

The IFS Green Budget

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Preface

Welcome to the Institute for Fiscal Studies' 2008 Green Budget, in which we discuss some of the issues confronting Alistair Darling in his first Budget as Chancellor of the Exchequer.

We are delighted once again this year to be producing the Green Budget in collaboration with Morgan Stanley. David Miles, managing Director and Chief UK Economist, has had a long association with IFS as a Research Fellow and as an editor of Fiscal Studies between 1999 and 2004. He and his colleagues have contributed chapters on the economic outlook, and on debt management and the recent problems in the credit markets.

We are also grateful for financial support from the Economic and Social Research Council's Centre for the Microeconomic Analysis of Public Policy at IFS. As with all IFS publications, the views are those of the authors of the particular chapters and not of the institute – which has no corporate views – or of the funders of the research.

A handwritten signature in black ink, reading "Robert Chote". The signature is written in a cursive style with a horizontal line underneath the name.

Robert Chote

Director, Institute for Fiscal Studies

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1. Summary

Chapter 2: The public finances under Labour

- Labour inherited, by international standards, a big budget deficit and an average public sector debt burden. More than a decade later, the structural budget deficit and the debt burden have both been reduced. But of 21 comparable industrial country governments, 19 have done more to improve their structural budget balances and 16 have done more to reduce their debt burdens than the UK has.
- Since taking office, Labour has announced net tax increases that will raise 1.3% of national income (£18.8 billion in today's terms) this year. This has contributed to a total increase in the tax burden of 2.1% of national income (£29.5 billion). This is being used to increase public sector investment and cut government borrowing.
- To strengthen the public finances over the next five years, Labour plans to allow the tax burden to increase by 1.0% of national income (£14 billion) and to cut public spending by 0.5% of national income (£7 billion). If delivered, this would take the tax burden to a 24-year high and public spending to an eight-year low.
- Over the next five years, Labour plans to take 48% of the 'proceeds of growth' in tax, up from 45% under Labour to date and 30% under the Conservatives from 1979. Real national income is expected to rise by £5,500 per family by 2012–13, with roughly £2,600 being taken in tax and £2,900 being left in individuals' pockets.

Chapter 3: The fiscal rules and policy framework

- Designing fiscal rules requires a trade-off between precision on the one hand and simplicity and transparency on the other. The golden rule and sustainable investment rule are not optimal as currently applied and could be improved. But they still have significant potential value as rules of thumb.
- Many economists outside government no longer see compliance with the fiscal rules as a good guide to the health of the public finances. In part this reflects concern that Gordon Brown, when Chancellor, 'moved the goalposts' to make the golden rule easier to meet.
- Using the Treasury's start and end dates for economic cycles, it met the golden rule over the previous economic cycle with £19 billion to spare and appears on course to meet it over the new cycle, provided the cycle is sufficiently long. However, using other plausible methods to date the cycle, the golden rule has already been broken under Labour.
- It would be sensible to make the golden rule symmetric, forward-looking and less reliant on the need to date the economic cycle precisely. The Treasury's fiscal forecasting could be made more transparent or perhaps even delegated to an independent body.

- There seems to be no appetite among the main political parties to reduce the burden of public sector debt significantly. But most industrial countries have done more to reduce their debt since 1997 than the UK and more than one in three OECD countries now have net holdings of financial assets rather than net debt.
- The taxpayer has provided guarantees worth up to £55 billion to Northern Rock's creditors. But if Northern Rock is nationalised, or if the Office for National Statistics determines that the government is in effective control of the company, around £100 billion could be added to public sector net debt.
- Were this to occur, the government should be able to unwind most (or perhaps even all) of the increase once Northern Rock's mortgage book has been sold. Whether a fiscal policy response is required should be determined by the long-term impact on public sector net debt rather than any short-term impact. Meanwhile, the Treasury should present public sector net debt figures including and excluding the impact of commitments made to Northern Rock.

Chapter 4: The economic outlook

- The economic outlook for the next few years is worse than it has been for some time. Our central forecast is that there will be a moderate slowdown in the UK economy over the coming fiscal year followed by a rather weak recovery in 2009. This implies two years of growth below the economy's long-run trend rate.
- We expect weaker consumer spending for the next few years as the incentives to save increase and the availability and price of credit make borrowing less easy.
- Although we expect slower domestic demand growth in the next year or so, growth is also likely to slow in the economies of the UK's major trading partners (particularly the euro area and the US). Without a very sharp depreciation in sterling, net trade is not likely to boost growth in the UK.
- This forecast for the UK economy differs somewhat from that of the Treasury. In particular, we forecast somewhat weaker GDP growth than the Treasury in fiscal years 2008–09 and 2009–10. Thereafter, we actually project slightly stronger growth than the Treasury does.

Chapter 5: Green Budget public finance forecasts

- Public sector net borrowing and the current budget deficit are likely to be £2.5 billion bigger this year, and £4.8 billion bigger next year, than forecast in the October 2007 Pre-Budget Report.
- Assuming that the economy evolves largely as the Treasury expects, but with corporation tax receipts only bouncing back to their long-term average by 2012–13 and with weaker growth in stamp duty revenues from both property and share transactions, by 2012–13 we are around 0.5% of national income – or £8 billion in today's terms – less optimistic than the Treasury about the current budget balance.

- In today's terms, we expect the current budget to be in surplus by £8 billion in five years' time, roughly £18 billion stronger than it is now. Of this improvement, £9 billion reflects a rise in the tax burden and £9 billion cuts in public spending after 2007–08.
- Despite this, we believe that without a further tightening the golden rule would be more likely to be missed than met unless the economic cycle that the Treasury believes began in 2006–07 runs for 10 years or more.
- We also forecast higher public sector net debt than the Treasury, expecting it to rise by 3½% of national income by 2012–13. In the absence of new policy announcements, we believe that it is more likely than not that debt will breach the 40% of national income ceiling that Mr Brown chose to adhere to when he was Chancellor – even ignoring the potential impact of Northern Rock.
- If the Chancellor wants to keep net debt below 40% of national income and maintain the improvement in the current budget balance that he was looking for in the PBR, we believe that he would need to announce tax increases worth around £8 billion. This seems unlikely, given the government's political constraints and the outlook for the economy. But there is scope for the Bank of England to offset the impact of a modest fiscal tightening on growth and inflation, so taking some action to underpin the fiscal position now would be prudent.

Chapter 6: Funding, debt management, and credit market problems

- As in recent years, the government is likely to have to borrow more over the next five years than the Treasury currently thinks. But the government still faces an environment that is favourable for issuing gilts at relatively low cost.
- Yields on shorter-dated gilts are exceptionally low, which argues for skewing issuance away from medium-dated towards shorter-dated bonds.
- Short-dated gilt yields are low in part because of turbulence in financial markets – the so-called 'credit crunch'. If this continues, it would pose significant difficulties for mortgage lenders. We consider a number of possible strategies to alleviate this problem, including the creation of an agency to buy or lend against the collateral of mortgage-based securities issued by banks and building societies.
- Mortgage contracts that (i) link monthly repayments to consumer prices or house prices, and (ii) involve borrowers and lenders sharing the risk of house price changes, should be both attractive and commercially viable.

Chapter 7: Pressures on public spending

- Public spending is set to grow only half as quickly over the three years covered by the 2007 Comprehensive Spending Review (CSR) as over the 'years of plenty' covered by

the previous four spending reviews. In a number of areas, the CSR spending plans may be insufficient to achieve stated policy goals.

- Health is set to see spending increase much less quickly than it has done over recent years. The CSR proposes to spend between £6 billion and £10 billion less on health in 2010–11 than Sir Derek Wanless's reviews have suggested would be necessary to progress towards a world-class health service.
- Education spending will stop rising as a share of national income under the CSR plans. If spending continues to increase at the rate planned in the CSR, the government would only meet its goal of matching the 2005–06 level of spending per pupil in the private sector in 2020–21 – a lag of 15 years.
- The local government settlement between 2008 and 2010, and the prospect of 'capping' for councils that propose cash-terms increases in council tax rates above 5%, put pressures on local services. These could be particularly tight in 2010–11, when the main grant is set to be cut in real terms.
- The government would need to spend around £3.4 billion more than it is currently forecasting on tax credits and social security benefits in 2010–11 if it were to give itself a 50:50 chance of meeting its child poverty target for that year.

Chapter 8: Public sector pay and pensions

- The public sector pay bill has been increasing since the beginning of this decade, reflecting both higher public sector employment and rising levels of public sector pay. As it squeezes spending, the government is attempting to slow pay growth in the public sector. It claims that to do so is important in controlling inflation.
- The case for using a public sector pay policy to help target inflation is weaker than some recent government statements have suggested. It is certainly not the case that public sector pay increases have to be held to 2% just because the UK has a 2% inflation target. Over time, public sector pay will need to reflect productivity improvements across the whole economy.
- The Bank of England believes that pay increases of around 4½% a year across the whole economy would be consistent with the inflation target. Headline public sector pay increases consistent with the inflation target will generally be lower because of relatively high 'pay drift' for some groups of public sector workers.
- Relatively generous public sector pensions mean that a public sector worker is on average around 12% better off than a private sector worker on the same basic salary. This gap has grown over the past decade as a result of private sector retrenchment. The government has made modest progress on reform, but unfunded public pension liabilities continue to grow. The gap between public and private sectors does not look sustainable. The case for further reform is strong.
- The 'staging' of a number of pay review body recommendations last year has delivered modest, but strictly one-off, savings. There would be significant risk to the credibility of

the pay review body process if the government were to make a habit of not implementing recommendations. This would have long-term costs.

- Public sector pay is much lower relative to private sector pay in London and the South East than in other parts of the country. If the government wishes to broadly equalise the quality of public services across the country, it should increase public sector pay more quickly in areas where it is relatively low.

Chapter 9: Aviation taxes

- Aviation is responsible for a rapidly-growing proportion of greenhouse gas emissions. Emissions, noise pollution and congestion all provide economic rationales for aviation taxes.
- Unfortunately, international agreements prevent fuel for international flights being taxed. But taxes on tickets, passengers and flights are all permissible.
- The government proposes putting a tax on flights from November 2009, replacing the current tax on passengers, air passenger duty (APD). This should allow it to target the level of emissions more effectively than APD does at the moment.
- A reformed aviation duty on flights would strengthen incentives for aircraft to fly as fully-loaded as possible and could also be extended relatively easily to freight flights, although the revenue from taxing freight flights would likely be small.
- To be targeted precisely on the external costs of aviation, the rates of a new aviation duty might in principle have to vary by aircraft type, aircraft emissions and departure airport, as well as by distance travelled. But the more sophisticated the tax is, the more complicated it will be to administer and comply with.
- To the extent that the new tax would be passed on to passengers, if the revenue raised were to remain the same there would be both winners and losers. The winners from a relatively sophisticated aviation duty would be those flying short distances on full, clean, quiet planes from airports away from residential areas.
- Reforms to aviation taxation are likely to be followed by the inclusion of aviation in the EU Emissions Trading Scheme. The interaction of the domestic tax with this system will need careful consideration.

Chapter 10: Capital gains tax

- The government's proposal in the Pre-Budget Report to abolish taper relief and the distinction between business and non-business assets was a welcome step in the direction of making capital gains tax (CGT) simpler and less distortionary.
- It would, however, probably be a good idea to sacrifice some of the gains in simplicity to make CGT even less distortionary, by applying reduced rates to corporate equity to reflect corporation tax already paid, and perhaps by re-introducing relief for inflation.

- There is a strong case for aligning CGT rates with the tax rates on earnings and dividend income. Higher CGT rates might discourage saving, investment and entrepreneurship, but these could be encouraged in better-targeted ways.
- Owners of business assets are understandably upset to see the withdrawal of a tax break from which they had expected to benefit, but it is not clear in many cases that the proposed regime is less favourable than when they bought the asset in the first place. The government could have offered transitional relief, but this would have re-complicated the system and created problems of its own.
- Announcing a reform without consultation, creating additional uncertainty by agreeing to rethink it in the face of intense lobbying, and then delaying the results of the rethink, are not the hallmarks of competent tax reform. It is hard to believe that whatever changes to CGT finally emerge this year will be the last.
- The announcement of a £200 million ‘entrepreneurs’ relief’ to be introduced in April 2008 will be a welcome reprieve for many owner-managers of small businesses, but reintroduces complexities and inefficient distortions similar to those inherent in taper relief.

Chapter 11: Corporation tax and entrepreneurship

- Labour has changed corporation tax rates in seven of its 11 years in office and plans to change them again next year and in 2009–10. This has caused considerable uncertainty and upheaval, particularly for the owners and managers of companies with profits below £50,000 per year.
- Throughout Labour’s time in office, the tax and National Insurance system has provided incentives to be self-employed rather than employed, and incorporated rather than unincorporated. The introduction (at 10%) and subsequent reduction (to 0%) of a ‘starting’ rate of corporation tax on those with profits below £10,000 substantially increased the incentive for small businesses to incorporate. Many new companies were set up as a result, but it is not clear how many were the type of ‘entrepreneurial’ businesses the government wanted to encourage.
- The removal of the starting rate, together with the planned increase in the small companies’ rate in 2008–09 and 2009–10, suggests that the government has now acknowledged that creating tax incentives that favour one legal form over another may not be the most sensible way to encourage entrepreneurship.
- The government’s experiment with the 0% starting rate may have alerted people to the tax incentives favouring incorporation, even though they are no longer as large as they were. Stemming the continued tide of incorporations may require further increases in – and perhaps even the abolition of – the small companies’ rate. This may be no bad thing, as the economic rationale for a distortion in the tax system in favour of companies with low profits is far from clear.

Chapter 12: Taxation of companies' foreign profits

- In June 2007, the Treasury and HM Revenue & Customs proposed moving away from taxing the dividends that UK companies receive from their foreign subsidiaries (having given a credit for any foreign taxes paid on those dividends) to a system in which foreign dividends are exempt from UK taxation altogether.
- Moving to an exemption system should increase the after-tax profitability of UK multinationals by allowing them to compete for control of firms in low-tax countries on a level playing field with multinationals in other exemption countries. The tax system would be less likely to distort investment decisions unhelpfully.
- An exemption system is more likely to be compatible with EU law than the current 'credit' system. In principle, an exemption system should also be simpler and cheaper for companies to comply with, but the government's reforms involve unnecessary complexity that would probably squander these potential gains. The proposed exemption system could be simpler if: exemption for foreign dividends included as few exceptions as possible; dividends arising from small and large shareholdings were dealt with on the same basis; and if no distinction were drawn between small, medium and large company recipients.
- The document also proposes changes to the definition of controlled foreign company income, which potentially have wide-ranging impact. The current *entity*-based regime would be replaced by an *income*-based regime. This would broaden the category of foreign income that the UK government attempts to tax (largely passive income) and increase the scope for capturing such income.

Chapter 13: Tax simplification

- The government has reaffirmed its commitment to simplify the tax system, but attempts by this and previous governments to deliver real and long-lasting reductions in complexity have usually come to nothing and the volume of tax legislation has grown inexorably.
- The rewrite of direct tax legislation, initiated under the last Conservative government and still in progress, uses simpler language but at much greater length and without resolving any of the underlying complexity in the legislation.
- The abolition of buildings allowances, the reform of capital gains tax and proposals for adopting simpler 'principles-based' anti-avoidance legislation are three measures that offer the prospect for some simplification of existing rules.
- Each proposal, however, has met with opposition. In the first two cases, those adversely affected by the proposals have objected. The third case has prompted concerns that it will create uncertainty and confer too much discretion on HM Revenue & Customs. Each proposal illustrates a variety of trade-offs that have to be made between simplicity and other legitimate aims of particular measures.

- Real simplification is difficult to achieve without more fundamental consideration of what, who and how we tax. Tackling complexity requires that we recognise what is complex and why, and focus on what can sensibly be done about it.
- In this respect, the government's approach of identifying particular elements of the tax system for review is a useful start. Ultimately, however, government must be clear as to its policy goals. One can then judge whether it is its goals that are complicated – possibly too complicated – or just its methods.

Chapter 14: The impact of tax and benefit reforms to be implemented in April 2008

- Several big changes to the tax, tax credit and National Insurance systems were announced in last year's Budget and Pre-Budget Report to be implemented this April. These involve tax cuts and tax credit increases worth £14 billion in the coming fiscal year, offset by tax increases of roughly the same amount. This is the biggest set of changes to be implemented in any one year under Labour.
- Households at the top and bottom of the income distribution will gain most from the changes to personal taxes and tax credits, while those in the middle will see very little impact. But increases in taxes that we cannot allocate to specific households (such as corporation tax) are likely to reduce these gains at the top and bottom of the income distribution and may result in net losses in the middle.
- The reforms to the direct tax system are a welcome simplification of the structure of marginal rates, although further simplification would be desirable. Cutting the marginal rate for basic-rate taxpayers will improve incentives to work and to save very slightly for many individuals, but the package will not reduce the very high marginal tax or deduction rates faced by those with the weakest work incentives.
- Taking this April's changes into account, the tax and benefit reforms since 1997 will have increased the incomes of the poorest tenth of the population by 12.4% (£1,300 a year) and reduced those at the top by 5.5% (£4,200 a year) on average. Despite facing higher net taxes, a household in the middle of the top tenth of the income distribution has still enjoyed an increase in real post-tax income of around 20% between 1997 and 2006.

2. The public finances under Labour

Robert Chote, Carl Emmerson and Gemma Tetlow (IFS)

Summary

- Labour inherited, by international standards, a big budget deficit and an average public sector debt burden. More than a decade later, the structural budget deficit and the debt burden have both been reduced. But of 21 comparable industrial country governments, 19 have done more to improve their structural budget balances and 16 have done more to reduce their debt burdens than the UK has.
- Since taking office, Labour has announced net tax increases that will raise 1.3% of national income (£18.8 billion in today's terms) this year. This has contributed to a total increase in the tax burden of 2.1% of national income (£29.5 billion). This is being used to increase public sector investment and cut government borrowing.
- To strengthen the public finances over the next five years, Labour plans to allow the tax burden to increase by 1.0% of national income (£14 billion) and to cut public spending by 0.5% of national income (£7 billion). If delivered, this would take the tax burden to a 24-year high and public spending to an eight-year low.
- Over the next five years, Labour plans to take 48% of the 'proceeds of growth' in tax, up from 45% under Labour to date and 30% under the Conservatives from 1979. Real national income is expected to rise by £5,500 per family by 2012–13, with roughly £2,600 being taken in tax and £2,900 being left in individuals' pockets.

2.1 Introduction: Labour's fiscal objectives

The 2008 Budget will be Alistair Darling's first since taking over from Gordon Brown as Chancellor of the Exchequer last year and the twelfth since the Labour Government took office in 1997. Labour has outlined four main goals for its fiscal policy:¹

- to avoid an unsustainable and potentially damaging rise in public sector debt;
- to ensure that future taxpayers are not left to pay for spending that does not benefit them;
- to avoid a bias against investment when public spending as a whole has to be squeezed;
- to 'support' monetary policy in stabilising the economy and keeping inflation on target.

In 1997, with no track record of his own, Mr Brown saw a new fiscal policy framework as a way to help convince people that he would avoid what he saw as the fiscal laxity and bias against investment of previous Chancellors. The key elements were

¹ Page 7 of HM Treasury, *Analysing UK Fiscal Policy*, November 1999 (<http://www.hm-treasury.gov.uk/media/E/E/anfiscalp99.pdf>).

- the **Code for Fiscal Stability**, which sets out the broad principles of fiscal policy, as well as requiring the Treasury to be transparent about its goals and record; and
- publicly-stated **fiscal rules**, which turn broad principles of ‘sound’ fiscal policy into specific operational targets against which success or failure can be judged.

The fiscal rules make Labour’s four broad objectives for fiscal policy more concrete:

- The **golden rule** requires the public sector to borrow only to pay for capital investment, and to finance its remaining ‘current’ spending from tax and other revenues. In other words, the government has to keep the current budget (revenues minus current spending) in balance or in surplus. To help manage demand in the economy appropriately, the rule has to be met on average over the economic cycle rather than every year.
- The **sustainable investment rule** requires the government to keep the public sector’s debt (net of its short-term financial assets) at a ‘stable and prudent’ level. For now, the Treasury defines this as less than 40% of national income (GDP) at the end of each financial year of the current economic cycle.

We discuss these rules and the fiscal framework in more detail in Chapter 3. In this chapter, we look at the state of the public finances when Labour took office in 1997 (Section 2.2) and at how they have evolved over the past 11 years (Section 2.3). We then assess how the current position compares with Labour’s inheritance (Section 2.4) and how the Treasury expects it to evolve over the next five years (Section 2.5). Section 2.6 quantifies the uncertainties that lie around the Treasury’s public finance forecasts. Section 2.7 concludes.

2.2 Labour’s inheritance

Labour took office at a time when the Conservatives were still trying to eliminate the large budget deficit that had opened up in the early 1990s. Adjusting for the level of economic activity, the ‘structural’ budget balance² had deteriorated from a surplus of 1.5% of national income in 1981–82 to a deficit of 5.6% by 1992–93. The impact of the recession on revenues and spending meant that the overall deficit was even bigger, reaching 7.8% of national income in 1993–94.

Britain’s exit from the European Exchange Rate Mechanism in September 1992 prompted a significant rebalancing of macroeconomic policy. Looser monetary policy – lower interest rates and a weaker exchange rate – was accompanied by a big fiscal tightening. After the 1992 election, Chancellor Norman Lamont announced significant tax-raising measures, and Kenneth Clarke, who became Chancellor in May 1993, continued this process and also cut public spending as a share of national income. This almost halved the structural budget deficit between 1992–93 and 1996–97 and, along with strong economic growth, helped stabilise public sector net debt, which peaked at 43.3% of national income in 1996–97. Mr Clarke forecast in his November 1996 Budget that revenues would continue to rise and spending

² The budget balance that would be recorded if economic activity were at its sustainable ‘trend’ level, consistent with stable inflation. See Section 3.2.

would continue to fall as shares of national income. This would get the budget back into surplus by 2000–01 and pull public sector net debt back down towards 40%.

This set the scene for Labour's inheritance. In 1996–97, the Conservatives' last year in office, total spending by the public sector (known as total managed expenditure, TME) was 40.6% of national income, while government revenues totalled 37.1% of national income. This left 3.5% of national income to be covered by public sector net borrowing. If sustained, this would have left net debt climbing significantly for the foreseeable future. A fifth of this borrowing financed investment, leaving a current budget deficit of 2.8% of national income. The Treasury estimates that part was explained by the impact of weak economic activity on tax revenues and welfare spending, but that there was still a 'structural' current budget deficit of 2.2% of national income. This would have to be reduced if Mr Brown were to comply with his 'golden rule' over the medium term.

By international standards, Labour inherited a relatively large budget deficit but a debt level in the middle of the industrial country league table. Using internationally comparable figures, in 1996 the UK's structural general government deficit was the seventh highest of the 22 major industrial countries for which we have comparable data for a broad range of fiscal indicators. General government net financial liabilities (the broadest OECD net debt measure) was the tenth highest of the same 22 countries.³

2.3 Labour's record to date

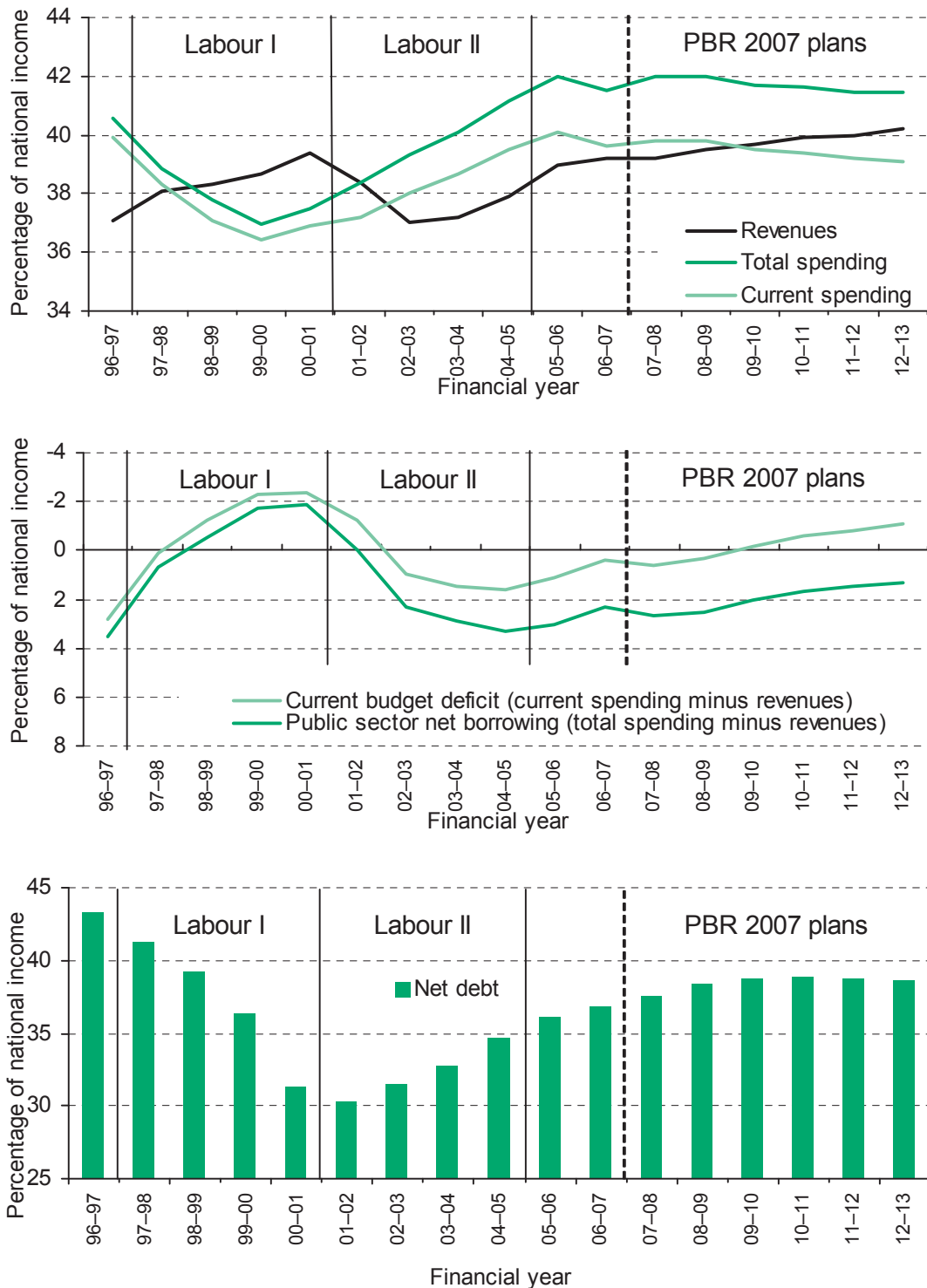
The evolution of the public finances

In its 1997 manifesto, Labour promised to keep to the tight spending plans laid down by Mr Clarke for two years. Mr Brown broadly kept that promise and reduced spending further in his third year at the Treasury, thanks partly to unintended departmental underspending. Despite beginning to spend more in the run-up to the 2001 election, public spending (TME) ended Labour's first term 3.2% of national income lower than it started (Figure 2.1). Most of the decline was in current spending, but public sector net investment also dropped, from 0.7% of national income to just 0.5%. Notwithstanding Mr Brown's complaints about underinvestment by the Conservatives, public sector net investment was lower on average in Labour's first term – at 0.6% of national income – than in any other four-year period since the Second World War.

Over the same four years of Labour's first term, government revenues rose by 2.3% of national income, thanks to real increases in fuel and tobacco duties (initiated by the Conservatives and then accelerated and maintained by Mr Brown until the November 1999 Pre-Budget Report), Budget measures such as the abolition of repayable dividend tax credits, and above-average economic growth. Mr Brown also decided not to raise income tax thresholds as quickly as incomes, which meant that a progressively larger proportion of people's incomes was taxed at higher rates (a process known as 'fiscal drag').

³ See Table 2.2 for more details.

Figure 2.1. Revenues, spending, budget balances and debt



Sources: HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/pbr_csr07_index.cfm); HM Treasury, *Public Sector Finances Databank*, December 2007 (http://www.hm-treasury.gov.uk/media/B/2/pfd_211207.xls).

With revenues rising and spending falling, by the time of the 2001 election the total budget balance and the current budget balance had both moved into surplus. The total budget balance reached 1.7% of national income in 1999–2000, comprising an estimated 1.4% of structural surplus and a further 0.3% from cyclical factors. Meanwhile, public sector net debt fell from

43.3% of national income in 1996–97 to 31.4% of national income in 2000–01, aided in part by the proceeds from auctioning 3G mobile phone licences (£22½ billion, 2.3% of national income at the time).

Mr Brown had described his determination to reduce borrowing as ‘prudence for a purpose’.⁴ The purpose became clear after 1999. The government reversed its earlier cuts in public spending, with health, education, and lower-income pensioners and families with children the main beneficiaries. However, as spending rose by 3.8% of national income over Labour’s second term, tax revenues weakened unexpectedly when the stock market fell in 2000 and 2001, reducing tax payments by financial sector firms and their employees. The tax-raising Budget of April 2002 helped begin to reverse the decline, but government revenues still ended Labour’s second term 1.5% of national income lower than they began it (even though the net effect of new policy measures during the second term had been to raise revenue).

The combination of higher spending and weaker tax revenues unwound the improvement in the public finances seen during Labour’s first term. The current budget balance moved from a surplus of 2.4% of national income at the end of the first term to a deficit of 1.6% at the end of the second. The swing in the overall budget balance was even larger, reflecting the fact that public sector net investment had at last begun to increase. The return to budget deficits began to push public sector net debt up again, reaching 34.7% of national income in 2004–05.

The 2004 Spending Review began to slow the increase in spending, with the Treasury’s original plans showing real increases declining from 4.2% in 2005–06 to 2.6% in 2006–07 and 2.8% in 2007–08. In fact, spending growth came in at a higher-than-intended 4.3% in 2005–06 and then slowed more sharply than intended to 2.1% in 2006–07. The Treasury now expects spending growth to rebound to 3.8% this year, giving an average increase of 3.4% a year over the three years of the review – slightly more than the 3.2% set down in the original plans. The Treasury expects this to leave the broadest measure of public spending, TME, at 42.0% of national income this year, up from 41.2% in 2004–05.

Even on the basis of the slower spending growth originally planned for Spending Review 2004, IFS and other independent commentators argued in the run-up to the 2005 election that the government would have to announce further tax-raising measures or cut spending as a share of national income if it wished to meet its fiscal rules with the degree of comfort it had sought in the past.

Mr Brown rejected any such suggestion, claiming during the campaign that ‘People say we won’t meet our fiscal rules. Once again, with the public finances strong, we will prove them wrong’.⁵ But, with the election out of the way, it became clear that the government was indeed on course to breach its rules and Mr Brown duly announced net tax increases in the 2005 Pre-Budget Report, the 2006 Budget and the 2006 Pre-Budget Report, followed by a relatively neutral 2007 Budget (at least in the medium term) and Mr Darling’s relatively neutral package in the 2007 Pre-Budget Report. Taken together, these post-election tax

⁴ Mr Brown’s 1998 Budget Speech: ‘I said that this would be a Budget based on prudence for a purpose and that guides us also in our approach to public spending’ (http://www.hm-treasury.gov.uk/budget/budget_1998/bud98_speech.cfm).

⁵ ‘Row over £11bn tax black hole’, *Guardian*, 22 April 2005 (<http://www.guardian.co.uk/guardianpolitics/story/0,,1466066,00.html>).

increases will be sufficient to raise an extra £7.4 billion this year (£200 per family). Adding in the impact of a rebound in corporation tax receipts and a gradual increase in the income tax burden as people drift into higher tax brackets, revenues in total are expected to rise from 37.9% of national income in 2004–05 to 39.2% this year (an increase equivalent to £19 billion since the election).

With revenues growing more quickly than spending, the Treasury forecasts that the current budget deficit will narrow from 1.6% of national income in 2004–05 to 0.6% of national income this year, with net borrowing forecast to fall from 3.3% to 2.7% of national income over the same three years. But if the Treasury's forecasts for this year prove to be correct, public sector net debt will still have risen from 34.7% of national income to 37.6%.

How has Labour raised extra tax revenue since 1997?

Looking over Labour's period in office to date, the Treasury expects government revenues to have risen by 2.1% of national income between 1996–97 and 2007–08, equivalent to £29.5 billion in today's terms. This increase in revenue is the net effect of four factors:

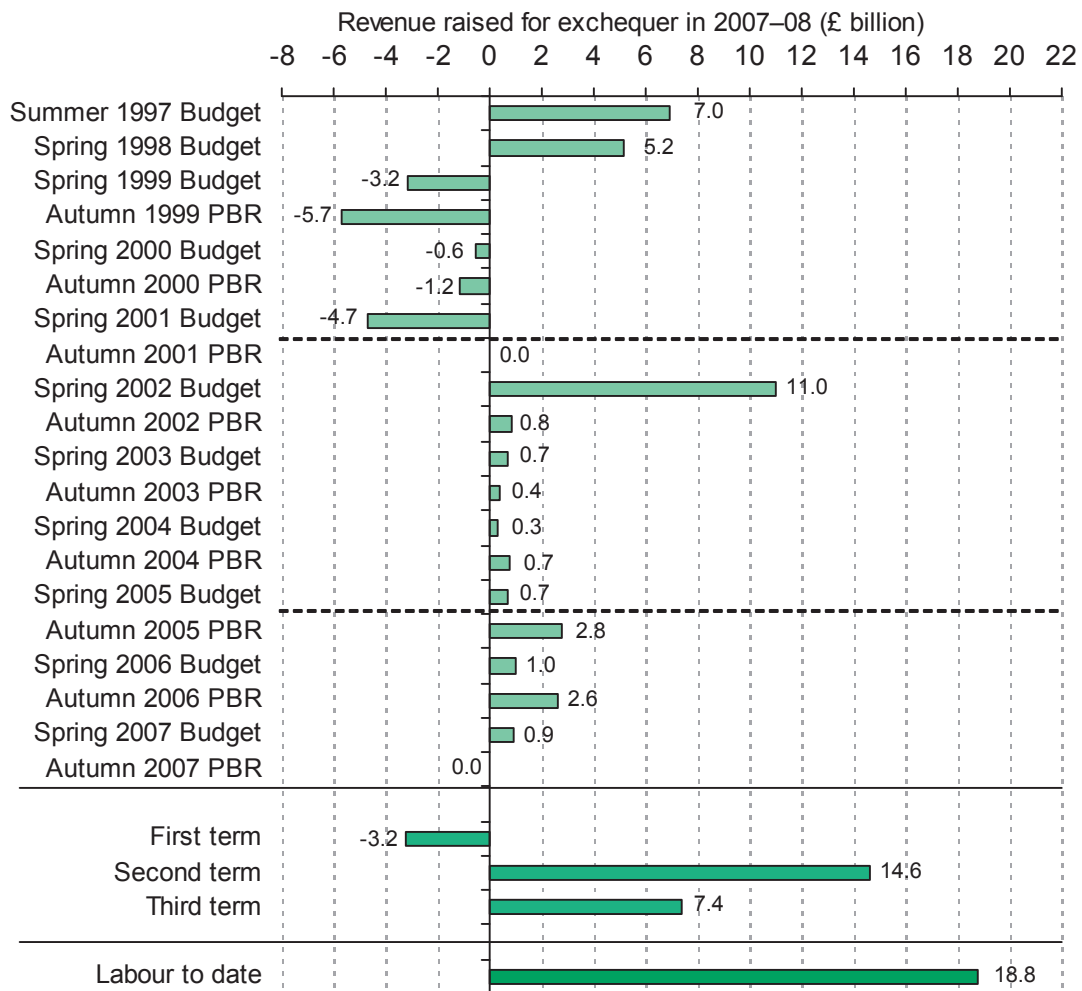
- explicit net tax increases announced by Labour and inherited from the Conservatives;
- fiscal drag: the decision not to raise thresholds and allowances in line with growth in the underlying tax base – for example, through not increasing income tax thresholds in line with growth in (taxable) incomes;
- the economic cycle: national income is thought to be stronger this year relative to the level consistent with stable inflation than in 1996–97;
- other economic factors, including the composition of national income and the health of the financial sector.

In this section, we assess the relative importance of these factors. Given the length of time we are looking at and the fact that the Treasury only assesses the revenue impact of Budget measures over a three-year period at the time they are introduced, such a decomposition can only involve tentative estimates. That said, and beginning with the explicit policy measures, Figure 2.2 shows the net impact that the various tax increases and tax cuts announced in Labour's 20 Budgets and Pre-Budget Reports to date will have on revenues in 2007–08.

We can see that Mr Brown began his Chancellorship with substantial net tax-raising measures in his first two Budgets. But these were more than offset by net tax cuts in the remaining five Budgets and Pre-Budget Reports of Labour's first term (including the abandonment of the fuel and tobacco escalators in the November 1999 Pre-Budget Report). This adds up to a net giveaway this year of 0.2% of national income, or £3.2 billion in 2007–08 terms.

The tax measures in Labour's second term were dominated by the increase in National Insurance contributions in the post-election April 2002 Budget, with relatively small net revenue-raisers in the remaining Budgets and Pre-Budget Reports contributing to a net tax increase from all measures announced in the second term worth £14.6 billion this year.

Figure 2.2. Revenue raised in 2007–08 by Labour-announced measures



Notes: 2007–08 terms. Measures defined as taxation using National Accounts definitions. Hence, only a proportion of the cost of the new tax credits is scored as a tax cut. The escalators on tobacco and fuel duty that were announced by the Conservatives and increased by Labour are assumed to have been intended to run to 2001–02. The cost to the exchequer of abolishing these escalators is attributed to the Autumn 1999 Pre-Budget Report. For more details of classifications prior to January 2001, see table 3.1 of A. Dilnot, C. Emmerson and H. Simpson (eds), *The IFS Green Budget: January 2001*, IFS Commentary 83 (<http://www.ifs.org.uk/budgets/gb2001/chap3.pdf>). Sources: Announcements from HM Treasury, *Financial Statement and Budget Report*, various years, and from HM Treasury, *Pre-Budget Report*, various years.

The first four Budgets and Pre-Budget Reports after the 2005 election were revenue-raisers, with the two Pre-Budget Reports being particularly significant. Combined with the more modest revenue-raising measures in the 2007 Budget and Pre-Budget Report, they will bring in a further £7.4 billion this year.

This means that the combined effect of all the tax measures announced by Labour to date will be to bring in 1.3% of national income (£18.8 billion) this year, compared with what would have happened if tax thresholds and allowances had simply been increased by their default amounts.

As Table 2.1 shows, the tax measures announced by Messrs Brown and Darling will raise around 1.3% of national income this year, to which we can add the 0.7% of national income

raised by the policy measures Labour inherited from the Conservatives and chose to maintain (notably, the above-inflation increases in fuel and tobacco duty that continued until 1999).

The second factor that has boosted tax receipts over the last 11 years is the phenomenon known as fiscal drag. In presenting its analysis of the public finances, the Treasury conventionally assumes that income tax allowances and thresholds rise in line with prices rather than earnings. However, as earnings tend to grow in real terms over time, this definition of ‘unchanged policy’ will see revenues increase as a share of national income over time as people migrate into higher tax brackets. Acquiescing in this ‘fiscal drag’ (which also occurs in other taxes where allowances fail to keep pace with underlying growth in the tax base) is, in effect, a policy choice. If unchecked since 1996–97, fiscal drag would have raised an estimated 2.2% of national income (£30.9 billion). In fact, fiscal drag *has* gone largely unchecked, which helps explain why the number of people paying income tax has risen from 25.7 million in 1996–97 to 31.6 million in 2007–08 and why the number paying it at the higher rate has risen from 2.1 million to 3.7 million over the same period.⁶

Table 2.1. Contributions to changes in government revenue (2007–08 terms)

	Impact on revenues in 2007–08	
	% of national income	Cash equivalent
<i>Announcements</i>		
Conservative	+0.7%	+£9.3bn
Labour 1 st term	–0.2%	–£3.2bn
Labour 2 nd term	+1.0%	+£14.6bn
Labour 3 rd term	+0.5%	+£7.4bn
All announcements	+2.0%	+£28.0bn
Fiscal drag	+2.2%	+£30.9bn
Economic cycle	+0.2%	+£2.5bn
Other factors	–2.3%	–£32.0bn
Total	+2.1%	+£29.5bn

Notes: As Figure 2.2.

Sources: As Figure 2.2. Fiscal drag estimated using HM Treasury estimate of 0.2% a year from paragraph A24 of HM Treasury, *End of Year Fiscal Report*, December 2003 ([http://www.hm-treasury.gov.uk/media/9/B/end_of_year_352\[1\].pdf](http://www.hm-treasury.gov.uk/media/9/B/end_of_year_352[1].pdf)). Impact of economic cycle estimated using figures in table A.5 of HM Treasury, *ibid*.

Adding together these elements, the broadest definition of the revenue increase for which government policy can directly be held responsible is an estimated 4.2% of national income (£58.9 billion). The remaining factors explaining the change in government revenues as a share of national income over the last 11 years are changes in the strength of the economy relative to the level consistent with stable inflation and other factors in the economy. The exchequer will receive an estimated further 0.2% of national income (£2½ billion) as a result of above-trend economic growth on average over the period since 1996–97. Offsetting these revenue increases, other economic developments will have cost the exchequer an estimated 2.3% of national income (£32 billion) this year. These other factors include episodes of weak stock market performance and the associated fall in the profitability of financial companies

⁶ http://www.hmrc.gov.uk/stats/income_tax/table2-1.xls.

(which adversely affected tax payments by firms and individuals in that sector) and weak earnings growth given the overall health of the economy.

This gives a total increase in revenues as a share of national income of £29.5 billion since Labour came to power. This is more than £10 billion lower than the £40.5 billion estimate published in last year's Green Budget⁷ and reflects the fact that the Treasury has downgraded its forecast for nominal tax receipts in 2007–08 despite having increased its forecast for nominal national income in the same year. This downgrading to the forecast for receipts was as a result of difficulties faced by the financial sector arising from large price changes in the credit markets (see Chapter 6).

2.4 Performance relative to the Conservatives

The public finances strengthened during Labour's first term and weakened during its second. The picture so far during the third term is mixed: the deficit has been shrinking but debt has still been rising. Given this fluctuating pattern, we should be wary of focusing too closely on the position in any particular year. But it is nonetheless interesting to compare the position now in 2007–08 to that when the Conservatives left office in 1996–97.

As Table 2.2 shows, Labour expects to spend 1.4% of national income more this year than the Conservatives did in their final year (£20 billion more in 2007–08 terms), with the extra money devoted to investment rather than current spending. But Labour has increased tax and other revenues by an even larger 2.1% of national income (£30 billion). This has paid for the extra spending and has also allowed Labour to cut borrowing by 0.8% of national income (£11 billion). The government is still having to borrow this year to pay for some of its non-investment spending, but to a much lesser degree than the Conservatives did: at 0.6% of national income, the current budget deficit is much smaller than that recorded in 1996–97.

Turning to the government's balance sheet, public sector net debt is expected to be 5.7% of national income (£80 billion) lower this year than it was in 1996–97, with the annual cost of debt interest also falling, by 1.3% of national income (£18 billion). Critics have argued that the government understates its true debt position by ignoring public sector pension liabilities and commitments made under the Private Finance Initiative. We discuss this in Section 3.3.

The comparisons of borrowing flatter Labour because economic activity was weaker in 1996–97 than it is expected to be in 2007–08, which automatically depressed tax revenues and pushed up welfare bills for the Conservatives. Adjusting for the state of the economy, the structural budget deficit is only 0.1% of national income smaller now than it was in 1996–97. But public sector net debt is significantly lower now than in 1996–97, even on a structural basis.

The improvements in debt, borrowing and the structural budget balances have occurred at a time when most other industrialised countries have also been strengthening their public finances – indeed, many of them more so. Out of the other 21 OECD countries for which we

⁷ Source: Table 2.1 of R. Chote, C. Emmerson, A. Leicester and D. Miles (eds), *The IFS Green Budget: January 2007*, IFS Commentary 102 (<http://www.ifs.org.uk/budgets/gb2007/07chap2.pdf>).

have comparable data on a wide range of indicators, 16 reduced their debt and 19 improved their structural budget balances by more than the UK between 1996 and 2007.

Figure 2.3 compares the evolution of the public finances during Labour's first decade with the Conservative record after 1979. At first glance, the comparison is not flattering to Labour. Having inherited a lower level of net debt than the Conservatives in 1979, after 10 years Labour finds itself with a higher debt burden than the Conservatives had after the same number of years in office. In addition, having inherited a smaller structural budget deficit than the Conservatives, and having reached the same structural surplus three years later, Labour has presided over a slightly bigger deterioration than the Conservatives over the subsequent seven years.

Table 2.2. Key fiscal indicators: 1996–97, 2007–08 and change over time

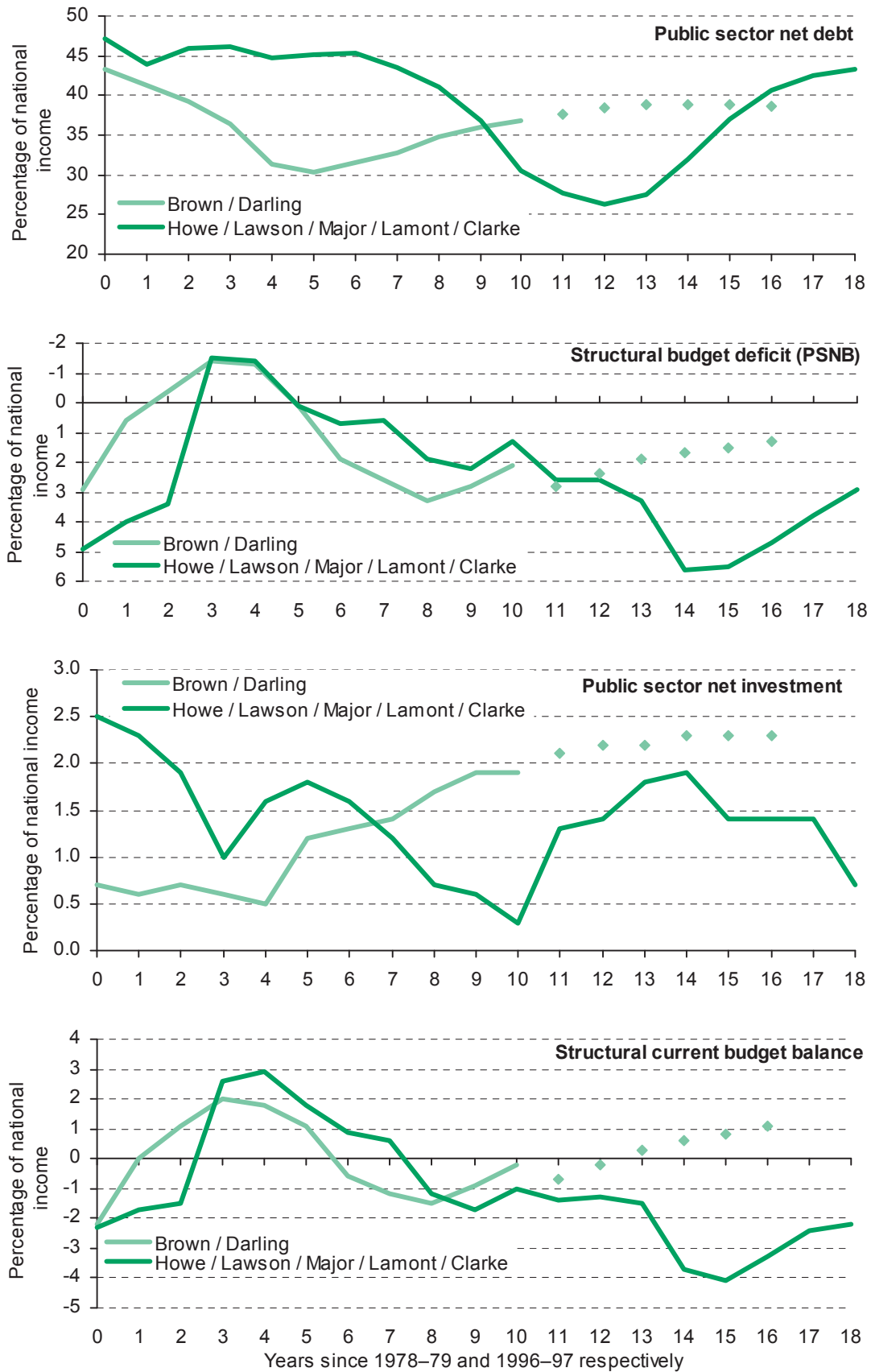
<i>% of national income unless otherwise stated Rankings: among 22 OECD member countries with consistent data for 1996 and 2007 for all measures</i>	Labour's inheritance (1996–97)	Current position (2007–08)	Change, 1996–97 to 2007–08 (% points)
Spending			
Total public spending <i>Place in OECD league table</i>	40.6% <i>16th highest spending</i>	42.0% <i>10th highest spending</i>	+1.4 <i>2nd largest increase</i>
Public sector net investment	0.7%	2.1%	+1.4
Central government debt interest <i>Place in OECD league table</i>	3.5% <i>14th highest debt interest</i>	2.2% <i>8th highest debt interest</i>	-1.3 <i>18th largest reduction</i>
Revenues			
Tax and other revenues <i>Place in OECD league table</i>	37.1% <i>17th highest revenues</i>	39.2% <i>14th highest revenues</i>	+2.1 <i>4th largest increase</i>
Borrowing			
Public sector net borrowing: total	3.5%	2.7%	-0.8
Public sector net borrowing: structural <i>Place in OECD league table</i>	2.9% <i>7th highest borrowing</i>	2.8% <i>4th highest borrowing</i>	-0.1 <i>20th largest reduction</i>
Current budget balance: total	-2.8%	-0.6%	+2.2
Current budget balance: structural	-2.2%	-0.7%	+1.5
Debt			
Public sector net debt <i>Place in OECD league table</i>	43.3% <i>10th highest debt</i>	37.6% <i>8th highest debt</i>	-5.7 <i>17th largest reduction</i>

Note: OECD figures relate to general government rather than public sector and include data from all OECD countries other than the Czech Republic, Ireland, South Korea, Poland, Slovakia, Switzerland and Turkey.

Sources: OECD, *Economic Outlook No. 82*, December 2007

(http://www.oecd.org/document/18/0,2340,en_2649_201185_20347538_1_1_1_1,00.html); HM Treasury, *Public Sector Finances Databank*, December 2007 (http://www.hm-treasury.gov.uk/media/B/2/pfd_211207.xls); Office for National Statistics.

Figure 2.3. Debt, deficits and investment: Labour vs Conservatives



Source: HM Treasury, *Public Sector Finances Databank*, December 2007 (http://www.hm-treasury.gov.uk/media/B/2/pfd_211207.xls).

However, this in part reflects Labour’s willingness to borrow more to increase net investment. As Figure 2.3 shows, net investment actually fell over Labour’s first term, but it has since increased and is now nearly three times higher than the level inherited from the Conservatives. By comparison, net investment fell sharply during the Conservatives’ first decade (although this in part reflected the privatisation of capital-intensive industries). If we exclude borrowing to finance investment, the current budget deficit has followed a remarkably similar pattern over the first 10 years of Labour to that over the first 10 years of the Conservatives, both parties having inherited similar levels. Labour recorded a stronger fiscal position in its first two years, while the Conservatives recorded a slightly stronger position from years 3 to 8. Looking forwards, the Chancellor believes that a very different pattern will be seen, with the current budget moving into surplus, whereas under the Conservatives a large deficit emerged.

2.5 Labour’s plans and forecasts

Labour expects to spend 42.0% of national income this year (39.8% on current spending plus 2.1% on public sector net investment). With revenues forecast at 39.2% of national income, this leaves a current budget deficit of 0.6% of national income (£8.3 billion) and public sector net borrowing of 2.7% of national income (£38 billion).

How does the Treasury hope that the public finances will evolve over the next five years?

In principle, the Pre-Budget Report is an interim forecast and does not necessarily indicate what the Treasury hopes will happen. For that, we supposedly need to wait for the Budget. But, in practice, Messrs Brown and Darling have removed any distinction between the Budget and Pre-Budget Report, with the latter recently having contained more significant policy changes, at least in terms of their net impact on the public finances, than the Budget (see Figure 2.2). So it seems reasonable to treat the Pre-Budget Report forecasts as a fair proxy for the Treasury’s desired path for the public finances.

According to the 2007 Pre-Budget Report, the current budget is predicted to move steadily from the deficit of 0.6% of national income this year to a surplus of 1.1% of national income in 2012–13. Over this period, revenues are expected to rise by 1.0% of national income while

Table 2.3. Current budget balance: cyclical and structural

	Economic growth (%)	Output gap (% of potential output)	Current budget balance (% of national income)			Net borrowing (% of national income)
			Cyclical	Structural	Total	
2007–08	3	0.2	0.1	–0.7	–0.6	2.7
2008–09	2	–0.3	–0.1	–0.2	–0.3	2.5
2009–10	2¾	0	0	0.2	0.2	2.0
2010–11	2½	0	0	0.6	0.6	1.7
2011–12	2½	0	0	0.8	0.8	1.5
2012–13	2½	0	0	1.1	1.1	1.3

Source: Tables B1 and B3 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm).

current spending is projected to fall by 0.7% of national income. Meanwhile, public sector net investment is forecast to rise by 0.2% of national income (giving a cut in total spending of 0.5% of national income). Net debt is forecast to rise from 37.6% of national income this year to a peak of 38.9% in 2010–11 before dropping back to 38.6% in 2012–13.

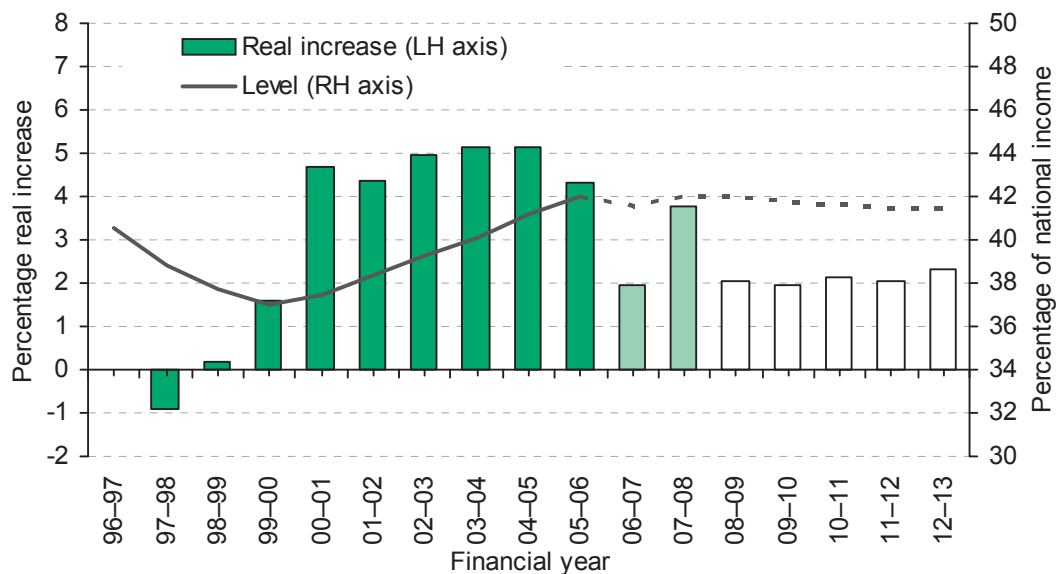
The Treasury now believes that economic activity is running only 0.2% above the level consistent with stable inflation (the ‘output gap’). So the structural improvement in the current budget balance forecast over the next five years is actually slightly larger than the forecast improvement in the headline measure (see Table 2.3).

Spending

The 2007 Comprehensive Spending Review (CSR) – published alongside October’s Pre-Budget Report – intensifies the squeeze on spending that began in Spending Review 2004. The Treasury plans to increase spending by 2.1% a year on average in 2008–09, 2009–10 and 2010–11. This is barely half the 4.0% increase seen on average over the previous nine years, covered by the 1998, 2000, 2002 and 2004 spending reviews. If these increases are delivered, spending will fall by 0.4% of national income, from 42.0% to 41.6% of national income.

In its Pre-Budget Report public finance forecasts, the Treasury also pencilled in two further years of modest spending growth, averaging 2.2% a year in real terms in 2011–12 and 2012–13, as shown in Figure 2.4. This would cut spending by a further 0.2% of national income to 41.5%. At 0.5% of national income, the total cut in spending projected over the next five years is worth £7.2 billion in today’s terms. This squeeze would be less dramatic than that

Figure 2.4. Total managed expenditure

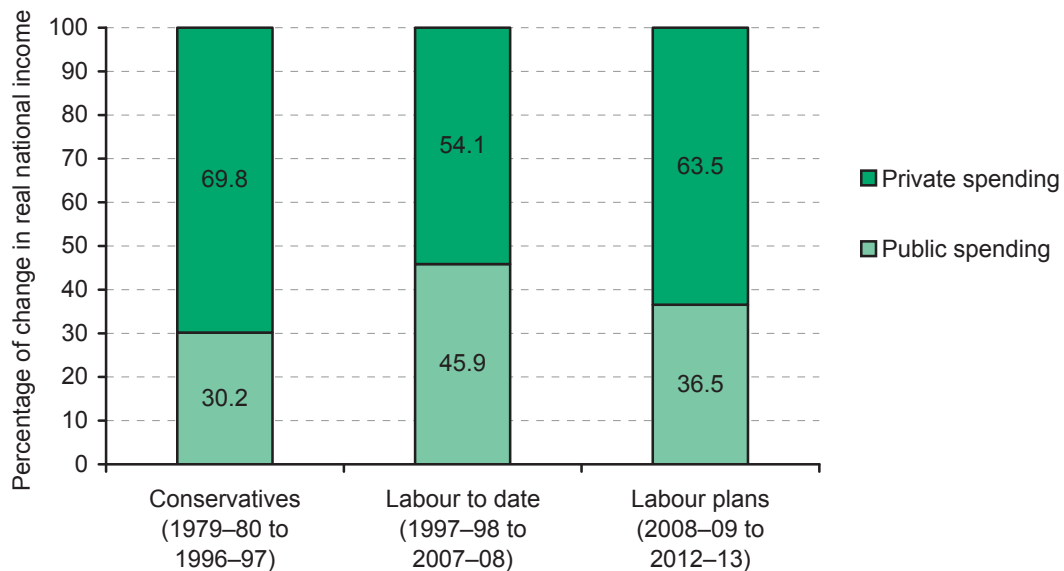


Sources: Total managed expenditure from table B1 of HM Treasury, *Public Sector Finances Databank*, December 2007 (http://www.hm-treasury.gov.uk/media/B/2/pfd_211207.xls) and table B5 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm). GDP and GDP deflators up-to-date as of 20 December 2007 from HM Treasury website (http://www.hm-treasury.gov.uk/media/6/8/GDP_Deflators_20071220_NA_update_circ.xls).

seen during Labour’s first two years in office (when it was aiming to stick to the plans that it inherited from the Conservatives) and would still leave spending higher in 2012–13 than it was in 2004–05.

Another way to characterise the squeeze on spending is to ask how the ‘proceeds of growth’ are shared between public and private spending. In other words, what proportion of every extra pound of national output does the Treasury expect the public sector to spend and what proportion does it expect to leave to the private sector? This split is shown in Figure 2.5. Under the Conservatives from 1979 to 1997, the public sector spent around 30% of additional national output, leaving 70% to the private sector. Under Labour to date, the public sector has spent just over 45% of the additional national output, leaving the private sector a little under 55%. Over the next five years, the shares are expected to be somewhere between the two previous periods, with the public sector spending around 37% of the extra national output and the private sector around 63%.

Figure 2.5. Sharing the proceeds of growth



Source: As Figure 2.4.

As in every previous spending review under Labour, the real increases in spending during the CSR 2007 period and beyond have been, or are set to be, larger than those originally intended. Chapter 7 discusses potential pressures on the government’s latest spending plans.

Revenues

The Treasury is expecting revenues to increase by 1.0% of national income (£14 billion) over the next five years. The extra revenue is expected to come predominantly from taxes on incomes and profits, partially offset by a decline in revenue from taxes on spending, as can be seen in Table 2.4.

As usual, the forecast incorporates an ongoing structural increase in revenues arising from ‘fiscal drag’. The Treasury estimates that fiscal drag increases current receipts by 0.2% of

Table 2.4. Revenue changes projected in PBR 2007 (% of national income)

	2007–08	2012–13	Change
Income tax & NICs	17.5	18.3	0.8
Corporation tax	2.9	3.3	0.4
North Sea revenues	0.5	0.5	No change
VAT & excise duties	8.7	8.4	–0.3
Other taxes & royalties	7.1	7.1	No change
Net taxes & NICs	36.8	37.6	0.8
Other receipts etc.	2.5	2.6	0.1
Current receipts	39.2	40.2	1.0

Note: Components may not add to totals due to rounding.

Source: Table B9 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm).

national income a year, which implies an increase of at least 0.75% of national income after five years once rounding is taken into account.⁸ This accounts for most if not all of the 0.8% of national income increase in revenue from income tax and National Insurance contributions (NICs) over the forecast horizon – and indeed most of the increase in revenues overall.

As with spending, we can characterise changes in the tax burden as changes in how the ‘proceeds of growth’ are shared between the public and private sectors. Over the next five years, the Treasury expects to take 48% of every extra pound of real national income in tax, compared with 45% under Labour to date and 30% under the preceding Conservative government.

But it is important to remember that even when the tax burden is rising, the income left to spend in the hands of the private sector can also be rising. (In addition, some tax revenue is simply redistributed within the population in the form of social security benefits and tax credits.) Under Labour to date, between 1996–97 and 2007–08, the Treasury estimates that real national income has risen by £374 billion or £11,800 per family. Of this total, families are paying £5,400 more in tax, leaving them with £6,500 more income after tax. Over the next five years, the Treasury expects real national income to rise by £173 billion or £5,500 per family. Of this, £2,600 will be taken in tax, leaving an increase in after-tax income of £2,900. (These figures take into account all government revenue and not just taxes that are formally paid by specific households. This reflects the fact that all taxes – even those formally paid by businesses – are ultimately paid by individuals.)

2.6 Uncertainty and the Treasury’s fiscal forecasts

As almost all Chancellors discover to their cost, forecasting the public finances is a difficult business. The main problem is that small errors in forecasts for spending or revenues can imply proportionately much bigger errors in forecasts of budget balances – the difference between the two. So when the Treasury predicts that the current budget balance will

⁸ Paragraph A24 of HM Treasury, *End of Year Fiscal Report*, December 2003 ([http://www.hm-treasury.gov.uk/media/9/B/end_of_year_352\[1\].pdf](http://www.hm-treasury.gov.uk/media/9/B/end_of_year_352[1].pdf)).

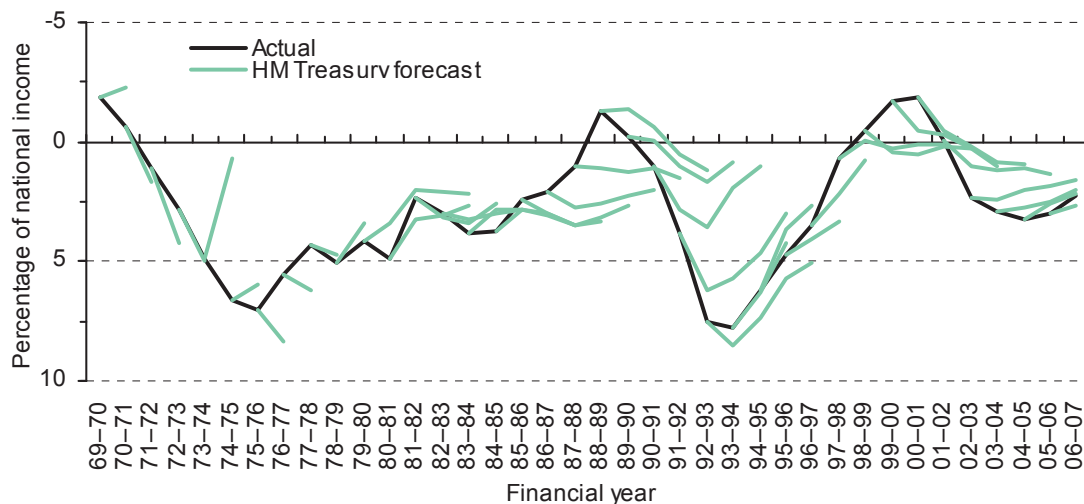
strengthened by 1.7% of national income (and public sector net borrowing by 1.4%) over the next five years, how confident should we be that this will actually be the outcome?

Lessons from past experience

The Treasury's past forecasting errors are a good place to start in assessing the confidence we should have in its latest predictions. If we assume that its forecasting performance in the future will be the same as that in the past, we can calculate the probability that the outcome will differ by a given amount in one direction or the other from the central forecast.

Figure 2.6 shows how Treasury forecasts of changes in public sector net borrowing since the early 1970s compare with what actually happened. We can see that the errors are relatively large and serially correlated: in other words, an optimistic forecast tends to be followed by another optimistic one and a pessimistic forecast by another pessimistic one.

Figure 2.6. Treasury public sector net borrowing forecasts



Source: Authors' calculations, from data contained in HM Treasury, *End of Year Fiscal Report*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/documents/pbr_csr07_fiscal.cfm).

The apparent forecast errors shown in Figure 2.6 are likely to understate the true error that would have occurred had policies been unchanged. This is because previous Chancellors might well have responded to forecast errors by taking action to bring borrowing back on track. For example, in the late 1980s, when previous forecasts for borrowing were proving to have been too pessimistic, Nigel Lawson announced significant tax-cutting Budgets. Conversely, in the early 1990s, when previous forecasts for borrowing were proving too optimistic, Norman Lamont and Kenneth Clarke announced significant tax-increasing Budgets. A similar response also occurred under Mr Brown: Budget 2000 announced increases in public spending as a share of national income at a time when borrowing was better than previously forecast. Conversely, Budget 2004 and Budget 2007 announced future cuts in public spending as a share of national income at a time when the outlook for borrowing appeared worse than previously forecast.

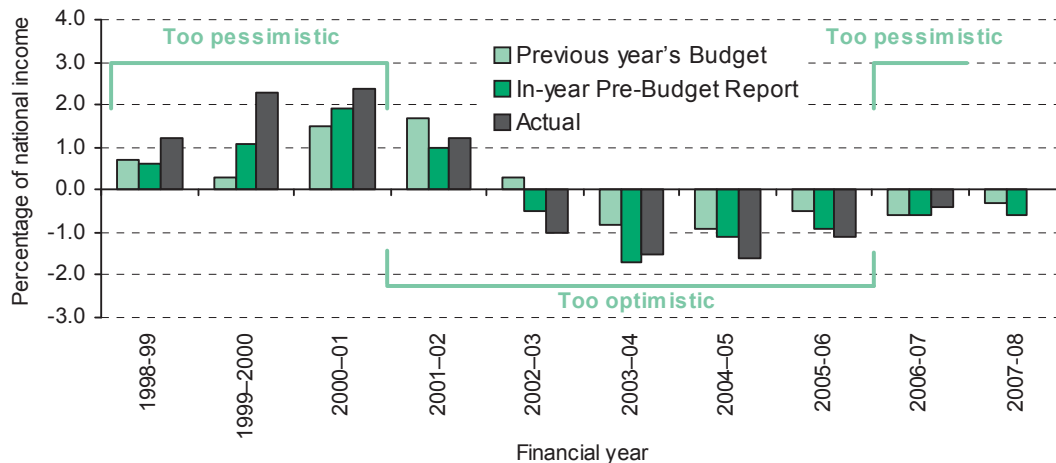
Table 2.5. Treasury errors in forecasting public sector net borrowing

Time period	Average absolute error (% of national income)	Average absolute error (£ billion)
One year ahead	1.0	13
Two years ahead	1.5	21
Three years ahead	1.9	27
Four years ahead	2.4	33

Notes: Figures in £ billion are calculated assuming HM Treasury forecast for national income in 2007–08 of £1,404 billion. Average absolute error is given over the period 1977–78 to 2006–07 for one year ahead, 1981–82 to 2006–07 for two years ahead, 1982–83 to 2006–07 (excluding 1996–97 to 1999–2000) for three years ahead, and 1983–84 to 2006–07 (excluding 1984–85 to 1986–87 and 1997–98 to 2000–01) for four years ahead.

Sources: HM Treasury, *End of Year Fiscal Report*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/documents/pbr_csr07_fiscal.cfm); authors' calculations.

Figure 2.7. Treasury current budget balance forecasts



Sources: HM Treasury, various Budgets and Pre-Budget Reports.

The Treasury's average absolute error in forecasting public sector net borrowing one, two, three and four years ahead for the period from 1977–78 to 2006–07 is shown in Table 2.5. This shows that even one year ahead, the average absolute error is 1% of national income, or £13 billion in today's prices.⁹

Errors in forecasting public sector net borrowing can arise either from errors in forecasting the strength and composition of economic growth or from errors in predicting tax revenues and spending for any given level and composition of national income. (Labour claims that its forecasts are deliberately cautious, by assuming that economic growth will be a quarter of a percentage point lower each year than its true expectation; for a discussion, see Chapter 4.) Only a minority of the Treasury's previous errors in forecasting budget balances can be explained by errors in forecasting economic growth; the more significant factor in explaining

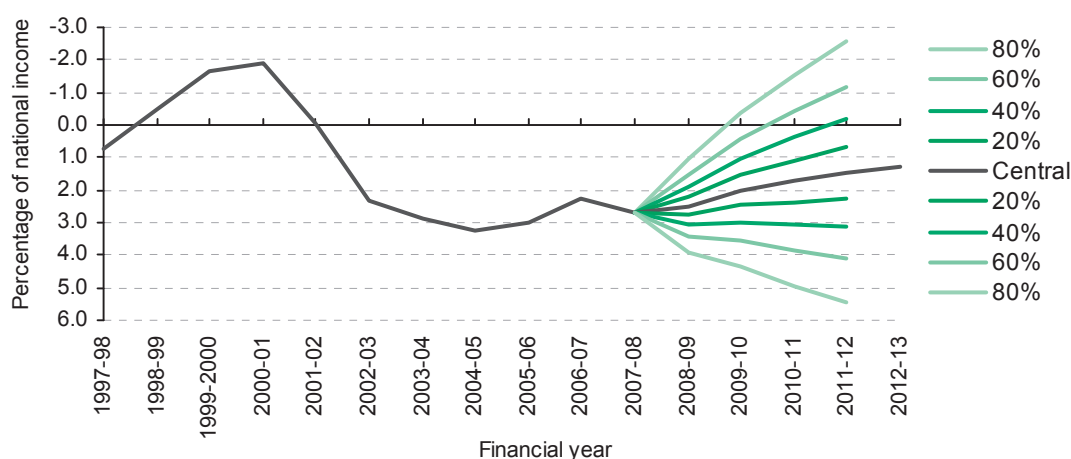
⁹ IFS forecasts show errors of similar magnitude. See C. Giles and J. Hall, 'Forecasting the PSBR outside government: the IFS perspective', *Fiscal Studies*, 19(1): 83–100 (http://www.ifs.org.uk/publications.php?publication_id=2250).

previous forecast errors has been errors in predicting tax revenues and spending for any given level and composition of national income.¹⁰

As mentioned above, forecasting errors tend to be correlated from one year to the next. We can see this for the current government's short-term forecasts of the current budget balance in Figure 2.7. The Treasury was serially over-pessimistic in its first three years of forecasts under Labour and serially over-optimistic in the following five. Budget 2006 saw the Treasury return to undue pessimism in its current budget forecast for 2006–07. But this may not persist as the impact of recent financial sector turbulence has already forced the Treasury to revise down its Budget 2007 forecast for the current budget in 2007–08.

If we assume that the Treasury's latest forecasts will be as accurate as its past ones and that errors are normally distributed, we can put confidence intervals around the projections. Figures 2.8, 2.9 and 2.10 show confidence intervals around the central projections for net borrowing, the current budget balance and net debt respectively over the next four years. By assumption, it is just as likely that things will turn out better than the Treasury expects as that they will turn out worse than expected. This seems reasonable: looking at the Treasury's one-year- and two-year-ahead forecasts back to 1970 and 1980 respectively, the positive and negative errors roughly offset each other.¹¹

Figure 2.8. Probabilities for net borrowing outcomes



Sources: Historic figures come from HM Treasury, *Public Sector Finances Databank*, December 2007 (http://www.hm-treasury.gov.uk/media/B/2/pfd_211207.xls). Central projections are taken from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm) and assume that the forecast for 2007–08 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).

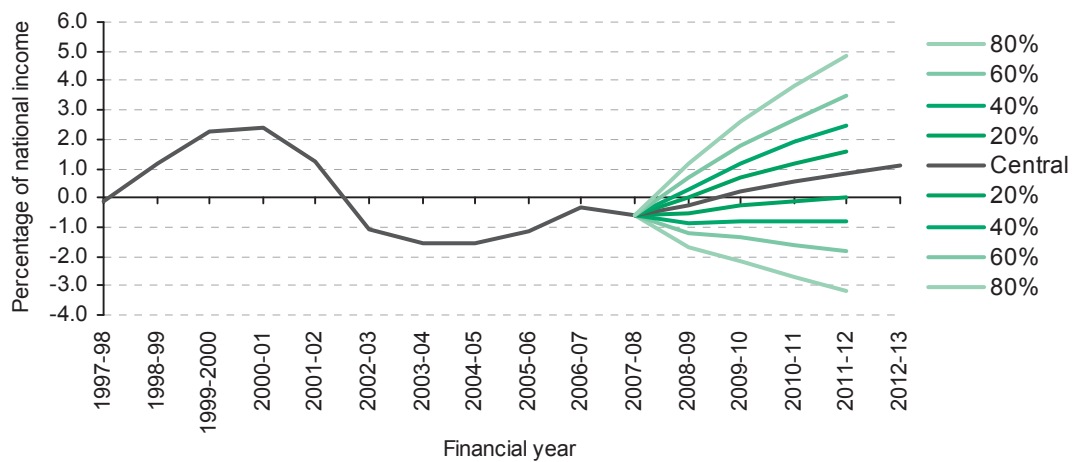
Figure 2.8 shows the probabilities of different outcomes for public sector net borrowing, based purely on the Treasury's latest forecasts and its past forecasting performance. We assume that the Treasury's projection for 2007–08 is correct but that there is uncertainty

¹⁰ See table B13 of HM Treasury, *Pre-Budget Report 1998*, November 1998 (<http://archive.treasury.gov.uk/pub/html/prebudgetNov98/index.html>).

¹¹ Table 2.2 of HM Treasury, *End of Year Fiscal Report*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/documents/pbr_csr07_fiscal.cfm).

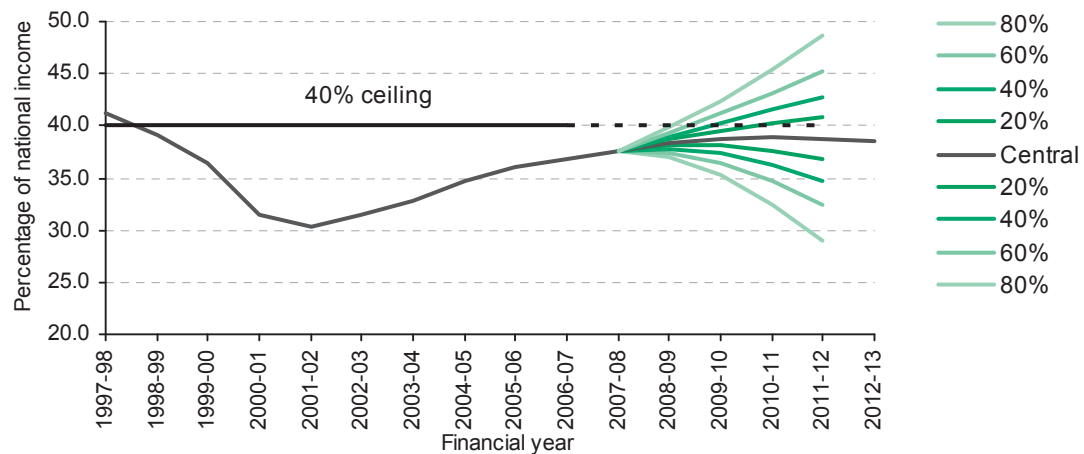
thereafter. The presentation is analogous to the Bank of England’s inflation and growth forecasts in its quarterly *Inflation Report*.¹² The ‘central’ estimate is the Pre-Budget Report forecast shown in Figure 2.1. Figure 2.8 shows that there is a 20% probability that the outcome will lie within the darkest bands either side of the central forecast, a 40% probability that it will lie between the next darkest bands, and so on. It shows that in 2011–12 there is around a one-in-three chance on past performance that the deficit will have been eliminated. This assumes that the Chancellor does not announce any new policy measures – of course, were net borrowing to turn out to be worse than the current forecasts suggest, the Chancellor may, as his predecessors typically did, choose to implement new measures to bring borrowing back towards previous forecasts.

Figure 2.9. Probabilities for current budget balance outcomes



Sources: As Figure 2.8.

Figure 2.10. Probabilities for public sector net debt outcomes



Note: Assumes that any cumulative variation in public sector net borrowing from that forecast by the Treasury directly adds to public sector net debt. The second-order impact of changes in debt interest is ignored.

Sources: As Figure 2.8.

¹² <http://www.bankofengland.co.uk/publications/inflationreport/index.htm>.

Figure 2.9 shows the probability distribution around the Treasury's central Pre-Budget Report forecast for the current budget balance. It suggests there is a 40% chance that the current budget will still be in deficit in four years' time rather than recording the surplus of 0.8% of national income predicted in the Pre-Budget Report, assuming that no further policy changes are implemented. There is a more than 30% chance that the current budget balance will be no better in four years' time than the Treasury expects it to be this year.

Figure 2.10 shows a similar probability distribution around the Treasury's central forecast for public sector net debt. This distribution also takes into account the fact that the direction of forecasting errors tends to be correlated from one year to the next, as shown in Figures 2.6 and 2.7. As we shall discuss in the next chapter, Figure 2.10 shows that the probability of public sector net debt breaching the 40% of national income ceiling established by the sustainable investment rule rises from about a third in 2009–10 to around 40% in 2010–11, again based purely on the Treasury's past forecasting performance and assuming no new policy announcements.

2.7 Conclusion

When Labour came to power in 1997, the public finances were strengthening but from a weak base. During Labour's first term, the budget moved into surplus and public sector debt fell sharply, encouraging the government to increase spending significantly in the belief that this would be easily affordable. Unfortunately, tax revenues weakened unexpectedly as the stock market fell, pushing the budget back into deficit and setting debt back on an upward path.

Looking back over Labour's 11 years in office, the pattern of sharp improvement and then steady deterioration is eerily familiar from the experience of the Conservatives after 1979, though in part this reflects a conscious determination to increase public sector net investment and a willingness to borrow to finance it. The net result is that the structural budget deficit and the level of public sector debt are both lower now than the levels inherited from the Conservatives, although most industrial countries have recorded bigger improvements over the same period.

Looking ahead, the government plans to reduce its borrowing and arrest the increase in debt by cutting spending and increasing tax revenues as a share of national income. If delivered, this would constrain the government's ability to achieve its goals for public services and poverty reduction (as we discuss in Chapter 7) and requires the Treasury to take almost half the extra national income that the economy is expected to generate over the next five years in tax.

3. The fiscal rules and policy framework

Robert Chote, Carl Emmerson and Gemma Tetlow (IFS)

Summary

- Designing fiscal rules requires a trade-off between precision on the one hand and simplicity and transparency on the other. The golden rule and sustainable investment rule are not optimal as currently applied and could be improved. But they still have significant potential value as rules of thumb.
- Many economists outside government no longer see compliance with the fiscal rules as a good guide to the health of the public finances. In part this reflects concern that Gordon Brown, when Chancellor, 'moved the goalposts' to make the golden rule easier to meet.
- Using the Treasury's start and end dates for economic cycles, it met the golden rule over the previous economic cycle with £19 billion to spare and appears on course to meet it over the new cycle, provided the cycle is sufficiently long. However, using other plausible methods to date the cycle, the golden rule has already been broken under Labour.
- It would be sensible to make the golden rule symmetric, forward-looking and less reliant on the need to date the economic cycle precisely. The Treasury's fiscal forecasting could be made more transparent or perhaps even delegated to an independent body.
- There seems to be no appetite among the main political parties to reduce the burden of public sector debt significantly. But most industrial countries have done more to reduce their debt since 1997 than the UK and more than one in three OECD countries now have net holdings of financial assets rather than net debt.
- The taxpayer has provided guarantees worth up to £55 billion to Northern Rock's creditors. But if Northern Rock is nationalised, or if the Office for National Statistics determines that the government is in effective control of the company, around £100 billion could be added to public sector net debt.
- Were this to occur, the government should be able to unwind most (or perhaps even all) of the increase once Northern Rock's mortgage book has been sold. Whether a fiscal policy response is required should be determined by the long-term impact on public sector net debt rather than any short-term impact. Meanwhile, the Treasury should present public sector net debt figures including and excluding the impact of commitments made to Northern Rock.

3.1 Introduction

As we explained in Chapter 2, whilst in opposition the then Shadow Chancellor of the Exchequer Gordon Brown wanted to persuade voters that he would be a fair and prudent

steward of the public finances. He saw a commitment to broad objectives for fiscal policy, operationalised through specific fiscal rules against which performance could be judged, as the best way to achieve this. The two specific rules that he adopted were the golden rule and the sustainable investment rule:

- The **golden rule** requires the public sector to borrow only what it needs to pay for capital investment, and to finance its remaining current spending from tax and other revenues. In other words, the government has to keep the current budget (revenues minus current spending) in balance or in surplus. The rule has to be met on average over the ups and downs of the economic cycle rather than every year.
- The **sustainable investment rule** requires the government to keep the public sector's debt (net of its short-term financial assets) at a 'stable and prudent' level. The Treasury has defined this as less than 40% of national income (GDP) at the end of every financial year of the economic cycle that it currently estimates ran from the first half of 1997 to the end of 2006. Despite the fact that the Treasury's forecasts suggest (and Gordon Brown has explicitly stated¹) that a new economic cycle has already begun, the Treasury has not yet announced how 'stable and prudent' is to be defined over this or future cycles.

The government formally adopted these rules in the 1998 Finance Act. The Act also placed the rules in a statutory framework, a 'Code for Fiscal Stability' that requires governments to spell out how they intend to formulate and implement fiscal policy and how they propose to manage the national debt. The Code also requires them to publish biannual forecasts demonstrating how policy at any given time is consistent with their chosen approach.

But the Code leaves the government to decide whether or not to set itself any operating rules and, if it does, to judge itself whether or not those rules have been adhered to. There is no penalty, other than potential reaction of voters and financial market participants, if they are missed.² This has contributed to suspicions that the government has applied the rules in such a way as to make them easier to meet while avoiding having to make painful policy adjustments at politically inconvenient times. This in turn has prompted calls for greater independence in judging adherence to the rules so that the Treasury no longer 'marks its own exam paper'.

This chapter describes the fiscal rules, assesses their operation to date and highlights ways in which assessment of adherence to them could be improved further. Section 3.2 examines the golden rule and Section 3.3 the sustainable investment rule. In Section 3.4, we describe a set of reforms that would improve the operation of the rules and might also help restore confidence that they truly reflect the underlying principles that inspired them.

¹ G. Brown, interview, *The Andrew Marr Show*, British Broadcasting Corporation, 6 January 2008 (http://news.bbc.co.uk/1/hi/programmes/andrew_marr_show/7173794.stm): 'I believe the fiscal arithmetic will prove over the cycle to be fine. The golden rule is something that is over the economic cycle.... We have just finished one economic cycle where we have met the golden rule, well that will be assessed in the Budget, of course. We are starting a new economic cycle and the question is over the whole years of the economic cycle do you have what is called a current balance.'

² For a detailed discussion, see 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).

3.2 The golden rule

The golden rule is designed to help achieve intergenerational fairness by ensuring that future taxpayers are not left to pay for public spending from which all the benefits have accrued to the current generation. It is also intended to remove a possible bias against investment if and when public spending has to be restrained. In such a situation, it might be more tempting to cut capital rather than current spending because it normally takes longer for voters to feel the effects of cuts in capital spending on the quality of public services.³ Requiring that the golden rule be met only on average over the economic cycle, rather than (for example) every financial year, allows fiscal policy to ‘support monetary policy’ – i.e. it makes it less likely that fiscal policy will have to be tightened at the same time as monetary policy is loosened (not that this is necessarily always undesirable).⁴

In the next two sections, we focus on two questions that arise in relation to the objectives of the golden rule:

- Does allowing the government to borrow only to finance capital investment in fact achieve intergenerational fairness?
- Is it sensible to seek to apply the rule over an economic cycle with specific start and end dates?

We then examine how the golden rule has been applied in practice and whether the Treasury’s latest forecasts suggest it has been and will be met over the economic cycles since Labour came to power in May 1997.

Intergenerational fairness

For a number of reasons, balancing the current budget as defined for the purposes of the golden rule will not necessarily achieve intergenerational fairness:

- The golden rule is based on the distinction between capital and current spending used in the National Accounts, which is in turn based on international accounting standards as interpreted by the Office for National Statistics. These accounting definitions do not necessarily coincide with spending that does and does not benefit future taxpayers. For example, spending on the enhancement of skills might increase future economic growth but does not score as capital spending: £1 of ‘current’ spending on the training of teachers or doctors might benefit future taxpayers more than £1 of ‘capital’ spending on an Olympic venue of uncertain long-term use.

The unfunded nature of many public sector pension arrangements – such as those covering many teachers, doctors, nurses, police, firefighters, civil servants and MPs – means that a significant part of the remuneration package for these workers will only

³ For a discussion, see HM Treasury, *Fiscal Policy: Current and Capital Spending*, London, 1998 (<http://www.hm-treasury.gov.uk/media/8/5/530.pdf>).

⁴ The extent to which fiscal policy has been ‘coordinated’ with monetary policy since 1997 is discussed in section 2.7 of R. Chote, C. Emmerson, A. Leicester and D. Miles (eds), *The IFS Green Budget: January 2007*, IFS Commentary 102, January 2007 (<http://www.ifs.org.uk/budgets/gb2007/index.php>).

count as current expenditure once their pension is in payment. The principle underpinning the golden rule implies that, to the extent to which the services these public sector workers provide benefit the current generation, their remuneration costs should be met by current taxpayers. While current taxpayers are financing the unfunded public sector pensions of former public sector employees, despite the fact that they did not necessarily benefit from the services they provided, these payments are expected to be lower than the cost of unfunded commitments accruing to current public sector workers. The scale of these liabilities is discussed in more detail in Section 3.3.

The Chancellor could distinguish spending that may and may not be covered by borrowing in a more sophisticated way, but there is likely to be a trade-off between the richness of the rule and its transparency. As Treasury officials have argued, 'It is difficult to agree on a robust definition of growth enhancing expenditure once generally accepted accounting standards are departed from'.⁵ Observers might well suspect that a bespoke definition could be tweaked and spending reclassified if and when a breach of the rule looked likely. Even with the use of the National Accounts definitions, the current government has sometimes been accused of reclassifying current spending to ease the constraint of the golden rule.⁶

- To judge rigorously whether or not tax and spending decisions are intergenerationally fair, one would need to consider the overall impact of taxes and spending and take a 'general equilibrium' approach, analysing their knock-on impact throughout the economy and not just the formal incidence of a few policy instruments taken in isolation. One would need to understand who ultimately bears the costs of taxation and receives the benefits of public spending after taking into account the way in which all policies, and their interactions with each other, affect individuals.
- Furthermore, were a particular generation to lose from the introduction and financing of a new policy, this could still enhance intergenerational fairness if that generation would otherwise have been in a privileged position due to the effect of other policies.⁷
- Borrowing only to invest over a cycle does not directly link the time profile of debt repayments with the time profile of the benefits flowing from an investment project that the debt has financed.

A related issue is the servicing of debts that have arisen from past breaches of the rule (i.e. to finance some of past generations' current spending). Under the current interpretation of the golden rule, payments required to service existing debt must (on average over the economic cycle) be covered by current tax receipts. However, since debt is structured in such a way that these interest payments tend to decline as a share of national income over time, it may be fairer to pass on some of this burden to the next generation (in the expectation that it and future generations will in turn continue to do so

⁵ P. Toigo and R. Woods, 'Public investment in the UK', paper presented at the 7th Banca d'Italia Public Finance Workshop, 2005.

⁶ 'Brown faces "fiddle" claim after U-turn on the roads', *The Times*, 19 February 2005 (<http://www.timesonline.co.uk/article/0,,19809-1490602,00.html>).

⁷ W. Buiter, 'Notes on "a code for fiscal stability"', *Oxford Economic Papers*, 2001, 53(1): 1–19.

ad infinitum) rather than to be the ‘transition’ generation that selflessly pays for its own and all outstanding past current spending.

- Fairness considerations might lead us to argue that future generations should pay for some of today’s current spending, as productivity growth arising from technological progress should make future generations financially better off on average and therefore give them greater ability to pay. In other words, running a current budget deficit would achieve progressive redistribution across the generations in the same way that the tax and benefit system achieves progressive redistribution within the current generation.

However, the current generation might be benefiting from one-off opportunities – for example, the exploitation of non-renewable natural resources such as North Sea oil reserves – which will therefore not be available to future generations. For exactly this reason Norway has made the decision to run budget surpluses in order to smooth out the consumption financed by these resources.

Even if a balanced current budget could be relied upon to deliver intergenerational fairness, that is not what Labour’s variant of the rule requires. Instead, it says the current budget should be in balance or in surplus. But the concept of intergenerational fairness underpinning the golden rule suggests that we should be as concerned if today’s taxpayers pay too much for current spending as if they pay too little.

For all these reasons, the golden rule is not an optimal mechanism to achieve intergenerational fairness. But it may well still have value as a rough-and-ready rule of thumb that is reasonable to use as a guide in most, but not necessarily all, time periods. In practice, it may not be worth sacrificing the transparency of the rule to get closer to optimality.

Taking account of the economic cycle

Now to our second question regarding Labour’s interpretation of the golden rule: does it make sense to aim to achieve it over a specific economic cycle with defined start and end dates?

There is certainly a powerful case for taking some account of the condition of the economy in assessing the appropriate level of the current budget balance (or any other measure of borrowing or debt) at any given time. Government revenues and spending are both influenced directly by fluctuations in income, spending, transactions and employment. Economic activity can be thought of as fluctuating around a rising sustainable level consistent with stable inflation. When the economy is weak and activity is below the sustainable level (i.e. there is a negative output gap), tax revenues will be depressed temporarily and the government is likely to have to spend more on transfer payments for those not in paid work. This will tend to push the current budget towards deficit. Conversely, when the economy is above trend output, the budget will tend towards surplus.

Changes in national income affect current spending and taxes collected, with higher national income leading to lower spending and higher receipts. According to Treasury estimates, if national income were to rise by 1% relative to its sustainable level, current spending would be expected to fall by about 0.5% of national income while current receipts would be expected to

rise by about 0.2% of national income over the following two years. The net effect is to increase the current budget surplus by about 0.7% of national income.⁸

The Bank of England is tasked with using interest rates to pursue an inflation target, which implies that once inflation is on target, it will try to keep activity as close as possible to its sustainable level, which in turn should minimise any cyclical budget surplus or deficit. This implies that fiscal policy decisions should focus on the structural budget position (in other words, the position abstracting from the effect of the cycle). Broadly speaking, it might not be unreasonable to expect cyclical deficits and surpluses to sum to zero over the course of a single symmetric economic cycle. So, if tax and spending decisions also succeed in keeping the structural position in balance on average, the golden rule would be expected to be met.

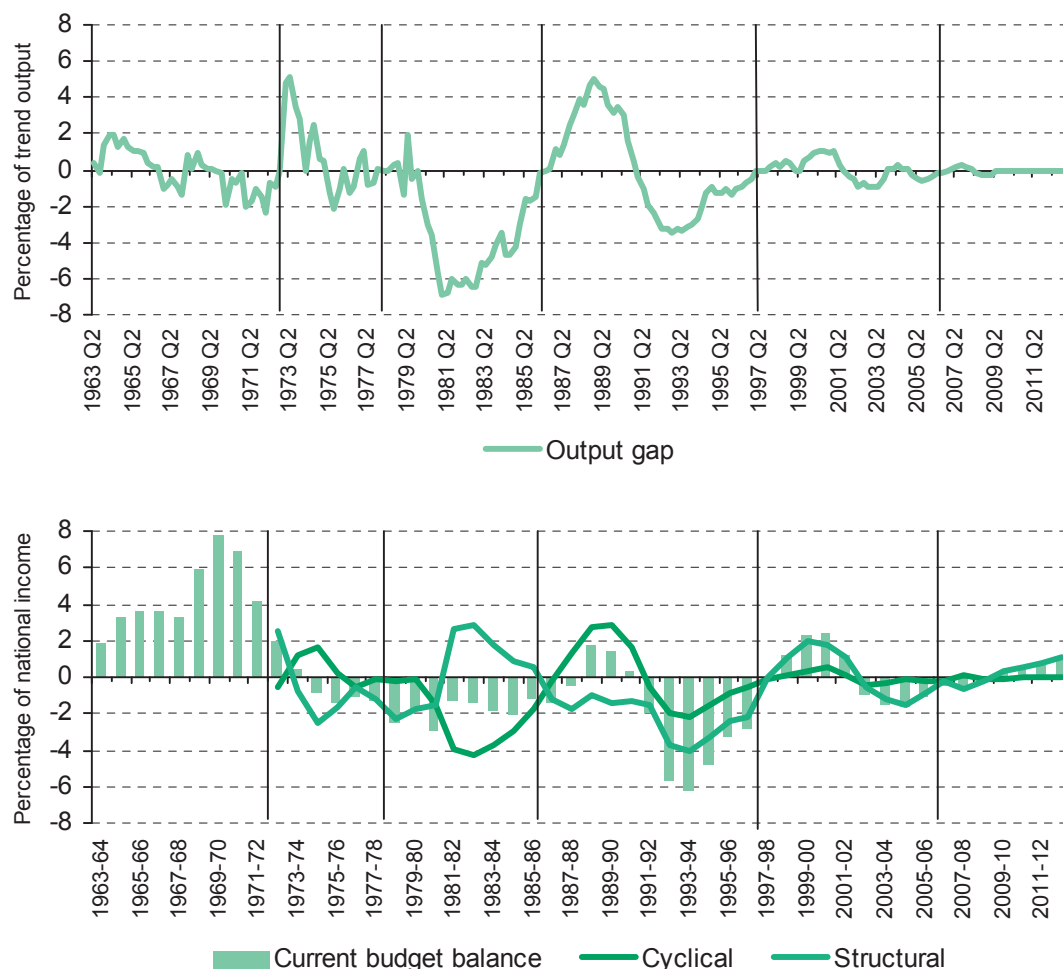
Allowing borrowing to rise and fall through the economic cycle acts as an 'automatic stabiliser'. If the government tried to keep the current budget balanced in every year of the cycle, it would need continuously to offset cyclical surpluses and deficits with structural deficits and surpluses respectively. This would typically mean implementing tax-raising measures and/or scaling back planned spending when a negative output gap leads to a cyclical deficit. Conversely, it would mean implementing tax-cutting measures and/or topping up planned spending when a positive output gap leads to a cyclical surplus. This would place a greater burden on monetary policy to stabilise the economy. It would also require temporary changes in tax rates that might well be more costly in economic terms than holding tax rates steady and allowing the current budget balance to fluctuate instead. It should be borne in mind that the strength of the automatic stabilisers will depend on the size of the public sector and the progressiveness of the tax, tax credit and benefit system, so it may not be optimal from a stabilisation perspective. However, there would be nothing to stop the Treasury from making additional discretionary policy changes in either direction, as long as they balanced out on average over the economic cycle, or from making changes to the tax, tax credit and benefit system in order to change the magnitude of the automatic stabilisers.

But it is one thing to argue that the government should aim to balance the structural current budget over some appropriate time horizon; it is another to argue that it should explicitly date a particular cycle and aim for a balance or surplus on average over that period. The Treasury identifies cycles by estimating, from a variety of economic indicators, points in time when economic activity was at its sustainable level and the output gap was zero (i.e. when there was neither upward nor downward pressure on inflation). It then assumes that the sustainable level of activity grows at a constant rate between these 'on-trend' points, allowing it to estimate the output gap at any other point. To date, it has chosen to define a cycle as a period of above-trend activity followed by a period of below-trend activity, although it could equally have opted for a below-trend one followed by an above-trend one.

⁸ As taxes and spending both equal roughly 40% of the economy, if national income were to rise by 1%, both revenues and spending would fall by about 0.4% of national income when compared with the size of the economy (assuming there were no change in their cash value). Treasury estimates suggest that, in addition to this 'denominator' effect, over the following two years we would see spending on transfer payments and debt interest payments drop by 0.1% of national income and revenues rise by 0.6% of national income. Adding the two effects together, after a 1% rise in national income relative to its sustainable level, we would see current spending fall by about 0.5% of national income while current receipts rise by about 0.2% of national income over the following two years. The net effect is to increase the current budget surplus by about 0.7% of national income. (HM Treasury, *End of Year Fiscal Report*, December 2003 (http://www.hm-treasury.gov.uk/media/9/B/end_of_year_352f11.pdf).

Figure 3.1 shows the Treasury's estimates of the output gap⁹ and the periods that it defines as economic cycles. It then shows the current budget balance, divided into its estimated 'structural component' (the level that it is estimated would have occurred had the output gap been zero throughout) and the estimated remaining 'cyclical' element which reflects the estimated impact of deviations in economic activity from its trend. These are based on the Treasury's estimates of the average output gap in each financial year.

Figure 3.1. Current budget balance: cyclical and structural



Note: HM Treasury's output gap estimate is measured using 'non-oil gross value added'.

Source: HM Treasury, *Public Sector Finances Databank*, October 2007 (<http://www.hm-treasury.gov.uk/media/8/A/publicfinancesdatabank251007.xls>).

One disadvantage of picking any fixed period over which to judge the rule is that the amount the government can borrow towards the end of the period is determined by what it has borrowed earlier on. Policy becomes backward-looking as the Chancellor is potentially constrained to compensate for the policy and forecasting errors of the past rather than setting what is necessarily the most sensible policy looking forward.

This is significantly different from the approach taken with monetary policy, where the Bank of England sets interest rates to try to achieve the inflation target at roughly a two-year time

⁹ The output gap shown in Figure 3.1 is measured using 'non-oil gross value added' as the measure of output, in line with Treasury practice.

horizon without offsetting actual deviations from the target in the past or expected deviations from the target in the very near term (i.e. the Bank of England's Monetary Policy Committee (MPC) targets inflation rather than a particular price level – higher-than-target inflation in period 1 would not lead to the MPC trying to achieve lower-than-target inflation in period 2). An analogous approach for fiscal policy would be to set a rolling forward-looking target for the cyclically adjusted current budget balance (or just the total current budget balance if the policy horizon were sufficient to expect the output gap to have returned to zero). We argue below that the present government's approach can actually be interpreted in this way, given its published forecasts.

All this assumes that we can identify 'on-trend' points and the output gap at any given time. However, according to Barry Eichengreen of the University of California (Berkeley), 'The one thing economists know about cyclical adjustments is that we do not know how to do them'.¹⁰

The Treasury's method of identifying the start and end points of the cycle is largely a matter of judgement and there do exist other methods of identifying the cycle – including statistical filters and production function techniques – that can yield very different answers (as shown in Table 4.4 of Chapter 4). Typically, the Treasury technique identifies fewer cycles than the filters do.

Given the lack of consensus over the dating of the cycle from different methods, if the Treasury re-dates the cycle in a way that increases the average current budget surplus for the period over which the golden rule is being judged (as it did in 2005, discussed below), it will not be surprising if people suspect that this has been done to make the golden rule easier to meet.

An obvious alternative would be for the Treasury to present forecasts based on output gap estimates produced by an independent body or bodies, such as the Office for National Statistics (which is to be independent of government from 1 April 2008), perhaps advised by an external panel.

More fundamentally, does it make sense to base policy on a clearly defined economic cycle at all? In a stable environment in which monetary policy is well run and credible, we might expect deviations in economic activity from its sustainable level to be relatively small. Economic activity might show high-frequency noise around its trend rather than protracted periods with significantly positive or negative output gaps. This would make cycles increasingly hard to identify and more prone to re-dating as the National Accounts are revised.

As Mervyn King, Governor of the Bank of England, has argued,¹¹

I am not even sure if the output gap is terribly well defined. To put precise numbers on it is pushing beyond the bounds of the plausible. The Bank and the Treasury have a very different view of how to think about the cycle. We don't like this sort of fixed

¹⁰ B. Eichengreen, 'Comment on "The political economy of fiscal adjustments"', *Brookings Papers on Economic Activity*, 1998, 1: 255–62.

¹¹ M. King, *Inflation Report* press conference, August 2005 (<http://www.bankofengland.co.uk/publications/inflationreport/2005.htm>).

dating and we have a different way of thinking about the productive potential of the economy and how it evolves. I am not even sure it makes sense to think about a cycle as if it is a well-defined phenomenon.

An alternative might be for the Treasury to set a target for the current budget in the medium term and constrain itself to present forecasts of revenues and spending based on some average of independent forecasts for growth and other macroeconomic variables. Or it could use the economic forecasts used by the Bank of England, which would presumably be advantageous since the same projections would be used for both fiscal and monetary policy. One pitfall of this approach is that it could increase the political sensitivity of the Bank of England's projections, which, over time, might risk reducing public confidence in their neutrality.

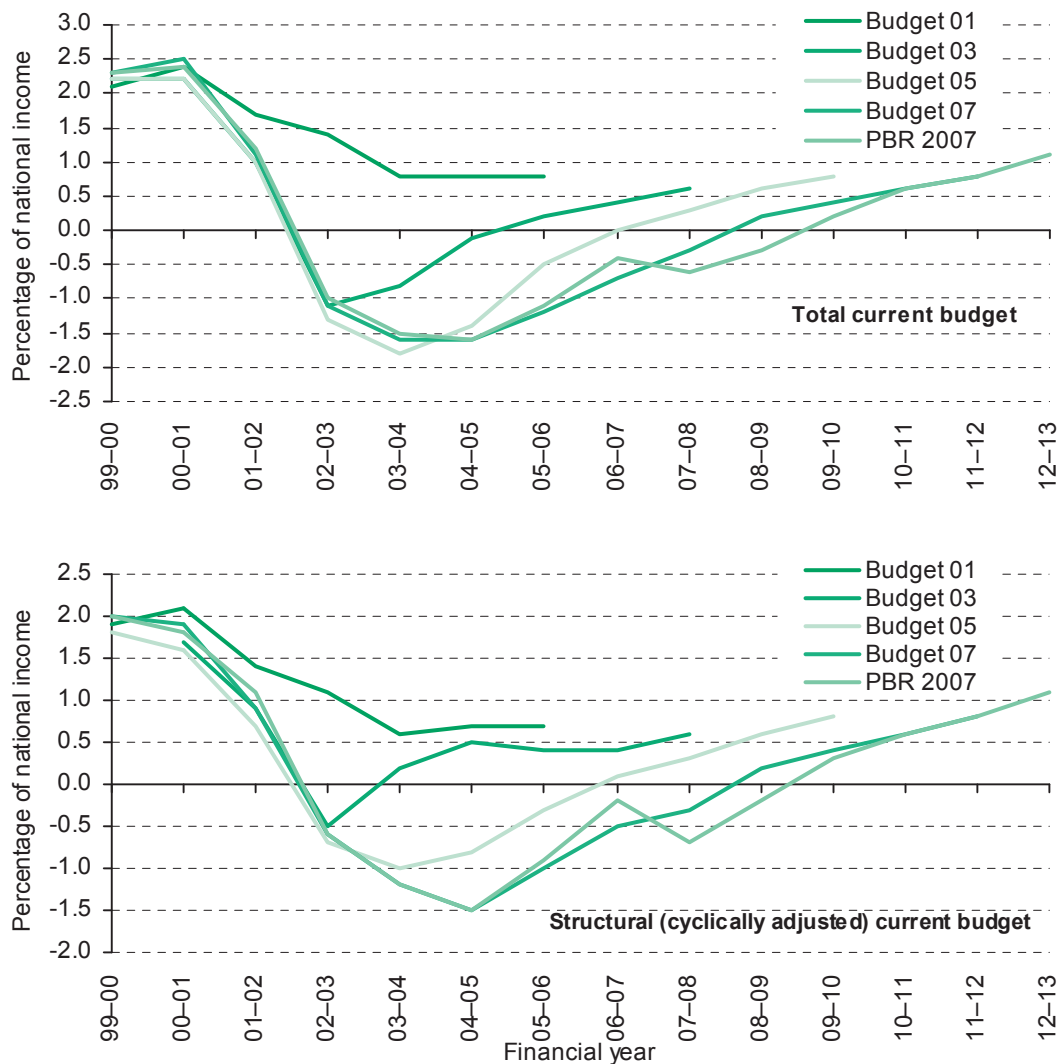
An even more dramatic option would be for more of the fiscal forecasting process to be delegated to an independent body, following the precedent of the Bank of England's MPC. For example, an independent body could be asked to provide official tax revenue forecasts, helped by access to information from HM Revenue & Customs. However, the Treasury has traditionally argued that it is impossible to separate responsibility for public finance forecasts or the economic inputs into them from the responsibility for making policy. We discuss this further in Section 3.4.

The golden rule in practice

In understanding how Mr Brown chose to interpret and apply the golden rule in practice over recent years, it is important to remember that almost all the Treasury's forecasts for the public finances since 2001 have been over-optimistic and have hence been revised down in successive Budgets and Pre-Budget Reports (the one recent exception being the Budget 2006 projection for the strength of the public finances in 2006–07). In particular, following the stock market decline between 2000 and 2002, tax revenues from the financial sector were much weaker than had been expected by the Treasury. The latest downgrading of fiscal projections, in the 2007 Pre-Budget Report, again reflects downward revisions to expected revenues from the financial sector, although this time these arise from large price changes in the credit markets (see Section 6.3 and in particular Figure 6.6) rather than particularly poor stock market performance.

Figure 3.2 shows the Treasury's forecasts for the current budget balance from every other Budget since 2001 and the latest Pre-Budget Report. It shows that in 2001, the Treasury expected current budget surpluses over the medium-term forecasting horizon, clearly implying that the golden rule would be met over any economic cycle of plausible duration. However, in 2002–03, the current budget moved sharply into deficit. The Treasury's expectations of a swift return to the black were repeatedly frustrated and a current budget surplus is not now expected by the Treasury until 2009–10 – by which time it expects to have recorded seven successive years of deficits. As the second graph in Figure 3.2 shows, the unexpectedly weak fiscal performance was not thought to be explained in any large part by the impact of temporary weakness in the economy – Treasury forecasts for the structural current budget balance were revised downwards in similar fashion. The structural balance is also expected by the Treasury not to return to surplus until 2009–10.

Figure 3.2. Treasury current budget balance forecasts



Sources: Successive Budgets and 2007 Pre-Budget Report.

As Mr Brown's hopes of continued surpluses were dashed and deficits began to mount up, exactly how the cumulative budget balance was calculated and the precise dating of the economic cycle became increasingly important in determining whether or not the golden rule was on course to be met – and, if so, with what degree of comfort. Over the early years of Labour's rule, with large current budget surpluses, Gordon Brown quoted figures in his Budget speeches for the cumulative surplus as the sum of the cash surpluses over the cycle up to that point. As these surpluses began to dwindle, the method of presenting the cumulative surplus was changed to use instead the sum of the surplus as a share of national income in each year of the cycle so far. From the Treasury's point of view, this had the advantage over the previous method of giving relatively more weight to the surpluses accrued in the early years of the cycle. Though the Treasury indicated in a 1999 document¹² that this latter method for calculating the cumulative surplus had always been the official method (and that the less

¹² Source: HM Treasury, *Analysing UK Fiscal Policy*, November 1999 (<http://www.hm-treasury.gov.uk/media/2/6/90.pdf>).

flattering sum of cash balances was only a ‘shorthand’ for use in speeches), simply changing the way in which the figures were presented created suspicion that Mr Brown had ‘moved the goalposts’.

This presentational issue was defensible given that the Treasury had set out early on (in Budget 1998) how the cumulative balance was to be officially calculated. However, greater suspicion was raised when Mr Brown began re-dating the economic cycle at a time when it began to look like he was in danger of breaching the golden rule (even using the less stringent method of calculating the cumulative surplus).

In Budget 2000, the Treasury had reached the ‘provisional conclusion’ that the present economic cycle began in financial year 1999–2000, a view it maintained up to and including the pre-election Budget in 2005. In that Budget, the Treasury argued the economy was running about 0.7% below full capacity and that above-trend economic activity would close the output gap ‘around the end of 2005’. For the purposes of the golden rule, this meant that there was one financial year still to come (2005–06) in a cycle spanning a total of seven years, as shown in Figure 3.3. The Treasury estimated in Budget 2005 that it would meet the golden rule over this period with around £5 billion to spare,¹³ far lower than the margins implied over the same period by previous forecasts. But as 2005–06 got under way, it soon became clear that the current budget deficit was not shrinking as rapidly as planned. In June 2005, the Treasury published figures showing that the deficit in the first two months of the financial year was only about 10% smaller than in the same period of 2004–05.¹⁴ If this had persisted, it would have come in at around £15 billion rather than the £5.7 billion forecast in Budget 2005: these figures therefore implied that the golden rule was on course to be breached.

Then, a month later, the Treasury published a detailed analysis arguing that the period from mid-1997 to mid-1999 should be regarded as part of the up-phase of the current cycle rather than as a complete mini-cycle in its own right. This added two additional financial years to the beginning of the cycle and extended it from seven to nine years. The Treasury justified this change largely on the grounds that revisions to National Accounts data showed that economic growth in 1999 had been stronger than hitherto thought.¹⁵ At a stroke, adding the two extra years to the beginning of the cycle put the Treasury back on course to meet the golden rule, thanks to the current budget surplus of 1.2% of national income recorded in 1998–99 (which outweighed the 0.1% of national income deficit in the previous year). The fortuitous timing of the Treasury’s decision to re-date the cycle inevitably fuelled speculation that it had been motivated by the desire to make the golden rule easier to meet.

We have argued in the past that if one were to accept the Treasury’s methodology and estimates for the output gap, it would be quite plausible to suggest that the cycle began in

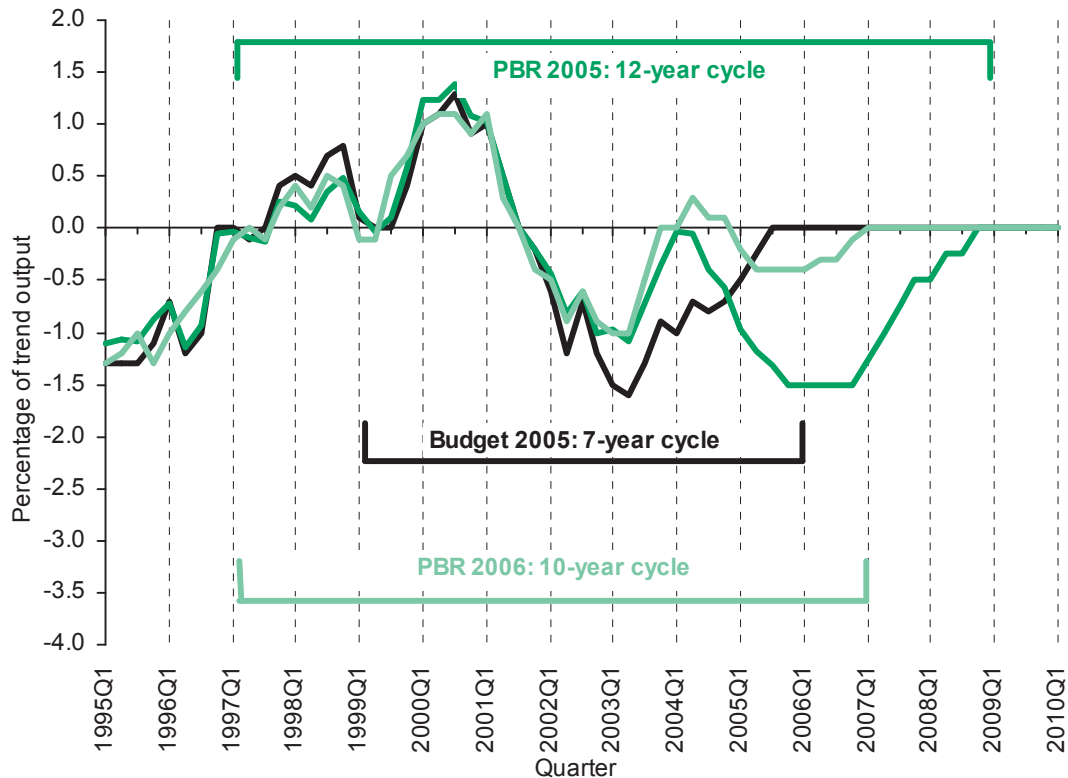
¹³ Cash value of cumulative current budget surpluses across the cycle, with surpluses in each year measured as shares of national income and then converted to cash terms using 2005–06 money GDP.

¹⁴ Office for National Statistics and HM Treasury, *First Release: Public Finances, May 2005*, June 2005 (<http://www.statistics.gov.uk/pdfdir/psf0605.pdf>).

¹⁵ HM Treasury, *Evidence on the UK Economic Cycle*, July 2005 (http://www.hm-treasury.gov.uk/media/7/7/economic_cycles190705.pdf).

1997 rather than 1999.¹⁶ But the case for making this judgement in the summer of 2005 seemed little stronger than at any time in the previous five years.¹⁷ So it is hardly surprising that extending the cycle at precisely the point at which, without this change, the government looked on course to break rather than meet the rule should undermine the credibility of the policy framework and create suspicion that Mr Brown simply ‘moved the goalposts’ to avoid the embarrassment of missing his target.

Figure 3.3. The output gap and the economic cycle: Treasury estimates



Note: Actual output less trend output as a percentage of trend output (non-oil basis).
Source: HM Treasury.

After this first revision, revisions two and three followed relatively quickly:

- Six months later, in the Pre-Budget Report of 2005, Mr Brown announced that he expected the cycle to end in 2008–09 rather than 2005–06. Given the forecasts for the current budget balance over the three additional years, this marginally increased the comfort with which the Treasury expected to meet the rule, but with greater uncertainty around the central forecast because of the longer time horizon.
- A year after this, in the Pre-Budget Report of 2006, prompted by revisions to the National Accounts, Mr Brown said that the cycle would close in early 2007, implying that the final financial year of the cycle would be 2006–07 rather than 2008–09, cutting it to 10 years. This reduced the degree of comfort with which the golden rule was expected to be met

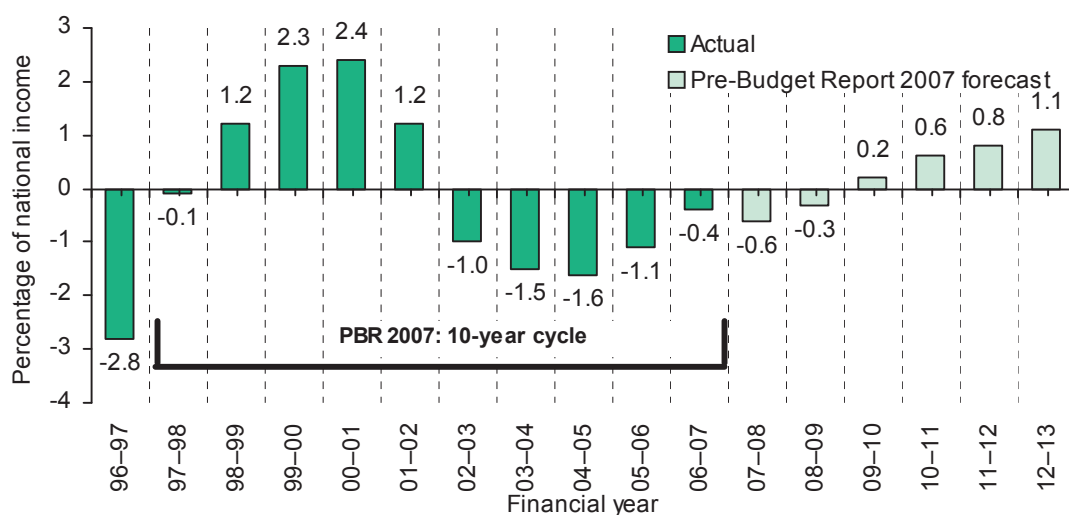
¹⁶ C. Emmerson, 'Bending the rules?', *Public Finance Magazine*, 5 August 2005 (http://www.cipfa.org.uk/publicfinance/features_details.cfm?News_id=24755).

¹⁷ See pages 20–26, chapter 2 of R. Chote, C. Emmerson, R. Harrison and D. Miles (eds), *The IFS Green Budget: January 2006*, IFS Commentary 100 (<http://www.ifs.org.uk/budgets/gb2006/index.php>).

under the Treasury’s forecasts. However, by reducing the time remaining until the end of the cycle, it also reduced the uncertainty around this central forecast.

Figure 3.4 shows recent out-turns and Treasury forecasts for the current budget balance from the 2007 Pre-Budget Report. Over the 10 financial years from 1997–98 to 2006–07, the current budget is estimated to have been in surplus by an average of 0.1% of national income, which is just £2 billion per year in 2007–08 terms. Therefore, as long as there are no significant net data revisions over this period and the Treasury is correct in its view that an economic cycle spanned these 10 years, the golden rule will have been met, albeit by a small margin, over this period. Ironically, it is also the case that the golden rule would have been met, or at least would still be on course to have been met, under either of the previous two datings of the economic cycle published by the Treasury (1999–2000 to 2005–06 and 1997–98 to 2008–09).

Figure 3.4. Current budget balance in the 2007 Pre-Budget Report



Sources: HM Treasury, *Public Sector Finances Databank*, October 2007 (<http://www.hm-treasury.gov.uk/media/8/A/publicfinancesdatabank251007.xls>); HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/pbr_csr07_index.cfm).

It is also not yet known whether or not the golden rule will be met over the new economic cycle that the Treasury estimates suggest we are now in. One problem in judging this is that although the Treasury has reached a provisional judgement that the current economic cycle ended in 2006–07, it has not decided, in that event, which year would be the first of the next cycle. Paul Boateng, the then Chief Secretary to the Treasury, said in 2003 that ‘Progress against the golden rule is measured by the average surplus on the current budget over the period from the financial year in which the economic cycle starts up to and including the financial year in which it ends’.¹⁸ This would seem to imply that if 2006–07 is treated as the last year of one economic cycle, it should also be treated as the first year of the next. But, in response to questioning by the Treasury Select Committee in December 2006, Treasury officials left open the option of dropping this approach:

¹⁸ *Hansard*, 4 November 2003, column 630w (http://www.parliament.the-stationery-office.co.uk/pa/cm200203/cmhansrd/vo031104/text/31104w26.htm#31104w26.html_spnew3).

David Gauke MP: But whenever it does end, whichever year it is, will that year count for both the old cycle and the new cycle?

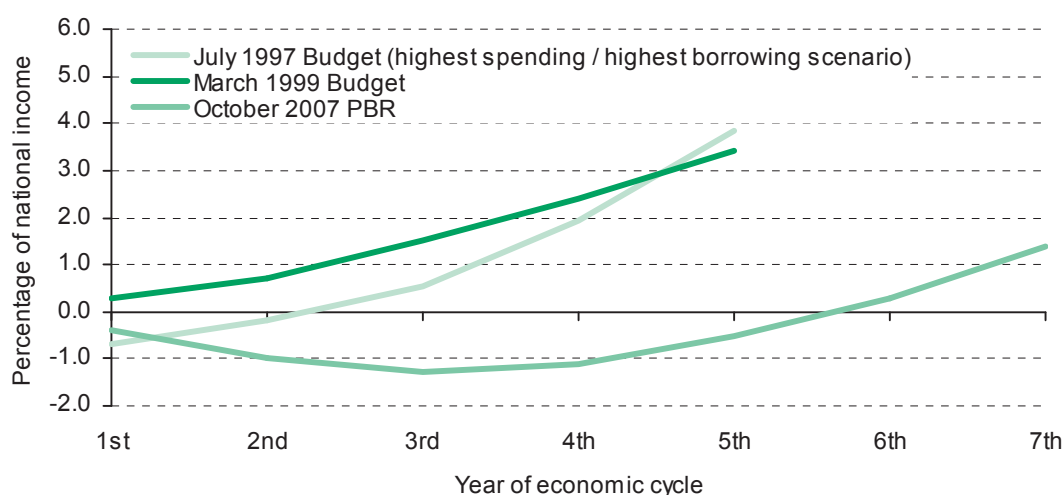
Jon Cunliffe (HM Treasury): That is what we have done in the past.

David Gauke MP: Is that what you are going to do in the future?

Jon Cunliffe (HM Treasury): I do not know what we are going to do in the future.¹⁹

If the Treasury were to count 2006–07 as the first year of the next cycle, it would begin with a current budget deficit of 0.4% of national income that would need to be offset by a surplus of at least the same size later in the cycle (Figure 3.4). If the Treasury’s projections for the current budget are correct then it would be missed if this cycle closed in 2010–11 or earlier, and would be met if it closed in 2011–12 or later (as shown in Figure 3.5). This is a decidedly less comfortable position than Gordon Brown’s in 1997, when the last economic cycle is now thought to have started, or in 1999, which at the time was thought to be the start of a new economic cycle. In addition to the latest Treasury forecasts from PBR 2007, Figure 3.5 shows the cumulative current budget surpluses that were forecast in the July 1997 Budget (under the Treasury’s most pessimistic scenario for the public finances) and the March 1999 Budget. The horizontal axis shows the year of the cycle (either based on what is currently believed, or what was believed at the time): for the Budget 1997 forecast, year 1 is 1997–98; for the Budget 1999 forecast, year 1 is 1999–2000; and for the PBR 2007 forecast, year 1 is 2006–07. The graph shows that the July 1997 Budget forecast that the cumulative current budget would return to balance by the end 1999–2000 (the third year of the cycle that the Treasury now thinks began in 1997–98). The forecasts in the Budget of March 1999, at which time the Treasury thought the economy was just beginning a new cycle, were even stronger – these forecasts were for a cumulative current budget surplus in each of the following five years. In contrast, the latest Treasury projections suggest that a cumulative current budget surplus since 2006–07 will only be achieved by year 6, i.e. in 2011–12. In this sense, the outlook for the

Figure 3.5. Treasury cumulative current budget balance forecasts



¹⁹ <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmtreasy/uc115-ii/uc11501.htm>.

Table 3.1. Economic cycles and compliance with the golden rule since 1997

Possible dating economic cycles	Average surplus		Golden rule met?
	% of GDP	£bn	
Using Treasury's estimates of the output gap			
<i>Any movement from below to above trend (4 cycles)</i>			
Cycle 1: 1997–98 to 1999–2000 (3 years)	+1.1	+15	Met
Cycle 2: 1999–2000 to 2003–04 (5 years)	+0.7	+9	Met
Cycle 3: 2003–04 to 2006–07 (4 years)	–1.1	–16	Missed
Cycle 4: 2006–07 to ???–?? (length unknown)	n/a	n/a	n/a
<i>3 cycles:</i>			
Cycle 1: 1997–98 to 2003–04 (7 years)	+0.6	+9	Met
Cycle 2: 2003–04 to 2006–07 (4 years)	–1.1	–16	Missed
Cycle 3: 2006–07 to ???–?? (length unknown)	n/a	n/a	n/a
<i>2 cycles (current Treasury view)</i>			
Cycle 1: 1997–98 to 2006–07 (10 years)	+0.1	+2	Met
Cycle 2: 2006–07 to ???–?? (length unknown)	n/a	n/a	n/a
<i>1 cycle:</i>			
Cycle 1: 1997–98 to ???–?? (length unknown)	n/a	n/a	n/a
Using HP 1,600 statistical filter estimates of the output gap			
<i>3 cycles:</i>			
Cycle 1: 1994–95 to 2003–04 (10 years)	–1.2	–16	Met
Cycle 2: 2003–04 to 2006–07 (4 years)	–1.1	–16	Missed
Cycle 3: 2006–07 to ???–?? (length unknown)	n/a	n/a	n/a

Note: The financial year during which an economic cycle is judged to have ended is assumed to be the first year of the next cycle. See Section 4.3 for other estimates of the output gap and dating of the cycle using statistical filters.

Sources: HM Treasury, *Public Sector Finances Databank*, December 2007 (http://www.hm-treasury.gov.uk/media/B/2/pfd_211207.xls); authors' calculations.

public finances is much weaker at the beginning of this economic cycle than it appeared to be at the beginning of the last.

However, whether or not the golden rule has in fact been met since 1997 and whether it will be met going forwards remains at least to some degree a matter of judgement. Even if an economic cycle is defined as a period of above-trend activity followed by a period of below-trend activity, and the Treasury's latest estimates of the output gap are correct, it is far from clear that there has been one economic cycle running from 1997–98 to 2006–07 (inclusive).

As shown in Table 3.1, judgements different from those made by the Treasury as to what constitutes a decisive movement from below to above trend can lead to different assessments of whether or not the golden rule has been met since 1997. If instead of there having been one long cycle from 1997–98 to 2006–07, there were in fact three shorter cycles, over the last of these (the one running from 2003–04 to 2006–07) the golden rule would have been judged to have been missed by a sizeable margin. In contrast, under the last scenario presented in the top panel of Table 3.1 – namely, that the current economic cycle began in 1997–98 and is yet

to end – the golden rule is set to be met if the cycle ends at any point during the medium-term forecast horizon.

If estimates of the output gap from a commonly used statistical filter (Hodrick–Prescott 1,600 filter; see Section 4.3 for more details) were used instead of the Treasury’s estimates of the output gap, then the dating of the economic cycle is far less ambiguous, but unfortunately also different from any of the datings from analysis of the Treasury’s data. As shown in the bottom panel of Table 3.1, this filter implies that an economic cycle covered the 10 financial years from 1994–95 to 2003–04, over which the golden rule would have been missed by an average of 1.2% of national income a year, or £16 billion in today’s terms. The subsequent economic cycle is estimated to cover the four financial years from 2003–04 to 2006–07, over which the golden rule would have been missed by a similar margin.

So it is clear that both typical revisions to estimates of the output gap and different judgements of what constitutes a decisive movement from below- to above-trend activity can lead to different datings of the economic cycle. These in turn lead to very different judgements of whether or not the golden rule has been met, which suggests that this is a far from satisfactory way of assessing the appropriateness, or otherwise, of fiscal policy.

One option would be for the Treasury to commit to using estimates of the output gap that were produced solely using publicly available National Accounts data and a statistical filter, such as the Hodrick–Prescott 1,600 filter used in Table 3.1. This would have the advantage of removing any suspicion that revisions to estimates of the output gap had been made as a result of political considerations. However, these filters are not without problems, and this approach would come at the cost of not allowing a valid judgement to be made that the output gap estimates should deviate from the estimates produced using the filter. In addition, filters provide no rules for judging when an economic cycle starts and finishes, and so what constituted an economic cycle would still be left as a matter of judgement.

We noted earlier in this section that one alternative to meeting the golden rule over a specifically dated economic cycle would be to aim for a particular target level for the current budget balance over an appropriate time horizon. As Figure 3.2 illustrates, it could be argued that in practice the government has in fact been pursuing just such a target in recent years: it has made tax and spending decisions that it forecasts in each Budget will deliver a current budget surplus (total or cyclically adjusted) of around $\frac{3}{4}$ % of national income after five years.

How has the Treasury performed relative to these notional targets?

Table 3.2 shows that the five-year-ahead target set in Budget 2001 was undershot by 1.9% of national income in 2005–06, of which 0.2% reflects the fact that the economy was running below potential. Budget 2002 loosened the target for 2006–07 by 0.1% of national income, but it was still undershot by 1.0% of national income, of which 0.1% reflects a weak economy. Budget 2003 loosened the target again by 0.1% of national income, and the Treasury now expects to undershoot this by 1.2% of national income. In the next two Budgets, the target was increased slightly, and the Treasury is now expecting to miss these targets by 1.0% of national income in 2008–09 and 0.6% of national income in 2009–10. Budget 2006 set a five-year-ahead target of 0.8% of national income for 2010–11, and the Treasury already expects to be 0.2% of national income adrift from that. However, the target

of a 0.8% of national income surplus on the current budget in 2011–12 set in Budget 2007 is still expected to be met by the Treasury.

It would be reasonable to argue that more caution is needed over a longer time frame since there is greater uncertainty. Therefore the ¾% of national income might never need to be achieved – particularly if the Chancellor only wanted to achieve a structural current budget balance. However, as shown in the bottom panel of Table 3.2, recent years have seen sizeable structural current budget deficits.

Table 3.2. Performance against notional five-year rolling target

Current budget balance (% of national income)	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
Target set 5 years previously (total & structural)	0.8%	0.7%	0.6%	0.7%	0.8%	0.8%	0.8%
Total							
<i>Actual deviation</i>	-1.9%	-1.0%	–	–	–	–	–
<i>Forecast deviation</i>	–	–	-1.2%	-1.0%	-0.6%	-0.2%	0.0%
Structural							
<i>Actual deviation</i>	-1.7%	-0.9%	–	–	–	–	–
<i>Forecast deviation</i>	–	–	-1.3%	-0.9%	-0.5%	-0.2%	0.0%

Source: Projections from various HM Treasury Budgets. Latest out-turns from HM Treasury, *Public Sector Finances Databank*, November 2007 (http://www.hm-treasury.gov.uk/media/C/B/pfd_301107.pdf.xls).

The current budget underperformed the Treasury’s notional Budget 2001 target for 2005–06 and the Budget 2002 target for 2006–07 largely because of the unexpected fall in tax revenue from the financial sector in 2000–01 and 2001–02 failing to rebound as quickly as it hoped and because of decisions to spend more on health, education and tax credits. Over the period from 2002 to 2006 (inclusive), IFS Green Budgets have been less optimistic than the Treasury about tax revenues. To achieve the sort of improvement in the public finances that Mr Brown was looking for, we said there would be need for tax increases and/or spending cuts worth roughly 0.6% of national income in the 2002 Green Budget, and roughly 1% of national income in the Green Budgets of 2003, 2004 and 2005.

Mr Brown consistently rejected this advice in the run-up to the 2005 election, but then followed it at the first opportunity once polling day was safely out of the way – he announced tax increases and signalled cuts in spending plans worth in total around 1% of national income in the 2005 Pre-Budget Report. We argued for a further tightening of 0.2% of national income in Green Budget 2006, and tax increases worth roughly this amount were delivered in the 2006 Budget and Pre-Budget Report.

In the 2007 Green Budget, we saw no need for a further significant tightening of policy to deliver the Treasury’s desired improvement in the public finances over the subsequent five years and noted that ‘the Treasury’s revenue forecasts have been over-optimistic for six years now, and history suggests that at some point it will be due for a run of better luck’.²⁰ The

²⁰ Section 5.5 of R. Chote, C. Emmerson, A. Leicester and D. Miles (eds), *The IFS Green Budget: January 2007*, IFS Commentary 102, January 2007 (<http://www.ifs.org.uk/budgets/gb2007/index.php>).

Treasury was indeed able to report in the 2007 PBR that in 2006–07 the current budget balance had turned out better than predicted in the preceding Budget for the first time in six years – thanks both to higher-than-expected revenues and lower-than-expected spending. Victory has been short-lived, however, with the problems in credit markets and the financial sector that began last summer forcing the Treasury to downgrade its forecasts for 2007–08, 2008–09 and 2009–10 (as we have also had to do; see Chapter 5). But it expects the impact of these problems to be temporary and has left its forecasts for 2010–11 and 2011–12 as they were in the Budget.

As we discuss in Chapter 5, the key question surrounding the outlook for the current budget is whether the Treasury is correct to assume that the impact of recent financial sector problems will be modest and short-lived – or whether it is about to repeat the mistake of Labour’s second term, when it was repeatedly overoptimistic about the recovery of the public finances following the decline in the stock market. If it is, the prospects of meeting the golden rule over the economic cycle just getting under way may be less rosy than the government hopes.

In addition to seeking intergenerational fairness, the golden rule was motivated in part by a desire to ensure that public sector net investment does not suffer a disproportionately severe squeeze when spending overall has to be restrained. When spending was squeezed early in Labour’s term in office, this did not succeed: public sector net investment fell (albeit at least in part unintentionally) by 2.4% per year in real terms between 1996–97 and 1999–2000, while current spending (including depreciation) increased by 0.3% per year. But if the Treasury’s current plans are delivered, investment will be protected over the three years of the Comprehensive Spending Review: public sector net investment is expected to increase by 4.5% in real terms on average per year between 2007–08 and 2010–11, compared with an increase of 1.9% per year for current spending. If achieved, this would also be in stark contrast to the last four years of the previous Conservative government, which delivered increases in current spending averaging 1.6% per year between 1992–93 and 1996–97 (i.e. only slightly below Labour’s current plans) but cut investment spending by 19.5% per year.

3.3 The sustainable investment rule

The sustainable investment rule states that the public sector’s debt (net of its short-term financial assets, which mostly comprise foreign exchange reserves) should be kept at a ‘stable and prudent’ level. More precisely, ‘To meet the sustainable investment rule with confidence, net debt will be maintained below 40 per cent of GDP in each and every year of the current economic cycle’.²¹ However, while this 40% of national income ceiling applies over the economic cycle that the Treasury believes ran from 1997–98 to 2006–07, it is yet to announce whether or not this ceiling will remain in place over the new economic cycle.

Governments take on debt for much the same reason that individuals and firms do – to smooth their spending. Whilst the biggest changes in government debt levels in this country have been driven by the need to finance the two World Wars, in more normal circumstances there are three main reasons why governments might take on debt:

²¹ Page 20, paragraph 2.13 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/pbr_csr07_index.cfm).

- First, it can be both fair and efficient to smooth the cost to taxpayers of public spending that yields a flow of (typically non-financial) benefits into the future.
- Second, it may make sense to smooth payments for current spending over the ups and downs of the economic cycle to help stabilise activity and alleviate pressure on monetary policy.
- Finally, and less commendably, governments may seek to push the costs of current spending onto future taxpayers for political advantage, because they believe that voters are short-sighted.

Why impose a debt ceiling?

When does debt – taken on for any or all these reasons – become ‘unsustainable’? As the Treasury argues, ‘There are many possible definitions of sustainability. One definition is that a government should be able to meet its obligations if and when they arise in the future’.²² As debt increases, the cost of servicing it also increases. In principle, the cost could rise so high that the economy produces too little to meet it. But in practice, long before then, sustainability becomes a political judgement: the ability of a government to meet the obligations it undertakes or inherits will depend on the willingness of future taxpayers to provide the revenue or to sacrifice other spending.

As experience in various emerging market countries has shown over the decades, *in extremis* governments may find it more attractive to lift the burden of meeting their financial obligations from taxpayers and concentrate it instead on their domestic and/or international creditors through rescheduling, default or inflation. Conscious of this danger, investors will become more reluctant to lend to a government if its policies look likely to impose a politically unacceptable burden on future taxpayers. By increasing interest rates and reducing economic growth, such investor fears can become self-fulfilling by further increasing the government’s obligations and simultaneously shrinking the resources available to meet them. Even in the absence of a significant default risk, interest rates may rise as government debts increase, weakening growth by ‘crowding out’ private investment. (This market discipline has been relatively weak in recent years, with most industrial countries seeing their borrowing costs fall even as their debts have risen, as discussed in Chapter 6.)

Given these dangers, it may be sensible for a government to make a clear public commitment to limit its obligations to some level that would not (under plausible economic circumstances) impose an unacceptable burden on future taxpayers. As Treasury officials have argued, ‘Committing to a clear benchmark level of debt helps to anchor expectations and helps avoid self-fulfilling losses of credibility in fiscal policy’.²³

²² Page 19 of HM Treasury, *Long-Term Public Finance Report: An Analysis of Fiscal Sustainability*, December 2006 (http://www.hm-treasury.gov.uk/pre_budget_report/prebud_pbr06/assoc_docs/prebud_pbr06_adlongterm.cfm).

²³ R. Woods, ‘The role of public debt in the UK fiscal rules’, paper presented at the 6th Banca d’Italia Public Finance Workshop, 2004.

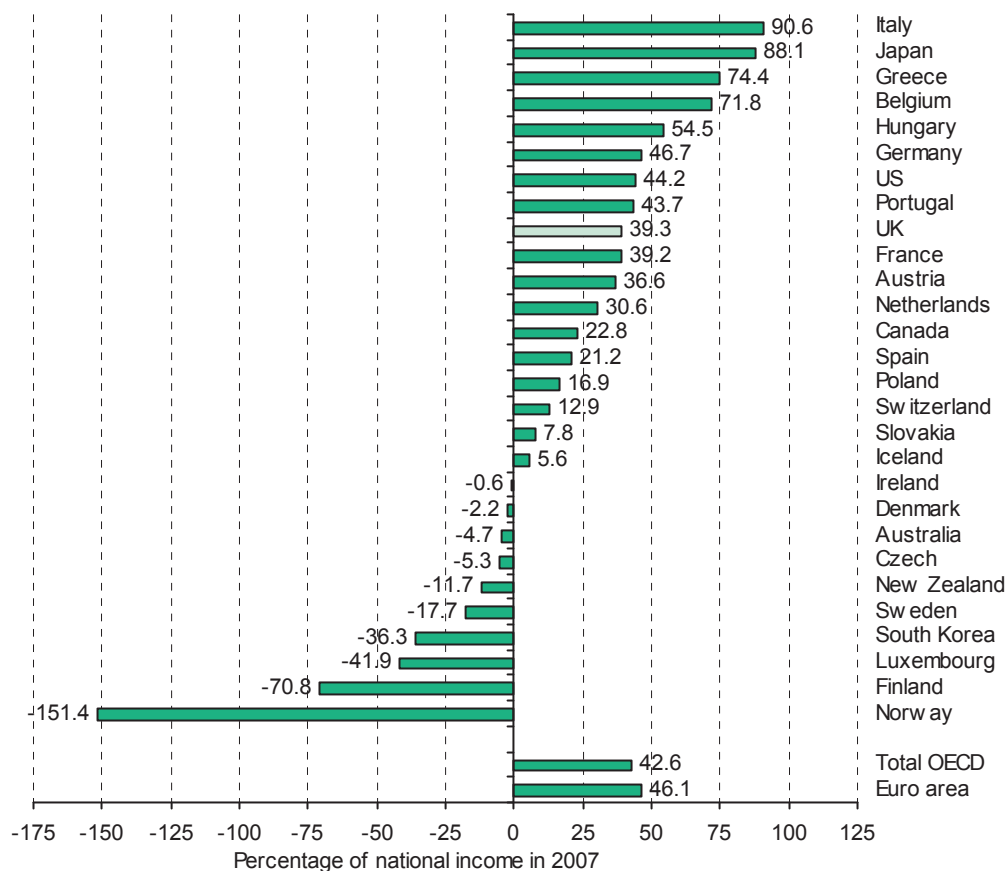
The height of the debt ceiling

Choosing where to set the debt ceiling is no easy task. For one thing, taxpayers' willingness to meet the obligations implied by past policy decisions may depend on a whole host of factors: the existing tax burden they face, the size of the debt interest bill, the reason the debt was incurred, the identity of the creditors and so on. Attempts have been made to infer an optimal debt ratio from comparisons with the debt/equity ratios prevailing in the private sector and from theoretical and empirical analyses of the relationship between debt levels, interest rates and economic growth rates. None has given a precise or robust result.

It certainly seems implausible to suggest that a debt ratio of up to 40% of national income would be sufficient to trigger a sovereign debt crisis, especially for a developed country such as the UK that has long been able to borrow in its own currency with relative ease. The current government appears to have chosen this ratio in effect as a commitment not to allow debt to rise above the level it inherited. Assuming that the golden rule was met, a debt ceiling of 40% of national income would also be sufficiently high to permit a higher level of public sector net investment in the long term than Labour inherited.

The Treasury estimates that public sector net debt will be 37.6% of national income this year. Figure 3.6, which uses a slightly different definition of debt to aid international comparison,

Figure 3.6. General government debt ratios in OECD countries in 2007



Source: Annex table 33 of OECD, *Economic Outlook No. 82*, December 2007 (http://www.oecd.org/document/61/0,3343,en_2649_201185_2483901_1_1_1_1,00.html).

shows that even if public sector debt in the UK did rise by the 2.4% of national income necessary to reach the 40% of national income level, it would still be low relative to that of most other G7 countries. But there are other industrial countries with much stronger net debt positions, including Australia, New Zealand and the Scandinavian countries. Ten out of the 28 OECD countries shown in the graph have more financial assets than debt – for example, Norway (to smooth the expenditure financed by its oil revenues) and South Korea (which has built up enormous foreign exchange reserves to limit the rise in its exchange rate). Looking at the change in net debt over the period from 1996 to 2007, the majority of OECD countries have reduced their net debt by more than the UK did over this period (see Table 2.2). This suggests that many countries are trying to reduce their level of net debt, whereas in the UK Labour has only sought to prevent it from rising. Similarly neither the opposition Conservative nor Liberal Democrat party has proposed anything different.

So why might the UK wish to aim for a debt ratio higher or lower than 40%?

First, the desired debt ratio will depend on the desired level of public sector net investment over the long term. The amount the government can invest while adhering to a particular debt ceiling will depend on: (a) the current level of debt; (b) the degree to which the golden rule is over- or under-achieved (which in turn partly depends on how much the government has to spend servicing its existing debt); and (c) the growth of the cash value of the economy.

If we assume that the golden rule is met exactly, whole-economy inflation is 2.5% a year and the economy grows in real terms by 2.5% a year, then the government could sustain public sector net investment of 2% of national income a year while keeping public sector net debt at 40% of national income.²⁴ If we believe that public sector net investment should be higher than 2% of national income in the long term, this argues for raising the debt ceiling above 40% unless the golden rule is consistently overachieved or cash growth in the economy exceeds 5% a year. Conversely, if we wish to invest less than 2% of national income, the debt ceiling could be lowered.

Second, a Chancellor might move the debt ceiling due to a belief that the underlying level of current spending is likely to rise (or fall) from its present level at some point in the future in order to limit economically costly variation in tax rates. This could be done without altering the level of investment by deliberately over- (or under-) achieving the golden rule for a while and temporarily reducing (or increasing) the debt ceiling. For example, some Scandinavian economies are deliberately pursuing low or negative net debt positions now because they believe that the ageing of their populations will require more public spending on the elderly in future decades. By running tight fiscal policies today, and giving themselves greater scope to borrow more in the future, they can limit future increases in tax rates and the associated disincentives to work and save.

In November and December of each year from 2002 to 2006, the Treasury published a report on the long-term strength of the public finances. In its December 2006 report, the Treasury estimated that, on existing policies, public spending in the UK would, as a result of changing demographics, rise from 40.9% of national income last year to 44.7% in 2055–56 – an

²⁴ Debt interest payments would also not rise as a share of national income as long as nominal interest rates were not above 5% p.a.

increase of 3.8% of national income or just over £50 billion in today's terms.²⁵ Unfortunately, the Treasury has not, as yet, published an update to its 2006 report.

Individuals are likely to wish to smooth their consumption in the face of an expected rise in tax rates to pay for these increases in spending, but some will be more aware of the necessary adjustments and better placed to make them at low cost than others. On these grounds, it may be thought preferable for the state to help make the adjustment by increasing tax rates now (aiming for a lower debt-to-national-income target) to reduce the increase required in the future (when the debt ratio would be allowed to rise again).

Other liabilities

As well as future debt repayments due to current borrowing, the government has made promises of other future payments in a number of ways. These include future payments arising from the pensions of public sector workers – both those who are yet to receive their pension and those who are already receiving their pension – and also a number of liabilities that would be incurred should a certain event(s) occur (known as contingent liabilities). These contingent liabilities include future payments made under Private Finance Initiative (PFI) contracts, which would be incurred under the, presumably likely, scenario that the private sector providers fulfil the terms of their contract. There are also many other contingent liabilities, some of which will be unlikely to occur; in this section, we focus solely on the debt of Network Rail and the more recent Treasury-backed Bank of England support for Northern Rock PLC, since these have been the subject of much discussion in recent months and years. The treatment of all these future payments is potentially important since, despite not appearing in the headline figures for debt, each could reduce the amount of income that future generations will be able to spend as they choose.

The opposition Conservative Party,²⁶ among others, has expressed concern at the size of the liabilities that are not counted in public sector net debt, and therefore are not constrained (at least in the short and medium term) by the sustainable investment rule. Arguably more important than the level of these liabilities is whether or not the total indebtedness of the public sector is increasing and the appropriateness of the financing tool used. Financing this spending through means that do not immediately score against public sector net debt would be inappropriate if it is done in order to keep the headline net debt figure low rather than for reasons of economic efficiency. For example, Section 8.4 puts forward the argument that better value for money for the taxpayer might be achieved through a combination of less generous pensions for public sector workers compensated in part with higher pay.

How large are these commitments that are not included in public sector net debt (PSND)? Due to intrinsic differences in their nature, comparable figures (based on consistent

²⁵ Source: Table 5.1, page 40 of HM Treasury, *Long-Term Public Finance Report: An Analysis of Fiscal Sustainability*, December 2006 (http://www.hm-treasury.gov.uk/pre_budget_report/prebud_pbr06/assoc_docs/prebud_pbr06_adlongterm.cfm).

²⁶ See, for example, Conservative Party, *Developing a Conservative Macroeconomic Framework*, December 2005 (<http://www.conservatives.com/pdf/Macroeconomicframework-Dec2005.pdf>). Also, Shadow Chief Secretary to the Treasury, Philip Hammond: 'This is the worst possible time to be adding yet more liabilities to the Government's balance sheet by entrenching UK taxpayers' exposure to Northern Rock', Conservative Press Release, 21 January 2008 (http://www.conservatives.com/tile.do?def=news.press.release.page&obj_id=141775).

underlying assumptions) for different components of public sector indebtedness are not available. Bearing in mind this important caveat, Table 3.3 compares the size of PSND with official estimates of public sector pension liabilities and an estimate of the value of the future flow of payments to PFI providers under contracts already signed (which is assuming that the private sector providers do fulfil the terms of these contracts). Also shown are two other relatively high-profile contingent liabilities – namely, the debt of Network Rail and the recent Treasury-backed Bank of England support for Northern Rock PLC.

Quantitatively speaking, compared with the official measure of PSND, PFI liabilities and public sector pension liabilities are particularly significant in size, with official estimates suggesting that the latter are larger than net debt itself. These estimates of public sector pension liabilities and future PFI payments total more than 63% of national income and are in

Table 3.3. Estimated value of various future public sector obligations based on official estimates

	£ billion	% of GDP
Public sector net debt, March 2007	500	36.8
Estimated public sector pension liabilities, March 2006	>725 ^a	>56
Estimated future PFI payments, signed current deals, November 2007	110	≈8
Total	n/a	>100
<i>Other contingent liabilities</i>		
Network Rail debt, 30 September 2007	0 to 18	0 to 1.3
Support for Northern Rock PLC:		
Treasury support for Bank of England loan	0 to ≈24	0 to ≈1.7
Treasury support for all other lenders	0 to ≈31	0 to ≈2.2
Treasury having control of all other liabilities (net of short-term financial assets)	0 to ≈45	0 to ≈3.2
<i>(Less potential contingent assets (apart from short-term financial assets))</i>	<i>(≈-100 to 0)</i>	<i>(≈-7.5 to 0)</i>

^a Estimate of public sector pension liabilities is the unfunded liabilities of the Teachers' Pensions Scheme (England and Wales), Principal Civil Service Pension Scheme, Armed Forces Pension Scheme, UKAEA Pension Schemes, DfID: Overseas Superannuation, Police Pension Schemes, Firefighters Pension Schemes and the National Health Service Pension Scheme. These come to £725 billion. Since the liabilities of other, albeit relatively smaller, schemes are excluded, the total unfunded liabilities will be greater than this.

Sources: Public sector net debt from table A4 of HM Treasury, *Public Sector Finances Databank*, December 2007 (http://www.hm-treasury.gov.uk/media/B/2/pfd_211207.xls). Public sector pension liabilities from Parliamentary Scrutiny Unit, *Public Sector Pensions*, Briefing Note, May 2007 (<http://www.parliament.uk/documents/upload/publicsectorpensions.pdf>) and page 26 of *NHS Pension Scheme and NHS Compensation for Premature Retirement Scheme: Resource Accounts 2006–07*, November 2007 (<http://www.official-documents.gov.uk/document/hc0607/hc10/1007/1007.pdf>). Estimated future PFI payments from table 18 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review: The Economy and Public Finances – Supplementary Charts and Tables*, October 2007 (http://www.hm-treasury.gov.uk/media/2/B/pbr_csr07_economy907.pdf) with payments discounted to 2007–08 by future nominal national income (assuming real growth of 2½% p.a. and economy-wide inflation of 2.7% p.a. from April 2013 onwards). Network Rail debt from table 9, page 22 of Network Rail Infrastructure Limited, *Interim Financial Statements: Six Months Ended 30 September 2007* (<http://www.networkrailmediacentre.co.uk/Content/detail.asp?ReleaseID=3453&NewsAreaID=2&zip=True>). Figures for Northern Rock's liabilities and assets from its latest annual report and interim report (<http://companyinfo.northernrock.co.uk/investorRelations/results/>). Statements from HM Treasury, the Bank of England and the Financial Services Authority regarding Northern Rock can be found at <http://www.bankofengland.co.uk/publications/northernrock/index.htm>.

total 60% larger than PSND itself. This gives an estimate of total liabilities of the public sector from these three sources exceeding 100% of national income. In contrast, the two contingent liabilities relating to Network Rail and Northern Rock PLC shown in Table 3.3 are, at least relative to official PSND, small.

A number of issues arise with each of these components of the indebtedness of the public sector, and we now discuss each in turn.

Public sector pensions (estimated liabilities in excess of £725 billion, March 2006)

The future liabilities of unfunded public sector workers' pension schemes are not included in public sector net debt. Estimating the value of these liabilities is extremely difficult as it will depend on individuals' pension tenure, their final salaries, how their pension benefits are indexed and the longevity of public sector workers. Nonetheless, these liabilities appear to be substantial: the most recent official estimate of total liabilities is that at March 2005 they were worth £530 billion.²⁷

The government has not, as yet, published its estimate for total unfunded pension liabilities at March 2006, despite Andy Burnham, the Chief Secretary to the Treasury, stating in September 2007 that 'a new estimate will be published in the autumn'.²⁸ However, while the government has not been able to provide an update for these numbers, in May 2007 the Parliamentary Scrutiny Unit published a report that sets out the liabilities of the main unfunded pension schemes for March 2006, apart from the NHS, while the NHS accounts were published in November 2007.²⁹ In total, the liabilities of these main public sector schemes are estimated to be £725 billion, a very large increase on the March 2005 estimate of £530 billion, and one that is likely to be an underestimate given that the liabilities of some smaller pension schemes are not included in this figure.

Any estimate of the value of the future payments of pensions to public sector workers is extremely sensitive to how future payments are discounted. This in part explains the increase between March 2005 and March 2006 from £530 billion to £725 billion, since the former were based on a discount rate of 3.5% per year whereas the latter are based on a lower rate of 2.8% per year. These rates were chosen on the basis of Treasury guidance, which states that the rate of return on AA corporate bond should be used. As a result, for 2006–07 the discount rate is set to fall to just 1.8% per year, which will lead to a further significant increase in estimated liabilities. Estimates of the liabilities of the NHS pension scheme using the discount rate of 1.8% have already been published. These suggest that between March 2006 and March 2007, the estimated liabilities of the NHS pension scheme increased from £165.4 billion to £218.0 billion. Of this increase of £52.6 billion, the majority (£40.6 billion)

²⁷ Latest official estimate by the Government Actuary's Department, mentioned in HM Treasury, *Long-Term Public Finance Report: An Analysis of Fiscal Sustainability*, December 2006 (http://www.hm-treasury.gov.uk/media/6/0/pbr06_longtermpublicfinancereport_476.pdf).

²⁸ Source: Hansard, 10 September 2007, column 1980W (<http://www.publications.parliament.uk/pa/cm200607/cmhansrd/cm070910/text/70910w0021.htm>).

²⁹ Sources: Parliamentary Scrutiny Unit, *Public Sector Pensions*, Briefing Note, May 2007 (<http://www.parliament.uk/documents/upload/publicsectorpensions.pdf>) and page 26 of *NHS Pension Scheme and NHS Compensation for Premature Retirement Scheme: Resource Accounts 2006–07*, November 2007 (<http://www.official-documents.gov.uk/document/hc0607/hc10/1007/1007.pdf>).

is due to the reduction in the discount rate used. This highlights the fact that applying this lower discount rate to all public sector pension schemes will increase the estimated total liabilities significantly. However, given that the state can use future national income to cover its liabilities, it would seem more appropriate to deflate by expected economic growth, which would be around 2½% a year and, since it is below 2.8%, would still increase the estimated liabilities further above £725 billion, but not as far as is set to occur for 2006–07 when the discount rate will be reduced to just 1.8% per year. Other studies have proposed using the discount rate implied by government bonds, which is currently even lower than 1.8% and would increase the estimated liability even further.³⁰

One key difference between public sector pension liabilities and public sector net debt is that governments are able to reduce the generosity of the future accrual of public sector workers' pension rights. However, such a change could have implications for other components of the remuneration package required to attract and retain public sector workers of the desired quality and motivation. This is discussed in detail in Chapter 8, and in particular in Section 8.4.

The treatment of public sector pensions also deserves more thought under the golden rule. On grounds of intergenerational fairness, it seems reasonable that today's taxpayers should pick up the tab for the future pension costs of workers employed to deliver current services today. Leaving aside the liability for longevity and other risks, this would happen automatically if public sector pension schemes were funded rather than pay-as-you-go. As most schemes in reality are not, the notable exception being the scheme for local government workers, it seems reasonable that if the government increases the number of public sector workers (or increases their expected pension tenures or expected final salaries, both of which would increase the expected value of their final salary pension arrangements), it should run a current budget surplus on average so that the increased cost of pension payments faced by tomorrow's taxpayers is offset by lower debt interest payments.

Of course, in thinking about whether and how to set such a target, we have to remember that we are not starting with a blank sheet of paper – today's taxpayers are already paying the pensions of past public sector workers despite potentially receiving little or no services from them. On these grounds, it might be thought reasonable to pass a similar burden onto future generations. So while it is true that today's public sector pension commitments were estimated by the Treasury in December 2006 to cost 2.0% of national income in 2055–56, past public sector pension commitments were already costing 1.5% of national income in

³⁰ Deflating by expected GDP growth was proposed by J. Hawksworth, *Public Service Pension Liabilities and the Fiscal Rules*, PriceWaterhouseCoopers, London, 2006. Alternative estimates for public sector liabilities have made less optimistic (in terms of pension liabilities) assumptions over mortality improvements, salary growth and also the discount rate. For example, estimates produced by Neil Record and by Stephen Yeo are that the liabilities stand at £1,025 billion and £960 billion respectively. The largest component of the difference between these estimates and those of the Government Actuary's Department is the chosen discount rate. See N. Record, *Sir Humphrey's Legacy: Facing Up to the Cost of Public Sector Pensions*, Institute of Economic Affairs, 2006 (<http://www.iea.org.uk/files/upld-release114pdf?.pdf>), and S. Yeo, 'Unfunded public sector pension liabilities now close to £1,000 billion', Watson Wyatt Press Release, 8 March 2006 (<http://www.watsonwyatt.com/news/press.asp?ID=15784>).

2005–06.³¹ It is the increase in the servicing burden over time that implies an additional intergenerational transfer, not the total debt burden.

Returning to the justification for the sustainable investment rule, we should presumably favour targeting a measure of public sector liabilities that reflects the expected impact of policy commitments made today on the revenue needs of governments tomorrow – not least because this is what investors in government debt will ultimately worry about. That suggests that, rather than ignore commitments where the precise timing and amount of the revenue required in the future are uncertain, we should instead take explicit account of the uncertainties in deciding what obligations it is safe to undertake. The completion of the Whole of Government Accounts³² would be a good opportunity for the incoming Chancellor to think about widening the scope of the existing sustainable investment rule at least to include provisions (including public sector pensions), and possibly also to include the expected cost of contingent liabilities.

Private Finance Initiative (future payments totalling £110 billion, November 2007)

Under PFI arrangements, private firms undertake some capital spending on behalf of the public sector, with the public sector paying private firms a rental price for use of a capital asset, in addition to payments for any current goods and services, that the private sector delivers. While the use of the PFI began in 1987 (with the Queen Elizabeth II Bridge built over the Thames at Dartford/Thurrock), it has been much more widely used since Labour came to power.³³

In total, PFI deals signed up to November 2007 that are still current are set to finance a total of £56.9 billion (4.1% of national income in 2007–08) of capital spending. Of this, 43% (£24.4 billion) is scored on the public sector balance sheet, with the remaining 57% (£32.5 billion) not on the public sector balance sheet.³⁴

The total £56.9 billion will only be incorporated in public sector net debt to the extent to which payments have already been made by the public sector to the private sector, or where debt has been undertaken by the private sector under PFI and accountants judge (and the National Audit Office agrees) that the public sector has taken on the risks and rewards of owning the asset concerned (e.g. a hospital) and where the new asset – or a phase of improvement work on an existing asset – is operational.

Therefore, in the short run, a conventionally financed investment project would typically add more to public sector net debt than a project financed via PFI or public–private partnerships

³¹ Source: Table 5.1, page 40 of HM Treasury, *Long-Term Public Finance Report: An Analysis of Fiscal Sustainability*, December 2006 (http://www.hm-treasury.gov.uk/pre_budget_report/prebud_pbr06/assoc_docs/prebud_pbr06_adlongterm.cfm).

³² For more information, see <http://www.wga.gov.uk>.

³³ Capital spending financed through the PFI averaged 0.1% of national income a year under deals signed over the 10-year period from 1987 to 1996, but averaged 0.5% a year over deals signed during the 11 years from 1997 to 2007 (with the three London Underground Tube deals being particularly significant in terms of the contracted capital spend (£17.6 billion, 1.3% of 2007–08 national income). Source: http://www.hm-treasury.gov.uk/media/B/E/pfi_signeddeals_231007.xls.

³⁴ HM Treasury, PFI Signed Projects List – October 2007, (http://www.hm-treasury.gov.uk/documents/public_private_partnerships/ppp_pfi_stats.cfm).

(PPPs). As long as this remains the case, there may be a suspicion that investment projects are undertaken via PFI (rather than conventionally) to help meet the sustainable investment rule rather than on value-for-money grounds. Had conventional finance been used instead of the PFI, then public sector net debt would have been increased by the total amount of capital spending that has taken place under the PFI so far (which will be less than the £56.9 billion that is set to be done eventually from all current contracts signed to date). Instead, the only amounts that have so far been included in public sector net debt are the payments that have so far been made to PFI providers (which as of March 2007 had totalled £20.6 billion across all PFI deals apart from those by the Scottish Government, from which data have not been made publicly available³⁵) and the finance lease component (which in September 2006 was estimated by the ONS to have totalled £4.95 billion up to March 2006).³⁶

Under a no-PFI scenario, public sector net debt – in the absence of compensating changes to taxes or other spending – would therefore have been much closer to, but not yet above, the 40% of national income level. Just as recent years have seen a greater proportion of PFI commitments included in net debt, this pattern is set to continue in April 2008 with the adoption of International Financial Reporting Standards which could affect the classification of the £32.5 billion of capital spending financed through PFI arrangements that are not currently on the public sector balance sheet.³⁷ Any significant classification change that increased public sector net debt could quite plausibly result in it being pushed above 40% of national income. However, Mr Darling might reasonably argue that if he had not intended to use the PFI then Mr Brown would have set the ceiling higher.

The future indebtedness of the public sector relates not to the capital value of PFI deals, but instead to the value of the payments that have been agreed contractually. In total, under deals signed up to November 2007, the value of future payments under current PFI contracts is £110 billion (after discounting future payments by assumed growth in national income). However, one key difference between these payments and the amounts owed to the holders of national debt is that in many cases these payments are in return for the receipt of future delivery of public service provision. This was acknowledged in a recent Treasury report on PFI policy, which stated that ‘In a typical PFI hospital, payments for services make up 40 to 50 per cent of the unitary charge [total payments to PFI providers]. For a typical PFI schools project, around 30 per cent of the unitary charge goes toward caretaking, maintenance and other services’.³⁸ Therefore a future government might well be able to negotiate a lower

³⁵ HM Treasury, PFI Signed Projects List – October 2007’, (http://www.hm-treasury.gov.uk/documents/public_private_partnerships/ppp_pfi_stats.cfm).

³⁶ For a discussion of the finance lease component of PFI deals, see A. Chesson and F. Maitland-Smith, ‘Including finance lease liabilities in public sector net debt: PFI & other’, *Economic Trends*, November 2006, 636: 27–42 (http://www.statistics.gov.uk/articles/economic_trends/ET636Chesson&MaitlandSmith.pdf).

³⁷ See ‘Time to set the PFI record straight’, *Financial Times*, 27 July 2007 (<http://search.ft.com/ftArticle?queryText=pfi+net+debt+IFRS&y=0&aje=false&x=0&id=070727000705&ct=0>) and evidence from Nick Macpherson, Permanent Secretary of HM Treasury, to the House of Commons Treasury Select Committee, 14 November 2007 (specifically, responses to questions 65 to 67) (<http://www.publications.parliament.uk/pa/cm200708/cmselect/cmtreasy/uc57-i/uc5702.htm>).

³⁸ Paragraph 2.25, page 22 of HM Treasury (2006), *PFI: Strengthening Long-Term Partnerships*, March 2006 (http://www.hm-treasury.gov.uk/media/7/F/bud06_pfi_618.pdf).

payment from the public purse in return for a reduction in services provided, in particular where these are for current rather than capital goods.

Network Rail (net debt up to £18 billion, September 2007)

Borrowing carried out by Network Rail could be considered similar to conventional government borrowing as the government guarantees to repay its debt if the company collapses, though the Office for National Statistics defines it as a private sector company and therefore off the public sector's balance sheet. In order to avoid a collapse, if the company got into serious trouble it is likely that the government would take greater control and the ONS would reclassify it as part of the public sector for the purposes of the National Accounts, even if Network Rail had not been formally renationalised. Such a reclassification would further reduce the Chancellor's room for manoeuvre in remaining below the current debt ceiling.

Northern Rock (liabilities up to £100 billion, January 2008)

The Treasury has underwritten a loan from the Bank of England to Northern Rock PLC for around £25 billion. In addition, the Treasury has also guaranteed other creditors – estimated at around £30 billion – to Northern Rock which ensures that savings deposited at Northern Rock remain risk-free from the point of view of savers. If a private sector takeover that was acceptable to the Treasury were to take place of Northern Rock, then it would allow the new owner to issue bonds, the repayment of which (including interest) would be underwritten by the taxpayer, in order to repay in full the loan (and interest) to the Bank of England and also to provide some working capital for the operation of the business.³⁹ The total potential exposure to the taxpayer could remain at around £55 billion (or 4% of national income).

The ONS could decide that the government has sufficient power to control Northern Rock and that it should be treated as part of the public sector in the national accounts. This would be the case were Northern Rock brought into temporary public ownership, which is what the Treasury has said will happen if an acceptable private sector sale is not made. This would bring both Northern Rock's liabilities and its assets (each valued at around £113 billion⁴⁰) onto the public sector balance sheet. The impact on public sector net debt would be to add Northern Rock's liabilities (£113 billion) to net debt less any short-term financial assets (£13 billion) that it held. The net addition of around £100 billion would increase the debt ratio from its current 37.7% of GDP to around 45%. But the impact on net debt would eventually be mitigated by the sale of any of Northern Rock's long-term financial assets. We would therefore expect the long-term impact on net debt – which is what should matter for fiscal policy decisions – to be much less than £100 billion. It might even reduce, rather than increase, net debt.

However, whether or not the ONS decides that the taxpayer guarantees for Northern Rock's borrowing should be included in net debt does not affect in any way the true exposure of taxpayers. Therefore the fact that net debt might well be pushed significantly above 40% of national income should not affect the approach the government takes. The government should

³⁹ Statements from HM Treasury, the Bank of England and the Financial Services Authority regarding Northern Rock can be found at <http://www.bankofengland.co.uk/publications/northernrock/index.htm>.

⁴⁰ <http://companyinfo.northernrock.co.uk/investorRelations/results/stockEx070725.asp>.

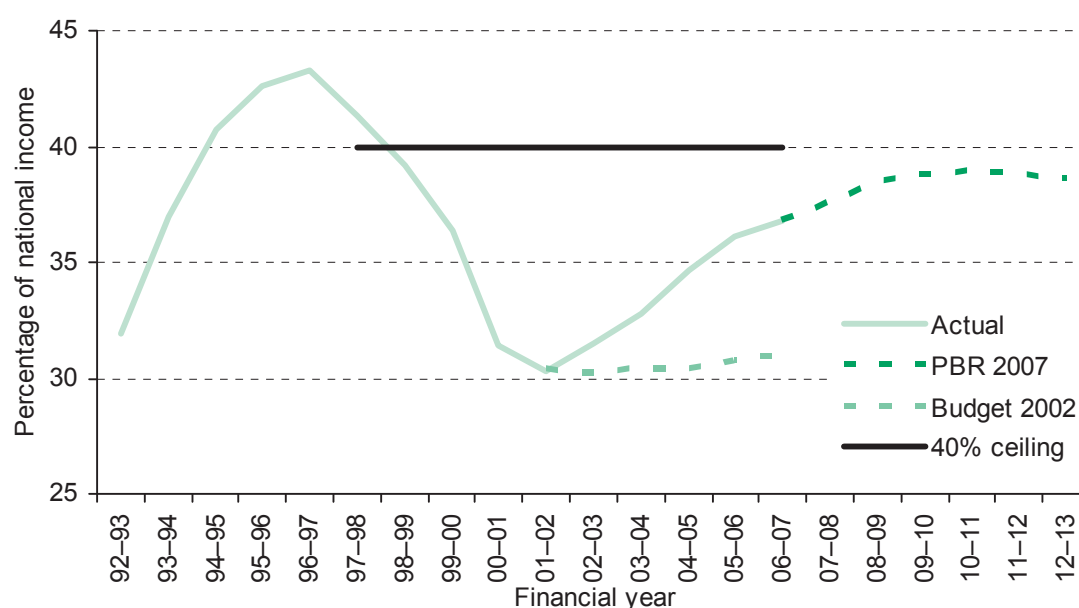
make the right decision for taxpayers and the long-term strength and stability of the banking system.

Regardless of any ONS decision, it would be sensible and desirable for the Treasury to publish measures of borrowing and debt that include and exclude the impact of commitments made to Northern Rock. This would aid analysis of both the underlying position of the public finances (excluding the impact of Northern Rock, which the government believes will be temporary) and the total commitments of taxpayers (including those made to Northern Rock).

The sustainable investment rule in practice

The same errors that have required the Chancellor to increase his forecasts of public sector borrowing repeatedly since 2001 (see Section 3.2) have also required him to increase his forecasts for public sector net debt. As Figure 3.7 shows, this has brought debt much closer to 40% of national income than it was forecast to be back in the Budget of 2002. But the Treasury has only promised to keep the ratio below 40% in every year of the economic cycle that began in 1997–98 and that the Treasury thinks ended in 2006–07. So we do not know yet whether the same will apply during the new cycle.

Figure 3.7. Treasury public sector net debt forecasts



Sources: Various Budgets and Pre-Budget Reports.

Table 3.4. Meeting the sustainable investment rule?

Financial year	Central estimate for net debt in PBR 2007	Probability net debt exceeds 40%
2008–09	38.4%	8%
2009–10	38.8%	33%
2010–11	38.9%	41%
2011–12	38.8%	44%

Note: As Figure 2.10.

Sources: As Figure 2.8.

Applying the probability distribution implied by past Treasury forecasting performance to its central estimate in the Pre-Budget Report (see Section 2.6), we can derive the probabilities that net debt would, on unchanged policies, breach 40% of national income in each of the next four years. These are shown in Table 3.4. Unless the Chancellor relaxes the sustainable investment rule in the next cycle, the Treasury's own forecasting abilities give him a less than 60% chance of sticking to it (without further spending cuts or tax increases) based on past performance. This suggests that the sustainable investment rule may now be more binding than the golden rule.

3.4 Reforming the rules: a golden opportunity?

As Chancellor, Gordon Brown transformed the machinery of macroeconomic policymaking in the UK – by giving the Bank of England control of interest rates in pursuit of an inflation target and by setting himself two high-profile pass/fail tests for fiscal policy in the shape of the golden rule and the sustainable investment rule. The introduction of the independent MPC and the associated reforms to the setting of interest rates are widely regarded as a triumph, while his fiscal reforms are regarded with scepticism at best and cynicism at worst.

Judging from the inflation expectations implicit in gilts prices, Gordon Brown's monetary policy framework has convinced financial market participants that interest rates will be driven by the inflation target rather than by short-term political considerations. When it comes to fiscal policy, we do not have an objective measure of the credibility of the rules analogous to financial market inflation expectations. When government borrowing (and the supply of gilts) is expected to increase, we might expect the yield on government debt to increase as well and fulfil a similar function. But, as discussed in Chapter 4, other factors are at play and the relationship between the amounts industrial country governments borrow and the interest rates they pay has not been particularly close in recent years.

Many economists outside government have little faith in the rules as a decisive factor determining the government's tax and spending decisions. 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'.⁴¹

This probably reflects the belief that Mr Brown 'moved the goalposts' as downward revisions to his public finance forecasts eroded the margin by which he expected to meet the rules after 2001. Suspicions were raised initially when he changed the way in which he calculated the cumulative current budget surplus over the cycle in a way that gave a more flattering picture (although the Treasury claimed that the less flattering method was only a 'shorthand' for use in speeches). The most controversial decision was to add two years, during which there had been on average a net current budget surplus, to the beginning of the economic cycle at precisely the point when it appeared necessary to get the government back on course to meet the golden rule. Mr Brown's decision to delay repeatedly the announcement of a fiscal tightening that most independent observers thought necessary until just after the 2005 election has also suggested that the rules have not depoliticised budget judgements to anything like the

⁴¹ 'Cut spending to reduce borrowing', *Financial Times*, 2 January 2007 (<http://www.ft.com/cms/s/683400d2-9a05-11db-8b6d-0000779e2340.html>).

degree that the monetary policy framework has depoliticised interest rate decisions. The Treasury's current reluctance to say whether the year in which the current economic cycle ends will also be counted as the first in the next cycle (which would be consistent with past practice, but would mean this current cycle beginning with the current budget in deficit by 0.4% of national income) and the fact that it is yet to confirm whether the sustainable investment rule target will remain to keep net debt below 40% in each and every year of the new economic cycle, as it was in the last, risks further accusations of goalpost-moving.

On the face of it, this seems like a lot of fuss over nothing. As we saw in Section 3.2, the golden rule is at best a rule of thumb and there is little direct economic significance if it is met or missed by a few billion pounds either way. It can also be argued that the rules have acted as a constraint on tax and spending decisions – as shown in Figure 2.2, the Spring 2005 Budget contained net tax-raising measures despite being a pre-election Budget, presumably at least in part because (as discussed in Section 3.2) the outlook for the public finances had almost eliminated the margin with which the golden rule was expected to be met.

The reason that these issues have taken on such importance is that from the outset, Mr Brown staked his credibility on achieving the rules exactly, creating conditions in which meeting them by £1 would be a political triumph and missing them by £1 a disaster. This approach did not look very risky four or five years ago, when the rules were expected to be met with tens of billions of pounds to spare. But he fell victim to the characteristic serial correlation of the Treasury's fiscal forecasting errors: things turned out better than expected early in the cycle, and Mr Brown used the proceeds to top up his spending plans; when the forecasts took a turn for the worse, his room for manoeuvre evaporated and time ran out to take countervailing measures. It is between Mr Brown and his conscience whether he actually instructed the Treasury to add two years to the beginning of the cycle primarily because it appeared necessary to meet the golden rule. However, there is a widespread suspicion that he did and that he has preferred to affront fiscal aficionados by moving the goalposts in a way that will be obscure to the general public, rather than read headlines saying the rule has been broken. This suspicion has eroded credibility.

Whatever the reality, if the Treasury sticks with its current dates for the cycle, then the golden rule has been met. This may leave close observers of the fiscal goalposts unimpressed, but the combination of this opportunity to declare 'victory' and Mr Darling's first Budget as Chancellor may be a golden opportunity to tweak the fiscal framework for the better. This could legitimately be presented as adhering to the spirit of Mr Brown's original vision, and indeed could be said to apply lessons learned from the widely hailed success of his monetary policy regime.

If so, what should be done?

- First, it seems reasonable to stick with the golden rule and sustainable investment rule as rules of thumb, but they should be presented as such rather than as an exact science. In relation to the golden rule, Mr Darling might ponder a more sophisticated distinction between spending that does and does not benefit future taxpayers, but the benefits of abandoning the familiar National Accounts distinction between current and capital spending may well not exceed the costs in terms of transparency and predictability. In relation to the sustainable investment rule, it may be worthwhile rethinking the treatment of public sector pension liabilities, using the introduction of Whole of Government

Accounts to widen the range of obligations to which the sustainable investment rule applies. It may also be worthwhile to require today's taxpayers to finance the difference between the future costs of public sector pension commitments that arise simply because they wish to consume greater public services today and the public sector pensions being paid by today's taxpayers for services delivered to previous generations. A difficulty arises from the uncertainty around these commitments. To the extent to which these arise as a result of changes in the assumed discount rate, then, as noted in Section 3.3, this could be set to be equal to expected growth in national income, which might be both more appropriate and more stable than the current method of using particular market rates of return. This might still require either the debt ceiling to be changed or an appropriate period of adjustment to be allowed, were significant information to come to light such as revisions to longevity assumptions. This flexibility would then potentially come at the cost of transparency.

- Second, like the inflation target, the golden rule should be made symmetric, requiring the government to pursue a point target for the current budget balance rather than 'balance or surplus'. Symmetry seems a more appropriate way to pursue intergenerational fairness, and it also avoids the problem of the Chancellor needing to decide – implicitly or explicitly – what safety margin to aim for to give an acceptable probability of falling the right side of the pass/fail line.
- Third, the Treasury should present its forecasts for the fiscal aggregates in such a way that they explicitly quantify the uncertainties around the central estimate – for example, with a 'fan chart' similar to that which the Bank places around its inflation target. The baseline forecast should also be a genuinely 'central' forecast, rather than one based on 'cautious' economic assumptions that inject deliberate bias.
- Fourth, the Treasury should no longer seek to meet the golden rule over a specific dated economic cycle. Instead, it should say that it is aiming for a target level for the total or cyclically adjusted current budget balance over an appropriate time horizon. (The former has the added attraction of avoiding the need to calculate an estimate of the output gap, which may be suspected of political manipulation.) It can be argued that the Treasury has in effect been doing this implicitly in recent years, with a rolling target (now being missed) to achieve a current budget surplus of around $\frac{3}{4}\%$ of national income after five years.

One problem with operationalising such an approach is that the Treasury's forecasts for tax revenue typically include an automatic tightening of around $\frac{3}{4}\%$ of national income over a five-year time horizon as a result of 'fiscal drag'. This means that the government could run a current budget deficit every year of $\frac{3}{4}\%$ of national income, by giving away the proceeds of fiscal drag in tax cuts or higher spending each year, and assert that it is on course to achieve a current budget balance in five years' time on 'unchanged policies'. This strengthens the case, which is already strong on transparency grounds, for changing the definition of unchanged policy to one in which income tax and National Insurance thresholds are assumed to rise in line with average earnings (or alternatively the projected growth in their underlying tax base) rather than prices. A similar, but quantitatively less important, case could be made for other taxes (such as stamp duty land tax and inheritance tax) in which the tax base is expected to grow in real terms over time.

Successive Chancellors have found it convenient to exploit fiscal drag as a ‘stealth tax’, so such a change is unlikely to find favour with the Treasury.

The use of a fixed, dated cycle means that policy is unnecessarily and unhelpfully backward-looking, with tax and spending decisions today in principle depending on past policy and forecast errors and on changing assessments of the start date of the cycle, rather than on the most appropriate path looking forward. It is also worth bearing in mind that Mr Brown’s Chancellorship was unusually long: he and Dennis Healey were the only Chancellors in the last half a century to have served for a full economic cycle.

- Fifth, if possible, an independent body or bodies should be given access to the same information on the evolution of spending and tax revenues that the Treasury receives to make forecasts of fiscal aggregates. The Treasury has long argued that this would be impossible, and there are certainly serious legal issues of taxpayer confidentiality that would need to be addressed. However, it would be helpful for the Treasury or for the Treasury Select Committee to ask former senior officials of the Treasury and HM Revenue & Customs to assess independently whether this would be possible and how it might be achieved. One model would be for an official forecasting body to be responsible to Parliament rather than to Ministers. The Treasury might even agree to abide by the net fiscal policy adjustment recommended by this body to achieve the fiscal targets that would appropriately still be set by the government.

The argument is not that reforms of this sort would necessarily produce more accurate forecasts, but that it would reassure voters and investors that the forecasts were not being massaged to delay politically inconvenient policy adjustments. This would also leave the choice of individual tax and spending decisions – and the political trade-offs they involve – with Ministers, where they belong. At the very least, the Treasury could continue to enhance transparency further by publishing a more in-depth explanation of the assumptions that underpin its revenue and spending projections.

4. The economic outlook

David Miles, with Melanie Baker and Vladimir Pillonca (Morgan Stanley)

Summary

- The economic outlook for the next few years is worse than it has been for some time. Our central forecast is that there will be a moderate slowdown in the UK economy over the coming fiscal year followed by a rather weak recovery in 2009. This implies two years of growth below the economy's long-run trend rate.
- We expect weaker consumer spending for the next few years as the incentives to save increase and the availability and price of credit make borrowing less easy.
- Although we expect slower domestic demand growth in the next year or so, growth is also likely to slow in the economies of the UK's major trading partners (particularly the euro area and the US). Without a very sharp depreciation in sterling, net trade is not likely to boost growth in the UK.
- This forecast for the UK economy differs somewhat from that of the Treasury. In particular, we forecast somewhat weaker GDP growth than the Treasury in fiscal years 2008–09 and 2009–10. Thereafter, we actually project slightly stronger growth than the Treasury does.

4.1 Introduction

The near-term outlook for the UK economy has clearly worsened over the past year, particularly since the financial market turmoil that began in August. But underlying factors had already made weaker consumer spending and a rebalancing of the economy towards higher saving both desirable and likely. Along with the Treasury and the Bank of England, we see a soft patch for the UK economy this year – and we think it could extend some way into 2009. That said, longer-term fundamentals continue to look relatively sound. Productivity and labour force growth seem likely to sustain trend growth of close to 2½% per year. The credible framework, and conduct, of monetary policy are also likely to ensure that inflation expectations do not drift far from the inflation target.

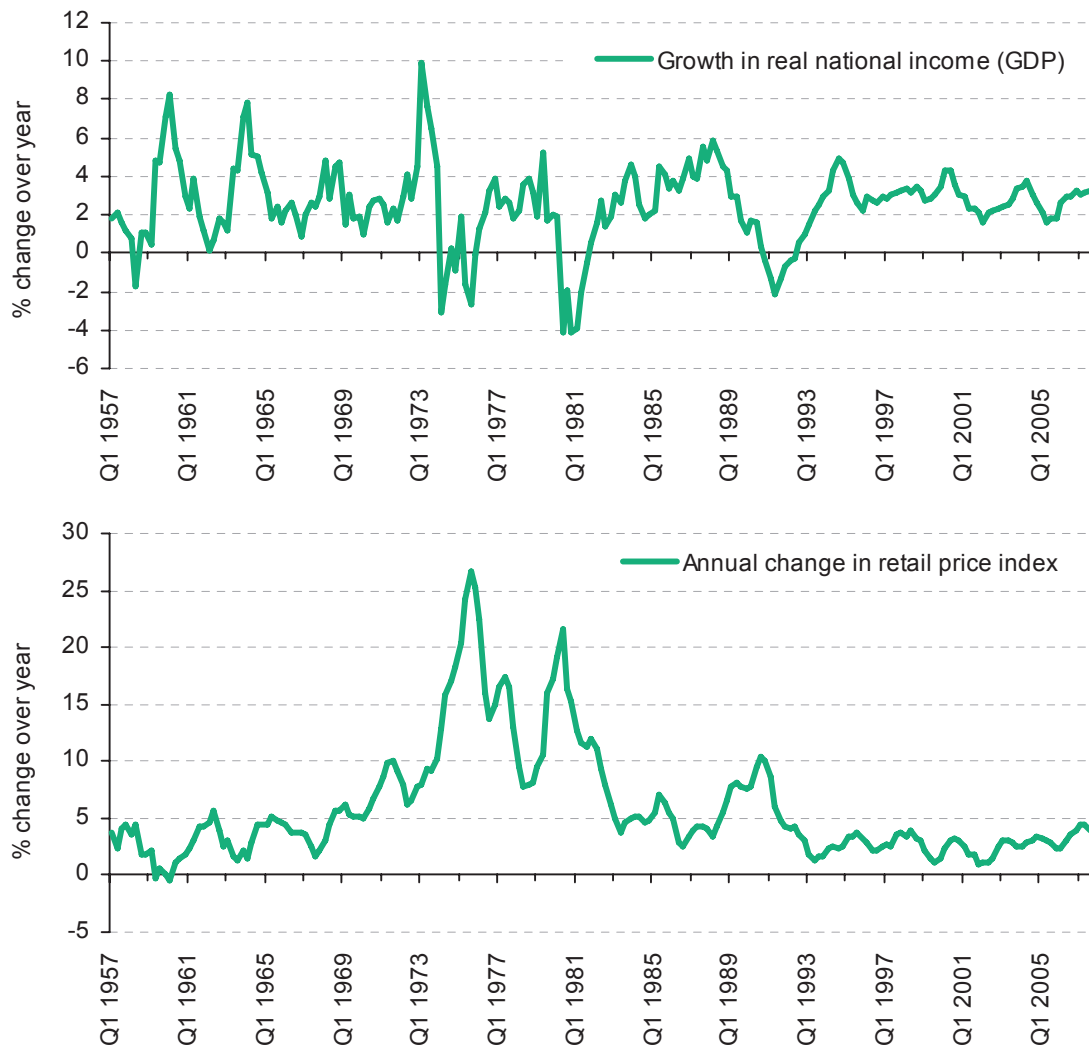
Section 4.2 discusses recent developments and the short-term outlook for the economy. Section 4.3 assesses the longer-term trend growth rate of the economy and asks what this implies about the shape of the economic cycle. Section 4.4 brings together our assessment of the short-term outlook and medium-term potential and presents both a central and a more pessimistic scenario for the economy over the next five years. We discuss the outlook for the public finances and debt issuance under these scenarios in Chapters 5 and 6 respectively.

4.2 Recent developments and near-term outlook

Introduction

The UK's economic performance under Labour continues to look remarkably stable by the standards of the past 50 years. Volatility in economic activity and inflation has been exceptionally low over the past 10 years (Figure 4.1). However, this may have helped sow the seeds for a more volatile period ahead. Less fear of sharp gyrations in the economy may well have contributed to the very rapid rise in household debt and perhaps also the government's willingness to run budget deficits on a scale not normally associated with periods of extended economic growth. As a result, the UK economy may now be less able to weather an economic shock than it was a few years ago, particularly one that adversely affects the labour market. Crucial to any such assessment are the extent of spare capacity in the economy and the likely rate of growth of productive potential. These are issues we address in Section 4.3.

Figure 4.1. Economic growth and inflation since 1957



Source: ONS.

For the last year or so, economic growth in the UK has been strong – quarterly output growth over the past year has been consistently at or above trend. But, even before the financial market turmoil that began at the end of last summer, and the subsequent tightening of credit conditions, several factors suggested that the UK economy was very likely to slow. The Bank of England had raised interest rates by a cumulative 1.25 percentage points since July 2006 and the impact of these rate rises is yet fully to work its way through. The UK's housing market looked increasingly vulnerable to a correction – possibly a sharp one. Aggregate real disposable income for households has been stagnant and, in aggregate, UK households had been spending almost all their disposable income in recent quarters – saving is very low.

Our central forecast for calendar year 2008 GDP growth (1.8% after a likely 3.0% in 2007) is a long way short of an outright contraction, but we see risks to our forecasts as skewed to the downside. Strong annual effects also mask the size of the slowdown: in the first three quarters of 2007, average quarter-on-quarter annualised GDP growth was 3.1%; in the following three quarters, we predict growth of only 1.3%. Our central forecast of 1.8% growth in 2008 is slightly below the bottom end of the Treasury's range of 2 to 2½% (the bottom end of the range is effectively used in the Treasury's fiscal projections).

Now that credit conditions have tightened, it seems very unlikely that they will revert back to their pre-August-2007 levels in 2008. We expect 2008 to be characterised by tighter bank lending criteria, slower lending growth and wider secured lending spreads compared with 2007 (see Box 4.1). Tighter credit conditions have also made further falls in house prices and housing transactions likely. Derivative contracts written on the national house price index (HBOS measure) are consistent with around a 7–8% fall in nominal house prices in 2008. This would represent a fall of around 10% in real terms. Further, the UK's main trading partners now look set for slower growth next year, dampening the outlook for UK exports unless sterling depreciates significantly. Expectations of slower global growth in 2008 are also likely to dampen business investment.

The Treasury's own view is not dissimilar to our own: past interest rate rises are expected to slow growth in 2008, while tighter credit conditions are assumed to feed through into household and company spending. The main differences are rather in the skew of risk – our central case is marginally below the bottom of the Treasury's range of forecasts and we see risks as skewed to the downside around our central forecast. Further, we do not expect as sharp a rebound in growth in 2009 as the Treasury does. We see a degree of persistence in many of the factors driving growth slower in 2008, in particular higher household saving and more cautious lending practices.

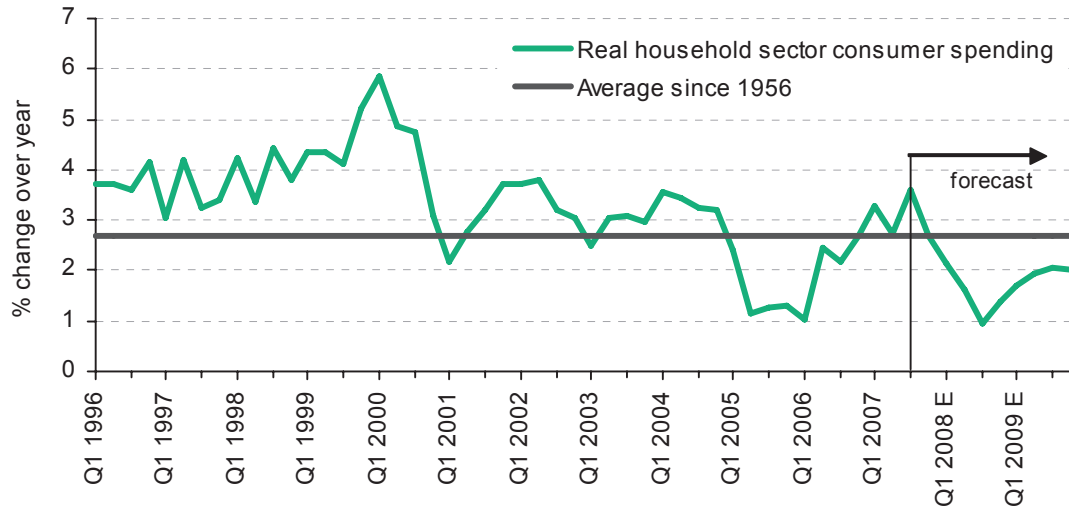
The big unknown is how long tight conditions in credit markets are likely to persist. In particular, if mortgage lending is not to fall sharply in 2008, the market for issuing mortgage-backed securities needs to re-open fairly soon.

Consumer spending

We expect consumer spending growth to slow significantly in calendar year 2008 (Figure 4.2). Our central forecast is for 1.5% real consumer spending growth after around 3.1% in 2007 and we expect consumer spending growth to remain below par in 2009. Debt levels and debt service costs are already high. Many households will find their finances under increased

strain as fixed-rate mortgages reset during tighter lending conditions. Slower housing market activity is likely to imply fewer purchases of durable goods often associated with a home move (e.g. washing machines, carpets, furniture). Lower house prices also deplete the collateral households have available to borrow against. The household saving rate is likely to rise as consumer spending slows.

Figure 4.2. Real consumer spending growth

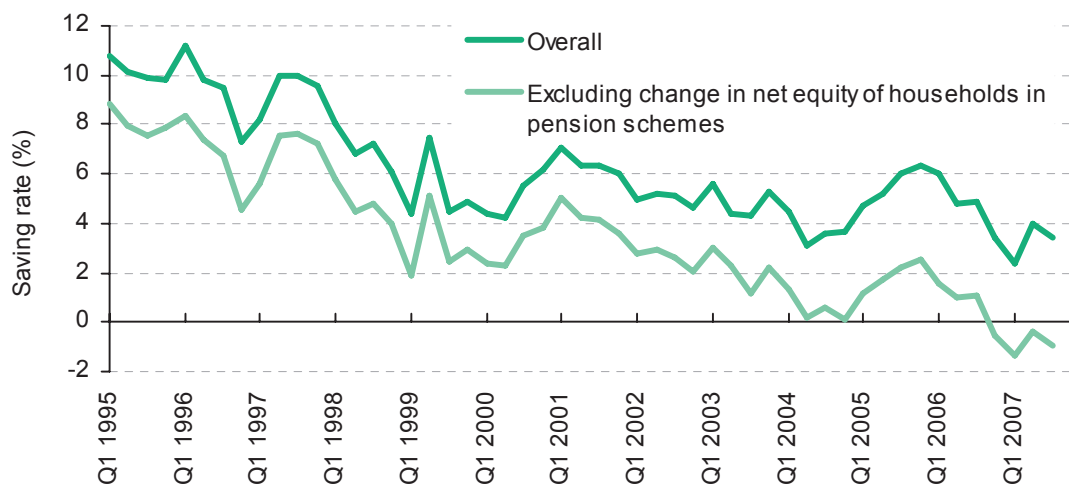


Sources: ONS; Morgan Stanley Research. E = Morgan Stanley Research forecast.

Household saving rate

The household saving rate has remained at relatively low levels. Excluding contributions made on behalf of households to company pension schemes, the saving rate is now negative for the first time since 1989 (Figure 4.3). Such a low saving rate is unsustainable in our view. We expect the household saving rate to move gradually higher as three recent forces come to have an impact on household spending and saving decisions: more expensive and less readily available credit; higher interest rates offered on savings; and a less benign economic outlook.

Figure 4.3. Saving rate

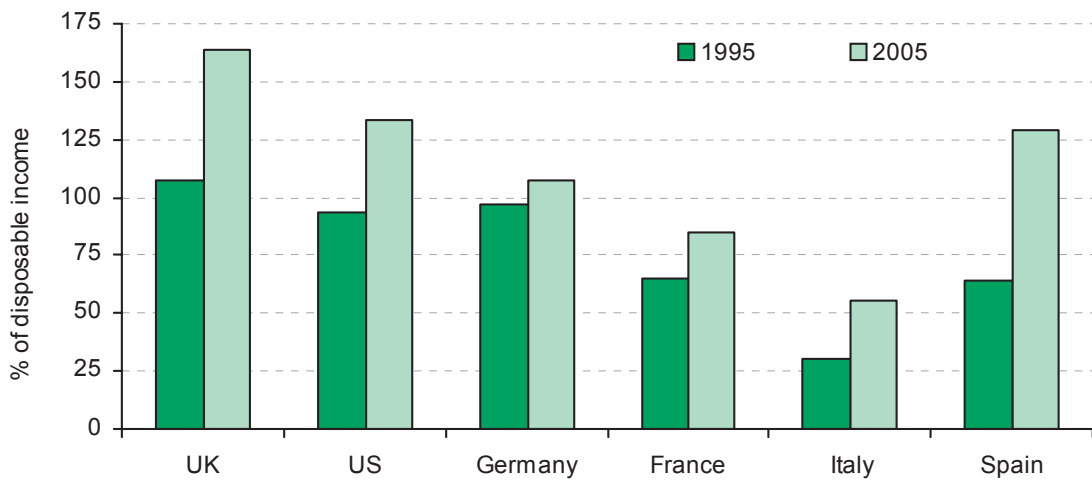


Sources: ONS; Morgan Stanley Research.

Household balance sheets

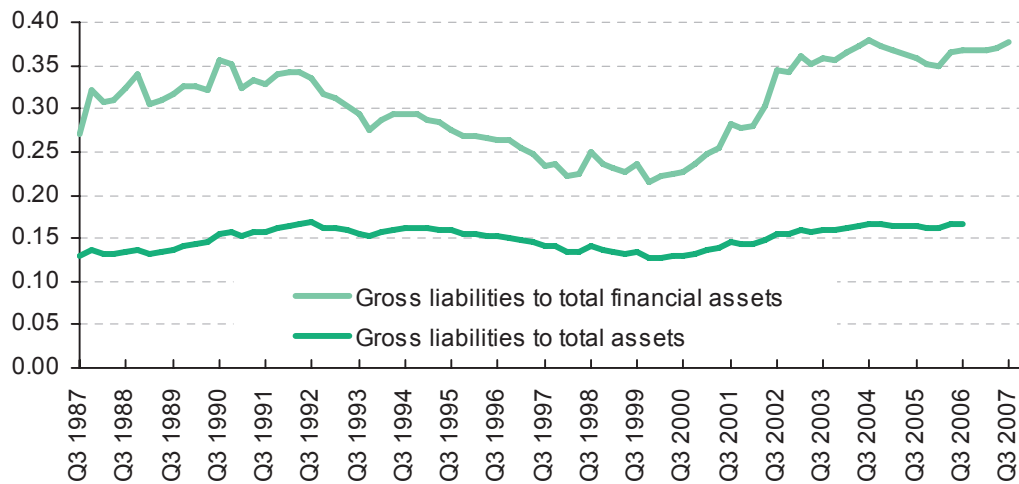
Household sector liabilities are overwhelmingly in the form of loans (largely secured loans), the biggest chunk of which is owed to banks. Overall household sector financial liabilities amount to some £1.5 trillion or around £60,000 per household. Income gearing (the ratio of household sector liabilities to disposable income) looks extended at around 175% (Figure 4.4). The more highly geared households are, the more sensitive household expenditure is likely to be to shocks in actual and expected interest rates. What happens to secured loan rates is particularly important for mortgage holders. Given the 1.25 percentage point cumulative rise in base rates seen before the financial turmoil of the summer, many households face tighter credit conditions. High household gearing increases the risk of significantly lower consumer spending growth in 2008 and beyond.

Figure 4.4. Household gross financial liabilities



Sources: Eurostat; Federal Reserve; BEA; Morgan Stanley Research.

Figure 4.5. Household capital gearing: increased debt and assets



Note: Total assets uses interpolated non-financial assets series.
Source: ONS.

However, both sides of the aggregate household balance sheet have expanded. Net worth (fixed and financial assets less financial liabilities) has risen substantially as a percentage of income. Of course, some of these gearing ratios look relatively healthy because we effectively offset the build-up in secured debt with the rising value of the housing asset purchased with the debt. However, even looking at the ratio of gross liabilities just to financial assets, gearing appears to have stabilised (albeit at a higher level than the historical average) thanks to the continued build-up of cash assets (Figure 4.5). But there is overwhelming evidence that financial assets and liabilities are very unequally distributed. There are substantial pockets of vulnerability in the UK household sector disguised by the aggregate balance sheet statistics. HMRC data, for example, suggest that net liquid assets (stocks, bonds, cash and other savings) tend to be higher for retirees, who also typically have the lowest debts (Table 4.1).

Table 4.1. Individual wealth distribution, 2003

Average £s per person	Age		
	18–44	45–64	65+
Assets			
Securities	11,728	13,823	27,969
Cash	13,918	22,133	34,094
Loans, mortgages etc.	3,870	3,207	1,479
Policies of insurance	30,299	20,060	5,717
Residential buildings	76,437	86,454	87,050
Other buildings and land	3,527	4,353	5,223
Total gross capital value	153,893	175,195	174,871
Liabilities			
Mortgages	16,581	6,216	1,658
Other debts	22,222	10,635	2,892
Total net capital value	115,090	158,344	170,321

Notes: Data use net capital value of estate data from HMRC on year-of-death basis. They take the total amount in each asset/liability category divided by the total number of estates in each age bracket (where HMRC uses the estate multiplier method to estimate the wealth of the living by regarding those who die in a year as a sample of the total population). Note that these figures can be volatile and 'influenced by the deaths of a few wealthy people, especially if they are young'.

Sources: HMRC; Morgan Stanley Research.

Household borrowing and disposable income

The household aggregate ratio of interest paid to disposable income is not exceptionally high, but has nevertheless crept steadily higher since 2003 and leaves households increasingly vulnerable to shocks. The debt-servicing ratio (including principal payments on secured debt) is at more worrying levels. Adjusting for mortgage interest tax relief, the debt service ratio calculated on this aggregate household basis is at similar levels to the peak of the recession of the early 1990s (Figure 4.6).

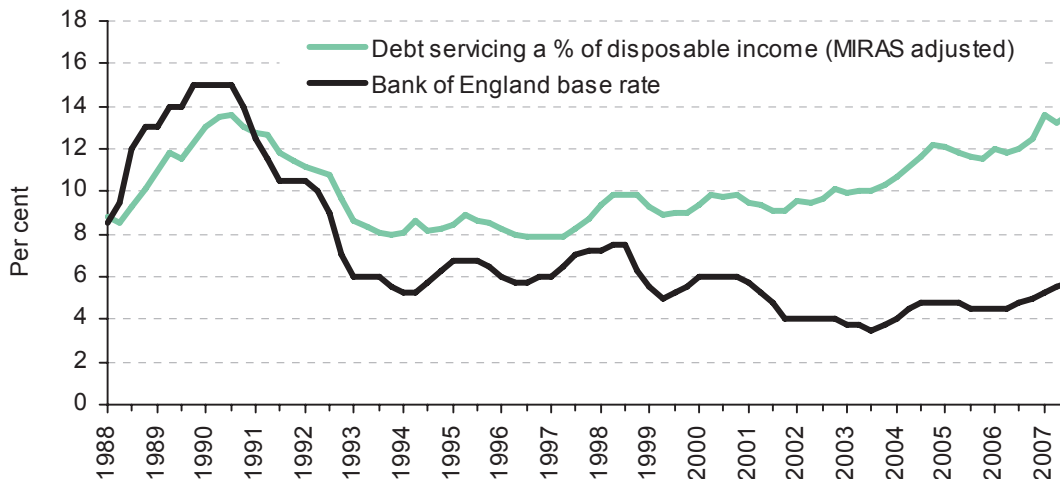
A number of factors are likely to be adding to pressures on households' budgets, in particular:

- **Mortgage resets:** Over Q4 2007 and throughout 2008, a substantial number of fixed-rate mortgages are due to expire. Between Q4 2005 and end-2006, 1.9 million fixed-rate mortgages were taken out in the UK. The vast majority have fixed-rate terms of between two and five years and a lot of these will have been two-year fixed-rate mortgages. If we assume 75% are two-year fixed-rate mortgages, then the fixed term on around 1.4 million

fixed-rate mortgages will expire between Q4 2007 and end-2008 (affecting around 6% of all UK households assuming relatively few households have multiple mortgages). The average rate paid on fixed-rate mortgages taken out in 2005 and 2006 was about 5.1%. Average quoted mortgage rates for two-year fixed-rate mortgages at end-December were 6.1% for loan-to-value ratios of 75% and 6.5% for loan-to-value ratios of 95%. So, on average, those hoping to move onto another two-year fixed-rate mortgage would currently be facing around a 1 percentage point increase in the interest rate charged on their mortgage. Many households, particularly those borrowers categorised as sub-prime (i.e. relatively poor credit risks), who are currently rolling off two-year fixed-rate deals are likely to be facing much steeper increases in payments. The Bank of England's own calculations suggested an increase more in the order of 2 percentage points.¹

- Disposable income growth** (Figure 4.7): Real gross household disposable income growth (which is measured post interest payments) has been slow in 2007, growing only 1.0% year-on-year in the first three quarters of 2007 (compared with 3.2% growth in real household consumer spending). Most consumers make some efforts to smooth their spending over time such that movements in income do not feed through one-to-one into spending. However, analysis suggests that for about 15% of UK households, current spending equals current income.² Further, to the extent that credit conditions have tightened, smoothing of expenditure becomes harder / more expensive to do for those who might wish to spend more than their current income.

Figure 4.6. Debt servicing and interest rates



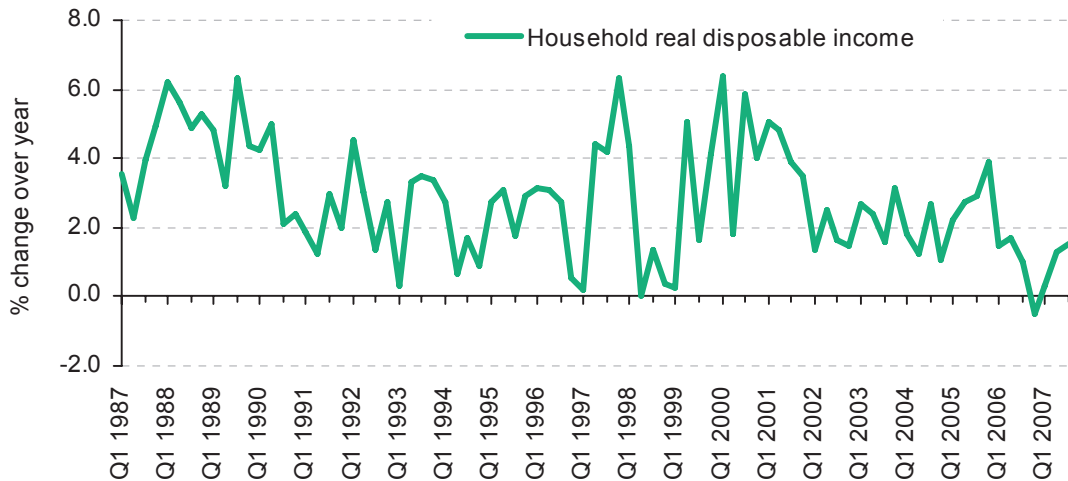
Notes: Debt servicing is interest payments by households and regular payment of mortgage principal. MIRAS is mortgage interest tax relief (phased out during the 1990s).

Sources: Bank of England; ONS; Inland Revenue; Morgan Stanley Research.

¹ Bank of England, *Financial Stability Report*, Issue 22, 25 October 2007 (<http://www.bankofengland.co.uk/publications/fsr/2007/fsr22.htm>).

² R. Banerjee and N. Batini, 'UK consumers' habits', External MPC Unit Discussion Paper 13, Bank of England, May 2003 (<http://www.bankofengland.co.uk/publications/externalmpcpapers/extmpcpaper0013.pdf>).

Figure 4.7. Sluggish real disposable income growth

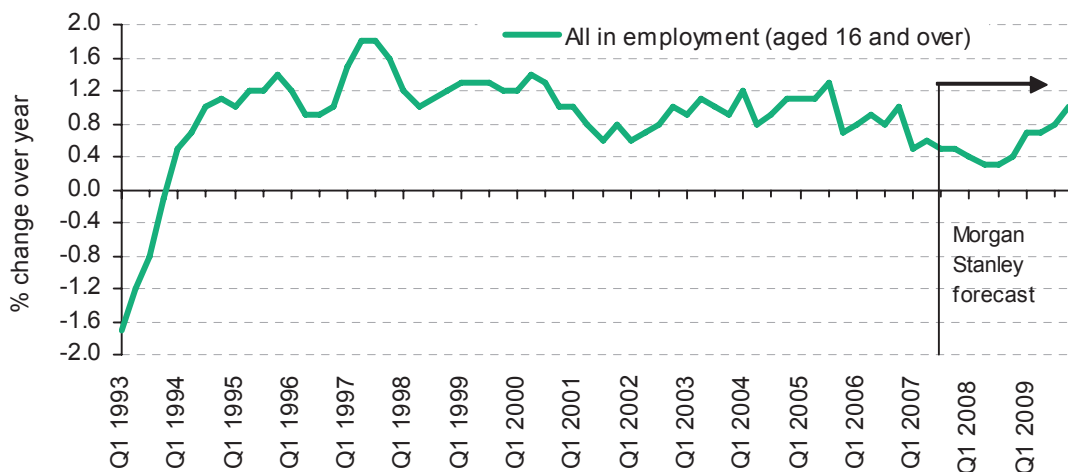


Source: ONS.

Employment and wages

Employment growth (Figure 4.8) and wage growth seem unlikely to offset other pressures for slower consumer spending growth. In an environment of slower output growth, employment growth is likely to be sluggish and unemployment will likely rise slightly. The public sector has, on balance, shed jobs over 2006 and the first half of 2007. While, over the same period, the ‘financial intermediation’ sector has seen very little growth in jobs, real estate has accounted for about a quarter of the net jobs generated and business services just under a half. Growth, and therefore hiring, in the financial services and real estate sectors now look vulnerable, particularly if tight credit conditions persist well into 2008. With profit growth likely to be weaker than in recent years, business services hiring could also prove vulnerable.

Figure 4.8. Employment growth



Sources: ONS; Morgan Stanley Research.

In an environment of sluggish employment growth and rising unemployment, wage settlements in the private sector are unlikely to pick up sharply. The relatively tight settlement for public spending departments announced in the Comprehensive Spending Review has also

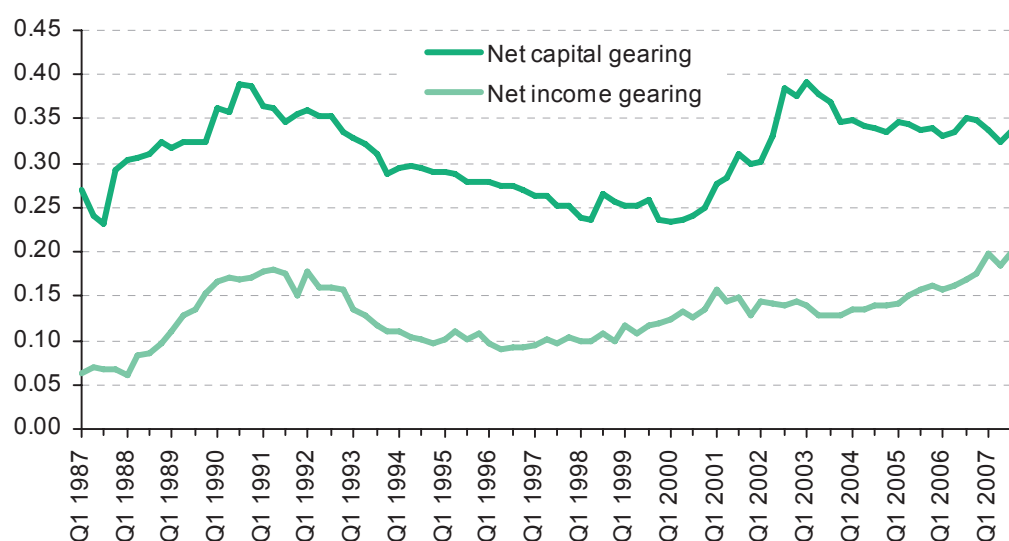
led to the government attempting to slow pay growth in the public sector (see Chapter 8 for more details).

Investment

Our central forecast is for real fixed investment spending growth to slow to about 3% in 2008 after an increase of around 6% in 2007. Within that, we expect residential investment growth to slow in both 2008 and 2009.

Investment seems likely to be depressed by the tightening in credit conditions. The cost of capital has risen slightly over the past year for non-financial companies and the Bank of England has reported tighter credit availability for corporates. Although non-financial companies in the UK can, in aggregate, fund 100% of their fixed investment from retained earnings, they would need to borrow in order to undertake direct investment / mergers & acquisitions and to continue to build up cash assets. Corporate income gearing has risen in recent years (Figure 4.9). Net interest payments as a percentage of gross operating surpluses are now at very similar levels to peaks in the late 1980s / early 1990s (right around the time the UK tipped into recession and when nominal interest rates were a great deal higher than they are now).

Figure 4.9. Private non-financial corporate gearing (ratios)



Notes: Net capital gearing measure: [non-equity financial liabilities less liquid assets (we use currency and deposits plus money market instruments plus bonds)] divided by [numerator plus 'shares and other equity']. Our net income gearing measure: net interest paid / gross operating surplus.

Sources: ONS; Morgan Stanley Research.

UK firms appear to have relatively strong balance sheets and are shielded to some extent by the recent robust growth of aggregate retained income and healthy levels of profitability. Corporate sector holdings of cash are large (around £660 billion in Q3 2007). However, the Bank of England, in its October 2007 *Financial Stability Report*, suggests that although most of the UK corporate sector is in a healthy financial position, 'profit growth and rising liquidity buffers have been concentrated in firms that were already strong'. Further, 'the proportion of

corporate debt held by firms whose profits were not large enough to cover their debt interest payments has started to rise again'.³

The buildings and structures component of investment (just under 40% of total investment) may be particularly vulnerable. The commercial property sector is capital-intensive and looks particularly likely to be affected by reduced availability of credit. Morgan Stanley analysts expect commercial property capital values to fall 12.5% in 2008. Residential investment also seems likely to slow as the housing market cools.

Beyond credit conditions, however, other factors also have an impact on firms' investment decisions, not least including uncertainty and the global growth outlook. Uncertainty on the outlook is very likely to have increased in the past six months and growth in both the US and the euro area (two of the UK's main trading partners) seems likely to slow in 2008.

Monetary policy

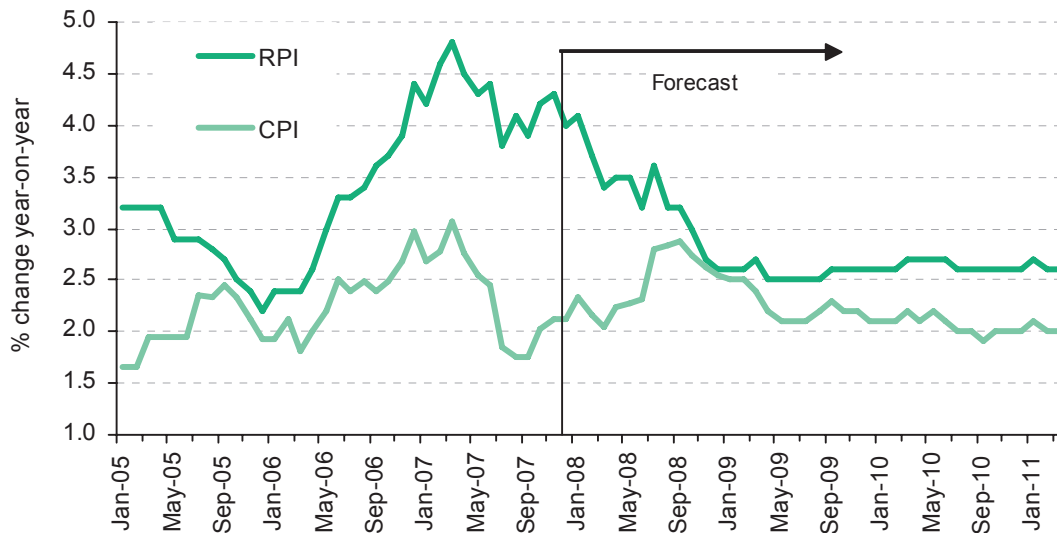
We consider base rates of around 5.25% to be roughly 'neutral' in the UK – that is, at a level such that if capacity utilisation is sustainable, and growth at its trend level, inflation would settle at around the target level (2% consumer price index (CPI) inflation). In reaching that judgement, we use a five-equation model that allows us to determine the long-run steady-state levels for key macroeconomic variables. Part of this model incorporates a Bank of England reaction function such that short-term interest rates are consistent with a path for inflation that stabilises around the target. With inflation at target, this steady state has base rates at a 'neutral' level of just over 5.25%.

If this assessment is about right, then rates are now at, or marginally above, a neutral level and so the Bank of England has plenty of 'monetary policy ammunition' available in the event of a very serious downturn in the UK economy.

While risks to economic growth look skewed to the downside, risks to inflation look more symmetric. There are significant risks in both directions for CPI inflation from current levels. Food and energy prices (9% and 7% of the bundle of goods used to calculate total CPI respectively) are likely to rise further in the next few months. However, we forecast slower economic growth, rising unemployment and relatively subdued wage growth – so domestically-generated inflation pressures seem likely to weaken. On balance, we think that CPI inflation will remain close to, but generally above, the Bank of England's 2.0% target during 2008. There is a key difference between changes in the level of relative prices and ongoing inflation pressures. For example, in the case of food it matters whether what we are seeing is a relatively brief adjustment of the price of food to a new equilibrium, or whether upward price pressure is likely to persist. In the case of the former, after 12 months (assuming no second-round effects), higher food prices would then drop out of the year-on-year price-level comparison and leave inflation back where it was, all else equal. Evidence seems to be building that upward pressure on inflation from food pricing may be more persistent than this.

³ Page 27 of Bank of England, *Financial Stability Report*, Issue 22, 25 October 2007 (<http://www.bankofengland.co.uk/publications/fsr/2007/fsr22.htm>).

Figure 4.10. Our central inflation forecasts

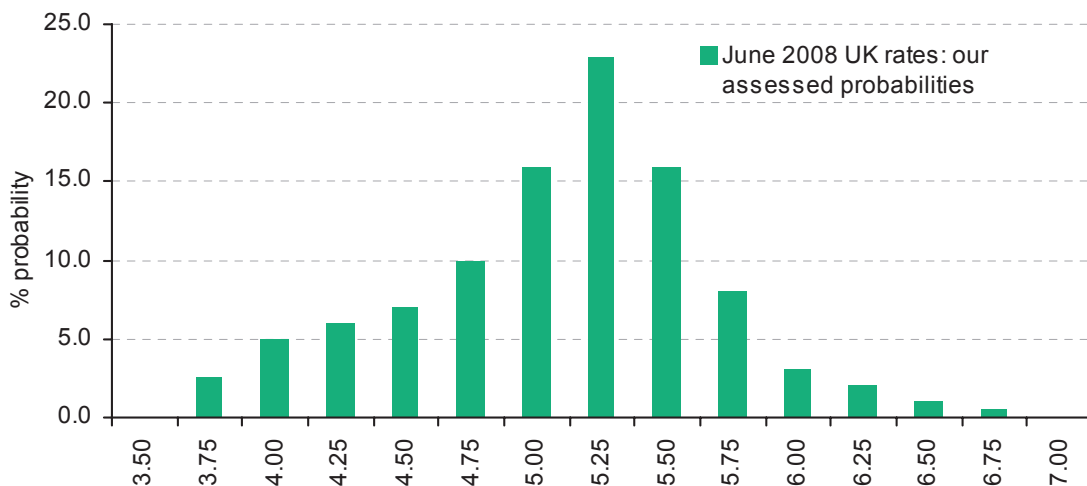


Sources: ONS; Morgan Stanley Research estimates.

Overall, with slower growth in domestic demand offsetting the impact of inflation pressures coming from higher materials prices, we see some – rather limited – scope for the Bank of England to cut rates.

Our own, long-held, view is that the single most likely outcome is that the Bank will want to reduce rates to a neutral level quickly (from their current level of 5.5%). If growth slows significantly in 2008 to slightly under 2% – but with inflation likely to be above target for much of the year – the Bank may well feel disinclined to cut rates below 5.25%, at least so long as the growth prospects for 2009 seem even marginally brighter. Around that scenario the risks are not symmetric though. We believe the chances of a much sharper downturn in the UK are significant such that the probability of rates falling further than 5.25% by the middle of 2008 (which we think is close to 50%) is greater than the probability of being above 5.25% (which we see at near to 30%). See Figure 4.11, where we illustrate our subjective assessment of the probability distribution of the policy rate in June 2008.

Figure 4.11. Subjective probability distribution: June 2008 policy interest rate



Source: Morgan Stanley Research estimates

Box 4.1. The cost of credit and capital

Three-month LIBOR relative to the policy rate: In normal times, the risk premium of the 3M LIBOR over the base rate would be expected to be relatively small. But, over the last five months of 2007, the risk premium rose very substantially. Adjusting for expectations of rate changes suggests that this premium was well over 1 percentage point by the beginning of December 2007, but fell back sharply in January. 3M LIBOR is an important benchmark rate for interest rate markets. Some lending is directly linked to that rate, but it is also used to price swaps, for example.

Mortgage pricing: Between end-2006 and end-2007, the quoted rate on a two-year fixed-rate mortgage (with a 75% loan-to-value ratio) rose by almost 1 percentage point. Over the same period, the base rate had risen by only 0.5 percentage points (after the December 2007 rate cut). Even the average quoted rate for a base-rate tracker rose by slightly more than the base rate (0.66 percentage points) over the period.

Cost of capital for companies: In contrast to households, the cost of capital to companies may have risen very little. The cost of using equity (and retained earnings) to fund investment has effectively fallen, if we assume that the cost of equity is equal to a 'safe' government bond yield plus a steady equity risk premium (government bond yields have fallen significantly). We estimate that the weighted average cost of capital has only risen by around 0.3 percentage points since the end of 2006.

Potential impact on spending and investment: We estimate that the cost of funding for households has risen by more than the cost of capital for (non-financial) corporates. Further, we think that the elasticity of household spending to changes in household interest rates is likely greater than the elasticity of corporate fixed investment with respect to changes in the cost of capital. In other words, consumer spending is likely to be directly hit harder than investment by the changes we have seen in financial conditions.

Our ballpark estimate of the impact on business fixed investment from a given increase in the real cost of capital is that it reduces the level of investment by around 40% of that rise in the long run, based on estimates of the substitutability of capital and labour. We estimate that the cost of capital to companies has increased by around 0.3 percentage points, so that the impact is likely to be, all else equal, around 0.1% off corporate fixed investment.

On consumer spending, Benito et al. (2007)^a describe an overlapping-generations model with different levels of household debt. In response to an unexpected 1 percentage point increase in real interest rates, with balance sheets as they were in 2005, they estimate that consumer spending falls in the first period (first year) by 2%. Even after four years, the level of consumer spending is still 1.0% or so lower in their model. Based on that estimate, given an increase in the cost of funds for consumer spending of around 0.7%, we would expect a decline of up to 1.4%, all else equal.

^a A. Benito, M. Waldron, G. Young and F. Zampolli, 'The role of household debt and balance sheets in the monetary transmission mechanism', *Bank of England Quarterly Bulletin*, 2007, Q1: 70–8.

Bank of England monetary policy, however, has become much harder to operate under recent financial market conditions. Few households and companies explicitly pay or receive the base rate. What matter to households and companies are the rates they actually pay and receive. In normal times, the spread between the base rate and the rates they pay and receive should remain relatively constant, but it has become a great deal more volatile since the summer of 2007. This affects the transmission of monetary policy. If, for example, the Bank of England cuts rates but the spread between average mortgage rates and the base rate widens, then households could – as many have done – find themselves making higher mortgage payments, rather than lower. For more details, see Box 4.1.

Banks partly rely on the wholesale debt markets (the capital markets) in order to finance new lending – retail deposits have been insufficient. While it remains expensive (due to relatively high inter-bank rates) and difficult (due to very low demand for mortgage-backed securities) to access the capital markets for funds, the spread of lending and deposit rates is likely to remain rather high relative to base rates. With banks needing to fall back on retail deposits, they are likely to compete hard for savings deposits. Banks also need to preserve liquidity while access to capital markets remains difficult. This is partly why we see the balance of risks to growth and to monetary policy in 2008 as clearly skewed to the downside from our central forecast of neutral rates (5.25%).

In addition to this general overview of near-term risks to the UK outlook, two specific areas of the UK economy warrant special attention – the financial sector and housing. These are important parts of the economy with potentially significant implications for UK economic growth. Events in financial markets since last summer also have a particular bearing on these two areas of the economy.

The financial sector

The fallout from recent turmoil in financial markets is likely to dampen aggregate output growth in the financial services sector. Lending to households will likely be lower; securitisations are running at very low levels; and leveraged buy-outs will be hit.

But just how important is the financial sector to the UK economy? Of course, a functioning financial system is essential for the smooth working of the economy – and so the scope for disruption to the flow of funds between companies and households to have a knock-on impact on general economic activity is immense. But the direct impact of financial sector output on total output and employment is a somewhat different consideration.

The financial sector is important for national output. Financial intermediation accounts for nearly 10% of total gross value added. In 2006, it accounted for approximately a quarter of growth in total value added.

Financial intermediation accounts for only 4% (1.1 million) of employee jobs in the UK, while manufacturing still accounts for 11%. Financial intermediation has also accounted for very little of the net job creation seen over the past couple of years. However, ‘financial intermediation’ will not include everything we might consider to be a financial service. Employment figures may also underestimate the importance of this group of employees to consumer spending in the economy: in 2006, median full-time employee weekly earnings in financial intermediation were 120% of the median for all full-time employees (£537

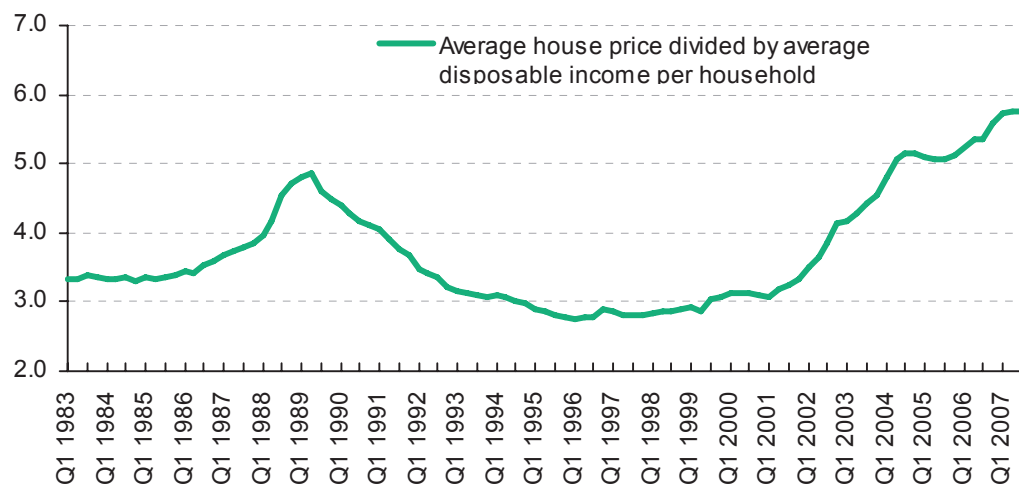
compared with £447). Growth in median financial intermediation earnings was also faster than growth in the overall median.

Housing

Several of the house price series are now consistent with house prices being flat or falling across much of the country; mortgage approvals and net mortgage lending is significantly lower than a few months ago. Survey data suggest that newly agreed sales and new buyer enquiries are weaker than during the first half of 2007.

Even before the summer, the balance of risks already seemed firmly in the direction of slower housing market activity and lower prices. Simple measures of housing valuation and affordability have looked stretched for some time, and they continue to do so. Most strikingly, the average house price is now nearly six times average disposable income, up from around three times in the mid-1990s and five times at the peak of the housing boom of the late 1980s (Figure 4.12). Seen from an investor perspective, UK housing also looks more expensive. Relative to the FTSE 100 dividend yield, the net yield on UK residential property in 2006 was at its lowest level since at least 2001.⁴ It has also become more difficult to generate net income flows from buy-to-let investments following increases in mortgage rates.

Figure 4.12. House prices relative to average household disposable income (ratio)



Notes: Average house price uses HBOS series. Average disposable income uses aggregate disposable income of the household sector divided by the (interpolated) number of households.

Sources: ONS; HBOS; DCLG; Morgan Stanley Research.

We have built a relatively straightforward model to try to explain house price movements over the last 10 years. We assume that the demand for housing depends on three factors: average per-capita incomes; the population; and the real ‘user cost’ of home ownership. The third factor depends on the level of real house prices, interest rates and other costs (e.g. house insurance and taxes), net of anticipated changes in house prices. We use estimates from the large literature on the UK housing market for the sensitivity of demand to these factors. Since

⁴ <http://www.ipd.com>.

we are explaining past movements in house prices, we can simply replace the supply side of the model with the change in the actual stock of dwellings over the period.

The major unknown factor in this procedure is figuring out how people decide where they think house prices will be going, i.e. the component of user cost related to the 'net anticipated change in house prices'. We make an assumption that people attach some weight to what has happened to house price inflation in recent years (the 'backward-looking' element), but that they also attach some weight to a belief that there is a tendency for prices to move towards some long-run average rate of increase (the 'forward-looking' element).

We find that in accounting for the change in prices over the past 10 years, we need to ascribe some of the rise to changing expectations (around 50 percentage points out of a total of 120). It is hard to account for house price appreciation simply in terms of changes in 'fundamentals'.

When we roll this model forward in order to forecast future house prices, the backward-looking element is potentially destabilising (if people believe that a period of price falls means further falls in prices, their demand is curtailed, thereby adding to downward price pressures). In projecting the model forward, we assume that non-mortgage cost elements are stable and assume steady 2.5% annual growth in household real disposable income. The model tends to predict house price falls, but the numerical results are very sensitive to assumptions made on the path of real mortgage rates, the pace of house-building and the proportion of expectations that are backward- and forward-looking. This limits the model's usefulness as a predictor of house prices.

In our view, a useful central house price forecast comes from expectations implicit in futures contracts (derivatives) priced on the HBOS national house price index. These have recently traded at levels suggesting a 7–8% or so drop in nominal house prices over the next year (which would imply around a 10% fall in real terms). That would take prices back to around where they were in Q3 2006.

We think that the link between household spending and house prices is variable over time and may not be especially strong. Any fall in house prices creates winners and losers. The losers in this case would be those about to trade down or exit the property market. The winners would in particular be first-time buyers, for whom housing affordability has been increasingly stretched. However, there is likely to be some link between house prices / housing activity and consumer spending. Falling house prices would likely have an influence largely by reducing the value of the collateral against which consumers can borrow and also through general effects on consumer confidence and by dampening demand for durable goods often associated with moving house (e.g. washing machines, furniture and carpets). In a recent paper, John Muellbauer estimates a marginal propensity to consume out of housing wealth of about 0.03.⁵ This implies that a 10% fall in real housing wealth would take around three-tenths of a percentage point from growth in real consumer spending.

⁵ J. Muellbauer, 'Housing, credit and consumer expenditure', 4 August 2007; paper prepared for Federal Reserve Bank of Kansas City's Jackson Hole Symposium, 31 August – 1 September 2007.

4.3 Trend growth and the economic cycle

In this section, we discuss how the UK's productive potential is likely to evolve. An economy's potential output growth is the best guess at the average growth rate we are likely to experience over a long time horizon; it is a key determinant of future tax revenues and therefore of the longer-term sustainability of fiscal policy. Alternatively, potential output growth can be viewed as the economy's speed limit: when the economy grows faster than the limit set by its potential (or trend) growth rate, in time inflation pressures will tend to be increasing and the central bank is likely to respond by raising its policy interest rate.

Estimating productive potential: a simple economic approach

We can decompose growth in national output into the (weighted) sum of three key components: changes in labour supply; changes in the amount of capital per worker (known as capital deepening); and technological progress (also known as the growth in total factor productivity or TFP). To work out the relative contribution of these three components, we use a production function, which relates an economy's output to the available inputs (labour and capital) and the existing technology. By using historic data on the evolution of output and inputs such as employment levels and the stock of capital, we can get a sense of the economy's ability – or efficiency – to transform inputs into outputs (also known as total factor productivity). We can also see how this ability has evolved over time. The key results of this exercise are shown in some detail in Tables 4.2 and 4.3.

Table 4.2 looks at how changes in the supply of labour and population growth have contributed to shaping the evolution of UK potential growth. The supply of labour is decomposed into the participation rate, the employment rate and the number of hours worked by employees. The contribution of each of these components towards potential growth is then calculated and shown in the table. From Table 4.2, it is evident that rising labour participation and population growth have had a steady and positive influence on UK potential growth.

Figure 4.13 shows that labour participation has risen to levels comparable to those of the early 1990s; this positive contribution is likely to diminish in the future, as labour participation is unlikely to grow meaningfully above current levels. Besides, we continue to expect the contribution of employment and hours worked to be marginally negative, meaning that the overall contribution of labour variables towards potential growth seems likely to decline somewhat. This is one of the reasons behind our expectation of a gradual slowdown of potential growth over the forecast horizon from 2008 to 2011.

An estimate of TFP growth is shown in the second column of Table 4.3.⁶ We do not find any evidence of a significant rise in TFP growth. In fact, we find that, despite the strong UK growth performance of recent years, TFP growth has remained slightly below its long-term average of around 1.6% per year.

⁶ We estimate TFP by using a standard (Cobb–Douglas) production function; for details, see chapter 3 of R. Chote, C. Emmerson, R. Harrison and D. Miles, *The IFS Green Budget January 2006*, IFS Commentary 100, January 2006 (<http://www.ifs.org.uk/budgets/gb2006/06chap3.pdf>).

Together, the forecasts for labour inputs, capital deepening and TFP growth suggest a short-lived improvement in potential growth to slightly above 2½% in 2009, returning to 2½% in 2010 and 2011.

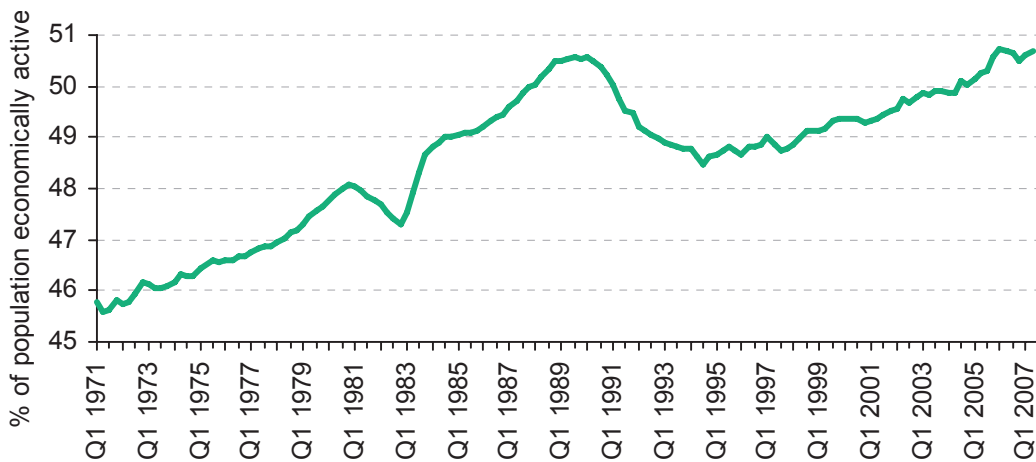
Table 4.2. Potential GDP growth (part one): the contribution of labour inputs

	Factors (percentage point contributions):					Actual observed GDP growth
	Labour participation	Employment rate	Hours worked	Population growth	Total contribution: labour variables and population	
1972–2006	0.2	0.0	–0.2	0.2	0.2	2.3
1996–2006	0.2	0.2	–0.2	0.4	0.6	2.8
2001–06	0.3	0.1	–0.2	0.5	0.5	2.5
2001	0.2	0.3	–0.4	0.4	0.5	2.3
2002	0.3	0.2	–0.4	0.4	0.5	2.0
2003	0.3	0.1	–0.3	0.4	0.5	2.7
2004	0.3	0.0	–0.2	0.5	0.5	3.2
2005	0.3	–0.1	–0.1	0.6	0.7	1.8
2006	0.3	–0.1	0.0	0.7	0.8	2.8
2007 Q1–Q3	0.3	–0.2	0.1	0.6	0.7	3.1
<i>Forecasts</i>						
2008	0.3	–0.1	–0.1	0.4	0.5	
2009	0.3	–0.1	–0.1	0.4	0.5	
2010	0.2	0.0	–0.1	0.3	0.4	
2011	0.2	0.0	–0.1	0.3	0.4	

Note: The trend rate of the underlying components from the production function is calculated using an HP filter, which aims to decompose output into a permanent ('trend') component and a cyclical factor.

Source: Morgan Stanley Research.

Figure 4.13. Labour participation



Note: We define labour participation as employment plus unemployment (aged 16 years and above) divided by the overall population.

Sources: Morgan Stanley Research; ONS.

Table 4.3. Potential GDP growth (part two): capital deepening and innovation

	Factors (percentage point contributions):				Actual observed GDP growth
	Capital deepening	TFP growth	Total contribution from labour variables and population (from Table 4.2)	Overall potential GDP growth from sum of filtered contributions	
1972–2006	0.5	1.6	0.2	2.3	2.3
1996–2006	0.7	1.5	0.6	2.8	2.8
2001–06	0.7	1.5	0.5	2.7	2.5
2001	0.8	1.4	0.5	2.8	2.3
2002	0.8	1.4	0.5	2.7	2.0
2003	0.7	1.5	0.5	2.6	2.7
2004	0.6	1.5	0.5	2.6	3.2
2005	0.6	1.5	0.7	2.7	1.8
2006	0.5	1.5	0.8	2.8	2.8
2007 Q1–Q3	0.5	1.5	0.7	2.7	3.1
<i>Forecasts</i>					
2008	0.5	1.5	0.5	2.5	
2009	0.5	1.5	0.5	2.6	
2010	0.5	1.6	0.4	2.5	
2011	0.5	1.6	0.4	2.5	

Note: The trend rate of the underlying components from the production function is calculated using an HP filter, which aims to decompose output into a permanent ('trend') component and a cyclical factor.

Source: Morgan Stanley Research.

Another way of estimating productive potential: statistical filters

The production function approach discussed above (Tables 4.2 and 4.3) relied on specific economic assumptions.⁷ Here, we focus on methods that distinguish an underlying trend from transient or cyclical perturbations directly from the actual data on economic output. In other words, we do not have to make any specific assumptions about the nature of the production function or about what is happening to the labour force or capital stock.

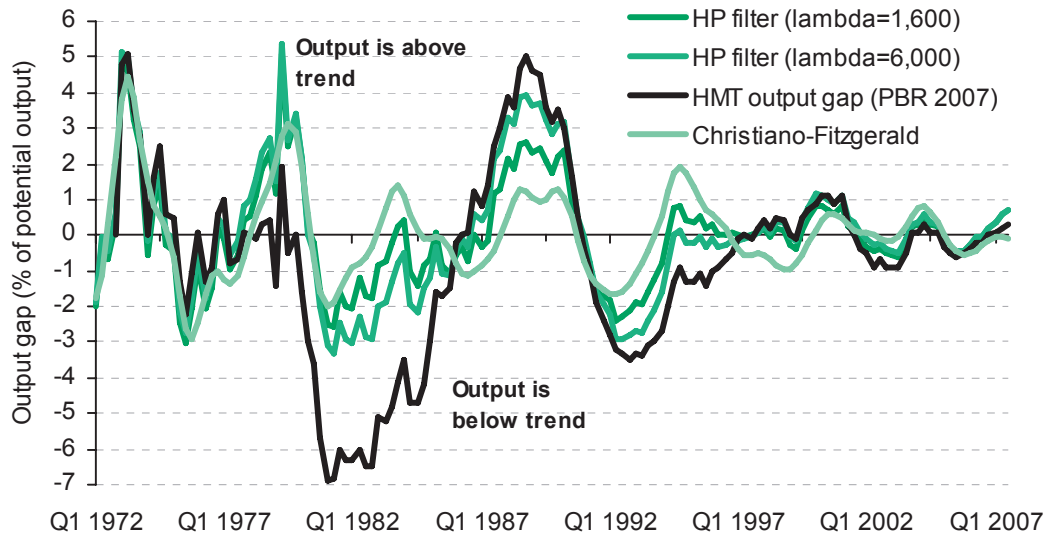
Here, we use a statistical approach, which is simply based on the path of output, to look at economic fluctuations and the dating of business cycles.

The economic cycle is made up of two phases: a period when output is above trend followed by a period when output is below trend. When actual output exceeds potential output, the output gap – the percentage difference between actual output and potential output – is said to be positive. At an on-trend point, the output gap is zero, as actual and potential output are equal. These fluctuations or cycles are characterised by periods when output (typically real gross domestic product, but non-oil gross value added on the Treasury's definition) is above trend and times when it is below trend.

⁷ For instance, we assumed a simple Cobb–Douglas specification where technology enters multiplicatively.

To avoid relying excessively on any given statistical method, we compute potential output using a few different statistical algorithms. Once this is done, we can estimate how far output is above or below its underlying potential level. This in turn enables us to estimate when economic cycles have started and ended, and compare that with the Treasury's estimates of economic cycles. The result of this exercise is shown in Figure 4.14.

Figure 4.14. Cyclical fluctuations in the UK economy since 1972



Sources: ONS; HM Treasury; Morgan Stanley Research.

Among statistical techniques to identify trends, the most widely known is the Hodrick–Prescott (HP) filter. More recent evolutions are the Baxter–King (BK) and Christiano–Fitzgerald (CF) band-pass filters.⁸ We use the filters to see whether the results they generate match our findings from the production function approach, which suggested at best a short-lived improvement in potential growth to slightly above 2½%.

Figure 4.14 shows the amount of spare capacity corresponding to these various measures of the trend and also includes the Treasury's own estimate, which tends to show more marked deviations from the trend than the statistical algorithms. The Treasury estimated in October's Pre-Budget Report that economic activity was around ¼% above potential in the third quarter of 2007. The Hodrick–Prescott filters suggest a figure closer to ¾%, while the Christiano–Fitzgerald filter suggests that output was fractionally below potential.

The uncertainties in dating economic cycles are compounded by the UK's recent economic stability: the economy has been operating close to its trend rate of growth, with small fluctuations around this trend. This has made the identification of cycles particularly hard, as the Treasury acknowledged in the 2007 Pre-Budget Report.

Using statistical filters, the average duration of a full economic cycle has been around seven years, slightly less than under the Treasury's methodology (Table 4.4). Applying a simple HP filter directly on the series of UK output (extended until 2011 with our GDP forecasts)

⁸ See, for example, L. J. Christiano and T. J. Fitzgerald, 'The band pass filter', *International Economic Review*, 2003, 44(2): 435–65.

suggests that the economic cycle ended around the third quarter of 2006. The current cycle started in the final quarter of 2006, and, according to our central forecasts, it should end in early 2010. As ever, there is no single way to date the cycle, and applying different filters can lead to different conclusions. For instance, using the (asymmetric) Christiano–Fitzgerald band-pass suggests that the current cycle started in early 2000 and won't end until early 2010. As shown in Figures 4.15 and 4.16, recent experience has been that estimates of the output gap produced using statistical filters have been less affected by revisions to economic data than the Treasury's estimates of the output gap.

Table 4.4. Dates of UK economic cycles

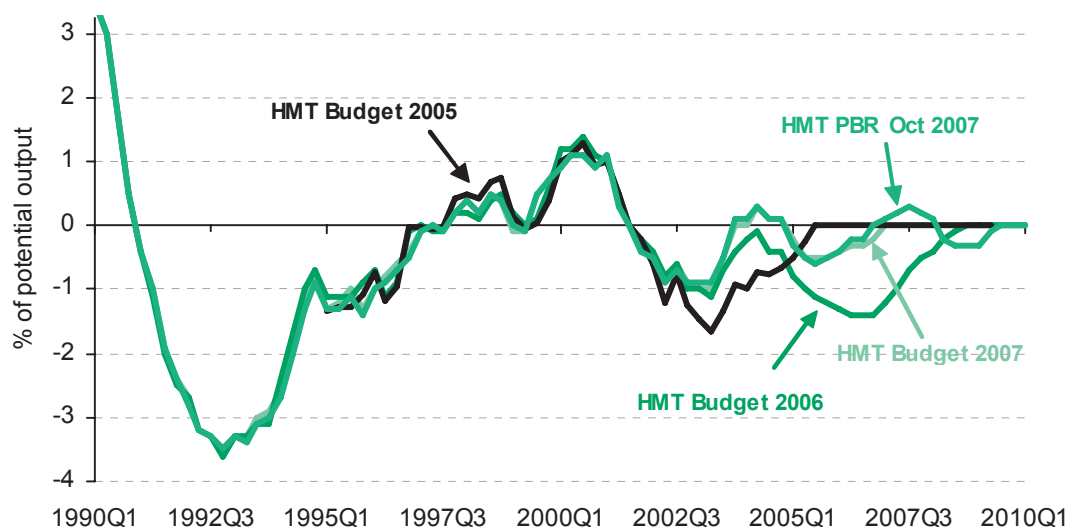
HM Treasury	Statistical filters		
	HP 1,600	CF	BK
1972Q4 – 1978Q1 (22Qs)	1972Q4 – 1977Q3 (20Qs)	1972Q3 – 1977Q4 (22Qs)	1972Q3 – 1977Q3 (21Qs)
1978Q1 – 1986Q2 (34Qs)	1977Q4 – 1987Q2 (39Qs)	1978Q1 – 1982Q4 (20Qs)	1977Q4 – 1987Q1 (38Qs)
1986Q2 – 1997H1 (45Qs)	1987Q3 – 1994Q1 (27Qs)	1983Q1 – 1987Q3 (19Qs)	1987Q2 – 1994Q1 (28Qs)
1997H1 – 2006Q4 ^a	1994Q2 – 2003Q3 (38Qs)	1987Q4 – 1993Q4 (25Qs)	1994Q2 – 1999Q2 (21Qs)
	2003Q4 – 2006Q3 (12Qs)	1994Q1 – 1999Q4 (24Qs)	1999Q3 – 2003Q3 (17Qs)
	2006Q4 – 2010Q4 (17Qs)	2000Q1 – 2010Q1 (41Qs)	2003Q4 – 2006Q3 (12Qs)

^a See page 133 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007:

'Evidence from the cyclical indicators monitored by the Treasury, and latest National Accounts data, imply the economy may have moved up through trend towards the end of 2006. However, it is too soon to assess whether or not the economic cycle has ended'. See also pages 140–142 of the 2007 PBR, where the Treasury states (paragraph A38) that 'with output assessed still to be close to trend, National Accounts data more than usually subject to revision, and growth forecast to slow in 2008, it is too soon to assess whether or not the economic cycle has ended'. (http://www.hm-treasury.gov.uk/media/8/A/pbr_csr07_annexa_380.pdf)

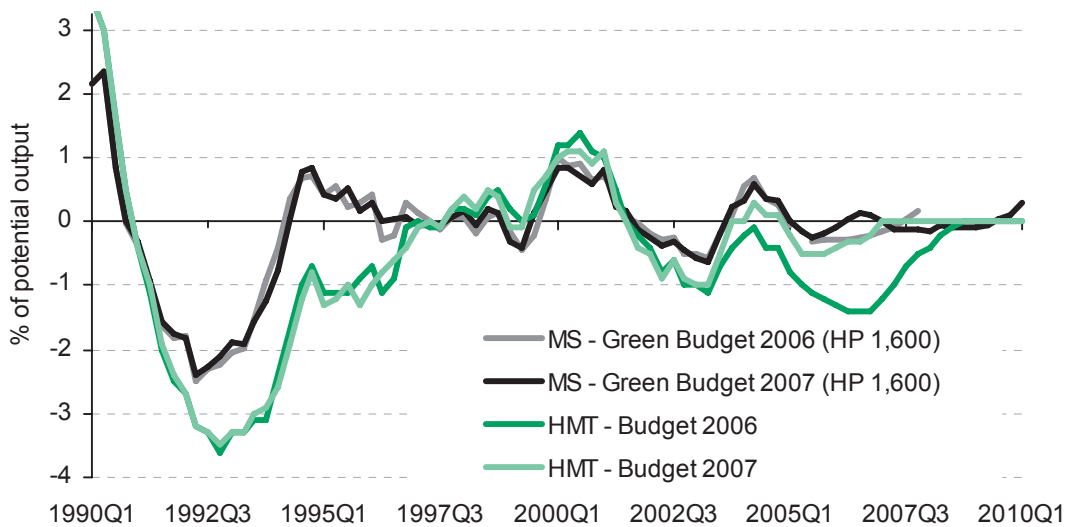
Sources: Morgan Stanley Research; HM Treasury.

Figure 4.15. Comparing the Treasury's recent estimates of the output gap



Source: HM Treasury.

Figure 4.16. Treasury and statistical filter output gap revisions



Sources: Morgan Stanley Research; HM Treasury.

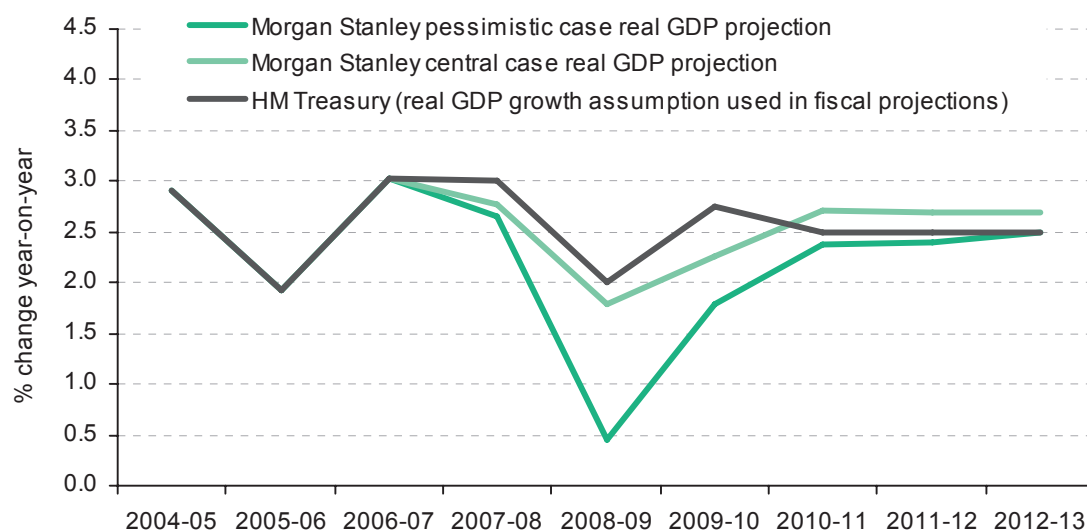
Conclusion: what is the trend rate of growth now?

On the whole, both approaches we employed (production-function-based and pure statistical filters) suggest that UK potential output growth is currently slightly above 2.5% a year, but it seems likely to slow in coming years, as the positive impact of rising participation rates wanes. We expect UK potential growth to edge slightly below 2.5% a year – less than the Treasury’s central estimate of 2¾%, though in line with the ‘cautious’ figure that the Treasury employs to make its fiscal projections. Given the highly uncertain macro environment, both in the UK and globally, the Treasury’s ‘cautious’ estimate does not seem cautious enough.

4.4 The next five years: two scenarios

As benchmarks against which to assess the outlook for the public finances, we present two scenarios for the economy over the next five years – a central case and a more pessimistic case. These are shown in Figure 4.17 alongside the Treasury’s 2007 Pre-Budget Report forecast. Our central and more pessimistic scenarios differ with respect to the economy’s cyclical position over the next couple of years. But, beyond that, they converge on a path guided by our estimates of trend growth described in the previous section. We see roughly a 40% probability that GDP growth turns out better than our central case, a 45% probability that growth turns out between our central and pessimistic case and a 15% probability that things turn out worse than our pessimistic case. More specifically, we see a roughly 35% probability that the economy evolves somewhere close to our pessimistic scenario.

Figure 4.17. Alternative GDP growth scenarios



Sources: HM Treasury; Morgan Stanley Research.

Central case

Our central case forecasts assume a moderate slowdown in the UK economy over the coming fiscal year, followed by a rather lacklustre recovery, with growth just above the historical average heading into the ‘pre-Olympic’ period, where the pace of growth may be temporarily boosted to an above-trend rate by a more rapid pace of investment.

We expect the next few years to be characterised by somewhat weaker consumer spending growth than we have seen over the past few years as many households build up their savings to more comfortable levels.

Table 4.5. Morgan Stanley central case economic projections

	2005–06	2006–07E	2007–08E	2008–09E	2009–10E	2010–11E	2011–12E	2012–13E
Real GDP (% annual change)	2	3	2¾	1¾	2¼	2¾	2¾	2¾
Real consumer spending (% annual change)	1¼	2¾	2¾	1½	2	2¼	2½	2½
Employment (% annual change)	1	¾	½	½	1	1	1	1
CPI inflation (% annual change)	2	2½	2¼	2	2	2	2	2
Output gap (%)	–½	0	½	0	–¼	0	½	½
Saving rate (%)	6	4	3½	3¾	4	4	4¼	4¼
Unemployment rate (%)	5	5½	5½	5½	5½	5¼	5	5
Productivity growth (% annual change)	1¼	1½	2¼	2	1¾	1¾	1¾	1¾

E = Morgan Stanley Research estimates.

Sources: ONS; Morgan Stanley Research.

A (relatively contained) housing correction helps subdue growth in investment, but we expect any correction to be largely worked through by the latter half of 2009–10, when we assume that construction really starts to pick up ahead of the London Olympics.

Net trade continues making a negative or neutral contribution to GDP growth throughout the period. Although we expect slower domestic demand growth in the next year or so, growth is also likely to slow in the economies of the UK's major trading partners (particularly the euro area and the US). Without a very sharp depreciation in sterling, this negative contribution to GDP growth seems likely to persist as domestic demand growth picks up.

This forecast for the UK economy differs somewhat from that of the Treasury. In particular, we forecast somewhat weaker GDP growth than the Treasury in fiscal year 2008–09 and 2009–10. Beyond that point, the Treasury actually projects slightly weaker output growth than we do for use in its budget projections, when we expect investment spending growth to pick up more strongly.

'Pessimistic case'

Our pessimistic case is a 'technical recession' (defined as two successive quarters of falling output; see Box 4.2). But it would be a very moderate recession by historical standards.

In this scenario, the household saving rate rises sharply with two quarters of contraction in household spending; business investment contracts in the first half of 2008; unemployment rises to a seven-year high. In this scenario, the UK records a technical recession and 0.7% growth overall in 2008. The key to whether this scenario actually comes to pass is consumer spending and saving behaviour. We see at least three potential (interlinked) triggers:

- **Trigger one: sharp prolonged tightening in credit conditions.** Funding conditions for banks have worsened and credit conditions have tightened for many households. In particular, the interest charged on sub-prime mortgages has risen sharply. However, data suggest that this has not yet strongly affected average quoted mortgage rates. Since the end of last year, quoted mortgage rates have risen across products, but much of this reflects the interest rate rises seen over the year from the Bank of England (75bp to July) rather than additional credit tightening. Our pessimistic scenario could be triggered if bank funding conditions do not improve sufficiently over the first half of 2008. Lenders might then pass on a relatively small portion of Bank of England rate cuts to borrowers and make significantly less credit available to households. Households would need to save more in order to build a deposit sufficient for banks to lend to them for house purchase and households would be less able to smooth spending using borrowing, encouraging precautionary savings. In order to attract retail deposits to plug some of their funding gap, banks may not reduce the rates offered to depositors as the Bank of England cuts rates, incentivising higher savings. In very rough terms, a mortgage rate that was 1.5 percentage points higher than our base case would cut consumer spending growth by about 2 percentage points. Household secured debt is about £1.1 trillion. If mortgage rates charged on existing mortgages were 1.5 percentage points higher across the board with no offset from higher interest payments to savers, then the increase in debt repayment in a year would be equivalent to approximately £17 billion or almost 2% of annual nominal consumption expenditure by the household sector.

Box 4.2. 'Stagflation' and 'recession'?

With growth forecasts for 2008 being reduced, and with inflationary pressures lingering, two rather emotive words have re-entered general discussions of economic issues in the media and within the forecasting community: 'stagflation' and 'recession'. Both require proper definition in order to be meaningful.

The term 'stagflation' was coined during the 1970s – a period of simultaneously extremely high inflation and recession. A return to that looks very improbable given today's monetary policy framework and greater economic flexibility and openness in the UK.

The term 'recession' is somewhat more precise than 'stagflation'. Even so, one should be clear as to whether one means a couple of quarters of (perhaps only slightly) negative quarter-on-quarter GDP growth – sometime called a 'technical recession' – or, for example, a more serious contraction in the level of GDP in one calendar year compared with the previous year. A situation where national income records two consecutive quarters of negative quarter-on-quarter growth (a technical recession) while inflation remains above the 2% target looks relatively plausible. But to describe such a scenario as 'stagflation' is misleading.

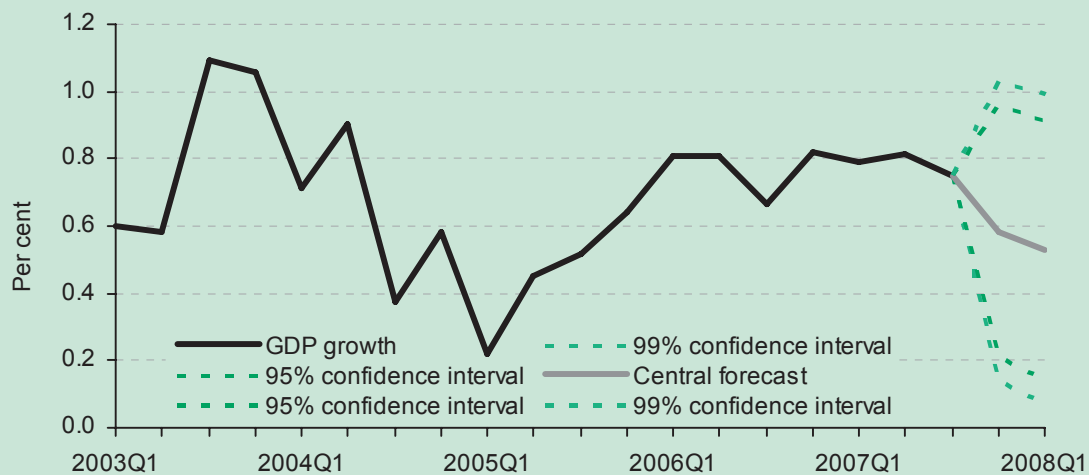
In assessing how likely a UK recession now is – on any definition – it is instructive to look at the characteristics of past periods when national output has fallen. There are several striking things to notice:

- Although we have not seen national output decline in any quarter since 1992, such events have been relatively common over the longer term. Indeed, there have been 39 quarterly falls in national output since 1956Q1 – almost one quarter in every five. On average, output has fallen by a sizeable 0.7% in each of these quarters.
- There have been 14 occasions since 1956Q1 on which output has fallen for at least two consecutive quarters, meeting the definition of a technical recession. The economy has been in technical recession for around 7% of the time over this period, with the longest declines taking place in the early 1980s and the early 1990s.
- On past performance, there is an 18% chance that a fall in output in a single quarter will mark the start of a technical recession. The average technical recession over the past 50 years has lasted for three quarters, has involved a 2% fall in output and has required five subsequent quarters of growth to restore output to its pre-recession level.
- On five occasions since 1956 – one year in 10 – output has declined over a full calendar year (in other words, output in one full year was lower than in the previous full year). These occasions have been clustered, taking place in 1974 and 1975, then in 1980 and 1981, and most recently in 1991.
- In terms of the size of the contraction (from the peak in national output to its trough), the recessions of the mid-1970s and early 1980s were deeper than that of the early 1990s. But the 1991 recession was followed by a year of sub-1%

growth, so the aggregate output 'lost' relative to what would have happened if the economy had grown throughout at its trend rate was comparable to that of the earlier two episodes.

Our simple econometric model of national output growth suggests that the probability of a technical recession in the next two of quarters is very small. Falls in quarter-on-quarter GDP are outside the 99% confidence interval of our central forecast (Figure 4.18). However, this probability is a lot smaller than the frequency of recessions historically would suggest (close to 10%). It is also a great deal smaller than our own subjective probability of a technical recession in 2008. As the discussion of our pessimistic scenario above indicates, we would put that at somewhere close to 35%. Our GDP model is backward-looking and recent GDP growth has been very strong, which helps to explain its more optimistic assessment.

Figure 4.18. Quarterly GDP growth



Sources: ONS; Morgan Stanley Research.

- **Trigger two: strong reaction to an asset price correction.** There is a clear risk that households react more strongly to falls in house prices than in our central forecast, particularly when combined with tighter credit conditions that would potentially increase the importance to households of having collateral in their homes. In addition, there is a significant risk that the equity market falls in 2008, implying a further negative wealth effect for households.
- **Trigger three: job cuts.** As growth prospects for the UK's main trading partners and for household demand fade and become more uncertain, investment plans may be sharply curtailed, hiring plans stalled and jobs cut. In our central case, the labour market remains relatively robust. If job cuts were to pick up strongly, domestic demand prospects could fade further and housing activity could fall sharply while mortgage arrears and repossessions pick up.

Table 4.6. Morgan Stanley pessimistic case economic projections

	2005– 06	2006– 07E	2007– 08E	2008– 09E	2009– 10E	2010– 11E	2011– 12E	2012 –13E
Real GDP (% annual change)	2	3	2¾	½	1¾	2½	2½	2½
Real consumer spending (% annual change)	1¼	2¾	2¾	¼	1¾	2¼	2¼	2¼
Employment (% annual change)	1	¾	¼	–¾	½	½	1	1¼
CPI inflation (% annual change)	2	2½	2¼	1½	1½	2	2	2
Output gap (%)	–½	0	1	–½	–½	0	¼	½
Saving rate (%)	6	4	3¾	5¼	5¼	5¼	5¼	5
Unemployment rate (%)	5	5½	5½	6¾	7	7	7	7
Productivity growth (% annual change)	1¼	1½	2¼	1½	1¼	1½	1¾	1½

E = Morgan Stanley Research estimates.

Sources: ONS; Morgan Stanley Research.

Conclusion

Despite relatively good overall economic outcomes over the past 10 years, we see several rather worrying signs of economic weakness in the short to medium term. We see particular downside risks relative to the Treasury's forecasts in fiscal year 2008–09 and 2009–10.

5. Green Budget public finance forecasts

Robert Chote, Carl Emmerson and Gemma Tetlow (IFS)

Summary

- Public sector net borrowing and the current budget deficit are likely to be £2.5 billion bigger this year, and £4.8 billion bigger next year, than forecast in the October 2007 Pre-Budget Report.
- Assuming that the economy evolves largely as the Treasury expects, but with corporation tax receipts only bouncing back to their long-term average by 2012–13 and with weaker growth in stamp duty revenues from both property and share transactions, by 2012–13 we are around 0.5% of national income – or £8 billion in today's terms – less optimistic than the Treasury about the current budget balance.
- In today's terms, we expect the current budget to be in surplus by £8 billion in five years' time, roughly £18 billion stronger than now. Of this improvement, half reflects a rise in the tax burden and half cuts in public spending after 2007–08.
- Despite this, we believe that without a further tightening the golden rule would be more likely to be missed than met unless the economic cycle that the Treasury believes began in 2006–07 runs for 10 years or more.
- We also forecast higher public sector net debt than the Treasury, expecting it to rise by 3½% of national income by 2012–13. In the absence of new policy announcements, we believe that it is more likely than not that debt will breach the 40% of national income ceiling that Mr Brown chose to adhere to when he was Chancellor – even ignoring the potential impact of Northern Rock.
- If the Chancellor wants to keep net debt below 40% of national income and maintain the improvement in the current budget balance that he was looking for in the PBR, we believe that he would need to announce tax increases worth around £8 billion. This seems unlikely, given the government's political constraints and the outlook for the economy. But there is scope for the Bank of England to offset the impact of a modest fiscal tightening on growth and inflation, so taking some action to underpin the fiscal position now would be prudent.

5.1 Introduction

This chapter presents the IFS public finance forecasts and discusses them in the context of the fiscal rules. Section 5.2 presents the 2008 Green Budget forecasts for 2007–08 and 2008–09, using as a baseline the assumption that the economy evolves largely as the Treasury predicted in the October 2007 Pre-Budget Report (PBR), but where, as we shall see, revenues from both corporation tax and stamp duty are noticeably weaker. Section 5.3 looks at the medium-term

prospects for the public finances (up to 2012–13), based on the same underlying economic assumptions. Section 5.4 compares our baseline forecasts with forecasts based on the alternative macroeconomic assumptions outlined by Morgan Stanley in Chapter 4. Finally, Section 5.5 examines whether or not the Chancellor would meet the fiscal rules under our forecasts and what this implies for tax and spending decisions in the next and future Budgets.

5.2 Short-term projections

In 2006–07, receipts came in just over £1 billion higher than the Treasury had forecast in its Pre-Budget Report in December 2006 and about £½ billion higher than we forecast in the January 2007 Green Budget, as shown in Table 5.1. The out-turn for the current budget was further strengthened relative to these earlier forecasts by current spending coming in £1.9 billion below the Treasury’s forecast and £3.9 billion below our Green Budget forecast. This was the result of unexpectedly slow growth in current spending over the last five months of 2006–07. As a result, the current budget deficit was £3.2 billion smaller than the Treasury forecasted in its 2006 Pre-Budget Report and £4.5 billion smaller than we forecast in last year’s Green Budget. On top of this, lower-than-forecast investment spending meant that public sector net borrowing in 2006–07 was £5.8 billion lower than the Treasury forecasted in December 2006 and £7.1 billion lower than we forecasted in January 2007. For more details on the components of these forecasts and out-turns, see Appendix A.

Table 5.1. Comparison of forecasts for 2006–07

£ billion	HM Treasury PBR forecast, December 2006	IFS Green Budget forecast, January 2007	Estimate, PBR, October 2007
Current receipts	517.9	518.5	519.1
Current expenditure ^a	525.7	527.7	523.8
Net investment	28.9	28.9	26.3
Public sector net borrowing	36.8	38.1	31.0
Surplus on current budget	–7.9	–9.2	–4.7

^a In line with the National Accounts, depreciation has been included as current expenditure.

Sources: Out-turn figures for 2006–07 from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm). Forecasts from HM Treasury, *Pre-Budget Report 2006*, December 2006 (http://www.hm-treasury.gov.uk/pre_budget_report/prebud_pbr06/prebud_pbr06_index.cfm) and table 5.2 of R. Chote, C. Emmerson, A. Leicester and D. Miles (eds), *The IFS Green Budget: January 2007*, IFS Commentary 102 (<http://www.ifs.org.uk/budgets/gb2007/index.php>).

Borrowing in 2007–08

Table 5.2 provides an overview of the Treasury’s and the January 2008 Green Budget baseline projections for receipts, spending and borrowing in the current financial year. Though the October 2007 Pre-Budget Report did revise down the Treasury’s previous, Budget 2007, forecast for receipts in 2007–08, the 2008 Green Budget baseline forecast for 2007–08 is that receipts will be a further £2.5 billion lower than PBR 2007 expected. Our baseline estimate for current spending and net investment in 2007–08 is that they will be the same as the Treasury’s PBR forecast. Therefore, our baseline forecast for the current budget

deficit in 2007–08 is that it will be £2.5 billion larger (at £10.8 billion) than the PBR 2007 forecast suggested. Similarly, we expect borrowing in 2007–08 to be £2.5 billion higher than the Treasury’s forecast (at £40.5 billion).

Table 5.2. Comparison of forecasts for government borrowing, 2007–08

£ billion	Budget, Mar. 07	PBR, Oct. 07	Green Budget, Jan. 08	Differences in Green Budget forecast relative to:	
				Budget	PBR
Current receipts	553	551.2	548.7	–4.3	–2.5
Current expenditure ^a	558	559.5	559.5	+1.5	0.0
Net investment	29	29.7	29.7	+0.7	0.0
Total managed expenditure	587	589.2	589.2	+2.2	0.0
Public sector net borrowing	34	38.0	40.5	+6.5	+2.5
Surplus on current budget	–4	–8.3	–10.8	–6.8	–2.5

^a In line with the National Accounts, depreciation has been included as current expenditure.

Sources: Treasury forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm) and HM Treasury, *Budget 2007: Financial Statement and Budget Report*, March 2007 (http://www.hm-treasury.gov.uk/budget/budget_07/report/bud_budget07_repindex.cfm).

Receipts and spending in 2007–08

The 2008 Green Budget forecast for receipts in 2007–08 is £2.5 billion lower than the Treasury’s 2007 PBR projection. Table 5.3 shows the forecast for receipts in 2007–08 (and also that for 2008–09) broken down into the constituent taxes. For most taxes, we expect revenues in 2007–08 to be in line with the Treasury’s PBR forecast. There are two exceptions to this – corporation tax and stamp duty.

Over the first nine months of this financial year, corporation tax receipts are fractionally below those received over the same period last year (–0.3%). Therefore, in the light of this evidence, we forecast that corporation tax revenues will be the same in cash terms as in 2006–07, which was £44.3 billion. This is £2.0 billion below the Treasury’s latest forecast of £46.3 billion. Figures for corporation tax receipts in January 2008 – set to be released by the Office for National Statistics on Thursday 21 February 2008 – will give a clear indication of the likely level of corporation tax receipts in 2007–08 and the extent to which the impact of the recent turmoil in certain financial markets on the public finances in this financial year is smaller or greater than we or the Treasury expect.

For stamp duty revenues, we assume that the yield from stamp duty land tax is the same in nominal terms over the remaining three months of this financial year as they were in the same period last year, which would be the case if house prices were the same in cash terms and if there were no change in the number of housing transactions. For stamp duty revenues from share transactions, our forecast attempts to take into account stock-market movements that have occurred in January 2008 by assuming that the revenues from this tax over the last three months of this financial year will be around 5% lower in cash terms than they were during the same period in 2006–07.

Table 5.3. Comparison of Green Budget and HM Treasury forecasts for government borrowing, 2007–08 and 2008–09

<i>£ billion</i>	2007–08		2008–09	
	<i>PBR</i> Oct. 2007	<i>Green</i> Budget Jan. 2008	<i>PBR</i> Oct. 2007	<i>Green</i> Budget Jan. 2008
Income tax (net of tax credits)	149.6	149.6	156.9	156.9
National Insurance contributions	96.5	96.5	101.0	102.7
Value added tax (VAT)	81.4	81.4	85.8	84.8
Corporation tax (net of tax credits)	46.3	44.3	50.9	47.8
Petroleum revenue tax	1.5	1.5	1.5	1.5
Fuel duties	24.9	24.9	26.2	26.2
Capital gains tax	4.8	4.8	5.4	5.4
Inheritance tax	3.9	3.9	3.3	3.3
Stamp duties	15.1	14.6	15.8	13.6
Tobacco duties	8.1	8.1	7.8	7.8
Spirits duties	2.3	2.3	2.3	2.3
Wine duties	2.6	2.6	2.8	2.8
Beer and cider duties	3.3	3.3	3.4	3.4
Betting and gaming duties	1.4	1.4	1.4	1.4
Air passenger duty	2.0	2.0	2.1	2.1
Insurance premium tax	2.4	2.4	2.5	2.5
Landfill tax	0.9	0.9	1.1	1.1
Climate change levy	0.7	0.7	0.7	0.7
Aggregates levy	0.3	0.3	0.4	0.4
Customs duties and levies	2.4	2.4	2.3	2.3
Total HM Revenue and Customs	450.4	447.9	473.7	469.0
Vehicle excise duties	5.5	5.5	5.9	5.9
Business rates	21.9	21.9	24.1	24.1
Council tax ^a	23.7	23.7	24.9	24.9
Other taxes and royalties ^b	15.3	15.3	16.0	16.0
Net taxes and NI contributions^c	516.8	514.3	544.5	539.9
Accruals adjustments on taxes	1.5	1.5	2.4	2.4
Less Own resources contribution to EU budget	–4.7	–4.7	–4.8	–4.8
Less PC corporation tax payments	–0.2	–0.2	–0.2	–0.2
Tax credits adjustment ^d	0.5	0.5	0.6	0.6
Interest and dividends	7.6	7.6	7.5	7.5
Other receipts ^e	29.7	29.7	31.0	31.0
Current receipts	551.2	548.7	581.0	576.4

^a 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.

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

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

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

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

Sources: PBR forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm); this table is similar to table B8 on page 168. Authors' calculations.

We assume that current spending will be in line with the Treasury's forecast from PBR 2007. This forecast that current spending in 2007–08 would be £559.5 billion – slightly above the Treasury's Budget 2007 forecast of £558 billion. Growth in current spending over the first nine months of this financial year has been below that forecast by the Treasury for the year as a whole. This is particularly true of current spending by central government departments on public services. Over the first nine months of 2007–08, this has been 5.3% higher than the same months of 2006–07, whereas the Treasury forecast implies that it will grow by 6.5% over the year as a whole. If this lower growth rate were to continue for the remaining three months, current spending by central government departments on public services would come in £3.9 billion below the Treasury's forecast. However, in 2006–07 only 24.9% of total spending for the year was carried out in the last three months, which was significantly below the 25.9% that occurred during the last three months of 2005–06. If it is the case that there was an unusual squeeze in spending during the last three months of 2006–07 and that in fact the pattern of spending over the year in 2005–06 is more typical, this would imply that spending for 2007–08 as a whole would actually come in £0.9 billion higher than the Treasury's forecast. We therefore assume that the Treasury's forecast for current spending (which lies somewhere between these two scenarios) is correct. However, these figures – and the relatively large errors in the forecasts for current spending in 2006–07 made by both the December 2006 Pre-Budget Report and the January 2007 IFS Green Budget (as shown in Table 5.1) – highlight the uncertainty around these forecasts.

Borrowing in 2008–09

The October 2007 Pre-Budget Report revised the forecast for the current budget balance in 2008–09 down by £7 billion – from a forecast surplus of £3 billion to a forecast deficit of £4 billion (see Table 5.4). Since policy measures introduced in the 2007 Pre-Budget Report had very little effect on the current budget in 2008–09 (they are set to result in only an estimated £400 million deterioration in the current budget) and the forecast for spending was only increased by £1 billion, this downward revision to the current budget balance mostly reflected downward revisions to the underlying strength of current receipts. The 2008 Green

Table 5.4. Comparison of forecasts for government borrowing, 2008–09

£ billion	Budget, Mar. 07	PBR, Oct. 07	Green Budget, Jan. 08	Differences in Green Budget forecast relative to:	
				Budget	PBR
Current receipts	586	581.0	576.4	–9.6	–4.6
Current expenditure ^a	584	585.1	585.2	+1.2	+0.2
Net investment	32	32.3	32.3	+0.3	+0.0
Total managed expenditure	616	617.4	617.5	+1.5	+0.2
Public sector net borrowing	28	36.4	41.2	+13.2	+4.8
Surplus on current budget	3	–4.1	–8.9	–11.9	–4.8

^a In line with the National Accounts, depreciation has been included as current expenditure.

Sources: Treasury forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm) and HM Treasury, *Budget 2007: Financial Statement and Budget Report*, March 2007 (http://www.hm-treasury.gov.uk/budget/budget_07/report/bud_budget07_repindex.cfm).

Box 5.1. Company earnings and corporation tax revenues

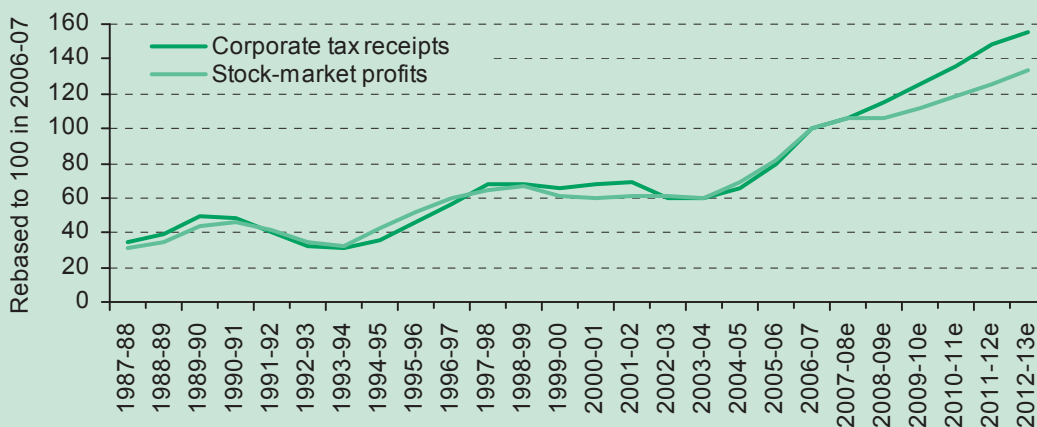
By Graham Secker (Morgan Stanley)

In recent years, we have highlighted the ambitious forecasts that the government has factored in for corporation tax receipts. The October 2007 Pre-Budget Report is the sixth consecutive PBR to see a downward revision to corporate tax receipt expectations from the previous Budget. In the latest PBR, the government reduced its corporation tax forecasts by £3.3 billion in 2007–08 and £3 billion in 2008–09. These represent the biggest downgrades seen since 2002. The government is now anticipating that corporate tax receipts will grow by just 4% in 2007–08 and by 10% in 2008–09. While this forecast growth is lower than in any of the last five PBRs, we believe the government is still too optimistic as we expect that growth in corporate profits will slow sharply over the next year.

In fact, according to provisional data from the Office for National Statistics, corporate tax receipts have already started to slow significantly, with receipts in the four quarters to the end of Q3 2007 running 3% lower than the four-quarter period to the end of Q3 2006. While we believe that profits reported by companies listed on the UK stock market will show modest growth in 2007–08, we currently forecast zero growth for 2008–09. The reason for our pessimism on the outlook for stock-market profits is the prospect of a significant slowdown in the domestic and global economy, as highlighted by the fall in share prices seen both in the UK and elsewhere in January 2008.

In the last three Green Budgets, we have included a graph showing how much more optimistic the Treasury is about growth in corporate tax receipts than we are in corporate earnings growth. Figure 5.1 contains an update of this analysis; it shows a divergence between HMT’s view on corporate tax receipts and Morgan Stanley’s view on stock-market earnings. Over the next five years, HMT forecasts non-North-Sea corporate tax receipts to grow at an average of 8% per annum; this compares with our own forecast of 5% (this constitutes 0% in 2008–09 and 6% growth thereafter – the latter is the average nominal earnings growth of the UK stock market since 1960). Based on HMT’s forecast of £40.7 billion of non-North-Sea corporation tax receipts in 2007–08, the difference between these two growth rates equates to £8 billion in 2012–13.

Figure 5.1. Treasury forecasts for corporation tax revenues and Morgan Stanley forecasts for UK stock-market growth



Note: Stock-market profits from 2007–08 onwards are based on Morgan Stanley forecasts.
Sources: ONS; MSCI; Morgan Stanley Research.

Budget forecasts a current budget deficit of £8.9 billion and net borrowing of £41.2 billion, which are both £4.8 billion worse than the Treasury's latest forecast.

Receipts and spending in 2008–09

The October 2007 Pre-Budget Report revised down current receipts by £5 billion relative to the forecast made in the March 2007 Budget. A small part of this revision (around £350 million) reflected new policy changes announced in PBR 2007. Most of the rest of the downward revision is due to the expected impact of the financial market disruption that occurred during Summer 2007, lower-than-expected oil and gas production which is expected to depress North Sea oil revenues and changes to the economic forecasts for earnings growth in 2008. This downward revision to the Treasury's receipts forecast was accompanied by a slight (£1 billion) upward revision to the forecast for current spending in 2008–09.

Relative to the Treasury's forecast from the 2007 Pre-Budget Report, the 2008 Green Budget forecast for 2008–09 is that receipts will be £4.6 billion lower and spending £0.2 billion higher. The latter reflects the debt interest payments that will be required to service the additional borrowing that we forecast will be necessary in 2007–08 (discussed above).

As shown in Table 5.3, the two biggest discrepancies between the January 2008 Green Budget forecast and the October 2007 Pre-Budget Report forecast for receipts in 2008–09 are for receipts of corporation tax and stamp duties. We forecast corporation tax receipts (which, due to the timing of tax payments, are dependent on both lagged and contemporaneous corporate profits) on the basis that corporate profits in 2007–08 and 2008–09 grow in line with Morgan Stanley's central forecast of 6% and 0% respectively (see Box 5.1 for more details). Since this growth rate is considerably below that implied by the Treasury's forecast for growth in underlying corporation tax receipts and because our forecast for corporation tax receipts in 2007–08 is £2 billion lower than the Treasury's, the 2008 Green Budget baseline forecast for corporation tax receipts in 2008–09 is £47.8 billion, £3.1 billion lower than the Treasury's 2007 Pre-Budget Report forecast.

We are also forecasting lower stamp duty revenues in 2008–09 than the Treasury. In part, this is due to us taking into account the impact of stock-market movements since the start of 2008 on revenues from stamp duty on share transactions. In addition, for receipts of stamp duty land tax, we use evidence from market expectations of the future path of the HBOS house price index. This suggests that house prices are expected to decline in nominal terms by 7½% in 2008, which if it were to occur might also be accompanied by a sharp decline in the volume of transactions. Therefore we assume that both of these factors will depress revenues from stamp duty land tax and so are forecasting receipts from stamp duty overall to be £2.2 billion lower than the Treasury expects.

5.3 Medium-term prospects

Over the medium term, we expect the near-term gap between the Green Budget and PBR current budget balance forecasts to widen until 2009–10 and decline slightly thereafter (Tables 5.5 and 5.6). The Green Budget forecasts a deficit £4.8 billion – or 0.3% of national income – bigger than the PBR in 2008–09, a gap that widens to £11 billion – or 0.7% of

Table 5.5. Medium-term public finance forecasts under Pre-Budget Report 2007 assumptions

<i>£ billion</i>	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13
Green Budget forecasts						
<i>Current budget</i>						
Current receipts	548.7	576.4	605	640	678	716
Current expenditure ^a	559.5	585.2	613	642	673	706
Surplus on current budget	–10.8	–8.9	–8	–2	5	10
<i>Capital budget</i>						
Net investment	29.7	32.3	34	37	39	42
Public sector net borrowing	40.5	41.2	41	39	34	32
HM Treasury forecasts						
<i>Current budget</i>						
Current receipts	551.2	581.0	616	651	686	724
Current expenditure ^a	559.5	585.1	613	642	672	705
Surplus on current budget	–8.3	–4.1	3	9	14	20
<i>Capital budget</i>						
Net investment	29.7	32.3	34	37	39	42
Public sector net borrowing	38.0	36.4	31	28	25	23

^a In line with the National Accounts, depreciation has been included as current expenditure.

Sources: Authors' calculations. Treasury forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm); this table is similar to table B5 on page 165.

national income – in 2009–10. By the end of the forecast period, the difference is £10 billion or 0.5% of national income. Given the uncertainties around both forecasts (judging from past forecasting performance), these are not very large differences.

Over the coming five years, we expect the current budget balance to move from a deficit of 0.8% of national income in 2007–08 to a surplus of 0.6% of national income in 2012–13. Of this 1.3% of national income forecast improvement (£19 billion in today's terms), half (0.7% of national income or £9 billion) comes from a forecast rise in the tax burden and the remaining half (0.7% of national income or £10 billion) from a forecast cut in current spending as a share of national income. Over the same period, the PBR has broadly the same reduction in current spending, but with a 0.2% of national income larger forecast increase in the tax burden.

For current spending, we assume that the Treasury keeps to the departmental spending plans set out in the Comprehensive Spending Review for 2008–09, 2009–10 and 2010–11. Our forecast is for slightly higher overall spending in these years due to slightly higher debt interest payments arising from higher borrowing in earlier years. For 2011–12 and 2012–13 – years for which departmental spending plans will presumably be set out in a spending review in 2009 – we assume that growth in nominal spending is the same as that implied by the figures contained in the October 2007 PBR. This would lead to spending continuing to fall as a share of national income and, as described in Chapter 7, could have implications for the government's aspirations to reduce poverty both in the UK and overseas while progressing towards the delivery of 'world-class' public services.

Table 5.6. Medium-term public finance forecasts under Pre-Budget Report 2007 assumptions

% of national income	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13
Green Budget forecasts						
<i>Current budget</i>						
Current receipts	39.1	39.2	39.1	39.3	39.6	39.7
Current expenditure ^a	39.9	39.8	39.6	39.4	39.3	39.2
Surplus on current budget	-0.8	-0.6	-0.5	-0.1	0.3	0.6
<i>Capital budget</i>						
Net investment	2.1	2.2	2.2	2.3	2.3	2.3
Public sector net borrowing	2.9	2.8	2.7	2.4	2.0	1.8
Public sector net debt	37.8	38.9	40.0	40.7	41.0	41.2
HM Treasury forecasts						
<i>Current budget</i>						
Current receipts	39.3	39.5	39.7	39.9	40.0	40.2
Current expenditure ^a	39.9	39.8	39.5	39.4	39.2	39.1
Surplus on current budget	-0.6	-0.3	0.2	0.6	0.8	1.1
<i>Capital budget</i>						
Net investment	2.1	2.2	2.2	2.3	2.3	2.3
Public sector net borrowing	2.7	2.5	2.0	1.7	1.5	1.3
Public sector net debt	37.6	38.4	38.8	38.9	38.8	38.6

^a In line with the National Accounts, depreciation has been included as current expenditure.

Sources: Authors' calculations. Treasury forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm); this table is similar to table B6 on page 165.

On the receipts side, the main difference between the Green Budget forecast and the October 2007 PBR forecast is the projected growth in receipts between 2008–09 and 2009–10. The Green Budget projection is for receipts to grow by 5.0% in nominal terms (which is slightly below expected growth in the economy), whereas the October 2007 PBR forecast is for them to grow by 6.0% – a full percentage point faster than our projection. The underlying cause of this is the different view we take over corporation tax receipts. Our projected growth in corporation tax receipts in 2009–10 is depressed by the lagged effect of us taking Morgan Stanley's forecast of no growth in corporate profits in 2008–09. Over the three years from 2010–11 to 2012–13, we assume that corporation tax receipts grow strongly and return to their long-run average. The next section discusses the composition of receipts in more detail.

The Green Budget forecasts for net investment are in line with the PBR ones throughout the forecast period. Consequently, the profile for public sector net borrowing over the medium term tracks that of the current budget, with borrowing in every year being higher under the Green Budget forecasts than under the PBR forecasts.

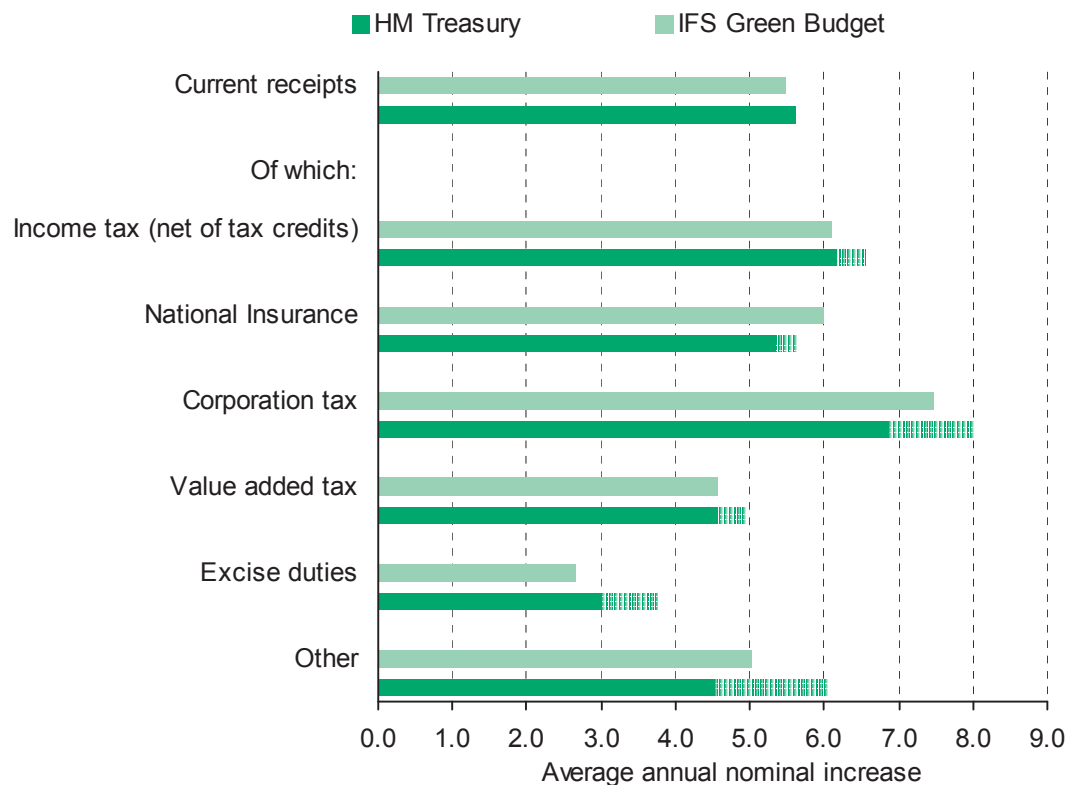
The higher borrowing forecasts mean that we have higher forecasts than the Treasury for public sector net debt right through to 2012–13. As discussed in Section 3.3, the sustainable investment rule required that public sector net debt be kept below 40% for all the years of the economic cycle that the Treasury believes covered the financial years from 1997–98 to 2006–07. Despite the fact that it believes a new cycle has begun, the Treasury has not yet announced how it will assess compliance with the rule over this new cycle. The Green Budget

forecast is that net debt will be at 40% of national income in 2009–10 and then continue to climb further – albeit by a relatively small amount – for the rest of the forecast period.

Breakdown of medium-term revenue projections

Figure 5.2 shows the average annual nominal growth rate for each major component of tax revenues under the Green Budget projection over the period from 2007–08 to 2012–13. These are compared with the Treasury’s October 2007 projections. Comparing the two medium-term projections is hampered by a lack of availability of detailed forecasts from the Treasury, since the PBR only shows limited information on the composition of its medium-term revenue projections and rounds revenues from each of the categories to the nearest 0.1% of national income. As a result, a lower and upper bound on the Treasury’s projection are shown in the graph (the range between these bounds being shown by the striped region).

Figure 5.2. PBR and IFS forecasts for revenue growth, 2007–08 to 2012–13



Note: Corporation tax includes petroleum revenue tax.

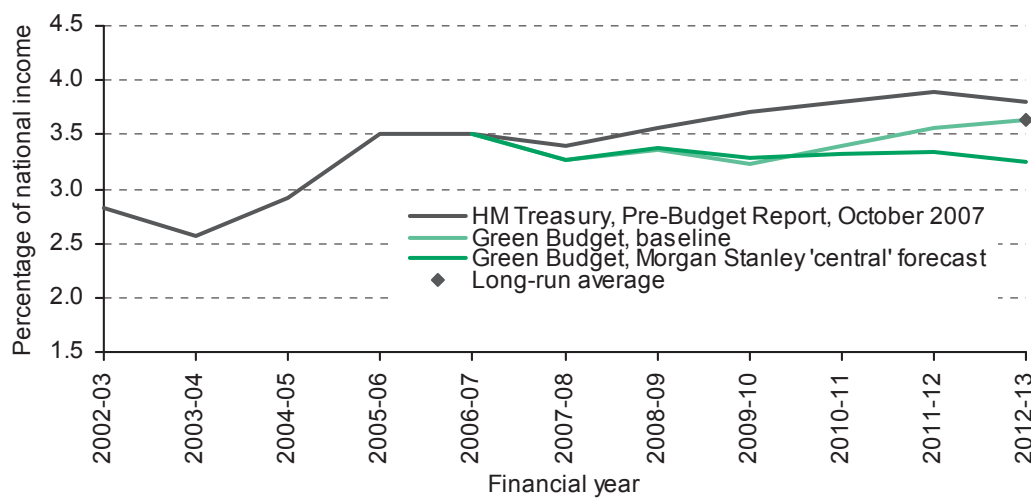
Sources: Authors' calculations. Treasury forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_reindex.cfm).

Overall, the Green Budget projection is for very slightly lower growth in tax (and non-tax) revenues from a slightly lower base. Between 2007–08 and 2012–13, the Green Budget forecasts show slightly weaker growth in income tax (net of tax credits) and stronger growth in National Insurance contributions. Growth in corporation tax receipts over the entire period is forecast to be about the same as the Treasury expects. However, there are two key differences. First, by assuming that corporate profits follow Morgan Stanley’s forecast in 2008–09 and 2009–10, we are assuming lower growth in receipts in the early part of the forecast horizon than in the later part. Second, we forecast that corporation tax revenues will

be £2.0 billion lower in 2007–08 and therefore, although we have a similar growth rate over the following five years, it is from a lower base. These two factors are shown in Figure 5.3, which presents the Treasury’s forecast for corporation tax receipts (including petroleum revenue tax) over the next five years and the Green Budget baseline forecasts, as well as the forecast using Morgan Stanley’s central macroeconomic forecast (which assumes that corporate profits grow at 6% a year in the medium term; see Box 5.1).

There is little difference in forecast growth in VAT revenues. The Green Budget forecast is for excise duties to grow less quickly than the Treasury expects, which reflects the assumed elasticity of these tax receipts for any given increase in the tax base.

Figure 5.3. Forecasts for corporation tax receipts under HM Treasury and Green Budget assumptions



Note: Corporation tax includes petroleum revenue tax. Morgan Stanley central forecast is for lower nominal national income in all years from 2007–08 onwards than HM Treasury Pre-Budget Report forecasts suggest.

Sources: Authors’ calculations. Treasury forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm).

Uncertainties around the baseline Green Budget forecast

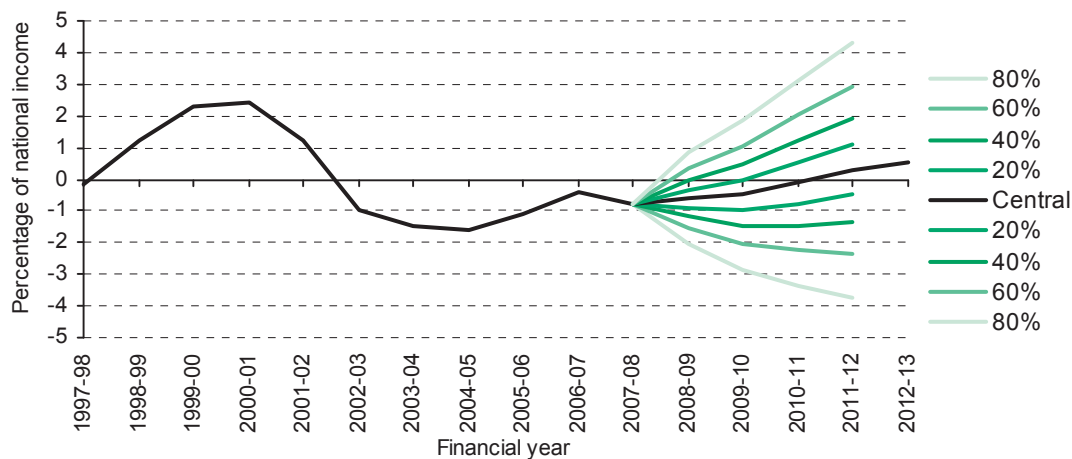
Public finance forecasts are by their nature uncertain and it is important to acknowledge this uncertainty when presenting them, in particular when interpreting point estimates for future deficits and debt. The further ahead forecasts are made, the larger the degree of uncertainty. Figures 5.4 and 5.5 present probabilistic fan charts for the Green Budget forecasts for the next four years, with the forecast for 2007–08 taken as given. The fan charts assume that the Green Budget forecasts will be right on average (and so are the best forecasts available) and that they are as accurate as the Treasury’s forecasts have been in the past. If the Green Budget forecasts were more inaccurate than the Treasury’s then the fan charts would be wider, while if they were more accurate then the fan charts would be narrower.

In each graph, the black line 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 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.

The central forecast for 2008–09 is for a current budget deficit of 0.6% of national income and Figure 5.4 indicates that there is a 20% probability that the actual outcome will be a deficit of between 0.9% and 0.3% of national income. In 2011–12, the central forecast is for a surplus of 0.3% 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 –0.5% to 1.1% 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 46% probability that, on unchanged policies, the current budget would still not be in surplus in 2011–12.

Figure 5.4. Probabilities of current budget balance outcomes (Green Budget baseline)

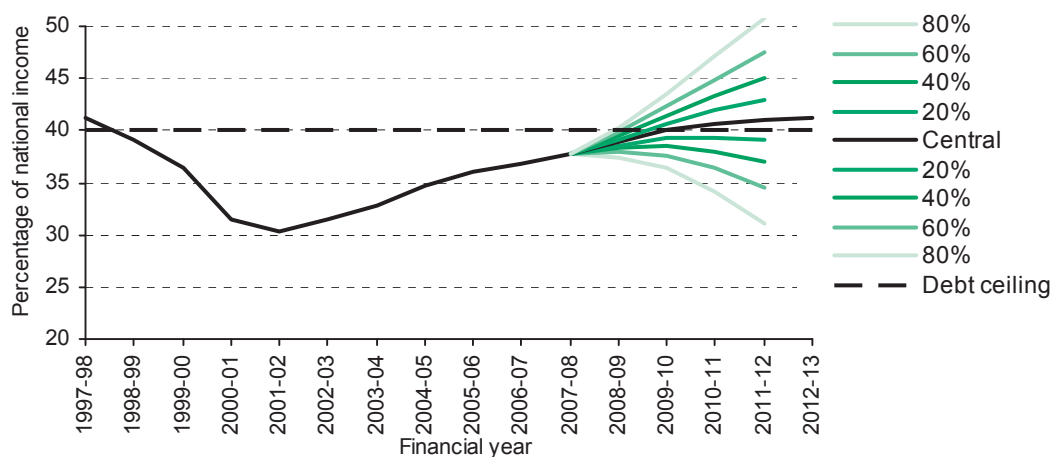


Notes: Central projections are taken from Table 5.6 and assume that the Green Budget projection for 2007–08 is correct. Methodology for computing fan charts taken from C. Emmerson, C. Frayne and S. Love, 'Updating the UK's Code for Fiscal Stability', IFS Working Paper W04/29, 2004 (http://www.ifs.org.uk/publications.php?publication_id=3163).

Similarly, Figure 5.5 presents the probabilistic fan chart for the Green Budget net debt forecasts over the next four years, again assuming that the central forecast is the best available estimate and that the forecasts are as accurate as the Treasury has been on average in the past. This suggests that there is a 16% chance in 2008–09 of net debt exceeding the 40% ceiling imposed by Gordon Brown during the economic cycle that the Treasury estimates spanned the financial years from 1997–98 to 2006–07. With the central forecast for net debt exceeding 40% of national income in all the years from 2009–10 onwards, this chance rises to 55% by 2011–12. The implication of this for compliance with the sustainable investment rule and the appropriate response for policy in light of this are discussed in more detail in Section 5.5.

A key conclusion of this analysis is that the difference between the central projections in the Green Budget and the PBR – for both budget balances and net debt – is less significant than the uncertainty that lies around either, given past forecast performance.

Figure 5.5. Probabilities of public sector net debt outcomes (Green Budget baseline)



Notes: Central projections are taken from Table 5.6 and assume that the Green Budget projection for 2007–08 is correct and that any cumulative variation in public sector net borrowing from that forecast in the Green Budget projection directly adds to public sector net debt. The second-order impact of changes in debt interest is ignored. 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).

5.4 Alternative macroeconomic assumptions

This section presents alternative forecasts under two different sets of macroeconomic assumptions from Morgan Stanley – a central scenario and a more pessimistic scenario.

Table 5.7 presents both the underlying economic growth and the trend level assumptions used by the Treasury and those presented by Morgan Stanley as well as the four sets of public finance forecasts: the Treasury's PBR forecasts, the Green Budget baseline forecasts, the Green Budget forecasts under the Morgan Stanley central macro forecasts and the Green Budget forecasts under the Morgan Stanley 'pessimistic case' forecast.

The Treasury forecasts that national income will grow by 3% in 2007–08, followed by 2% in 2008–09, 2¾% in 2009–10 and 2½% thereafter (which, for the period from 2008–09 onwards, is a ¼ percentage point below the Treasury's central estimate of trend growth).

Under the first alternative Green Budget scenario (the Morgan Stanley central case), growth in national income is expected to be ¼ percentage point below the Treasury's forecast this year and next year, ½ percentage point below in 2009–10 and ¼ percentage point above thereafter. The second alternative Green Budget scenario (the Morgan Stanley 'pessimistic case') assumes that the growth rate of national income is ¼ percentage point lower in 2007–08 and is also lower than the Treasury's forecast in 2008–09 and 2009–10. From 2010–11 onwards, growth in national income under the Morgan Stanley 'pessimistic case' is the same as under the Treasury's assumptions.

The Green Budget public finance forecasts using the Morgan Stanley central scenario show a slightly larger current budget deficit in 2008–09 and 2009–10 than under the Green Budget baseline scenario. For later years, the current budget remains further below the Green Budget

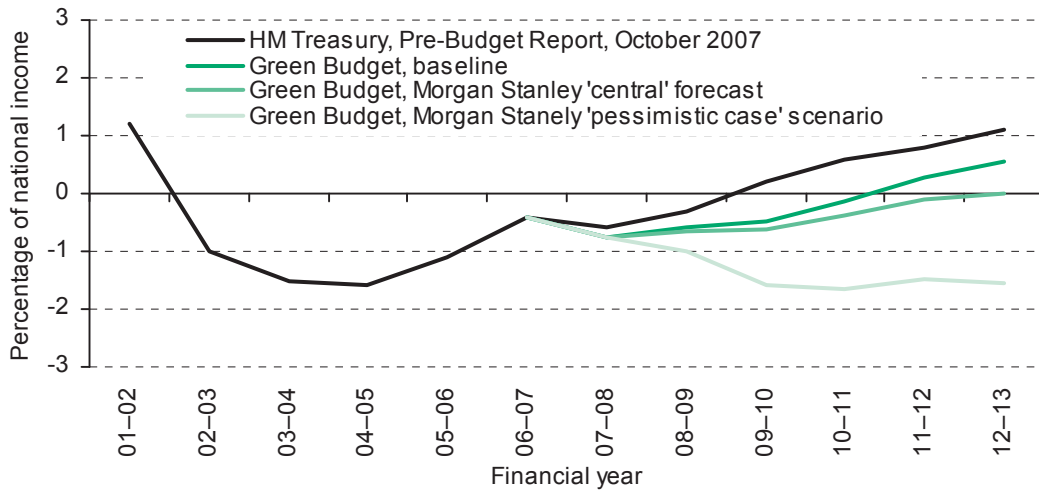
baseline and does not return to surplus until the last year of the forecast horizon. Under the Morgan Stanley ‘pessimistic case’ scenario, there is a slightly larger current budget deficit in 2008–09 than under the Morgan Stanley central scenario, and a much larger deficit in later years. These forecasts for the current budget surplus are also compared in Figure 5.6. The equivalent figures for forecasts of the cyclically adjusted current budget surplus are shown in Figure 5.7.

Table 5.7. Public finance forecasts under various macroeconomic scenarios

	2007– 08	2008– 09	2009– 10	2010– 11	2011– 12	2012– 13
Treasury Pre-Budget Report forecasts						
GDP growth	3	2	2¾	2½	2½	2½
Output gap (% of potential GDP)	0.2	–0.3	0.0	0.0	0.0	0.0
<i>Public finance forecasts (% of GDP)</i>						
Current budget surplus	–0.6	–0.3	0.2	0.6	0.8	1.1
Cyclically adjusted current budget surplus	–0.7	–0.2	0.3	0.6	0.8	1.1
Net borrowing	2.7	2.5	2.0	1.7	1.5	1.3
Net debt	37.6	38.4	38.8	38.9	38.8	38.6
Green Budget baseline						
GDP growth	3	2	2¾	2½	2½	2½
Output gap (% of potential GDP)	0.2	–0.3	0.0	0.0	0.0	0.0
<i>Public finance forecasts (% of GDP)</i>						
Current budget surplus	–0.8	–0.6	–0.5	–0.1	0.3	0.6
Cyclically adjusted current budget surplus	–0.8	–0.5	–0.4	–0.1	0.3	0.6
Net borrowing	2.9	2.8	2.7	2.4	2.0	1.8
Net debt	37.8	38.9	40.0	40.7	41.0	41.2
Morgan Stanley central case						
GDP growth	2¾	1¾	2¼	2¾	2¾	2¾
Output gap (% of potential GDP)	0.4	–0.1	–0.2	0.1	0.4	0.6
<i>Public finance forecasts (% of GDP)</i>						
Current budget surplus	–0.8	–0.7	–0.6	–0.4	–0.1	0.0
Cyclically adjusted current budget surplus	–0.9	–0.9	–0.7	–0.2	–0.1	–0.2
Net borrowing	2.9	2.9	2.9	2.7	2.4	2.4
Net debt	38.0	39.7	41.6	42.6	43.4	44.2
Morgan Stanley ‘pessimistic case’						
GDP growth	2¾	½	1¾	2½	2½	2½
Output gap (% of potential GDP)	1.0	–0.5	–0.5	0.0	0.3	0.5
<i>Public finance forecasts (% of GDP)</i>						
Current budget surplus	–0.8	–1.0	–1.6	–1.7	–1.5	–1.5
Cyclically adjusted current budget surplus	–0.9	–1.5	–1.5	–1.3	–1.5	–1.7
Net borrowing	2.9	3.3	3.9	4.0	4.0	4.0
Net debt	38.1	41.8	45.5	48.1	50.4	52.8

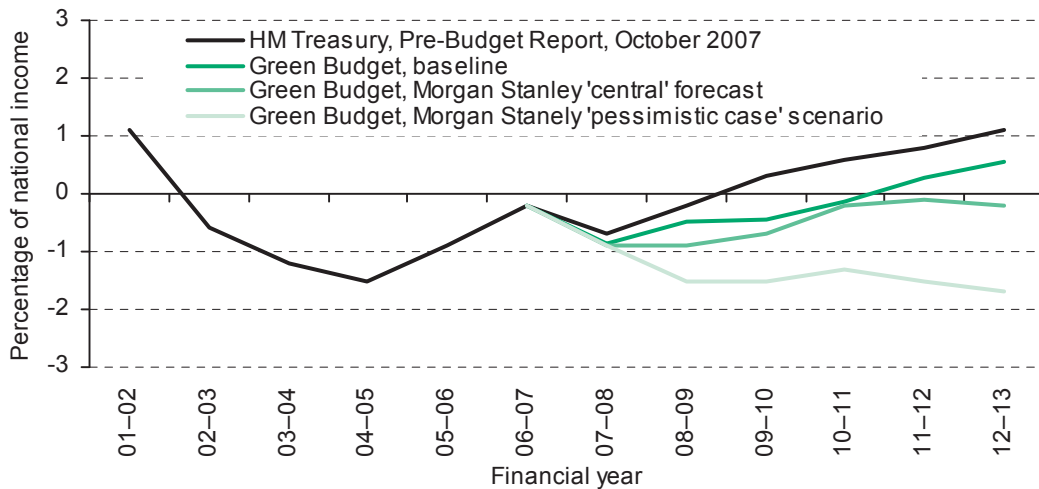
Sources: Morgan Stanley; Treasury forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm).

Figure 5.6. Current budget balance forecasts



Sources: Authors' calculations; Treasury forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm).

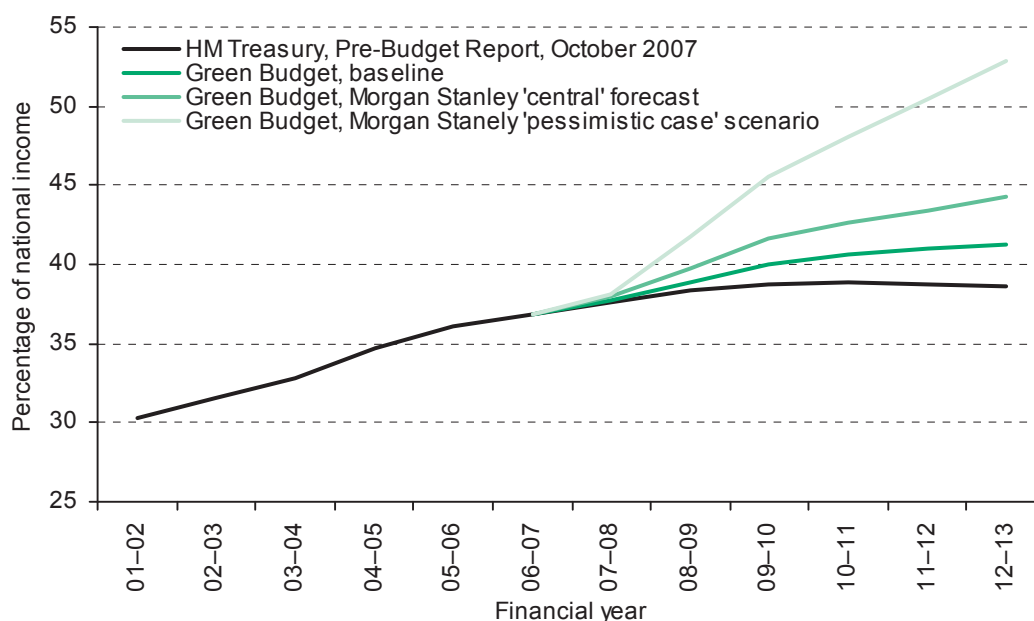
Figure 5.7. Cyclically adjusted current budget balance forecasts



Sources: Authors' calculations; Treasury forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm).

Net debt is slightly higher as a share of national income in 2007–08 (reflecting a lower assumed level of national income in this year) under the Morgan Stanley central scenario than under the Green Budget baseline scenario and then moves further above the Green Budget baseline scenario for the rest of the forecast period. Net debt is higher under the ‘pessimistic case’ than under the central scenario in all years and by the end of the forecast period would be projected to exceed 50% of national income. These forecasts are compared in Figure 5.8.

Figure 5.8. Public sector net debt forecasts



Sources: Authors' calculations; Treasury forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm).

5.5 The fiscal rules and the budget judgement

The Treasury argued in the 2007 Pre-Budget Report that it had met the golden rule over the last economic cycle (which it provisionally claims ended in 2006–07) and said that it was on course to meet it over the next. The Treasury also predicted that public sector net debt would peak at 38.9% of national income in 2010–11, below the 40% ceiling that it had set itself for the last economic cycle – thus continuing to satisfy the sustainable investment rule if the Treasury were to apply it in the same way over the next cycle.

Under each of the scenarios described in the last section, borrowing and net debt are expected to be higher over the next five years than forecast in the PBR. We are thus less confident than the PBR that the Treasury will continue to meet its rules without a further fiscal tightening.

The golden rule

If the Treasury's PBR forecast turns out to be correct, the golden rule will be met as long as the new economic cycle ends no earlier than 2011–12. This would provide enough time for the current budget deficits that the Treasury expects to record through to 2008–09 to be offset by surpluses in subsequent years. This would be true whether the Treasury counts 2006–07 both as the last year of the old cycle and as the first year of the new (as it did with the previous transition between cycles) or whether it starts the new cycle in 2007–08.

Under the Green Budget baseline scenario, the current budget would remain in deficit for an extra two years (to 2010–11). The deficits early in the cycle would not, assuming the current budget surplus remains at the same level we forecast it to be in 2012–13 beyond this point, be offset by subsequent surpluses until 2015–16 unless a further improvement in the current

budget occurred beyond the forecast horizon (for example, through fiscal drag or further cuts in public spending as a share of national income). In other words, the Treasury could find itself needing a 10-year cycle (assuming the current cycle begins in 2006–07) rather than a six-year cycle in order to expect to meet the rule. Under neither of the economic scenarios outlined by Morgan Stanley in Chapter 4, nor under those defined by the statistical filters described in the same chapter, is the cycle expected to last that long. In addition, under the two Morgan Stanley scenarios, we expect borrowing to be even higher and would thus require an even longer cycle to give enough time for the early deficits to be offset by later surpluses.

This picture is, of course, in stark contrast to the pattern over the first 10 years of Labour's time in office. That began with a lengthy (albeit modest and uneven) upswing in the economy, which contributed to big current budget surpluses on average over the early years of the cycle that in effect paid for later deficits. This time, it looks as though the economy will barely have moved above potential before the downswing begins. There will be no cyclical budget surpluses to provide a cushion in the early years, and meeting the golden rule will therefore require the sort of sustained structural improvement in the current budget balance over the next few years that the Treasury has consistently predicted but so far failed to deliver.

The Treasury may come to argue that the last cycle did not end in 2006–07 and that we are still in the sustained downswing of the cycle that it assumes began in 1997–98. By pushing the end date further out, it would reduce the margin by which it estimates that the rule was met over the last cycle and make it easier to meet the rule over the next. This might be an appropriate judgement. However, such a re-dating would risk further undermining what remaining credibility the golden rule has as a guide to the health of the public finances and as a source of discipline on fiscal policy.

The sustainable investment rule

The Treasury's reluctance to say whether it intends to apply the sustainable investment rule in the same way over the new economic cycle as over the last conveys the unfortunate impression that the government is hedging its bets while it assesses how likely it is that debt will exceed 40% of national income in the next few years.

The Treasury's PBR forecasts imply that, at its worst, public sector net debt will still be 1.1% of national income below the 40% of national income ceiling that Mr Brown chose to apply over the last cycle. However, the Green Budget base case shows net debt at 40% of national income in 2009–10 and continuing to rise to 41.2% at the end of the five-year forecasting horizon. Under Morgan Stanley's central scenario, we estimate that net debt would rise to 44.2% of national income and under their pessimistic scenario to 52.8%. Even under the pessimistic scenario, this does not imply a rise in indebtedness to crisis levels (although this level of debt has not been surpassed in the UK since 1975–76). But under each scenario, it would breach the sustainable investment rule (as it has been applied to date) and put the UK further at odds with the trend towards lower debt levels in most industrial countries. As shown in Table 5.8, taking into account previous forecasting errors, in 2010–11 there is a 41% chance that, in the absence of any further policy announcements, net debt would exceed 40% of national income under the Treasury's own forecast. Under the Green Budget baseline, this probability rises to 55%, and under the Morgan Stanley central scenario, it is 70%.

Table 5.8. The sustainable investment rule under the alternative forecasts: percentage chance of net debt exceeding 40% of national income

% chance	HMT PBR forecast	Green Budget baseline	Morgan Stanley central	Morgan Stanley pessimistic
2008–09	7.8	16.3	41.0	94.6
2009–10	33.4	49.3	71.7	97.5
2010–11	41.4	55.2	70.0	94.5
2011–12	43.8	55.1	67.2	91.3

Notes: As Figure 5.5.

Sources: As Table 5.7.

The government could argue that a larger-than-expected increase in the current budget deficit over the next couple of years would be a temporary result of the credit crunch and the particular difficulties of the financial sector and that the golden rule sensibly allows it to borrow more in bad times as long as it runs offsetting surpluses in good times. But the sustainable investment rule, at least as Mr Brown chose to apply it over the last cycle, offers no such get-out: it is a ceiling to be kept below every year, in good times or bad times.

This relative inflexibility did not seem much of a constraint five or six years ago, when the Treasury expected net debt to remain much closer to 30% than to 40%. But since then, its forecasts for borrowing – and thus for debt – have almost always proved optimistic. As a result, the headroom beneath the debt ceiling has been steadily eroded and the government now has little room for manoeuvre left if the credit crunch and economic slowdown are more severe than was expected at the time of the PBR.

The Budget judgement

Given our assessment that the outlook for the public finances is weaker over the next five years than the Treasury thinks, and that we are not as confident as the Treasury that the fiscal rules will be adhered to, what should Alistair Darling do in his first Budget?

One response is to argue that he should announce Budget measures sufficient:

- to make it more likely than not that net debt will remain below 40% of national income over the next five years;
- to ensure that the current budget balance is more likely than not to return to the black in 2009–10, as the Treasury thought appropriate at the time of the Pre-Budget Report; and
- to ensure that the overall budget deficit is forecast to be no larger (and the current budget surplus no smaller) at the end of the five-year forecasting horizon in 2012–13 than the Treasury thought appropriate in the PBR.

If the public finances are set to evolve as in the Green Budget base case, these goals argue for a tightening in the Budget of around 0.5% of national income or £8 billion to be implemented by the 2009–10 financial year. As the Treasury has just announced ‘firm and fixed’ spending plans for the next three years, such an adjustment would presumably take the form of tax increases rather than further cuts in spending.

Three objections might be put forward to such a course:

- *The outlook for the public finances is uncertain:* This is true today as it has always been. As the probability distributions in Figures 5.4 and 5.5 illustrate, there are big uncertainties around our central projections for the budget balance and public sector net debt (as there are around those of the Treasury, although it is reluctant to quantify them). But the Morgan Stanley central and pessimistic scenarios suggest that the risks to the Green Budget base case may well be more on the downside than the upside. A prudent and far-sighted government might think it better to tighten policy today and give itself scope to loosen in the future, if it turns out to have been unnecessary, than to do nothing today and face the possible need for a bigger and more abrupt adjustment at an even more inconvenient moment in the future.
- *The deterioration in the public finances the Green Budget expects relative to the Treasury's forecast is only temporary:* It is certainly true that we are more pessimistic about the outlook for the public finances in part because of the unexpected impact of the financial market disruption and credit crunch that got under way last year. The fortunes of the financial sector might well rebound swiftly, but the fiscal lesson of Labour's second term is that problems in the financial sector can have a bigger and more persistent impact on the public finances than first appears likely. Indeed, it may demonstrate that what looked like normal conditions beforehand were actually unsustainable. A tightening in policy now would help insure against these risks and help bolster the credibility of the government's claims to be a prudent manager of the public finances.
- *It would be a mistake to tighten fiscal policy when the downside risks to the economy are so great:* On the face of it, it does not seem desirable to take spending power out of the economy just as people become increasingly pessimistic about the outlook for growth. The golden rule is explicitly designed to allow the automatic stabilisers to work – in other words, to allow the government to borrow more when the economy is weak. The sustainable investment rule does not offer similar latitude, especially now that the government has almost entirely exhausted its margin for error. But if it comes to a choice between the needs of the economy and an arbitrary ceiling on public sector debt, the needs of the economy should clearly come first. However, Mervyn King, the Governor of the Bank of England, said on 22 January 2008¹ that, with base rates at 5.5%, monetary policy was probably still 'bearing down on demand' rather than stimulating it. This implies that the Bank has interest rate ammunition in reserve to stimulate activity if and when it needs to – and that we do not yet need fiscal policy to do the job. (The Bank may, of course, feel constrained in cutting interest rates because it expects inflation to be uncomfortably high this year, even while growth is weak. But that constraint would be much the same either with the current policy mix or with a slightly tighter fiscal policy offset in its impact on growth and inflation by a slightly looser monetary policy.) In his speech, Mr King added that 'As part of a longer-run rebalancing of the UK economy, an increase in our national saving rate, both private *and public* [our italics], is necessary'. This implies that the uncertain economic outlook should not deter the government from doing what looks necessary to get fiscal policy onto a sound medium-term footing.

¹ Speech by Mervyn King at a dinner in Bristol hosted by the IoD South West and the CBI, 22 January 2008 (<http://www.bankofengland.co.uk/publications/speeches/2008/speech333.pdf>).

Furthermore, underpinning the fiscal position now would leave greater scope for a loosening in the future if monetary policy proved overstretched or ineffective.

In terms of the political practicalities alone, it seems unlikely that Mr Darling (and his illustrious predecessor) would contemplate much of a fiscal tightening in this year's Budget. We might expect them to argue that any further near-term deterioration in the public finances will be temporary and that it is important in these uncertain times for fiscal policy to support monetary policy. The implications of the weak outlook for the economy merit serious consideration in making the Budget judgement. But, having already undermined people's faith in the letter of the fiscal rules, they risk undermining people's faith in the spirit if they do nothing to address a further worsening in the outlook for the public finances. Budget after Budget, Treasury Ministers have had to admit that the outlook for the public finances is weaker than they thought and that a return to their desired position is one year further away. That the prospect of having to say the same in this year's Budget largely reflects the domestic consequences of unhelpful global events is doubtless frustrating. But there is a danger in being seen always to pray, like Saint Augustine and Robbie Williams, 'Oh Lord, make me pure, but not yet'. The day of judgement cannot be postponed forever.

6. Funding, debt management, and credit market problems

David Miles and Laurence Mutkin (Morgan Stanley)

Summary

- As in recent years, the government is likely to have to borrow more over the next five years than the Treasury currently thinks. But the government still faces an environment that is favourable for issuing gilts at relatively low cost.
- Yields on shorter-dated gilts are exceptionally low, which argues for skewing issuance away from medium-dated towards shorter-dated bonds.
- Short-dated gilt yields are low in part because of turbulence in financial markets – the so-called ‘credit crunch’. If this continues, it would pose significant difficulties for mortgage lenders. We consider a number of possible strategies to alleviate this problem, including the creation of an agency to buy or lend against the collateral of mortgage-based securities issued by banks and building societies.
- Mortgage contracts that (i) link monthly repayments to consumer prices or house prices, and (ii) involve borrowers and lenders sharing the risk of house price changes, could be both attractive and commercially viable.

6.1 Introduction

This chapter begins by assessing the likely scale of gilt sales over the next few years (Section 6.2). We then analyse how the yield curve has evolved and consider the impact of the recent market turbulence – the so-called ‘credit crunch’ – on the price of shorter-dated government bonds (Section 6.3). We consider the implications of this for how the Debt Management Office (DMO) might optimally choose what types of bond to issue (Section 6.4). We then consider the potential wider fallout from the credit crunch and some possible policy reactions to it – some of which are radical (Section 6.5). The fallout of the recent market turbulence on the mortgage market is potentially significant, and the structure of the mortgage market and the risks it generates are an issue the government was already considering before the recent dramatic market turbulence and the bank run at Northern Rock: in Section 6.6, we highlight some issues in the risk and cost characteristics of mortgages, and discuss the way they can be funded and how that interacts with gilt issuance. Section 6.7 concludes.

6.2 The likely scale of debt issuance

Gross gilt issuance depends upon the central government net cash requirement (which is usually closely linked to public sector net borrowing) and the scale of redemptions. Based on the Treasury’s October 2007 Pre-Budget Report (PBR) projections for borrowing and on the

assumption that other factors (e.g. changes in the stock of Treasury bills) are neutral, gross and net gilt issuance will be fairly steady over the next few years but then fall to a significantly lower level, in real terms, by 2012–13. In five years' time, the real net cash requirement of the central government – the main driver of net gilt issuance – is projected by the Treasury to be around 30% lower than in the current financial year. Gross gilt issuance five years ahead is projected to fall even more than the net cash requirement because redemptions fall markedly in 2012–13. Based on the PBR projections, 2012–13 gross gilt issuance would, in real terms, probably be only around one-half the level in the current financial year.

But these projections are based on assumptions on near-term growth in the economy that are marginally more optimistic than we consider plausible and, more significantly, rely on assumptions on the amount of tax revenue generated for a given level of economic activity that look high. Alternative profiles for the evolution of the level of public sector borrowing, gilt issuance and the stock of debt based on different assumptions about economic growth and the tax take out of national income are shown in Tables 6.1 to 6.4.

Table 6.1 shows central estimates of the scale of public sector net borrowing under four scenarios (see Chapter 5):

- the Treasury's 2007 PBR forecast;
- the IFS 'base case', in which the economy evolves largely as the Treasury expects, but where corporation tax and stamp duty land tax revenues are noticeably weaker;
- IFS's forecast if the economy evolves according to the Morgan Stanley 'central case' (see Section 4.4);
- IFS's forecast if the economy evolves according to Morgan Stanley's 'pessimistic case' (also see Section 4.4).

Table 6.1. Public sector net borrowing

£ billion	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13
2007 PBR	31.0	38.0	36.4	30.6	27.2	25.0	23.0
IFS base case	31.0	40.5	41.2	41.5	38.6	33.9	31.8
MS central case	31.0	40.5	41.8	43.5	42.7	40.7	41.7
MS pessimistic case	31.0	40.5	46.6	57.4	62.3	64.0	68.1

Sources: IFS; Morgan Stanley Research; HM Treasury.

Table 6.2 shows how the stock of debt relative to national income might evolve in each case. Table 6.3 shows the DMO's illustrative projection of gilt issuance based on the Treasury's 2007 PBR forecasts. Table 6.4 compares this with the outlook for gilt issuance on the other three borrowing scenarios. Our three alternative scenarios show public sector net borrowing consistently higher than the Treasury expects over the next five years. Assuming no offsetting changes elsewhere, the IFS base case and the Morgan Stanley central case imply that over the five years from April 2008, gilt issuance on average would be between £9 and £14 billion a year higher than the DMO projections. On the Morgan Stanley 'pessimistic case' scenario, borrowing is higher still and consistently remains well above the PBR projections.

Table 6.2. Public sector net debt

% of GDP	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13
2007 PBR	36.7	37.6	38.4	38.8	38.9	38.8	38.6
IFS base case	36.7	37.8	38.9	40.0	40.7	41.0	41.2
MS central case	36.7	38.0	39.7	41.6	42.6	43.4	44.2
MS pessimistic case	36.7	38.1	41.8	45.5	48.1	50.4	52.8

Sources: IFS; Morgan Stanley Research; HM Treasury.

Table 6.3. Gilt issuance: the DMO's illustrative projections based on Pre-Budget Report forecasts

£ billion	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13
Central government net cash requirement	41.2	37.3	42*	38	33	34	29
Redemptions	29.9	29.2	17	16	30	27	8
Financing requirement	71.1	66.5	59	54	63	61	37
Other sources of financing*	-8.6*	-8.1	-6	-20	-2	-2	-2
Illustrative gross gilt sales	62.5	58.4	53	52	61	59	35

Notes: * The DMO announced on 24 January that the government would repay £4 billion of its ways and means facility at the Bank of England. We assume that this £4 billion will be added to the central government net cash requirement in 2008–09. We assume that this will be met entirely by non-gilt financing (e.g. Treasury bills). Other projections assume national savings and investments run at £2 billion a year and that other factors (for example, changes in the public sector net cash position and changes in the stock of Treasury bills) have zero net impact.

Sources: Debt Management Office; Morgan Stanley Research.

Table 6.4. Outlook for gross gilt issuance

£ billion	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13
<i>DMO/PBR illustrative gilt sales</i>	62.5	58.4	53	52	61	59	35
IFS base case	62.5	60.9	58	63	72	68	44
MS central case	62.5	60.9	58	65	77	75	54
MS pessimistic case	62.5	60.9	63	79	96	98	80

Note: The alternative projections in this table to the DMO/PBR illustrations are not really forecasts of what gilt sales would be since they are based on an assumption of unchanged spending plans and tax rates.

Sources: IFS; Morgan Stanley Research; HM Treasury.

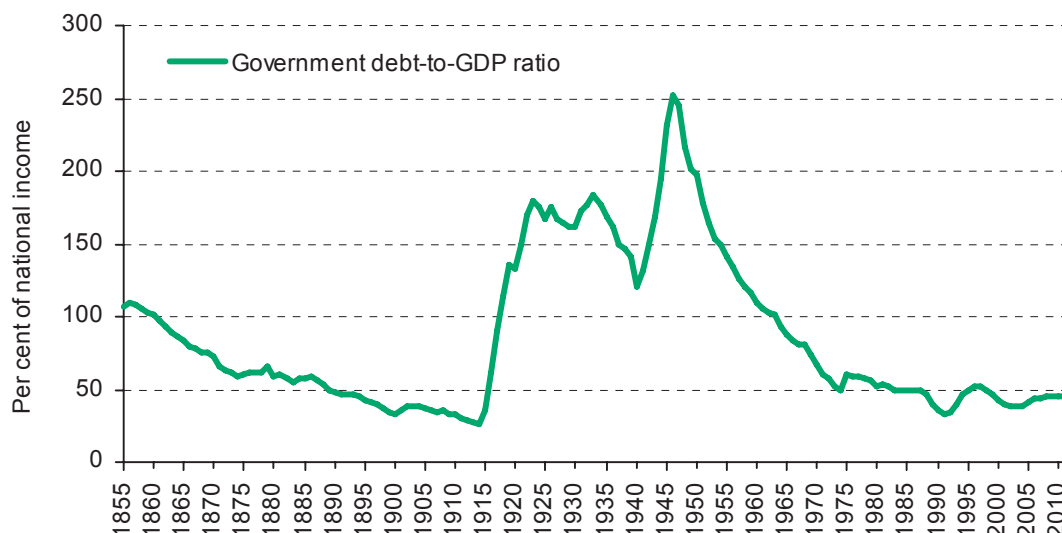
If the alternative scenarios turned out to be accurate projections for the UK economy, and for the subsequent path of the public finances, the government might well change policy so that borrowing does not increase as much. This is more likely in the medium term than the short term. In particular, the figure of over £55 billion for public sector net borrowing from 2009–2010 under the 'pessimistic' scenario for the economy is not a very likely outcome since the Chancellor would probably have to scale back his spending plans and/or announce new tax-raising measures if things turned out that badly. Failure to do so would imply that the ratio of net debt to GDP would substantially exceed 40% (see Table 6.2).

Even in the more favourable scenarios, it is clear that the stock of net debt to GDP would likely be very close to 40% for several years. Should the government place a high weight on keeping below the 40% figure, it would constantly need to be ready to adjust quickly the

balance between spending and revenue in response to even mild deterioration in the outcomes relative to its forecast (which would probably not be sensible). The safety margin between the stock of debt and the 40% of GDP level has essentially disappeared.

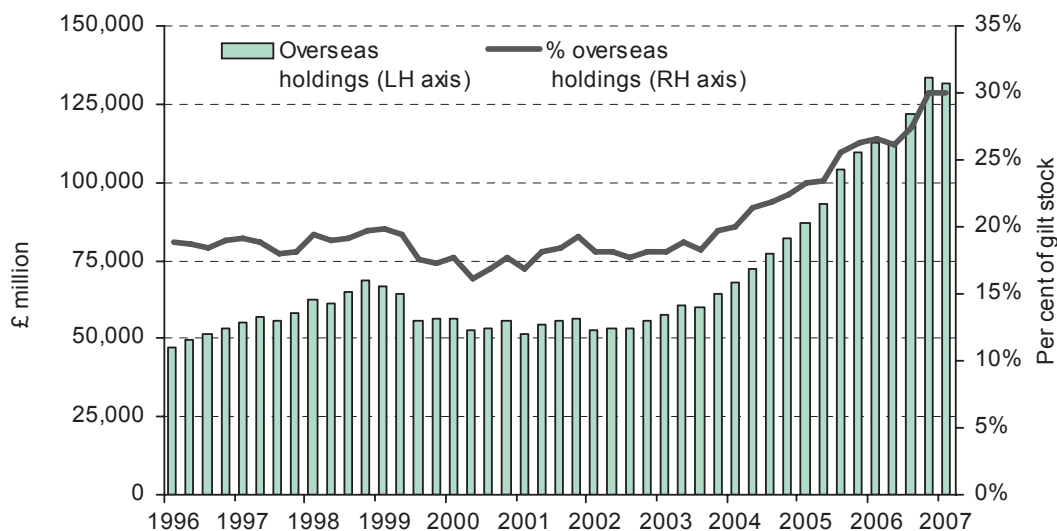
Net debt being marginally above or below 40% of national income is in itself not very significant from an economic point of view. So its impact upon gilt yields would be small, unless people came to see a breaching of the 40% limit as a signal that substantially higher debt and deficits were now more likely in the future.

Figure 6.1. National debt as a proportion of national income since 1855



Notes: Pre-1974 series is gross nominal liabilities of the National Loans Fund (formerly known as the national debt). 1974 onwards it is the general government gross debt.
Sources: Debt Management Office; HM Treasury; Office for National Statistics.

Figure 6.2. Overseas holdings of gilts



Source: Debt Management Office.

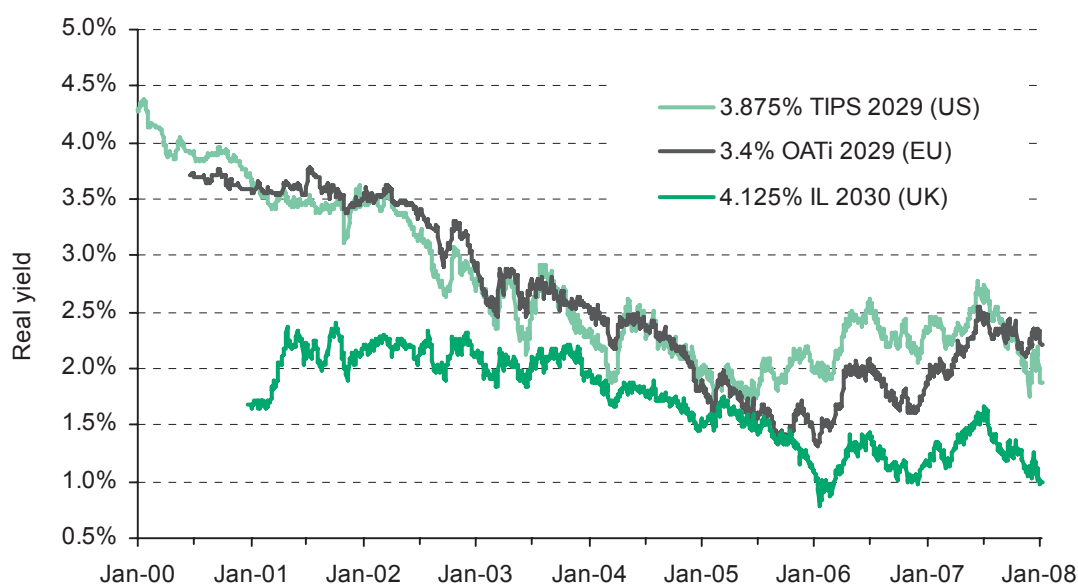
Even then, it is far from clear that this would cause a significant sell-off in the market for government debt. UK government debt, given the size of the economy, is low relative to most other G7 economies (although less so relative to that of some other industrial countries) and also relative to the UK's past history. Figure 6.1 shows an estimate of government debt relative to national income since the middle of the nineteenth century. Although rising, at well under 50% of national income the debt burden is not that far above the low point of 26% reached on the eve of the First World War.

Furthermore, the cost of UK government borrowing is probably less influenced now by the scale of borrowing than it has been in the past. This reflects the increasing internationalisation of the bond market, evidence of which we can see in the increasing proportion of UK gilts that are now held overseas, as shown in Figure 6.2.

Another manifestation of this globalisation is the increasing tendency for the real cost of government debt for different developed countries to move together even when their debt positions evolve in different ways. Figure 6.3 shows that the path for the real cost of government debt over the past seven or so years has been similar in the US, the Euro area and the UK. The synchronisation of movements in bond yields across the developed economies in the past few years has been high.

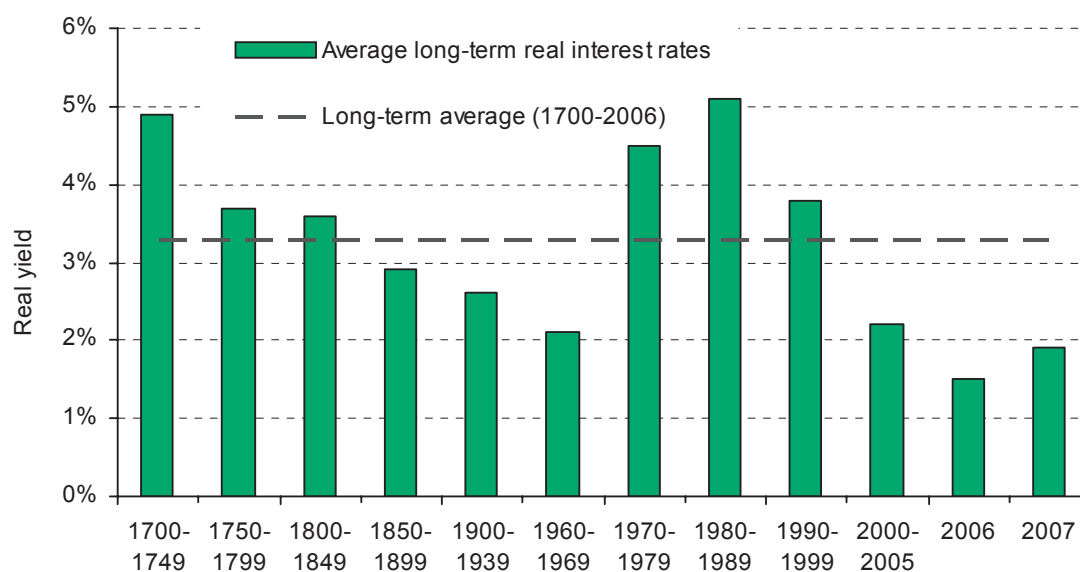
As shown in Figure 6.4, long-term real interest rates in the last couple of years have, by historical standards, been very low. Over the period from the turn of the century until 2006, it has been striking how the UK government's cost of borrowing (illustrated in Table 6.5) had been falling – in both nominal and real terms – even though the amount it has borrowed has been rising and has consistently exceeded its own forecasts. But that period of steadily falling real and nominal yields came to an end in the first part of 2007. Real and nominal yields moved up in the early part of 2007 before falling back quite sharply in the second half of the year as extreme turbulence in the money and bond markets increased the value placed on safe and highly liquid fixed income assets.

Figure 6.3. International real yields on inflation-proof government bonds



Source: Bloomberg.

Figure 6.4. Long-term real interest rates on UK conventional debt



Notes: Nominal 2.5% consol rate less long-term inflation expectations. 1940–59 is omitted from the graph (but not from the long-run average, which otherwise would rise further to just under 3.6%) because rationing during this period made price data unreliable, leading to a negative real long-term interest rate.

Source: Morgan Stanley Research. Estimates of real yields are based on the nominal yield on consols net of a measure of expected inflation over the coming 10 years. For a detailed description of the method used to construct the real yields, see D. Miles, M. Baker and V. Pillonca, 'Where should long-term interest rates be today? A 300 year view', Morgan Stanley Research, March 2005.

Table 6.5. Gilt issuance and gilt yields

	Gross (Net) issuance (£bn)	15-year nominal yield	15-year real yield
2001–02	14 (–5)	4.86%	2.37%
2002–03	26 (9)	4.71%	2.21%
2003–04	50 (29)	4.70%	2.04%
2004–05	50 (35)	4.57%	1.78%
2005–06	52 (38)	4.24%	1.44%
2006–07	63 (32)	4.41%	1.37%
2007–08	58 (29)	4.75%	1.50%

Notes: 15-year real and nominal yields are funding-year averages of Bank of England estimated spot yields. 2007–08 estimates are calculated using spot yields up until 11 January 2008.

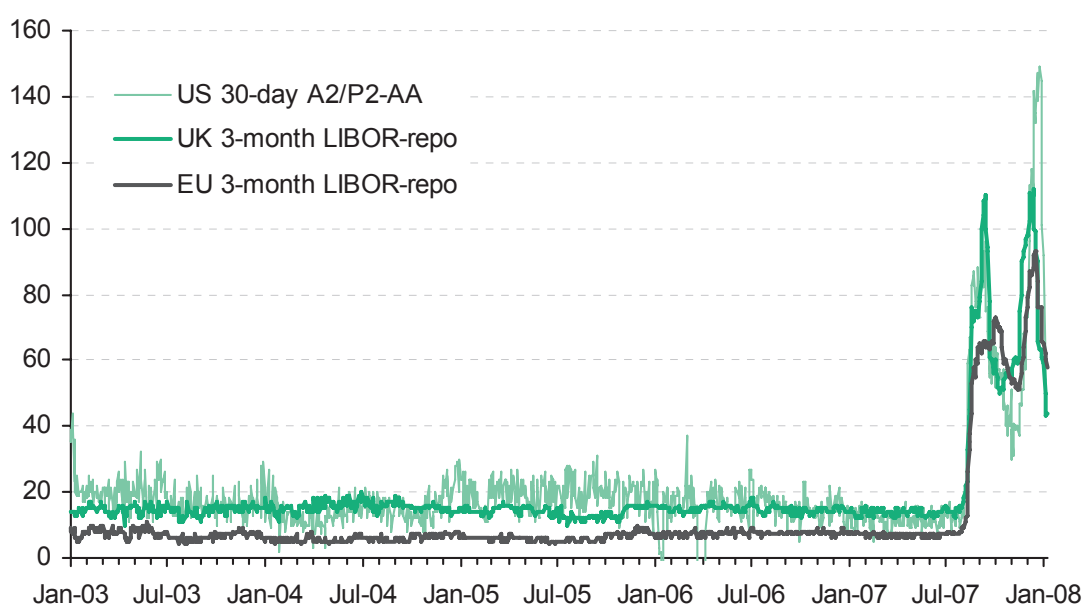
Sources: Bank of England; Debt Management Office.

On balance, it remains the case that the UK government can borrow at nominal and real rates that are, by the standards of recent decades, very low. But given the recent turbulence in markets, it is likely that the cost of debt will continue to fluctuate significantly. This raises important issues about the best way to fund the borrowing needs of the government. This question takes on unusual significance given the substantial changes in the shape of the yield curve that have occurred over the past few months, when conditions in the financial markets have driven yields on short-dated nominal gilts down sharply. We turn to those issues in the next two sections.

6.3 Government debt and the money market crisis

Systemic credit stresses erupted during August 2007, after several months of sporadic, apparently isolated credit problems centred on the US sub-prime mortgage market. The sea-change from individual credit concerns to systemic liquidity collapse was rapid and widespread. The first three weeks of August saw spreads between secured and unsecured interbank lending rates (i.e. the difference between the rate of interest charged on secured interbank lending – the repo rate – and that charged on unsecured interbank lending) more than quadruple across the sterling, US dollar and euro-denominated markets (Figure 6.5).

Figure 6.5. Secured–unsecured spreads in the UK and Europe, and the US Commercial Paper AA-A2/P2 spread



Source: Reuters EcoWin.

Stresses have been evident across a wide variety of financial instruments not directly connected with the US sub-prime mortgage market: corporate bonds; interest rate swaps; foreign-exchange forwards; and credit derivatives.

This systemic collapse in general liquidity conditions has also precipitated specific casualties – notably the run on the UK bank Northern Rock, which led to the Treasury’s announcement on 17 September 2007 that deposits there would be guaranteed by HM Government. But there have been significant specific failures elsewhere in the global financial system too. As financial market liquidity and credit conditions have tightened, the effects have been felt across the spectrum of financial markets.

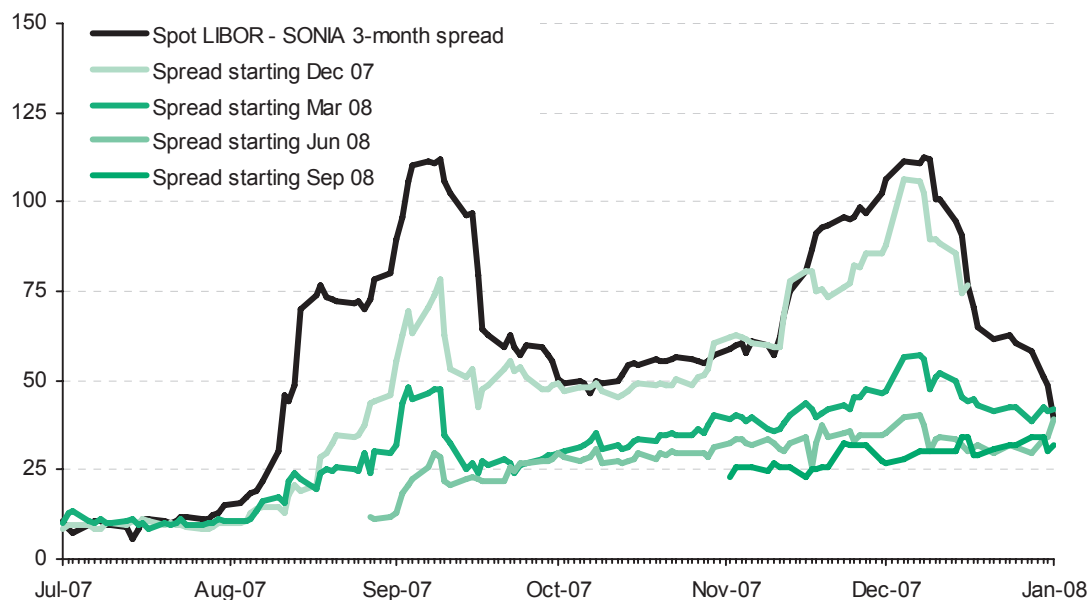
Markets have remained pessimistic about the prospects that the liquidity crisis will be quickly fixed, although sentiment has improved since calendar-year-end.

A visible expression of market expectations for the persistence of money-market stress lies in the difference between the interest rate charged for money over a given term and expectations

for where overnight interest rates will be over the same period.¹ This difference is known as the LIBOR–SONIA spread. In theory, the two rates – LIBOR and SONIA – should be very close together, as interest rates for loans over a given term such as LIBOR are themselves an expression of expectations for future short-term interest rates. The difference between LIBOR and SONIA, therefore, expresses counterparties’ reluctance to part with cash, either because of fears about credit risk or because of cash hoarding. As such, it is a good barometer of money-market stresses.

Before August, LIBOR–SONIA spreads were around a dozen basis points; but in August, the 3-month LIBOR–SONIA spread widened dramatically, more than eightfold, to more than 100 basis points (its equivalents in US dollars and euros followed suit, albeit to a lesser extent). This is shown in Figure 6.6.

Figure 6.6. Forward LIBOR–SONIA spreads



Notes: Spread between 3-month LIBOR and 3-month SONIA: the ‘spot LIBOR–SONIA spread’. Market prices also allow us to see what level the market expects the spread to be in the future, and how these expectations change over time. After calendar-year-end, the spot spread narrowed considerably (though remaining very elevated compared with pre-August 2007); but the forward spreads did not retreat much, reflecting persistent wariness about liquidity conditions throughout 2008.

Central banks including the Bank of England have made attempts to ease the liquidity crisis. The ECB, whose open market operations (OMOs) already permitted it to lend to banks against a wide range of collateral before August, seems to have become the bellwether. Other central banks, particularly the Bank of England, were initially reluctant to adopt as liberal an approach as the ECB, preferring less accommodative measures. But financial market stresses worsened during November and December; and in December the US Federal Reserve, the

¹ In the UK, the average overnight rate is referred to as the Sterling Overnight Index Average, or SONIA. Since August, SONIA swaps have become more actively traded. These are essentially no more than a contract for difference on what the average overnight interest rate will be for a certain period of time. As such, there is negligible counterparty risk, as neither party to the swap actually lends the other cash.

Bank of England and other central banks agreed to conduct a variety of term lending operations against a wide range of collateral.

Since calendar-year-end, money-market liquidity conditions have improved, and the LIBOR–SONIA spread has narrowed markedly (although it remains above the levels prevailing before August 2007). But in spite of the central banks' efforts, markets remain wary of another potential deterioration in money-market liquidity. In mid-January, the forward LIBOR–SONIA spreads starting in June 2008 and September 2008 were trading around 30bp, about three times what 3-month LIBOR–SONIA was before August last year, implying that stresses are expected to persist even into Q4 2008.

The liquidity crunch and the gilt market

Financial market stresses have had the effect of pushing gilt yields lower. Since risk aversion and liquidity concerns erupted in August, gilts – especially short-dated gilts – have commanded a premium.

Between the end of July 2007 and the end of December 2007, 2-year gilt yields fell by 120bp, and the slope of the yield curve between 2 years and 30 years steepened by 90bp, bringing 2- and 30-year yields to about the same level for the first time since 2005 (Figure 6.9). Long-dated breakeven inflation (the rate of RPI inflation that would make the returns on conventional and index-linked gilts the same – effectively a market forecast for inflation) pushed up above 3.50%, its highest level since the Bank of England was granted independent control of monetary policy in May 1997 (Figure 6.10). Swap spreads (the spread between gilt yields and swap rates of the same maturity) have widened, especially in shorter maturities (Figure 6.8).

These yield moves create interesting questions for gilt market participants – including the Debt Management Office.

How much of the fall in short-dated gilt yields is attributable directly to a flight to safety, and how much reflects expectations that the Bank of England will cut official rates in response to the effect on the real economy of tightening credit conditions? Should the DMO consider issuing gilts shorter than 5 years to satisfy the market's increased demand for short-dated government debt? And does the dis-inversion of the yield curve evident in Figure 6.9 mean that the market's appetite for long-dated conventional gilts is finally on the wane? We briefly consider these questions before turning to the implications for funding.

Why has the yield curve shifted?

The fall in 2-year gilt yields since August, if it reflected only expectations of the future path of the base rate, would certainly be consistent with several interest rate cuts. Since the MPC was given independent responsibility for monetary policy in 1997, 2-year gilts have typically traded 40-60bp below the base rate when the market anticipated that the next policy move would be a rate cut. After August 2007, 2-year yields fell to more than 125bp below the base rate – a spread previously reached only in the wake of the 1998 emerging market/LTCM crisis (Figure 6.7).

Figure 6.7. 2-year gilt yield vs base rate (%)

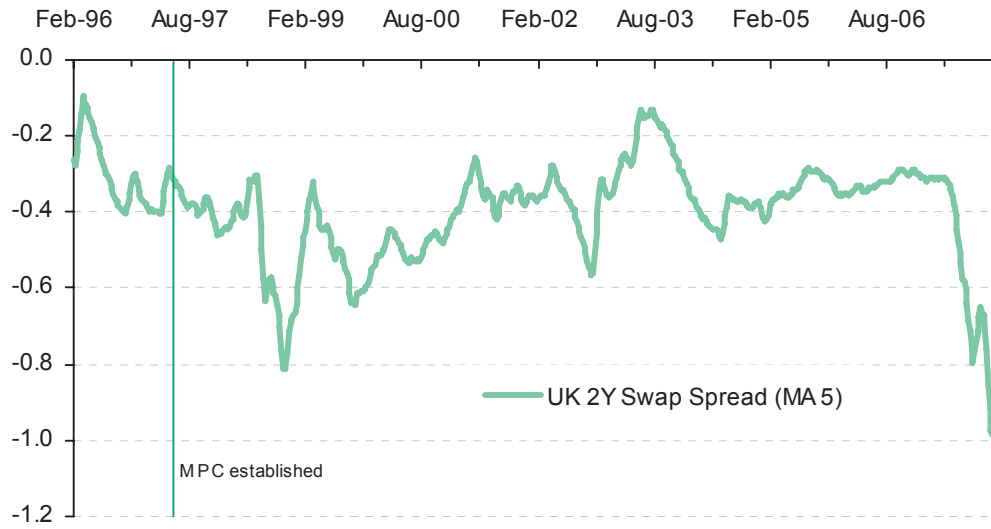


Notes: The upper panel shows the base rate and the 2-year gilt yield; the lower panel shows the spread between the two. When the market anticipates an official rate cut (shaded areas), the 2-year yield trades below the base rate. Source: Bloomberg.

But it seems clear that not all the rally in shorter-dated gilts is attributable to expectations of base rate cuts. Although short-dated gilt yields have fallen, short-dated swap rates – an expression of expectations of the future path of LIBOR – have not fallen nearly as much. The widening of this so-called swap spread suggests that at least some of the rally in short-dated gilts has been to do with a flight to safety rather than the anticipation of the level of policy rates (Figure 6.8).

So yields on short gilts have probably been driven lower by more than changing base rate expectations. The yield curve steepened during the second half of 2007, putting the spread between 2- and 30-year gilts back into positive territory for the first time in more than two years (Figure 6.9).

Figure 6.8. 2-year swap spread



Source: Bloomberg.

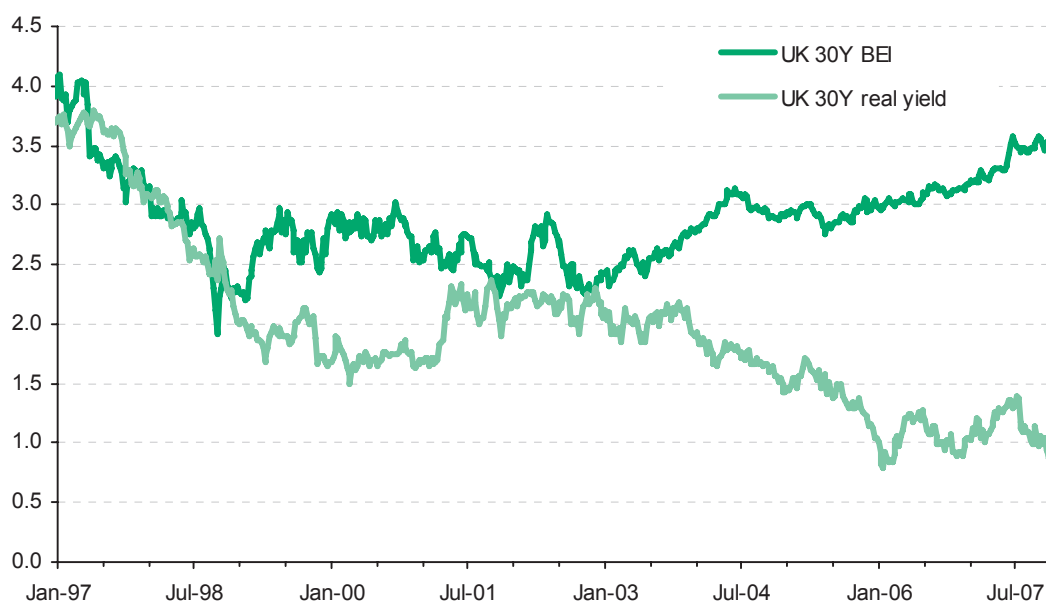
Figure 6.9. The gilt yield curve



Source: Morgan Stanley.

This steepening was mainly the result of a fall in yields on shorter-dated gilts, driven by a combination of weaker economic data and the liquidity crisis that arose in August. It does not signify a fall in demand for long-duration assets from pension funds, which has remained firm. Indeed, long-dated forward rates have remained rather stable. Even though real yields have moved up a little from the levels of 2006, they are still low relative to recent history (Figure 6.10). Given that long-dated breakeven inflation (the difference between nominal and real yields on conventional and indexed gilts of long maturity) is well above the MPC's target, this suggests that index-linked gilts remain a source of relatively cheap funding and it would make sense for the DMO to continue to supply them. Whether in the light of the sharp fall in yields on shorter-dated gilts the DMO should also skew issuance towards short-dated nominal bonds is the issue we consider in the next section.

Figure 6.10. 30-year index-linked real yield and breakeven inflation (BEI)



Source: Bloomberg.

6.4 Optimal debt management

Debt management involves choosing the types of bonds the government should issue – longer- or short-dated, denominated in sterling or other currencies, with fixed nominal values or values that depend upon unknown future events (e.g. the level of consumer prices).

Here we consider how the stock of debt should be managed – what sort of bonds should be issued? We start with an overview of what the funding strategy has been to date and how the composition of the outstanding debt has evolved. We then look at what the DMO's own modelling of different debt issuance strategies suggests might be the best way to fund deficits in the light of the current prices of different sorts of government debt.

The recent history of debt issuance and the structure of debt

In recent years, the government has issued about 25% of its new gilts in index-linked (inflation-proof) form, whilst around 75% has been conventional (fixed, nominal value) debt. Most index-linked debt is relatively long-term, with maturities of new indexed gilts generally being 20 years or more; since 2005, some new indexed gilts have had original maturities as long as 50 years. There has been a recent increase in the proportion of conventional debt that has long maturity – that is, an original maturity at issue of 15 years or more (Table 6.6).

Table 6.6. Breakdown of gilt issuance by maturity and type

%	Conventional			Total	Other		
	0–7 years	7–15 years	15+ years		Floating	Undated	Index-linked
1990–91	40.1	33.1	8.0	81.1	0.0	2.6	16.2
1991–92	42.7	28.3	10.7	81.6	0.0	2.4	16.0
1992–93	38.6	27.6	14.7	80.9	0.0	2.0	17.1
1993–94	36.0	30.4	15.0	81.4	0.0	1.5	17.1
1994–95	34.7	29.3	15.3	79.4	2.2	1.4	17.0
1995–96	36.3	27.4	15.1	78.9	2.2	1.2	17.8
1996–97	37.0	25.2	15.9	78.1	3.0	1.1	17.8
1997–98	35.3	25.4	15.5	76.2	2.9	1.1	19.8
1998–99	37.8	24.0	14.7	76.5	1.0	1.1	21.4
1999–00	39.1	19.5	16.5	75.1	1.0	1.1	22.7
2000–01	38.9	16.1	17.4	72.5	1.1	1.1	25.3
2001–02	36.7	17.0	19.5	73.2	0.0	1.2	25.6
2002–03	35.6	17.7	19.0	72.2	0.0	1.1	26.7
2003–04	34.3	18.6	21.0	73.9	0.0	1.0	25.1
2004–05	37.2	14.1	23.0	74.3	0.0	0.8	24.8
2005–06	32.8	15.4	25.2	73.5	0.0	0.7	25.8
2006–07	28.0	19.0	25.0	72.0	0.0	1.0	27.0
2007–08	17.2	17.1	40.0	74.3	0.0	0.0	25.7

Notes: Floating-rate gilts have coupons set in line with short-term interest rates. The redemption of undated gilts is at the discretion of the government.

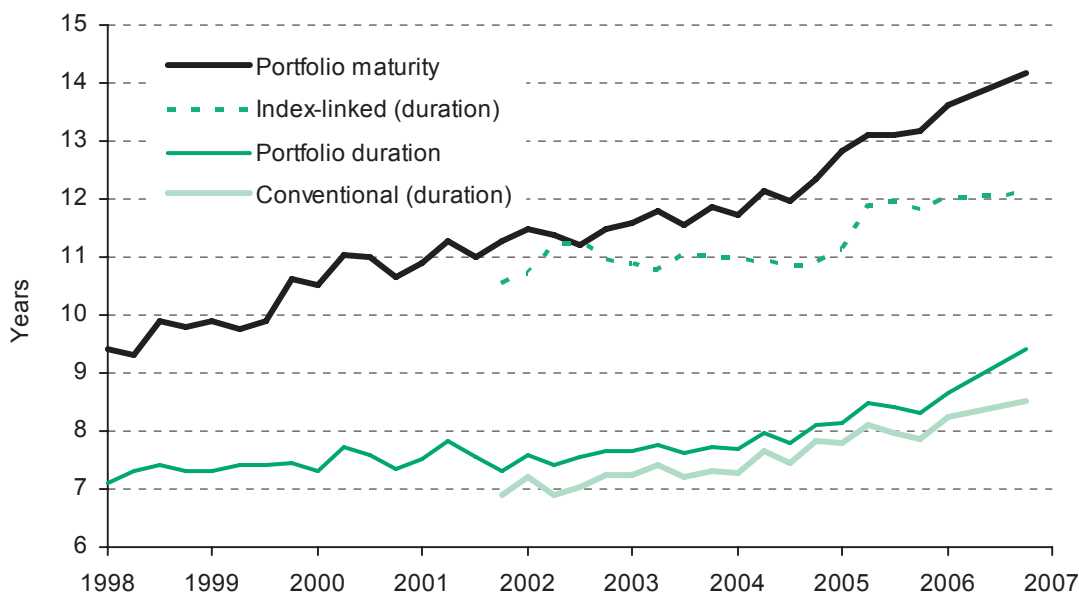
Source: Debt Management Office.

The strategy of issuing about one-quarter of debt in index-linked form has been fairly consistent for several years. As a result, the proportion of the outstanding stock of debt that is index-linked (or real) has been fairly steady and also settled down at around 25%.

But within the stock of both real and nominal debt, the average maturities of new issues have lengthened. Figure 6.11 shows that the average maturity of the outstanding stock of government debt has increased from about 9½ years a decade ago to about 14 years today. A more relevant measure of the length of government debt is its duration, which takes account of the fact that interest (coupon) payments on gilts are generally paid every six months so that the maturity of the debt (the date until the final payment is made) overstates the period for

which money is effectively lent.² Duration has also increased substantially over the past decade – from around 7 years to about 9½ years. The strategy of lengthening the maturity and duration of debt has occurred over a period when, until very recently, long yields have consistently been well below shorter yields.

Figure 6.11. Gilt portfolio maturity and duration



Source: Debt Management Office.

Optimal debt management looking forward

But that situation of long yields being well under short yields no longer holds (see Figure 6.9). Part of the sharp fall in yields on shorter-dated conventional gilts reflects expectations that the Bank of England may be cutting rates during 2008. But the extent of the implied cuts in Bank of England base rate seems to exceed the expectations of all but the most pessimistic economists and this suggests that the fall in 2-year gilt yields may also reflect a fall in the term premium on such gilts. What all this has meant is that the yield curve no longer consistently slopes downward in the UK.

How long the unusual – by recent standards – shape of the nominal gilt yield curve might last is very hard to judge. Is there a strong case for the DMO to tilt issuance towards shorter-dated conventional gilts while it does last? Such a strategy might seem to have the advantage of targeting issuance at parts of the yield curve that have moved in ways that potentially reflect shortages that have driven term premiums (which reflect risk and liquidity issues) down.

The DMO's own modelling work on optimal debt issuance provides one way of answering that question.³ It shows that optimal funding is indeed quite sensitive to the level of term

² Duration also measures the sensitivity of the price of a bond to a change in its yield.

³ For a description of the DMO work on modelling issuance strategies, see chapter 6 of Debt Management Office, *DMO Annual Review, 2005–06*, August 2006 (http://www.dmo.gov.uk/index.aspx?page=publications/Annual_Reviews).

premiums that affect the slope of the yield curve. When an assumption is made that the average level of interest rates on bonds of differing maturities is lower at maturities of 10 years and beyond than at 1 and 5 years (generating an inverted yield curve beyond 5 years) then the DMO model implied that more long-dated issuance is better on cost and volatility grounds. But if an alternative assumption is made that the yield curve mildly slopes up (so that the yield on 10-year nominal debt is on average about 40 basis points above the yield on 2-year debt) then a strategy of switching to fairly heavy short-dated issuance wins on cost and volatility grounds.

The results serve to show the sensitivity of calculations of optimal debt management to fairly small changes in assumption about the shape of the yield curve. But the DMO modelling is only suggestive, and in many ways it is not very well suited to the issue of whether the DMO should temporarily switch tactics during what may well be a temporary period where the yield curve is unusually steep, while retaining a hump at the longer end. The DMO's modelling considers alternative strategies that are consistently followed over a long period.

Nonetheless, its simulation results do serve to show sensitivity to shifts in slope, and support the intuitive appeal of targeting issuance where shortages appear significant – as revealed by slopes of the gilt yield curve that seem to go beyond the shape one would expect based on expectations about how very short-dated nominal rates (set by the Bank of England) and inflation will evolve. Right now, that implies a strategy of issuing short-dated conventionals, long conventionals and long index-linked bonds. Issuing medium-dated conventionals looks less attractive. So long as yields on 2- to 3-year gilts seem to have become somewhat separated from expectations of Bank of England rates (just as, arguably, long-dated yields have become somewhat separated from expectations of central bank policy and inflation over the long term), there is an argument for tilting issuance in that direction.

6.5 Government policy and the 'credit crunch'

The problems in financial markets that began in August last year – commonly referred to now as the 'credit crunch' – pose major policy questions for governments across the world. Those issues are particularly acute in the UK. In part, this is because the tightening in credit conditions has already had a significant impact on the price and availability of credit – particularly mortgages – to UK households and to some companies. More obviously, the policy issues in the UK are acute because the liquidity problems that hit Northern Rock caused a bank run and led to the extension of approximately £25 billion of credit to that bank from the Bank of England. The Bank of England is essentially a nationalised entity (and has been since 1946), so the loan to Northern Rock is effectively a government loan, although it does not count as government debt on the definition used for the fiscal rules.⁴

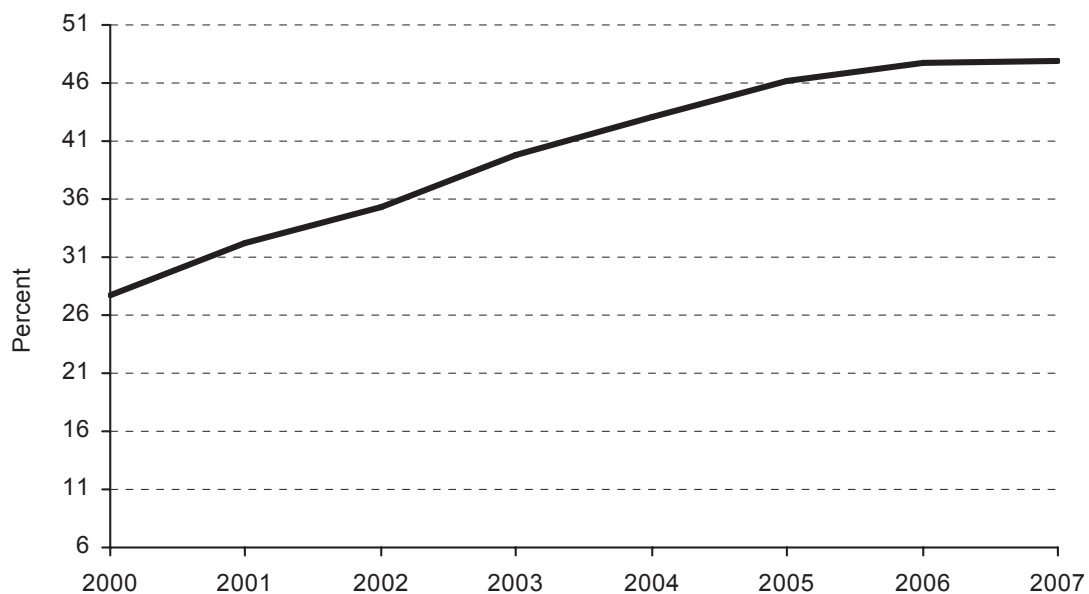
Conditions in the money market and in the markets where banks and building societies raise wholesale funds remain fragile, and participants remain nervous that liquidity could suddenly evaporate again. The market for issuing asset-backed securities has effectively been closed – the price that issuers would need to offer (in terms of yield) to raise new funds has been so

⁴ The Treasury would have to compensate the Bank of England were Northern Rock to default and, were this to happen, it would affect measures of the public finances.

high that it is not commercially attractive for almost any institution. If this situation persists for several more months, it would create major problems. UK banks rely on raising funds in the wholesale markets (Figure 6.12). A significant proportion of the stock of mortgage loans in the UK is funded by the issuance of mortgage-backed securities. A recent report by Morgan Stanley's banks analysts⁵ summarises the position thus:

... the UK banks have increasingly been using wholesale sources to fund customer lending. This is reflected in the widening customer funding gap – the difference between customer loans and customer deposits. At end-June 2007, this amounted to £564bn for the major UK banks ... or 22% of the stock of their customer loans. In recent years this gap has been largely filled by securitization.

Figure 6.12. Major UK banks' wholesale funding as a percentage of total funding, median^{a,b}



^a 2007 data are as at 2007 H1.

^b Wholesale funding is defined as interbank deposits plus debt securities in issue. Total funding is wholesale funding plus customer deposits.

Source: Bank of England.

Table 6.7 shows the gap between loans to customers and deposits from them for some of the major UK lenders. In all cases, that gap is substantial – both absolutely and relative to the size of their lending. Table 6.8 focuses on the mortgage market, showing what proportion of mortgage loans is financed from securitisations; that averages nearly 30% for the main UK mortgage lenders.

It is exceptionally hard to assess whether or not the market for issuing asset-backed securities will ‘unfreeze’ in the near future. But if it does not, banks and building societies would face severe problems: a source of funds which has financed a high proportion of recent growth in loans will be unavailable; potentially more serious is that, as existing asset-backed securities

⁵ M. Helsby and S. Hayne, *UK Banks: Life after Peak Earnings*, December 2007.

Table 6.7. Major banks' funding gaps at end June 2007

	Net customer loans (£bn)	Customer deposits (£bn)	Customer funding gap (£bn)	Customer funding gap to loans (%)	Loans to deposits (%)	Deposits to loans (%)
RBS	503	419	84	17	120	83
HBOS	395	227	168	43	174	57
Barclays	321	292	29	9	110	91
Lloyds TSB	200	145	56	28	138	72
Northern Rock	97	30	67	69	321	31
Alliance & Leicester	49	31	19	38	161	62
Bradford & Bingley	41	24	17	42	172	58
Total	1,607	1,168	439	27	138	73

Source: Company data, Morgan Stanley Research.

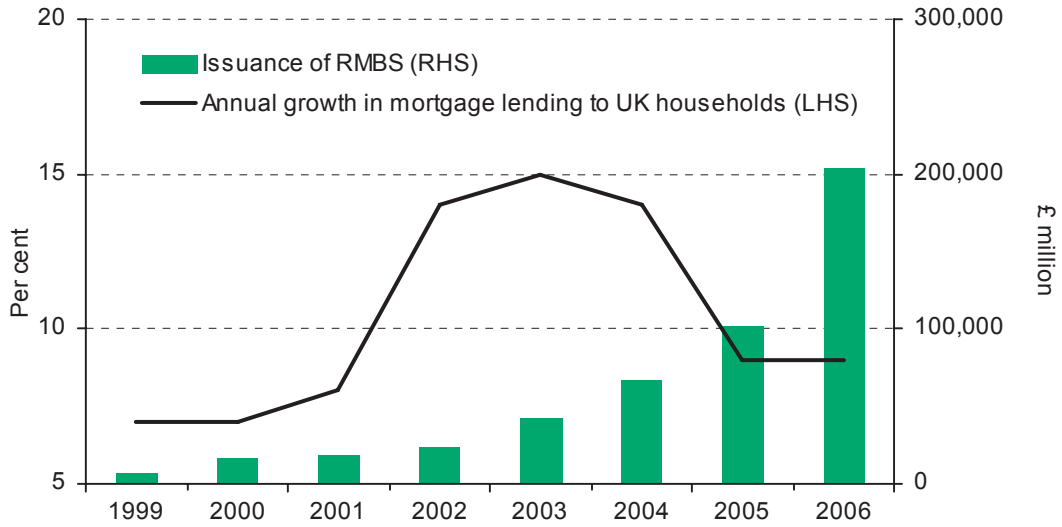
Table 6.8. Bank securitisation of mortgage loans

2006	Total mortgage loans outstanding (£bn)	Securitised (£bn)	Securitised (%)
HBOS	219.0	72.7	33
Abbey	101.7	29.1	29
Lloyds TSB	95.3	14.9	16
Northern Rock	77.3	47.2	61
RBS	69.7	15.7	23
Barclays	61.7	12.6	20
HSBC	37.4	3.7	10
Alliance & Leicester	38.0	3.4	9
Bradford & Bingley	31.1	6.7	22
Total	731.2	206.0	28

Source: Company data, Morgan Stanley Research.

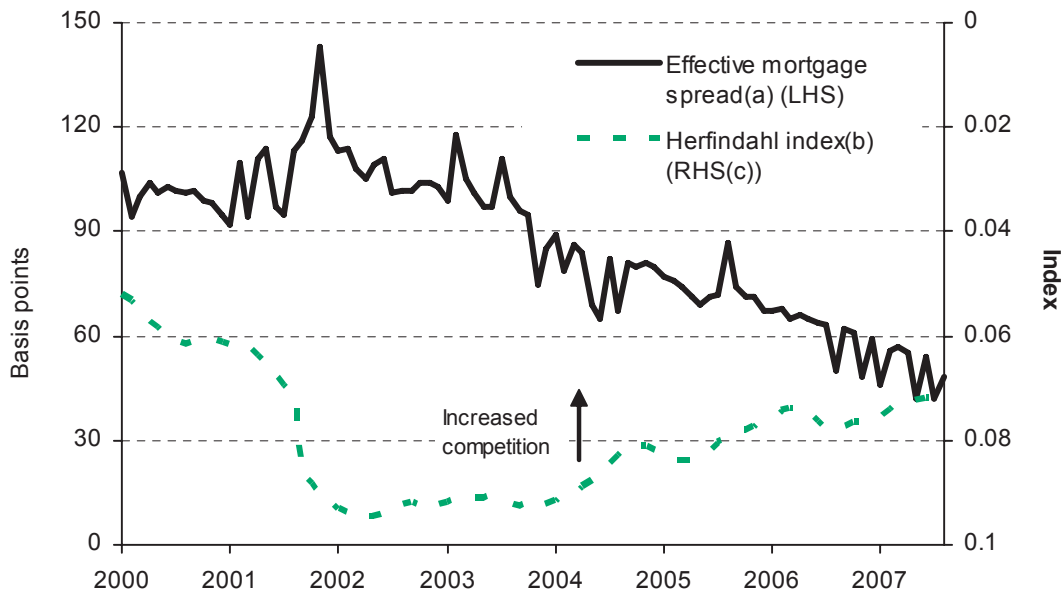
mature, they will have to be replaced with other sources of funding. There are around £250 billion of mortgage-backed securities outstanding. If banks and building societies have to replace a substantial part of wholesale funding with retail deposits, it is plausible that rates offered on savings will need to be high – potentially even higher than rates already offered by lenders (which have moved up sharply in recent months even as the Bank of England's base rate has fallen and yields on shorter-dated gilts have moved lower). That would mean that the cost of loans would itself have to move higher. Those pressures would likely be most acute in the mortgage market because it is there where margins of lending rates over the cost of funds had fallen to exceptionally (and probably unsustainably) low levels (see Figure 6.14). The impact of a further increase in the cost of mortgage debt in an environment where arrears and repossessions are already expected to climb fast is potentially severe. (The Council for

Figure 6.13. Major UK banks' issuance of residential mortgage-backed securities (RMBS) and growth in mortgage lending



Sources: Bank of England; Dealogic; FSA regulatory returns.

Figure 6.14. The effective mortgage spread



^a Effective interest rate on the stock of outstanding mortgages relative to an appropriate funding rate. For floating-rate mortgages, that is assumed to be the Bank Rate. For fixed-rate products, swap rates of similar maturities are used (averaged over the relevant horizon and lagged one month).

^b The Herfindahl index is a measure of concentration in an industry or sector. It is calculated as the sum of the squares of market shares for each firm.

^c Inverted scale.

Source: Bank of England.

Mortgage Lenders (CML) recently predicted that arrears and repossessions are likely to increase sharply in 2008, relative to 2007.⁶)

The Bank of England has taken measures to try to ease the situation. As part of a coordinated plan from the Fed, ECB, Bank of England, Bank of Canada and Swiss National Bank, it was announced in mid-December that the Bank of England would accept bids for funds – at a non-penal rate – against a broader range of collateral than was normal and for 3 months. The widened list of collateral included triple AAA tranches of mortgage-backed securities.

The Bank of England operation was not designed to provide substantial net new funding, though by widening the range of assets acceptable as collateral it nonetheless helped make the seriously blocked market for mortgage-backed securities more liquid. This will have eased some of the potential acute liquidity problems of the kind that caused a run on Northern Rock. But whether this is likely to open up the market for new issues of mortgage-backed securities is very far from clear. Inevitably, there is serious doubt about that, given the small scale of the operation (the auctions on 18 December and on 15 January were for £11.35 billion, of which £10 billion was for 3 months) relative to the stock of outstanding mortgage-backed securities.

What more can the government do if the market for mortgage-backed securities remains blocked? One option is to do nothing and wait, and hope, for the market to unfreeze. More pro-active action could involve some form of public sector lending, or support to lenders (for example, by provision of credit enhancement). This could be undertaken by the Bank of England, which could *very* substantially increase the scale of lending it would do – at non-penal rates – against a wide range of collateral that includes asset-backed (and particularly mortgage-backed) securities and perhaps also mortgages. This would be a major extension of the action undertaken in a coordinated way with other central banks in December. A more radical strategy would be for the government to set up a special lending facility using an entity that is not part of the Bank of England – a special mortgage lending agency.

The ‘do nothing’ strategy is best if things sort themselves out – but risky in case they do not. Having the Bank of England undertake massive lending puts the central bank in a difficult position because it looks more like a support operation for the banking sector than an attempt to preserve order in the money markets. And the scale of lending would potentially need to be enormous – far greater than the facility announced on 12 December. And if a massive extension in Bank of England lending were clearly done on behalf of the government, it could be seen to threaten Bank of England independence – which has great value in the sphere of setting interest rates. Although conceptually there is a distinction between operations in money markets to preserve order and liquidity, and decisions taken by the Monetary Policy Committee at the Bank of England about the policy rate, this risks becoming blurred. So government making policy on the former may seem to threaten Bank independence on the latter.

⁶ In October 2007, the CML forecast the number of 3+ months arrears cases to reach 145,000 (1.22% of all mortgages) by the end of 2007 and 170,000 (1.42% of all mortgages) by the end of 2008. The number of repossessions was forecast to be 30,000 (0.25% of all mortgages) in 2007 and 45,000 (0.38% of all mortgages) in 2008.

So the strategy of establishing a new agency to undertake lending may be the better way to deal with a situation where mortgage lenders cannot access wholesale funds. How might this work?

An agency could be established either to buy, or lend against the collateral of, mortgage-backed securities, and possibly mortgages, issued by banks and building societies. Lending for a given period against the collateral of mortgage-backed securities – a repo arrangement – has the advantage that the agency could apply haircuts, i.e., set a safety margin between the amount lent and the market value of the collateral. The repo route has many advantages: it reflects the temporary nature of the assistance; it means the agency does not need to take a view on the right price to pay for securities; and it means the agency can have conservative lending criteria without forcing institutions to sell at ‘fire-sale’ prices.

On the other side of the agency’s balance sheet could be loans from the government – an alternative is that the agency issues its own securities. But that may (unhelpfully) duplicate the role of the DMO. So the loan route could be better. It is possible that the DMO would issue short-dated securities to match the nature of the assets held by the agency.

How does the agency quietly exit the scene when the market is working again? If the average life of the repos is, say, 12 months then its balance sheet will shrink quite quickly after it stops repo’ing. This is a major advantage of the repo route rather than the outright purchase route. Under the latter, the stock would not naturally run off for several years, so the agency would have to make decisions about when, and at what price, to sell securities.

Such an agency is clearly not designed to shape the type of mortgages offered nor to influence directly the relative prices of different sorts of mortgage. But the government does have a long-standing agenda on the nature of mortgage loans and will be reporting in the Budget on its assessment of potential obstacles to more longer-term fixed-rate mortgages being sold. The repricing of mortgages underway now in the UK – which is partly a delayed reaction to the rate increases the Bank of England made in 2006 and in the first part of 2007 and, more significantly, a response to the more recent credit crunch – does show some of the very real risks with products where people expose themselves to uncertainty about future rates. The rationale for the establishment of an (emergency) agency to buy mortgages and mortgage-backed securities is to sort out a liquidity problem and not to shape the design of mortgages sold in the UK. But there is a common issue here – namely, a concern that mortgages where interest rates are uncertain can generate major problems when rates re-set unexpectedly higher. We consider the more long-standing concern of the government – reflecting the predominance of variable and very short-term fixed-rate lending in the UK – in the next section.

6.6 Mortgages and mortgage financing – the role of indexation

Uncertainty about where mortgage rates will move over the next few years has meant that UK borrowers – who now borrow a great deal relative to their incomes to enter the housing market and rarely fix the cost of the debt for more than a couple of years – do take on a lot of interest rate risk. The government has been concerned about the type of mortgage lending

undertaken in the UK. One potential way of reducing risk is to encourage the sale of more longer-term fixed-rate mortgages – or at least seek to remove potential obstacles to their sale. This is the strategy the government is exploring and on which it will report at the Budget.

Fixed nominal rate mortgages do have advantages in terms of creating certainty about the path of the nominal value of repayments. But they can create a degree of inflexibility and can mean that if inflation and nominal interest rates fall unexpectedly, borrowers can be paying what becomes a relatively high rate often with significant costs of remortgaging.

In this section, we ask whether there are alternatives to fixed or variable nominal rate mortgages that might create a better risk–cost balance.

Overwhelmingly across Europe, a mortgage remains a nominal contract with repayments unrelated to movements in consumer or house prices. Typically, capital is repaid over a period of 20 to 30 years, or at least it would be if people did not remortgage. In practice, people often remortgage when they move house and only a minority would gradually repay their original mortgage in line with the amortising schedule used to calculate the regular payments.

Sometimes the nominal rate is fixed, sometimes it is variable. Different mixes of fixed- and variable-rate mortgages are seen in different countries, though there have been some significant changes in recent years, with variable rates becoming more popular in some countries where in the past fixed-rate contracts were common (e.g. Denmark and the US), while in other countries fixed-rate contracts have become more common than they have been in the past (the UK).

The differences in the risk characteristics between fixed nominal and variable nominal rate debt contracts are well understood and much analysed (Campbell and Cocco, 2003; Leece, 2005; Miles, 1994, 2003, 2004).⁷

Neither the overall real value of the stream of payments nor its time profile is known with nominal debt contracts, either fixed or variable rate. Fixed and variable contracts nonetheless generate very different risks. Front-end loading (or the tilt effect) – whereby the real value of payments is higher earlier in the term of the mortgage and lower later – is less serious with the fixed nominal rate contract if inflation and nominal rates suddenly rise, but with fixed nominal rate mortgages the real cost of borrowing can nonetheless be highly variable if inflation deviates from what seemed likely when the nominal rate was set. With variable-rate nominal contracts, the real overall cost of borrowing would be less variable should the dominant driver of nominal rates be inflation; but shifts in inflation will create big shifts in the timing of payments, which can cause big problems for credit-constrained households.

So, in terms of risk, the problem with standard, nominal mortgages is threefold:

- They generate uncertainty about the real repayment profile.

⁷ J. Y. Campbell and J. F. Cocco, 'Household risk management and optimal mortgage choice', *Quarterly Journal of Economics*, 2003, 118(4): 1449–94.

D. Leece, *Economics of the Mortgage Market*, Blackwell Publishing, Oxford, 2004.

D. Miles, *Housing, Financial Markets and the Wider Economy*, John Wiley and Sons, Chichester 1994.

D. Miles, *The UK Mortgage Market: Taking a Longer-Term View – Interim Report*, HM Treasury, December 2003.

D. Miles, *The UK Mortgage Market: Taking a Longer-Term View – Final Report and Recommendations*, HM Treasury, March 2004.

- Because payments are unrelated to shifts in the value of the home, they create a highly levered investment position with substantial exposure of the home-owner's net worth to changes in the value of their specific property.
- With either fixed or variable nominal rates, typically the burden of repayments is highest when the debt is taken out and gradually declines, which is not obviously ideal given the typical profile of income for buyers, particularly first-time buyers.

In short, nearly all mortgages offered in Europe today do not afford certainty over real payments nor do they in any way link what is owed to the value of the underlying asset, the house.

All these problems – front-end loading, the impact of uncertainty over the profile of real burden of servicing the debt and the great exposure of net worth to unexpected movements in the price of the specific house purchased – get worse if house prices are higher relative to incomes and if movements in future house prices are caused by factors other than increases in productivity and incomes. This creates problems whether the rise in prices is permanent or transitory, but the problems are different.

If the big rise in prices is largely permanent, people will consistently need to borrow more, so the risk of unexpected rate movements or of locking in at a 'wrong' nominal rate will now be more serious. The burden of servicing debt will also be permanently higher.

If a very substantial part of the rise in house prices is transitory, then those who have bought very recently, and whose debt liability is independent of house prices, will experience very large shocks to net wealth, though they might still be gainers if they plan to trade up later.

Optimal mortgage contracts

What might an ideal contract look like? The careful analysis of Campbell and Cocco (2003) strongly suggests it should give more certainty about the real cost of repayments: it should have a strong (consumer) price-indexed element. To allow households to be less exposed to shifts in the price of the specific property they own, it might also have an element of true risk-sharing of movements in the price of the property. With greater life expectancy, and longer expected working lives, it might also have a somewhat longer repayment period than has been typical in the past.

We will now consider the characteristics of such mortgages using simulation analysis to see how they compare with standard mortgages.

Alternative mortgage contracts

Average house prices in the UK have more than doubled since 2000. Incomes have not increased by anything like as much. As a result, buyers, and particularly first-time buyers, are having to borrow far more relative to their incomes than was the case in the past. For recent first-time buyers in the UK, the average ratio between purchase price and incomes is above 4.5; ten years ago, it was 2.9. Mortgage advances relative to incomes are up sharply, on average now about 40% higher than was typical ten years ago. At the same time, most first-time buyers are now having to find a somewhat higher proportion of the purchase price as a deposit, and with prices having risen so much, many buyers are struggling to afford even the

most modest homes. All this is happening against a backdrop of very sharply rising personal insolvencies and increased bank write-offs of bad debts. Thus far, most of the defaults have been on unsecured lending: credit card debt and overdraft lending. But there has also been an increase in the rate of possession orders taken out by lenders as a first step towards possible repossession of homes from owners unable to make mortgage debt repayments.

In this environment, the type of mortgage that has been typical in the UK for many years becomes increasingly unsuitable for many aspiring home-owners. The typical UK mortgage has been a variable-rate debt contract (or one where the rate is fixed for a small part of its life, typically two years or so). The loan usually represents a high proportion of the purchase price – often 90% or more of the value of a house – but the liability is not linked to shifts in the value of the property.

This loan contract means that first-time buyers are taking a highly-leveraged investment in a highly-non-diversified portfolio of residential property. The concentration of investment in one property is, in itself, pretty extreme when viewed in the light of standard portfolio theory. And the protection against interest rate fluctuations created by fixing the rate for just two years or so is limited in a world where no-one knows where short-term, nominal interest rates will be a few years down the road.

What kind of financial contract would offer a better way to deal with affordability and risk issues for many first-time buyers? And could it be offered on a commercial basis? Two desirable features of a loan contract are:

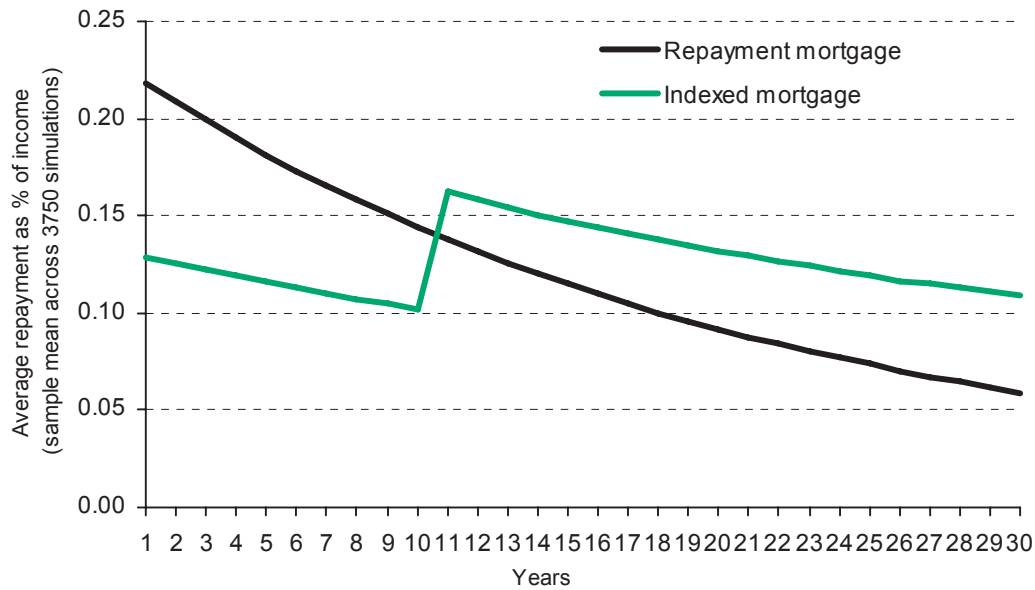
- that the burden of repayments on the loan is not fully exposed to shifts in nominal interest rates, which can cause severe problems to those who might only just be able to manage payments at current levels of interest rates;
- that it makes buyers less exposed to sharp swings in the value of the specific property that they buy and that it makes the value of the loan reflect, to some extent, shifts in the value of the home that is its collateral.

In the light of the first point, setting repayments by reference to a *real* interest rate, rather than to a *nominal* one, has advantages. Real interest rates are less volatile than nominal rates.

In the light of the second point, equity share (or equity loan) contracts, where a lender effectively takes an equity stake in a home and gains exposure to movements in the value of the property, are promising. The UK government has various initiatives in this area. But those schemes have an element of public subsidy and, as a result, are likely to be targeted at specific groups rather than to be available more widely to all potential borrowers. This is why it is interesting to ask whether financial contracts that have these features can be offered on commercial terms. Since the economic advantages – particularly in terms of risk-sharing between lenders and home-owners – of having a contract that has these features are potentially substantial, there is every reason to believe that they can be mutually beneficial and therefore commercially viable.

The idea behind indexed mortgages is simple: repayments in nominal terms would be linked to consumer prices and/or to house prices. Figure 6.15 illustrates the profile of repayments on a particular type of indexed mortgage contract and based on a particular set of assumptions about inflation, house price growth and real and nominal rates.

Figure 6.15. The repayment burden of standard and indexed fixed-rate mortgages: proportion of income taken by repayments



Notes: Both mortgages are for the same amount borrowed and are completely paid off after 30 years. The indexed mortgage illustrated here has two parts: the larger fraction (60%) is a standard repayment mortgage where payments are constant in real (consumer-price-adjusted) terms. The second (smaller) element is an interest-only mortgage, which also pays a fixed real rate on the outstanding balance; but the outstanding capital balance owed on this part of the mortgage is linked to house prices. That (house-price-linked) part of the outstanding balance begins to be repaid after 10 years and is gradually paid off by 30 years. This is why the payment profile moves back up after 10 years. Source: Morgan Stanley Research.

Index-linked mortgages have the twin benefit of generating a less downward-sloping real burden of repayments over time and also a much less volatile one. As Figure 6.15 shows, the burden of servicing the debt is much lower in the early years of the mortgage relative to a standard, nominal repayment mortgage. This is a desirable feature since that is when affordability issues are often most acute. But will lenders want to offer them? There are strong reasons to believe that innovation will come because the products that are right for borrowers create financial assets that should suit investors. As a result of this sort of indexed lending, securities can be created that allow investors to receive streams of income that are linked to consumer price inflation and to overall house price inflation. These could come to represent a useful addition to the supply of existing index-linked bonds that create a return that is some fixed amount in excess of consumer price inflation. The UK government has overwhelmingly been the main issuer of such sterling-denominated debt over the past 25 years. A security that generates a fixed return over house price inflation is likely to be one that many long-term investors would see as a useful addition to the existing pool of securities. It would naturally allow retail savings to be developed that allow people to hedge against the costs of buying houses in the future.

6.7 Conclusions

The economic and financial environment the government will face over the next few years is likely to be difficult. Growth will likely be slower than in recent years; conditions in credit

and money markets may remain stretched, increasing the cost and reducing the availability of funds to lenders. But this set of conditions may mean the cost of government debt remains at its recent very low levels, which is a helpful offsetting factor. There is an argument for issuing more short-dated debt than has been typical in recent years, with the yield curve having made short-dated gilts look unusually expensive.

The ongoing problems in financial markets create tensions and risks in the market for housing finance. In the near term, the serious risk is that issuing residential mortgage-backed securities remains problematic for lenders. There is a related, but more long-standing, set of issues on the type of mortgage contracts typically used by home-buyers. There are advantages – to both mortgage borrowers and lenders – in indexed mortgage contracts.

7. Pressures on public spending

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Summary

- Public spending is set to grow only half as quickly over the three years covered by the 2007 Comprehensive Spending Review (CSR) as over the ‘years of plenty’ covered by the previous four spending reviews. In a number of areas, the CSR spending plans may be insufficient to achieve stated policy goals.
- Health is set to see spending increase much less quickly than it has done over recent years. The CSR proposes to spend between £6 billion and £10 billion less on health in 2010–11 than Sir Derek Wanless’s reviews have suggested would be necessary to progress towards a world-class health service.
- Education spending will stop rising as a share of national income under the CSR plans. If spending continues to increase at the rate planned in the CSR, the government would only meet its goal of matching the 2005–06 level of spending per pupil in the private sector in 2020–21 – a lag of 15 years.
- The local government settlement between 2008 and 2010, and the prospect of ‘capping’ for councils that propose cash-terms increases in council tax rates above 5%, put pressures on local services. These could be particularly tight in 2010–11, when the main grant is set to be cut in real terms.
- The government would need to spend around £3.4 billion more than it is currently forecasting on tax credits and social security benefits in 2010–11 if it were to give itself a 50:50 chance of meeting its child poverty target for that year.

7.1 Introduction

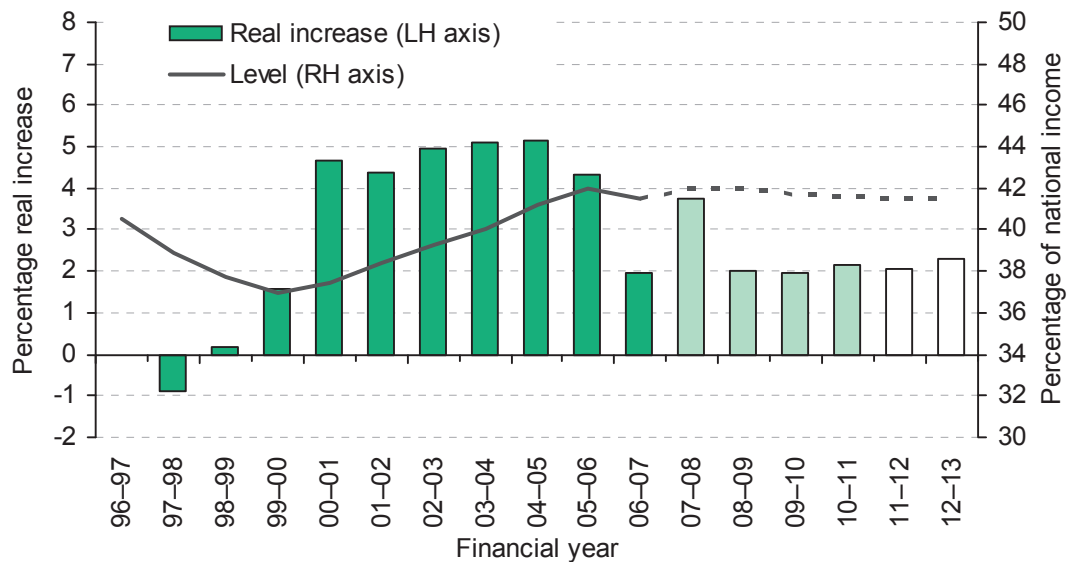
The 2007 Comprehensive Spending Review (CSR) set out plans for the level and composition of public spending in 2008–09, 2009–10 and 2010–11. On average, spending is set to increase by only 2.1% per year in real terms over this period, only half the rate seen during the ‘years of plenty’ covered by the previous four spending reviews. By reducing the growth rate of public spending below that expected for the economy, these plans would cut public spending from 42.0% of national income in 2007–08 to 41.6% by 2010–11. Given this planned squeeze, will there be sufficient resources to deliver on the government’s key policy goals?

Section 7.2 summarises the trends in aggregate public spending under Labour. In Section 7.3, we discuss whether or not the real increases in spending allocated in the 2007 CSR are likely to be sufficient to achieve the government’s main objectives in seven important policy areas: health, education, child poverty, local government, defence, transport and international aid. (The important issue of the setting of public sector pay, which represents one-third of total government expenditure, is discussed in Chapter 8.) Section 7.4 concludes.

7.2 Trends in aggregate public spending under Labour

This section discusses the trends in aggregate public spending under Labour. The bars in Figure 7.1 show the percentage annual real increases (left-hand axis) in total public spending (technically known as total managed expenditure or TME) under Labour to date and the line shows total public spending as a proportion of national income (right-hand axis).

Figure 7.1. Total public spending



Sources: Total managed expenditure from table B1 of HM Treasury, *Public Sector Finances Databank*, December 2007 (http://www.hm-treasury.gov.uk/media/B/2/pfd_211207.xls) and table B5 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm). GDP and GDP deflators up-to-date as of 20 December 2007 from HM Treasury website (http://www.hm-treasury.gov.uk/media/6/8/GDP_Deflators_20071220_NA_update_circ.xls).

Labour came into office in 1997 having promised to abide by the tight public spending plans that it inherited from the Conservatives for two financial years. It largely kept this promise, cutting spending by 0.4% a year in real terms on average. It was helped by robust economic growth (which kept social security bills down) and by falling debt interest costs.

In July 1998, the government published its first CSR, which set out plans for 1999–2000, 2000–01 and 2001–02. With tax revenues buoyant and the public finances strengthening, the Treasury sanctioned an increase in total spending of 3.3% a year in real terms. But largely because departments failed to spend the money they had been allocated in the first year of the review, spending rose by only 1.6% in 1999–2000 – less than the growth rate of the economy. As a result, spending had fallen by more than 3% of national income over Labour’s first three years in office, from 40.6% in 1996–97 to 37.0% in 1999–2000.

Thereafter, Labour increased spending rapidly, pumping money into public services (especially education and health, as described in Section 7.3) and transfer payments (notably benefit and tax credit payments for lower-income families with children and lower-income pensioners – see Chapter 14). Spending grew by more than 4% a year for six successive years, taking it to 42.0% of national income in 2005–06.

In the July 2004 Spending Review (SR), the government began gently to apply the brakes. The Treasury's original plans showed real increases declining from 4.2% in 2005–06 to 2.6% in 2006–07 and 2.8% in 2007–08. In fact, spending growth came in at a higher-than-intended 4.3% in 2005–06 and then slowed more sharply than intended to 2.0% in 2006–07. The Treasury now expects spending growth to rebound to 3.8% this year, giving an average increase of 3.3% a year over the three years of the review – slightly more than the 3.2% set down in the original plans. The unexpectedly weak figure for spending growth in 2006–07 reflects the fact that cash-terms public spending came in at £550.0 billion, £4.6 billion lower than the government's planned level of £554.6 billion (as set out in Spending Review 2004). The difference can mostly be accounted for by a £2.9 billion underspend in health and a £1.0 billion underspend in education, both compared with their respective planned levels for 2006–07 as set out in Spending Review 2004.

Public spending plans for 2008–09, 2009–10 and 2010–11 were set out in last year's CSR. Public spending is projected to grow by 2.0% in real terms in both 2008–09 and 2009–10, and then by 2.1% in 2010–11. As shown by the dotted line in Figure 7.1, this would mean public spending declining to 41.6% of national income in 2010–11. This 0.4% of national income cut in public spending is equivalent to £6 billion in 2007–08 terms.

The projected level of spending in 2010–11 would be higher than that inherited by Labour when it came to power (40.6% of national income), but lower than the average seen during either John Major's premiership (42.9% of national income) or Margaret Thatcher's (44.9% of national income).

Last year's Pre-Budget Report (PBR) also presented projections for cash spending in 2011–12 and 2012–13. Figure 7.1 shows what these projections, if adopted as firm plans and then delivered in full, would mean in terms of annual real increases and for public spending as a proportion of national income (assuming inflation of 2.7% per year and projected levels of national income as published in the PBR). These increases, if delivered in full, would amount to slightly larger annual real increases than the planned real increases for the period from 2007–08 to 2010–11, at 2.1% for 2011–12 and 2.3% for 2012–13. These plans, if delivered in full, would also lead public spending as a proportion of national income to decline by a further 0.2% to reach 41.5% in 2012–13.

Actual real increases in public spending have differed from original spending plans over spending reviews under Labour to date. Part of this is due to the fact that actual inflation has differed from expected inflation, but it is also due to the fact that the government may decide to allocate more resources to departments and top up their spending plans. Figure 7.2 shows the annualised average real increase in departmental spending as set out in CSR 98, SR 2000, SR 2002, SR 2004 and CSR 2007. These are adjusted for subsequent inflation, which means they show the after-inflation increase that would have occurred had the original cash spending plans been delivered. The graph also shows actual real increases in departmental spending across these same periods. It is quite clear from this comparison that the original 'firm and fixed' cash spending plans over the periods covered by CSR 98, SR 2000 and SR 2002 were subsequently topped up. However, the tendency to top up spending plans appears to be declining over time – presumably reflecting the fact that the weakening outlook for the public finances left less money for the government to play with. Spending plans over the period

covered by SR 2004 were topped up slightly, but by a much smaller margin than for CSR 1998 and SR 2000.

Public spending has not grown steadily under Labour. In fact, it has seesawed from average real-terms cuts in their first two years of office, real increases above 4% between 2000–01 and 2005–06 and has now swung back to a planned real increase of 2.1% between 2007–08 and 2010–11. It also clear that spending plans are not necessarily firm and fixed. They have instead been topped up in subsequent years, though the tendency for the government to do this has reduced over time. The next section looks at pressures that might prompt government to diverge from its plans for the period covered by last year’s CSR.

Figure 7.2. Firm and fixed departmental spending plans?



Note: Departmental spending refers to the total of all departmental expenditure limits.
 Sources: Departmental expenditure limits and GDP deflators as for Figure 7.1; initial cash spending plans (adjusted for subsequent inflation) taken from table 3 of C. Emmerson and G. Tetlow, *The 2007 Comprehensive Spending Review: A Challenging Spending Review?*, IFS Briefing Note 75, 2007 (<http://www.ifs.org.uk/bns/bn75.pdf>).

7.3 Trends in key areas of public spending

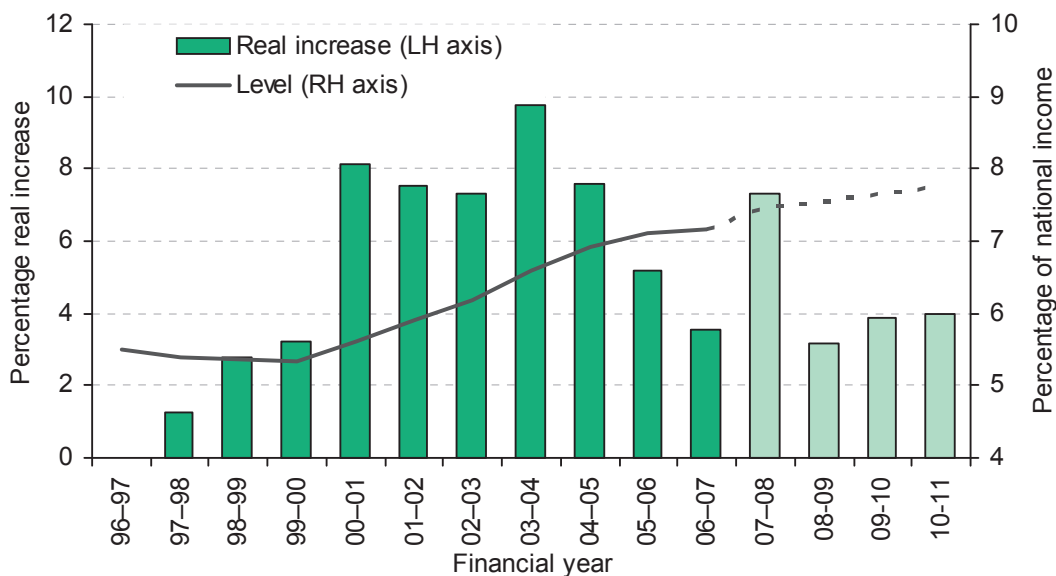
While the government’s plans show public spending as a whole increasing in real terms by 2.1% a year over the period of the 2007 CSR, different departments and areas of spending have received different allocations – from a 5.6% real cut each year for the administrative part of the Department for Work and Pensions to a 3.7% real increase per year in health. To what extent are these allocations consistent with the government’s stated policy goals in each area? Might the government need to top up these plans or scale back its ambitions?

In this section, we look at the spending plans in seven areas: health, education, child poverty, local government, defence, transport and international aid.

Health

The past seven years have seen the largest sustained increase in funding for the National Health Service since its inception in 1949.¹ The Treasury-commissioned Wanless Review of healthcare expenditure, published alongside the April 2002 Budget, recommended that to close the ‘considerable gaps in performance between the UK and other developed countries’, NHS spending would need to grow more quickly than the economy at least until 2017–18.² Although the government never formally promised to follow Wanless’s recommendations, Gordon Brown cited this conclusion in his 2002 Budget, announcing a five-year settlement for the NHS that promised average real-terms increases of 7.4% per year for the five years from 2003–04 to 2007–08.

Figure 7.3. Health spending



Note: Figures refer to public sector health spending based on the UN Classification of the Functions of Government (COFOG), the international standard, as used in the Public Expenditure Statistical Analysis.

Sources: Period to 2006–07 from HM Treasury, *Latest Functional Data*, October 2007 (http://www.hm-treasury.gov.uk/media/6/1/PBR_2007_functional_series.xls). Period from 2007–08 onwards from table D6 of HM Treasury, *2007 Pre-Budget Report & Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/media/4/7/pbr_csr07_annexd2_197.pdf). This assumes real growth in national income of 2½% per year, the Treasury’s ‘cautious’ assumption for real GDP growth used for its public finance projections.

Figure 7.3 shows UK health spending as a percentage of national income up until 2006–07, together with plans for 2007–08 to 2010–11, assuming they are delivered in full. Also shown in the graph is the real increase in health spending each year implied by these actual and planned levels of health spending. The real increases in health spending during Labour’s first three years in office were lower than growth in the economy – therefore health spending declined slightly as a share of national income (from 5.5% of national income in 1996–97 to 5.3% of national income in 1999–2000). However, from 2000–01 onwards (even before the Wanless Review was published), the government introduced significant spending increases of

¹ For more details of NHS spending over time, see C. Emmerson, C. Frayne and A. Goodman, *Pressures in UK Healthcare: Challenges for the NHS*, IFS Commentary 81, May 2000 (<http://www.ifs.org.uk/comms/nhsspending.pdf>).

² D. Wanless, *Securing Our Future Health: Taking a Long-Term View*, April 2002 (http://www.hm-treasury.gov.uk/Consultations_and_Legislation/wanless/consult_wanless_final.cfm).

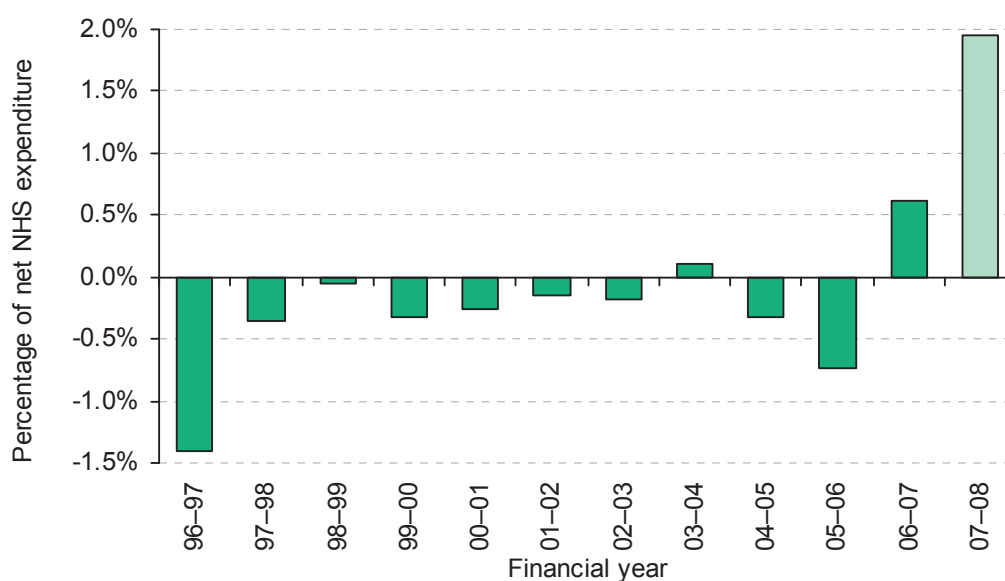
more than 7% per year in real terms. If plans set out in the 2007 CSR are delivered in full, public spending on healthcare is projected to reach 7.8% of national income in 2010–11, which would be its highest ever level.

However, Figure 7.3 also makes clear how volatile these spending increases have been. While the 2002 Budget promised steady annual spending increases of between 7.2% and 7.7% per year, in reality growth has been far less consistent. Spending growth was as high as 9.8% in 2003–04, before falling to 3.5% in 2006–07.

The cycle of first overshooting then undershooting expenditure plans has seen the NHS budget move from a deficit of over £500 million in 2005–06 to a predicted surplus of up to £1.8 billion in 2007–08.³ While the deficits of 2004–05 and 2005–06 generated considerable media coverage, they were by no means unprecedented, as Figure 7.4 shows. England’s NHS deficit in the last year of John Major’s administration, at 1.4% of net NHS expenditure, was twice the size of the deficit in 2005–06 (0.7% of net NHS expenditure). Indeed, the health service had run small deficits for seven of the eight years prior to 2005–06. At least compared with recent history, it is the comparatively large surpluses generated in 2006–07 and 2007–08 (under current plans) that are anomalous.

The net result of this over- and under-spending is that health spending has on average grown more slowly than Mr Brown had planned in 2002, with average real growth of 6.6% per year between 2002–03 and 2007–08 rather than the 7.4% annual growth announced in 2002.

Figure 7.4. NHS budget deficit/surplus in England



Sources: Authors’ calculations based on time series of NHS deficits from House of Commons Health Committee, *NHS Deficits*, December 2006 (<http://www.publications.parliament.uk/pa/cm200607/cmselect/cmhealth/73/73i.pdf>) and series on net NHS expenditure created from Department of Health Annual Reports, 2001 to 2007 (<http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/AnnualReports/index.htm>).

³ Sources: Department of Health, *NHS Financial Performance, Quarter 4 2006–07*, June 2007 (http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_075230); Department of Health, *The Quarter: Quarter 2, 2007–08* (NHS Financial Performance), November 2007 (http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_080967).

Looking ahead, the government currently plans to increase healthcare spending by 3.7% a year on average in real terms between 2008–09 and 2010–11. How do these growth rates compare with those recommended in the Wanless Review? The review set out three different scenarios for NHS spending based on different assumptions regarding the efficiency of the NHS and the contribution that the population makes to its own health through its own behaviour:

- ‘Slow uptake’ – the most expensive scenario. This assumes that the health status of the population is constant or deteriorates, with the public failing to become more ‘engaged’ with improving its own health. Life expectancy still increases, but by the smallest amount of all scenarios. The health service is assumed to be relatively unresponsive, with low rates of technology uptake and low productivity. Under this scenario, spending would need to grow by 7.4% a year between 2002–03 and 2007–08 and then by 5.6% a year between 2007–08 and 2012–13.
- ‘Solid progress’: This requires increasing public engagement with health, improving health status and increasing life expectancy. The health service becomes more responsive, with high rates of technology take-up and more efficient use of resources. Under this scenario, spending would need to grow by 7.1% a year between 2002–03 and 2007–08 and then by 4.7% a year between 2007–08 and 2012–13.
- ‘Fully engaged’ – the least expensive scenario. This requires high engagement by the public with its health, dramatically improving health status and with life expectancy increasing beyond current forecasts. It also requires high rates of technology and more efficient use of resources by the NHS. Under this scenario, spending would need to grow by 7.1% a year between 2002–03 and 2007–08 and then by 4.4% a year between 2007–08 and 2012–13.

In a report commissioned by the King’s Fund five years after his original report, Sir Derek Wanless and co-authors estimated that in terms of services delivered, the NHS lay somewhere between the ‘slow uptake’ and ‘solid progress’ scenarios.⁴ Public engagement was also judged to be on a path between ‘slow uptake’ and ‘solid progress’, though over-optimistic targets (on obesity, for example) mean that in some areas not even the ‘slow uptake’ scenario is being achieved. The NHS has also failed to realise the productivity gains assumed in the 2002 report, the authors suggest, placing the productivity of the health service closer to the ‘slow uptake’ scenario.

The real spending increase of 7.4% a year planned in Spending Review 2004 would have been sufficient under the ‘fully engaged’ scenario, but the increases of 6.6% that were actually delivered fell slightly short of that – and even further short of the increases required under the ‘slow uptake’ scenario. The 3.7% a year real increase proposed for the next three years under the CSR also falls short of what Wanless recommended under each scenario.

Where does this leave us with regard to the level of spending implicitly recommended by the 2002 Wanless Review? Table 7.1 shows the shortfall between planned government health expenditure in 2010–11 and Wanless’s recommended level of spending under each of the

⁴ D. Wanless, J. Appleby, A. Harrison and D. Patel, *Our Future Health Secured?*, Kings Fund, September 2007 (http://www.kingsfund.org.uk/publications/kings_fund_publications/our_future.html).

three scenarios, if plans going forward are delivered in full. Given the findings of the most recent Wanless Review (that the NHS is somewhere between the ‘slow uptake’ and ‘solid progress’ scenarios), the current spending gap is between £2.4 billion and £3.6 billion, and is set to widen to between £6.2 billion and £10.4 billion at the end of the CSR period in 2010–11 under current plans. This means that by 2010–11, health expenditure would be 5.1% below Wanless’s recommended spending under the ‘solid progress’ scenario and 8.2% below the spending level envisaged under ‘slow uptake’. To close the gap would require the government to spend between 1% and 1.2% of national income more on health in 2010–11 than it is currently planning to do.

Table 7.1. NHS spending shortfall compared with Wanless recommendations

	Real spending shortfall in 2007–08	Real spending shortfall by 2010–11	Shortfall as % of Wanless recommended spending in 2010–11
Slow uptake	£3.6 billion	£10.4 billion	8.2%
Solid progress	£2.4 billion	£6.2 billion	5.1%
Fully engaged	£2.4 billion	£5.0 billion	4.4%

Notes: Figures in £ billion at 2007–08 prices. Recommended spending levels have been calculated by starting with actual health spending in 2002–03 and applying the Wanless Report’s recommended annual growth rates under each scenario every year to 2010–11.

Sources: As for Figure 7.3; authors’ calculations.

Education

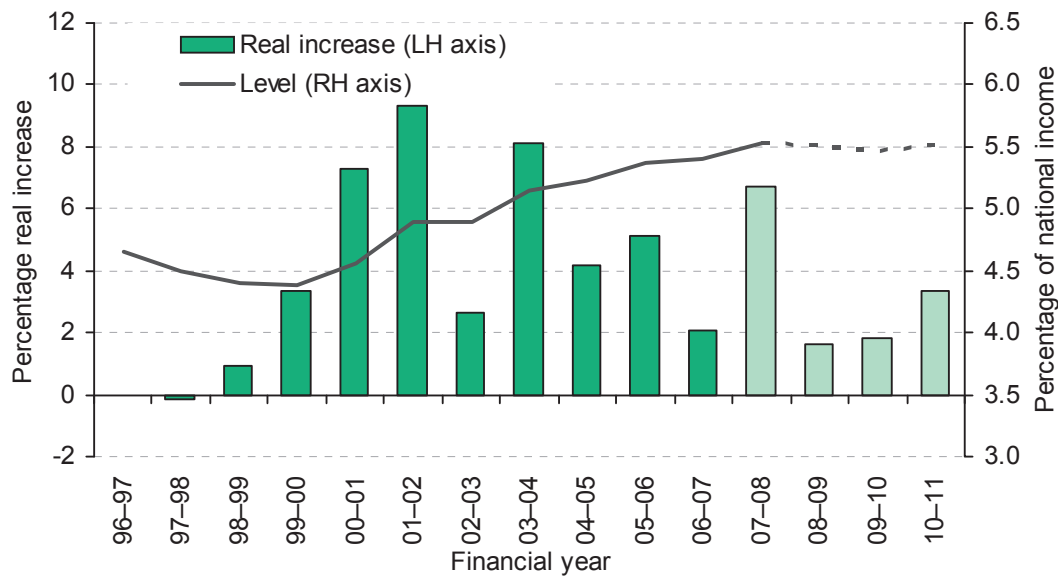
The current government has made a number of pledges with regard to education, some quantifiable, some less so. This section examines whether the recent CSR settlement is sufficient to meet the manifesto commitment to increase education spending as a share of national income. It also discusses the aspiration to increase state school spending to the level spent by the independent sector in 2005–06, plus the implications for education spending of the ambition for a ‘world-class education system’.

Figure 7.5 shows UK education spending as a proportion of national income up until 2006–07, together with the projected shares for 2007–08 and beyond, assuming the CSR settlement for education is delivered in full. Also shown in Figure 7.5 is the annual real increase in education spending for each year between 1996–97 and 2010–11 (figures for 2007–08 and beyond represent planned real increases).

Over Labour’s two complete terms of office, it is clear that education spending at the end of each Parliament was higher as a share of national income than it was at the start. The CSR settlement for education spending also means that this pledge is likely to be met over Labour’s third term, as education spending as a proportion of national income is projected to be higher in 2009 and 2010 (likely dates for the next general election) under current plans than it was in 2005.

However, it is important to note that the main reason these manifesto commitments have been met – or are likely to be met – is the very strong year-on-year increases between 1999–2000 and 2007–08. This means that the manifesto commitment was met by a very large margin indeed during Labour’s second term, as compared with much smaller margins over Labour’s

Figure 7.5. Education spending



Note: Education spending refers to public sector education spending based on the UN Classification of the Functions of Government (COFOG), the international standard, as used in the Public Expenditure Statistical Analysis.

Sources: Period to 2006–07 from HM Treasury, *Latest Functional Data*, October 2007 (http://www.hm-treasury.gov.uk/media/6/1/PBR_2007_functional_series.xls). Period from 2007–08 onwards from table D1 of HM Treasury, *2007 Pre-Budget Report & Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/media/3/9/pbr_csr07_annexd1_189.pdf). This assumes real growth in national income of 2½% per year, the Treasury's 'cautious' assumption for real GDP growth used for its public finance projections.

first and potentially also during its third term. Over the period covered by the 2007 CSR, education spending as a share of national income is currently expected to remain at 5.5% of national income. This is despite the fact that Mr Brown has said that the coming years are a time when public and private spending on education, innovation and science should be increasing further as a share of national income:⁵

I believe that taking private and public investments together, advanced industrial countries will have in future [to] aspire to invest not 5-6-7-8 per cent of their national income, on education, science and innovation but 10 per cent, one pound in every ten.

As well as its manifesto commitment to increase education spending as a share of national income, the government has made other pledges with regard to increased levels of education spending. In Budget 2006, the then Chancellor, Gordon Brown, stated that:⁶

To improve pupil teacher ratios and the quality of our education, we should agree an objective for our country that stage by stage, adjusting for inflation, we raise average investment per pupil to today's private school level.

Meeting this aspiration would require increasing spending per pupil in the state sector (£5,280 in 2005–06 in today's prices) to reach the level seen in the independent sector in 2005–06 (£8,440 in today's prices). The CSR announced that state spending per pupil would reach the

⁵ Speech by the Chancellor of the Exchequer, the Rt Hon. Gordon Brown, to Mansion House, 20 June 2007 (http://www.hm-treasury.gov.uk/newsroom_and_speeches/press/2007/press_68_07.cfm).

⁶ http://www.hm-treasury.gov.uk/budget/budget_06/bud_bud06_speech.cfm.

equivalent of £6,160 in 2007–08 prices under current plans. This leaves a remaining real-terms gap of £2,280 per pupil in 2010–11 (2007–08 prices) or a total of £17.2 billion.

The figures announced in the CSR imply that state school spending per pupil will grow by 3.2% per year in real terms between 2007–08 and 2010–11, if plans going forward are delivered in full. If this growth were continued beyond 2010–11, the aspiration would not be met until about 2020–21 – some 15 years after the same level of spending had been achieved in the private sector. Alternatively, if school spending per head were to grow at the underlying rate of growth in the economy (assumed to be the Treasury’s ‘cautious’ assumption of 2½% real per year) and thus remain constant as a share of national income, it would take until 2023–24 to meet the pledge – a lag of 18 years.

The implicit assumption made by politicians of all stripes when calling for higher education spending is that it would deliver improved educational attainment. Therefore it is worth asking whether countries with higher spending per pupil achieve better educational outcomes, and thus whether higher education spending will deliver a ‘world-class education system’, a stated ambition in a recent speech by the Prime Minister: ‘Our ambition must be nothing less than to be world class in education and to move to the top of the global education league’.⁷

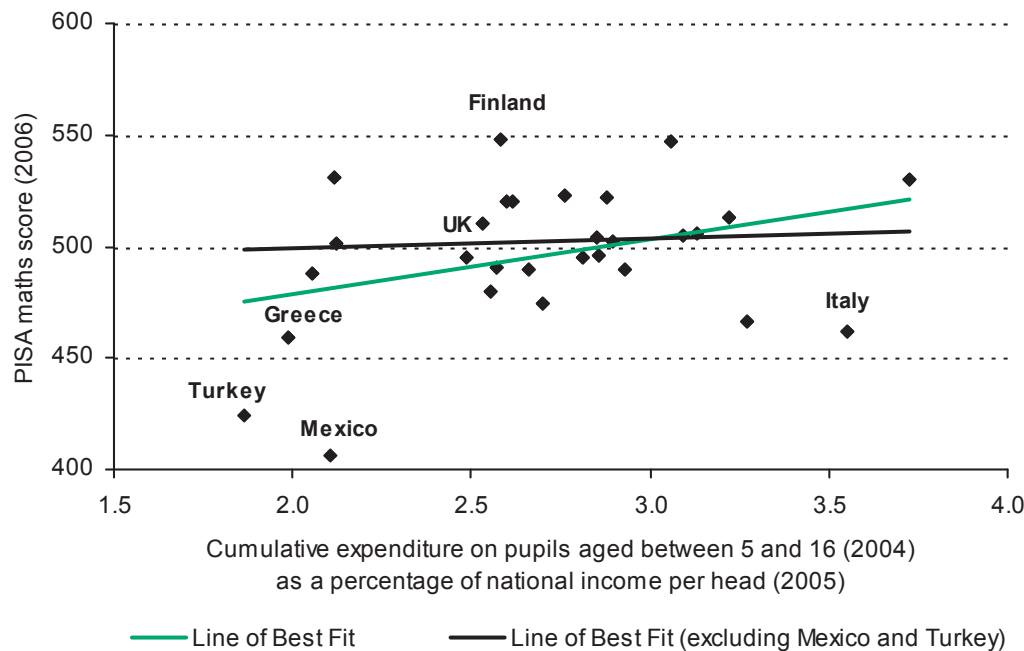
The OECD recently published cross-country rankings in terms of students’ performance in reading, maths and science. This placed the UK 17th out of 56 OECD and partner countries in terms of reading, 24th out of 57 countries in terms of maths and 14th out of 57 countries in terms of science. Is spending per pupil higher in the countries ranked above the UK in these league tables, i.e. is spending per pupil higher in countries that have ‘world-class’ results? We will focus on performance in maths, since this was the UK’s lowest ranking out of these three core subjects and thus where the UK appears to have furthest to go in order to become ‘world-class’.

Figure 7.6 shows students’ average performance in maths against a measure of education spending per pupil scaled by national income per head for OECD countries (this excludes partner countries present in the league tables). Education spending per pupil is measured as the cumulative expenditure per student throughout primary and secondary schooling in 2004 (between the ages of 5 and 16). We then divide this by each country’s respective national income per head in 2005. Average performance is measured by students’ average score in PISA maths assessments in 2006. (Note that graphs showing PISA reading and science results instead of maths give a very similar picture.)

Countries with diamonds in the top right of the diagram would be classed as high-spenders/high-achievers and those in the bottom left would be low-spenders/low-achievers. Of course, it is also possible to be a low-spender/high-achiever (top left) or a high-spender/low-achiever (bottom right). If a line of best fit through these points slopes upwards, it suggests a positive association between spending per pupil (scaled by national income per head) and attainment. If the line is horizontal, it suggests that there is no association.

⁷ Gordon Brown’s speech on education given at the University of Greenwich, 31 October 2007 (<http://www.number10.gov.uk/output/Page13675.asp>).

Figure 7.6. Education spending per pupil and average maths scores



Note: Canada is not shown due to lack of data.

Sources: Cumulative expenditure per student and national income per head taken from OECD, *Education at a Glance 2007* (<http://www.oecd.org/dataoecd/4/55/39313286.pdf>). Maths scores taken from OECD, *PISA 2006: Science Competencies for Tomorrow's World* (<http://www.pisa.oecd.org/dataoecd/30/17/39703267.pdf>).

The graph shows that in 2004, the UK is estimated to have spent the equivalent of two-and-a-half times its national income per head on each 5- to 16-year-old over 11 years of compulsory schooling. Pupils in the UK achieved an average maths score of 495 in 2006, placing the UK 24th out of 57 OECD and partner countries, or 17th out of the 30 OECD countries. The diamond for the UK lies above the green line of best fit, which is consistent with the UK getting slightly better 'bang for its buck' when spending on education compared with this set of countries, although some countries do much better. For example, Finland spent a similar amount to the UK across 5- to 16-year-olds (2.6 times its national income per head), but on average pupils in Finland achieved a much higher maths score, coming top of the OECD rankings.

In fact, if we look at all OECD countries together – those for which we have both spending-per-pupil data and average performance in maths – there appears to be a slight positive association between spending per pupil (scaled by national income per head) and average performance in maths (shown by the green line). However, if we exclude the two poorest countries in the OECD (Turkey and Mexico, which both had a national income per head below \$11,000 in 2005), then there is no obvious association between spending per pupil and average performance in maths (shown by the dark line). Countries with high levels of cumulative spending per pupil (scaled by national income per head), such as Italy – which spent about 3.6 times its national income per head across 5- to 16-year-olds in 2004 – appear to achieve similar results to countries that spent comparatively little, such as Greece – which spent less than twice the level of its national income per head across 5- to 16-year-olds in the same year.

Clearly, the relationship between spending per pupil and educational attainment is a complex one and it would be unwise to draw policy conclusions from a single graph.⁸ If the UK were to reduce education spending significantly, UK students could well achieve worse results. Also, such a graph does not necessarily imply that large real increases in education spending since 1999–2000 have not improved results. However, other studies do show that the relationship between spending per pupil and attainment is at best weakly positive.⁹

What such results do say, however, is that higher levels of education spending are not a sufficient condition for improving educational performance. Countries such as Italy can devote large amounts of spending to education but achieve similar results to low spenders. Nor are higher levels of spending a necessary condition. Countries such as Finland can come top of the OECD rankings but still spend around the average amount per pupil.

The government is likely to meet its manifesto commitment to increase education spending as a share of national income over the course of the current Parliament, but by a smaller margin than during the previous Parliament. Moreover, it seems hard to square Gordon Brown's professed belief that industrial countries will need to increase the share of national income that they spend on education, science and innovation with the decision in the CSR to halt the rise in public spending on education as a share of national income after the increases of the past seven years. That said, there is little evidence of a reliable link between education spending and outcomes.

Child poverty

In 1999, Tony Blair stated that 'Our historic aim will be for ours to be the first generation to end child poverty forever, and it will take a generation. It is a twenty year mission, but I believe it can be done'.¹⁰ The government later clarified this pledge by stating that it aimed for the UK's child poverty rate to be among the lowest in Europe by 2020.¹¹ This was further supplemented by two intermediate targets:

- to reduce child poverty by one-quarter between 1998–99 and 2004–05;
- to reduce child poverty by one-half between 1998–99 and 2010–11.

Figures published in March 2005 revealed that the first target had been narrowly missed.¹² For the second target, progress will be assessed using three definitions of poverty – a relative

⁸ For a more detailed discussion, see OECD, *Education at a Glance 2007*, 2007 (<http://www.oecd.org/dataoecd/4/55/39313286.pdf>).

⁹ E. A. Hanushek, 'Measuring investment in education', *Journal of Economic Perspectives*, 1996, 10(4): 9–30.

¹⁰ T. Blair, 'Beveridge re-visited: a welfare state for the 21st century' in R. Walker (ed.), *Ending Child Poverty: Popular Welfare for the 21st Century?*, Policy Press, Bristol, 1999.

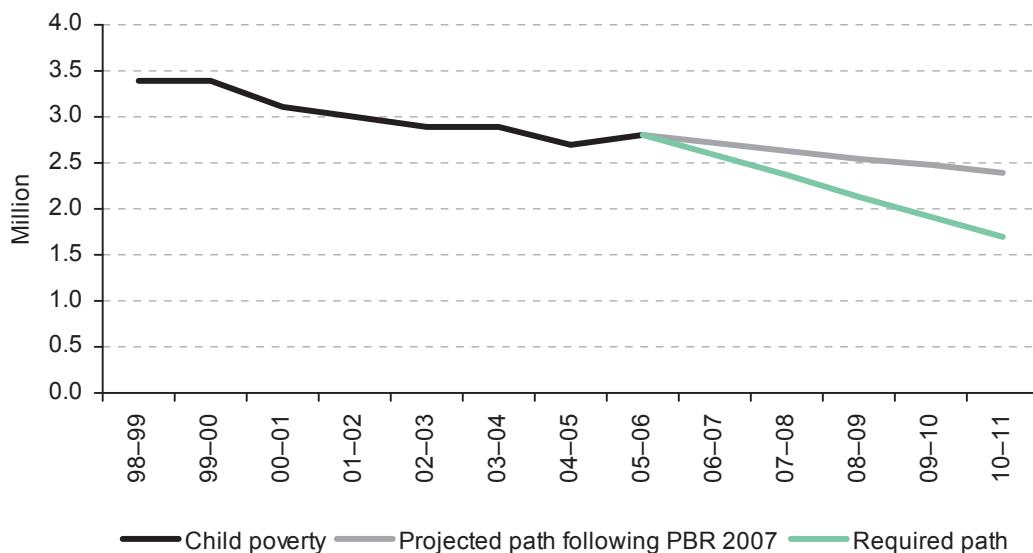
¹¹ Department for Work and Pensions, *Measuring Child Poverty*, December 2003 (http://www.dwp.gov.uk/ofa/related/final_conclusions.pdf).

¹² Department for Work and Pensions, *Households Below Average Income 1994/95–2004/05*, Corporate Document Services, Leeds, 2006.

poverty indicator, an absolute poverty indicator and a material deprivation indicator – all of which are different from the ones used for the target for child poverty in 2004–05.¹³

IFS researchers have previously argued that the most binding of the government’s three indicators will be the pure relative poverty indicator, which is for child poverty in the UK in 2010–11 to be one-half lower than its level in 1998–99, using a poverty line of 60% of median before-housing-costs (BHC) income and the modified OECD equivalence scale.¹⁴ As shown in Figure 7.7, child poverty in the UK in 1998–99 is estimated to be 3.4 million, which means it must fall to 1.7 million in order to meet the target. The number of children in poverty in 2005–06 (the latest year for which data are available) stood at 2.8 million, having risen by 100,000 between 2004–05 and 2005–06. This means that child poverty has fallen by 600,000 (or 17.2% using rounded figures) in the seven years since 1998–99 and needs to fall by a further 1.1 million in the remaining five years between 2005–06 and 2010–11 to meet this element of the target. Thus, child poverty needs to fall by an average of over 200,000 for the next five years, having fallen by an average of less than 100,000 a year for the past seven years.

Figure 7.7. Actual, required and projected path of child poverty



Notes: Child poverty is defined as living in households in the UK with less than 60% of median BHC household income using the modified OECD equivalence scale.

Source: Authors’ calculations based on the Family Resources Survey, various years. ‘Projected path following PBR 2007’ from an updated estimate from M. Brewer and J. Browne, ‘Estimates of the costs of meeting the government’s child poverty target in 2010/11: update after the Budget 2007’, April 2007

(http://www.ifs.org.uk/publications.php?publication_id=3973).

¹³ For more details, see HM Treasury, *PSA Delivery Agreement 9: Halve the number of children in poverty by 2010–11, on the way to eradicating child poverty by 2020*, October 2007 (http://www.hm-treasury.gov.uk/media/B/9/pbr_csr07_psa9.pdf).

¹⁴ M. Brewer, A. Goodman, J. Shaw and A. Shephard, *Poverty and Inequality in Britain: 2005*, IFS Commentary 99, March 2005 (http://www.ifs.org.uk/publications.php?publication_id=3328).

IFS researchers estimated in 2005 that, on unchanged policies, the number of children in poverty would fall only slightly between 2004–05 and 2010–11.¹⁵ In fact, in 2005–06 the number of children in poverty actually rose by 100,000 (not a statistically significant amount). Given the tax and tax credit changes announced in the 2007 Budget and Pre-Budget Report, IFS researchers now estimate that, in the absence of further policy announcements, child poverty will be 700,000 short of the target in 2010–11 (shown by the solid grey line). To give itself a 50:50 chance of meeting the target, the government would need to spend another £3.4 billion on financial support for low-income families with children, on top of the social security and tax credit spending that it has forecast for 2010–11 in the CSR.¹⁶ The extra support would need to be announced in Autumn 2009 at the latest, when the tax credit and benefit rates are set for April 2010.

Local government

When announcing the local government settlement to Parliament in December 2007, John Healey MP, the minister for local government, said that ‘This is a tight settlement, but it is fair and it is affordable’. He also said that ‘We expect the average council tax increase in England to be substantially below 5%. We will not hesitate to use our capping powers as necessary to protect council tax payers from excessive increases’.¹⁷

This section examines whether the government might face pressure either to top up this settlement or to tolerate larger increases in council tax rates (in which case it might feel the need to offer targeted support to limit the impact on particular groups, such as pensioners).

Just how ‘tight’ is the local government settlement?

In 2006–07, local authority expenditure on services in their area accounted for around 27% of total managed expenditure (TME) by the public sector. This included spending on capital projects (e.g. roads, school buildings), spending on council housing and revenue expenditure. Revenue expenditure includes current spending on services other than council housing (e.g. schools, fire services, adult social services and the police). Revenue expenditure, which amounted to £94.0 billion in 2007–08 (nearly two-thirds of the local authority total), is the focus of this section.¹⁸

The vast majority of revenue expenditure is funded out of a combination of different grants from central government¹⁹ and funds raised locally through council tax. The combination of

¹⁵ M. Brewer, J. Browne and H. Sutherland, *Micro-Simulating Child Poverty in 2010 and 2020*, Joseph Rowntree Foundation, York, July 2006 (<http://www.jrf.org.uk/bookshop/eBooks/9781859355091.pdf>).

¹⁶ An updated estimate from M. Brewer and J. Browne, ‘Estimates of the costs of meeting the government’s child poverty target in 2010/11: update after the Budget 2007’, April 2007 (http://www.ifs.org.uk/publications.php?publication_id=3973).

¹⁷ <http://www.local.odpm.gov.uk/finance/0809/constate.pdf>.

¹⁸ Figures in this paragraph from Communities and Local Government, *Local Government Finance Key Facts: England*, November 2007 (<http://www.local.odpm.gov.uk/finance/stats/keystats/key2007.pdf>) and table B6 of HM Treasury, *Public Finances Databank*, December 2007 (http://www.hm-treasury.gov.uk/economic_data_and_tools/finance_spending_statistics/pubsec_finance/psf_statistics.cfm).

¹⁹ Including redistributed national non-domestic rates.

government grants is known as total aggregate external finance (AEF), which we generally refer to as the local government settlement.

On 6 December 2007, the government set out the local government settlement over the three years covered by the 2007 CSR (2008–09, 2009–10 and 2010–11). Table 7.2 shows the real-terms growth per year in this settlement (i.e. in AEF) over the whole of this period compared with that seen over spending reviews to date (1998–99 to 2007–08). It shows that over the period covered by the 2007 CSR, the local government settlement is set to increase by an average real rate of 1.5% a year. This would be less than half the growth rate over spending reviews to date. The table also shows the real-terms growth in AEF in each of the individual years covered by the CSR, which is fairly evenly spread.

Table 7.2. Annual increases in grants to local authorities and in council tax

	Reviews to date (1998–99 to 2007–08)	CSR 2007 (2007–08 to 2010–11)	2007–08 to 2008–09	Of which:	
				2008–09 to 2009–10	2009–10 to 2010–11
Local government settlement (AEF)	+4.2%	+1.5%	+1.3%	+1.6%	+1.6%
<i>Of which:</i>					
Special grants	Not comparable	+1.8%	+1.2%	+2.2%	+2.1%
Main grant	Not comparable	+0.3%	+0.9%	+0.1%	–0.1%
<i>Assuming cash increase in council tax rates of 5% a year over CSR period:</i>					
Council tax rates	+3.9%	+2.2%			
Council tax revenues	+4.8%	+3.1%			

Notes: Increases in council tax rates and council tax revenues for CSR 2007 refer to maximum potential real increases given a maximum cash-terms increase of 5.0%. Due to the introduction of the Dedicated Schools Grant in 2006–07 (moving funding for schools from the main grant to a special ring-fenced grant), we do not present the increase in special grants over spending reviews to date.

Sources: Communities and Local Government, *Local Government Finance Key Facts: England*, November 2007 (<http://www.local.odpm.gov.uk/finance/stats/keystats/key2007.pdf>); 2008/09 *Local Government Settlement Consultation* (<http://www.local.communities.gov.uk/finance/0809/grant.htm#con089>); deflators taken from HM Treasury website (http://www.hm-treasury.gov.uk/economic_data_and_tools/gdp_deflators/data_gdp_index.cfm); Local Government Association, *Local Government Finance Settlement 2008–09 to 2010–11*, Briefing, December 2007 (<http://www.lga.gov.uk/lga/aio/103566>); authors' calculations.

Is such a slowdown in the local government settlement feasible, given that the government has stated that it expects the average increases to be 'substantially below 5%' and that it will use its capping powers to 'protect council tax payers from excessive increases'?

Given that the government desires an average increase 'substantially' below 5% in cash terms, let us assume that the maximum average increase in council tax rates in cash terms that it intends to permit is 5%. This is equivalent to a maximum average increase of 2.2% a year in real terms, after accounting for expected inflation between 2007–08 and 2010–11. But this would not necessarily imply that the maximum real-terms increase in council tax revenues over this period would be 2.2% per year, as demographic trends will also affect changes in council tax revenues. We estimate that if the trends in the underlying council tax base follow the pattern seen over the last 10 years, council tax revenues would grow by 3.1% per year in

real terms.²⁰ This is lower than the 4.8% a year real increase delivered over spending reviews to date, as is shown in Table 7.2. This implies that central government intends that the two main sources of funding for revenue expenditure – council tax and grants from central government – should both grow much less quickly over the CSR period than they did under the previous reviews.

The slowdown looks even more dramatic when we remove special grants from the settlement. Most of these are ring-fenced for specific items. (The largest is the Dedicated Schools Grant, all of which must be spent on schools.) These special grants are set to grow by an average of 1.8% per year in real terms, leaving the remaining ‘main grant’ to grow by only 0.3% per year on the same basis, a near real-terms freeze. Moreover, much of this growth is planned for 2008–09. A real-terms cut is planned for 2010–11. The extent to which this will restrict councils’ ability to increase spending on areas covered by the main grant will depend on the extent to which councils currently top up spending on areas covered by special grants from council tax revenues.

The local government settlement looks particularly tight over the next few years. Pressures are likely to be particularly acute in 2009–10 and 2010–11, given the spread of real-terms increases in the main grant shown in Table 7.2. As a result, local authorities may not be happy to keep council tax increases ‘substantially below 5%’ as the government wishes.

This could confront the government with a set of unpalatable choices:

- cap the authorities and risk taking the blame for the consequences to public services;
- cap the authorities but allow them to raise extra revenue by increasing user charges, sales and fees;
- top up the overall local government settlement;
- allow local authorities to raise council tax more than the desired amount, perhaps with additional targeted support to protect specific groups such as pensioners.

Defence

In November 2007, a number of former defence chiefs criticised the recent CSR settlement for defence spending.²¹ We do not have the expertise to judge whether they are correct, but we can assess whether the defence settlement is relatively tight in historical terms.

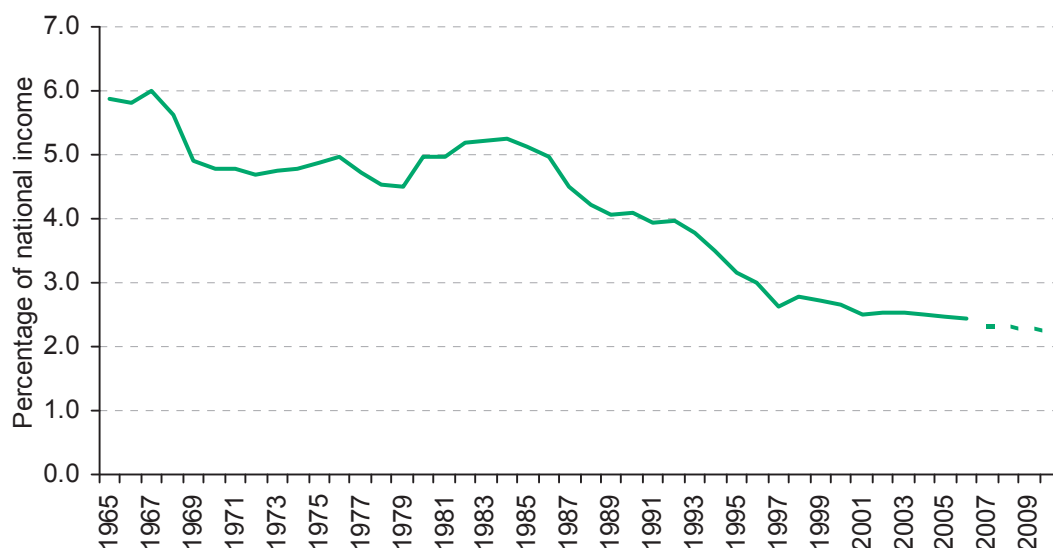
²⁰ The growth in the revenue obtained from council tax will depend upon changes in other factors. For instance, it depends on the growth in the number of households, changing residency patterns across council tax bands, average size of households, number of second homes and many other factors. Since 1998–99, growth in council tax revenues has outstripped the growth in average rates of council tax. On average, the annual growth in council tax revenues has exceeded growth in council tax rates by 0.9 percentage points over spending reviews to date (i.e. between 1998–99 and 2007–08). In other words, this suggests that if councils had chosen to freeze council tax rates in real terms, then council tax revenues would still have grown by an average of 0.9% per year in real terms. If we assume that this average excess growth in revenues is maintained over the period covered by the 2007 Comprehensive Spending Review, then if all councils increase their Band D rates by an annualised average of 2.2% per year in real terms (5% in cash terms), council tax revenues would grow by an annualised average of 3.1% in real terms.

²¹ ‘Retired military chiefs join forces to battle for a bigger war chest’, *The Times*, 9 November 2007 (<http://www.timesonline.co.uk/tol/news/politics/article2836430.ece>).

If the CSR plans for defence spending are delivered as planned, then defence spending will grow by an average of 1.5% per year in real terms between 2007–08 and 2010–11. This is slightly higher than the average delivered under Labour to date of 1.3% per annum.

Figure 7.8 shows the share of national income devoted to defence spending in a longer historical context, together with the plans through to 2010–11. It shows that between the late 1960s and late 1970s, defence spending hovered just below 5% as a share of national income. It then rose as a share of national income up to 1985, following a NATO agreement in 1977²² signed by the then Labour government to increase defence spending by 3% per year in real terms over the following seven years (which was kept to by the incoming Conservative administration in 1979). Following the end of this agreement, between the mid-1980s and mid-1990s there was a substantial fall in the share of national income devoted to defence spending, declining from 5.3% in 1984 to reach 2.6% in 1997. Since Labour came to power in 1997, the share has continued to decline, though at a much slower rate. If plans for the period covered by the CSR are delivered, then defence spending is expected to represent 2.3% of national income in 2010–11, which would be the lowest level seen over the last fifty years.

Figure 7.8. UK defence spending since 1965



Notes: Calendar years up to 1997; national income created as weighted average of financial years. Financial years thereon.

Sources: Defence spending from ONS *Blue Book* 1979 to 1997, PESA COFOG 1996–97 to 2006–07 and CSR 2007–08 to 10–11; GDP from HM Treasury website.

The decline in defence spending to date under Labour is much less dramatic than the decline between the mid-1980s and mid-1990s, and the planned decline for the next three years is slightly slower than that delivered by Labour over the last 10 years. However, it should be said that the decline in defence spending over the early 1990s partly reflects the fact that the end of the cold war reduced the UK's military commitments. The key question is whether or not the CSR settlement for defence is likely to prove commensurate with current and future demands on the armed forces. This is a question that we cannot even begin to answer, but the

²² <http://www.nato.int/docu/comm/49-95/c770517b.htm>.

former defence chiefs do not believe it to be likely. For instance, former Chief of the Defence Staff, Lord Boyce, said that:

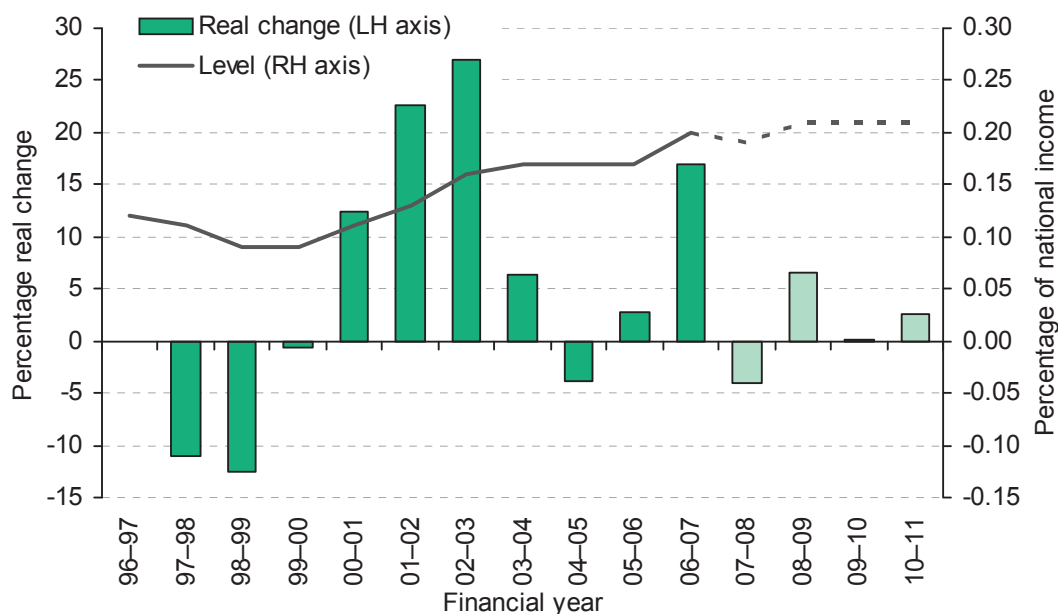
Even though defence did see an increase in the most recent comprehensive spending review, that goes nowhere near addressing the fundamental issue of proper funding and over-commitment.

Transport

Transport spending has been historically volatile, with a comparatively low base that can be significantly affected by major infrastructure projects in a particular year. Figure 7.9 shows the uneven path of transport spending since 1996–97: real spending cuts in Labour’s first three years were followed by three years of rapid growth. Since 2003–04, the trend in transport spending has been less clear, with real cuts in some years (2004–05, 2007–08) and strong growth in others. If current plans are delivered, by 2010–11 transport spending will have more than doubled as a proportion of national income, from its recent low point of 0.09% of national income in 1999–2000 to more than 0.2% at the end of the CSR period.

Citing the long-term nature of transport planning, in 2000 the government published a ‘Ten-Year Plan’ for transport policy,²³ which set out guideline funding allocations for public

Figure 7.9. Transport spending

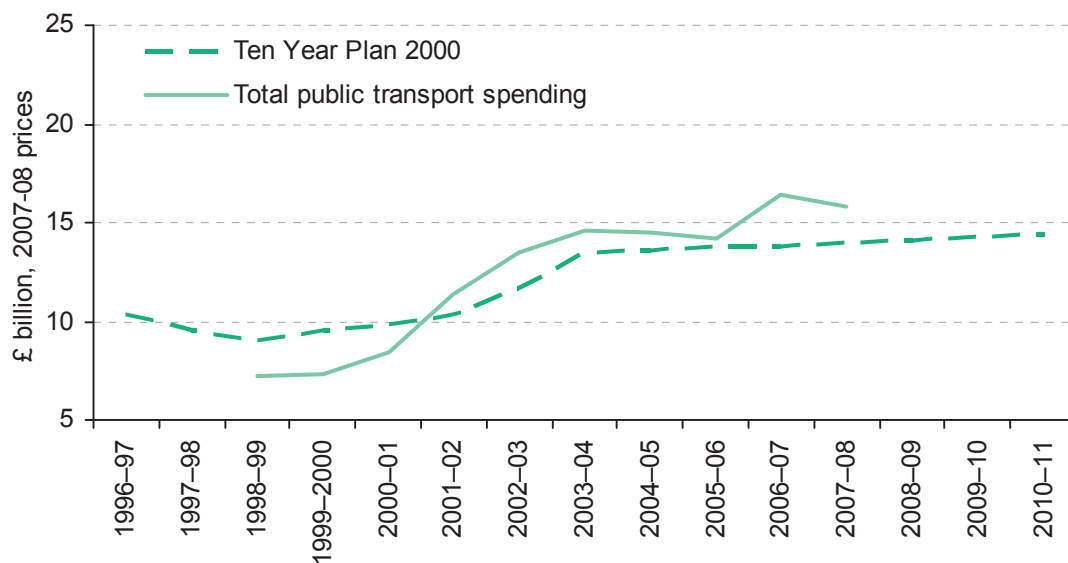


Note: Figures refer to public sector transport spending based on the UN Classification of the Functions of Government (COFOG), the international standard, as used in the Public Expenditure Statistical Analysis.

Source: Period to 2006–07 from HM Treasury, *Latest Functional Data*, October 2007 (http://www.hm-treasury.gov.uk/media/6/1/PBR_2007_functional_series.xls). Period from 2007–08 onwards from table D7 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/media/9/7/pbr_csr07_annexd3_199.pdf). This assumes real growth in national income of 2½% per year, the Treasury’s ‘cautious’ assumption for real GDP growth used for its public finance projections.

²³ Department for Transport, *Transport Ten Year Plan 2000* (<http://www.dft.gov.uk/about/strategy/whitepapers/previous/transporttenyearplan2000>).

Figure 7.10. Department for Transport budget compared with Ten Year Plan



Sources: Table A.3 of Department for Transport, *Transport Ten Year Plan 2000* (<http://www.dft.gov.uk/about/strategy/whitepapers/previous/transporttenyearplan2000>); Department for Transport Annual Reports, 2004 to 2007 (<http://www.dft.gov.uk/about/publications/apr/>).

spending on transport through to 2010–11. Figure 7.10 compares the public transport spending envisaged by this 10-year plan with actual public transport spending up to 2007–08. It is clear that from 2001–02 onwards, the government decided to spend slightly more on transport than the 10-year plan published in 2000 indicated.

The 10-year funding guideline was extended to 2018–19 in the 2007 CSR. It indicated that the Department for Transport (DfT) can plan for increases in its programme budget of 2¼% a year in real terms from 2011–12 to 2018–19.²⁴ This would represent a step down in real transport spending growth when compared with the 4.3% average annual growth delivered by Labour to date. Moreover, the Crossrail project – a cross-London rail link for which £5 billion of public funding was agreed in 2007, and whose construction is due to begin in 2010 – looks set to take up the majority of DfT’s funding increase for the years 2010–11 to 2012–13.²⁵

Of the real funding increase planned for the DfT from 2014 to 2019, however, about £20 billion cumulatively over those six years is currently unallocated. DfT has discussed possible uses for the money in its recent long-term strategy document, *Towards a Sustainable Transport System*,²⁶ with ultra-long trains on a new London–Birmingham–Manchester line, expanded congestion charging schemes and widening motorways among the options being debated.²⁷

²⁴ HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/media/9/7/pbr_csr07_annexd3_199.pdf).

²⁵ See page 45 of Department for Transport, *Towards a Sustainable Transport System*, October 2007 (<http://www.dft.gov.uk/about/strategy/transportstrategy/pdfsustaintranssystem.pdf>).

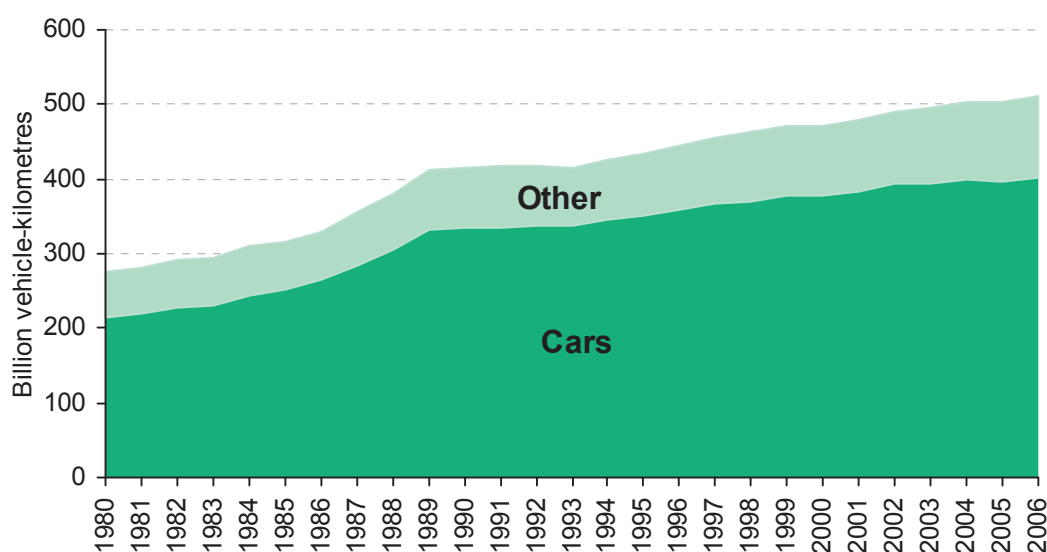
²⁶ Department for Transport, *Towards a Sustainable Transport System*, October 2007 (<http://www.dft.gov.uk/about/strategy/transportstrategy/pdfsustaintranssystem.pdf>).

²⁷ See, for example, ‘Radical transport options unveiled’, *Financial Times*, 29 October 2007.

UK transport policy has been the subject of a series of ambitious government targets – ambitions that have rarely been met. New targets were introduced in the 2004 Spending Review, this time in the form of seven Public Service Agreement (PSA) targets for the DfT, ranging from reducing road congestion to increasing bus and light-rail use. However, the House of Commons Transport Committee’s annual report for 2006–07²⁸ found that the DfT was on track to meet only two of these seven targets – on road safety and rail punctuality. Targets on congestion, bus use, air quality and climate change were all set to be missed.

Figure 7.11 shows perhaps the single most significant trend facing transport policymakers – the relentless rise in road traffic, and car use in particular. Total road traffic increased by 84% between 1980 and 2006, from 277 to 511 billion vehicle-kilometres. The majority of the growth was in car traffic, which rose by 87% over the same period.

Figure 7.11. Road traffic, 1980 to 2006

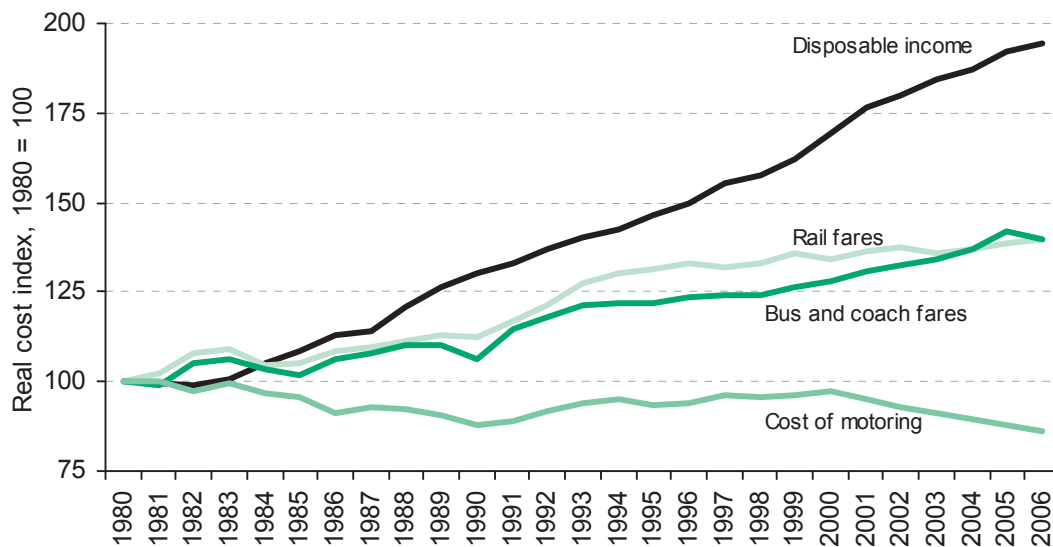


Note: 'Other' category includes light vans, motorcycles, pedal cycles, heavy goods vehicles, buses and coaches.
 Source: Trend 1.1a of Department for Transport, *Transport Trends 2007*
[\(http://www.dft.gov.uk/pgr/statistics/datatablespublications/trends/current/\)](http://www.dft.gov.uk/pgr/statistics/datatablespublications/trends/current/).

Figure 7.12 illustrates one important factor behind this increase in car use: the cost of motoring has fallen by over 13% in real terms since 1980 (despite recent increases in the cost of petrol and diesel), while disposable incomes have almost doubled in real terms over the same period. Bus and coach fares have risen by about 40% in real terms since 1980, while rail fares have risen by the same proportion. Thus while all modes of transport have become more affordable since 1980, it is private motoring that has seen the biggest increase in affordability. This increased affordability has been reflected in trends in car ownership: in 1980 only 59% of households had access to a car, while by 2005 over 75% of households did (with 31% of households having access to two or more cars).

²⁸ House of Commons Transport Committee, *Department for Transport Annual Report 2006*, February 2007
<http://www.publications.parliament.uk/pa/cm200607/cmselect/cmtran/95/95.pdf>.

Figure 7.12. Changes in the real cost of transport and income



Note: Overall cost of motoring index includes purchase, maintenance, petrol and oil, and tax and insurance.

Source: Trend 2.6 of Department for Transport, *Transport Trends 2007*

(<http://www.dft.gov.uk/pgr/statistics/datatablespublications/trends/current/>).

Meeting the government's transport targets is likely to require more than simply spending money. Ultimately, if the government is to meet its targets (on road congestion in particular), it will need to change people's behaviour, by changing the prices individuals face when they consider making a journey. The importance of 'getting the prices right' across different modes of transport was particularly emphasised in the 2006 Eddington Study of transport policy, commissioned jointly by the Treasury and DfT. The study recommends a targeted approach focused on the most congested, crowded and unreliable parts of the UK's travel networks, and highlights the importance of sending the right price signals to travellers. In particular, it argues that 'the potential for benefits from a well-designed, large-scale road pricing scheme is unrivalled by any other intervention'.²⁹

In its response to the Eddington Study, the Department for Transport has signalled willingness to support local road pricing schemes (Greater Manchester and Cambridge have already submitted proposals), but states that introducing road pricing on national networks 'is a decision for the future'.³⁰ Recent history suggests, however, that without grasping the nettle of road pricing, the government's transport spending may do little to check increasing road traffic.

International aid

The year 2007 marked the midway point in efforts to achieve the UN's Millennium Development Goals – eight internationally agreed targets set out in the UN's Millennium Declaration, ranging from halving extreme poverty to halting the spread of HIV/AIDS by

²⁹ Page 39 of the executive summary of HM Treasury, *The Eddington Transport Study*, December 2006 (<http://www.dft.gov.uk/162259/187604/206711/executivesummary>).

³⁰ Page 49 of Department for Transport, *Towards a Sustainable Transport System*, October 2007 (<http://www.dft.gov.uk/about/strategy/transportstrategy/pdfsustainabletranssystem.pdf>).

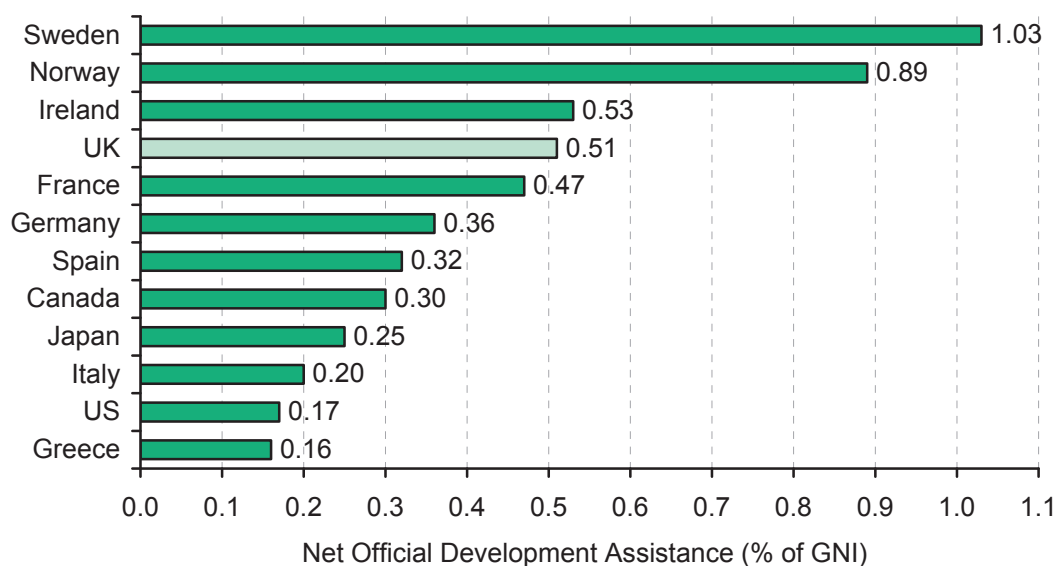
2015.³¹ Having signed up to these goals in the year 2000, the UK government has made several concrete spending pledges, including commitments on education (where DfID has committed to spend £8.5 billion by 2015) and health (where DfID has committed £1 billion between 2007 and 2015 to the Global Fund to Fight AIDS, Tuberculosis and Malaria).³²

Under plans set out in the 2007 CSR, the Department for International Development (DfID) budget is set to grow faster than government spending as a whole over the CSR period. With average planned real increases of 10.9% per year between 2007–08 and 2010–11, the DfID budget is set to reach more than £7 billion (at current prices) by 2010–11.

The 2007 CSR also reiterated the government’s commitment to achieve the UN’s target of 0.7% of gross national income (GNI) spent on Official Development Assistance (ODA). While EU countries have set a target of reaching the 0.7% mark by 2015, Labour’s 2005 election manifesto set a timetable for meeting this level two years earlier, in 2013. Figure 7.13 shows that the UK’s ODA spending in 2006 (as a percentage of GNI) compared favourably with those of many other developed countries, with the notable exceptions of Sweden and Norway.

However, Figure 7.13 gives a slightly misleading picture of the UK’s relative standing, as ODA figures in 2006 (and 2005) were distorted by the inclusion of large one-off debt write-offs to less developed countries – notably Nigeria and Iraq – in these years. To gain a clearer picture of trends in UK aid spending, Figure 7.14 shows ODA as a percentage of GNI since 2001, along with projections up to the end of the 2007 CSR period in 2010–11 if plans going forward are delivered in full.

Figure 7.13. Official Development Assistance (% of GNI, 2006)

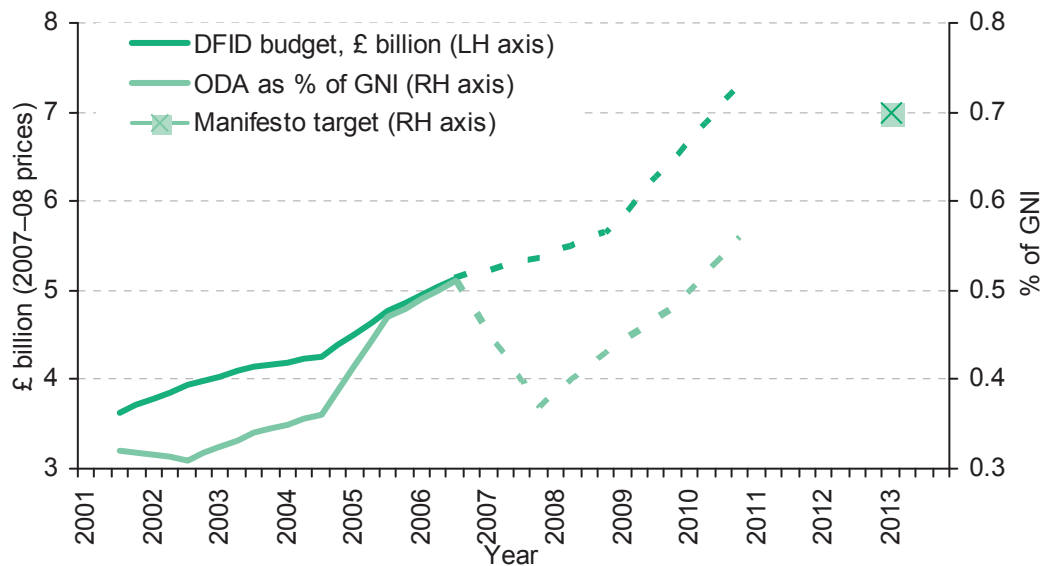


Source: Table 8 of Department for International Development, *Statistics on International Development*, October 2007 (<http://www.dfid.gov.uk/Pubs/files/sid2007/tables-index.asp>).

³¹ More information about the Millennium Development Goals is available at <http://www.un.org/millenniumgoals/>.

³² Page 237 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/media/6/B/pbr_csr07_annexd10_148.pdf).

Figure 7.14. Official Development Assistance and the Department for International Development budget



Note: ODA series up to 2006 is based on calendar-year data from DfID, while projections from 2007–08 onwards are based on financial-year data from HM Treasury, with linear interpolation used between data points.

Sources: DfID budget to 2006–07 from HM Treasury, *Public Expenditure Statistical Analyses*, April 2007 (http://www.hm-treasury.gov.uk/media/1/A/pesa2007_c1tables.xls.xls). ODA to 2006 from table 7 of DfID, *Statistics on International Development 2007*, October 2007 (<http://www.dfid.gov.uk/pubs/files/sid2007/contents.asp>). DfID budget and ODA from 2007–08 onwards from tables C16 and D17 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/media/6/B/pbr_csr07_annexd10_148.pdf).

The effect of the debt write-offs in 2005 and 2006 can be clearly seen, as they push the UK's ODA up to over 0.5% of GNI in 2006. Such large debt write-offs are not due to be repeated in future years, however, and so ODA as a percentage of GNI falls markedly in 2007–08. Nonetheless, were the planned trend in ODA growth from 2007–08 to 2010–11 to continue, the government would meet its manifesto pledge to reach the UN target of 0.7% of GNI by 2013. It would, though, cost another 0.15% of national income over a two-year period in which the Treasury is currently projecting that total public spending will fall by 0.2% of national income.

Figure 7.14 also shows the overall DfID budget (which is not distorted by debt write-offs) to make clear that the fall in ODA in 2007 does not represent a cut in government spending on international development. In fact, total overseas aid is set to grow even faster than the DfID budget – by as much as 17% a year over the CSR period to 2010–11 – as aid is channelled through other government departments as well as DfID.³³ Funds newly established in the 2007 CSR will distribute aid money through the Department for the Environment, Food and Rural Affairs (DEFRA), the Ministry of Defence (MoD) and the Foreign and Commonwealth Office (FCO), as well as through DfID directly.

Overall, then, current plans make the government well-placed to meet its commitments on international aid through to 2013. But this will require more resources during the next

³³ See, for example, 'Spending Review: Treasury to meet aid pledges', *Financial Times*, 10 October 2007.

spending review, a period over which the Treasury expects to continue cutting spending overall as a share of national income.

7.4 Conclusion

On average, public spending is set to increase by 2.1% per year in real terms over the period covered by the 2007 CSR, cutting public spending as a proportion of national income from 42.0% in 2007–08 to 41.6% by 2010–11. This compares with a rise from 37.0% in 1999–2000 to 42.0% by 2007–08. The government has a number of goals and objectives it has set itself over this period and beyond. Are the planned increases in public spending likely to be sufficient to meet these goals and objectives, or will the government need to top up these spending plans or rein back its policy goals?

There is one area of spending where the government is certainly on course to meet its commitments:

- International development has enjoyed the biggest spending increases of any department under Labour and will continue to do so under the CSR. The government is also on course to meet its commitment to increase Official Development Assistance to the 0.7% of GNI recommended by the UN. To do so will require an additional 0.15% of national income in the next spending review, tightening the likely pressures elsewhere.

There are a number of areas where there is considerable uncertainty over whether planned spending increases alone will allow the government to achieve all its objectives:

- The government is likely to meet its manifesto commitment to increase public spending on education as a share of national income during this Parliament. But the share is not set to increase over the CSR period, even though Gordon Brown says that public and private spending on education, science and innovation needs to increase significantly. However, it is not clear that high education spending is sufficient or necessary to achieve ‘world-class’ results.
- The government looks unlikely to meet its medium-term goals with regard to transport policy, though it has promised real-terms increases in transport spending of at least 2¼% up to 2017. Higher public spending is unlikely to do much to achieve the goal of reducing traffic, as motoring has been becoming increasingly affordable over time.
- The government currently plans to increase defence spending by 1.5% in real terms per year over the CSR period. This is slightly higher than the 1.3% it has delivered to date, but former defence chiefs have argued that this is too little to meet the military’s needs.

In other areas, there is considerable evidence to suggest that spending plans would need to be topped up to avoid government objectives being missed:

- The government looks unlikely to meet its target to halve child poverty between 1998 and 2010, unless it is able to find £3.4 billion of extra money to increase support for families with children above that assumed in public finance forecasts.
- The local government settlement between 2008 and 2010 looks particularly tight, with little scope to increase spending on local services, given the prospect of ‘capping’ for

councils that propose cash-terms increases in council tax rates above 5%. The pressures could be particularly severe in 2010–11, when the main grant is to be cut in real terms.

- Notwithstanding the rapid increases of the past seven years, the amount spent on the NHS has fallen short of that recommended by Sir Derek Wanless to achieve a world-class service. The CSR settlement for health, while more generous than that for most departments, would, if delivered, exacerbate this shortfall.

8. Public sector pay and pensions

Antoine Bozio and Paul Johnson (IFS)

Summary

- The public sector pay bill has been increasing since the beginning of this decade, reflecting both higher public sector employment and rising levels of public sector pay. As it squeezes spending, the government is attempting to slow pay growth in the public sector. It claims that to do so is important in controlling inflation.
- The case for using a public sector pay policy to help target inflation is weaker than some recent government statements have suggested. It is certainly not the case that public sector pay increases have to be held to 2% just because the UK has a 2% inflation target. Over time, public sector pay will need to reflect productivity improvements across the whole economy.
- The Bank of England believes that pay increases of around 4½% a year across the whole economy would be consistent with the inflation target. Headline public sector pay increases consistent with the inflation target will generally be lower because of relatively high 'pay drift' for some groups of public sector workers.
- Relatively generous public sector pensions mean that a public sector worker is on average around 12% better off than a private sector worker on the same basic salary. This gap has grown over the past decade as a result of private sector retrenchment. The government has made modest progress on reform, but unfunded public pension liabilities continue to grow. The gap between public and private sectors does not look sustainable. The case for further reform is strong.
- The 'staging' of a number of pay review body recommendations last year has delivered modest, but strictly one-off, savings. There would be significant risk to the credibility of the pay review body process if the government were to make a habit of not implementing recommendations. This would have long-term costs.
- Public sector pay is much lower relative to private sector pay in London and the South East than in other parts of the country. If the government wishes to broadly equalise the quality of public services across the country, it should increase public sector pay more quickly in areas where it is relatively low.

8.1 Introduction

Public sector pay and pensions have been looming increasingly large in recent years among public policy challenges. Given the numbers involved, this is not altogether surprising. The public sector pay bill amounted to £161 billion in 2006, representing 32% of all government

expenditure, 12.4% of national income.¹ Payments of public sector pensions amount to 1.5% of national income,² while the total stock of public sector pension liabilities has been estimated by the Government Actuary's Department at £530 billion as at March 2005.³ When total figures for March 2006 are eventually released, they will show liabilities of at least £725 billion.

Although pay and pensions tend to be tackled separately in the public debate, we deal with them together here because they are clearly both aspects of the remuneration package enjoyed by public sector employees. And, although accounted for differently, they each form part of the cost to government of employing staff.

Both pay bill and estimated pension liabilities have been rising swiftly in recent years. The early part of this decade saw significant increases in public sector employment and, in many parts of the public sector, major reforms to pay systems. On average, public sector pay rose faster than pay in the private sector. This was partly a catching-up period for the public sector and partly a deliberate strategy to improve pay systems, to ensure vacancies were filled and to attract new workers in to fill the new posts. More staff and higher pay led, of course, to swiftly increasing costs. In a tighter fiscal environment, the government is now trying to rein in the pay bill, using a claimed link between public sector pay settlements and inflation as a justification for restraint. For parts of the public sector, and in particular the Civil Service, workforce reductions are also occurring.

Pension liabilities have also been increasing quite dramatically in recent years. A large part of the increase is due to changes in the way pension liabilities are measured, but real liabilities have also been growing as a result of increases in the number of public sector employees, increases in pay and larger-than-expected increases in longevity. At the same time, the coverage of generous final salary pension schemes has diminished quite swiftly in the private sector, with the result that the relative generosity of public sector pension provision has risen. The government has responded with a reform programme aimed at increasing the normal pension age across the main final salary public sector schemes, but only for new employees.

In the face of smaller pay increases, job cuts in some areas and pension reforms, public sector unions have been growing increasingly restive. They successfully delayed and caused to be amended the original proposed pension reforms which were due to be implemented in 2005. They have also led a smattering of strikes over pay and job losses in the Civil Service. The unions have been particularly upset by the government's decision last year to 'stage' pay review body recommendations, in particular the decision not to pay in full the 2.5% increase proposed for nurses and other health service workers, and more recently the police.

In these circumstances, the government is going to face a number of tricky decisions over the coming months:

¹ Total current expenditure is estimated at £501 billion for 2006. Both numbers are from the ONS.

² HM Treasury, *Long-Term Public Finance Report: An Analysis of Fiscal Sustainability*, December 2006 (http://www.hm-treasury.gov.uk/media/6/0/pbr06_longtermpublicfinancereport_476.pdf).

³ Note that this is a stock, not an annual flow like the pay bill, and so cannot be compared with the pay cost numbers. We go into more details on these estimates in Section 8.4.

- how to respond to pay review body recommendations when they come between now and the Budget;
- how to trade off the risk that pay costs will grow against the risks of industrial unrest and/or a possible return to recruitment and retention problems;
- whether to try to make progress towards greater local pay variation;
- how to respond to threats of expensive equal pay claims;
- how to finalise reforms to public sector pensions and whether to push towards further changes, particularly in light of recently legislated future increases to state pension age;
- whether to change pay-setting mechanisms, either by lengthening the pay deal terms or by abandoning the arbitrage of pay review bodies;
- to what extent to follow a public sector pay policy aimed in part at damping down inflation.

In this chapter, we start in Section 8.2 by setting out some of the facts on the size of the public sector pay bill and workforce and how this has changed in recent years. Section 8.3 compares changes in pay rates between public and private sector pay and assesses what room for manoeuvre the government has and what options it faces in particular sectors, with some focus on specific issues of local pay and equal pay. We then consider, in Section 8.4, where the pension reform programme has reached and what further options remain. Section 8.5 looks in more detail at the pay review body process. In Section 8.6, we come to a discussion of pay-setting mechanisms and the relation between public pay growth and inflation, as these have been at the core of recent policy debates. Section 8.7 concludes.

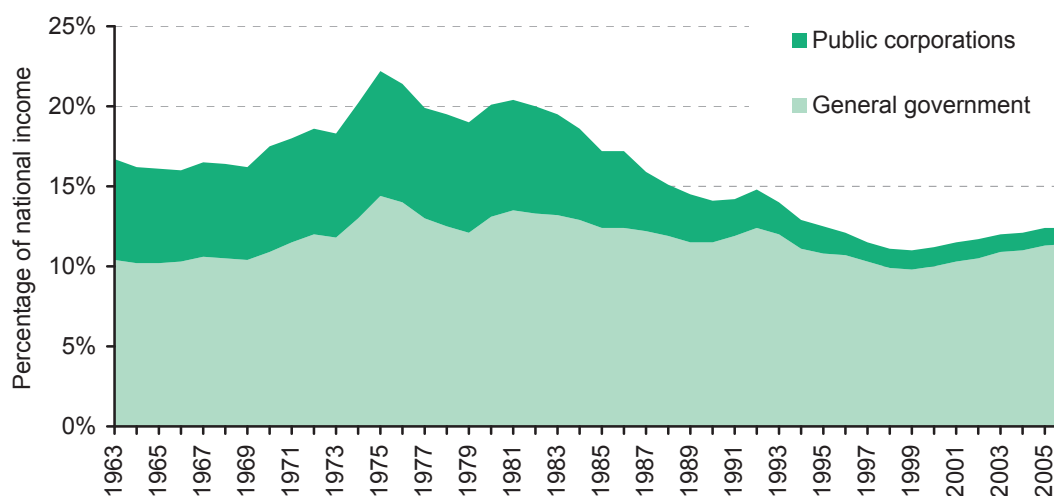
8.2 The public sector pay bill and workforce

Following a long period of decline, in large part reflecting the privatisation of public corporations, the public sector pay bill in the UK has been increasing steadily since 1999. Figure 8.1 shows the long-term evolution of public sector compensation as a share of national income since the early 1960s. From a peak of 22.0% of national income in 1975, public sector compensation declined to a low point in 1999 of 11.0% and has since increased to 12.4% in 2006, a rise of 1.4% of national income.

From a low of £103 billion (in 2006 prices) in 1998, the pay bill excluding public corporations has increased by 43% in real terms to reach £148 billion in 2006. This is to be compared with the 32% real increase in total public expenditure over the same period and the small increase (in real terms) of the pay bill over the period from 1990 to 1998.

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 to the government of employing staff. Table 8.1 shows changes in workforce numbers for some of the key groups of the public sector between 1997 and 2006. Compared with the rest of the public sector, the numbers of teaching assistants, police, doctors and NHS staff have risen relatively quickly, the number of public administrators has risen relatively slowly, and the number of people in the armed services has fallen in absolute terms as well as relative to the rest of the public sector workforce.

Figure 8.1. Public sector compensation



Sources: ONS, *United Kingdom National Accounts: Blue Book*, 2007 (<http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=1143&Pos=1&ColRank=1&Rank=272>); ONS, *National Accounts Concepts, Sources and Methods*, 1998 (http://www.statistics.gov.uk/downloads/theme_economy/Concepts_Sources_&Methods.pdf).

Table 8.1. Public sector workforce in the UK

	1997	2006	% change, 1997–2006
National Health Service	1,190,000	1,522,000	+28%
<i>Of which:</i>			
Doctors (England)	89,619	126,251	+41%
Nurses (England)	318,856	398,335	+25%
Education	1,131,000	1,397,000	+24%
<i>Of which:</i>			
Teachers (England & Wales)	437,980	476,940	+9%
Teaching assistants (England)	68,074	199,331	+193%
Police	230,000	275,000	+20%
Public administration	1,139,000	1,245,000	+9%
<i>Of which:</i>			
Civil Service	516,000	558,000	+8%
Other public sector	708,000	733,000	+4%
HM Forces	220,000	204,000	-7%
Other health and social work	436,000	385,000	-12%
Construction	124,000	65,000	-48%
All public sector	5,178,000	5,826,000	+13%

Notes: Headcounts. These annual figures relate to the June quarter. The 1997 figures are not seasonally adjusted whereas the 2006 figures are.

Sources: ONS, *Public Sector Employment*, June 2007; DCSF, *Statistical Evidence to School Teachers' Review Body (STRB) 2007* (available at <http://www.teachernet.gov.uk/management/payandperformance/pay/reviseversion/>); NHS data from the Information Centre (available at <http://www.ic.nhs.uk/statistics-and-data-collections/workforce>).

Given the large increases in spending in labour-intensive services, such as health and education, this increase in staff numbers is not surprising. It was intended as a way to help increase the output of public services. But such increases are unlikely to continue with overall spending planned to grow by only 2.1% per annum in real terms over the next spending review period. Given these spending plans, for the workforce to continue to grow to any significant degree would require either an increase in the proportion of total spending going on the workforce or what would probably be unsustainably slow growth in pay levels (to which we come in Section 8.3).

The government has already started to reduce numbers employed in the Civil Service (see Box 8.1) but this is unlikely to be sufficient to provide room for increases in other groups of the public sector workforce.

Box 8.1. Civil Service reductions

The government has trumpeted recent reductions in the number of civil servants. This follows its decision in Spending Review 2004 to implement some of the recommendations made by Sir Peter Gershon, who reviewed efficiency across Civil Service departments.^a That spending review announced that there would be gross reductions in the full-time equivalent (FTE) Civil Service workforce of 84,150 between April 2004 and April 2008, implying gross reductions of 70,600 after 'reallocation' to the front line. The time of reckoning is very close. In October 2007, the Treasury published a progress report suggesting that by June of that year 66,275 of the 70,600 required net reductions had been achieved.^b This looks like a triumph.

Concern has been expressed, however, about the discrepancies between these figures and ONS figures showing rather smaller reductions in Civil Service numbers. Latest ONS data show Civil Service numbers falling from 538,000 in 2004Q2 to 499,000 in 2007Q3, a fall of just 39,000.^c

What explains these differences? It is difficult to be precise because the government has chosen not to publish a reconciliation between the ONS figures and the ones it uses to measure progress against its target.

Some of the differences are clear enough and clearly justifiable. For example, in April 2005 the Magistrates Court Service was brought together with the Court Service to form Her Majesty's Courts Service and as a result ONS reclassified the 11,000 former magistrates' staff into the Civil Service. Clearly, this should not count against the target. Other differences include:

- geographical coverage: ONS figures include devolved administrations, the government target does not;
- scope: government target includes reductions in military support staff not included in ONS figures;
- adjustments reflecting controlled expansions or new burdens: a Treasury technical note suggests that 'if the work of the Civil Service has expanded, due to factors that were unforeseen at the start of the efficiency programme ... then Departments can make a case to have these additional posts excluded from progress against their efficiency programme'.^d

This leaves us with two problems. First, it is not at all clear that, across government as a whole, this last exclusion is legitimate. If a target to reduce Civil Service posts makes sense, then it is hard to see why one would accept increases as a result of ‘new burdens’. The Treasury would certainly not argue that ‘new burdens’ justify increasing the spending allocations departments are given under its ‘firm and fixed’ spending reviews – it would require offsetting savings to be made elsewhere.

Second, and perhaps more fundamentally, if the government wants its policy to be fully credible, it should publish a clear reconciliation between its own figures and ONS figures. Given that the end date for this target is April of this year, we would expect the government to publish such a reconciliation alongside its assessment of whether or not it has succeeded in meeting its target. It is a shame that it failed to do so in its update of October 2007, where no attempt at explanation or reconciliation of the figures was made.

Going forward, no further specific targets for Civil Service headcount reductions were announced in the 2007 Comprehensive Spending Review, but 5% annual real reductions in administration budgets across departments were announced.^e With real pay per head unlikely to fall by much (if at all), and with staff costs forming a majority of administration budgets, this implies further reductions in Civil Service numbers.

How much further this will be possible without losses in capability it is hard to know. Given recent problems at HMRC, which has delivered the great bulk of the 13,000 or so net reductions in staff recorded for the ‘Chancellor’s departments’, the government might wish to consider whether further across-the-board cuts of this magnitude are likely to be too risky.

^a P. Gershon, *Releasing Resources to the Front Line: Independent Review of Public Sector Efficiency*, July 2004 (http://www.hm-treasury.gov.uk/media/C/A/efficiency_review120704.pdf).

^b HM Treasury, *2004 Spending Review: Efficiency Progress to June 2007*, October 2007 (http://www.hm-treasury.gov.uk/media/2/E/pbr_csr07_efficiency265.pdf).

^c Note that these are FTE figures and thus not directly comparable with the headcount figures in Table 8.1.

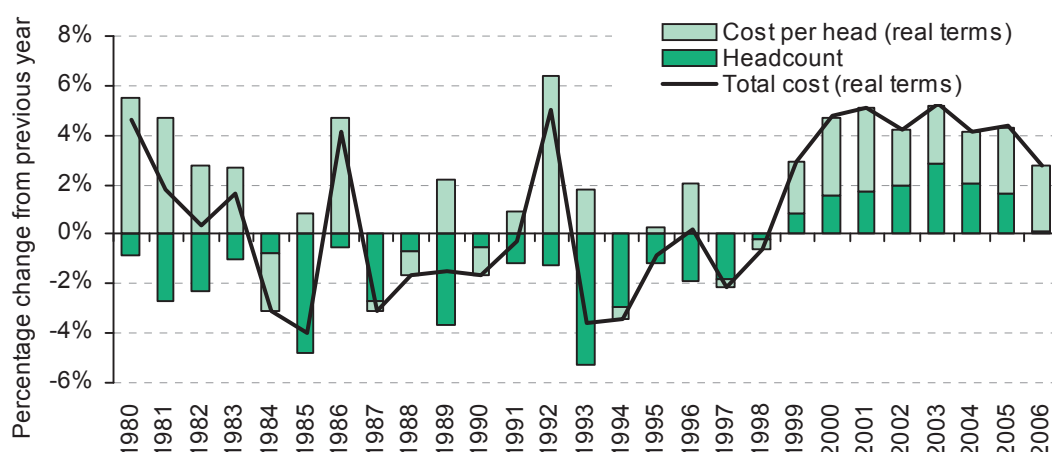
^d HM Treasury, *Comparing Quarterly Civil Service Employment Estimates with Progress against Departmental Efficiency Programmes*, April 2006 (http://www.civilservice.gov.uk/documents/doc/statistics/workforce_reductions_tech_note.doc).

^e Page 43 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm).

8.3 Public sector pay trends and levels

Not all the recent increase in the public sector pay bill is due to an increase in numbers employed. A significant part is due to an increase in the real pay of public sector workers. Figure 8.2 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 1980 to 1997 reduced headcounts on average by 2% each year (in large part through privatisations) while increasing real cost per head by 1.6%. The Labour government, on the other hand, has increased headcounts yearly by 1.1% as well as increasing cost per head by 2% over the period from 1997 to 2006.

Figure 8.2. Changes in the public sector bill, 1980–2006



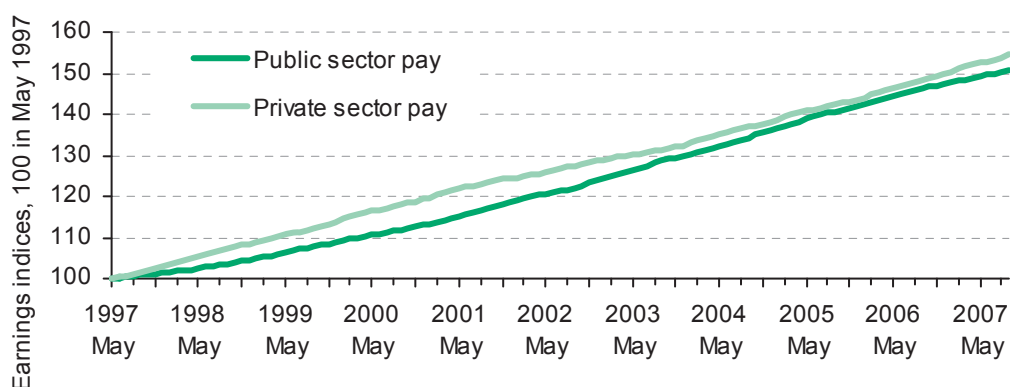
Note: The cost of public sector employees includes contributions to National Insurance and payment of current pensions.

Sources: ONS, *United Kingdom National Accounts: Blue Book*, 2007

(<http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=1143&Pos=1&ColRank=1&Rank=272>); authors' calculations.

Figure 8.3 shows how public sector pay levels have changed relative to the private sector since 1997. In the first part of the period, private sector pay rose faster than public sector pay – between May 1997 and April 2001, private sector average earnings increased by 21% against 14% for the public sector. From 2001 to 2006, pay in the public sector, and particularly in the health sector, rose significantly more quickly than in the private sector. The overall gap that had opened up since 1997 had essentially disappeared by January 2006 (42.6% increase since May 1997 for the public sector, 44.0% for the private sector). That pattern has been slightly reversed since then, as the increase for the entire period until September 2007 stands at 51% for the public sector against 54% for the private sector.

Figure 8.3. Trends in public and private sector pay since 1997

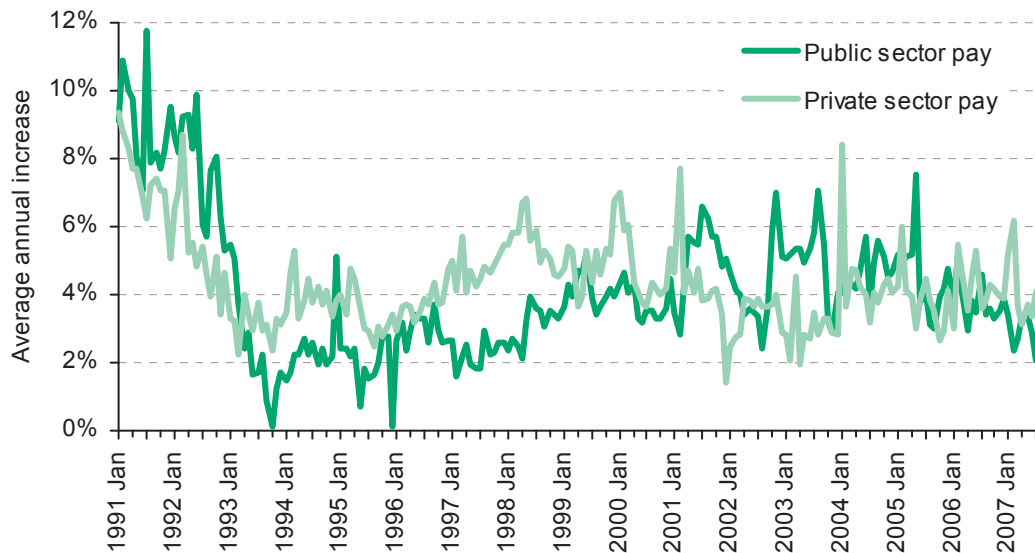


Note: The monthly indices have been smoothed by annual moving average in order to smooth the bonuses effect in the private sector at the end of the year.

Source: ONS, average earnings indices (AEI) not seasonally adjusted and including bonuses (series LNNI for the public sector and LNKX for the private sector).

Over longer periods, there is a well-known pattern of periods of gradual reduction relative to private sector comparators followed by periods of catch-up. Figure 8.4 shows the relative pay increases in the public and private sectors since 1991. To some extent, the period between 2000 and 2006 was just such a period of catch-up. Over the 1990s, public pay had been held in check, with average pay increases smaller than those in the private sector.

Figure 8.4. Trends in public and private sector pay since 1991

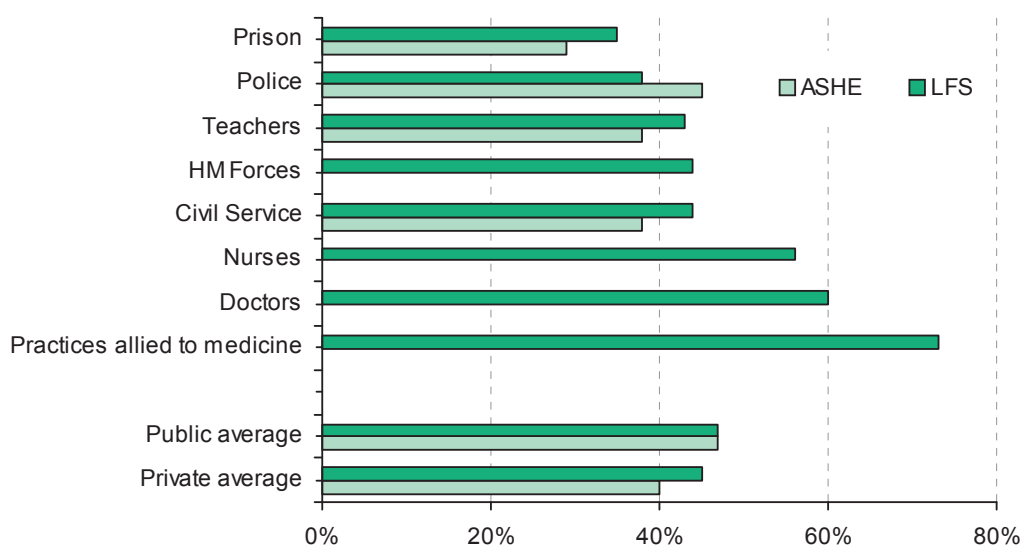


Source: ONS, average earnings indices (AEI) not seasonally adjusted and including bonuses (series LNNI for the public sector and LNKX for the private sector).

But it is a mistake to think of the experience of the different parts of the public sector over the past decade as having been uniform. Some groups – for example, those in the health service – have experienced rather substantial pay increases. Others – for example, civil servants and prison officers – have received pay increases below the public sector average. Figure 8.5 provides one particular illustration of this using the Labour Force Survey (LFS) – and where possible the Annual Survey of Hours and Earnings (ASHE) – to compare increases in the average salaries of different groups of public sector workers. While this conflates changes in composition with changes in pay levels, it is the most comprehensive method of comparison.⁴ Between 1997 and 2006, doctors and nurses have seen their earnings increase by 60% and 56% respectively. Figures from ASHE differ marginally from figures from the LFS due to differences in sampling and measurement, but teachers, civil servants and prison officers seem to have always been below the public average of 47% earnings growth. The armed

⁴ Measures of earnings growth can come from a variety of sources (LFS, ASHE, Monthly Wages and Salaries Survey), can measure different elements of remuneration (including or excluding bonuses or overtime) and can be measured in different ways (over different time periods, with different weights for composition changes). Each measure provides a slightly different number for public and private sector comparison even though the overall picture is not changed. For example, the public sector has had slightly bigger earnings increases than the private sector over the period 1997 to 2006 using ASHE or LFS (as in Figure 8.5) but similar earnings growth if one looks at ONS earnings estimates based on the Monthly Wages and Salaries Survey (as in Figures 8.3 and 8.4).

Figure 8.5. Average increase in nominal earnings, 1997–2006



Notes: 'Practices allied to medicine' are occupations such as medical radiographers and physiotherapists. In both data-sets, public sector groups are identified using SOC occupations. As doctors and nurses are both public and private sector workers, it is not possible to compare ASHE and LFS numbers for these groups. A similar problem arises for teachers, but as teachers' pay in the private sector is driven by the public sector, we have presented ASHE numbers for the teachers' group. Data from ASHE are not available for HM Forces.

Sources: Labour Force Survey (LFS) and Annual Survey of Hours and Earnings (ASHE) tabulations from ONS (<http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=13101>); authors' calculations. We thank the UK Data Archive for having provided the rights to use the Labour Force Survey (<http://www.data-archive.ac.uk/>).

forces and police are closer to the public average if ASHE numbers are to be preferred to LFS ones.⁵

Regional issues

The pattern of regional pay appears to differ between the public and private sectors. Figure 8.6, for example, shows average pay levels for male graduates by sector and region. It is immediately clear that graduates in the public sector earn significantly less in London and the South East than their private sector counterparts. In Northern Ireland, the North East and Wales, the opposite is true. More specific examples of this phenomenon include the fact that the median male teacher in London is at the 40th percentile of the male graduate earnings distribution in London, whereas his counterpart in the North East is at the 50th percentile of the equivalent distribution and his counterpart in Northern Ireland is at the 60th percentile.⁶

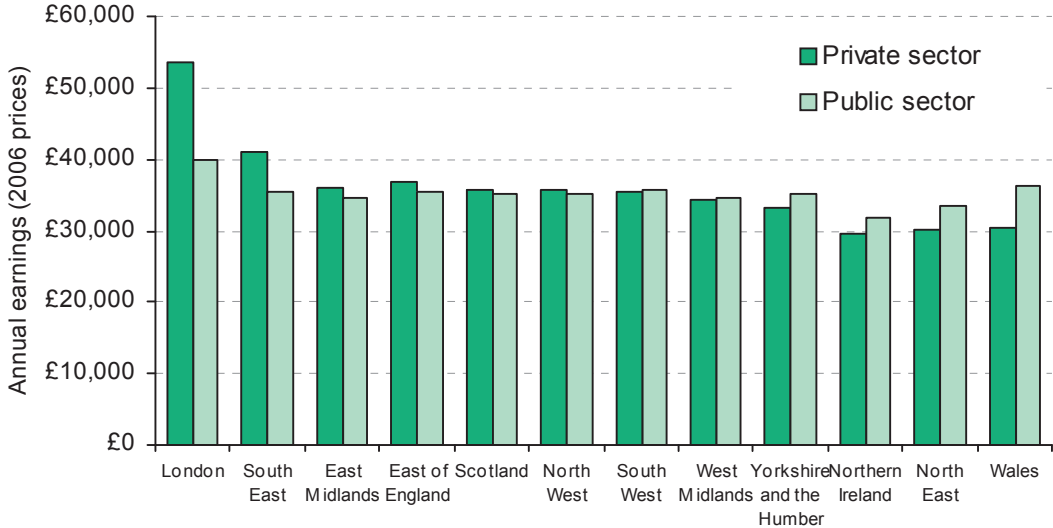
This pattern of relative pay is to some extent felt in recruitment problems and sometimes in retention issues. For example, measured vacancy rates of teachers in Figure 8.7 show that the recruitment problems experienced by schools at the turn of the millennium were very severe for London, somewhat important in the South East and East of England, but less so in the rest of the country.

⁵ Sample sizes are much bigger in ASHE than in LFS.

⁶ Authors' calculations using Labour Force Survey 2006.

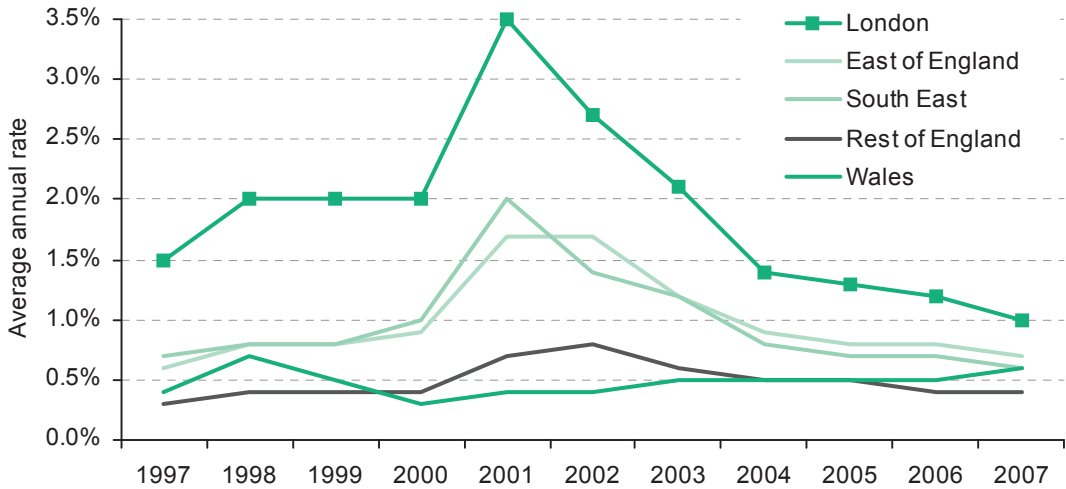
A similar pattern can be uncovered for retention issues by looking at turnover rates. Figure 8.8 shows that staff turnover among teachers is highest in London, the South East and the

Figure 8.6. Public and private sector average earnings for male graduates by region



Note: We have computed average earnings for 2004, 2005 and 2006 in 2006 prices in order to increase the sample size.
Sources: Labour Force Survey, 2004, 2005 and 2006.

Figure 8.7. Vacancy rate for all teachers by region since 1997



Sources: DfES, *Statistical Evidence to School Teachers' Review Body (STRB) – September 2006* (available at <http://www.teachernet.gov.uk/management/payandperformance/pay/SatsEvidenceSept2006/>); DCSF, *Statistical Evidence to School Teachers' Review Body (STRB) 2007* (available at <http://www.teachernet.gov.uk/management/payandperformance/pay/revisedversion/>).

Figure 8.8. Turnover rate of teachers in 2006



Source: DCSF, *Statistical Evidence to School Teachers' Review Body (STRB) 2007* (available at <http://www.teachernet.gov.uk/management/payandperformance/pay/revisedversion/>).

East of England. These correlations between the pay differential and staff turnover are not necessarily causal – factors other than pay might play a part in high turnover in big cities – but they underline specificities of the London labour market that are hard to ignore.

Interestingly, there appear to be other ways in which public sector labour markets respond to pay differentials. In particular, the demographic characteristics of workers in the same sector differ by region. For example, teachers in London are, on average, younger than those in the rest of the country, with 46.5% of teachers in London being aged under 40 compared with just 38.5% outside London.⁷ Experienced teachers are also more prevalent outside London than in the capital. Similar differences can be found for nurses and other public sector groups.

The result is that, by an accident of the characteristics of regional labour markets, the characteristics of those delivering key public services differ quite dramatically across the country. Other aspects of the ‘quality’ of public sector workers may also vary as a result and there is some evidence that this makes a difference to outcomes in health. For example Hall, Propper and Van Reenen (2006)⁸ found impacts of higher outside wages for nurses on particular health outcomes.⁹

With a constrained budget and limited scope to increase wages across the board, there is a clear prima-facie case for raising wages differentially across the country.¹⁰ Table 8.2 presents

⁷ Average over the period 1997–2006. Source: Authors' calculations using the Labour Force Survey.

⁸ E. Hall, C. Propper and J. Van Reenen, ‘Can pay regulation kill? Panel data evidence on the effect of labor markets and skills on hospital quality and productivity’, NBER, 2006 (<http://www.nber.org/~confer/2006/si2006/hc/vanreenen.pdf>).

⁹ For example, they found that a 10% increase in outside wages available to nurses can result in a 3% to 8% increase in death rates among emergency admissions for acute myocardial infarction.

¹⁰ The regional variations that occurred in 2007 cannot be seen as a step in the right direction. The fact that the Scottish and Welsh administrations accepted pay review body recommendations in full for nurses and police rather than ‘staging’ them meant that the effective increases were higher in Scotland and Wales than in the rather more constrained labour markets of London and the South East.

some estimates of what might be possible within an overall headline increase of 3% for teachers. An increase of 2.8% in parts of the country where teachers' pay is highest relative to the private sector would allow an increase of 3% in a middle group of regions (East Midlands and East of England) and increases of 3.2% in the South East and 3.9% in London. An alternative with greater regional variation could involve 2.5% for areas where teachers' pay is highest relative to the private sector, 3% for the middle group of regions, 3.5% in the South East and 5.4% in London.

Table 8.2. Regional changes in teachers' pay: possible options with a budget equivalent to a 3% headline increase

Government Office Region	Share of the workforce	Headline increase possible (1)	Headline increase possible (2)
North East	4.9%	2.8%	2.5%
North West	7.7%	2.8%	2.5%
Yorkshire and the Humber	8.1%	2.8%	2.5%
West Midlands	9.1%	2.8%	2.5%
East Midlands	6.5%	3.0%	3.0%
East of England	3.8%	3.0%	3.0%
London	6.2%	3.9%	5.4%
South East	27.2%	3.2%	3.5%
South West	8.1%	2.8%	2.5%
Scotland	9.2%	2.8%	2.5%
Wales	4.7%	2.8%	2.5%
Northern Ireland	4.6%	2.8%	2.5%
UK average	100%	3.0%	3.0%

Sources: Authors computations, using LFS for regional weights.

Equal pay issues

One further specific issue facing government is that of 'equal pay'. The money potentially at stake is highly uncertain but could be very considerable – one off costs of more than £3 billion in local government alone.¹¹ The main issue is that, particularly in local government and the NHS, reviews of pay systems aimed at ensuring compliance with equal pay legislation have uncovered significant anomalies. Many of these were put right in the NHS through the Agenda for Change programme, which led to a dramatic shake-up in pay levels and structures, and ongoing increases in pay costs. Anomalies are also gradually being dealt with in local government, though much more slowly than initially intended. Some of the ongoing cost to local government (estimated by local government employers as a permanent increase in pay bill in the order of 4%¹²) has been absorbed and some remains to come.

¹¹ <http://www.communities.gov.uk/news/corporate/490459>.

¹² Local Government Employers, *Unblocking the Route to Equal Pay in Local Government*, November 2006 (<http://www.lge.gov.uk/lge/core/page.do?pageld=54477&path=52690.20&activeld=61539>).

The biggest immediate financial worry to government, though, comes from potential immediate liabilities for back pay. Claims for equality of treatment apply not just to current and subsequent pay but can involve payment of six years' back pay. Because reviews of pay structures – such as those undertaken through Agenda for Change – unearth unequal treatment issues and deal with them going forward, they provide a clear basis for making claims for back pay. Estimates of potential liabilities are hard to verify but it appears that in local government, at least £3 billion (an employers' estimate) will be needed to clear these liabilities. NHS employers are less willing to provide estimates of costs, but more than 13,000 claims have been lodged and some settlements have been significant, suggesting a potential liability running into billions of pounds. It does not seem possible to be more specific.

On the local government front, significant extra support has already been announced in the form of 'capitalisation directions', which effectively permit capital receipts or borrowing to be used to make the one-off back payments. A sum of £500 million was allocated in this way in September 2007.¹³ It is likely that significant further directions will be required.

Summary

The key policy problem for the government is to judge whether public sector pay is now at the 'right' level, and for how long lower increases than in the private sector are sustainable. There are relatively few signs of real strain at the national level. Vacancy levels among teachers and nurses, for example, are well down on the problematic levels of 2001. Three issues are clear, however:

- Returning relative pay levels to where they were in 2001 does not look like a wise move, given the problems that arose at that time. Overall, that would require only three or four years of increases 1 percentage point below the increases in the private sector. It would not be an efficient policy if we were to enter another cycle of overly-depressed public sector pay increases and another period of catch-up a few years down the line.
- Different parts of the public sector have experienced very different trends over the last few years. For example, whilst health service workers have enjoyed above-trend increases, civil servants have had smaller increases than the private sector. The case for treating them like this going forward looks weak.
- Whilst there do not appear to be major problems at a national level, there are important regional variations, and issues for some specialisms, that government might need to address.
- The potential cost of equal pay claims over the next few years is uncertain and could be very large. A key question for government is going to be the extent to which these claims are funded from the main pay bill, thereby holding other pay down, or from other money, thereby either reducing services or increasing borrowing.

¹³ Local Government Employers, op. cit.

8.4 Public sector pensions

As we mentioned in the introduction to this chapter, pay is only one part of public sector compensation. The other major part, often ignored when public and private remuneration are compared, is pension provision. Table 8.3 shows proportions of public and private sector workers in different sorts of pension scheme.

Table 8.3. Proportions of public and private sector employees who are active members of different types of employer-sponsored pension scheme

Type of employer provision	Proportion of public sector employees	Proportion of private sector employees
Occupational defined benefit	76.5%	17.0%
Occupational defined contribution	3.4%	8.3%
Group personal pension	0.8%	8.1%
Stakeholder	0.3%	4.6%
Unknown	4.1%	4.0%
No employer-sponsored pension	15.0%	58.0%

Sources: There are numerous different estimates of pension coverage. We use data direct from ONS available at http://www.statistics.gov.uk/downloads/theme_labour/ashe_2006/tabP2.1a.xls. Other estimates produce results that are qualitatively similar.

There are striking differences between the sectors. More than three-quarters of public sector employees are members of a defined benefit occupational pension scheme as against just 17% of private sector employees. (A defined benefit (DB) scheme is one in which the pension income it provides depends on years of membership of the scheme and a measure of salary, typically taken close to when the individual leaves the pension scheme.) Private sector employees are more likely to be active members of other forms of employer-sponsored scheme. Nevertheless, 58% are members of no employer-sponsored provision, as against just 15% of public sector employees.

Coverage is not the only difference. There are also differences between sectors in the value of pension accruals. A recent estimate by Disney, Emmerson and Tetlow (2007)¹⁴ suggests that the average value of the accrual of pension rights for public sector employees is around 25% of salary. In other words, the additional pension accrued for one more year in employment is on average worth a quarter of gross salary. So an average public sector employee who is a member of the pension scheme with a headline salary of £20,000 would have a remuneration package including pension worth not £20,000 but £25,000. Private sector scheme members have a slightly lower accrual of about 20%, so that the scheme member on £20,000 would have a pay and pensions' remuneration package valued at £24,000. The authors conclude that the main reason for this difference is the lower normal pension age in most public sector schemes (generally 60, as against 65 in most private schemes).¹⁵ We return to this below.

¹⁴ R. Disney, C. Emmerson and G. Tetlow, 'What is a public sector pension worth?', IFS Working Paper W17/07, October 2007 (http://www.ifs.org.uk/publications.php?publication_id=4051).

¹⁵ We should not neglect their additional important conclusion that part of the difference also reflects different age and earnings profiles between sectors.

Across the population of public and private sector workers, the difference is much more dramatic than this suggests, because scheme membership is so much lower in the private sector. Very importantly, employer contributions to defined contribution (DC) schemes are much lower. Employers with DC schemes make contributions of 6% of salary on average on behalf of their employees.¹⁶

If we make the (generous) assumption that employers make contributions to group personal pensions and stakeholder pensions similar to those that they make to occupational DC schemes, we are in a position to compare the average value of employer-provided pensions in the public and private sectors.

Public sector DB pensions are, on average, worth 19.125% of total salary (i.e. 76.5% of 25%). If we take account of the fact that public sector employees on average contribute 3.9% of salary to their occupational scheme, this value falls to 16.1%. Assuming that the other 8.5% of public employees with some form of employer pension provision get a 6% contribution from their employer adds another 0.5% to this giving a total average value of public sector pensions of about 16.6% of salary.

Private sector DB schemes are worth 3.4% of total salary (i.e. 17% of 20%). This is reduced by employee contributions of 4.6% on average, to just 2.6% of salary. If the other 25% of private employees with some form of employer provision get a 6% contribution from their employer, this adds a total 1.5% to the value of private sector pension provision by employers, bringing the total to 4.1% of salary.

These are all very rough calculations, but they suggest that on average, to compare private and public sector remuneration including pensions, one needs to add about 12% more on to public sector wages than on to private sector wages – a dramatically large amount in this context.

In addition, there are important distributional differences between the two sectors – for example, there is a stronger relationship between probability of scheme membership and earnings in the private sector than in the public sector.

Changes over time

These differences between public and private sector are not static. The generosity and coverage of schemes in the private sector have been falling. The most important change in the private sector has simply been the reduction in coverage of occupational schemes. According to the Government Actuary, the number of active members of private sector occupational schemes fell from 6.5 million in 1991 to 4.7 million in 2005.¹⁷ The other important shift has been the increasing importance of (generally significantly less generous) DC schemes in this total, such that only an estimated 3.7 million private sector employees were active members of a DB scheme in 2005. And fewer than 2 million of them are in ‘open’ DB schemes – in

¹⁶ Table 8.3 of Government Actuary's Department, *Occupational Pension Schemes 2005*, June 2006 (http://www.gad.gov.uk/Documents/13th_Occupational_Pension_Schemes_Survey_05.pdf).

¹⁷ Government Actuary's Department, *Occupational Pension Schemes 2005*, June 2006 (http://www.gad.gov.uk/Documents/13th_Occupational_Pension_Schemes_Survey_05.pdf).

other words, schemes that new employees are able to join. This matters because it might begin to give us a handle on the future ‘steady state’. Even if no more schemes close or change their rules, we could end up in a situation in which fewer than 2 million private sector employees are accruing a DB pension. The Pensions Commission took a much gloomier view, concluding that the number will stabilise below 1.6 million 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’.¹⁸

The reason this matters for the public sector is that the difference between public and private sector remuneration packages has been changing quite rapidly over time as a result of this private sector retrenchment, and this looks set to continue to change.

Public pension reform

Given these differences between sectors, it is not surprising that the government has been trying to reform some of the public sector schemes. One reason this is particularly important is that (with the exception of the local government scheme) most public sector schemes are unfunded – that is, liabilities being built up today are not matched by the accumulation of funds to pay for them, but will need to be met from future tax receipts.

The scale of these unfunded liabilities is very substantial – estimated at £530 billion in present-value terms by the Government Actuary’s Department as at March 2005. This liability is growing rather fast as a consequence of earnings growth and rapid improvements in mortality, as well as accounting changes which are reducing the discount rates used (see Box 8.2 for details). New figures will show a further significant rise in liabilities. Indeed, it is straightforward to calculate from a recent note by the parliamentary Scrutiny Unit, and the published accounts of the NHS scheme,¹⁹ that the liabilities of the main schemes had risen to £725 billion by March 2006. The Treasury estimates that the cost of payments from unfunded public service pensions will rise from about 1.5% of GDP now to 2.0% of GDP by 2030.²⁰

Changes to the main unfunded schemes have finally been agreed, following the government’s U-turn in the run-up to the 2005 general election. Reforms were due to be introduced at that point to increase the normal pension age to 65 for the main schemes (NHS, teachers and Civil Service) for all new members and to phase in the increase for current members. In the event, union pressure forced a renegotiation, culminating in an agreement in November 2005 that effectively saw current members exempted from any increase in pension age. The government’s condition was that the savings of £13 billion (in present-value terms) that would have been generated from the originally proposed reforms should be maintained.

¹⁸ 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>).

¹⁹ Sources: Parliamentary Scrutiny Unit, *Public Sector Pensions*, Briefing Note, May 2007 (<http://www.parliament.uk/documents/upload/publicsectorpensions.pdf>); page 26 of *NHS Pension Scheme and NHS Compensation for Premature Retirement Scheme: Resource Accounts 2006–07*, November 2007 (<http://www.official-documents.gov.uk/document/hc0607/hc10/1007/1007.pdf>).

Box 8.2. Public sector pension liabilities

A large number of central government pension schemes are unfunded schemes. The government pays pensions when its employees retire, but does not make contributions to a fund to pay for them while they are working. As a result, the government has an implicit debt toward its employees (and former employees) which amounts to the future pensions it has promised to pay.

The Government Actuary's Department (GAD) computes these pension liabilities using estimates of life expectancy and assumptions on salary growth and discount rates. The current official number is £530 billion for March 2005; Figure 8.9 reproduces the recent evolution of these estimates.^a

Figure 8.9. Official estimates of pension liabilities



Sources: Table 8, page 60 of N. Record, *Sir Humphrey's Legacy: Facing Up to the Cost of Public Sector Pensions*, Institute of Economic Affairs, 2006 (<http://www.iea.org.uk/files/upld-book390pdf?.pdf>) using various parliamentary answers quoting official estimates from GAD.

Pension liabilities have increased for various reasons: increases in life expectancy have been repeatedly underestimated; increases in public pay in recent years have outpaced the GAD assumption of 1.5% real increases (as public pensions depend on final salaries, public pay increases have an immediate impact on pension liabilities); and the number of public sector workers has increased over the period.

Estimates of pension liabilities are considerably higher if the discount rate used to compute them is reduced. The discount rate measures the real interest rate that could be earned if the assets corresponding to the liabilities were to be placed at no risk for the duration of the liabilities. Until 2005, the GAD used a discount rate of 3.5%. This rate was high compared with the rate used to estimate private sector liabilities (i.e. the AA corporate bond rate – 2.8% in 2004 – following Financial

²⁰ HM Treasury, *Long-Term Public Finance Report: An Analysis of Fiscal Sustainability*, December 2006 (http://www.hm-treasury.gov.uk/media/6/0/pbr06_longtermpublicfinancereport_476.pdf).

Reporting Standards FRS17) and therefore it was reduced to 2.8% for 2006 and further to 1.8% for 2007. This will increase estimated liabilities by a large amount, putting the March 2006 number closer to three-quarters of a trillion pounds.

Which discount rate to use is an important question. Some have argued that the most appropriate rate is to be found in the index-linked gilt market where the government can borrow money. Using the rate of return at long duration on this market gives much lower discount rates (1.12% for 18 years' duration and above), suggesting much higher pension liabilities estimates. Record (2006)^b thus estimates pension liabilities for March 2006 at £1,025 billion. On the other hand, the index-linked gilt rate might be artificially low as a result of government regulations pertaining to funded pension schemes (they have to buy index-linked gilts). Hawksworth (2006)^c has suggested using expected GDP growth, as it is the theoretical rate of return of an unfunded system in equilibrium and as the government's income follows GDP growth. Pension liabilities valued in such a way would be higher than current estimates but are likely to be lower than the values mentioned by Record (2006) as GDP growth is expected to be between the index-linked gilt rate of 1.12% and the 2.8% corporate bond rate.

To facilitate the public debate on these estimates, GAD should publish sensitivity analysis to its central estimate of pension liabilities based on changes in pay, employment, longevity and discount rate.

^a The £530 billion March 2005 figure is the latest official estimate mentioned in HM Treasury, *Long-Term Public Finance Report: An Analysis of Fiscal Sustainability*, December 2006 (http://www.hm-treasury.gov.uk/media/6/0/pbr06_longtermpublicfinancereport_476.pdf). The figure for 2006 was not published in the 2007 Pre-Budget Report. New estimates for March 2006 show that liabilities for the main schemes were £725 billion.

^b N. Record, *Sir Humphrey's Legacy: Facing Up to the Cost of Public Sector Pensions*, Institute of Economic Affairs, 2006 (<http://www.iea.org.uk/files/upld-book390pdf?.pdf>).

^c J. Hawksworth, *Public Service Pension Liabilities and the Fiscal Rules*, PriceWaterhouseCoopers, 2006.

In most contexts, one would consider £13 billion to be a very significant sum. But two things are worth noting. First, this is a one-off saving on the net present value of liabilities, not an annual saving. Second, it represents only a small fraction of the measured increase in liabilities over the past decade.

Negotiations since then have been protracted, but new terms have now been agreed between government and the main Civil Service, NHS and teacher unions. Importantly, these are expected to keep within the budgetary savings prescribed and have indeed resulted in new normal pension ages of 65 for new members, whilst maintaining age 60 for current members. This concession for current members will have long-lasting consequences. It means that significant numbers of teachers, nurses and civil servants will still be able to retire on full pensions at age 60, 30 years hence and even after the state pension age has risen to 67.

Importantly, however, government and unions have also agreed cost sharing between employees and employers for any future increase in costs, with caps on employer costs. In the teachers' scheme, for example, employer contributions rose from 13.5% to 14.1% in January 2007, whilst employee contributions rose from 6.0% to 6.4%. Going forward, there is a commitment to share equally any increase or decrease in costs resulting from actuarial revaluations – for example, in the light of greater-than-expected increases in life expectancies

– with a 14% ceiling on employer contributions from the 2008 revaluation. Given that the ceiling has already been reached, this commitment means that all future increases will be felt by employees.

The main NHS scheme will change from April 2008, again with normal pension age rising for new entrants but remaining unchanged for current members. Contribution rates will rise for higher earners, from 5% or 6% currently to 6.5% for those earning between £19,166 and £63,416, from 6% to 7.5% for those earning up to £100,000 and to 8.5% for those earning more than £100,000. Employer contributions are capped at 14% and would have had to rise to 15.3% in the absence of these reforms, at a cost of £430 million per year.

These cost-sharing agreements with increased member contributions to reflect increasing costs are significant and can help protect government finances into the future. For pension members, higher employee contributions will be very similar to a pay cut, with the one notable difference that a pay cut would reduce their expected pension whereas higher employee contributions do not. But, overall, the reforms are modest, given both the rate at which liabilities have been increasing and the big – and growing – difference between the public and private sectors. Whilst the difficulty of agreeing even the current set of reforms will discourage government from pursuing these issues further in the short run, in the longer run this cannot be the end of the story. At the very least, there must be a strong case for aligning public service pension ages with the state pension scheme.

More fundamentally, it is unclear why the government should choose to remunerate its employees so much through deferred pay (pensions). It is not clear that its employees value that method of remuneration as much as the large increase in immediate pay that would have the same monetary value – and hence whether the public sector as an employer is getting good value for this spending. And, of course, providing a full pension to high-quality teachers and nurses at age 60 provides them with a strong signal to retire at that age when we are likely to want to continue employing them.

8.5 Pay review bodies

Pay-setting mechanisms in the public sector are inherently different from wage bargaining in the private sector for a variety of reasons. For example, some public sector workers cannot strike; public sector pay setting can be highly political (particularly for groups such as nurses and teachers); public sector workers are also voters; and, in some cases, the government can have unusual market power, being the only, or very dominant, employer of some types of worker – soldiers, police, brain surgeons etc.

One helpful way of splitting up public sector workers is according to how their pay is set. From government's point of view, there are three groups:

- The Civil Service makes up about 10% of the public sector, and central government has direct control over its pay awards.
- Another 40% or so are covered by pay review bodies (PRBs). The PRBs cover nurses, doctors and other health service staff, teachers, the armed forces, prison officers and certain senior public servants such as judges and senior civil servants. The PRBs

recommend increases and government can decide whether or not to accept the recommendations.

- The rest of the public sector, of which local government is the most important part, negotiates pay with their employers. Here, central government control is more limited, though of course pay increases are always constrained by the overall spending envelope.

In this section, we look particularly at the pay-setting mechanism for groups covered by pay review bodies and discuss possible reforms for the pay-setting mechanism.

The pay review body process

Pay review bodies, which are independent of government, take evidence from government, staff and other interested parties and then, having regard to such issues as recruitment and retention, affordability and comparability, make recommendations to government.

Box 8.3. What 'staging' pay awards means

When an award is 'staged', the government formally accepts the headline pay award recommendation from a pay review body, but only part of the increase is paid immediately and the rest is not paid until later in the year.

In the case of nurses, the 'staging' of the 2.5% increase (1.5% in April and the rest in November) corresponds to an increase in annual pay of 1.92%. In the case of the police in England and Wales, the 2.5% increase paid from December rather than backdated to September corresponds to an increase in annual pay of 1.88%. In the last year, 'staging' pay awards has been a way for the government to limit real headline increases to below 2% while still formally following PRB recommendations.

But 'staging' is not equivalent to a lower pay increase. Had the government increased nurses' pay by 1.92% since April, nurses would have received the same amount of pay in 2007–08 but their annual pay would be lower at the end of the year. Hence, next year's award would have been on top of a lower base. A lower pay award has long-term effects on pay while 'staging' does not. 'Staging' pay awards saves money for the government only in the short term. Therefore the political cost to the government from 'staging' pay awards does not deliver a lower pay bill in the long run.

The Royal College of Nursing has estimated the savings for nurses at £60 million.^a Our own computations lead to an estimate of £80 million for nurses and around £40 million for the police. None of these figures is large compared with the overall pay bill.

^a BBC, 'Nurses to be balloted over action', 16 May 2007 (<http://news.bbc.co.uk/1/hi/health/6654547.stm>).

The government does not have to accept the recommendations, but in the past it usually has done – since 1999, it has 'staged' the recommendations from the PRBs on only seven out of 49 occasions. However, four of these occasions – affecting judges, prison officers, nurses and the police – were in 2007. Given the purpose and nature of the process – to provide independent advice in respect of groups of workers who have either forfeited the right to strike or with whom government finds it politically difficult to negotiate directly – if

government were to get into the habit of rejecting recommendations then it is likely that the process would collapse. Last year saw recommendations from some of the review bodies which, whilst not rejected outright, were ‘staged’ (which makes them less generous in the short term). Most controversial was the ‘staging’ of the 2.5% increase for nurses, with 1.5% awarded as from April but the rest only becoming payable in November, and more recently the 2.5% increase for police in England and Wales, which was backdated to December instead of the recommended date of September. Box 8.3 explains ‘staging’.

The government chose to ‘stage’ the awards in order to limit overall headline awards for PRB groups in 2007–08 to below 2% (1.9%²¹). We come to the rationale for this in the next section, but it is worth considering in what sense it has in fact been achieved. Table 8.4 shows

Table 8.4. Headline versus full year actual increase

PRB remit group	Number in group	Headline increase (value in 2008–09)	Increase received 2007–08
Armed forces	187,000	+3.3%	+3.3%
Prison officers (England & Wales)	33,607	+2.5%	+1.9%
Police (England & Wales)	144,000	+2.5%	+1.9%
Police (Scotland)	16,000	+2.5%	+2.5%
Nurses (England & N. Ireland)	406,000	+2.5%	+1.9%
Nurses (Wales & Scotland)	84,000	+2.5%	+2.5%
Doctors and dentists (GB)	174,710		
<i>Of which:</i>			
<i>Hospital staff</i>	107,240	+2%	+1.8% ^a
<i>General medical practitioners</i>	42,590	0%	0%
<i>General dental practitioners</i>	24,370	+2%	+2%
Teachers (England & Wales)	476,000	+2.5%	+2.5%
Judiciary	2,100	+2.4%	+2.4%
All (weighted)		2.48%	2.24%
All (weighted, excluding teachers)		2.48%	2.12%
All (weighted, excluding teachers, Scottish police and Scottish and Welsh nurses)		2.48%	2.08%

^a This number is an approximation by the authors, given that the effect of ‘staging’ the pay award depends on the distribution of salaries within hospital doctors and dentists. Headline increase for doctors and dentists corresponds to the increase in average gross earnings computed by the pay review body as a result of its recommendation. In practice, the PRB recommended £1,000 flat increase for all hospital consultants and £650 flat increase for doctors in training (see NHS Employers’ website, <http://www.nhsemployers.org/pay-conditions/pay-conditions-2350.cfm>). This corresponds to higher percentage increases for lower-paid doctors (for instance, an increase of 3.3% for clinical medical officers with annual salary of £30,179) and conversely lower increases for better-paid doctors (for instance, an increase of 1% for a consultant with annual salary of £95,831). The ‘staging’ of the award affected only the lowest-paid doctors as the increase in April was up to the lesser between 1.5% and the flat rate (either £650 or £1,000). For instance, the ‘staging’ reduces the annual increase from 3.3% to 2.26% for a doctor with £30,179 salary but leaves unchanged the 1% increase for the better paid consultant. For general dental practitioners, the PRB recommended a gross earnings base increase of 3%, leading to an average 2% increase in earnings after expenses. Sources: Pay review bodies; departmental announcements.

²¹ See quotation in Section 8.6.

the headline recommendation, the value of the actual pay increase in 2007–08 (different when the increase is ‘staged’) and the numbers in each group for various PRB groups.

As is plain from Table 8.4, it is hard to see in what sense PRB increases have been below 2% on average. On the most generous interpretation, which excludes teachers (who have been in a two-year pay deal), police in Scotland and nurses in Wales and Scotland, the average increase for 2007–08 is slightly above 2%. The long-run effective increase including all PRB groups is virtually 2.5%. For all groups for 2007–08, the impact of government decisions on ‘staging’ was to reduce the average PRB pay awards from the 2.48% recommended to 2.24%. This achieved a one-off saving of around £120 million (calculated as 0.6% of the pay bill of nurses and the police).

There is a cost to the government of amending pay review body recommendations in terms of immediate political or industrial relations difficulties. A perhaps more important cost may be damage to the credibility of the pay review body process itself. There are good reasons for having independent recommending bodies. It is not clear that there is an alternative that would satisfy both sides. Direct negotiations with teachers and nurses have proved politically very hard in the past, which is why they were brought under the PRB system in the first place. Direct negotiations with groups such as the armed forces are very difficult, especially when they have no right to strike. Tying pay increases to some kind of formula, as happened for police pay until recently, is very inflexible. Pay review bodies avoid these problems, but they are only credible when both sides accept the outcome in all other than exceptional circumstances.

Multi-year awards

Chancellor Alistair Darling has recently mooted the possibility of longer-term pay deals. In the early part of this decade, a number of such multi-year awards were put in place, often as part of a strategy to reform pay systems. Reforming pay systems – to overcome inequities, to allow assimilation between two organisations joining together or just to simplify by reducing numbers of bands and allowances – can be an expensive and complex business. Multi-year awards can provide flexibility to accommodate change, can provide time and space to negotiate and implement change rather than spending that time on annual pay negotiations, and can provide a degree of certainty to employees. It is not clear from recent government statements, though, that this is what it has in mind for future multi-year deals.

Rather, the purpose seems to be to provide certainty and to minimise inflationary pressures. In the words of the Prime Minister,²²

It means as people face mortgage bills and utility prices they know exactly what their income is likely to be ... The whole purpose of this is keeping inflation under control ... There is no point in a big salary rise that’s wiped out by a big inflation rise.

Such deals will indeed provide certainty over nominal earnings, but not over the – presumably more important – level of real (inflation-adjusted) earnings. We come to the issue of inflation in the next section, although it would be helpful if the Prime Minister were to spell out

²² Quoted by the BBC at http://news.bbc.co.uk/1/hi/uk_politics/7176170.stm.

through exactly what mechanism three-year pay deals in the public sector will keep inflation under control.

One recent experience is worth reflecting on in this context. Teachers are currently about 16 months through a two-year deal, running from September 2006, which offered 2.5% increases in each of the two years covered, but with a possibility of a review if inflation exceeded 3.25%. Inflation duly did rise above this level. The government, however, chose not to reopen the deal, rather promising to consider the effects of inflation in the forthcoming pay award. This serves to illustrate the risk-sharing issues implicit in longer-term pay settlements.

The new pay deal for teachers, announced on 15 January, covers the three years from September 2008. It involves headline increases of 2.45% in the first year and 2.3% in each of the subsequent years.

8.6 Public sector pay policy and inflation

Beyond the question of the pay-setting mechanism lies the more profound question of what might be the ‘right’ level of public sector pay. Why have the independent pay review bodies diverged from the government in their assessment of a fair and affordable pay award? What principles should guide public sector pay policy?

Assessing whether public sector pay is at the ‘right’ level is a very difficult task. Public sector labour markets are far from the perfectly competitive paradigm. On the one hand, employees often have a market power when they are the sole providers of indispensable services. On the other hand, employers have a monopsony power as they are often the sole employers of specific skills that may have been accumulated by their employees. In addition, the government might have good reasons to use public sector employment and earnings to help steer macroeconomic conditions.

Indeed, the current public sector pay policy seems to place considerable emphasis on concerns over inflationary pressures. The 2007 Comprehensive Spending Review explicitly linked concerns over inflation with public sector pay increases:²³

In contrast to periods of higher inflation in previous decades, the credibility of the UK’s monetary policy framework has kept inflation expectations anchored and earnings growth has remained subdued. The Government has demonstrated its commitment to this by delivering overall headline awards for Pay Review Body groups in 2007–08 that average 1.9 per cent.

... It is therefore important that public sector pay settlements continue to be consistent with the achievement of the Government’s inflation target of 2 per cent.

It is important to understand what this policy guidance might mean as there seems to be some confusion – in two senses. The first is the complex issue of what the relationship between

²³ Page 22 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/report/pbr_csr07_repindex.cfm).

public sector pay and inflation actually is. The second is what a reasonable interpretation of a pay settlement ‘consistent with’ achieving the 2% target might be.

On the first of these, the Prime Minister clearly sees a very direct relationship. He recently claimed that ‘staging’ last year’s pay awards had ‘helped break the back of inflation in Britain in 2007’.²⁴ On the other hand, Professor Stephen Nickell, a former member of the Bank of England’s Monetary Policy Committee, said recently: ‘They [public sector pay rises] have nothing to do with inflation’.²⁵

For macroeconomists, what matters is the difference between overall government spending and taxation. If the government is running a deficit, it might add to inflationary pressures, whereas if it is running a surplus, the government is likely to cool down demands and therefore slow inflationary pressures. There are, however, two cases in which public pay settlements have a direct influence on inflation. First, if public pay is a residual from government spending, public pay settlements determine the deficit the government is likely to run. Second, if public sector pay settlements signal inflation expectations, then public sector pay increases might lead to further private sector pay increases, which in turn might fuel inflation and lead the central bank to raise its interest rate.

Using public sector pay as a tool to promote lower inflation comes at a price, however. The increased public–private pay differential will have to be ‘caught up’ later on if one does not want the quality of public sector workers to decrease. And, more importantly, it might not be efficient in the long run if expectations in the private sector are left unchecked by the central bank.

Even if one accepts the government’s pledge to limit inflationary pressures using public sector pay as a countercyclical tool, the question remains of what level of public sector pay growth is compatible with the government’s inflation target. Here there seems to be further confusion.

Keeping public sector pay settlements consistent with the 2% inflation target is not the same as saying that headline increases should be kept to 2%. The Bank of England has made it clear that it considers economy-wide earnings growth of around 4½% to be consistent with its inflation target²⁶ – if productivity is growing by 2½% per annum, then 2½% pay growth would simply reflect the greater productivity of workers in the economy and be consistent with zero inflation. By the same token, pay growth across the public sector of around 4½% should be entirely consistent with the inflation target of 2%.

As the Department for Children, Schools and Families (DCSF) has said regarding the most recent pay deal for teachers, of headline increases of 2.45% in the first year and 2.3% in the two subsequent years,²⁷

²⁴ Quoted by the BBC at http://news.bbc.co.uk/1/hi/uk_politics/7176170.stm.

²⁵ Norma Cohen, ‘Inflation driven by potatoes’, *Financial Times*, 10 January 2008.

²⁶ Mervyn King, ‘Monetary policy and the labour market’, speech at the Employment Policy Institute’s Fourth Annual Lecture on 1 December 1998 (<http://www.bankofengland.co.uk/publications/speeches/1998/speech29.htm>).

²⁷ Quoted by the BBC at <http://news.bbc.co.uk/1/hi/education/7188649.stm>.

What the Prime Minister said was that going forward public sector pay increases must be consistent with keeping inflation at 2%. This is the first of the settlements he was referring to. He didn't say public sector pay would have to be 2%.

Indeed. In fact, given very limited pay drift among teachers (see Table 8.5 later), it is at least arguable that a rather higher settlement would have been 'consistent with keeping inflation at 2%', though it might not have been consistent with delivering education policy within the current fiscal envelope.

This simple arithmetic often bumps into questions related to the 'right' measures of inflation and productivity. It has been argued – wrongly – that public sector pay increases should follow public sector productivity.²⁸ As public sector productivity has not been increasing very much in recent years, so the argument goes, this might lend credence to the view that the 'right' level of public pay increase should be similar to the inflation target, i.e. 2% per annum. After all, one of the first principles of economics is that people should be paid at their marginal productivity.

But this cannot follow in the long run for the provision of public services. The reason is that there is labour mobility between sectors (at least in the long run). Even if productivity in teaching English has not increased since the nineteenth century, it would be very difficult to attract young graduates into becoming teachers while paying them the same wage (in real terms) as their counterparts 150 years ago. As a result, wages in different sectors (conditioning on qualifications and the relative enjoyment derived from the occupation, plus any other part of the remuneration package – such as pensions) should be equalised and follow average productivity growth in the economy. Imperfect labour mobility might give the government some ability (market power) to award lower pay increases to some groups of public sector workers, specifically those who have the fewest private market alternatives. But that strategy is bound to come to an end in the long run if recruitment of similarly qualified workers is the objective of the government.

Economics suggests that individuals should be paid at the value of their marginal productivity. Relative prices of goods in each sector will therefore adjust to the rising cost of producing these goods and services. If productivity gains are harder to achieve in publicly-provided services (such as health and education), then the cost of these services is likely to follow average productivity growth and therefore grow at a higher rate than average prices. Economists have long reflected on this issue and called it 'Baumol's cost disease' after the seminal paper by William Baumol on the implications of growth differences across sectors.²⁹ One implication of this literature is that the relative size of the public sector is likely to grow if services provided by the public sector are 'superior' goods (in other words, if individuals want to consume more of them as they grow richer) and if the government maintains the same

²⁸ The Treasury has been reported in the press to be making this point: 'So long as productivity in the public sector was rising sufficiently, higher pay rises would be in order, the Treasury said, since compensation to reward higher productivity would not contribute excessively to demand and hence inflationary pressure' ('Strike action "inevitable" on teachers' pay', *Financial Times*, 16 January 2008).

²⁹ W. Baumol, 'Macroeconomics of unbalanced growth: the anatomy of urban crisis', *American Economic Review*, 1967, 57(3): 415–26. For a more recent discussion, see N. Oulton, 'Must the growth rate decline? Baumol's unbalanced growth revisited', *Oxford Economic Papers*, 2001, 53(4): 605–27, available as a discussion paper at <http://www.bankofengland.co.uk/publications/workingpapers/wp107.pdf>.

public coverage of these services. To take an example, if individuals want to spend more on health as they grow richer and if health services are to be publicly provided, the share of national income spent on health has to increase. Wages in the health sector will follow average productivity growth (even if this sector experiences no productivity growth by itself) and the cost of producing health will increase for the government.

The second issue with the policy guidance on public sector pay settlements concerns the ‘right’ measure of inflation. There have been rows over the relative merits of using consumer price index (CPI) measures versus retail price index (RPI) measures. The RPI has been in use in the UK since the beginning of the twentieth century, while the CPI is the result of recent international homogenisation. In the UK, the RPI measure has led to consistently higher estimates of inflation than the CPI. Which is appropriate to use depends on the circumstances and what one is trying to achieve. The CPI is a ‘better’ measure of the genuine increase in the cost of living because it allows for the possibility of changing expenditure patterns in the face of price rises. On the other hand, it is not a good measure of the cost of living of many employees because it excludes part of housing costs. From the point of view of measuring what is consistent with the inflation target, however, the CPI is the correct benchmark because that is how the inflation target is denominated and the CPI is the measure used by ONS in measuring productivity growth.

Box 8.4. The economics of public sector pay setting

Setting public sector pay is neither easy nor straightforward. Other things being equal, holding public sector pay below the levels available in the private sector is likely to lead to recruitment and retention difficulties and/or reductions in the quality of staff willing to work in the public sector. Conversely, more generous reward packages in the public sector might lead to the crowding out of private sector activity and excessive levels of public spending. Over the long run, and abstracting from planned changes in the composition or quality of the public sector workforce, one would expect remuneration in public and private sectors to move together, in line with the overall rate of productivity growth in the economy.

Both individual performance and productivity are very difficult to observe in the public sector.

A simple rule of thumb to devise pay settlements would be to compute the rate of gross earnings growth compatible with the **inflation target** of 2%, which depends on the estimates of the **productivity growth** in the economy (currently between 2% and 2½% a year). If one takes a cautious view on this estimate, it leads to overall earnings growth of 4%. Increases in the relative generosity of public sector pensions should reduce this number: growth in gross earnings can be allocated between pay and deferred pay. One then needs estimates of **pay drift**, using data for recent years and different groups. These estimates of pay drift and increasing pension costs would then be subtracted from the 4% figure to give the **headline increase** consistent with the 2% inflation target. It need not equal 2%.

Once these clarifications have been made, is it fair to say that 4½% pay increases for the public sector are non-inflationary? Not necessarily. Remuneration growth is not the same as headline pay increases, for two main reasons – relative pay drift and pension costs (see Box 8.4).

Average levels of pay per person can grow in part because of pay drift, when the average pay grade increases as well as the average rate of pay for that grade. Pay drift may occur when the bottom points on pay scales are removed, or when people are promoted to higher paying jobs more quickly than previously, or when a pay system is not in equilibrium – people are moving up newly-created or extended scales.

So what level of headline increase would be consistent with achievement of the inflation target? Table 8.5 shows estimates made by government departments of the amount of pay drift for particular groups. It is low for teachers as their pay system is in equilibrium. It is much higher for NHS staff, particularly over recent years following reforms to pay systems. This pay drift is projected to decline in the coming years as the system approaches equilibrium.

Table 8.5. Pay drift estimations

Workforce group	Pay drift estimation, 2006–07	Pay drift estimation, 2007–08	2007–08 headline increase consistent with 2% inflation and 2.5% productivity growth	2007–08 headline increase consistent with 2% inflation and 1.5% productivity growth
Teachers	0.23–0.28%	0.15–0.20%	4.3%	3.3%
Doctors	3.6%	0.7%	3.8%	2.8%
Nurses 1 ^a	2.7%	2.5%	2.0%	1.0%
Nurses 2 ^a		1.6%	2.9%	1.9%
Armed forces		0.6%	3.9%	2.9%

^a The second set of figures provided for nurses (2) correspond to the average actual pay drift estimated by the Department of Health for the period 2000–05, whereas the first set (Nurses 1) correspond to the projected pay drift for the year 2007–08.

Notes: The Department of Health does not provide any indication of why pay drift is predicted to drop massively for doctors. Headline increases mentioned in this table do not take account of the increasing cost of public sector workers compared with the private sector. Estimates of this increasing cost are not available and, as pay drift estimates are themselves of poor quality, one should not take the figures mentioned in this table at face value.

Sources: Pay review body reports for pay drift estimations, especially page 85, table 7.4 of the Review Body for Nursing and Other Health Professions, *Twenty-Second Report 2007*

(http://www.ome.uk.com/downloads/361072_Cm7029_WEB.pdf); authors' calculations.

One should note that these estimates of pay drift, however important for government spending plans, do not seem to be produced in a very transparent way. It is not clear how accurate they are. For example, the Review Body on Doctors' and Dentists' Remuneration underlines in its latest report that 'no explanation was given for the substantial reduction in the forecast level of drift this year [from 3.6% in 2006–07 to 0.7% in 2007–08]',³⁰ whilst the Review Body for

³⁰ Page 14 of Review Body on Doctors' and Dentists' Remuneration, *Thirty-Sixth Report 2007*, March 2007 (<http://www.ome.uk.com/downloads/Cm%207025.pdf>).

Nursing and Other Health Professions has expressed considerable exasperation at the apparent inability of the Department of Health to provide credible and consistent figures for pay drift.³¹

Given the emphasis that the Health Departments place on pay drift in their evidence this year, it is clearly important that they provide accurate figures based on transparent and comprehensible analysis which unpacks its various components. This they have not been able to do.

In addition, the projection of pay drift for nurses for 2005–06 by the Department of Health (2.7%) was significantly higher than actual pay drift turned out to be (1.7%). Given the variability of the estimates, it is not clear that these new projections can be considered reliable. The other departments' predictions, where they are not missing altogether, do not seem to be much more explicit.

Table 8.5 shows our estimates of the headline pay increases consistent with the 2% target for inflation and two estimates of productivity growth (see Box 8.4). The estimates can vary considerably following the estimates of pay drift and productivity growth. More information should be given by the government on these estimates in order to improve confidence in them.

8.7 Conclusion

Public sector pay has risen more quickly than private sector pay since 2000, although the picture is much less clear if one goes back just a few more years. At the same time, the relative value of public sector pensions has risen quite swiftly, and public sector workers now on average have pension benefits from their employers that are worth in the order of 12% more of their gross pay than do private sector workers. These changes in pay and pension arrangements should be seen together.

On the basis of our analysis, we would draw the following tentative conclusions for policy:

- There are currently relatively few recruitment and retention problems in the public sector, so there is no need on these grounds for pay increases above those enjoyed in the private sector.
 - However, there are significant regional variations and a strong case for skewing the allocations of any fixed pot of money to areas such as London and the South East, where public sector workers are less well paid relative to private sector workers, at the expense of areas where they are relatively better paid.
- There is only a limited economic case for an across-the-board public sector pay policy.
 - While the public sector as a whole has done relatively well in recent years, different groups have experienced quite different increases.

³¹ Page 87, paragraph 7.68 of Review Body for Nursing and Other Health Professions, *Twenty-Second Report 2007*, March 2007 (http://www.ome.uk.com/downloads/361072_Cm7029_WEB.pdf).

- The argument that 2% headline increases are required to control inflation is not a strong one. In some sectors at least, higher increases look perfectly compatible with the inflation target.
- The pay review body process has served the government well for a significant period. Other pay-setting and negotiating mechanisms do not look attractive. There are risks to the government in persistently rejecting PRB recommendations because doing so will put the mechanism at risk.
- The pension reforms negotiated by government have made some progress and have involved some important changes resulting in reductions in long-term costs. However, upward cost pressures appear inexorable, the gap with the private sector is large and growing, and maintaining a pension age of 60 for current employees in the face of a state pension age rising to 68 looks even more unsustainable now than it did in 2005 when the original proposals to increase the pension age for public sector employees were dropped. This is surely unfinished business.
- In some key policy areas regarding the workforce, pay and pensions in the public sector, the evidence made available by the government is lacking. Government should make it a priority to rectify this.
 - In some cases, the government itself seems to be operating with inadequate information – estimates of pay drift for key workforce groups, for example. This needs to be rectified urgently if the government is going to spend public money effectively.
 - In other cases, government is backward in making available its own data or calculations – reconciling estimates of changes in Civil Service numbers and providing up-to-date estimates of public sector pension liabilities, for example.

9. Aviation taxes

Andrew Leicester (IFS and UCL) and Cormac O'Dea (IFS)¹

Summary

- Aviation is responsible for a rapidly-growing proportion of greenhouse gas emissions. Emissions, noise pollution and congestion all provide economic rationales for aviation taxes.
- Unfortunately, international agreements prevent fuel for international flights being taxed. But taxes on tickets, passengers and flights are all permissible.
- The government proposes putting a tax on flights from November 2009, replacing the current tax on passengers, air passenger duty (APD). This should allow it to target the level of emissions more effectively than APD does at the moment.
- A reformed aviation duty on flights would strengthen incentives for aircraft to fly as fully-loaded as possible and could also be extended relatively easily to freight flights, although the revenue from taxing freight flights would likely be small.
- To be targeted precisely on the external costs of aviation, the rates of a new aviation duty might in principle have to vary by aircraft type, aircraft emissions and departure airport, as well as by distance travelled. But the more sophisticated the tax is, the more complicated it will be to administer and comply with.
- To the extent that the new tax would be passed on to passengers, if the revenue raised were to remain the same there would be both winners and losers. The winners from a relatively sophisticated aviation duty would be those flying short distances on full, clean, quiet planes from airports away from residential areas.
- Reforms to aviation taxation are likely to be followed by the inclusion of aviation in the EU Emissions Trading Scheme. The interaction of the domestic tax with this system will need careful consideration.

9.1 Introduction

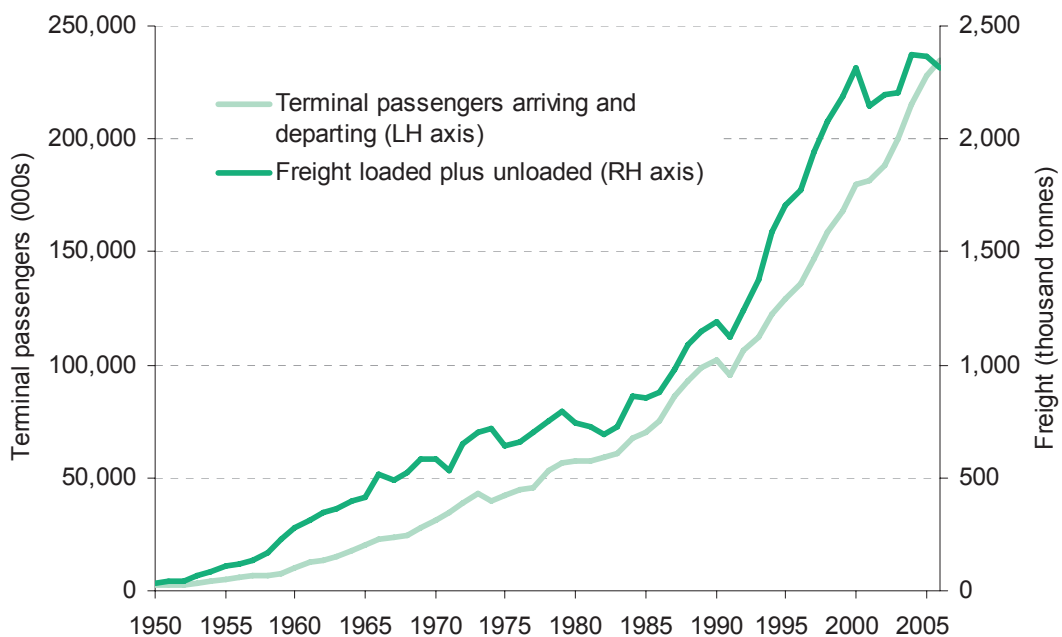
This chapter discusses the history of and possible reforms to aviation taxation. Until the introduction of air passenger duty (APD) in November 1994, air travel was effectively untaxed in the UK: tickets were (and remain) zero-rated for VAT and aviation fuel for commercial flights is exempt from duty. In the October 2007 Pre-Budget Report, Chancellor Alistair Darling announced that, from November 2009, APD would be replaced by a tax levied on flights rather than passengers, mirroring similar proposals announced earlier by both the Conservatives and the Liberal Democrats. A new per-flight tax may more effectively

¹ The authors are grateful to the Civil Aviation Authority (CAA) for providing the data on which much of the analysis of Section 9.4 is based, and to Paul Johnson for helpful advice and comments.

target the environmental effects of flying (by giving greater incentives for airlines to fill their aircraft, and perhaps by varying the tax rate according to the emissions and noise costs of different aircraft types), though this would come at a cost of making the system more complex. We discuss possible design issues below, as well as the likely impacts of the new tax. Though no name for the tax has been announced, for ease of exposition we refer to it as ‘aviation duty’ throughout.

Section 9.2 discusses the economic principles of aviation taxation and looks at the evidence on the environmental costs generated by aviation. Section 9.3 briefly recaps the history of APD since its introduction, looking at the tax structure, rates and revenues. Section 9.4 examines potential options for aviation duty, looking at how a per-flight tax could be approximated by a per-seat tax that varies by destination and describing who might gain and lose from such a tax relative to APD. Section 9.5 then discusses issues in the design of aviation duty, looking at what the tax base should be, how a per-flight tax might be introduced in practice and what the implications for domestic tax policy might be of the inclusion of aviation in the EU Emissions Trading Scheme. Section 9.6 concludes.

Figure 9.1. Terminal passengers and freight at UK airports, 1950 to 2006



Source: Table 2.1 of Department for Transport, *Transport Statistics Great Britain 2007* (<http://www.dft.gov.uk/pgr/statistics/datatablespublications/tsqb/2007edition/sectiontwoaviation.pdf>).

9.2 Economic principles of aviation taxation

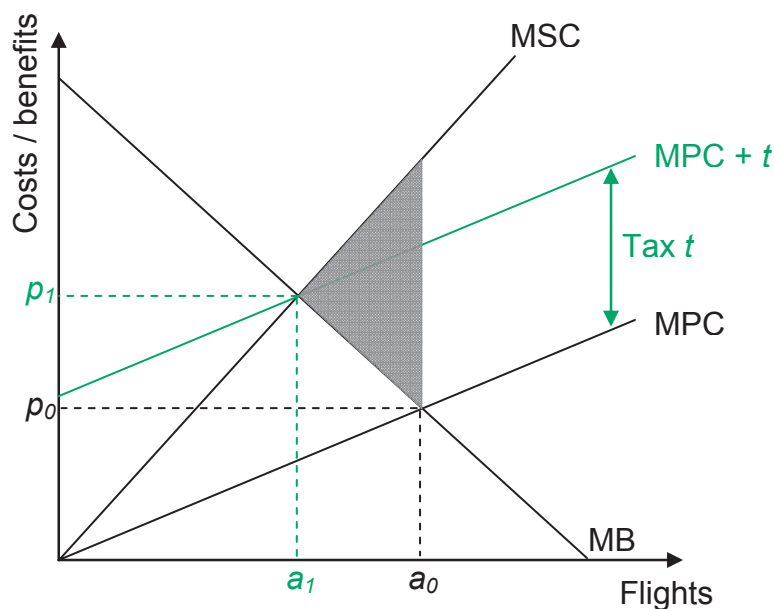
Why tax aviation?

Aviation imposes costs on society that are not wholly borne by those who fly: emissions that contribute to climate change, the noise costs for those living in the vicinity of airports and under flight paths, and congestion costs (both in the air and around airports). To the extent

that these external costs (or ‘externalities’) are not taken into account by passengers, there would be too much demand for aviation relative to the socially desirable level. Taxes are therefore a way to ensure these costs are borne by passengers, reducing demand to the level preferred by society and increasing social welfare.

Figure 9.2 illustrates this point in a very simplified way. The horizontal axis shows the level of aviation in terms of numbers of flights and the vertical axis the ‘price’ of aviation. In a very simple world where all flights were identical, this would be a representation of the entire market for aviation, though in a more realistic setting we can imagine this represents the market for flights to a particular destination on a particular aircraft type from a certain airport, etc. so that the costs and benefits (and thus the ideal tax) will vary if any of these characteristics change. The downward-sloping marginal benefit (MB) curve shows the additional benefit to society of each additional flight, which is assumed to fall as the total number of flights increases. The marginal private cost (MPC) curve shows the cost of each additional flight to airlines, reflecting the costs of purchasing and running new planes, opening new routes, buying additional landing slots and so on. Finally, the marginal social cost (MSC) curve shows the cost to *society* of each additional flight, with the gap between private and social costs showing the external costs discussed above. In equilibrium, the total number of flights will be the level at which benefits equal private marginal costs, generating a level of aviation a_0 at price p_0 . At this level, however, the social costs of flying exceed the benefits by a total amount given by the shaded triangle – this represents the welfare loss of excessive aviation. An aviation tax set at rate t , however, increases the private costs to the point where the marginal social cost equals the marginal benefits. The number of flights is reduced to a_1 at price p_1 and the welfare loss is eliminated.

Figure 9.2. Aviation externalities – a stylised illustration



Taxes that aim to internalise external costs in this way are known as ‘Pigouvian taxes’.² If this is the main justification for aviation taxes, then a number of points should be made on the tax level:

- The tax should be set at the level that ensures that the socially optimal level of output (in this case, air travel) is produced – in other words, the tax should be equal to the *marginal* externality at the social optimum. This need not be, and indeed is unlikely to be, the tax level that raises the most revenue or the level that ensures total revenues equal the total externalities imposed on society. Intuitively, the tax is not meant to be a penalty designed to compensate society for harmful effects imposed on it, rather an instrument by which the socially optimal level of a good is produced.³
- Determining the optimal tax rate for a particular flight is difficult. Noise costs will depend on local population levels and may well vary with time of day and aircraft type, and emissions costs will also depend on the aircraft’s destination and engine type, for example.
- As an inherently international business, there may also be concerns about tax competition in aviation tax design (for example, taxes imposed on aviation fuel unilaterally by the UK would encourage airlines to refuel abroad in a zero-tax environment, substantially mitigating the environmental benefit).

Aviation taxes may also be used as revenue-raising tools. When APD was introduced in November 1994, the major justification was that the sector was under-taxed compared with private transport because of VAT zero-rating (though this is true of other forms of public transport) and exemptions from fuel duty. We discuss the revenue-raising versus environmental aspect of APD in Section 9.3.

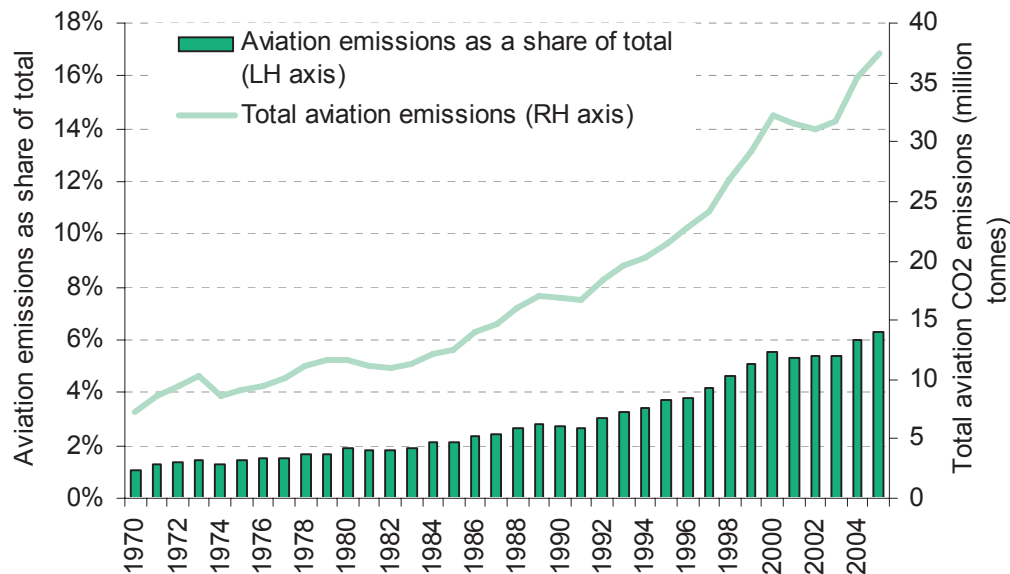
To the extent that the environmental/externalities argument for aviation taxes is central, it is important to have good evidence on the scale of the marginal externality for effective tax design. The rest of this section examines how aviation emissions have changed and evidence from the economic literature on the size of the external costs involved in aviation.

Trends in UK aviation emissions

Under reporting guidelines agreed as part of the United Nations Framework Convention on Climate Change (UNFCCC), against which progress towards Kyoto Protocol targets is judged, only emissions released by domestic flights are included in a country’s emission estimates. The UK government also includes only estimates of domestic aviation CO₂ emissions for its target to reduce CO₂ emissions by 20% from the 1990 levels by 2010. However, estimates of emissions generated by fuelling done in the UK (whether by international or UK carriers) are included as memo items in reported greenhouse gas inventories. Figure 9.3 shows total UK CO₂ emissions from domestic and international aviation since 1970 and aviation’s share in total CO₂ emissions over the same period.

² A. C. Pigou, *The Economics of Welfare*, Macmillan, London, 1920 (available at <http://www.econlib.org/Library/NPDBooks/Pigou/pgEW.html>).

³ For a more comprehensive discussion of this point, see chapter 2 of A. Leicester, *The UK Tax System and the Environment*, IFS, London, 2006 (<http://www.ifs.org.uk/comms/r68.pdf>).

Figure 9.3. UK aviation CO₂ emissions, 1970 to 2005

Note: Total emissions include domestic aviation and estimates of international aviation emissions. The overall total against which the share of emissions is measured includes additionally estimates of international shipping emissions. Source: Table 5 of Department of Environment, Food and Rural Affairs, *e-Digest of Statistics* (<http://www.defra.gov.uk/environment/statistics/globalatmos/download/xls/gatb05.xls>).

Emissions have risen fairly consistently, and particularly rapidly over the last 15 years or so: over the whole period, the average increase in aviation CO₂ emissions has been around 4.8% per year, and since 1990 slightly faster at 5.4% per year. Total aviation CO₂ emissions have increased more than fivefold from around 7 million tonnes of CO₂ to over 35 million tonnes, and the aviation share of total emissions has risen from 1% to more than 6%. Year-on-year falls in emissions have been relatively rare – recently only the recession of the early 1990s and the decline in aviation post-11 September 2001 have led to falls in aviation emissions.

The ‘greenhouse effect’ caused by aviation is greater than that caused by CO₂ alone. Additional effects are caused by emissions of water vapour, nitric oxide (NO), nitrogen dioxide (NO₂), sulphur oxides (SO_x) and soot. The Intergovernmental Panel on Climate Change (IPCC) estimated in 1999 that the total effect that can currently be quantified is between two and four times the effect of CO₂ alone.⁴ Much of the uncertainty surrounding this estimate has to do with the unknown effect of the formation of aviation-induced cirrus clouds. A more recent study⁵ also investigated the relative effects of these gases and came to a qualitatively similar conclusion to the IPCC.

How large are the external costs of aviation?

Various studies have attempted to quantify the marginal external costs of aviation and thus the appropriate size of an aviation tax. Some have focused exclusively on the emissions

⁴ J. E. Penner, D. H. Lister, D. J. Griggs, D. J. Dokken and M. McFarland (eds), *Aviation and the Global Atmosphere*, a Special Report of IPCC Working Groups I and III, Cambridge University Press, Cambridge, 1999. A useful summary for policymakers is available at <http://www.grida.no/Climate/ipcc/aviation/>.

⁵ R. Sausen et al., ‘Aviation radiative forcing in 2000: an update on IPCC (1999)’, *Meteorologische Zeitschrift*, 2005, 14(4): 555–61 (http://folk.uio.no/gunnarmy/paper/sausen_mz05.pdf).

externality. Bleijenberg and Wit (1998),⁶ for example, examined tax rates that varied by length of journey and aircraft type based on estimates of the shadow price of each emissions type. Illustratively, they suggest a tax on a Boeing 747-400 flying 2,000 kilometres (roughly the distance from Heathrow to Morocco or Aberdeen to Italy) should attract a total tax of around \$1,700 to \$11,000 depending on uncertainties over the quantity of emissions generated and the size of the externality (in particular, the cost of emissions released at altitude). This equates to around \$3 to \$20 per passenger assuming two-thirds of the plane is filled, or around \$1.50 to \$10 per 1,000 passenger-kilometres flown. A smaller F50 plane, flying 500 kilometres at two-thirds capacity, has an estimated externality of around \$60 to \$350, or \$1.40 to \$8.30 per passenger (\$2.80 to \$16.60 per 1,000 passenger-kilometres).

A later study by Dings et al. (2003)⁷ examined both environmental and noise externalities. Noise externalities are clearly largest on take-off and landing since airports are more likely to be closer to residential areas than flight paths and because these activities are relatively noisy. For longer flights, the marginal noise externality per kilometre flown is lower as this 'local' externality is not much different for short- and long-haul flights (leaving aside the fact that long-haul flights tend to use larger aircraft). The authors estimated, for example, that a 100-seat plane travelling 500 kilometres generates local externalities (largely noise, NO_x and particulate emissions) of around €12.50 per 1,000 passenger-kilometres, or €6.25 per passenger, whilst a 400-seat aircraft covering 6,000 kilometres (roughly the distance between Gatwick and Washington, DC) would generate a marginal local externality of less than €1 per 1,000 passenger-kilometres. The difference in climate externalities is much smaller – around €7.20 per 1,000 passenger-kilometres for the short-haul flight (€3.60 per passenger) and €4.40 for the long-haul flight (€26.40 per passenger). These figures could be much larger if the uncertain climatic impact generated by contrails (the condensation trails left by planes) is included: in the short-haul case, the authors estimate a marginal climate externality of €17.90 per 1,000 passenger-kilometres for the short-haul flight and €6.10 for the long-haul flight, or €8.95 and €36.60 per passenger respectively. Excluding these effects, they suggest the externalities could amount to around 5% of the price of a long-haul flight and 20% to 30% of the price of a short-haul flight.

Pearce and Pearce (2000)⁸ explicitly studied the marginal external costs of aviation for Heathrow Airport, based on both noise and emissions estimates for different aircraft types. They considered short-haul flights (500 nautical miles) and long-haul flights (3,500 nautical miles) for various types of aircraft. They estimated, for example, a Boeing 747-400 should attract an externality tax on a long-haul flight of around £3,750 (of which the noise cost makes up around 4% and the pollution cost 96%) and on a short-haul flight of around £900 (with noise representing 19% of the total). On a per-passenger basis, this short-haul tax (assuming average loads) equates to around £3.20, or £3.50 per 1,000 passenger-kilometres. Pearce and Pearce make direct comparisons to the Bleijenberg and Wit (1998) study, and find the per-passenger or per-passenger-kilometre estimates, once suitable conversions for

⁶ A. N. Bleijenberg and R. C. N. Wit, *A European Environmental Aviation Charge: Feasibility Study*, Centre for Energy Conservation and Environmental Technology, Delft, 1998.

⁷ J. M. W. Dings, R. C. N. Wit, B. A. Leurs and M. D. Davidson, *External Costs of Aviation*, Centre for Energy Conservation and Environmental Technology, Delft, 2003 (<http://www.umweltdaten.de/publikationen/fpdf-l/2297.pdf>).

⁸ B. Pearce and D. Pearce, 'Setting environmental taxes for aircraft: a case study of the UK', CSERGE, Working Paper GEC 2000-26, 2000 (http://www.uea.ac.uk/env/cserge/pub/wp/gec/gec_2000_26.pdf).

currency and distance have been made, to be broadly comparable even though the earlier study excluded noise emissions. This may be due to differences in the estimates of pollution costs.

9.3 Air passenger duty

Structure and rates

Air passenger duty was introduced by Kenneth Clarke in the November 1993 Budget and was first charged in November 1994. The duty is incurred on flights departing from UK airports and is levied on a per-passenger-carried basis, though certain categories of passenger and aircraft are exempt. These include children under the age of 2 who do not have their own seat, passengers on short pleasure flights lasting less than 60 minutes and passengers taking off from airports in the Scottish Highlands and Islands. Most passengers getting a connecting flight do not pay APD on their second or subsequent flight as long as the two flights are linked (usually interpreted as booked together at the same time). Aircraft with fewer than 20 seats or that weigh less than 10 tonnes are also exempt.⁹

APD was initially set at £5 per passenger on flights to certain specified European destinations and £10 per passenger on flights to other destinations. All 27 EU member states (plus most dependent territories) are covered by the European rate, which is also applied to domestic flights. Since February 2007, signatories to the European Common Aviation Area that are not also members of the EU have been covered by the European rate – namely, Norway, Iceland, Croatia, Macedonia, Albania, Bosnia and Herzegovina, Serbia, Montenegro and Kosovo. Passengers flying to Switzerland, Turkey and Liechtenstein are also taxed at the European rate.

APD rates were doubled from November 1997, a change announced by Kenneth Clarke in his November 1996 Budget. A second substantial reform occurred in April 2001, when the rates became differentiated not only by destination but also by the class of seat: business and first-class passengers paid double the European/non-European rate of standard-class passengers. At the same time, the standard-class European rate was halved to £5, effectively taking it back to its introductory level. The December 2006 Pre-Budget Report announced that all APD rates were to double from February 2007. Pre-Budget Report 2007 announced rates would be frozen for 2008–09 in anticipation of the reformed aviation duty. Table 9.1 summarises the evolution of APD rates.

In 2001–02, around two-thirds of passengers paid the lowest APD rate, then £5. By 2006–07, just over three-quarters paid the lowest rate, reflecting both the growth of low-cost airlines and the expansion of the list of countries eligible for the European tax rates. Between 2001–02 and 2006–07, the number of passengers paying the non-economy European rate fell by more than half, from 4.4 million to 2.1 million.¹⁰

⁹ Full details of exemptions from APD can be found at http://customs.hmrc.gov.uk/channelsPortalWebApp/channelsPortalWebApp.portal?_nfpb=true&_pageLabel=pageVA_T_ShowContent&id=HMCE_CL_000505&propertyType=document.

¹⁰ Source: Table 2 of uktradeinfo, *Statistical Bulletin Dataset: Air Passenger Duty*, December 2007 (<http://www.uktradeinfo.com/index.cfm?task=bullair>).

Table 9.1. Rates of air passenger duty, 1994 to 2009

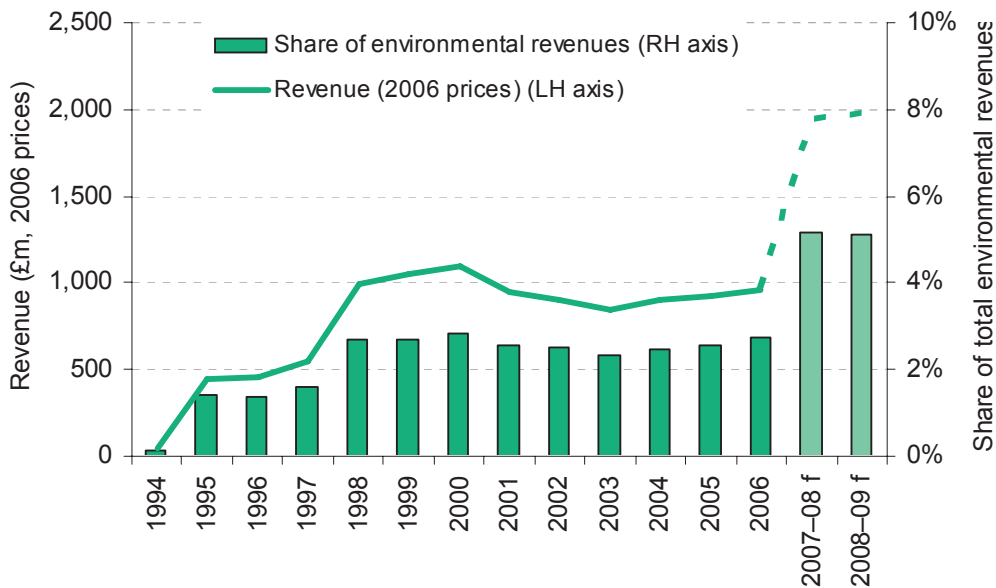
Date from which rates apply	European rate		Non-European rate	
1 November 1994	£5		£10	
1 November 1997	£10		£20	
	Economy class	Other classes	Economy class	Other classes
1 April 2001	£5	£10	£20	£40
1 February 2007	£10	£20	£40	£80
November 2009	To be replaced by new aviation duty			

Sources: HM Treasury, *Financial Statement and Budget Report*, various years; HM Treasury, *Pre-Budget Report*, various years.

Revenues

Figure 9.4 shows total revenues generated by APD since its introduction, both in real terms and as a percentage of all revenue generated by environmental taxes.¹¹ Figures for 2007–08 and 2008–09 are forecasts from the October 2007 Pre-Budget Report. Real-terms revenues

Figure 9.4. Total APD revenues, 1994 to 2008–09



Notes: 2007–08 and 2008–09 are fiscal-year forecasts from the October 2007 Pre-Budget Report converted to 2006 prices; other years are calendar-year receipts from ONS Environmental Accounts. APD share of total environmental revenue is estimated using forecast revenues for other green taxes from the Pre-Budget Report.

Sources: ONS *Environmental Accounts*; annex B of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/media/F/9/pbr_csr07_annexb_305.pdf).

¹¹ Environmental taxes are as defined by the biannual ONS *Environmental Accounts* publication as at Autumn 2007 (<http://www.statistics.gov.uk/pdfdir/enva1207.pdf>). They include fuel duty (and associated VAT), vehicle excise duty, climate change levy, aggregates levy and the landfill tax as well as APD. For more on the definition of environmental taxes, see I. Gazley, 'UK environmental taxes: classification and recent trends', *Economic Trends*, 635, October 2006 (http://www.statistics.gov.uk/articles/economic_trends/ET635Gazley.pdf).

approximately doubled to just over £1 billion after rates were doubled in 1997, and fell back slightly after the rate restructuring in 2001. Revenues are again forecast roughly to double to around £2 billion after the doubling of APD rates in the December 2006 Pre-Budget Report. It is clear that APD makes up only a small proportion of all environmental tax revenues. The vast majority of these revenues come from vehicle excise duties and VAT on fuel, neither of which is levied on fuel used by aircraft. In 2006, the total revenue generated by APD accounted for less than 0.2% of total (including non-environmental) taxes and social contributions raised.

Is APD an environmental tax?

There is some controversy over whether air passenger duty is an environmental tax. While the labelling of the tax is of little practical consequence, the tax structure and rates should depend on its objective(s). If a tax is levied to internalise an externality, its optimal level would be the social marginal cost at the socially-desirable level of aviation (as demonstrated in Figure 9.2). This optimal level of the tax is unlikely to coincide with the level that would be consistent with the government's revenue-raising objectives (or indeed other objectives that the government might have).

APD was not, initially at least, considered an environmental tax by the government; its purpose was to broaden the tax base and raise revenue at a time when the public finances were strained. In introducing the tax in his Budget Speech, Kenneth Clarke made no reference to the effect of air travel on the environment nor did he do so when he raised the rates in his final Budget in November 1996. Gordon Brown, when he restructured the rates in his 2000 Budget, also made no reference to the environment (nor did the Budget document itself).

In recent years, there has been a shift towards considering the tax as an environmental one. The doubling of APD rates in the 2006 Pre-Budget Report was justified as both a useful measure to combat aircraft emissions and one that would provide extra resources for domestic spending priorities. In the 2007 Pre-Budget Report, the announcement that APD would be replaced with a levy on flights was framed as a response to rising aircraft emissions. It is clear that, whatever its original purpose, the taxation of air travel is now considered by the government to be an environmental tax. However, in its current form, it is not a particularly well-targeted one: those flying relatively short distances within each tax band on full, clean planes would ideally pay less than those on empty, more polluting planes travelling long distances. We examine these issues more closely in the next section.

Comparing APD rates with the marginal external cost of aviation

APD varies only loosely with distance travelled and not at all with aircraft type or load. Given the discussion so far, it is clear that APD rates will not equate to the marginal externality generated by any particular flight though it may be instructive to compare rates of APD with the estimates of average or typical per-passenger externalities discussed in Section 9.2 above.

Estimates from Bleijenberg and Wit (1998), for example, suggested environmental externalities from aviation that varied from around \$1.40 to \$8.30 per passenger for short-haul

flights and \$3 to \$20 per passenger for medium-haul flights; in 2007–08 sterling terms,¹² this suggests current figures of some £1.13 to £7 per short-haul passenger and £2.43 to £16 per medium-haul passenger. This compares with APD rates of £10 for short-haul and £40 for (most) medium-haul flights.¹³ The Dings et al. (2003) study suggested a marginal externality (local plus climate) of just under €10 per passenger on short-haul flights and just over €30 per passenger on long-haul flights. Again in current sterling terms,¹⁴ this equates to around £7.67 per passenger on short-haul flights and £23.34 on long-haul flights. Both studies therefore suggest that APD rates are higher than the estimated externality, although once uncertainties over cirrus cloud generation are included in the Dings et al. study, the short-haul rate in particular may not be too dissimilar to the APD rate. Pearce and Pearce's (2000) estimates of short-haul taxes of around £3.20 per passenger and long-haul taxes of around £13.50 per passenger are now substantially less than APD rates of £10 and £40 even allowing for inflation (in 2007–08 terms, the estimates would be £3.88 and £16.35 respectively).

In summary, these studies all seem to suggest external costs that are, if anything, lower than current APD rates. However, it is again worth noting the huge uncertainties that surround the external costs of aviation, particularly illustrated in the Dings et al. study. In addition, these studies use estimates of the social cost of carbon that are below the 'business as usual' estimates in the recent *Stern Review on the Economics of Climate Change* and which might justify higher aviation (and other) environmental tax rates.¹⁵

In addition, it is clear that APD is not simply a Pigouvian externalities tax – it is also at least partly designed as a revenue-raising instrument, given the lack of other taxes on the aviation sector. To that end, it is perhaps not surprising that the rates may be higher than those justified by the externalities alone.

Distributional effects

There is often concern that environmental taxes (and, indeed, consumption taxes in general) are regressive – that is, they impact more on poorer households than on richer households and so are 'unfair' in a way that taxes on, say, income and wealth might not be. This often motivates calls for revenues from green taxes to be recycled to low-income households to ensure that their net position remains unchanged.¹⁶

¹² US dollar figures converted to sterling using OECD estimate for 1998 \$/£ PPP exchange rate of \$1 = £0.645 (<http://www.oecd.org/dataoecd/61/56/39653523.xls>) and then updated to current prices using the UK GDP deflator.

¹³ Assuming that 'short-haul' and 'medium-haul' can be taken as approximations for the European and non-European APD rates. The 2,000-kilometre distance assumed to be medium-haul might in fact cover some flights at the European rate.

¹⁴ Converting using a PPP exchange rate for 2003 of €1 = £0.698 and then updating to current prices using the GDP deflator as before.

¹⁵ The Pearce and Pearce study used a figure of £29/tonne and the Dings et al. study a figure of €30/tonne. Stern (2006) estimated a social cost of around \$85/tonne under 'business as usual' emissions paths and around \$30/tonne if emissions were lowered to levels that stabilised the level of global warming (see http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm).

¹⁶ For example, S. Dresner and P. Ekins, 'Economic instruments to improve home energy efficiency without negative social impacts', *Fiscal Studies*, 2006, 27(1): 47–74, examines how a tax on domestic fuel modelled on the existing business climate change levy may be introduced without negative distributional consequences, though they argue that it would be difficult to do so without leaving some significant losers.

Is there evidence that aviation taxes are regressive? A study by the ONS,¹⁷ using data from the 2005–06 Expenditure and Food Survey (EFS), suggested that APD accounted for around 0.08% of the average annual income of those in the poorest 20% of households and around 0.10% of average annual income for other households, which suggests that APD has relatively little distributional impact. However, APD payments are not separately recorded in the EFS and these figures rely on some rather heroic assumptions about the proportion of holiday and air fare expenditures that are accounted for by APD.

The Civil Aviation Authority (CAA) carries out an annual survey of passengers departing from the major UK airports. In its 2006 results,¹⁸ the data suggest that the average (mean) gross annual household income of leisure passengers departing from Gatwick Airport was in excess of £50,000; for Heathrow the figure was almost £60,000 and for Manchester it was almost £44,000.¹⁹ The ONS study of the 2005–06 Expenditure and Food Survey cited above suggested that average UK gross household income was around £33,000 per year, considerably below the average income of those surveyed by the CAA. This suggests that higher aviation taxes – whether increases in APD or a reformed aviation duty – are unlikely to be regressive overall.

9.4 Aviation duty: illustrative options for reform

Reforms to air passenger duty have been proposed by all the main political parties. The Liberal Democrats argued in November 2006²⁰ for a per-flight aircraft tax ‘based on the emissions of each aircraft’ and proposed revenues in the order of £4 billion from a reformed tax, roughly double current APD receipts. In his speech to the September 2007 Conservative Party Conference, Shadow Chancellor George Osborne announced a shift from APD to ‘an airline pollution duty ... empty planes will pay the same as full ones. And newer, cleaner planes will pay less than the older, polluting ones’.²¹ The October 2007 Pre-Budget Report then announced a reform from per-passenger to per-plane aviation tax from November 2009 and stated that revenues from the reformed tax would be around £520 million higher in 2010–11 than under APD. This would suggest revenues from the reformed duty at around £2¾ billion in 2010–11 (given some allowance for additional APD to be generated through higher passenger numbers and current receipts in the order of £2 billion per year).

To generate an additional £500 million or so per year from today through existing APD would require rates around 25% higher than now; to generate an extra £2 billion or so that the

¹⁷ F. Jones, *The Effects of Taxes and Benefits on Household Incomes, 2005–06*, Office for National Statistics, 2007 (http://www.statistics.gov.uk/downloads/theme_social/Taxes_Benefits_2005-2006/Taxes_Benefits_2005_06.pdf).

¹⁸ *CAA Passenger Survey Report 2006* (<http://www.caa.co.uk/docs/81/2006CAAPaxSurveyReport.pdf>). Figures for leisure passengers are annual gross household incomes where respondents are invited to pick a response from a card that matches their household circumstances.

¹⁹ The overall distributional effect of taxes on aviation is complicated by the fact that a significant proportion of passengers are business passengers who may not ultimately be liable for the taxes on the flights that they take. However, the figures reported here are for leisure passengers only.

²⁰ Liberal Democrats, *Fairer, Simpler, Greener*, Policy Paper 75, July 2006 (<http://www.libdems.org.uk/media/documents/policies/PP75%20Fairer%20Simpler%20Greener.pdf>).

²¹ http://www.conservatives.com/tile.do?def=news_story_page&obj_id=139170.

Liberal Democrats have proposed from aviation taxes would, were it to be raised through APD, require rates to at least double.

This section considers how a reformed per-flight tax may be introduced. In particular, we make some illustrative proposals for a per-seat tax (which approximates a per-plane tax since the tax is levied on empty seats as well as passengers) based on departures data from the Civil Aviation Authority. We allow the tax rate to vary by the size of the aircraft (the number of seats) and the destination. We discuss how a per-flight tax might look on a per-passenger basis and how that compares with APD. Our simulations are carried out under the assumption that everyone who flew in 2006 would also have flown under our new taxes; that is, we ignore any behavioural effects that a restructuring of the tax might induce. Our intention is not to model formally the exact effect that such a new tax might have but to illustrate the fact that, in moving from APD to a per-flight tax, on a per-passenger basis some people would gain and some would lose. Further, our simulations should not be seen as our view on how a per-flight tax should optimally be introduced. What we are able to model is limited by the data available and a per-flight tax in practice may look very different from those we describe here. In Section 9.5, we discuss in more detail some of the issues involved in the design of a tax based on the flight.

Departing flights and passengers from the UK: data

We use data for 2006 provided by the Civil Aviation Authority. The data include, for each combination of departure airport, country of destination and aircraft type, figures for total passengers carried and total flights and an estimate of the total passenger capacity from which we can derive an average load factor.²² The data include all transport flights, also covering freight-only flights. In 2006, a total of nearly 1.2 million departing flights are recorded, of which 32,527 (2.8%) are cargo-only flights, though many passenger flights of course also carry cargo. A total of about 119 million passengers were on the recorded flights. Table 9.2 details the largest airports according to flights and passengers departing.

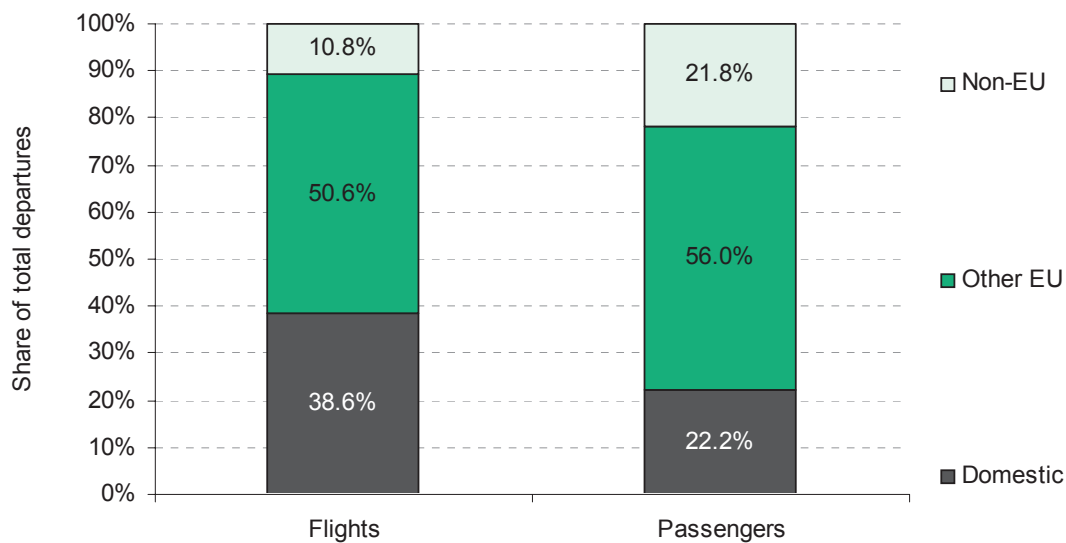
Table 9.2. Flights and passengers departing the UK, by airport, 2006

Airport	Departing flights	Departing passengers
Heathrow	235,478 (19.9%)	33,767,573 (28.4%)
Gatwick	127,198 (10.8%)	17,114,532 (14.4%)
Stansted	95,184 (8.1%)	11,818,027 (9.9%)
Manchester	106,635 (9.0%)	11,351,646 (9.5%)
Luton	39,487 (3.3%)	4,691,310 (3.9%)
Birmingham	54,348 (4.6%)	4,606,802 (3.9%)
Glasgow	48,519 (4.1%)	4,448,837 (3.7%)
Edinburgh	57,784 (4.9%)	4,295,431 (3.6%)
Other UK airports	415,737 (35.2%)	27,008,514 (22.7%)
Total	1,180,370	119,102,672

Source: Calculated from CAA departure statistics, 2006.

²² Where such information is unavailable, we assume average load factors for 2006, as described in Section 9.5, of 65.9% for domestic flights and 79.4% for international flights.

Figure 9.5. Departing flights and passengers, by broad destination, 2006



Source: Calculated from CAA departure statistics, 2006.

Figure 9.5 breaks down flights and passengers according to whether their destination was domestic (i.e. a flight to another UK airport), another country attracting the European APD rate or a non-European country. Only a minority of flights and passengers are for non-European destinations, though it is clear from these data that the number of passengers per flight is much larger for these longer-haul flights, reflecting both the larger capacity and higher load factors of long-haul aviation.

Looking at the particular country of destination, domestic flights account for 26.47 million passenger departures, around 17.44 million passengers travelled to Spain, 9.31 million to the US, 6.18 million to the Irish Republic, 5.77 million to France, 5.75 million to Germany and 5.30 million to Italy. The Netherlands, Greece, Switzerland and Portugal also attracted more than 2 million passengers each. The data include only the first leg of multi-stage journeys – there are few direct flights, and therefore passengers, recorded to Australia, for example, and none at all to New Zealand.

Our figures for total departing passengers are similar to (but not identical to) those in Section 9.3 when we examined APD rates per passenger. HMRC data for 2006 give a total of 105,448,635 chargeable passengers, around 11% below the number of passengers in our data. However, our figures here include non-chargeable passengers (such as transfer passengers) and may also include some non-chargeable flights. The split between European/non-European-destination passengers in the HMRC data is identical to ours (78.2% European-destination passengers), suggesting no variation in the proportion of chargeable and non-chargeable passengers across the two destination groups. Given that it is unclear how aviation duty might be exempted for currently exempt passenger groups (even if it should be), we assume that it will apply to such groups in the future and use CAA passenger numbers rather than scaling them to HMRC levels.

We supplement the CAA data with estimates of the distance from each UK airport to each destination country. We know only the country rather than the airport of destination, and so we assume all flights are to the capital city of each destination and use information on the

latitude and longitude of the departure airport and destination capital to estimate flight distances in kilometres.

Aviation duty: some illustrations

We begin by simulating a tax similar to APD for the departures data. We do not know the class of seat, so can differentiate only according to destination (£10 for those flying within Europe, £40 for those flying outside), though in 2006 almost 95% of passengers paid the economy-class APD rate so this is not an unreasonable approximation. In addition, we assume all passengers (including transfer passengers) are liable for the tax other than those flying from the Scottish Highlands and Islands.²³

We estimate total receipts from our simulated APD and then consider two reforms that approximate a change of tax base to the aircraft in different ways but generate the same revenue. Assuming that the number of passengers remains unchanged for each journey, we can express these per-flight charges on a per-passenger basis to compare with APD payments. Neither of the proposals we make here for a per-flight tax is how we might necessarily expect aviation duty to be introduced in practice. We have no details from the Treasury as yet as to how the new tax might operate or how the per-flight charge might be determined (nor have any opposition parties detailed how they would implement such a reform). Our results are purely illustrative and based only on the data at our disposal.

We base our illustrative aviation duty on a per-seat tax – in effect, an APD that is extended to empty seats. The different aviation tax options we examine are:

1. a two-tier seat tax where flights to non-European countries attract four times the tax rate of flights to European countries; this preserves the ratio of European to non-European duty as it stands under APD;
2. a two-part tax that combines a fixed per-seat charge with an additional component that, for a given aircraft size, increases proportionately with distance travelled.

Note that, in practice, a per-seat tax (or a direct per-flight tax) may vary by other factors as well – in particular, the emissions of the aircraft, and the airport (and perhaps time) of departure. We do not model these possibilities: to do so would require good evidence on noise and environmental emissions by aircraft type and airport that are not easily publicly available. We assume that the per-seat tax varies only by destination (in option 1) and distance (in option 2). Section 9.5 looks at the issues in tax design more closely.

Our simplified APD generates revenues of £1.964 billion in 2006, around £180 million more than the revenues from applying rates of £10 and £40 to the chargeable passenger numbers from HMRC statistics for 2006, reflecting the fact that our passenger tax applies to transfer passengers as well. The mean payment per passenger is £16.58, with a median of £10. The revenue figure of almost £2 billion is the benchmark against which we calibrate revenues from our simulated aviation duty reforms.

²³ Around 2% of flights and 0.5% of passengers depart from airports that are in the Scottish Highlands and Islands and so currently exempt from APD. We make the assumption that any aviation duty would maintain this exemption, though clearly our results will be little changed since these flights and passengers represent such a small fraction of the totals.

Option 1: per-seat tax with European/non-European variation

Our simulations suggest a European seat tax rate of £7.53 and a non-European seat tax rate of £30.14 would be required for a revenue-neutral change. These figures are below current APD rates as there are clearly more available seats than passengers. The mean duty per passenger would be £16.58, by construction the same as under our simplified APD since we assume no change in revenue or passenger numbers. The median tax would be £10.52, similar to the APD level. The difference is that we generate much more variation in the per-passenger payment according to the load factor: passengers flying in relatively empty planes have to absorb a greater tax for the empty seats than those flying on relatively full flights.²⁴

Option 2: two-part tax varying proportionately with distance

Planes that fly longer distances pollute more in total, though less per kilometre flown since most of the noise emissions occur during take-off and landing. It seems therefore that a tax should increase proportionately with distance to account for environmental emissions but with a fixed component reflecting these local noise externalities that do not vary systematically by distance. This fixed charge could also serve a revenue-raising purpose. Under such a structure, the total tax per seat increases with distance but the tax per seat-kilometre (seats multiplied by distance) falls with distance. The fixed component could vary according to aircraft type or departure airport in order to target the externalities more precisely.

It must be emphasised that under this type of structure, there are an infinite number of fixed and variable charge combinations that will yield the desired revenue. Our intention is to illustrate how the structure might work rather than to argue that our chosen combination is in any sense optimal. We select the combination of fixed charge and per-seat-kilometre charge that ensures that the average charge paid by a passenger to a European destination is the same as in our first tax simulation.

Table 9.3. Two-part tax for typical flights

Length of flight (km)	Typical destination	Two-part tax per seat	Two-part tax per passenger with 80% capacity	Two-part tax per passenger with 60% capacity
0	Domestic	£3.78	£4.73	£6.30
500	Paris	£5.89	£7.36	£9.82
1,000	Prague	£8.00	£10.00	£13.33
1,500	Budapest	£10.11	£12.64	£16.85
2,500	Moscow	£14.33	£17.91	£23.88
6,000	Washington	£29.10	£36.38	£48.50
7,500	Havana	£35.43	£44.29	£59.05
9,500	Hong Kong	£43.87	£54.84	£73.12

Source: Authors' calculations from CAA departure statistics, 2006. Destinations are approximate distances from Heathrow Airport to other national capitals.

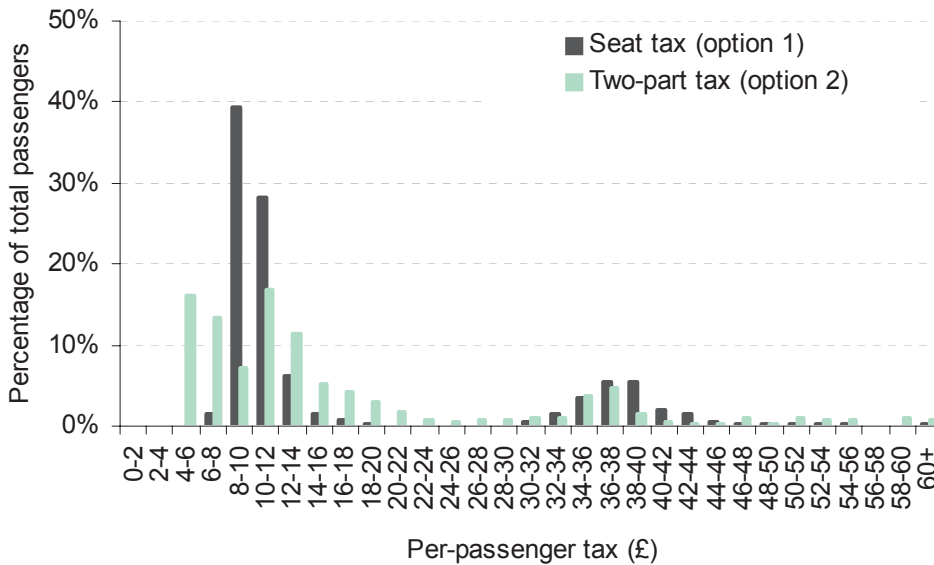
²⁴ Indeed, given that our per-seat tax varies only according to the European/non-European distinction, the per-passenger tax is determined entirely by the load factor. A European-destination craft operating at 50% load will have a per-passenger average liability of $(£7.53) \div 50\% = £15.06$, whereas one operating at 90% load will have a passenger-equivalent tax of $(£7.53) \div 90\% = £8.37$.

Our simulated tax rate per seat-kilometre flown is 0.422p (that is, just over 1p for every 2.5 seat-kilometres flown), with a fixed charge per seat of £3.78.²⁵ Expressed per passenger, this tax yields a mean charge that is the same as the previous cases (£16.58 per passenger), with a median of £11.69 per passenger. Table 9.3 illustrates the charges that would arise per seat for flights of various lengths assuming different load factors.

Comparison of the two options

Figure 9.6 shows, for our two models of aviation duty, the distribution of per-passenger payments. Recall that under APD, all per-passenger payments are either £10 or £40 in our simulations. Clearly, a seat tax varying only loosely by destination (option 1) would see per-passenger payments varying less than a fully distance-based tax (option 2). Just under 70% of passengers would pay between £8 and £12 under option 1, whereas under option 2 the distribution of payments for those currently paying the European rate of APD is much more dispersed between £4 and £18. There is also more dispersion of higher payments for longer-haul flights. Compared with the current maximum payable under APD (not allowing for seat class variation), option 1 sees 5.5% of passengers paying more than £40 whereas option 2 sees 6.7% of passengers paying more than £40.

Figure 9.6. Distribution of per-passenger payments for different tax types



Note: Per-passenger tax of £0–2 should be interpreted as greater than or equal to zero but strictly less than £2, and so on.

²⁵ A revenue-neutral shift that increased the fixed component and reduced the per-kilometre charge would, relative to this simulation, benefit those flying long-haul, whilst a reduction in the fixed component and an increase in the per-kilometre charge would benefit those flying domestically and short-haul. Note that under our simulated tax, domestic passengers pay only the fixed component per seat since we do not know the destination airport and so have assumed a zero distance, though were a tax introduced on this basis it would be possible to determine flight distances domestically as well. In practice, most countries tax domestic aviation more heavily than international flights. We discuss this in the next section.

Table 9.4. Passengers paying more than APD, by region of destination

Destination region	Seat tax (Europe/other)	Two-part tax (distance)
Domestic (UK)	77.80%	0.35%
Other Europe	36.35%	73.21%
Non-Europe	25.14%	30.36%

Note: Percentages exclude passengers from the Scottish Highlands and Islands, who are assumed to be exempt under all schemes.

Table 9.4 illustrates the fact that there would be both gainers and losers from a move from APD to a per-flight tax. It gives the percentage of passengers (broken down by destination) paying more under our two new taxes than they would have paid under APD. Under the seat tax differentiated by European/non-European destination, domestic travellers would lose out to the greatest extent, with a majority of travellers to other destinations benefiting. This reflects the fact that domestic flights are typically less fully-loaded than international flights and so domestic passengers would be required to pay the cost for these empty seats, assuming the taxes are passed on to them. Under the two-part tax, those currently paying the European rate would lose to a much greater extent than those paying the non-European rate; almost all domestic passengers benefit from paying only the fixed component.

Table 9.5. Illustrative per-passenger tax rates for different tax types

Aircraft type (country of destination)	Passengers carried	Load factor	Distance (km)	APD	Option 1 (Europe/ other) per passenger	Option 2 (distance) per passenger
Airbus A319 (to UK)	979,849	72.3%	n/a	£10.00	£10.42	£5.22
Boeing 747SP (to UK)	2,522	43.2%	n/a	£10.00	£17.42	£8.73
Airbus A320 (to France)	390,743	65.5%	427	£10.00	£11.50	£8.52
McDonnell-Douglas MD88 (to Spain)	46,858	89.8%	1,279	£10.00	£8.39	£10.22
Airbus A300-600 (to Sudan)	2,475	30.0%	5,006	£40.00	£100.46	£83.06
Boeing 767-200 (to Canada)	31,661	96.3%	5,260	£40.00	£31.29	£26.98
Boeing 767-300ER/F (to US)	327,398	79.1%	5,880	£40.00	£38.12	£28.61
Boeing 777-200 (to Japan)	35,052	55.6%	9,642	£40.00	£54.24	£80.02

Note: All flights are from London Heathrow.

Source: Authors' calculations from CAA departures data, 2006.

In Table 9.5, we illustrate various routes (aircraft/country-of-destination combinations) from London Heathrow and compare APD with the two new taxes that we simulate. In each case, we show the implicit per-passenger tax given the average capacity and load on the route in question and the distance to the national capital. The importance of load factor and, for the two-part tax, distance to the capital is clear: relatively empty planes attract the largest taxes per passenger whereas full planes attract lower taxes per passenger even if the distances

travelled are similar or even longer (for example, the simulated per-passenger tax to the Sudan for the example aircraft type in the table is three times higher than the per-passenger tax to Canada, even though the distance travelled is approximately the same, as, on average, the Sudanese flight currently operates at 30% capacity compared with the 96% capacity of the Canadian flight).

Summary

The move from a passenger-based tax to a flight-based tax could be implemented in many ways. Any such switch would create, on a per-passenger basis, winners and losers. We have illustrated only a simple method in which seats are taxed and the tax is allowed to vary with distance (either simply a Europe/other split as under APD or linearly with distance). The winners from this simulation are those who fly on fully-loaded planes and who fly relatively short distances, though by setting a high fixed component in our two-part tax we have mitigated the impact of the distance somewhat.

In practice, a per-flight tax may also be differentiated by aircraft emissions, aircraft noise, airport of departure and so on. In this case, the pattern of winners and losers would be more complicated than we have been able to simulate. Relative winners would be those flying on full, clean, quiet planes from airports away from residential areas. Relative losers would be those who do the opposite. The balance between all of these factors in determining the correct charges for different flights would be complicated and depend on the ease with which each can be incorporated accurately and cheaply into the tax design.

9.5 Issues in aviation tax reform

Choosing the tax base

The current tax base for air travel in the UK is passengers leaving UK airports, with a planned change in the base to flights leaving UK airports in 2009. This section first discusses the merits of this change and some issues that will need to be considered in implementing a per-flight tax. We then discuss other alternative tax bases – fuel and aircraft emissions – and ask whether there may be alternative or additional aviation tax reforms that would be desirable.

There are a number of considerations to be taken into account when choosing the appropriate tax base. These include:

- the degree to which the tax correlates well (or can be made to correlate well) with the various aviation externalities;
- the complexity and cost of administering the tax;
- the negative distortionary effects that the tax could induce (in terms of unintended incentives for airlines, or macroeconomic consequences such as the effect on trade or on the position of the UK as an air transport hub);
- the revenue-raising capabilities of the tax;
- any obstacles to the implementation of the tax (such as international agreements).

A point worth making in advance, however, is that there is no reason to suppose that we need limit ourselves to one tax base alone. The ideal solution to aviation taxation may involve a combination of instruments. Keen and Strand (2007)²⁶ argued that a fuel tax (which would closely align to environmental externalities) plus a ticket tax would provide an optimal system of taxes in their stylised model. Noise externalities may be additionally covered through departure taxes that could also vary by airport, for example.

Passenger or flight?

Air passenger duty at present suffers from three key disadvantages that a per-flight tax could help overcome:

- First, the link between the passenger and the externality is weak. APD varies only loosely by destination and seat class: someone flying standard class to Turkey will pay the same tax as someone flying standard class domestically despite the much longer distance travelled and the greater total emissions generated. Of course, APD could be reformed to correlate more closely with emissions, and the move to a per-flight tax should be used to consider a wholesale reform of the factors that influence the tax rate to help improve the environmental targeting. However, there is a clear trade-off between effective externality targeting and administrative simplicity. The Chartered Institute of Taxation (2007)²⁷ noted that APD is currently coded into the ticket price based on information about the class of seat and destination held in central ‘Global Distribution Suppliers’ (GDSs) that connect travel suppliers and travel agents. Since this information is already held, it is relatively straightforward for the correct APD to be levied on the ticket price, but if a future flight tax is to be graded by information not currently held by ticketing systems, then it would be important to weigh the costs of including such information against the benefits in terms of targeting and environmental outcomes.

To the extent that both per-passenger and per-flight taxes can be made to approximate the various externalities involved, this is not a clear advantage of flight taxes *per se*.

- Second, APD (and per-passenger taxes in general) do not provide any additional incentive for airlines to operate their aircraft at greater capacity. Noise and emissions depend only very marginally on the degree to which the plane is full – environmentally, it would be much better to fly one plane fully loaded than two planes at half capacity. Average seat occupancy rates have been fairly stable over the last decade or so – around 78% to 80% of the available ‘passenger kilometres’ have been occupied since 1996. International flights have a significantly higher average load factor than do domestic flights (79.4% and 65.9% in 2006 respectively).²⁸

Taxes on flights, however, do provide greater incentives for airlines to fly their planes fully loaded. Imagine an airline operating a plane with a capacity of 250 passengers. If the aircraft is taxed £1,000 to depart, then flying at full capacity results in an average tax per

²⁶ M. Keen and J. Strand, ‘Indirect taxes on international aviation’, *Fiscal Studies*, 2007, 28(1): 1–41

²⁷ Chartered Institute of Taxation, *Greener Skies: Response by the CIOT to the Consultation Paper Issued by the Conservative Party*, June 2007 (<http://www.tax.org.uk/showarticle.pl?id=5643>).

²⁸ Figures from table 2.4 of Department for Transport, *Transport Statistics Great Britain 2007* (<http://www.dft.gov.uk/pgr/statistics/datatablespublications/tsqb/2007edition/sectiontwoaviation.pdf>).

passenger of £4 whereas flying at half capacity means either the airline has to pass on a tax of £8 (which would raise its ticket price) or it has to absorb the cost for the empty seats itself.

- Third, APD and passenger taxes cannot be generalised straightforwardly to freight-only flights. This is clearly not the case when the tax base is the flight itself. At present, freight flights are untaxed in the UK but clearly they still generate noise and environmental emissions and there are no really convincing economic arguments for excluding them from any environmental tax regime. Indeed, exempting freight-only flights from any reformed aviation duty could create perverse incentives for airlines to operate two small aircraft, one for passengers and one for freight, rather than one larger aircraft carrying both passengers and freight. This would have negative environmental consequences.

CAA data for 2006 shows that there are in fact relatively few freight-only flights, accounting for around 2.8% of departures from UK airports, with more than half of those being freight flights within the UK. We attempted to simulate aviation duty extended to freight flights along the lines of the options outlined in Section 9.4: by comparing the aircraft type to the same aircraft carrying passengers, we were able to estimate the number of seats that would be available on the freight flights were they to carry passengers instead and use this as the basis for the tax.²⁹ Under both options – varying the rate by Europe/other only or linearly with distance – we estimated that revenue from cargo flights would be small (in the order of £30 to £40 million) and the impact on per-passenger taxes (assuming this additional revenue were used to reduce the tax rate on all flights) would consequently also be small.

Whilst there may be obvious advantages to a flight-based tax over a passenger-based tax, one possible problem is that flight taxes make it harder to exempt certain categories of individuals from incurring a liability than do passenger taxes. At the moment, transfer and transit passengers are exempt from APD, presumably so as not to damage the position of the UK as an international hub for air travel. In moving to a flight tax, it becomes a little more complex to exempt such passengers, though one can imagine a rebate (or discount) system that could operate to reduce the liability of planes that carry transfer passengers. However, this would come at the cost of making the tax more complex.

Alternative tax bases?

Taxes could be levied as an *ad valorem* **ticket charge** rather than a fixed per-passenger fee. One way to do this would be to bring aviation tickets into the VAT system. All forms of public transport, including aviation, are currently zero-rated for VAT. This in effect subsidises them relative to consumption that is subject to VAT. There may be good reason for this with regard to encouraging bus, coach and train use rather than private car use, but it seems harder to make a similar argument for zero-rating aviation. Including international aviation in the VAT system would involve considerable complexity such that it would really only be feasible to include domestic aviation. Note that adding VAT to aviation tickets would not affect the business demand for flights since VAT on inputs can be reclaimed.

²⁹ We were able to match cargo aircraft types to passenger aircraft types in about three-quarters of cases; where we could not (i.e. for those aircraft types built exclusively for cargo transport), we assumed the number of seats to be equal to the average on other cargo-only flights.

How much additional revenue could VAT on domestic aviation raise? In evidence to the House of Commons Environmental Audit Committee following the 2006 Pre-Budget Report,³⁰ John Healey (then Financial Secretary to the Treasury) suggested that standard-rating domestic aviation would generate revenues of around £160 million per year, which uprated to 2007–08 suggests receipts in the order of £180 million today.

Applying VAT on a ticket rather than a fixed charge on a passenger would not mitigate the weaknesses of a passenger tax relative to a flight tax. There would still be no (additional) incentive to fly planes as full as possible and the link between ticket price and externality is fairly weak.

If taxes are designed to reduce aviation emissions, then the ideal tax base is a direct **emissions tax**. There are practical problems with this: it is hard to measure the emissions from an individual flight directly and accurately and the costs of doing so may outweigh the potential environmental gains. Emissions may be estimated according to aircraft type, destination, engine type etc. though there may be inaccuracies (variation according to load, unanticipated route diversions and so on).

An alternative that is closely related to emissions but easily measurable and already traded (reducing the costs of administration) is aviation fuel. A **fuel tax** would penalise airlines that operate a relatively fuel-inefficient service and encourage greater investment in fuel-efficient aircraft. However, a tax on fuel alone would not accurately target those services that impose the greatest noise externalities on areas surrounding airports. In addition, some emissions (such as NO_x) are not closely related to fuel consumption and other instruments might be needed to take account of these.³¹

One way to tax aviation fuel would be to bring it under the scope of VAT: aviation fuel for both domestic and international travel is currently zero-rated in the UK. However, there are problems with doing this similar to those with charging VAT on tickets discussed above: VAT on fuel would have little effect on airlines, which could reclaim the VAT paid on their inputs, including aviation fuel. A fuel tax would therefore have to take the form of an unrecoverable duty, similar to those on motor fuel, to have an impact.

A number of countries have a duty on fuel for domestic aviation, including Australia, Canada, the Netherlands (alone in the EU), Norway and the US, and there would be no legal impediments to taxing domestically-used fuel in the UK.³² However, there would be a number of legal barriers to the charging of fuel duties for international flights. Article 24 of the Chicago Convention, which established the International Civil Aviation Organisation, states that ‘fuel ... on board an aircraft of a contracting State, on arrival in the territory of another contracting State and retained on board on leaving the territory of that State shall be exempt from customs duty, inspection fees or similar national or local duties and charges’.³³ In

³⁰ House of Commons Environmental Audit Committee, *Pre-Budget 2006 and the Stern Review*, March 2007 <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmenvaud/227/227.pdf>.

³¹ A full discussion of these issues is contained in A. N. Bleijenberg and R. C. N. Wit, *A European Environmental Aviation Charge: Feasibility Study*, Centre for Energy Conservation and Environmental Technology, Delft, 1998.

³² Indeed, some aviation fuel is subject to duty. Aviation gasoline, or AVGAS, is taxed at a rate of 30.03p/litre and is used for small aircraft (largely private aircraft for pleasure flights rather than commercial flights).

³³ See http://www.icao.int/icaonet/arch/doc/7300/7300_9ed.pdf.

addition, there are more than 2,500 bilateral Air Service Agreements (ASAs) that go further and prohibit the imposition of any tax on aviation fuel that will be used by aircraft travelling between the two signatories. These agreements were signed with a view to preventing aircraft travelling to low-fuel-tax jurisdictions to fill their tanks, thereby introducing distortions into the market. Norway had to abolish an aviation fuel tax within months of instituting it in January 1999 as it transgressed a number of these ASAs.³⁴ Since 2003, however, it has been permissible for two EU countries to tax the fuel used on travel between them.³⁵ As yet, no countries have availed themselves of this option.

Lessons for aviation duty

The discussion above and our earlier simple illustrations based on a per-seat tax suggest several lessons for how a reform of the tax base to the aircraft should be introduced:

- A simple seat tax,³⁶ whilst providing strengthened incentives to fly planes fully loaded, is probably not sufficient to target effectively the noise and emissions externalities of aviation. Ideally, the tax rate should vary according to the aircraft type, aircraft emissions, airport of departure (since marginal noise externalities of additional flights will vary according to the airport) and so on, as well as distance travelled. But, as we have warned above, the reform will need to weigh up carefully the operational costs of this more complex tax structure with the potential gains.
- The tax reform needs to be designed so as not to create incentives for airlines or passengers to try to take steps to avoid the tax. A per-seat tax, for example, may encourage airlines to fit removable seats on low-load-factor routes. With any per-flight tax that varied significantly by distance flown from UK airports, there may be a concern that passengers would have a strong incentive to take a short flight out of the country and then a connecting flight to their intended destination, even if this increased the journey time, distance travelled and total emissions. This will be more of an issue the larger the component of the final ticket price that is accounted for by the tax.
- In the long term, aviation duty could affect the pattern of air travel routes offered by airlines. As the analysis in our simulation showed, the tax would impact most strongly on flights with low load factors, and airlines may seek to reduce or limit the extent to which they operate to unpopular destinations, or reduce the choice available to passengers in terms of flight times and frequencies, in order to try to fly more fully-loaded planes. This, of course, is the point of the tax: it is supposed to reduce the number of flights taken in relatively empty planes. However, there might be concerns that reductions in marginal routes from regional airports, say, could affect the ability of those in relatively remote areas to fly. The exemption of APD for flights from the Scottish Highlands and Islands is

³⁴ ECON Analyse, *The Political Economy of the Norwegian Aviation Fuel Tax*, OECD, Paris, November 2005 ([http://appli1.oecd.org/olis/2005doc.nsf/43bb6130e5e86e5fc12569fa005d004c/5a0254861b05e21ac12570c20060da00/\\$FILE/JT00194728.PDF](http://appli1.oecd.org/olis/2005doc.nsf/43bb6130e5e86e5fc12569fa005d004c/5a0254861b05e21ac12570c20060da00/$FILE/JT00194728.PDF)).

³⁵ EU Council Directive 2003/96/EC on restructuring the Community framework for the taxation of energy products and electricity (http://ec.europa.eu/energy/res/legislation/doc/biofuels/taxation_energy_products_and_electricity.pdf).

³⁶ A seat tax was imposed briefly in Norway between 1998 and 1999. It replaced, and was subsequently replaced by, a passenger tax similar to APD. Its brief life can partly be explained by the fact that a majority in Parliament was opposed to the tax from the outset; it was only accepted as part of a settlement on the overall budget between the opposition parties and the government. See ECON Analyse, op. cit.

designed with such concerns in mind and we have assumed any reformed aviation duty would maintain this exemption.

There are clear advantages in moving from a passenger tax to a flight tax, provided the reform is carefully implemented, in particular given the many constraints on the way international aviation can be taxed. One consequence of the reform, evident in our simulations in Section 9.4, is that where there is a clear distance-based component of the tax, domestic passengers will pay considerably less than they do at present. In practice, many countries tax domestic aviation more heavily than international aviation.³⁷ Should the government wish to prevent taxes on domestic aviation falling when replacing APD with aviation duty, either the variation in the tax rate with distance would have to be limited or other domestic aviation taxes (such as fuel or ticket taxes) would have to be introduced. For international aviation, the ideal solution may well be renegotiation of international agreements to allow fuel taxes to be introduced that would capture environmental emissions reasonably well, coupled with additional levies to cover noise emissions. Given that this is unlikely, at least any time soon, a well-designed per-flight tax may be the best available option.

Aviation and the EU Emissions Trading Scheme

The basic idea of an emissions trading scheme (ETS) is that participants are allocated permits (whether through an upfront auction or allocated freely, known as ‘grandfathering’) that give them the right to generate a certain level of emissions. If they reduce emissions below their allocation, they can sell their excess permits to other participants who are finding it more difficult to reduce emissions, with the price of the permit reflecting the marginal cost of a unit of pollution reduction. Efficient abaters will do more abatement and receive payment for the excess; inefficient abaters will do less abatement and pay for the privilege. A ‘market’ for pollution is created where none existed before, and the price of permits will fluctuate according to the supply of and demand for them. Emissions are capped by the total number of permits allocated to participants and abatement to the cap should be achieved as efficiently as possible.

To the extent that there is certainty over the marginal costs and benefits, taxes and trading should generate similar outcomes and the choice between them may depend on implementation costs, international considerations and so on. Under uncertainty, taxes and trading may have different outcomes.³⁸

The EU Emission Trading Scheme began in 2005 and was described by the EU as ‘the largest multi-country, multi-sector Greenhouse Gas emission trading scheme world-wide’.³⁹ The first phase of the scheme ran until the end of 2007, with the second phase running from 2008 to 2012. Aviation was excluded from the first phase, but it is proposed that it will be included

³⁷ There is not necessarily any good economic reason for this, but the discussion throughout this chapter has highlighted the difficulties in taxing international aviation.

³⁸ For more, see section 11.2 of R. Chote, C. Emmerson, A. Leicester and D. Miles (eds), *The IFS Green Budget: January 2007*, IFS Commentary 102 (<http://www.ifs.org.uk/budgets/gb2007/07chap11.pdf>).

³⁹ For the EU ETS homepage, see <http://ec.europa.eu/environment/climat/emission.htm>.

from 2012, only three years after the reformed domestic tax is expected to be implemented. Under proposals put forward by EU environmental ministers in December 2007:⁴⁰

- From 1 January 2012, the ETS will cover all flights departing from or arriving at an EU airport, even if the destination or origin is outside the EU. Permits will be required for emissions generated anywhere along the flight path, not simply the part that is in EU airspace.
- A fixed proportion (10%) of the emissions permits will be auctioned. The remainder will be allocated according to a benchmarking scheme, with the number of permits awarded to a particular operator being proportional to the tonnage-kilometres flown by that operator. The number of permits available to the aviation sector will be capped at the average level of EU aviation emissions between 2004 and 2006. Any increases in CO₂ emissions generated by the aviation sector will therefore have to be offset by reductions in other industries.
- By the end of 2008, the Commission will put forward a proposal to address the emissions of nitrogen oxides from aviation after a thorough impact assessment.⁴¹
- Flights arriving from non-EU countries that have an emissions trading scheme will be exempt, as will flights made by airlines with less than an average of two flights per day in three consecutive four-month periods. In addition, certain flights to the most remote regions of the EU will be exempt.

The ETS will cover only (at least initially) CO₂ emissions from the aviation sector. Other emissions and noise and congestion externalities will provide continued justifications for domestic aviation taxes as well. However, it will be of crucial importance in reforming APD to a per-flight basis to consider how aviation duty will interact with the ETS, particularly given how soon after the reform the inclusion of aviation in the ETS is likely to take place.

If domestic aviation taxes are abolished or reduced, then the government loses a source of revenue which may not be replaced if, as expected, almost all permits are allocated freely rather than auctioned. If, on the other hand, aviation duty is not abolished, then customers are potentially charged twice. To avoid either of these less-than-desirable scenarios, it would seem optimal to auction the permits, and then keep that portion of domestic duty that is meant to track the noise externality and cover non-CO₂ emissions (as well as to raise revenue), but to remove that portion that is meant to internalise the CO₂ emissions externality.

9.6 Conclusion

The rapidly-growing contribution of aviation to greenhouse gas emissions provides an important motivation for a wholesale reform of the aviation tax system. The move from a per-passenger to a per-flight tax in 2009 now has cross-party support. Such a move may provide

⁴⁰ For a summary of the proposals of the Council of Ministers, see http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/envir/97858.pdf.

⁴¹ See Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community (http://ec.europa.eu/environment/climat/pdf/aviation_ets_com_2006_818-21273_en.pdf).

considerable environmental benefits if it can be designed so as to target reasonably accurately the various externalities involved, without incurring too much administrative complexity. Any revenue-neutral move from APD to aviation duty would create both winners and losers. A simple tax varying by distance will benefit those flying short distances on full planes, but more complicated taxes that vary with emissions, aircraft type, airport of departure, and so on will have a more complex pattern of relative benefits. Moreover, since the Treasury wants the new aviation duty to raise more revenue than the existing APD, the average losses will have to be greater than the average gains. Given the constraints on international aviation taxes, a per-flight tax may well represent the best available option at the moment, although VAT and fuel duty are also possibilities that should be strongly considered for domestic flights. The picture will also be complicated by moves to bring aviation into a system of emissions trading and it will be of the utmost importance to consider how the domestic tax and international trading systems will operate alongside one another.

10. Capital gains tax

Stuart Adam (IFS)¹

Summary

- The government's proposal in the Pre-Budget Report to abolish taper relief and the distinction between business and non-business assets was a welcome step in the direction of making capital gains tax (CGT) simpler and less distortionary.
- It would, however, probably be a good idea to sacrifice some of the gains in simplicity to make CGT even less distortionary, by applying reduced rates to corporate equity to reflect corporation tax already paid, and perhaps by re-introducing relief for inflation.
- There is a strong case for aligning CGT rates with the tax rates on earnings and dividend income. Higher CGT rates might discourage saving, investment and entrepreneurship, but these could be encouraged in better-targeted ways.
- Owners of business assets are understandably upset to see the withdrawal of a tax break from which they had expected to benefit, but it is not clear in many cases that the proposed regime is less favourable than when they bought the asset in the first place. The government could have offered transitional relief, but this would have re-complicated the system and created problems of its own.
- Announcing a reform without consultation, creating additional uncertainty by agreeing to rethink it in the face of intense lobbying, and then delaying the results of the rethink, are not the hallmarks of competent tax reform. It is hard to believe that whatever changes to CGT finally emerge this year will be the last.
- The announcement of a £200 million 'entrepreneurs' relief' to be introduced in April 2008 will be a welcome reprieve for many owner-managers of small businesses, but reintroduces complexities and inefficient distortions similar to those inherent in taper relief.

10.1 Introduction

Capital gains tax (CGT) in the UK has been much criticised and much reformed. It was partly dissatisfaction with the way in which CGT was first designed and enacted in 1965 that led to the creation of the Institute for Fiscal Studies. Proposals for the reform of CGT in last year's Pre-Budget Report have maintained this tradition for controversy and prompted such a backlash among business lobby groups and other critics that the government has promised a rethink.

¹ Thanks to Steve Bond, Claire Crawford, Malcolm Gammie, Rachel Griffith and Helen Miller for helpful comments.

Section 10.2 sets out the policy background and explains the proposals. Section 10.3 evaluates both the existing system and the proposed replacement against criteria for good design of the tax, while Section 10.4 addresses the question of whether and how to protect individuals who stand to suffer windfall losses from the reform. The process by which CGT policy has been made is evaluated in Section 10.5. Section 10.6 concludes.

The introduction of an ‘entrepreneurs’ relief’ was announced on 24 January 2008, too late to be integrated into this chapter before going to print. Entrepreneurs’ relief is discussed separately in Section 10.7.

10.2 Background

This section describes the evolution of CGT in the UK, the current system and the reforms announced in the October 2007 Pre-Budget Report.

Capital gains tax in the UK

CGT is a tax on the increase in the value of an asset between its acquisition and its disposal. Broadly speaking, this means its sale price minus its purchase price, though assets that are acquired or disposed of in other ways (e.g. gifts) are assigned a market value. Transfers to a spouse or civil partner do not trigger a CGT liability: roughly speaking, the recipient is treated as if he or she were the original purchaser of the asset, at the original acquisition date and price.² CGT is ‘forgiven’ completely at death: the deceased’s estate is not liable for tax on any increase in the value of assets prior to death, and those inheriting the assets are deemed to acquire them at their market value at the date of death.

CGT only applies to assets sold by individuals and trustees; gains made by companies are included in profits and subject to corporation tax. The rest of this chapter focuses exclusively on capital gains made by individuals.

As with income tax, there is an annual threshold below which CGT does not have to be paid. In 2007–08, this ‘exempt amount’ is £9,200. This is subtracted from total annual capital gains to give taxable capital gains. Taxable capital gains – after applying indexation allowances and taper relief, described below – are in effect subject to income tax as if they were taxable savings income: treated as the top slice of income, capital gains are taxed at 10% below the starting-rate limit, 20% between the starting- and basic-rate limits, and 40% above the basic-rate limit. Unused income tax allowances cannot be set against capital gains, and vice versa.

When CGT was introduced in the UK in 1965, it was levied at a flat rate of 30%. But the structure and rates of the tax have since undergone several major reforms. Relief for inflation was introduced in 1982 and substantially modified in 1985 and 1988: ‘indexation allowances’ adjusted the purchase price of an asset used to calculate the capital gain in line with the retail price index, so that only gains in excess of inflation were subject to tax. In 1988, the tax changed from being a flat 30% rate to being charged at the taxpayer’s marginal income tax rate.

² This is a characterisation of the effect of the current system. The precise rules for transfers between spouses and civil partners are slightly different from this, with one important implication discussed in footnote 31.

The next major reform occurred in 1998, when indexation allowances were abolished for periods of ownership after April 1998. Instead, a system of ‘taper relief’ was introduced, which reduced the taxable gain according to the number of years of ownership after April 1998.³ Taper relief was more generous for ‘business assets’ – the definition of which has changed several times since – than for other assets, and the taper for business assets was made still more generous in 2000 and 2002.

Table 10.1. The capital gains tax taper, 2007–08

Number of complete years after 5 April 1998 for which asset held	Non-business assets		Business assets	
	Percentage of gain chargeable	Equivalent tax rate for higher-rate taxpayer	Percentage of gain chargeable	Equivalent tax rate for higher-rate taxpayer
0	100	40	100	40
1	100	40	50	20
2	100	40	25	10
3	95	38	25	10
4	90	36	25	10
5	85	34	25	10
6	80	32	25	10
7	75	30	25	10
8	70	28	25	10
9	65	26	25	10
10 or more	60	24	25	10

Source: *Tolley’s Capital Gains Tax 2007–08*.

Table 10.1 illustrates the taper relief system currently in place and shows the effective CGT rate payable by someone subject to the higher (40%) rate of income tax. For taper relief purposes, business assets are assets used wholly or partly for trading purposes, and shares and securities in a company if (a) the company is not listed on a stock exchange or (b) the shareholder is an employee of the company or has at least 5% of the voting rights in the company.^{4,5} Non-business assets therefore include most shares in listed companies, second homes and other physical assets such as jewellery, antiques and works of art. Figure 10.1 shows the contribution to total chargeable capital gains (before applying taper relief) of different asset types; Figure 10.2 shows the contribution of business and non-business assets of different holding periods. In 2004–05 (the latest year for which figures are available), business assets accounted for 61% of chargeable gains before taper relief was applied, but only 38% of tapered gains.⁶ In total, the government estimates that taper relief reduces

³ An additional ‘bonus’ year was added to the post-April-1998 ownership period for assets acquired before March 1998. Indexation and taper relief are applied before deducting the exempt amount.

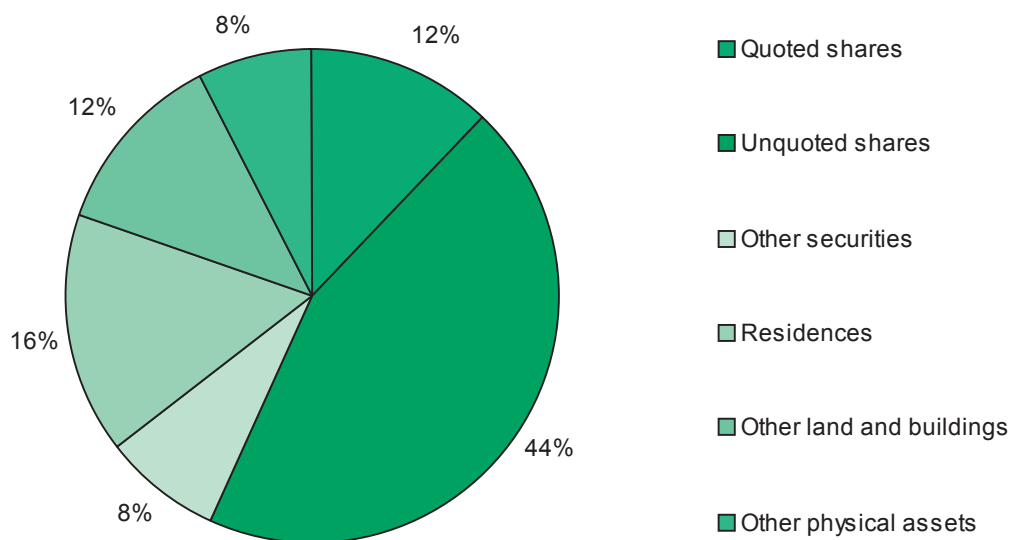
⁴ This roughly corresponds to owning 5% of the company, but the correspondence is not exact.

⁵ The conditions stated apply to a trading company or holding company of a trading group. Shares and securities in non-trading companies qualify as business assets if the shareholder is an employee of the company (or a connected company) and does not have a material (more than 10%) interest in the company.

⁶ Source: Table 14.9 of HMRC Statistics (http://www.hmrc.gov.uk/stats/capital_gains/table14-9.pdf). Mixed business/non-business assets are not included in business assets but are included in the total.

potential CGT receipts by £7.2 billion in 2007–08, £5.6 billion (77%) of which is from business assets.⁷

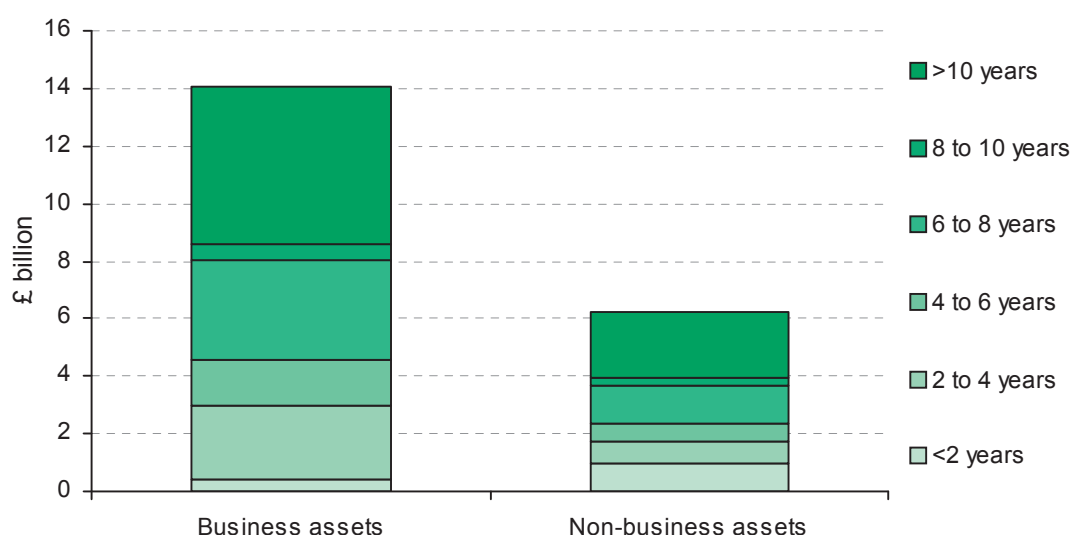
Figure 10.1. Chargeable gains by asset type, 2004–05



Notes: Chargeable gains measured before application of taper relief. 'Other securities' includes fixed interest investments, unit trusts, loan notes, etc. 'Other land and buildings' includes commercial, industrial and agricultural property. 'Other physical assets' includes jewellery, antiques, paintings, etc.

Source: Table 14.4 of HMRC Statistics (http://www.hmrc.gov.uk/stats/capital_gains/table14-4.pdf).

Figure 10.2. Chargeable gains by length of asset ownership, 2004–05



Note: Chargeable gains measured before application of taper relief. Mixed business/non-business assets excluded.

Source: Table 14.9 of HMRC Statistics (http://www.hmrc.gov.uk/stats/capital_gains/table14-9.pdf).

⁷ Overall cost from table 1.5 of HMRC Statistics (http://www.hmrc.gov.uk/stats/tax_expenditures/table1-5.pdf); breakdown into business and non-business assets from answers to Parliamentary questions, 29 October 2007, Hansard, columns 885W-886W (<http://www.publications.parliament.uk/pa/cm200607/cmhansrd/cm071029/text/71029w0062.htm#07103050000006>).

Crucially, increases in the value of owner-occupied homes (and private cars) are exempt altogether from CGT, as are any assets held within pension funds or Individual Savings Accounts (ISAs). Shares owned by company employees via a Share Incentive Plan for at least three years are exempt from CGT on any increase in value while they remain in the plan; when the shares are sold, the acquisition price for CGT purposes is the market value of the shares when they were withdrawn from the plan.

Venture Capital Trusts (VCTs) and the Enterprise Investment Scheme (EIS) are investment vehicles that provide a CGT exemption for shares in small unquoted companies⁸ (as well as income tax relief on the purchase of the shares, with 20% relief on up to £400,000 invested through the EIS and 30% relief on up to £200,000 invested through a VCT) provided that the shares are held for at least three years (five years for VCTs). These schemes cannot be used by owner-managed companies to escape tax – EIS shareholders must not be employees of the company or hold more than 30% of the shares, and VCTs must be quoted companies with no more than 15% of their investments in any one company – but many other investments in small unquoted companies are channelled through these vehicles and attract no CGT. In 2007–08, VCTs are estimated to cost the exchequer £85 million, and the EIS £150 million, in CGT and income tax reliefs.⁹

In 2007–08, 260,000 individuals and trusts are forecast to pay CGT, raising a total of £4.8 billion for the exchequer, some 0.9% of total revenue.¹⁰ This compares with 1996–97, when CGT from 120,000 taxpayers provided 0.4% of total revenue – both figures that have more than doubled, although these numbers are highly cyclical.¹¹

The 2007 Pre-Budget Report proposals

In the October 2007 Pre-Budget Report, the Chancellor announced a radical reform of CGT: from April 2008, both taper relief and indexation allowances are set to be abolished completely, and CGT is to be charged at a flat rate of 18%. The Chancellor said in the PBR speech that his goal was ‘to make the system more straightforward and sustainable; to ensure it sets consistent incentives for investment and enterprise; and to ensure it remains internationally competitive’. The effect of the reform on the CGT rate structure is shown in Figure 10.3.

The graph shows that, if the proposal is implemented as announced, some disposals will be taxed more heavily than at present and others less heavily, according to a combination of whether the asset is a business or non-business asset, how long it has been held and whether the seller is a starting-, basic- or higher-rate taxpayer. The key changes are that:

⁸ At the time of the investment, companies must have fewer than 50 employees and no more than £7 million in gross assets (£8 million including the new investment). Companies are limited to raising no more than £2 million per year through the combination of VCT, EIS and the Corporate Venturing Scheme, a similar scheme available only to corporate investors and so ignored in this chapter.

⁹ Source: Table 1.5 of HMRC Statistics (http://www.hmrc.gov.uk/stats/tax_expenditures/table1-5.pdf).

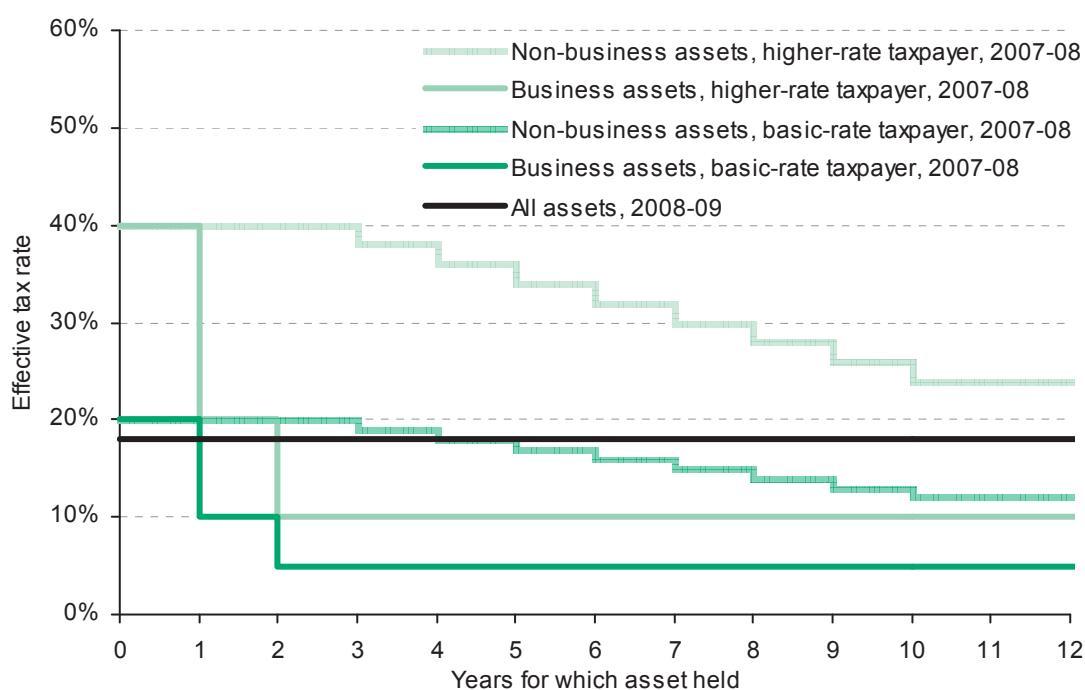
¹⁰ Numbers of taxpayers from table 1.4 of HMRC Statistics (http://www.hmrc.gov.uk/stats/tax_receipts/table1-4.pdf); revenue from table B8 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/media/F/9/pbr_csr07_annexb_305.pdf).

¹¹ Source: HM Treasury.

- capital gains on the non-business assets of higher-rate taxpayers will face a lower rate than at present;
- capital gains on business assets will be taxed more heavily than at present if the assets have been held for more than two years.

Overall, the increases will raise more for the exchequer than the reductions cost: the Treasury estimates that the net effect of the reform will be to increase the CGT yield in 2010–11 by an estimated £900 million, not a great deal in the context of overall tax revenue but quite substantial relative to the current £4.8 billion yield of CGT.

Figure 10.3. The PBR 2007 capital gains tax reform



Note: Effective rates for starting-rate taxpayers have been omitted for ease of viewing. Effective rates for them in 2007–08 fall from 10% to 2.5% on business assets and from 10% to 6% on non-business assets.

Sources: *Tolley's Capital Gains Tax 2007–08*; HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/pbr_csr07_index.cfm).

The reform announced in the Pre-Budget Report returns the CGT regime to roughly where it was before 1982: a single flat rate – unrelated to the taxpayer's marginal income tax rate and much lower than the higher rate(s) of income tax – with no allowance for indexation and no taper.

The rise in CGT rates on long-held business assets from 10% to 18% (or from 5% to 18% for basic-rate taxpayers) provoked angry reactions from many in the business community. The UK's four main business groups – the British Chambers of Commerce, the Confederation of British Industry, the Federation of Small Businesses and the Institute of Directors – jointly wrote an open letter to the Chancellor to object to the reform, stating: 'The reaction of our memberships has been so universally strong that we have felt it necessary to write collectively

to make clear the depth of our shared concerns'.¹² The *Daily Telegraph* ran a 'CGT: no thanks Darling' campaign; a petition on the 10 Downing Street website to keep taper relief has attracted over 18,000 signatories.¹³

In response to these objections, the government signalled that it would hold discussions with business groups and adjust the details of the reform. Chancellor Alistair Darling told the Confederation of British Industry's annual conference on 27 November 2007, 'we are working with the CBI and other business organisations to listen to what you have to say. I expect to publish final proposals in the next three weeks'.¹⁴ These proposals have since been delayed again: Mr Darling told the House of Commons on 13 December that 'it is not now going to be possible to conclude that process until the New Year'. At the time of writing, no new proposals have been announced.

10.3 CGT design and the proposed reform

This section examines how both the current system and the replacement proposed in the Pre-Budget Report measure up against some of the features we might look for in a tax on capital gains. We look first at neutrality: our starting point is that taxes should not, without a very strong rationale, distort commercial decisions about who holds assets for how long, which assets are chosen and whether remuneration is taken as earnings, dividends or capital gains. We consider each of these in turn. As well as being economically inefficient, arbitrarily favouring one action over another is unfair in penalising otherwise equivalent people who behave in the non-tax-favoured way.

We then consider the extent to which CGT discourages saving and investment that would take place in the absence of the tax; its possible role in actively encouraging entrepreneurship; and finally at the simplicity of the tax.

Allocation of assets and the period of ownership

The tax system should not, without very good reason, distort the allocation of assets: they should be held by the people who value them most, and voluntary agreements to buy and sell assets (in which both purchaser and seller presumably expect to gain from the transaction) should not be discouraged by tax considerations.

This, however, is the defining feature of taper relief, which cuts the CGT rate the longer an asset is held. Taper relief encourages people to hold on to business assets for at least two years, and non-business assets for at least 10 years, regardless of the underlying commercial desirability of doing so. Removing this distortion would be eminently sensible.

¹² Available at [http://www.cbi.org.uk/ndbs/press.nsf/0363c1f07c6ca12a8025671c00381cc7/bfb7fe8cd5119c258025737200534ce2/\\$FILE/Chancellor%20letter%20-%20BCC%20CBI%20FSB%20IOD%20-%2015.10.07.pdf](http://www.cbi.org.uk/ndbs/press.nsf/0363c1f07c6ca12a8025671c00381cc7/bfb7fe8cd5119c258025737200534ce2/$FILE/Chancellor%20letter%20-%20BCC%20CBI%20FSB%20IOD%20-%2015.10.07.pdf).

¹³ <http://petitions.pm.gov.uk/SaveCGTrelief/>.

¹⁴

<http://www.cbi.org.uk/ndbs/Press.nsf/0363c1f07c6ca12a8025671c00381cc7/f254e58732292458802573a000431cca?OpenDocument>.

The introduction of taper relief was partly justified by the government because of a supposed culture of excessive short-termist speculation damaging the economy. The theoretical argument for why mutually beneficial transactions may be harmful rests on the idea that investors who trade on the basis of tip-offs or other information that is not related to fundamental value may reduce market efficiency and increase price volatility and risk.¹⁵ However, by reducing market liquidity, a tax that discourages transactions might increase volatility rather than necessarily reducing it, and indeed there is some evidence that this is what happens.¹⁶ In any case, it seems highly unlikely that any benefits of reducing volatility would outweigh the cost to the individuals concerned of losing out on a mutually beneficial trade or the cost to the wider market of reduced liquidity.

A second justification given at the time was that taper relief would encourage long-term investment. But providing a tax incentive for people to hold assets for longer than they would otherwise wish to do is not the same thing as encouraging long-term investment. Whether a company undertakes a major investment, with large upfront costs and returns that may arise years later, will depend in part on the expected rate of CGT (as well as corporation tax and allowances for investment costs, as discussed below). Tapering – a tax rate that is higher for short holding periods than for long ones – merely influences whether the shares in that company are held by one person for a longer period or by several people for shorter periods, which is not something where there is a clear rationale for government intervention.

This argument suggests only that the tax rate should not fall with the holding period. It does not shed any light on whether the tax rate should be ‘levelled out’ at 10% or 40%, the government’s chosen level of 18%, the taxpayer’s marginal rate or something else.

Taper relief is not the only feature of CGT that encourages people to hold assets for longer than they otherwise would:

- The fact that CGT is ‘forgiven’ at death encourages people to hold on to assets that have risen in value and bequeath them, even if it would be more profitable to sell them and use the proceeds in some other way before death (at which point other assets, including the proceeds from the sale of the original assets, could be passed on instead) and even if it would be preferable to pass on the assets (or the proceeds from selling them) immediately.
- Taxing capital gains when they are realised (i.e. on disposal of the asset) rather than when they accrue (i.e. when the rise in value occurs) means that the latent tax liability is deferred until disposal. This creates a ‘lock-in’ effect: once an asset has risen in value, holding on to it shields the gain from tax, in effect providing an interest-free loan of the tax liability from the point of accrual to the point of realisation.

There is a strong case for ending the forgiveness of CGT on death (which costs the exchequer £560 million in 2007–08), though this might need to be considered in conjunction with reform

¹⁵ This argument for taxing transactions is developed in, for example, J. Tobin, ‘On the efficiency of the financial system’, *Lloyds Bank Review*, 1984, 153: 1–15.

¹⁶ See annex A of M. Hawkins and J. McCrae, *Stamp Duty on Share Transactions: Is There a Case for Change?*, IFS Commentary 89, June 2002 (<http://www.ifs.org.uk/comms/comm89.pdf>).

of inheritance tax.¹⁷ Ending the lock-in effect of realisation-based taxation is more difficult, since taxing on accrual is impractical for assets that cannot easily be valued without an actual transaction, and the only realisation-based scheme that does not distort holding periods is complicated and creates different problems.¹⁸ But abolishing taper relief is certainly a move in the right direction.

The *Daily Telegraph* and the *Financial Times* reported that, as a concession to opposition to its proposal, the government was planning to introduce a scheme similar to ‘retirement relief’, which was gradually reduced in value under the current Labour government before finally being abolished in April 2003.¹⁹ Retirement relief reduced the CGT payable on business assets if the seller was aged 50 or over (or had retired early on ill-health grounds), with a greater reduction the longer the asset had been held.²⁰ Hence it made relevant assets both more valuable to older individuals and more valuable the longer they had been held – once again, encouraging people to hold on to assets beyond the point where commercial considerations would lead them to dispose of them. It would seem bizarre to abolish taper relief but to introduce an alternative with similar flaws.

Choice of assets

The government should not distort the form in which savings are held and invested without a very good rationale: whether someone puts their money into a bank account, housing, shares in a quoted company, or his or her own business should generally be left to the individual’s judgement of which offers the best return (i.e. is the most productive investment) given their different risk profiles and other characteristics.

Taper relief violates this principle: by favouring business assets over non-business assets, it encourages individuals to put their money into their own business or shares in the company they work for rather than into shares in other companies or a second home. Removing this distortion is therefore an advantage of the proposed reform.

There is, however, a justification for taxing gains on corporate equity more lightly. The tax system as a whole should be neutral across different forms of saving and investment, but CGT is only part of that system. Company profits that give rise to capital gains are already taxed once under the corporation tax. There is therefore a clear case for taxing capital gains on corporate equity at a lower rate than capital gains on other assets in order to place investments in incorporated firms on a level playing field with investments in other assets. Indeed, this is

¹⁷ The cost of CGT forgiveness on death is taken from table 1.5 of HMRC Statistics (http://www.hmrc.gov.uk/stats/tax_expenditures/table1-5.pdf). The Tax Reform Commission, established by the Conservative Party and chaired by Lord Forsyth, recommended ending forgiveness on death with a reformed CGT (which tapered to zero after 10 years in any case) and abolishing inheritance tax altogether: see Tax Reform Commission, *Tax Matters: Reforming the Tax System*, October 2006 (<http://www.conservatives.com/pdf/taxreformcommissionreport.pdf>).

¹⁸ A realisation-based scheme with holding-period neutrality is presented in A. J. Auerbach, ‘Retrospective capital gains taxation’, *American Economic Review*, 1991, 81(1): 167–78, and developed in A. J. Auerbach and D. F. Bradford, ‘Generalized cash-flow taxation’, *Journal of Public Economics*, 2004, 88(5): 957–80.

¹⁹ ‘Gordon Brown concedes over capital gains tax’, *Daily Telegraph*, 1 November 2007 (<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2007/10/31/cncgt231.xml>); ‘Business attacks CGT climbdown’, *Financial Times*, 31 October 2007 (<http://search.ft.com/ftArticle?sortBy=gadatearticle&queryText=jean+eaglesham&y=0&aje=true&x=0&id=071031000683&ct=0&page=21>).

²⁰ The definition of business assets for retirement relief purposes was different from that for taper relief purposes.

precisely what is already done for income tax in respect of dividends: once the dividend tax credit is taken into account, the effective income tax rates on dividend income are zero (at the starting and basic rates) and 25% (at the higher rate), reflecting the corporation tax paid on profits before they are distributed as dividends. Similar CGT rates could be adopted for capital gains on shares.

But the distinction between corporate and non-corporate assets does not correspond to the business/non-business assets distinction in taper relief, which applies preferential rates to unincorporated and unquoted businesses and does not apply them to shares in quoted companies unless the share owner is an employee of the company or has at least 5% of the voting rights in the company. The distinction made for taper relief introduces differentials between the treatment of quoted and unquoted companies, employee and non-employee shareholders, and shareholders with more or less than a 5% stake in the company. These differentials seem inequitable, as well as distorting a variety of decisions: not only how an individual invests his or her money, but also how to structure the ownership of a company, whether or not a company lists on a stock exchange, whether an employee holds shares in the company he or she works for or in other companies, and whether or not an employee leaves his or her job. None of these are decisions we would obviously want to be affected by their implications for liability to CGT.

In removing the distinction between business and non-business assets, the abolition of taper relief is therefore again moving in the right direction. The continued exemption of main homes remains a peculiarity, though this is a far larger issue (the exemption is estimated to cost the exchequer £17.3 billion in 2007–08,²¹ more than three times the total CGT yield) and any reform must be considered in the context of the overall tax treatment of housing, which is idiosyncratic in many respects. There is a strong case for introducing a preferential rate for shares, to reflect corporation tax already paid. Such a preferential rate would be removing rather than introducing a distortion in the system, and would be relatively simple to implement, since equity in companies liable for corporation tax is readily identifiable. But the abolition of the present distinction between business and non-business assets is welcome.

Form of economic activity and remuneration

Taxing different forms of remuneration in different ways creates an avoidance problem if remuneration can be shifted from one form to another, and encourages people to move into occupations where taking less heavily taxed remuneration is possible. While governments sometimes devise rules to try to restrict the form in which remuneration can be taken in particular circumstances (recent examples include the IR35 and Managed Service Company rules), such attempts are usually unsuccessful and never fully satisfactory: their main effect is to generate complexity and arbitrary distinctions and to occupy the minds of tax advisers in finding ingenious ways around the rules. Ultimately, the only solution is to align the tax rates on different forms of remuneration. In this context, the taxation of capital gains is out of line with the taxation of two other forms of remuneration that can be substituted for capital gains – dividends and earnings. We now look at each of these in turn.

²¹ Table 1.5 of HMRC Statistics (http://www.hmrc.gov.uk/stats/tax_expenditures/table1-5.pdf).

Taxation of dividends and capital gains

A company's profits can be returned to shareholders in at least two ways. The company can pay dividends, or it can hold on to the profits, increasing the value of its shares and creating a capital gain. There is no obvious reason for the tax system to treat one of these more favourably than the other, and owners of small businesses can to a large extent choose in which form to take the return on their investment. This would suggest aligning CGT rates on corporate equity with the income tax rates on dividends.

For starting- and basic-rate income taxpayers, dividend income is in effect untaxed at the personal level. A flat 18% CGT rate therefore represents a move away from alignment, since the current rate (for owner-managed firms, whose shares are business assets) is 5% for basic-rate taxpayers as long as the shares have been held for at least two years. However, since owner-managers who are basic-rate taxpayers would prefer untaxed dividends to capital gains in any case, this further differential is likely to make little difference. For basic-rate income taxpayers who have small shareholdings in quoted companies (non-business assets), the change is smaller – 18% replaces something between 12% and 20%, depending on the holding period – and substitution between dividends and capital gains is less of an issue, although differential treatment is still difficult to justify.

More important is the effect on owner-managers who are higher-rate taxpayers. For them, a rise in the CGT rate from 10% to 18% would move the headline rate closer to the 25% effective tax rate on dividend income, although the lack of relief for inflation (discussed in the next subsection) means that headline rates do not tell the whole story: the extent of the distortion in favour of capital gains (if any) also depends on how long after the dividends would be taken the capital gains would be realised, inflation rates in the intervening period, and the tax treatment of any asset the dividends were put into in the interim.

However, these comparisons serve mainly to highlight how strange it is for any difference to exist at all. The obvious way forward would be alignment of CGT rates on shares and income tax rates on dividends for both basic- and higher-rate taxpayers.

Taxation of earnings and capital gains

It is sometimes difficult to distinguish capital gains from earnings. The recent controversy over the treatment of 'carried interest' received by private equity fund managers provides a high-profile illustration of this, and it featured heavily in a recent Treasury Select Committee inquiry into the industry.²² But a more prosaic example is ordinary small companies: owner-managers might choose to forgo some or all of their salary to increase the value of the business and then sell it on (or pay themselves dividends, as discussed above). Indeed, as well as distorting the form in which remuneration is taken, preferential treatment of capital gains can distort the underlying economic activity, providing an incentive for people to move into occupations in which rewards can be taken as capital gains rather than earnings. Again, this points towards aligning the tax rates on capital gains and earnings, in order to minimise the need to make difficult distinctions, minimise the scope for tax avoidance and ensure equal treatment of people whose effort is rewarded with capital gains rather than salary.

²² The Treasury Select Committee's report can be viewed at <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmtreasy/567/56702.htm>.

Under the existing system, CGT is charged at almost the same rates as income tax on earnings if the gains are realised within a year: 20% basic rate and 40% higher rate.²³ However, taper relief reduces the CGT rates dramatically to 5% basic rate and 10% higher rate if the capital gains are realised after more than two years.²⁴ This might seem to suggest that alignment is currently well achieved for short holding periods but not long ones, and that a flat 18% CGT rate creates close alignment with income tax for basic-rate taxpayers regardless of the holding period, while for people facing the higher (40%) rate of income tax, a flat 18% CGT rate is closer to alignment for long-held business assets (currently subject to 10% CGT) but further from alignment for business assets sold within a year (currently subject to 40% CGT).

However, this simple analysis again neglects the effect of the rest of the tax system. In particular, when considering the potential for converting salary into capital gains, the central case of interest is an owner-managed incorporated firm, and corporation tax cannot be ignored. Salaries are deductible for corporation tax, but profits retained to generate capital gains (or paid out as dividends) are not. If the company faces the 22% small companies' corporation tax rate that will be in place from April 2009 (see Chapter 11 for a discussion), then the current 10% and 40% CGT rates faced by higher-rate taxpayers at either end of the business assets taper imply overall tax rates of 29.8% and 53.2%; for basic-rate taxpayers, the corresponding figures are 25.9% and 37.6%.²⁵ A flat CGT rate of 18% implies an overall tax rate of 36.0%.

These might seemingly be compared with income tax rates of 20% and 40% for basic- and higher-rate taxpayers respectively, suggesting that the proposed CGT reform is primarily a move away from alignment for basic-rate taxpayers who hold on to their assets for two years or more, and a move towards alignment for higher-rate taxpayers at both ends of the business asset taper. But income tax is not the only tax on earnings. National Insurance contributions are a major tax on earnings that is escaped altogether by people taking remuneration as capital gains or dividends. Taking employee and employer contributions into account, the effective marginal tax rate on earnings is 38.8% for basic-rate taxpayers and 47.7% for higher-rate taxpayers.²⁶ For the purist, it is with these overall tax rates on earnings that combined corporation tax and CGT rates should be aligned. Yet even this analysis is not complete: as with the discussion of dividends above, the lack of indexation for inflation makes comparing effective tax rates on salary received now and capital gains realised in the future more difficult.

Despite all these complications, two lessons are clear. The first is that the case for having lower CGT rates on corporate equity than on other assets remains compelling: alignment of

²³ The main exception to this is that basic-rate taxpayers face a 22% marginal tax rate on earnings but only 20% – the savings rate – on capital gains. This small difference would disappear naturally in April 2008 as the basic rate of income tax falls from 22% to 20%. However, at the same time, the 10% starting rate of income tax is being abolished for earnings, but kept for savings income, and therefore would presumably be kept for capital gains in the absence of the proposed reform, introducing another small disparity. A further difference is in the different tax-free allowances for the two taxes, discussed further below.

²⁴ This assumes the assets are business assets, as they typically would be. For non-business assets, the rates fall much more slowly, to 12% basic rate and 24% higher rate after 10 years.

²⁵ For comparison, the overall tax rates on dividends in this case are 22.0% at the basic rate and 41.5% at the higher rate.

²⁶ These figures assume that the Income Tax and National Insurance reforms announced in Budget 2007 are implemented, and that the individual is contracted into the State Second Pension. They ignore the effect of earnings (or capital gains) on means-tested benefits and tax credits.

the effective rates at which gains on different asset types are taxed must be a prerequisite for successful alignment of these rates with those on other forms of remuneration. The second lesson is that a capital gains tax with basic and higher rates would inevitably line up more closely with taxes on income than a flat-rate tax does. When all other forms of income are taxed at rising marginal rates, a flat rate on capital gains seems hard to justify on either equity or efficiency grounds. A return to taxation of capital gains at the taxpayer's marginal income tax rate, as happened from 1988 to 1998, but with preferential rates on shares, would be a move in the right direction

A final issue to address is the continued separation of the CGT allowance from the income tax allowance, so that the CGT allowance cannot be set against income and the income tax allowance cannot be set against capital gains. This separation rewards people who in a given year have some income and some capital gain, rather than exclusively one or the other. There seems to be little rationale for having large separate allowances. Beyond a *de minimis* allowance specifically for capital gains (much lower than the current one) to avoid the burden of CGT compliance for those realising trivial gains, it would make much more sense to have a single allowance to set against both income and capital gains.

Encouraging saving and investment

Most criticism of the reform has focused not on the elimination of the differentials between short- and long-held assets and between business and non-business assets, but on the rise from 10% to 18% in the CGT rate on long-held business assets that is set to face higher-rate taxpayers. It is argued that this discourages investment and entrepreneurship. This subsection focuses on saving and investment; the next considers wider concepts of entrepreneurship.

High rates of CGT (and indeed other capital taxes such as corporation tax and income tax on savings, dividends and self-employment profits) certainly discourage saving and investment. This is usually undesirable: too little investment will be undertaken if otherwise profitable investments are made unprofitable by tax. And if an individual would rather save his or her money than spend it now, it is difficult to see why taxes should be used to discourage this.

This suggests a tension between keeping capital tax rates as low as possible so as not to discourage investment, and raising them towards income tax rates so as to minimise tax avoidance problems and avoid distorting choices over how to use effort, as discussed above. Indeed, the attempt to manage this trade-off has arguably been at the heart of CGT reform for decades: Nigel Lawson aligned CGT and income tax rates; Gordon Brown introduced taper relief, with a 10% CGT rate on long-held business assets to encourage investment; and finally, following a furore over the low tax rates faced by private equity executives, Alistair Darling increased the 10% rate to 18%. It seems unlikely that this reform will prove to be the final word on the matter.

However, this trade-off is not as straightforward and inescapable as it might seem, because it is not just headline rates that matter; the definition of the tax base is also important. In particular, capital allowances, which explicitly give deductions for the purchase cost and depreciation of assets, are crucial. Indeed, increasing capital allowances is a better way to encourage investment than reducing rates, because they focus specifically on reducing the

effective tax rate on investment rather than on effort, luck or other factors that generate capital gains.

In the 2007 Budget, the government announced the introduction in April 2008 of an Annual Investment Allowance (AIA), which allows investors to deduct the first £50,000 per year of investment in plant and machinery from their taxable profits. This will reduce the effective tax rate on small firms' investment in such assets by more than the CGT reform will increase it.

To see this, note that a rise in the CGT rate from 10% to 18%, though widely described as 'an 80% increase in the tax rate', is best thought of as meaning that the amount an investor gets to keep of any capital gain is 82/90 of what it was before the reform, an 8.9% fall in the post-tax rate of return. Equivalently, only investments that yield at least 90/82 of (just under 10% more than) what was required to break even before the reform will still be worth undertaking after the reform. And this assumes that all return is taken in the form of capital gains – if some (or all) of the investment return is taken as dividends, the net investment return falls by less (or not at all).

Compare this with the introduction of the AIA. If the investor faces the 22% small companies' corporation tax rate that will be in place from April 2009, this means that money that could previously buy £78-worth of equipment can now buy £100-worth of equipment. So each pound invested will yield 100/78 of what it did before the reform, a 28.2% rise in the rate of return. Equivalently, the rate of return required for an investment to be worthwhile will now be 78/100 of (22% lower than) what it was before the reform.²⁷

We would question the decision to restrict the AIA to investment in plant and machinery (rather than in industrial or commercial buildings, for example). But for companies whose investment is mainly in plant and machinery and is below the £50,000 limit, the combination of the introduction of the AIA and the increase in the CGT rate is likely to increase rather than reduce incentives to invest. And the AIA also encourages investment by other groups whose investment incentives are largely unaffected by the CGT reform: unincorporated businesses, which cannot easily convert profits into capital gains, and basic-rate taxpayers, for whom dividends are tax-favoured relative to capital gains in any case. All of this illustrates that preferential rates of CGT are a relatively ineffective way of using the tax system to stimulate investment.

In any case, small unquoted companies can still seek new external finance through the Enterprise Investment Scheme or Venture Capital Trusts, which are exempt from CGT and also receive upfront relief from income tax.

The most troubling aspect of the proposed reform is the continuing absence (indeed, the abolition for periods up to 1998) of indexation for inflation. Both the existing system and its proposed replacement fail to distinguish between real capital gains, which represent an increase in purchasing power when assets are sold, and nominal capital gains, which may simply reflect asset prices rising in line with inflation. Even at low rates of inflation, a tax on nominal capital gains corresponds to a much higher tax rate on real gains: for example, if

²⁷ This assumes that the pre-existing schedule of capital allowances corresponds exactly to true economic depreciation of plant and machinery. The reduction in effective tax rates will be smaller (larger) for forms of plant and machinery that depreciate less (more) rapidly than the schedule of capital allowances.

inflation is 2%, an 18% tax rate on a 5% nominal return corresponds to a 30% tax rate on the real return. And it can generate a hefty tax bill on holdings of assets even where no real gain at all has been made. This is both distortionary and inequitable. There is no obvious reason to tax purely inflationary gains, and no obvious reason to discourage saving and investment more when inflation is expected to be higher. Indexation operated successfully up to 1998, at some cost in complexity but far less than that associated with taper relief. In a world with online tax-return software widely available, it might now be possible for HMRC to administer a system in which the purchase price of assets is automatically updated in line with specified inflation rates over the period they are held. Failing that, in a world with low and stable inflation around the government's target, a close approximation to indexation could be achieved just by allowing for a constant, target inflation rate throughout the holding period.

There are two reasonable arguments against indexation. One is the complexity that it re-introduces into the system, albeit less than that associated with taper relief. It is hard to believe that this complexity alone would be enough to justify forgoing the benefits of indexation, but a judgement on that question rests partly on what path inflation might take in future and how great the benefits of indexation are therefore likely to be. The second argument against indexing capital gains is that it is not done for capital income: ordinary savings accounts, for example, are taxed according to the nominal interest they pay, not only interest above the current rate of inflation. That being the case, taxing only above-inflation capital gains would be inequitable, would distort the savings market in favour of assets that yield capital gains and would lead to conversion between income and gains. Of course, the ideal solution to that would be to provide inflation indexation of capital income as well as gains. But failing that, there is a judgement to be made as to whether some indexation is better than none at all.

Encouraging entrepreneurial risk-taking

So far, this section has considered as a goal not distorting decisions that would be made in the absence of tax. But should CGT be used actively to encourage certain activities?

Low rates of CGT are often defended as essential to reward difficult and risky entrepreneurial activity. But it is important to recognise that the difficulty and risk associated with entrepreneurship do not themselves justify favourable tax treatment. If the market rewards for particularly difficult or risky activities are not sufficiently high to compensate for the additional difficulty and risk involved, it suggests that the activities are not worth undertaking: there is no reason for the government to give them special tax breaks. A justification for government intervention arises only if markets fail to provide the appropriate incentives for entrepreneurship.

Market failure might arise if certain activities generate positive spillovers to society at large that neither the entrepreneur nor the investors in such activity can appropriate and that the individual does not take into account when choosing an occupation. The government might then wish to intervene to encourage this behaviour. For example, research and development – which brings benefits that cannot be fully appropriated by the researcher because intellectual property rights to the resulting innovations are limited – is encouraged by the R&D tax credit and through state funding of universities.

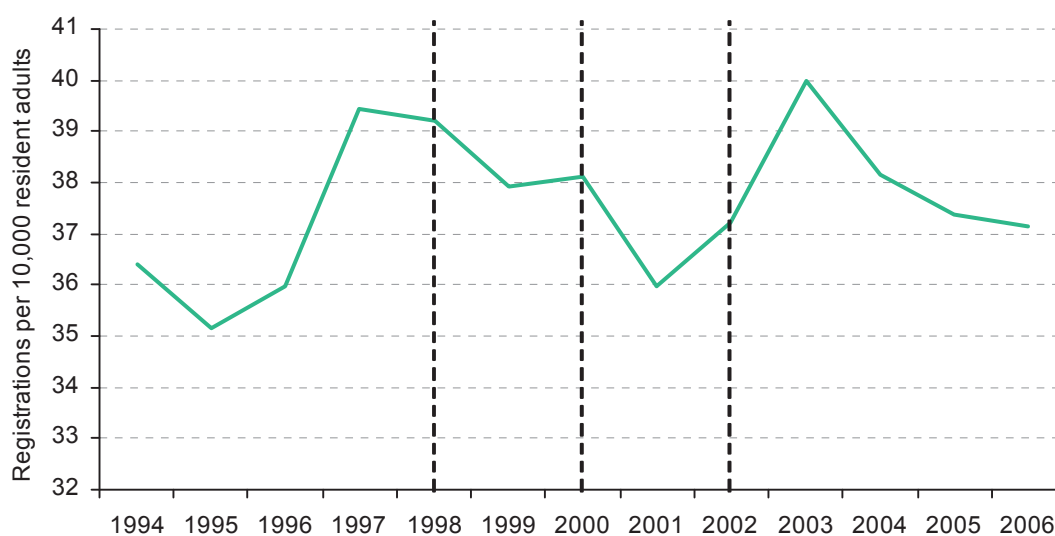
It is highly plausible that entrepreneurial activity in some sense does bring benefits to wider society. Ideally, the government would identify precisely what it is that generates these spillovers, and address it directly. But the spillovers from entrepreneurship may be difficult to pin down to specific activities in this way: for example, if the benefits to wider society come from individuals' trying out new ideas, from which others can learn whether or not they are successful, it is difficult to see how this could be addressed in as direct a way as the R&D tax credit. It may therefore be that tax incentives are not good tools for eliciting the elusive behaviour that we would like to encourage. Yet even if the nearest proxy we could find were starting a business (as opposed to being employed), that would at most point towards reducing tax rates on company and self-employment profits – though such a blunt instrument would scatter benefits much more widely than just on the additional entrepreneurs created and would create additional problems such as encouraging people to convert earnings into profits. It is even harder to see why low CGT rates, which help only firms that retain profits (thus excluding unincorporated businesses and companies that need to pay out dividends or salaries to cover the entrepreneur's living costs), would be an appropriate response.

Another potential market failure is financing constraints arising from asymmetric information. The supply of funds may be important if new ventures require a certain amount of equity finance in order to be viable. If potential investors know less about a venture's prospects than the entrepreneur involved, financial markets might fail to supply enough capital for a viable venture to go ahead. To the extent that the potential investors are liable to CGT, a low rate could allow viable start-ups to go ahead. However, the major sources of venture capital that are not subject to CGT, such as bank loans, pension funds, EIS and VCTs, at least partly alleviate this bottleneck,²⁸ and there is little hard evidence that any remaining problem is significant: it may be that entrepreneurs who fail to find finance just don't have viable business propositions. And again, CGT seems badly targeted to address whatever market failure there might be: in so far as it encourages investors to back viable ventures when they lack the information to perceive viability, it will also encourage them to back ventures that would not be viable at all but for the tax break.

There is scant evidence that CGT reform has an important effect on whether or not individuals start new ventures. Figure 10.4 plots the rate of UK VAT registrations in the UK, highlighting the dates of the introduction of, and two major changes to, the taper relief regime. VAT registrations can be seen as a crude gauge of the number of new ventures. Although each reform introduced a more favourable tax treatment for entrepreneurs, there is no clear relationship with the number of new VAT registrations. One would expect that if CGT had a large effect, it would be at least partly seen in this graph. In fact, the effect of the business cycle is much more important.

²⁸ A US study in 1989 found that more than three-quarters of the funds that are invested in start-up firms are provided by investors who are not subject to the individual capital gains tax: see J. Poterba, 'Capital gains tax policy toward entrepreneurship', *National Tax Journal*, 1989, 42(3): 375–89. Recent survey evidence for the UK (<http://www.gemconsortium.org/document.aspx?id=579>) similarly suggests only a small role for CGT-payers in financing start-ups.

Figure 10.4. UK VAT registration rates and capital gains tax reforms



Notes: VAT registration rates are by calendar year. Vertical lines represent the years in which taper relief was introduced and the rates made more generous; in each case, the reform took effect in April of the relevant year.

Source: Table 1e of Department for Business, Enterprise and Regulatory Reform, VAT Statistics (<http://stats.berr.gov.uk/ed/vat/>).

Low rates of CGT do not, then, look like a well-targeted measure to encourage otherwise under-incentivised entrepreneurship. They do not directly focus on activities that the market might fail to reward adequately, and do not have a clear impact in increasing start-up activity, while they provide favourable treatment to many others without good reason, as discussed earlier in this section.

Simplicity

The government's principal justification for the CGT reform has been simplification of the tax system. One glance at Figure 10.3 reveals that the new system is considerably simpler than the one it is replacing. This is most obvious in the removal of the need to calculate taper relief and to make different calculations for business and non-business assets. In practice, much of the simplification arises from the less obvious implications of these features.

Taper relief requires rules to determine, if an individual buys shares in a company at more than one date and then sells some of them, which is the purchase date and price for the shares being sold. Distinguishing between business and non-business assets not only requires a complicated set of rules in itself; it also requires a set of rules for dealing with assets that were business assets for part of the holding period and non-business assets for the remainder: for example, in the case of an employee shareholder who sells his shares some time after leaving his job, a shareholder in a company that lists or de-lists on a stock exchange, or a shareholder whose share of voting rights in the company moves above or below 5% (perhaps repeatedly). Many such rules will become unnecessary under a flat-rate tax, and others will become less troublesome to police because the benefits of circumventing them will be reduced. A simple, across-the-board 18% rate also removes the need to keep separate sets of rules for assets acquired before 1998 and 1982. CGT is a notoriously complicated tax, and the value of such a major simplification should not be underestimated.

Perhaps the one area in which the proposed reforms would create potential for additional complexity is in the de-linking of the CGT rates for short-held assets from income tax rates. As discussed above, the true incentive to convert income into capital gains is rather more complicated than this would suggest, once the effects of inflation and other taxes are taken into account. Nevertheless, there is a risk that significant new opportunities will open up to avoid tax by converting income into immediately realised gains. It remains to be seen whether people who were not willing to wait two years for taper relief will be persuaded to take capital gains instead of income if the tax advantage can be obtained immediately. And perhaps tax advisers will be able to devise forms of remuneration that can be dressed up as instantly realised gains but that were not available if an asset had to be held for an extended period before disposal, though legal developments over the years have reduced the scope for such schemes. But if conversion of income into instantly realised gains becomes widespread, taxpayers and the government face the prospect of yet more rounds of avoidance schemes, anti-avoidance rules and court cases.

10.4 Managing transition

The previous section considered the current CGT regime and its proposed replacement in abstract terms: how one would design CGT if starting from scratch. This is a good way to think about how to tax people who buy assets in future. But a large part of the complaint about the PBR proposals has been about the perceived unfairness of retrospectively imposing a higher-than-expected tax on gains that people have already made.

Almost any capital tax reform creates windfall gains and losses for existing asset holders. This reform creates windfall gains for higher-rate taxpayers who own non-business assets²⁹ and windfall losses for people who have owned business assets for more than two years, both of which seem undeserved.

We should be clear about who the losers from the reform are and who they are not.

For example, owner-managers of companies still have the option of paying themselves dividends instead of maximising capital gains – and for basic-rate taxpayers that is a tax-advantaged option both before and after the reform, so they may be little affected.

Concern has been expressed about millions of members of employee share schemes being vulnerable to a tax hike. But the majority of such individuals are members of Share Incentive Plans (SIPs), which are CGT-exempt. A substantial minority (an estimated 1.7 million people) participate in Save As You Earn schemes, which are not CGT-exempt; but they can avoid CGT by transferring their shares to an ISA.³⁰ The vast majority of those who remain will not realise capital gains on these shares exceeding £9,200 in a single year, and those who do can hardly be described as the most vulnerable members of society.

²⁹ Owners of non-business assets who acquired them before 1998 are still set to lose from the abolition of indexation allowances, however, and in some cases this might outweigh the gains from reduced statutory rates.

³⁰ The 1.7 million estimate, and the fact that the majority of employee share scheme members participate in a SIP, come from ifs ProShare; see http://www.ifsproshare.org/lobbying/pdf/cgt_briefing_note_nov_07.pdf.

More generally, no-one whose savings are held in their main home, a pension, ISA, EIS, VCT or SIP loses; nor does anyone who holds on to their assets until death, or who realises gains of no more than £9,200 in any given year. And there are options available to mitigate the effect of the CGT increase. Part of the asset can be transferred to a spouse or civil partner before disposal to make use of both partners' annual exempt amounts. Individuals can defer their CGT bill by investing the proceeds of a sale through the EIS: not only are investment returns within the EIS CGT-exempt, but the CGT due on the original disposal is deferred without interest until disposal of the EIS shares. And, of course, many people investing in non-business assets, such as most quoted shares or second homes, will gain from the reform.

Nevertheless, there are some holders of business assets with a legitimate grievance about a retrospective tax increase. We can think of these as two groups. Those who started businesses (or acquired business assets more generally) before 1998 were not doing so in expectation of a 10% tax rate. They may have been led to expect one since – and perhaps reduced their other retirement saving as a result, for example – but the abolition of taper relief does not reduce their investment return below what they were expecting when making the investment. Indeed, 18% is a lower rate than they would have expected at the time – much lower, for higher-rate taxpayers – although this is offset by the abolition of indexation allowances, which were then in place. The CGT bill for people who acquired business assets before 1998, then, will be higher than they would have expected before the Pre-Budget Report, but it is not clear whether it will be higher than they would have expected when buying the asset. The effect of the reform for these people is in large part to take back the windfall they were given when taper relief was introduced.

For people who acquired assets from 1998 onwards, however, the argument is more clear-cut. Not only are they being made worse off now, but they invested on the basis that the tax rate on long-held business assets would be 10%. They may not even have benefited from taper relief if the low expected tax rate on long-held assets was reflected in a higher purchase price of the assets.

The government's approach to this issue has been unconvincing. It has made no explicit provision for transitional protection to avoid a windfall tax on already-accrued gains. But it has deliberately given a few months' notice of the reform to allow asset owners to 'arrange their affairs'. This is highly distortionary: it gives owners of business assets a huge incentive to dispose of their assets before the new regime comes in (and owners of non-business assets an incentive to hold on to their assets until then), regardless of the commercial desirability of doing so.³¹ This has been exacerbated by the subsequent uncertainty over possible

³¹ Owners of assets acquired before 1998 can avoid losing from the abolition of indexation allowances – though not from the abolition of taper relief – without having to sell their assets to anonymous third parties, by transferring the assets to a spouse or civil partner before 6 April 2008. The 'no gain / no loss' basis for treating transfers between spouses and civil partners means that the transfer is deemed to happen at the original purchase price plus indexation allowances given for periods up to 1998; but the holding period for taper relief purposes is the couple's combined length of ownership. Under the existing system, that is equivalent to treating the asset as acquired by the recipient at the original purchase price and date: the indexation allowance is simply built into the recipient's deemed acquisition cost instead of being calculated on final disposal. But from April 2008, no indexation allowance will be provided on final disposal; the deemed acquisition date will be irrelevant and only the deemed acquisition cost will matter. If no transfer takes place before April, the acquisition cost used for CGT purposes on eventual disposal will be the original acquisition cost; but if the asset is transferred to a spouse, the acquisition cost used on eventual disposal will include indexation allowance for periods up to 1998. Thus if an asset acquired before 1998 is transferred to a spouse or civil partner before 6 April, the indexation allowance for periods up to 1998 is crystallised into the deemed acquisition cost even though indexation is then retrospectively abolished. This possibility neutralises a significant part of the windfall losses facing some long-term asset holders, but far from all, and at the cost of discriminating against those without a

adjustments to the reform, which leaves existing holders of business assets still uncertain (at the time of writing) as to whether they will in the end face a much higher tax bill if they dispose of their assets after 5 April 2008 even as the window of opportunity before that date shrinks. As well as the economic distortions this approach causes, it seems grossly unfair to give much more generous treatment to those who dispose of their assets before 6 April than to those who are unwilling or unable to do so.

If the government did not want to provide transitional protection to existing holders of business assets, it should have implemented the reforms with immediate effect (i.e. presumably made the announcement in the forthcoming Budget for the 2008–09 tax year). If it viewed transitional protection as desirable, it should have been introduced explicitly.

Possible transitional arrangements

The purest form of transitional arrangement would apply the new regime in future but not retrospectively. This would involve rebasing asset values to a particular date (hereafter ‘the rebasing date’), applying the new regime to gains accruing thereafter, and continuing to apply the old regime – or some alternative – to gains accruing before that date. Arrangements broadly along these lines already exist for assets held before 1965 and for assets held before 1982.

The rebasing date could not be announced in advance, as that would leave open the possibility of manipulation of asset values around the relevant date. Since the government’s announcement of the CGT reform came as a surprise, we suggest that the rebasing date should be the date of the Pre-Budget Report, 9 October 2007, or earlier. The Institute of Chartered Accountants in England and Wales has suggested rebasing to 31 March 2002 as a possibility worth considering.³²

In effect, individuals would be treated as if they had sold their assets and bought them again (‘deemed realisation’) at market value on the relevant date. To achieve precise transitional protection, the government could continue to apply taper relief to gains accruing up to that date (according to the number of years between 1998 and the rebasing date for which the asset had been held) and to apply the existing transitional arrangements such as indexation for periods before 1998. To prevent cash-flow problems, tax due on increases in value prior to the rebasing date would become payable only upon eventual disposal of the assets, ideally with a market rate of interest accruing in the intervening period.

A less precise but simpler approach would be to apply a single system for all gains accruing before the rebasing date. For example, in 1988 all assets acquired before 1982 were rebased to their 1982 market values; for disposals since then, gains that accrued prior to 1982 are taxed under the regime in place at the time of disposal, but with a 50% reduction. Of course, the more generous the treatment of gains accruing before the rebasing date, and the more recent the rebasing date chosen, the greater the cost to the exchequer.

spouse or civil partner and perhaps introducing strife into marital relations where an individual is reluctant to give large assets to his or her spouse.

³² <http://www.icaew.com/index.cfm?route=152112>.

Maintaining a separate system – or more than one, if precise transitional protection were pursued – for gains accruing before a particular date would add considerably to the complexity of the overall CGT regime. Over time, as assets held before the rebasing date were disposed of, these complexities would become gradually less important (as the rules for assets held before 1965, 1982 and 1998 successively have), but simplification would become a painfully slow process.

The biggest disadvantage of the rebasing approach, however, is administrative: it would require all assets acquired before the rebasing date to be assigned a market value as at the rebasing date when they came to be sold. For quoted shares, this might be reasonably straightforward; for other assets, it seems a daunting task. It was done (and is still done) for the 1982 rebasing, and the burden can be significantly reduced by choosing a rebasing date some time ago, before the acquisition date of many assets now held. Nevertheless, rebasing is a burden the government may be reluctant to take on.

A number of practical compromises are possible which do not require valuation of all assets, though none is very satisfactory:

- Time apportionment: gains could be assumed to accrue smoothly, so that when an asset is sold, a proportion of the gain could be treated as arising under the new regime, equal to the proportion of the holding period that is after a particular date. This is theoretically inferior to the approach described above – if an asset holder expects future gains to accrue more quickly than past gains, he or she has an incentive to hold on to the asset so that the large gains are taxed as if partly arising under the old, more generous regime, and vice versa – but it would avoid the need for a complete rebasing of asset values. On the rare occasions when rules are still needed, assets acquired before 1965 are broadly subject to rebasing if they are quoted shares (the market values of which are more easily assessed) and time apportionment otherwise. A similar approach could be adopted now.
- The government could allow assets acquired before the reform to continue to be taxed under the current regime, either indefinitely or for a limited period. This would be deeply unsatisfactory. It would unfairly give much better treatment to people making gains on assets bought before that date than people making gains on newly acquired assets; it would provide a strong incentive for individuals to hold on to existing assets for as long as possible (or until their preferential treatment ended); and, if the preferential treatment were for a limited period only, it would penalise people who for commercial reasons would want to hold on to their assets beyond the limited period and push them to dispose of their assets earlier than they otherwise would.
- The least radical option would be to extend the government's approach by announcing now that the new regime would come into effect, not in a few months, but in (say) two years' time. The longer implementation is delayed, the longer people would have to 'arrange their affairs', and so fewer people would be unfairly penalised because disposing of their assets before the implementation date is an unattractive or unfeasible option. But there would still be a large distortionary incentive for people to dispose of assets shortly before the implementation date, and this distortion would become relevant for the many people who bought assets between now and the implementation date. Delaying implementation would also increase the distortion of non-business asset holders hanging on to their assets until implementation, and give people an incentive to try to compress

capital gain into the period before implementation (e.g. owner-managers forgoing salary until implementation and then taking a large salary afterwards).

In some cases, a decision would have to be made regarding whether to make the transitional scheme optional or compulsory; whether to apply it to people who gain from the proposed reforms as well as to people who lose. In all of the cases described above, applying the transitional arrangements to people who gain from the reform would remove some of the windfall gains. The gains of non-business asset holders seem just as undeserved as the losses of business asset holders, so applying the transitional arrangements to both groups would seem fair, as well as costing the Exchequer less. But, having announced reforms that benefit these groups, the government would be risking another backlash if it then withdrew part of these benefits.

This discussion has illustrated that all transitional schemes have significant disadvantages in terms of equity, economic efficiency and/or practicality. All would also significantly reduce or delay the simplification of the tax system that the Pre-Budget Report proposal represents. And all would be costly to the exchequer.

All tax and benefit reforms create winners and losers, and anyone making an investment takes the risk that the government will increase the tax rate on the investment return by the time it arises. A tax rate of 18% is still not very high, whether the comparison is with historical CGT rates, other countries' CGT rates, or tax rates on other economic activities. Individuals who invested on the basis of a 10% CGT rate understandably feel aggrieved, but given the disadvantages of transitional arrangements, whether protecting these (relatively few and relatively wealthy) people is the best use of exchequer funds seems uncertain at best.

10.5 The policy-making process

The problem of transition discussed in the previous section arises because the government is trying to withdraw a generous tax break that it had earlier given out. Like the introduction and then abolition of the 0% rate of corporation tax discussed in Chapter 11, the introduction and then (almost) abolition of the 10% starting rate of income tax, the introduction and then abolition of the stamp duty land tax exemption for non-residential properties in disadvantaged areas, and the almost annual reforms to first-year capital allowances for small firms' investment in plant and machinery, the introduction and then abolition of taper relief also adds to the instability of the tax system and creates a perception of uncertainty around not only the particular feature of the tax system being reformed but the rest of the tax system too. This makes it difficult for taxpayers to plan. The lesson is obvious: avoid making bad policy that will later need reform.

The desirability of stability does not mean that reform should never happen. Taper relief was overly complicated, overly generous and economically distortionary, and it is better to remove it than to leave it in place. But it would have been better still if the entirely foreseeable problems had been foreseen by the government, and taper relief never introduced in the first place. After a decade of reform, we are set to be left with a system that is arguably less sensible than the one Labour inherited. But in the mean time, the introduction of a tax break has created a vocal constituency for its retention, making it politically difficult to remove and

arguably unfair on those who had been led to believe it would remain – with the losers from its abolition not always the same people as the gainers from its introduction. The complaints of these losers may yet lead to even more unsatisfactory (and perhaps soon-to-be-reversed) measures to appease them.

In evidence to the Treasury Select Committee's inquiry into the Pre-Budget Report, Chancellor Darling claimed that taper relief had been a good idea when it was introduced, but that it was no longer needed. He argued that in the 1990s, there had been a climate of excessive short-term speculation that needed to be countered by incentives for long-term asset holding, but that this climate of short-termism had now changed.³³ This is unconvincing. It is doubtful that 'excessive' speculation was ever adequate justification for introducing taper relief; it is more doubtful that this aspect of the economic climate has changed much over the past 10 years; and it is still more doubtful that any of this justifies the problems associated with introducing a tax break and then removing it again.

Business lobby groups, tax professionals and the Treasury Select Committee have all expressed concern about the lack of consultation before the announcement of the CGT reform in the Pre-Budget Report.³⁴ It is difficult to think of good reasons not to consult on major reforms to the structure of a perennially awkward tax. One reason might have been if the government had wanted to implement the reforms with no notice so as to avoid a rush to sell assets before the new regime came into effect, and feared that consultation would not remain confidential. But the government clearly did not want the reform to come as a surprise: rightly or wrongly (as discussed in the previous section), the government deliberately gave some months' advance warning to allow taxpayers to arrange their affairs, so there could have been little additional harm done even if the details of a consultation had leaked out.

A second justification for not consulting before announcing the reform might be if the government was so sure that its policy was the right one that no consultation was needed. Yet the government has proclaimed itself willing to reconsider the detail of the reform since announcing it. Having created uncertainty in this way, the government has exacerbated it by missing its self-imposed deadline for publishing its 'final proposals' (though there had been no indication at the time of the Pre-Budget Report that the proposals were anything other than final). And there is no guarantee that the 'final proposals' that do emerge will be sensible, given that the government is constrained to make some decision before the policy is due to take effect on 6 April and is being lobbied intensively by interested parties. Almost the worst option of all is to announce reforms without consultation and then to make hasty policy in the months between announcement and implementation to try to deal with the response.

To the fiscal purist, the lack of consultation prior to this announcement, the strong incentive to sell assets before the announced changes are supposed to be implemented in April 2008, and the subsequent period of uncertainty about how they will in fact be implemented fail every test for sensible tax reform.

³³ See <http://www.publications.parliament.uk/pa/cm200708/cmselect/cmtreasy/54/5402.htm>.

³⁴ For the views of business lobby groups, see [http://www.cbi.org.uk/ndbs/press.nsf/0363c1f07c6ca12a8025671c00381cc7/bfb7fe8cd5119c258025737200534ce2/\\$FILE/Chancellor%20letter%20-%20BCC%20CBI%20FSB%20IOD%20-%2015.10.07.pdf](http://www.cbi.org.uk/ndbs/press.nsf/0363c1f07c6ca12a8025671c00381cc7/bfb7fe8cd5119c258025737200534ce2/$FILE/Chancellor%20letter%20-%20BCC%20CBI%20FSB%20IOD%20-%2015.10.07.pdf); for those of professional organisations, see <http://www.tax.org.uk/showarticle.pl?id=6315> and <http://www.icaew.com/index.cfm?route=152112>;

10.6 Conclusion

The guiding principles of capital gains tax design should be neutrality and simplicity. More often than not, these coincide, but not always. On simplicity, the reform proposed in the 2007 Pre-Budget Report passes with flying colours: it is hard to envisage a simpler system than a single flat rate. On neutrality, the proposed reforms are a significant improvement on the existing system, removing the principal incentive to hold on to assets for longer than makes commercial sense, the unequal treatment of business and non-business assets, and some of the incentive to convert income into gains.

It would be worth sacrificing some of the simplicity of the proposed reforms in favour of greater neutrality. Reduced rates should be applied to corporate equity to reflect corporation tax already paid, and serious consideration should be given to re-introducing relief for inflation. And the choice of an 18% rate seems determined by the government's immediate revenue needs rather than by a coherent view of how CGT fits into the tax system as a whole. It would be better to aim for alignment of CGT rates with those on earned income and dividends, and it is hard to understand why marginal CGT rates alone of these should not rise with income. Higher tax rates do discourage saving, investment and entrepreneurship. But saving and investment can better be encouraged by other means; so could entrepreneurship, once it is identified precisely what activity deserves special treatment.

Nevertheless, the proposed reform is a move in the right direction. Owners of existing business assets are understandably angry about the removal of a tax break they had been led to expect; if it were deemed appropriate, transitional protection could be devised, though it would be far from simple and would lead to problems of its own. The main lesson should be to avoid that kind of problem by providing certainty, stability and predictability, and to introduce carefully thought-out policies that will not need to be reformed or reversed in future. Yet the process of this reform has run exactly contrary to this lesson: an announcement was made without advance consultation; adverse reaction has prompted the announcement of a partial rethink, leading to instability and uncertainty; and the rethink is now being conducted under intense time pressure and lobbying, not the best environment for producing sensible policy proposals. It is hard to believe that whatever reform to CGT the government finally settles on this year will be the last.

10.7 Postscript: entrepreneurs' relief

On 24 January 2008, Mr Darling announced a concession to opponents of his proposed CGT reform: the introduction of a £200 million 'entrepreneurs' relief' that the Chancellor estimated would be available to 80,000 people in 2008–09.³⁵

and for the Report of the Treasury Select Committee, see <http://www.publications.parliament.uk/pa/cm200708/cmselect/cmtreasy/54/5402.htm>.

³⁵ Source: Statement to Parliament by the Chancellor of the Exchequer, 24 January 2008, available at http://www.hm-treasury.gov.uk/newsroom_and_speeches/speeches/statement/speech_statement_240108.cfm. More details of the policy can be found at http://www.hm-treasury.gov.uk/newsroom_and_speeches/press/2008/press_05_08.cfm and <http://www.hmrc.gov.uk/cgt/disposal.htm>.

Entrepreneurs' relief will reduce the rate of CGT from 18% to 10% on the first £1 million of otherwise taxable capital gains realised over an individual's lifetime on the sale after 6 April 2008 of certain eligible assets:

- shares in a trading company (or holding company of a trading group) of which the shareholder has been a full-time employee or director, owned at least 5% of the shares, and had at least 5% of the voting rights, all for at least a year;
- an unincorporated business (or share in a business) or business assets sold after the individual stops carrying on the business.

This definition of eligible assets is based on that used for retirement relief prior to its abolition in 2003, and is different from the definition of business assets for taper relief purposes. In particular, it excludes three kinds of disposal that are currently eligible for business asset taper relief:

- assets of an unincorporated business if the individual continues the business thereafter;
- employee shareholdings of less than 5% of a quoted company;
- substantial shareholdings held by people who are not full-time employees or directors of the company (such as many private equity partners).

The ability of married couples and civil partners who both work for the same business to transfer shares of the business between them tax-free means that they can take advantage of the additional relief on lifetime gains of up to £2 million.

Taking together the reform announced in the Pre-Budget Report and the entrepreneurs' relief later bolted on, the main gainers from the CGT reforms due to take effect on 6 April will be higher-rate taxpayers making capital gains on non-business assets (primarily second homes and most quoted shares). The losers will be:

- investors in assets that qualified as business assets for taper relief but are not eligible for entrepreneurs' relief, as summarised above;
- investors in business assets who realise capital gains of over £1 million over their lifetimes after 6 April 2008;
- basic-rate taxpayers for whom the 10% rate created by entrepreneurs' relief remains higher than the 5% rate created by taper relief for business assets held for at least two years, or for whom the 18% main rate remains higher than the rate created by taper relief for non-business assets held for at least five years;
- people who have held assets since before 1998 and lose more from the abolition of indexation allowances than they gain from the rest of the package (if anything).

Entrepreneurs' relief will help to encourage people to start a business and invest in it, although, as discussed in Section 10.3, this could have been done in better-targeted ways and there is little evidence that reduced rates of CGT significantly affect the rate of business start-ups.

However, the relief will seriously complicate the admirably simple system proposed in the PBR. In particular, it reintroduces a need to distinguish between qualifying and non-qualifying assets.

The lifetime limit also introduces a need to keep records of disposals on which relief is claimed over the whole lifetime of any individual disposing of an asset, although only disposals that take place from 6 April 2008 onwards will count towards the £1 million lifetime limit, so there will be no need for records of disposals prior to that date.

Unlike retirement relief, entrepreneurs' relief does not have a minimum age requirement or give a higher rate of relief for longer-held assets. This reform therefore avoids reintroducing an explicit incentive for people to hold on to assets for longer than they would on commercial grounds alone. However, the design of the relief in fact entails several similar distortions:

- It gives self-employed individuals and partnerships a large incentive not to sell any assets of the business until they are ready to stop doing business altogether, regardless of whether the assets could be more profitably used by others and whether the proceeds of a sale could be more profitably used in other ways.
- The need to meet the qualifying conditions for the relief for at least a year is also a distortion, but the owner-managed businesses that qualify for relief are not the kind of assets typically traded in relatively short time horizons, and a qualifying period (or some alternative measure) is probably necessary to counter tax avoidance. Even with the one-year qualifying period, the incentive to roll existing assets into a business environment in order to shelter previously accrued gains from tax will put pressure on any anti-avoidance rules designed to counter this.
- The fact that only disposals from 6 April onwards will count towards the £1 million lifetime limit means that people have a strong incentive to realise accrued gains (that are taxed at 10% under the current system) before 6 April if they would otherwise expect to reach the £1 million lifetime limit.

Finally, the reform encourages owner-managers of companies to retain profits in the company rather than take them out as dividends or salary, regardless of whether (in the absence of tax considerations) they would rather spend the money or could invest it more profitably elsewhere. The strong incentive to set up a company in which to retain profits will also keep pressure on the IR35 and Managed Service Company rules which attempt to define when companies are 'artificial' avoidance devices.

As well as the economic inefficiency caused, it also seems unfair to discriminate in this way against owner-managers who cannot afford to retain profits in their company and against self-employed people who choose (or need) to sell business assets before giving up the business altogether. More generally, the justification for applying lower tax rates to people who own their own business than to the rest of the population seems far from clear. These people will no doubt welcome entrepreneurs' relief, but this tax break appears to come at the cost of some complexity, inefficiency and unfairness.

11. Corporation tax and entrepreneurship

Claire Crawford (IFS)¹

Summary

- Labour has changed corporation tax rates in seven of its 11 years in office and plans to change them again next year and in 2009–10. This has caused considerable uncertainty and upheaval, particularly for the owners and managers of companies with profits below £50,000 per year.
- Throughout Labour's time in office, the tax and National Insurance system has provided incentives to be self-employed rather than employed, and incorporated rather than unincorporated. The introduction (at 10%) and subsequent reduction (to 0%) of a 'starting' rate of corporation tax on those with profits below £10,000 substantially increased the incentive for small businesses to incorporate. Many new companies were set up as a result, but it is not clear how many were the type of 'entrepreneurial' businesses the government wanted to encourage.
- The removal of the starting rate, together with the planned increase in the small companies' rate in 2008–09 and 2009–10, suggests that the government has now acknowledged that creating tax incentives that favour one legal form over another may not be the most sensible way to encourage entrepreneurship.
- The government's experiment with the 0% starting rate may have alerted people to the tax incentives favouring incorporation, even though they are no longer as large as they were. Stemming the continued tide of incorporations may require further increases in – and perhaps even the abolition of – the small companies' rate. This may be no bad thing, as the economic rationale for a distortion in the tax system in favour of companies with low profits is far from clear.

11.1 Introduction

Since Labour came to power in May 1997, there have been only four years in which it has not changed corporation tax rates in the UK. This does not seem a helpful contribution to the stable business environment that Gordon Brown has so often stated is vital for investment and economic growth.² Furthermore, after 11 years of almost relentless change – particularly for companies with annual profits below £50,000 – the proposed 2009–10 system looks remarkably similar to its 1996–97 predecessor. Can we conclude that the government has sensibly given up using targeted corporation tax cuts to try to encourage entrepreneurship?

¹ This chapter builds on work undertaken as part of C. Crawford and J. Freedman, 'Small business taxation: a special study of the structural issues surrounding the taxation of business profits of owner-managed firms', forthcoming, which forms part of the Mirrlees Review (<http://www.ifs.org.uk/mirrleesreview>).

² See, for example, Budget Speech 2006 (www.hm-treasury.gov.uk/budget/budget_06/bud_bud06_speech.cfm).

11.2 Corporation tax rates and entrepreneurship

In his first Budget as Chancellor in July 1997, Gordon Brown reduced both the main and the small companies' rates of corporation tax (the latter applying to companies with profits below £300,000 per year³), from 33% to 31% and from 24% to 21% respectively. This was to be the first of many changes to corporation tax during Gordon Brown's time as Chancellor – including the introduction and subsequent withdrawal of the now infamous 0% starting rate.⁴ Table 11.1 summarises these changes, presenting corporation tax rates from 1996–97 to 2009–10.

Table 11.1. Changes to corporation tax rates under Labour

Financial year	Main rate of corporation tax	Small companies' rate of corporation tax	Starting rate of corporation tax
1996–97	33%	24%	n/a
<i>First term</i>			
1997–98 ^a	31%	21%	n/a
1998–99	31%	21%	n/a
1999–00	30%	20%	n/a
2000–01	30%	20%	10%
<i>Second term</i>			
2001–02	30%	20%	10%
2002–03	30%	19%	0%
2003–04	30%	19%	0%
2004–05	30%	19%	0% ^b
<i>Third term</i>			
2005–06	30%	19%	0% ^b
2006–07	30%	19%	n/a
2007–08	30%	20%	n/a
2008–09 ^c	28%	21%	n/a
2009–10 ^c	28%	22%	n/a

^a These changes were announced in Gordon Brown's first Budget, in July 1997, and were backdated to April 1997.

^b 19% for profits distributed to shareholders.

^c This assumes that changes announced in Budget 2007 are implemented as announced.

Sources: *Tolley's Corporation Tax*, various years.

Table 11.1 shows that the main rate of corporation tax has fallen only gradually during Labour's time in office; indeed, the 2007 Budget announcement of a reduction to 28% from April 2008 was the first main-rate change in 10 years. The small companies' rate has also seen relatively little change over this period, being only 1 percentage point lower in 2007–08 than it was in 1997–98. However, the introduction (April 2000), reduction (April 2002) and

³ For companies with profits between £300,001 and £1.5 million, a system of relief operates, such that the average tax rate for these companies is gradually brought into line with the main rate of corporation tax (which applies to profits above £1.5 million per year). Kenneth Clarke announced in the November 1996 Budget that the small companies' rate would be reduced to 23% from April 1997, but this was superseded by Gordon Brown's July 1997 Budget announcement of a cut to 21%, which was to be backdated to April 1997.

⁴ The starting rate of corporation tax – originally introduced at a rate of 10% in 2000–01, before being reduced to 0% in 2002–03 – applied to all annual profits below £10,000 per year. For profits between £10,001 and £50,000, a higher marginal effective tax rate applied, to bring the average tax rate into line with that of the small companies' rate for companies with profits of £50,000 per year.

subsequent withdrawal (April 2006) of a ‘starting’ rate of corporation tax led to considerable variation in marginal and average tax rates for companies with low profits over the same period.

Encouraging entrepreneurship?

The starting rate was, according to Budget 1999, introduced to ‘give new incentives for men and women to start their own business’;⁵ it was intended to ‘encourage investment and enterprise’⁶ and to promote job growth. Such statements are common in government rhetoric concerning small businesses, and there may be an element of truth to them. The problem is that individuals seem – to the extent that it is possible for them to do so – much more likely to respond to tax incentives by relabelling or altering the timing of existing transactions than by undertaking new entrepreneurial activity.

In this case, the starting rate provided a tax incentive for self-employed individuals (or employees) to incorporate (i.e. relabel existing activity by establishing a company). Such an incentive arose because, while the profits of self-employed individuals and employees are taxed under the personal tax system, individuals running their business as a company can choose whether their profits are taxed under the personal or corporate tax system, by extracting them as a salary or as dividends (or capital gains⁷) respectively. This flexibility enables owner-managers of companies to take advantage of any difference between the two effective tax rates.

Figure 11.1 illustrates how the percentage of gross income or profits paid in tax and National Insurance (NI) contributions (for a business making £15,000 per year) has changed between 1996–97 and 2009–10 for an employed individual,⁸ a self-employed individual and an individual who chooses to incorporate.⁹ Figure 11.1 makes clear that there has been a tax and NI advantage to self-employment (relative to employment) and to incorporation (relative to self-employment or employment) throughout Labour’s time in office. But while the incentive to be self-employed rather than employed has not changed significantly over time – the percentage of gross income or profits paid in tax and NI has remained roughly constant for both employees (at around 25%) and the self-employed (at around 18½%) – the same cannot be said for incorporated businesses.

The line for incorporated businesses in Figure 11.1 is drawn assuming that the owner-manager takes the personal allowance – just over £5,000 – as salary (on which no income tax or NI contributions are paid) and extracts the remaining profits – just under £10,000 – as

⁵ Budget Speech, 1999 (www.hm-treasury.gov.uk/budget/budget_99/budget_report/bud99_report_speech.cfm).

⁶ Budget Report, 1999 (www.hm-treasury.gov.uk/budget/budget_99/budget_report/bud99_chap03.cfm).

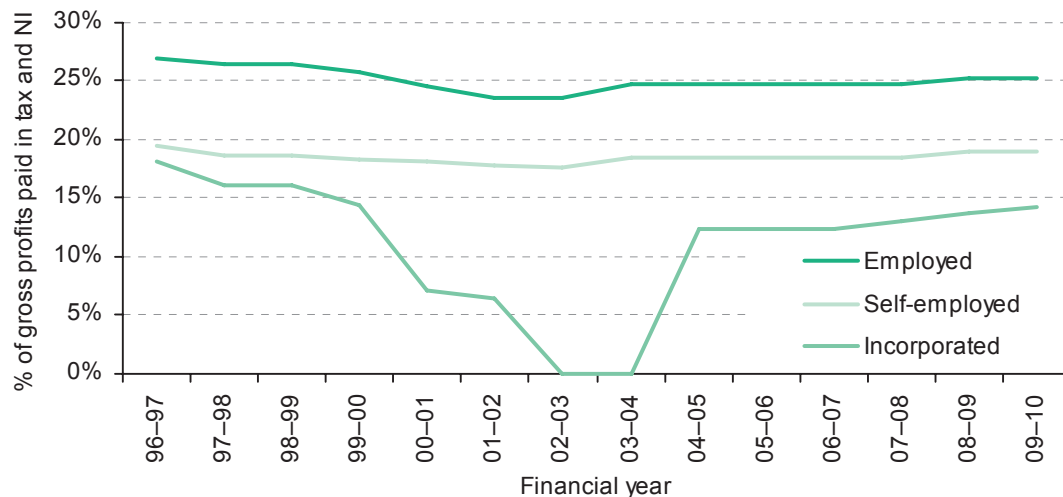
⁷ Extraction of company profits as capital gains is not considered in this chapter. For details on capital gains tax reform, see Chapter 10.

⁸ The employed individual can be thought of as the sole owner-manager of a company who chooses to extract all of his company’s profits as salary (rather than dividends or capital gains).

⁹ Figures for 2008–09 and 2009–10 have been calculated on the basis that the relevant changes announced in Budget 2007 are introduced as described therein. This includes: increase of the upper earnings and profits limits by more than inflation in 2008–09, followed by alignment in 2009–10 with the income tax higher-rate threshold; elimination of the starting rate of income tax and reduction of the basic rate of income tax to 20% in 2008–09; increase of the small companies’ rate of corporation tax to 21% in 2008–09 and 22% in 2009–10.

dividends (on which corporation tax and income tax on dividend income are paid).¹⁰ This minimises tax liability. Following the introduction of the 10% starting rate of corporation tax in 2000–01, the percentage of gross profits paid out in tax and NI contributions fell from 14.4% to 7.2%. And once the starting rate had been cut to 0% in 2002–03, the percentage of gross profits paid out in tax and NI fell to 0%.

Figure 11.1. Percentage of £15,000 gross income or profits paid in tax and NI contributions over time, by legal form



Notes:

All allowances and thresholds used in these calculations are in 2007–08 prices. (The author would like to thank James Browne of IFS for providing these figures.)

The tax calculations for the employee take into account both employers' and employees' National Insurance contributions, i.e. they reflect the combined tax and social security cost of being an employee (rather than being self-employed or incorporated).

It is assumed that the incorporated individual pays themselves a salary equal to the personal allowance (roughly equivalent to an 18-hour week on the national minimum wage), with the remaining profits extracted in the form of dividends (on which corporation tax and income tax on dividend income must be paid).

Sources: Author's calculations using: *Tolley's Income Tax*, various years; *Tolley's National Insurance Contributions*, various years; *Tolley's Corporation Tax*, various years; and HM Treasury, *Budget 2007: Report*, March 2007 (www.hm-treasury.gov.uk/budget/budget_07/report/bud_budget07_repindex.cfm).

The calculations underlying the 2002–03 figures are shown in Table 11.2. This table compares the tax and NI contributions of an employed individual, a self-employed individual and an individual who chooses to incorporate, whose business earns £15,000 and who minimises their tax liability. For each individual, the figures indicating total tax and NI as a percentage of gross receipts are the same as those (for 2002–03) in Figure 11.1. These percentages translate into a tax saving of £3,527.64 for an individual who chooses to incorporate (and of £865.66 for a self-employed individual) compared with an employee with the same gross income.

¹⁰ Dividend income is taxed at a rate of 10% up to the higher-rate threshold and at 32.5% above this level. However, this is offset by a dividend tax credit – to reduce the distortion arising from the double taxation of dividends (once at the corporate level and once at the personal level) – which reduces the effective tax rates to 0% and 25% respectively. Assuming that this owner-manager has no other taxable income (or, if they do, that this additional income does not push them above the higher-rate tax threshold), this essentially means that all dividend income will be taxed at an effective income tax rate of 0%. (Of course, some corporation tax will have already been paid on this income in all years except 2002–03 and 2003–04 – during which the 0% corporation tax rate applied to distributed profits.)

Table 11.2. Tax and NI contributions to be paid on £15,000 gross income or profits in 2002–03, by legal form^a

	Employed	Self-employed	Incorporated
Gross income/profits	£15,000.00	£15,000.00	£15,000.00
Salary	£13,978.57 ^b	£15,000.00	£5,305.00 ^c
<i>Tax and NICs to be paid</i>			
Income tax	£1,640.58	£1,865.30	£0.00
Class 1 employees' NICs	£865.62	n/a	£0.00
Class 1 employers' NICs	£1,021.43	n/a	£0.00
Class 2 NICs	n/a	£120.01	n/a
Class 4 NICs	n/a	£676.67	n/a
Corporation tax	n/a	n/a	£0.00
Total tax and NI to be paid	£3,527.64	£2,661.98	£0.00
Net income/profits	£11,472.36	£12,338.02	£15,000.00
Total tax and NI as a % of gross income/profits	23.5%	17.7%	0.0%
Increase in net income/profits (over employee)	–	£865.66	£3,527.64

^a All allowances and thresholds used in these calculations are in 2007–08 prices. (The author would like to thank James Browne of IFS for providing these figures.)

^b The tax calculations for the employee take into account both employers' and employees' National Insurance contributions (NICs), i.e. they reflect the combined tax and social security cost of being an employee (rather than being self-employed or incorporated). Employers' NICs must be paid on top of an employee's salary, hence an individual whose business makes £15,000 profits (but who chooses to extract it all in the form of salary) must pay themselves a salary below £15,000 (leaving sufficient profits to pay employers' NICs on top of this).

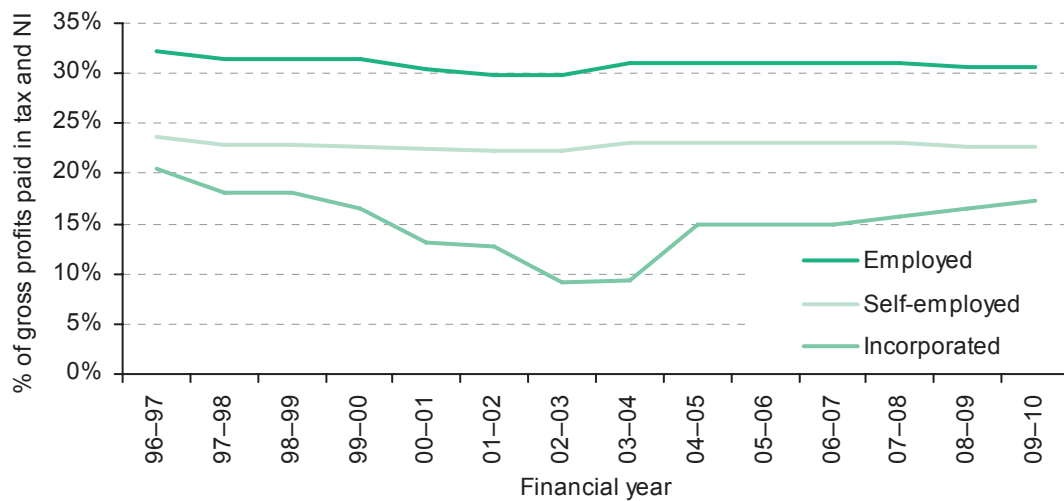
^c It is assumed that the incorporated individual pays themselves a salary equal to the personal allowance (roughly equivalent to an 18-hour week on the national minimum wage), with the remaining profits extracted in the form of dividends (on which corporation tax and income tax on dividend income must be paid).

Sources: Author's calculations using: *Tolley's Income Tax*, various years; *Tolley's National Insurance Contributions*, various years; *Tolley's Corporation Tax*, various years; and HM Treasury, *Budget 2007: Report*, March 2007 (www.hm-treasury.gov.uk/budget/budget_07/report/bud_budget07_repindex.cfm).

Given that the main driving force behind the tax differentials illustrated above has been changes to the starting rate of corporation tax – which only applied to profits up to £10,000 per year – it is perhaps not surprising that the tax incentive to choose incorporation over self-employment or employment decreases as profits rise. Figure 11.2 shows the percentage of gross income or profits paid out in tax and NI by an employed individual, a self-employed individual and the owner-manager of a company whose business makes £25,000 profits per year. This graph presents roughly the same pattern as that observed in Figure 11.1, with the exception that the benefit derived from incorporation is slightly smaller than it was in the case of a business making £15,000 annual profits. The exception arises because a marginal corporation tax rate of 23.75% is charged on annual profits between £10,001 and £50,000, increasing the tax liability considerably for a company with profits within this range.¹¹

¹¹ Above the higher-rate threshold, the effective tax rate on dividend income would also increase (from 0% to 25%), thus reducing the tax incentive to incorporate still further.

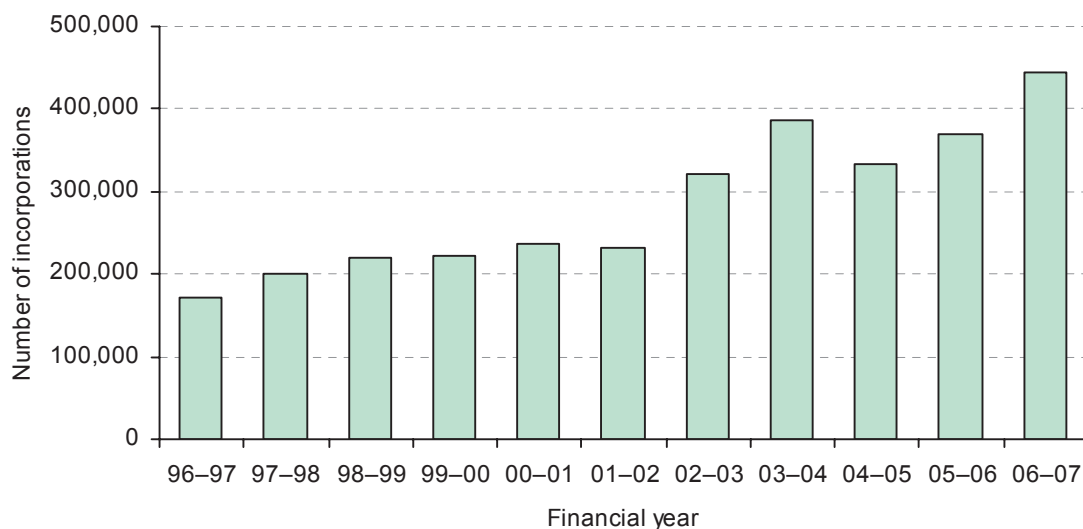
Figure 11.2. Percentage of £25,000 gross income or profits paid in tax and NI contributions over time, by legal form



Notes: See Notes to Figure 11.1.

Given the magnitude of the tax savings highlighted above, it is not surprising that many new companies were created in the years following the introduction of the starting rate. Figure 11.3 shows that in 2002–03 (when the starting rate was reduced to 0%), just over 320,000 new companies were created – up almost 90,000 from just over 230,000 in 2001–02. Following the removal of the 0% rate for distributed profits (in 2004–05), the number of new companies created per financial year fell by around 54,000 (from 387,000 in 2003–04 to 333,000 in 2004–05).¹²

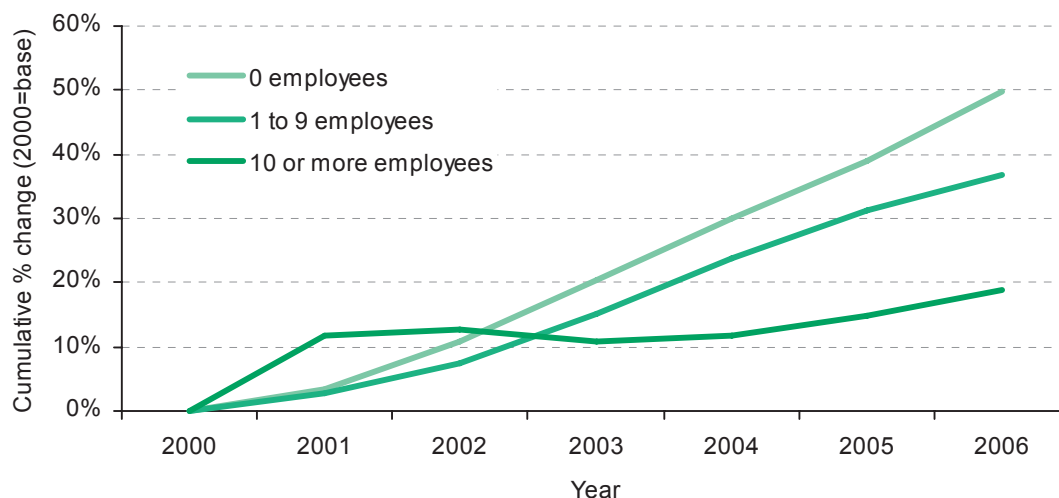
Figure 11.3. Gross incorporations in Great Britain



Source: Author's calculations using data provided by Companies House.

¹² The large number of new companies created in 2006–07 is likely to reflect the announcement (in December 2006) of the introduction (in April 2007) of legislation to tackle Managed Service Companies. This led many businesses to set up their own Personal Service Companies to try to circumvent this new legislation. For more details, see HM Treasury and HM Revenue & Customs, *Tackling Managed Service Companies*, December 2006 (http://www.hm-treasury.gov.uk/media/B/2/pbr06_managedservicecompanies_453.pdf).

Figure 11.4. Cumulative percentage change in the number of companies in the UK from 2000 to 2006, by number of employees



Sources: Authors' calculations using DBERR SME Statistics, 2000 to 2006. This graph is also used in C. Crawford and J. Freedman, 'Small business taxation: a special study of the structural issues surrounding the taxation of business profits of owner-managed firms', forthcoming, which forms part of the Mirrlees Review (<http://www.ifs.org.uk/mirrleesreview>).

Furthermore, many of these companies had no employees (other than the owner-manager), supporting the notion that at least some may have been created purely for tax purposes. Figure 11.4 shows the cumulative percentage change in the number of companies with 0, 1 to 9, or 10 or more employees in the UK between 2000 and 2006. This graph shows that the rate of growth has been greatest for companies with no employees (closely followed by companies with between one and nine employees) – increasing by approximately 50% (from just over 300,000 in 2000 to just over 450,000 in 2006).¹³

Whilst these figures are not proof of a causal impact of the changes to the tax system on incorporation rates, they are consistent with a significant response to the tax incentives created by the government.

2008–09 and beyond

The tax and NI incentives to be incorporated rather than unincorporated (or employed) were reduced still further by announcements made in Budget 2007: in particular, the increase in the small companies' rate of corporation tax by 3 percentage points from its 2006–07 level of 19% – to 20% in April 2007, 21% in April 2008 and 22% in April 2009 – and the elimination of the starting rate of income tax and reduction of the basic rate of income tax to 20% in April 2008. These changes will have the effect of increasing the effective tax rate paid on dividends (or capital gains) and, for many working-age individuals, decreasing the effective tax rate paid on salaries,¹⁴ thereby reducing the incentive to relabel income through incorporation.

¹³ Accessed via <http://stats.berr.gov.uk/ed/sme/>. Note that it is not possible to make comparisons with earlier periods because the definition of companies with no employees changed in 2000.

¹⁴ Individuals earning between the personal allowance (just over £5,000) and approximately £18,500 will face a higher effective tax rate on labour income as a result of these changes (see Chapter 14 for more details).

Figure 11.1 shows that, compared with the impact of the starting rate on the incentive to incorporate, the combined effect of these changes is very small. Nevertheless, they are certainly a step in the right direction. But there is a danger that the government's doomed experiment with the 0% starting rate has highlighted the tax advantages available through incorporation to such an extent that the number of individuals switching legal form will remain higher than it was in 1996–97, despite the fact that the tax incentive is no longer significantly larger than it was at that time.

With this in mind, it may not be enough simply to return to the 1996–97 position to stem the additional flow of tax-motivated incorporation that occurred in the intervening period: it may be necessary for the government to go further towards alignment of the effective rates across the corporate and personal sectors. This would be considerably aided by further increases in – and perhaps the eventual removal of – the small companies' rate of corporation tax, which may be no bad thing (albeit unpopular with small-business lobby groups) as its economic rationale is unclear.

To eliminate effective tax rate differentials entirely, more radical reform would be needed. This might include the integration of income tax and NI (or at least an increase in the rate of NI contributions paid by the self-employed), which would reduce or eliminate tax differentials between the self-employed and employees. Such a change would need to be accompanied by an increase in the tax liability of incorporated individuals – perhaps through an increase in dividend tax rates – to ensure that the tax differentials between incorporated and unincorporated businesses did not increase as a result. Any net revenue raised could, of course, pay for tax cuts elsewhere.

11.3 Conclusion

The last decade has seen many changes to corporation tax rates in the UK, including the introduction and subsequent withdrawal of a starting rate of corporation tax. The planned increases in the small companies' rate, together with the changes to income tax, announced in Budget 2007 mean that in 2009–10, the combined tax and NI incentive to incorporate (rather than to be employed or self-employed) will have almost returned to its 1996–97 level.

Whilst these changes extend the period of instability under which small companies have operated in recent years, they are necessary to undo the self-inflicted damage caused by the 0% starting rate. However, the fact that the number of new companies being created did not fall back to its 1996–97 level following the removal of the starting rate suggests that simply reverting to the status quo may no longer be sufficient. Thus, whilst the government may have concluded that creating tax incentives to choose one legal form over another may not be the best way to encourage entrepreneurship, it may now need to introduce further reforms if it wishes to return the rate of tax-motivated incorporation back to its 1996–97 level.

12. Taxation of companies' foreign profits

Malcolm Gammie (IFS Tax Law Review Committee), Rachel Griffith (IFS) and Helen Miller (IFS)

Summary

- In June 2007, the Treasury and HM Revenue & Customs proposed moving away from taxing the dividends that UK companies receive from their foreign subsidiaries (having given a credit for any foreign taxes paid on those dividends) to a system in which foreign dividends are exempt from UK taxation altogether.
- Moving to an exemption system should increase the after-tax profitability of UK multinationals by allowing them to compete for control of firms in low-tax countries on a level playing field with multinationals in other exemption countries. The tax system would be less likely to distort investment decisions unhelpfully.
- An exemption system is more likely to be compatible with EU law than the current 'credit' system. In principle, an exemption system should also be simpler and cheaper for companies to comply with, but the government's reforms involve unnecessary complexity that would probably squander these potential gains. The proposed exemption system could be simpler if: exemption for foreign dividends included as few exceptions as possible; dividends arising from small and large shareholdings were dealt with on the same basis; and if no distinction were drawn between small, medium and large company recipients.
- The document also proposes changes to the definition of controlled foreign company income, which potentially have wide-ranging impact. The current *entity*-based regime would be replaced by an *income*-based regime. This would broaden the category of foreign income that the UK government attempts to tax (largely passive income) and increase the scope for capturing such income.

12.1 Introduction

In June 2007, the Treasury and HM Revenue & Customs (HMRC) issued a discussion document setting out proposals aimed at creating a more straightforward regime for taxing the foreign profits of UK companies.¹ The main proposal was for the UK to move from its current system of taxing foreign dividends after giving a credit for taxes paid to foreign governments to a system in which foreign dividends are exempt from UK taxation. This would bring the UK in line with most other European countries. In addition, the document proposed overhauling the way in which the government tries to discourage companies from shifting profits to subsidiaries in countries with lower corporate tax rates.

¹ HM Treasury and HM Revenue & Customs, *Taxation of the Foreign Profits of Companies: A Discussion Document*, June 2007 (http://www.hm-treasury.gov.uk/media/E/B/consult_foreign_profits210607.pdf).

Section 12.2 highlights how the current system operates, while Section 12.3 sets out the main economic principles that guide how we think about the taxation of foreign income. Section 12.4 outlines the specific proposals made in the discussion document and Section 12.5 comments on the implications of the proposed changes, including the likely revenue impact. Section 12.6 concludes.

12.2 The current UK system

The credit system

UK-resident companies are taxed on profits that are earned overseas. In order to avoid double taxation, HMRC generally gives UK companies credit against their UK corporation tax bill for taxes that have been paid on the income earned overseas. Any credit is limited to the amount of corporation tax due in the UK.

To illustrate how the UK credit system operates, consider a UK-resident company that has a subsidiary based in Ireland (where the corporation tax rate for traded income is 12.5%). The subsidiary earns profits of £100 of which £12.50 is paid to the Irish government in corporation tax and the remaining £87.50 is paid as a dividend to the UK parent company. The UK parent then faces corporation tax of 30% on the pre-tax value of the dividend (i.e. £100) while receiving a credit of £12.50 for the tax that has already been paid. The tax liability, £30, net of the tax credit, £12.50, leaves the firm with a UK tax bill of £17.50 and a net dividend income of £70. This is equivalent to the net dividend income that would have resulted from earning the £100 profits in the UK and paying 30% corporation tax. Since the tax credit is limited to the UK corporation tax rate, dividends remitted from countries with a higher tax rate face the tax burden of that country with no additional tax paid in the UK.

The European Court of Justice

The current system means that dividends paid out of foreign profits are treated differently from dividends paid out of domestic profits. Dividends received from an overseas subsidiary are treated as taxable income with a credit issued for corporation tax paid to the foreign government. Dividends/profits received from a domestic subsidiary are exempt income of the UK parent and therefore require no credit. In most cases, it would make no difference to the final tax liability were profits from domestic subsidiaries taxed under a credit system. However, there are circumstances under which it will make a difference (for example, if the subsidiary is subject to tax losses or faces corporation tax at the lower small companies' rate). This disparity led a number of companies with overseas subsidiaries to challenge the UK regime for taxing foreign dividends as fundamentally incompatible with Community Law in the European Court of Justice (ECJ).

The ECJ decided that taxing foreign dividends with credit while exempting domestic dividends was not necessarily incompatible with the requirements of Community Law, provided the UK was not effectively imposing a higher burden of taxation on investment overseas than it does on investment domestically. The ECJ concluded that the treatment of foreign direct investment was consistent with Community Law but that the treatment of portfolio investment was not (because in the latter case there is no credit for any underlying

tax paid).² The proposals set out in the discussion paper are in part designed to make the whole UK regime for the taxation of foreign profits consistent with Community Law.

The 'controlled foreign company' (CFC) regime

The UK normally taxes the profits of foreign subsidiaries only when they are remitted to the UK in the form of dividends. This means that UK multinational companies have the scope to defer UK taxation indefinitely by keeping the profits of their foreign subsidiaries offshore. To counter this, the UK operates a controlled foreign company (CFC) regime that limits the extent to which companies can defer UK tax by retaining profits offshore in a jurisdiction with a lower corporation tax rate.

Broadly speaking, a company is treated as a CFC if it is resident outside the UK, is subject to a tax regime with a significantly lower level of tax than the UK (less than 75% of the tax rate applied in the UK) and is controlled by UK residents. In such cases, the UK-resident company is taxed on the proportion of the profits of the CFC that can be attributed to the UK by virtue of the size of its shareholding (provided that such profits account for at least 25% of the total profits of the CFC).

The UK CFC regime has also been subject to challenge before the ECJ. In the *Cadbury Schweppes* case, it was argued that the UK's CFC regime treated investments in subsidiaries in other EU countries less favourably than investments in domestic subsidiaries (because foreign profits were subject to immediate taxation in the hand of the parent but domestic profits were not). The ECJ decided that the CFC regime did infringe Community Law in this respect, as it impeded foreign investment. But the ECJ recognised that the UK might be able to justify its measures provided they were shown to be adequately targeted against attempts to avoid tax.³

12.3 Principles guiding the taxation of foreign profits

Before discussing the Treasury's specific proposals for an exemption system, we highlight three principles that should help guide us in deciding how foreign profits should be taxed.⁴

The first principle is **neutrality**: a well-designed tax system should not distort decisions over how much investment occurs, where investments are made and who undertakes the investment (unless there is a specific intention to influence those decisions).

Three important types of neutrality are emphasised by economists:

² Case C-446/04 *Test Claimants in the FII Group Litigation*. Foreign direct investment is investment where shareholding amounts to at least 10%. Portfolio investment is where it is less than 10%.

³ Case C-196/04 *Cadbury Schweppes*.

⁴ For further details and discussion, see R. Griffith, J. Hines and P. B. Sørensen, 'International capital taxation', paper presented at IFS conference 'Reforming the Tax System for the 21st Century: The Mirrlees Review', New Hall, Cambridge, April 2007 (http://www.ifs.org.uk/publications.php?publication_id=3942). Also see M. Gammie, 'Taxation of foreign profits: response to HMT/HMRC's June 2007 Discussion Paper', mimeo, forthcoming.

- *capital import neutrality* (CIN) – this is achieved when investments into the domestic jurisdiction from abroad are treated the same for tax purposes regardless of the country of origin;
- *capital export neutrality* (CEN) – this is achieved when investments outside the domestic jurisdiction are treated the same for tax purposes regardless of the destination;
- *capital ownership neutrality* (CON) – this is achieved when inward or outward investments are treated the same for tax purposes regardless of who owns them.

It can be difficult for a single country to achieve neutrality across all these dimensions since the extent to which they are realised is in part dependent on the systems operated by other jurisdictions.

Alongside neutrality, simplicity and stability are also guiding principles of a good tax system. **Simplicity** helps ensure that compliance with the rules of the tax system does not impose unnecessary costs. **Stability** reduces uncertainty about future tax regimes, which can make it difficult for firms to plan and provides a disincentive for investment.

12.4 The June 2007 proposals

Foreign dividend exemption

The Treasury and HMRC propose a dividend exemption system, whereby profits repatriated to a UK-resident company from abroad are not liable for UK corporation tax and therefore require no credit for tax paid overseas. The tax burden on foreign income would be determined by the corporate tax rate in the foreign jurisdiction where the overseas investment took place. The stated aims are to simplify the tax treatment of foreign profits, make the rules more certain and straightforward, and increase the competitiveness of the UK's tax system.

Following from the above example, the dividend of £87.50 remitted from the Irish subsidiary to the UK-based parent company would not be liable to UK corporation tax under an exemption system (unless the income were classified as 'passive' or 'mobile' under the new 'controlled company' (CC) regime, see below). The burden would remain that imposed by the Irish government, namely 12.5%.

Currently, profits earned in foreign branches are treated differently from profits earned in foreign subsidiaries. The Treasury and HMRC do not make any proposals for changing the taxation of profits from foreign branch operations; these would continue to be taxed in the UK with credit given for foreign taxes already paid.

The 'controlled company' (CC) regime

The dividend exemption system introduces an incentive for investors to move financial assets abroad to countries with a lower corporation tax rate, then to repatriate the returns as tax-free dividends and so benefit from the lower foreign tax rate. To protect the domestic tax base, the Treasury and HMRC propose replacing the existing CFC regime with a new 'controlled company' (CC) regime.

One of the big changes is that the current CFC regime applies to *entities* whereas the new CC regime applies to *income*. In order to understand the implications of this change, it is first useful to define passive and active income. ‘Active’ income is income from commercial activities, while ‘passive’ income is mainly investment income such as interest, dividends (other than dividends flowing within the controlled group), royalties and rents.

Under the CFC regime, both active and passive income are liable to UK taxation if a subsidiary is defined as a CFC. There are a series of exemptions from being defined as a CFC, including an exemption for active trading subsidiaries. Provided it does not compromise its exempt status, a company is able to mix passive with active income in a trading subsidiary (or trading subgroup) in order that the former goes untaxed in the UK.

In contrast, under the proposed CC regime, all passive income would be liable to UK corporation tax. Most importantly, all of the passive income in ‘active’ subsidiaries would fall under the CC regime whereas this income is mostly not captured under the current CFC regime.

Alongside this, there is a change to what is considered as passive and active income (although the terms active and passive income are not used in the existing system, the concepts are there). The biggest change is to treat mobile active income as passive income. ‘Mobile’ income is income that can be easily transferred to different parts of the company and can therefore be located outside the UK to reduce tax liability.

The controversial element of this proposal is the intention to tax ‘active income to the extent that it is, in substance, passive income’. In particular, in the discussions that followed the publication of the proposals, it has become apparent that the Treasury and HMRC envisage this including income that is attributable to intangible assets (such as brands), even when they are employed in an active business. Under the new CC system, the passive income and mobile active income of a controlled subsidiary of a UK parent company would be apportioned to the UK parent and subject to UK tax on a current basis, with a credit for any foreign (and, presumably, UK) taxes paid.⁵

Another big difference between the regimes is that the CFC rules apply to subsidiaries located in countries that have a tax rate that is less than 75% of the existing UK tax rate (so for the current UK rate of 30%, this is less than 22.5%), while the new CC rules will apply to subsidiaries located in any jurisdiction.

An important feature of the proposed CC regime is that it applies to domestic as well as foreign subsidiaries of the UK parent, such that the passive income from UK subsidiaries would be treated the same as that from foreign subsidiaries. The implications for current UK corporation tax rules (e.g. for losses) of having the CC regime apply to domestic subsidiaries, the aim of which presumably resulted from concerns that the proposed CC regime would be incompatible with EU law unless it were extended to UK subsidiaries, were not explored in the discussion document.

⁵ The apportioned income must represent at least 10% of the profits of the CC (a reduction from the 25% required under the CFC regime) before tax liability is triggered. Alongside this, there are a series of exemptions for passive income that is the result of genuine active finance, banking and insurance business.

Treatment of small businesses

Small businesses – those with fewer than 50 employees and a turnover not exceeding €10 million – would not be eligible for the new exemption system and would instead continue to be subject to a simplified version of the current credit system. Only the passive income part of the CC regime would apply to small companies, with the possibility of complete exemption from the CC regime if consolidated profits fall below a certain limit. As under the current CFC regime, a gateway test would determine which small businesses attract tax.

Interest relief allowance

Having volunteered to give up taxing most foreign dividends, the government has proposed recouping some revenue by tightening the rules that allow companies to deduct from taxable profits interest payments on borrowing. The total interest deduction claimed by the UK members of a multinational group would be restricted by reference to the group's total consolidated external finance costs. If the UK members of the multinational have higher finance costs than the overall external finance costs of the entire group, HMRC would see this as an indication that interest expenses have been allocated to the UK subgroup artificially with the purpose of reducing the entire group's worldwide tax bill.

Summary of proposals

In summary, the main features of the discussion document proposals are as follows:

- The foreign dividends received by companies resident in the UK from overseas subsidiaries would be exempt from UK corporation tax if the UK firm had a 'participation' holding (a shareholding of at least 10% in the company issuing the dividends) and was not small (defined as companies with fewer than 50 employees and a turnover not exceeding €10 million).
- The current entity-based controlled foreign company (CFC) regime would be replaced with an income-based controlled company (CC) regime, where the latter includes UK as well as foreign subsidiaries.
- Under the CC regime, the passive income of a controlled subsidiary would be apportioned to the UK parent company and taxed on a current basis with credit given for any foreign taxes paid. This applies to both UK and foreign subsidiaries and includes interest (other than certain intra-group interest), dividends (other than those flowing within the controlled group), royalties, rents and some realised capital gains.
- Certain mobile active income of a controlled subsidiary (both UK and foreign) of a UK parent company would be subject to the same tax regime as passive income.
- UK and foreign portfolio dividends (where the UK firm has less than 10% shareholdings) would be taxed or exempted from tax on the same basis.
- Small businesses would be subject to a simplified version of the current credit system.

- There would be some changes to the interest relief rules, restricting the amount of interest UK members of a multinational group are able to claim with reference to the group's total consolidated external finance costs.

12.5 Implications of the proposed exemption system

Would the proposed system move us closer to neutrality?

The extent to which the different types of neutrality (CIN, CEN and CON) are realised depends not only on the UK tax system but also on the systems operated by other jurisdictions. A single country cannot achieve all of these types of neutrality unilaterally.

Faced with a choice between CIN and CEN, it has usually been argued that, from a global perspective, CEN should take precedence over CIN. The reasoning is that when investors face the same effective tax rate on foreign and domestic investment, the cross-country equalisation of after-tax rates of return enforced by capital mobility ensures that pre-tax rates of return are also brought into line. In this way, a regime of CEN would tend to equalise the marginal productivities of capital across countries, as required for maximisation of world income.⁶

Box 12.1. Does a credit system achieve CEN?

As a credit system, the current UK regime is based on the principle of capital export neutrality. CEN is designed to ensure, from the residence state's perspective, that its tax system does not distort the decision of where to invest, by ensuring that investment faces the same tax rate wherever it is made. However, in practice, there are two important reasons why a credit system fails to achieve CEN, reflecting the practical difficulty of taxing foreign profits other than when they are remitted to the residence state in the form of dividends paid by foreign subsidiaries.

First, the UK limits the foreign tax credit to the amount of domestic tax payable on the foreign-source income in order to prevent taxes levied abroad from eroding the revenue from tax on domestic-source income. In the absence of limits on foreign tax credits, the governments of source countries could appropriate the revenues of residence countries through high source-country tax rates without deterring inbound investment. Because of the limitation on credits, investors are subject to the higher of the foreign and the domestic tax rate, whereas CEN requires that they should always face the same tax rate whether they invest at home or abroad.

Second, domestic taxes are deferred on the active business income of foreign subsidiaries until this income is repatriated in the form of a dividend to the domestic parent company. Profits retained abroad are thus only subject to the foreign corporation tax, so for retained earnings existing credit systems tend to work like an exemption system.

⁶ The 1999 Inland Revenue discussion document, *Double Taxation Relief for Companies* (<http://www.hmrc.gov.uk/consult/dtrc.pdf>), stated that, historically, the UK has aimed at achieving CEN although the practical outcome does not conform to the principle.

A credit system of international double tax relief brings us closer to CEN than an exemption system: an investor resident in a single country faces more similar tax rates on their investments in different countries under a credit system than under an exemption system. However, in practice, and under the current UK credit system, CEN does not prevail, for a number of reasons, as described in Box 12.1.

A particular asset or investment may be much more productive in the hands of one multinational than it would be in the hands of another, so it is important that the tax system does not distort the pattern of ownership. CON is achieved if all countries practise worldwide income tax using the same tax base and unlimited tax credits or, alternatively, if all residence countries exempt foreign income from domestic tax and apply the same rules for deducting financing costs. While neither of these options is close to being complete, moving to an exemption system would move the UK closer to CON, especially since many other countries also operate exemption systems. Under a pure exemption system, investments in any single location would be liable for the same tax regardless of their country of origin. As a result, the

Box 12.2. Taxation of foreign-source income and productivity

If global ownership neutrality is the policy goal, the exemption system is just as attractive as a system of worldwide taxation with foreign tax credits. Moreover, if optimisation of the ownership pattern is the overriding goal, the exemption system is actually the preferred policy from the national viewpoint of an individual country, as argued by Desai and Hines (2003).^a

If a country has a credit system like that which operates in the UK, its multinationals will tend to earn a lower after-tax return on operations in a foreign low-tax country than will multinationals headquartered in countries that exempt foreign income. Assets invested in low-tax countries will therefore tend to be taken over by companies based in exemption countries, even if those assets could be used more productively by companies based in countries with a worldwide system.

By giving up the current credit system and switching to exemption, the UK could increase the prices that its multinationals are willing to pay for assets located in foreign low-tax countries, enabling domestic companies to take over assets that they can use more efficiently than companies based in other countries. (This assumes that the home countries of foreign multinationals do not offer special tax advantages that reduce the costs of acquisitions. In practice, this assumption may not always hold. For example, it seems that one of the reasons why Spanish firms have outbid other companies in recent years is their ability to write off goodwill for tax purposes.)

Thus a policy of exemption would maximise the after-tax profitability of domestic multinationals. A country seeking to maximise the sum of its tax revenue and the after-tax profits of its companies would therefore opt for the exemption system if such a system does not reduce domestic tax revenue raised from domestic economic activity. This condition would be met if any increase in outbound investment triggered by a switch to exemption were offset by an equally productive amount of new inbound investment from foreign firms.

^a M. Desai and J. Hines, 'Evaluating international tax reform', *National Tax Journal*, 2003, 56: 487–502.

assets invested in each country would be held by those companies that could earn the highest pre-tax (and hence highest after-tax) return on them. More details are contained in Box 12.2.

What impact might the reform have on investment?

The impact of the proposed reform would depend in part on how investors respond and how other countries tax foreign earnings (and whether they change the way they do so in response to the UK reforms). The former would be affected by the change in investors' incentives, how these incentives can be manipulated by investors (or tax lawyers and accountants) and how responsive investors are to changes in the after-tax returns from different investments.

How big an impact would the proposed exemption of foreign dividends have on after-tax returns to investment? One reason why the exemption of foreign dividends might not have a very big impact is that a credit system where the tax liability is deferred until profits are repatriated (as we currently have in the UK) is roughly equivalent to an exemption system. This is the case since the payment of UK corporation tax can be deferred indefinitely by maintaining the dividends offshore. To the extent that such dividends are not apportioned to the UK parent firm under the CFC regime, they remain tax-exempt. Research using data for US multinationals suggests that for this reason the behavioural effects of a switch to exemption may be very limited.⁷

In as much as the current system is effective as a credit system, UK-based parent companies are at a disadvantage compared with firms located in countries that exempt foreign-source income (most European countries). This disadvantage would be removed under the new system, increasing the after-tax return to some investments. However, the disadvantage is only relevant for investments into countries with lower tax rates than the UK, since (even with deferral) the net dividend income is the same in both the credit and exemption systems when the subsidiary is based in a jurisdiction with the same or a higher tax rate.

The ownership neutrality implied by an exemption system could help UK multinationals make more productive use of their assets. The current UK taxation of foreign dividends discourages UK firms from investing in low-tax countries more than do the tax systems that apply to companies in exemption countries with which they compete. With a switch to exemption, UK multinationals may relocate some of their overseas activities from foreign high-tax to foreign low-tax countries to take advantage of increased after-tax profitability.

A move by UK firms to relocate some of their domestic activities to foreign low-tax countries could also result in reduced rewards from UK fixed factors of production (e.g. lower wages for workers) and reduced UK tax revenues (if firms from other countries do not sufficiently increase their investment in the UK).

Would the reforms simplify the system and cut compliance costs?

While in principle the exemption system is simpler, it is not clear that simplicity is borne out in these particular proposals. In particular, exemption has been qualified in a number of ways,

⁷ H. Grubert and J. Mutti, *Taxing International Business Income: Dividend Exemption versus the Current System*, AEI Studies on Tax Reform, American Enterprise Institute, Washington, DC, 2001.

with different treatment for different forms of dividends, different types of investment and different-sized companies. Complexity is also increased by the number of exemptions employed in the CC regime to define passive and mobile income. It would be surprising if a system that encompassed such variety proved to be significantly simpler than the current credit system.

A simpler system would be one where:

- corporate exemption for foreign dividends included as few exceptions as possible;
- portfolio (shareholding of less than 10%) and participation (at least 10%) dividends were dealt with on the same basis; and
- no distinction were drawn between small, medium and large company recipients.

To the extent that such a system would give rise to a potential increase in avoidance, this could be tackled in other ways – for example, through the CC regime and transfer pricing rules.

Even if the new system were simpler, there is a concern that the new CC regime could introduce significant administrative costs. The Treasury notes in the discussion document that many companies already have an appropriate reporting process in place to provide the necessary information to comply with the CC requirements. Furthermore, any additional costs that would arise should be set against a reduction in overall costs resulting from introducing exemption and removing the Treasury consent rules for certain overseas transactions. Much will depend on the final form and scope of the CC regime.

Would the new system make it easier to comply with EU law?

The new system may have the benefit of aiding compliance with EU law. Although the European Court has decided that both credit and exemption systems are capable of being compatible with EU law, we believe that it is easier to achieve compatibility with an exemption system than it is with a credit system. In principle, an exemption system ensures that the return to investment is taxed in the source state only and it therefore respects the choices that the source state has made for the taxation of investments within its market without interference (and double taxation) by investors' residence states.

Why treat small businesses differently?

The discussion document says that 'the Government does not consider it appropriate to take a uniform approach to foreign profits across all businesses'. As outlined above, small businesses would continue to be subject to a simplified version of the current credit system. Inevitably, this would complicate the system, and it is not apparent why the same profits in different hands should be taxed differently. If there is a case for producing a more straightforward and modern regime for large and medium business, is there not an equally strong case for doing so for small business? While it is true that many small businesses have no foreign operations or income, to the extent that they do (or aspire to have such operations and income) it is not clear why they should be subject to a credit system that 'is inevitably less straightforward ... than dividend exemption'. The prospect of being taxed here and

abroad may well inhibit small businesses from expanding abroad, introducing a distortion to investment and a disincentive for small firms to develop foreign operations.

The fact that small business involves less complex structures does not suggest that the exemption system and a CC regime (with appropriate modifications) should be more complex, less certain or involve greater administrative costs than it would for medium and large business or in comparison with a credit system. If it is the government's objective that the tax system should not distort commercial decisions, it must have the same objective for smaller businesses, especially those that may consider expanding abroad.

What are the likely revenue implications?

This is a difficult question to answer, in part because there are no publicly available official estimates of the UK corporation tax collected on foreign-source income (net of tax credits) and partly because a switch to exemption would affect revenue through changes in company behaviour that are hard to predict.

The proposed system may provide increased scope for income shifting through transfer pricing and through manipulation of royalty payments (those resulting from licensed use of an asset, generally an intellectual property right). Due to the asymmetric taxation of dividends and royalties, UK parent companies may substitute between the two, and this can lead to potential revenue gains or losses to the UK. Global tax revenue would go down but the net effect on UK tax revenue is in principle ambiguous. It would broadly depend on whether the intangible assets owned by UK multinationals are mainly used in foreign high-tax countries or in foreign low-tax countries. If a move to a dividend exemption system induces UK multinationals to move some of their assets to foreign low-tax jurisdictions, then part of the global revenue loss would be borne by the UK government. The revenue effect would also depend significantly on the scope of the CC regime.

Evidence seems to suggest that the exchequer would not lose a large amount of revenue. Grubert and Mutti (1995) estimated that the average US corporate tax rate on foreign-source income is only 2.7% (like the UK, the US operates a credit system).⁸ Since the UK corporate tax rate is lower than that in the US, it seems likely that the UK exchequer also collects very little net tax on the foreign income of UK multinationals. However, this may not represent the limit of the revenue cost of moving to an exemption system. The concern is that taxable income would move offshore.

When looking at countries that operate exemption systems, we do not see any evidence that they collect systematically less revenue from corporate taxes. Table 12.1 shows corporate tax revenue as a share of national income and statutory tax rates for countries that operate some sort of credit system, and for countries that operate exemption systems, either as a general policy or as a policy towards tax treaty partners. This suggests that revenue loss is not a necessary consequence of adopting an exemption system.

⁸ H. Grubert and J. Mutti, 'Taxing multinationals in a world with portfolio flows and R&D: is capital export neutrality obsolete?', *International Tax and Public Finance*, 1995, 2(3).

Table 12.1. Corporation tax revenue and statutory tax rate, 2004

Tax treatment of foreign-source dividends	Corporate tax revenue as a % of national income	Statutory tax rate (%)	Deductibility of costs related to tax-exempt foreign dividends	Amount of tax-exempt dividends (%)
Credit system				0
Ireland	3.6	12.5	N/a	0
UK	2.9	30	N/a	0
Greece	3.3	35	N/a	0
Canada	3.5	36	N/a	0
US	2.2	39	N/a	0
Japan	3.6	40	N/a	0
Exemption system				
Switzerland	2.5	25	Yes	100
Norway	10.1	28	No	100
Sweden	3.1	28	Yes	100
Finland	3.6	29	Yes	100
Denmark	3.2	30	Yes	100
Luxembourg	6.1	30	Yes	100
Belgium	3.8	34	Yes	95
Austria	2.3	34	No	100
Netherlands	3.2	35	No	100
Spain	3.5	35	Yes	100
France	2.7	35	Yes	95
Italy	2.9	37	Yes	95
Germany	1.6	38	No interest deduction ^a	95

^a Full deductibility in the case of the foreign subsidiary not distributing profits.

Source: K-Y. Yoo, 'Corporate taxation of foreign direct investment income 1991–2001', OECD Economics Department Working Paper 365, 2003.

The revenue effects of a switch to exemption depend critically on a number of specific design features of any new system, including the rules for allocation of overhead and interest expenses between domestic income and foreign exempt income. The difficulty occurs in determining the extent to which such expenses are the result of spending that generates foreign income. It is not clear that relief should be given for these expenses since the resulting income would no longer be taxed in the UK. The interest relief rules outlined above set out to restrict the extent to which interest payments on debt that is used to finance overseas investments can be deducted against profits in computing UK corporation tax liability and in doing so seem to be a legitimate attempt to protect the UK tax base.

An exemption system is beneficial provided it does not reduce domestic tax revenue raised from domestic economic activity. A move to exemption can be expected to trigger an increase in outbound investment, since UK companies can then benefit from lower corporate tax rates abroad. However, it might also be the case that we see an increase in domestic investment – for example, if the previous system gave firms an incentive to relocate in other countries. Moving to an exemption system would be beneficial if the latter outweighed the former. Desai and Hines argue that for the US, increased outbound foreign direct investment (FDI)

will indeed typically be offset to a very large extent by additional inbound investment.⁹ They point out that the bulk of global FDI takes the form of acquisitions of existing firms rather than new greenfield investment. Thus most cross-border FDI seems to involve a reshuffling of global ownership patterns rather than involving a net transfer of saving from one country to another.

The discussion document states that the aim is to make the package of policy reforms broadly revenue-neutral. While we do not take issue with the desire to devise a revenue-neutral package of measures, it appears to us that this objective has obscured the policy goals that underlie the proposals. Thus, in its outline of the CC system, the Treasury leaves the impression that its aim in adopting an exemption system is not to reform the taxation of foreign income as such, but to replicate the current imperfect credit system in a different form. In the Treasury's mind, aiming for 'revenue neutrality' seems to be presented as aiming to achieve the same result with a new regime as with the current one, even though the new regime is based on different economic principles. We think that this is neither sensible nor desirable.

12.6 Conclusions

A move from the current foreign tax credit system to a dividend exemption system should increase the after-tax profitability of UK multinationals by removing the disadvantage that they face relative to multinationals in other countries with exemption systems in the market for corporate control of firms located in foreign low-tax countries. A move to exemption would also eliminate the tax distortion to repatriation decisions generated by the current system of credit with deferral and move towards capital ownership neutrality. In practice, how important these changes are depends in large part on the extent to which the current credit system is effectively an exemption system because of the ability to defer tax payments.

With regard to the details of the policy, the proposed package appears to be handicapped by being designed to replicate an imperfect credit system by exempting some foreign dividends and moving from a CFC to a CC regime, rather than seeking real reform with a satisfactory policy underpinning. Actual exemption replaces effective exemption; foreign profits taxed under the current entity-based CFC regime are to continue to be taxed under an income-based CC regime; compliance with EU law would be secure by extending the CC regime to domestic transactions; and the system of interest relief would continue to subsidise foreign investment subject to some modest tightening of the rules.

At the very least, it seems quite implausible that the measures would produce any real simplification in the system. In particular, given that the income-based CC regime (i) seems to have greater scope than the current entity-based CFC regime, (ii) extends to domestic situations and (iii) requires detailed enquiry into the sources of a company's profits rather than the nature of the company itself, it is difficult to conclude either that it is administratively simpler or that it would be revenue-neutral rather than revenue-raising. At the same time, the tightening of the existing interest deduction rules and the introduction of new interest

⁹ M. Desai and J. Hines, 'Evaluating international tax reform', *National Tax Journal*, 2003, 56: 487–502.

restriction rules adds a further layer of anti-avoidance provision to the plethora of anti-avoidance measures targeted at financing costs.

We support the government's aims of producing 'a more straightforward regime for taxing foreign profits' and supporting large and medium business 'by simplifying and modernising the current regime for foreign dividends'. But overall we are not persuaded that the package would achieve such aims. If one of the main advantages of the exemption system is its simplicity then it is important that a package of proposed reforms preserves that.

13. Tax simplification

Malcolm Gammie (IFS Tax Law Review Committee)

Summary

- The government has reaffirmed its commitment to simplify the tax system, but attempts by this and previous governments to deliver real and long-lasting reductions in complexity have usually come to nothing and the volume of tax legislation has grown inexorably.
- The rewrite of direct tax legislation, initiated under the last Conservative government and still in progress, uses simpler language but at much greater length and without resolving any of the underlying complexity in the legislation.
- The abolition of buildings allowances, the reform of capital gains tax and proposals for adopting simpler ‘principles-based’ anti-avoidance legislation are three measures that offer the prospect for some simplification of existing rules.
- Each proposal, however, has met with opposition. In the first two cases, those adversely affected by the proposals have objected. The third case has prompted concerns that it will create uncertainty and confer too much discretion on HM Revenue & Customs. Each proposal illustrates a variety of trade-offs that have to be made between simplicity and other legitimate aims of particular measures.
- Real simplification is difficult to achieve without more fundamental consideration of what, who and how we tax. Tackling complexity requires that we recognise what is complex and why, and focus on what can sensibly be done about it.
- In this respect, the government’s approach of identifying particular elements of the tax system for review is a useful start. Ultimately, however, government must be clear as to its policy goals. One can then judge whether it is its goals that are complicated – possibly too complicated – or just its methods.

13.1 Introduction

Tax simplification is in the air again. Building on a number of announcements in its 2007 Budget to simplify both the personal and business tax regimes, the government reaffirmed its ‘commitment to tax simplification’ in its 2007 Pre-Budget Report by announcing three reviews to consider:

- how to simplify VAT rules and administration in the UK and the EU;
- how anti-avoidance legislation can best meet the aims of simplicity and revenue protection; and
- how to simplify the corporation tax rules for related companies.

HM Revenue & Customs has followed up each of those announced reviews by holding meetings with interested parties and publishing material detailing areas where there is scope for future simplification and, in one case (anti-avoidance), publishing a consultative document with illustrative ‘general principles’ draft legislation. Consultative bodies have been encouraged to submit lists of ‘quick win’ simplification suggestions. After 10 years of a Chancellor who was not noted for his concern for simplifying the tax system, a tax-simplifying Budget offers a new Chancellor, with little room for manoeuvre on revenue or policy, an opportunity to make his name in ways that may be remembered.

A background to the simplification process is given in Section 13.2, while Section 13.3 gives some recent examples of simplifications which, due to their impact, have been met with a mixed reaction from those affected. Section 13.4 concludes.

13.2 A 10-yearly simplification cycle?

The complaint that tax law is too complex is not new. Members of Parliament urged the then Chancellor of the Exchequer William Gladstone, in a Parliamentary debate in 1853, to see that income tax legislation was made intelligible to everyone, even those who had not benefited from a legal education. He replied that:

To bring the construction of these laws within the reach of [everyone is] no doubt extremely desirable, but far from being easy ... the nature of property ... and its very complicated forms [render] it almost impossible to deal with it for the purpose of the income tax in a very simple manner.

In 1981, the Presiding Special Commissioner referred to Gladstone’s statement and added that ‘the plea today is that it would be some advance if laws of this kind were intelligible to those who *have* received a legal education’.

More recently, tax simplification is a topic that has commanded attention at broadly 10-yearly intervals – roughly the same intervals as the major restructuring of capital gains tax (CGT). Consider this:

The last Finance Act has created a crescendo of dissatisfaction in the tax world. It is one of the longest in British fiscal history and it is, essentially, about nothing. It leaves the system no better, and little different; only more complicated.

That was John Kay in his valedictory speech as Director of IFS in 1986.¹ And then:

This is the year of simplification of tax legislation.... There is nothing new in complaining about the complexity of tax legislation. Every generation does it.

That was John Avery Jones, a member (and subsequently chairman) of the IFS Tax Law Review Committee, in 1996.² This last comment followed section 160 of the Finance Act 1995, which required that ‘The Inland Revenue shall prepare and present to Treasury Ministers a report on tax simplification’. The report was published in December 1995 and

¹ Page 2 of J. A. Kay, ‘Tax reform in context: a strategy for the 1990s’, *Fiscal Studies*, 1986, 7(4): 1–17.

² Page 63 of J. Avery Jones, ‘Tax law: rules or principles?’, *Fiscal Studies*, 1996, 17(3): 63–89.

entitled *The Path to Tax Simplification*. In the event, the path pursued was that of the Tax Law Rewrite, but as Avery Jones commented at the time:³

My real objection to rewriting is that I do not find much of a connection between the causes of [complexity] and the proposed solution. The solution seems to me to be an implied acceptance that nothing can be done to remove the real causes of complexity which are deeply rooted in our whole legal culture. If you start with 6,000 pages of gobbledegook, you will end up with a number of pages ... of easier-to-read legislation, but will we all say that this is the end of complexity?

Since Kay's speech in 1986, Finance Acts on average have continued to expand⁴ and, as Avery Jones predicted, we have discovered that expressing complex concepts in plain English does nothing to simplify the concepts themselves. The income tax legislation may have been unbundled from its traditional legal form and put in a more logical order, but the complexity of language has been replaced by the complexity of legislative volume as more words (albeit simpler ones) have been required to preserve precision. Length alone can be a source of complexity, reflecting the ease (or difficulty) with which it is possible to identify and comprehend relevant material and how much of it must be consulted to find the answer to particular issues.

The first consolidation of income tax in 1918 produced an Act of 177 pages. The 1952 consolidation Act was 687 pages and that of 1970 1,297 pages. The consolidation of 1988 with the 1990 consolidation of capital allowances produced 2,796 pages. By 1995, primary legislation on income tax, corporation tax and CGT had grown by 253% since 1970 (from 1,297 to 4,580 pages) and secondary legislation by 744% (from 171 to 1,444 pages).⁵ The draftsman of the first rewrite Act – the Capital Allowances Act 2001 – commented in 1996 that:⁶

It has been calculated [by Avery Jones] that this represents a compound growth rate of nearly 6% per annum since 1970, over 8% since 1988, and over 12% since 1992. ... You only have to project these figures into the future to see that things are getting completely out of hand. At these rates of growth in five years time, we would have, depending on what rate of growth you project, 8,000, 9,000, or 10,700 pages. If the legislation continued to grow at a similar rate for a further five years the figures become truly frightening. We could be looking at 10,600, 13,500 or 19,000 pages of tax legislation in ten years time.

The rewrite of income tax alone has taken four Acts of increasing length. Two (possibly three) Acts will follow shortly to rewrite corporation tax and to deal with the residual elements of the Income and Corporation Taxes Act 1988. It is anticipated that the first corporation tax rewrite Act will be the longest single piece of legislation ever put before

³ Page 66 of Avery Jones, op. cit. See also page 2:1 of M. Gammie, *Tax Simplification: Right Path or Dead End?*, Canadian Tax Foundation, Report of Proceedings of the 47th Tax Conference (the answer was dead end).

⁴ The annotated 1986 Finance Act produced for members of the Chartered Institute of Taxation was 297 pages in length. This was exceeded in 6 of the following 10 years to 1996 and in every year since 1997.

⁵ See table B in *The Path to Tax Simplification*.

⁶ Sellers, 'The Inland Revenue Tax Law Simplification Project', an address to the Statute Law Society on 19 October 1996, *The Quarterly Record*, July 1997, page 208.

Parliament. In 1995, primary and secondary legislation on income tax, corporation tax and CGT ran to 3,856 pages in Butterworths Tax Handbooks and in 2007 it covered 6,564 pages.⁷

13.3 Recent ‘simplifications’ in practice

The growth in legislation is symptomatic of the complexity of the underlying concepts that need to be explained. Without any simplification of those underlying concepts – what it is we are trying to tax (the choice of tax base) and the tax structure (tax rates and taxable units)⁸ – the achievements in terms of tax simplification are likely to be small, as the Tax Law Rewrite has shown. We can welcome any simplification, however small, but we should be careful to recognise precisely what simplification has really been achieved and at what price. Three examples will serve to illustrate the point.

Capital allowances for commercial buildings

A frequent request by business and professional organisations to governments of all complexions over several years has been for the simplification of the UK’s system of depreciation (capital) allowances for industrial buildings and their extension to all commercial buildings. None envisaged the abolition of buildings allowances, but this is exactly what the current government did (in part to simplify the system and in part to pay for the reduction in corporation tax from 30% to 28%).

Those who have lost the benefit of the allowances have not welcomed the simplification in their tax computations, but have complained that paying 28% of something to the government is worse than paying 30% of nothing. This is not surprising. The increased revenue raised by abolishing specific tax allowances may have been largely returned to the corporate sector but, inevitably, there was a mismatch between those who saw their allowances reduced and others who benefited from a reduction in the tax rate. When the government undertakes simplification in the face of this expected response from the losers, it presumably does so in the belief that the additional revenue and cuts in compliance costs for the winners make the reform worthwhile.

The more fundamental problem with this ‘simplification’ is that buildings have not ceased to depreciate and it is still thought appropriate to take account of depreciation in computing business profits. While governments have allowed certain buildings to be depreciated year by year, the computation of business profits does not usually take account of the yearly appreciation in land values. The solution that has been adopted has not been to compute profits for tax purposes more accurately, which could involve more complex calculations, but to adopt a pragmatic but potentially more arbitrary solution to arrive at a more easily computed figure of taxable profits and charge tax at a lower rate. The outcome may be a genuinely simpler system but one that does not necessarily achieve the government’s other

⁷ Pages of Butterworths are not directly comparable to the previous figures, which are based on the number of pages in the Acts. If, however, 3,856 pages of Butterworths represented 6,024 pages of legislation in 1995, 6,564 pages in 2007 translates into 10,250 pages of legislation.

⁸ In this respect, the introduction of income-splitting rules for family businesses – an outcome of the choice of taxable family unit – will inevitably complicate rather than simplify the taxation of those businesses.

stated policy objectives in terms of the overall fairness and efficiency of the business tax system.

Capital gains tax

The latest proposed reform to CGT is described in detail in Chapter 10. Broadly, however, we are set to have come almost full circle in 2008 to return to a system that broadly corresponds to that introduced in 1965. IFS was created partly in exasperation at the way CGT was designed in the first place, and John Kay, when IFS Director, memorably remarked that the taxation of capital gains was notable for the half-baked attempts to reform it at 10-yearly intervals.

The 1965 version taxed capital gains but at a significantly lower rate than ordinary investment income.⁹ Ultimately, however, the tax fell foul of inflation, leading to the various 1980s versions of indexation, which were then replaced by taper relief.¹⁰

Nigel Lawson thought he had resolved the differential between income tax and CGT rates in 1988 by taxing indexed gains at income tax rates, but the subsequent introduction of taper relief announced in the March 1998 Budget (for business assets especially) produced a lower rate at some complexity in what the government claimed was an attempt to tackle ‘short-termism’ among investors and to promote innovation and enterprise. As such, the introduction of taper relief substituted the complexity of taper relief for the complexity of indexation and did nothing to resolve the demands for simplification evident in the review of CGT that had preceded the change. Indeed, an inevitable complexity of CGT, especially for fungible assets such as shares, is the need to match acquisitions with disposals and keep track of acquisition costs. The realisations basis of the tax – taxing only on a disposal of an asset – avoids the greater complication of taxing on accruals and any system of inflation adjustment or taper is liable to complicate rather than simplify the system.

The abolition of taper relief (and the accrued indexation for pre-1998 assets) that was announced in the October 2007 Pre-Budget Report almost 10 years after its introduction reverts to a simpler system, ironically as inflation is re-emerging as a concern. As we would expect, those who will pay tax on business assets at 18% rather than 10% (or even 5%) have not thanked the Chancellor for a simpler computation.

In part, the protests at this ‘simplification’ arise from a popular perception that changes to CGT operate retrospectively, taxing gains that have accrued in the expectation of, for example, a 10% tax at an 18% rate. From the government’s perspective, taxpayers who have chosen to postpone paying tax until a later date take the risk that tax rates may change. As it is, by announcing the reform six months in advance, the government has offered some taxpayers the opportunity to realise business assets and pay tax early at the lower rate. Others with less easily realised business assets – and those who choose not to realise their gains – will pay tax later at a rate that, in the absence of further reform, will be higher. And with no adjustment for inflation, the effective tax rate for long-term holders of assets will be higher

⁹ A rate of 30% compared with rates of up to 98% on investment income until 1979.

¹⁰ Described by the author at the IFS post-Budget conference as a reform that had not even been half baked.

than the headline rate, subject to some offset for the deferral of their tax liability until disposal.

There seems little doubt that the post-taper post-indexation system of CGT will be simpler. As the history shows, however, taxing capital gains is one area of the tax system that it is difficult to get right. It remains to be seen whether a simpler system will stand the test of time any better than its predecessors.

Anti-avoidance in financial products

A final claimed example of tax simplification is found in the recent publication of a joint Treasury and Revenue consultation document on a *Principles-Based Approach to Financial Products Avoidance*.¹¹ This proposes to replace many pages of complex corporate anti-avoidance legislation with much shorter legislation that will express two basic principles. The first (which will be applied only to companies and not individuals) is that a return designed to be economically equivalent to interest should be taxed in the same way as interest. The second is that receipts which are derived from a right to receive income and which do not involve any loss of capital are economic substitutes for income and are to be treated for tax purposes as income. As broad expressions of principle, these may well command support, although one might wonder why a return has to be ‘designed’ to be economically equivalent to interest before it is taxed as interest.¹²

It is this last point that offers a clue to the difficulties involved here. Broadly speaking, returns to savings are taxed differently according to whether they accrue as interest, dividends or capital gains. The different taxation treatment of each depends significantly upon the legal characterisation of the instrument from which the return arises: whether it is debt or equity or some other asset. Modern financial innovation has ensured that what looks like a return to an equity instrument can in fact be made equivalent to the return to debt, and vice versa, and there has always been scope to convert income into capital. Neither economists nor accountants recognise the ways in which the tax system classifies and taxes returns to savings. Accordingly, the battle between the Revenue and tax professionals who exploit rules that tax returns in different legal forms at different effective tax rates is ongoing.

Since 2004, the Revenue’s armoury has been supplemented by rules requiring the early disclosure of the latest tax avoidance ideas, especially in relation to financial products. As a result, anti-avoidance legislation has had to be tweaked every year to deal with the latest tax planning ideas. The proposals in the consultative document accordingly have less to do with simplification than with providing the Revenue with an effective weapon in the form of generally expressed legislation that does not have to be amended every year and which it can supplement as necessary with non-statutory guidance.

It is possible that this approach, if adopted, may provide a more satisfactory solution if, for example, non-statutory guidance proves to be more comprehensible and administrative action

¹¹ Source: http://www.hm-treasury.gov.uk/media/2/A/consult_financialproductsavoidance061207.pdf.

¹² The current draft of the legislation does not express these principles as such and appears to be considerably defective. One assumes, however, that the consultation process should highlight these deficiencies of the draft and that, if enacted, the legislation would give satisfactory effect to the principles.

ensures greater certainty for taxpayers to know in advance how their transactions will be taxed. ‘Simplification’ here lies largely in achieving a greater degree of certainty for taxpayers in a complex field and whether it is better to achieve that certainty through continuing elaboration of complex legislation that may still have gaps through which transactions may pass untaxed, or with shorter and simpler legislation supplemented by Revenue guidance. The adoption of the latter approach goes against English legislative traditions and raises significant issues as to the degree of discretion that is allowed to the Revenue in these matters and the ability of taxpayers to contest the Revenue’s view on appeal.

The fundamental difficulty that general principles drafting has to address, however, is how can you satisfactorily express a general principle in the context of a taxing Act that lacks any clear underlying principle in categorising returns to savings in different ways, basically depending upon whether the return is to some extent certain or contingent? The lack of any clear economic principle to the existing system is why the Revenue has had to amend current legislation every year. The only difference that principles-based drafting may make is that in future the Revenue may be able to amend its guidance rather than ask Parliament to amend its legislation. As such, the new approach may in the end offer taxpayers no greater certainty than they have at present.

13.4 Conclusion

The Tax Law Rewrite has demonstrated that there is more to simplification than just replacing concise technical legal language with more voluminous ‘plain English’. As an element of the tax system, there are undeniable benefits in ensuring that the legislation is written in a more accessible form, even though the overall benefits of doing so may be relatively limited and offset by the greater volume. The majority of complexity, however, surrounds the concepts upon which the legislation is built, the structure the system adopts in terms of tax rates and taxable units, and the extent to which the government chooses to use the tax system to achieve particular policy objectives.

Within this matrix, some taxes are conceptually difficult – for example, taxes on savings and taxes on profits – while others are conceptually simple but may have features that make them administratively difficult – as, for example, aspects of VAT, PAYE and NICs. The three illustrations given above – buildings allowances, capital gains and financial avoidance – fall into the first category of conceptually difficult taxes. In each case, simplification requires some compromise with what would be ideal because what is ideal is likely to be more complex rather than simpler. At the same time, the choice of tax rates and taxable units – for example, the family or the individual, a single company or a group – can have a profound effect on the relative complexity of any tax. A value added tax that distinguishes many different products and services and taxes them at different rates is likely to be more complex than one that adopts a single rate. A tax system that taxes individuals but pays tax credits to families is liable to be more complex than one where both elements of the system are based on the same unit of assessment. In this respect, the government’s income shifting proposals for small businesses are unlikely to simplify the taxation affairs of those businesses.

Experience suggests that ‘simplification’ is easily espoused but is rarely achieved with any lasting success. The lesson is that simplification is difficult to achieve without more

fundamental consideration of tax bases and tax structures and that ‘simplification’ measures are often just one piece of a complex jigsaw that comprises the tax system. Solving the issue of complexity requires that we recognise what is complex and why and concentrate on what can sensibly be done about it. In this respect, the government’s approach of identifying particular elements of the tax system for review is a start. At the end of the day, however, government must be clear as to what its policy goals are. We can then see whether its goals are complicated – possibly too complicated – or just its methods.

14. The impact of tax and benefit reforms to be implemented in April 2008

David Phillips (IFS)

Summary

- Several big changes to the tax, tax credit and National Insurance systems were announced in last year's Budget and Pre-Budget Report to be implemented this April. These involve tax cuts and tax credit increases worth £14 billion in the coming fiscal year, offset by tax increases of roughly the same amount. This is the biggest set of changes to be implemented in any one year under Labour.
- Households at the top and bottom of the income distribution will gain most from the changes to personal taxes and tax credits, while those in the middle will see very little impact. But increases in taxes that we cannot allocate to specific households (such as corporation tax) are likely to reduce these gains at the top and bottom of the income distribution and may result in net losses in the middle.
- The reforms to the direct tax system are a welcome simplification of the structure of marginal rates, although further simplification would be desirable. Cutting the marginal rate for basic-rate taxpayers will improve incentives to work and to save very slightly for many individuals, but the package will not reduce the very high marginal tax or deduction rates faced by those with the weakest work incentives.
- Taking this April's changes into account, the tax and benefit reforms since 1997 will have increased the incomes of the poorest tenth of the population by 12.4% (£1,300 a year) and reduced those at the top by 5.5% (£4,200 a year) on average. Despite facing higher net taxes, a household in the middle of the top tenth of the income distribution has still enjoyed an increase in real post-tax income of around 20% between 1997 and 2006.

14.1 Introduction

The first week of April 2008 will be a big week for the British tax system. Major reforms, primarily announced in the March 2007 Budget and October 2007 Pre-Budget Report, are due to take effect for capital gains tax, corporation tax, income tax, inheritance tax, National Insurance contributions, national non-domestic rates and the tax credit system.

Taken individually, the various tax and tax credit changes would create large numbers of significant winners and losers. But the overall package appears to have been carefully constructed to minimise the number of individuals losing or gaining significantly. In particular, those aged 65 or over and families with children have been protected from losses as the system is simplified. In aggregate, the package is also fiscally neutral, with almost every pound given away with one hand being taken back with the other.

In this chapter, we analyse the set of reforms to income tax, National Insurance, tax credits and fuel duty, with a focus on the marginal rate structure and the distribution of income. Section 14.2 summarises the reforms announced for April 2008 and gives their costs. Section 14.3 analyses the impact of the changes in income tax and employees' National Insurance on the marginal rate structure for some example families, whilst Section 14.4 focuses upon the differential impact of the reforms over the income distribution and across household types. Section 14.5 places the reforms in the context of the distributional impact of all the Labour Government's tax and benefit reforms since 1997. Section 14.6 concludes.

14.2 The changes due in April 2008

Table 14.1 lists the main reforms due to be implemented in 2008–09, showing estimated gains and costs to the Treasury in both 2008–09 and 2009–10.¹ Those in *italics* are included in our main distributional modelling, which we detail in Section 14.4.

It is important to note that the Treasury presents costs on a 'National Accounts' basis. For most taxes, this means accounting for a tax when the liability accrues, rather than when the revenue is actually received by the government. However, there are some important exceptions, including corporation tax, self-assessment income tax, inheritance tax and capital gains tax. This means that the figures listed for 2008–09 do not record the full impact of all the reforms due in 2008–09, as a significant part of the revenue, particularly for corporation tax changes, will not be received and accounted for until the following year. Hence, the full impact of reforms due in 2008–09 is not reflected in the figures until at least 2009–10, but these later figures also include the impact of later reforms and economic growth. In many cases, as we wish to measure the impact of the 2008–09 reforms at the time when the tax liability accrues, the number we want lies somewhere between the two figures.

In this chapter, we focus on the reforms to income tax, National Insurance, tax credits and fuel duty. Of these, the most important in revenue terms are the abolition of the 10p starting rate of income tax for non-savings income, which raises over £8.6 billion by 2009–10, and the reduction of the basic rate of income tax from 22 pence to 20 pence in the pound, which is estimated to cost £9.6 billion by the same date. Partly in order to reduce the number of net losers from these two reforms and the £1.5 billion increase in National Insurance payments by those with higher earnings, and partly to help meet its targets on poverty, the government is increasing age-related allowances for those aged 65 and over, at a cost of almost £1 billion, and increasing the generosity of the child and working tax credits by £1.7 billion (both measured in 2009–10). Together, these reforms represent a net cost to the Treasury (and thus

¹ The complete list of tax and benefit reforms announced in the 2007 Budget and the 2007 Pre-Budget Report can be found on the Treasury website, along with the estimated costs and gains. Sources: Appendix A of HM Treasury, *Financial Statement and Budget Report 2007*, March 2007 (http://www.hm-treasury.gov.uk/media/D/0/bud07_chaptera_235.pdf); Annex B of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/media/F/9/pbr_csr07_annexb_305.pdf).

Table 14.1. Tax and benefit changes in April 2008 (unless otherwise stated)

	2008–09 gain (cost)	2009–10 gain (cost)
Announced in Budget 2007		
Income tax and National Insurance		
<i>Removal of 10% starting rate of income tax on non-savings income</i>	7,230	8,630
<i>Reduction of basic rate of income tax from 22% to 20%</i>	(8,090)	(9,640)
<i>Increase in allowances for those aged 65 and over by £1,180 above indexation</i>	(810)	(950)
<i>Rise in upper earnings level for National Insurance contributions by £75 per week above indexation (in 2009–10, it will be further raised to the level at which higher-rate tax becomes payable)</i>	1,100	1,490
Tax credits		
<i>Increase in child element of child tax credit by £150 p.a. over indexation</i>	(880)	(1,020)
<i>Increase in working tax credit threshold of £1,200 p.a.</i>	(1,310)	(1,310)
<i>Increase in withdrawal rate for tax credits of 2% points to 39%</i>	600	620
Duties and environmental taxes		
<i>Increase in petrol duties of 2p per litre (nominal)^a</i>	350	375
<i>Other reforms</i>	560	790
Corporation tax and national non-domestic rates		
<i>Tax cuts: reduction in corporation tax main rate, increase in long-life capital allowance, introduction of £50,000 annual capital allowance</i>	(1,615)	(3,540)
<i>Tax rises: small companies' rate increased from 20% to 21% in 2008–09 and 22% in 2009–10, reduced capital allowance, abolition of empty property relief for non-domestic property</i>	2,895	4,255
<i>Other measures^b</i>	(90)	(60)
Announced in Pre-Budget Report 2007		
Tax credits		
<i>Increase in child element of tax credit by a further £25 p.a.</i>	(30)	(30)
Inheritance tax and capital gains tax		
<i>Introduction of a transferable inheritance tax allowance for married and civil-partnered couples</i>	(1,000)	(1,200)
<i>Capital gains tax: 18% tax rate replacing current schedule from 40% to 22% for 'non-business' assets rates and 40% to 10% for 'business' assets</i>	350	750
Other measures (including 'anti-avoidance' measures)		
	365	555
Total impact of 2008–09 reforms	(470)	(285)

^a Derived using HM Treasury, *Tax Ready Reckoner and Tax Reliefs*, October 2007 (http://www.hm-treasury.gov.uk/media/1/F/pbr_csr07_taxreadyreckoner.pdf) as the impact of the real increase taking place in April 2008.

^b Many of the other measures included in Budget 2007 were implemented that April or are due in April 2009 and are not included.

Sources: Appendix A of HM Treasury, *Financial Statement and Budget Report 2007*, March 2007 (http://www.hm-treasury.gov.uk/media/D/0/bud07_chaptera_235.pdf); Annex B of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/media/F/9/pbr_csr07_annexb_305.pdf); author's calculations.

a giveaway to households) of almost £2.2 billion in both 2008–09 and 2009–10 according to its figures (as in Table 14.1).²

But this giveaway is largely offset by increases in corporation tax and capital gains tax, and the overall net cost to the Treasury for the measures to be implemented in April is less than £0.5 billion in 2008–09 and £0.3 billion in 2009–10. Given that ultimately all taxes are borne by individuals, this means that the gains (losses) for different deciles or household types that we find in our distributional analysis should be adjusted downwards (upwards) to give an idea of how the whole package is likely to affect net household incomes.

The gross tax rises and reductions (the latter including tax credit increases) amount to about £13.5 billion and almost £14.0 billion respectively in 2008–09, and to more than £17.6 billion and £17.9 billion for 2009–10. This is the biggest year of tax and tax credit reform measures since Labour came to power. Note that the numbers used here differ from those presented in the Treasury's Budget and Pre-Budget Report tables because, where possible, we have abstracted from reforms that have already been implemented and from those that are not due to be implemented until 2009–10, although this has not been possible for all taxes.

14.3 The impact on effective marginal tax rates

In this section, we analyse the impact of the reforms on the structure of effective marginal tax rates, first abstracting from the reforms to the tax credit system and then including them for an example family with children. We also use this work to highlight some winners and losers in Section 14.4.

Figure 14.1 shows the marginal rate structure for income tax and employees' National Insurance (NI) under the current Autumn 2007 tax system and in the April 2008 tax system with respect to earned income.³ The reforms announced in Budget 2007 represent a simplification of the marginal rate structure at the bottom: with the 10p starting rate of income tax for non-savings income abolished, there is no longer the 'step up' at the point at which the basic rate currently kicks in (at £7,755 in 2008–09 prices). However, the 10% starting rate remains in place for savings income, and whilst it may be argued that this is to maintain and strengthen incentives for saving, there seems little justification for keeping the starting rate at all, and further simplification by abolishing it would seem a sensible reform.⁴

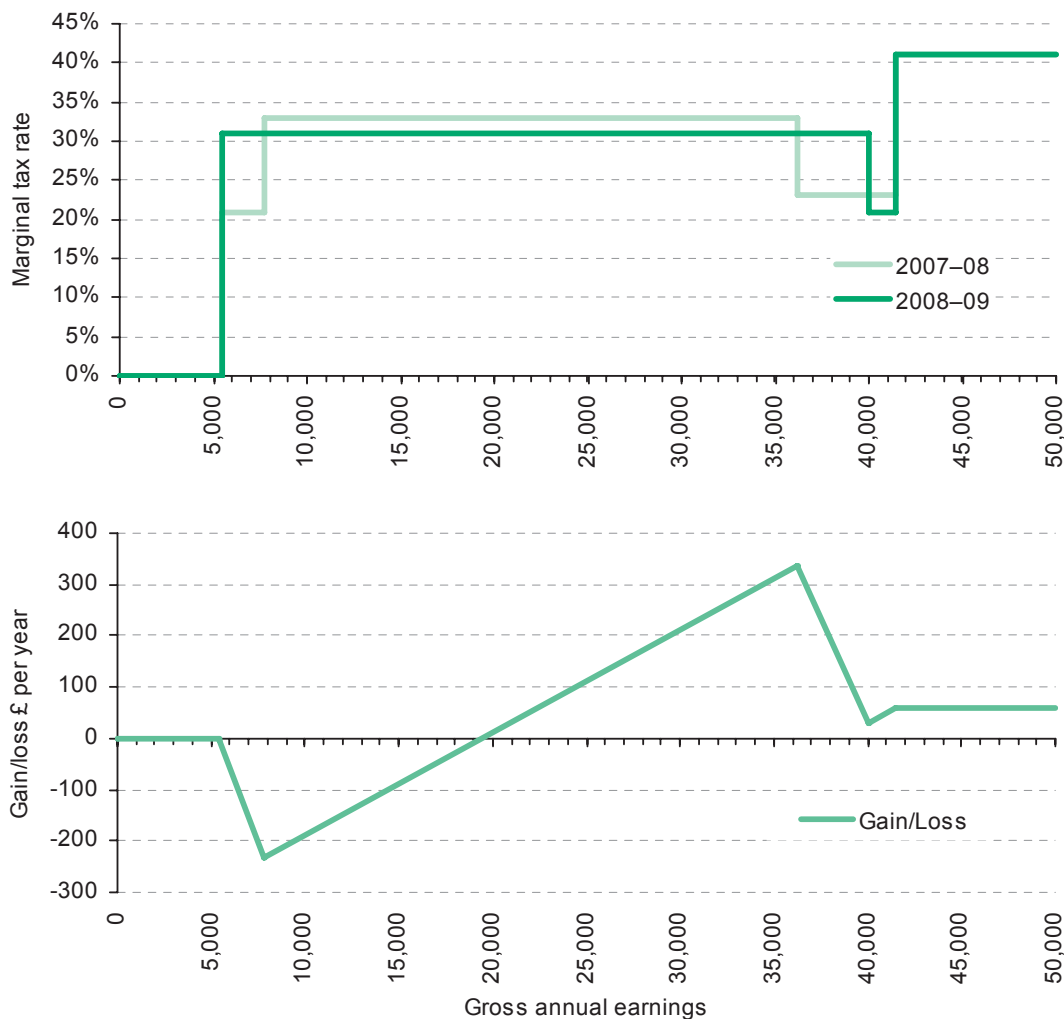
Further simplification in the structure of income tax and National Insurance is set to occur in 2009–10 with the alignment of the upper earnings limit (UEL) of National Insurance and the higher rate threshold of income tax. This will remove the 'step down' in marginal rates at approximately £40,000 that remains in 2008–09 as the alignment is phased in.

² The implied cost of these reforms using the IFS tax and benefit simulator TAXBEN in Section 14.4 is about £3.2 billion. The figures differ partly due to the timing of receipts (TAXBEN uses a fully accruals-based method). However, the Treasury has more information available for its calculations and, apart from the timing issue, its estimates should be more accurate as a guide to the fiscal impact of the reforms.

³ To make it comparable to the April 2008 tax and benefit system, the Autumn 2007 tax and benefit system has been indexed using standard uprating procedures.

⁴ There exist both theoretical and practical arguments for zero taxation on savings income, although these are contested and subject to much disagreement. However, given that the government does tax savings income, the

Figure 14.1. Income tax and employees' NI: April 2008 vs Autumn 2007



Notes: For simplicity, the marginal rate schedule in the graph abstracts from employers' National Insurance contributions and is based upon a worker contracted into the State Second Pension (S2P). For this individual, gains and losses from the reform are the same after accounting for employers' NI. When accounting for employers' NI, the gains (but not marginal rates) are the same for those contracted out of S2P as for those contracted in, except for those earning between the current UEL and the 2008 UEL: the increase in the UEL increases the amount of earnings that the employer can pay the reduced 'contracted out' rate on and hence gains could be larger than shown in this income range.

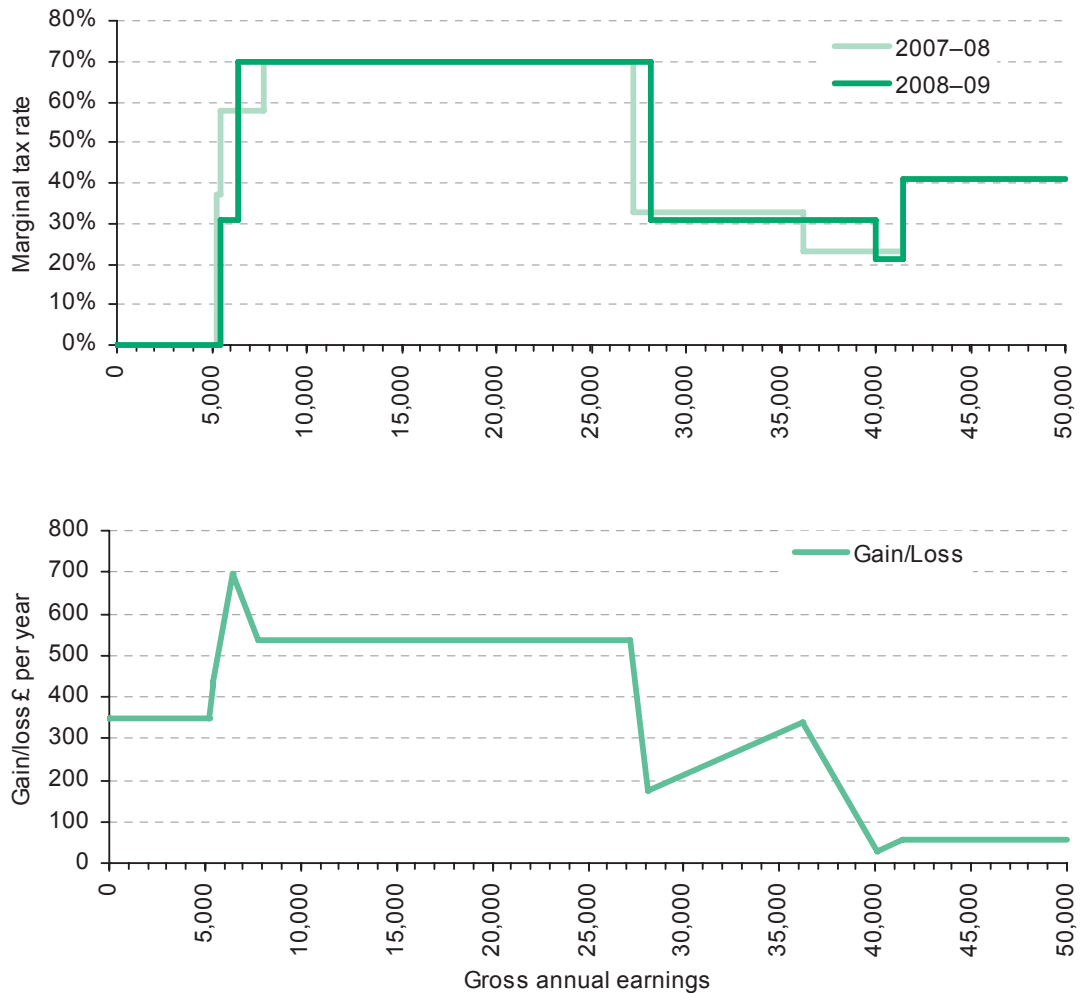
Source: Author's calculations.

In 2008–09, those earning between £5,435 per annum and approximately £18,500 lose from the reforms to income tax and National Insurance, whilst those earning more than £18,500 all gain, although those earning more than about £39,000 are never better off by more than about £1 per week or £52 per year. Losses are greatest at the current threshold for the basic rate of income tax (with losses of approximately £232 per year) and gains are greatest at the current National Insurance UEL (with gains of approximately £337 per year). In April 2009, when the UEL and higher-rate threshold are aligned at a slightly raised level, those who are still higher-rate taxpayers will see zero effect on their net income, although those earning between

administrative difficulties of keeping the 10% starting rate (including the need for taxpayers to 'claim back' excess tax deducted at source) make abolition of this rate attractive.

approximately £41,500 and £43,300 will see modest declines in net pay (of up to about £1.50 per week or £80 a year).

Figure 14.2. Income tax, tax credit and employees' NI: April 2008 vs Autumn 2007



Notes: As Figure 14.1. This graph is drawn for a one-earner couple, or a lone parent, with two children aged between 1 and 16. Such a couple would not be entitled to the childcare element of the working tax credit; however, a lone parent would be, and we assume that they do not take it up.

Source: Author's calculations.

Figure 14.2 includes the impact of reforms to the tax credit system in addition to those for income tax and National Insurance. It is drawn for an example family – a one-earner family, with two children aged between 1 and 16. Notice that whereas under the Autumn 2007 system the working tax credit threshold and income tax personal allowance were almost aligned (at £5,220 and £5,225 respectively), the £1,200 increase in the working tax credit threshold moves these systems away from alignment. The increase in the child element of the child tax credit is balanced by the increase in the tax credit taper rate (from 37% to 39%) so that the size of the range of incomes that the main tax credit taper rate applies to is more or less the same, although it is somewhat shifted to the right (i.e. towards higher incomes).

Here, gains are highest (at almost £700) at the point at which the working tax credit taper will begin in 2008 – £6,420 per annum. Gains then fall until £7,755 per annum, when the basic

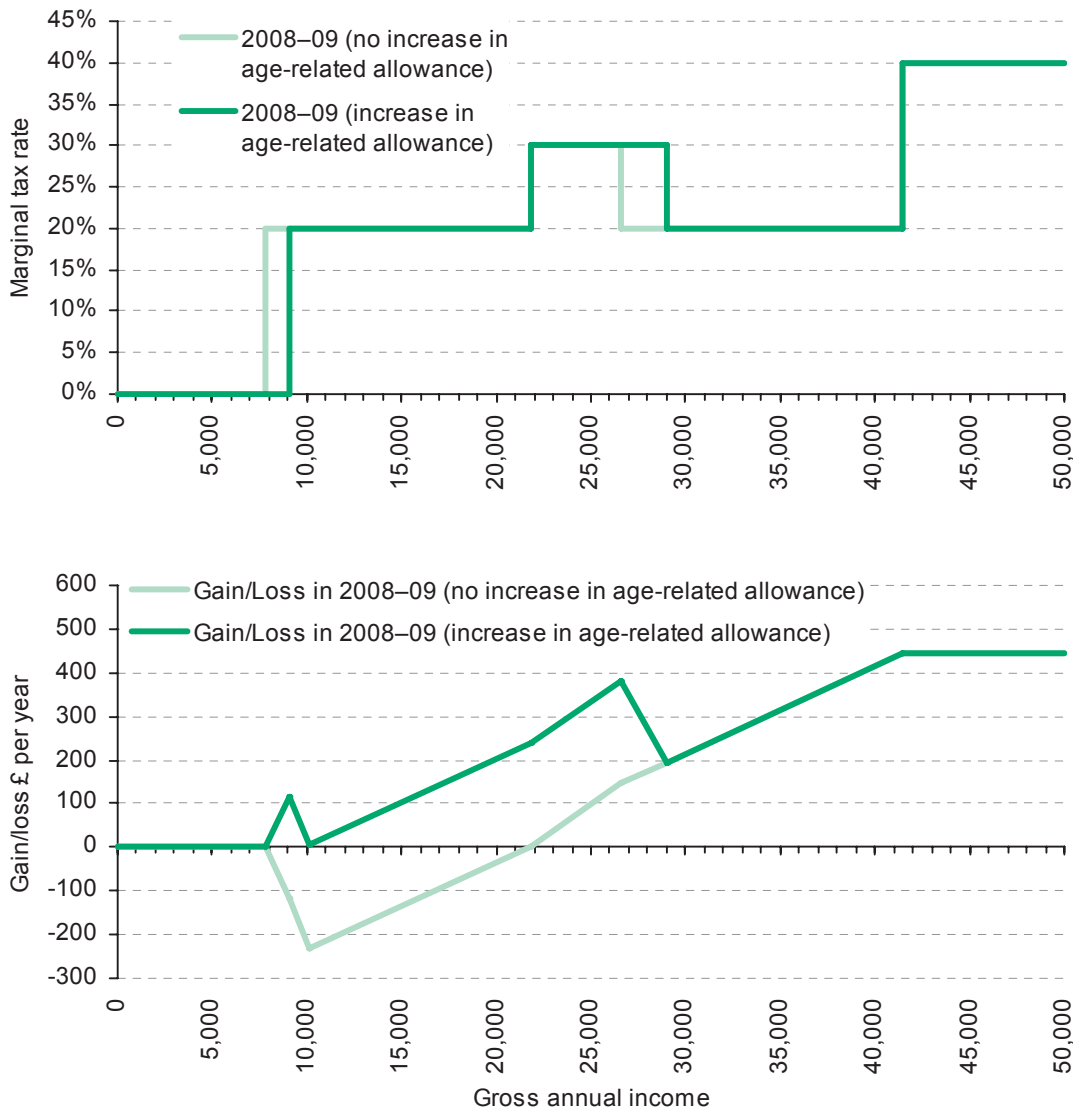
rate of income tax currently starts, and then remain constant until the point at which tax credits are currently exhausted for our example family (about £27,000). Gains then fall until the point at which the tax credits are exhausted under the April 2008 system (about £28,000); from this point onwards, the pattern is the same as in Figure 14.1. Hence, for families with children, the biggest gains accrue to low to middle earners who are on the tax credit taper.

A number of further points are worth noting:

- The income tax reforms reduce the marginal tax rate faced by those paying National Insurance and the basic rate of income tax, but the increase in the tax credit taper rate exactly offsets this for the many families who will have their tax credits withdrawn faster. Hence, those facing the highest marginal rates (those on the withdrawal tapers of tax credits and means-tested benefits) see no improvement in their incentive to earn an extra pound.
- The increase in the working tax credit threshold is presumably intended to compensate for the abolition of the 10p starting rate (and, combined with the increase in the child tax credit, to make working families with children better off). But some people ‘fall through the net’ and are made worse off: those who do not receive either the working tax credit or the child tax credit but who have incomes between £5,435 and £18,500 per year. This group includes childless single adults aged under 25 and childless adults working less than 30 hours per week (since these groups are not eligible for these tax credits) and those who are entitled but not claiming: only 19% of entitled families without children take up their working tax credit entitlement, for instance.⁵
- The reforms appear to have been carefully structured to ensure that there are no losers amongst those aged 65 or over. The maximum loss that one could face from the abolition of the 10p starting rate is £232 whilst the increase in the age-related allowance for those aged 65–74 is worth £237 under the 20p basic rate of income tax. This means that those who are aged 65 or over are at least £5 per year better off. Figure 14.3 shows the impact of the reforms on a single pensioner aged 65–74. Note that the gains are highest in absolute terms for the richest pensioners, at up to £440 per annum. It is worth bearing in mind that this does not mean there are no pensioner losers; single women aged between 60 and 64 with non-savings income between £5,435 and £18,500 do lose unless they work full-time and are claiming the working tax credit, as they are not entitled to the increased age-related allowances.
- Whilst in 2008–09 higher-rate taxpayers will be a little better off due to the reforms, following the alignment of the NI UEL and the higher-rate income tax threshold in 2009–10 higher-rate payers would have been left worse off by about £75 per year. The £800 increase in the higher-rate threshold just compensates for this, meaning that employed higher-rate payers will find themselves virtually unaffected by the reforms (the self-employed will be a little better off).

⁵ Table 10 of HMRC, *Child Tax Credit and Working Tax Credit: Take-Up Rates 2004–05, 2007* (<http://www.hmrc.gov.uk/stats/personal-tax-credits/takeup-rates2004-05.pdf>).

Figure 14.3. Income tax for a single pensioner aged 65–74



Notes: Age-related allowances are tapered away at a rate of 50p in the pound when incomes exceed £21,800, hence the higher marginal tax rates between £4,800 and £7,200 above this threshold. The graph is drawn for a single pensioner with no savings income. The line labels suffixed 'no increase in age-related allowance' refer to a system that includes the abolition of the starting rate of income tax but without the increase in age-related personal allowances.

Source: Author's calculations.

Table 14.2 shows how the reforms change the distribution of effective marginal tax rates (EMTRs) (on earned income), with the numbers of taxpayers shown by 10% marginal rate band. The EMTR includes the impact of income tax, employees' and employers' National Insurance (the latter included to ensure consistency),⁶ with withdrawal of tax credits and

⁶ Taxes on wages (e.g. income tax and employees' and employers' National Insurance contributions) may be partly incident on shareholders or consumers, however public discourse typically assumes the first two are fully incident on employees. Employers' and employees' National Insurance are structurally nearly identical, meaning it is sensible to assume that, at least in the longer term, they have the same incidence; hence the convention used here is to treat them both as incident on workers.

means-tested benefits, but excludes indirect taxation (i.e. VAT). From this table, we can see the following:

- There is an increase of approximately 0.5 million in those with an EMTR of less than 10%; these are people aged 65 or over benefiting from the higher age-related personal allowances and who will no longer pay income tax.
- There is a fall in the number facing an EMTR of between 10% and 20%, and an increase in those facing EMTRs of between 20% and 30%, both due to the abolition of the 10p starting rate on non-savings income.
- There is a very significant increase in the number facing an EMTR of between 30% and 40%, with a large fall in those facing an EMTR of between 40% and 50%. This is due to a fall in the EMTR from approximately 40.6% to 38.8% for those contracted into the State Second Pension and presently paying the 22% basic rate of income tax (which becomes 20% following the reform). Those contracted out of the State Second Pension see a very similar reduction in their effective marginal rate but already pay a rate of less than 40% and so do not move bands.
- Amongst those with higher EMTRs, there is an increase in the number of people facing marginal rates of between 70% and 80%; the shift in the tax credit taper up the income distribution has increased the number of people subject to withdrawal of tax credits as their income rises.

Table 14.2. Numbers of individuals facing different marginal rates

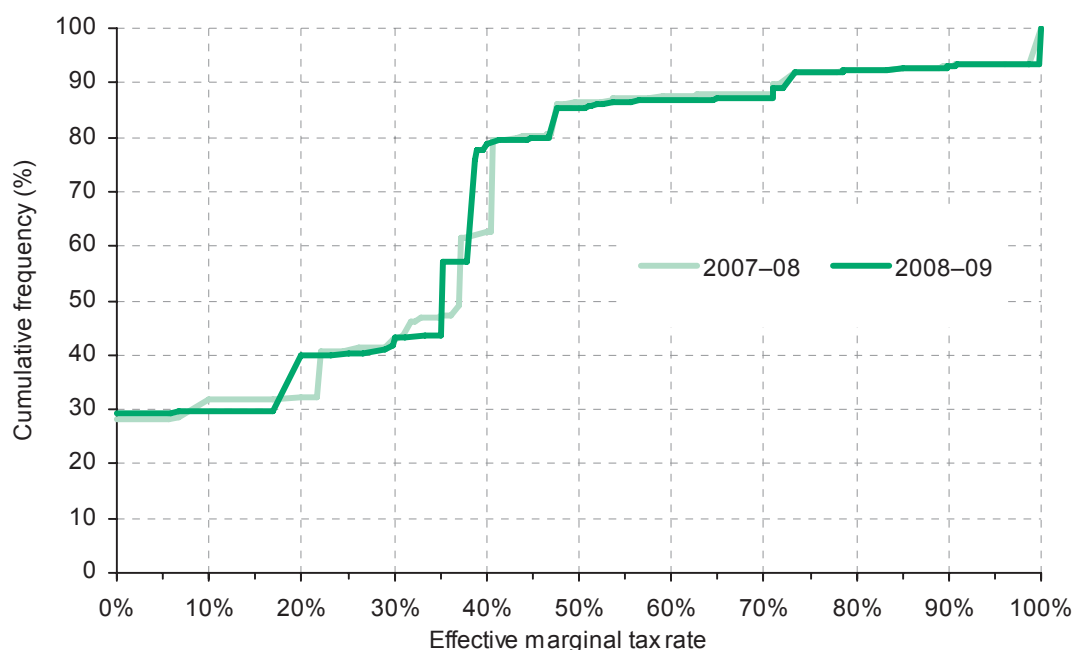
	Autumn 2007 system		April 2008 system		Change	
	Number (thous.)	%	Number (thous.)	%	Number (thous.)	%
0≤EMTR<10	13,174	28.5	13,684	29.6	+510	+1.1
10≤EMTR<20	1,654	3.6	15	0.0	-1,639	-3.6
20≤EMTR<30	4,389	9.5	5,238	11.3	+849	+1.8
30≤EMTR<40	9,287	20.0	17,087	36.9	+7,800	+16.9
40≤EMTR<50	11,515	24.9	3,547	7.7	-7,968	-17.2
50≤EMTR<60	447	1.0	692	1.5	+245	+0.5
60≤EMTR<70	296	0.6	105	0.2	-191	-0.4
70≤EMTR<80	2,009	4.3	2,411	5.2	+402	+0.9
80≤EMTR<90	296	0.6	259	0.6	-37	0.0
90≤EMTR≤100	3,243	7.0	3,273	7.1	+30	+0.1
Overall	46,310	100	46,310	100		

Notes: All adults in private households, including those not currently employed. Includes employers' National Insurance.

Sources: IFS tax and benefit model, TAXBEN, based on 2005–06 Family Resources Survey; author's calculations.

Figure 14.4 gives more detail on the changing distribution of EMTRs by showing a cumulative frequency graph: the height of the graph at each marginal rate shows the percentage of people facing a marginal rate less than or equal to that rate. This emphasises the point that the set of reforms does little to reduce marginal rates for those with very high rates: the distribution above 40% is virtually identical under the Autumn 2007 and April 2008 systems.

Figure 14.4. Distribution of effective marginal tax rates



Notes: All adults in private households, including those not currently employed. Includes employers' National Insurance.

Sources: IFS tax and benefit model, TAXBEN, based on 2005-06 Family Resources Survey; author's calculations.

Despite the significant changes to the distribution of EMTRs, the average (mean) marginal rate will be almost unchanged: it is 31.79% under the current system and will be 31.77% after the reforms due in April 2008. Underlying this aggregate figure, some subgroups of the population see small falls in their average marginal tax rate (generally those without children), whilst others see small rises (generally households with children and more than one adult), but changes are not dramatic, on average, for any group. Around three-quarters of a million people see their EMTR fall by 5 percentage points or more, 18.6 million see it fall by between 1 and 5 percentage points, 22 million see little change and about 5 million see an increase of at least 1 percentage point.

Looking forward, 2009-10 is set to see a rise in the higher-rate threshold of £800 above indexation to a level of £43,385 (assuming inflation of 2.75% in September 2008). This increase reduces the number of higher-rate taxpayers by about 190,000. However, due to fiscal drag in 2007-08 and 2008-09, this remains about 100,000 higher than the number estimated for the tax year 2006-07 (the year immediately preceding the announcement of the these reforms), when the government estimates there were approximately 3.58 million higher-rate taxpayers. Furthermore, it is significantly greater than the 2.1 million higher-rate taxpayers in 1996-97, the year prior to Labour coming to power.⁷

⁷ Source: http://www.hmrc.gov.uk/stats/income_tax/table2-1.pdf.

14.4 Winners and losers

In this section, we show the distributional impact of the following reforms, assuming full compliance with the tax rules and full take-up of benefit and tax credit entitlements:

- (1) the direct tax changes that take effect in April 2008 (i.e. abolition of the 10p starting rate of income tax on non-savings income, reduction of the basic rate of income tax to 20p, increase in age-related allowances, raising of the National Insurance UEL);
- (2) the changes to the working tax credit and child tax credit;
- (3) the changes in (1) and (2) considered together;
- (4) the changes in (1) and (2) plus the changes to indirect taxation (i.e. increase in fuel duty).

The counterfactual with which we compare each set of reforms is where tax and benefit withdrawal rates remain unchanged from current (2007–08) levels, and tax thresholds, and benefit and tax credit amounts are uprated in line with the public finance defaults.⁸ This means we include in our impact the pre-announced decision to uprate the child element of the child tax credit by average earnings, even though this would have taken place without the changes announced in Budget 2007 and Pre-Budget Report 2007. Most of our analysis is done at the level of the household, where each household can contain several families or benefit units. Examples of multiple-benefit-unit (MBU) households include young adult children living with their parents, an elderly person living with their children, and single adults sharing a house. Households with MBUs are more difficult to classify than those containing a single benefit unit, and hence we categorise them separately in the distributional analysis that follows.

Tables 14.3 and 14.4 show the average impact on each tenth of the income distribution as a percentage of disposable income and in cash terms respectively. Tables 14.5 and 14.6 show the average impact on a number of different household types. Table 14.7 shows how many households gain and lose from the reforms to income tax, National Insurance and tax credits only.

Remember that this is not an exhaustive list of the revenue-affecting reforms planned for the year beginning April 2008. Changes in corporation tax, capital gains tax, inheritance tax and business rates will all affect families in a way that may vary across the distribution; unfortunately, it is not possible to model these fully given the data available. However, as shown in Section 14.2, these additional reforms are expected to mean that households, on average, must be less positively affected by the entire package announced during 2007 than by the subset of policies we analyse here.

⁸ This typically, but not always, means uprated in line with inflation. For instance, we assume the pension credit guarantee is uprated in line with average earnings and that the family element of the child tax credit is frozen in cash terms.

Table 14.3. Percentage gains from reforms in April 2008

Income decile group	Income tax and National Insurance (1)	Child tax credit and working tax credit (2)	Income tax, NI, child tax credit and working tax credit (1 + 2)	Income tax, NI, child tax credit, working tax credit and fuel duty (1 + 2 + fuel duty)
Poorest	-0.31%	1.40%	1.08%	0.99%
2	-0.31%	1.39%	1.08%	1.02%
3	-0.27%	0.97%	0.70%	0.65%
4	-0.16%	0.45%	0.29%	0.23%
5	-0.10%	0.24%	0.14%	0.08%
6	0.07%	0.11%	0.17%	0.12%
7	0.20%	0.05%	0.25%	0.19%
8	0.43%	0.02%	0.44%	0.39%
9	0.60%	0.01%	0.61%	0.56%
Richest	0.47%	0.00%	0.47%	0.43%
Overall	0.23%	0.24%	0.47%	0.42%

Notes: Income deciles are derived by dividing all households into 10 equally sized groups according to income adjusted for household 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: IFS tax and benefit model, TAXBEN, based on 2005–06 Family Resources Survey; author's calculations.

Table 14.4. Weekly cash gains from reforms in April 2008 (2008 prices)

Income decile group	Income tax and National Insurance (1)	Child tax credit and working tax credit (2)	Income tax, NI, child tax credit and working tax credit (1 + 2)	Income tax, NI, child tax credit, working tax credit and fuel duty (1 + 2 + fuel duty)
Poorest	-£0.63	£2.81	£2.16	£1.99
2	-£0.84	£3.80	£2.95	£2.80
3	-£0.85	£3.07	£2.21	£2.03
4	-£0.57	£1.59	£1.01	£0.83
5	-£0.43	£1.02	£0.59	£0.35
6	£0.33	£0.52	£0.86	£0.58
7	£1.14	£0.29	£1.42	£1.08
8	£2.89	£0.13	£3.02	£2.63
9	£4.93	£0.07	£5.00	£4.59
Richest	£6.84	£0.02	£6.87	£6.36
Overall	£1.28	£1.33	£2.61	£2.32

Notes: As for Table 14.3.
Sources: As for Table 14.3.

Tables 14.3 and 14.4 show the following:

- The changes in direct tax (income tax and National Insurance) are regressive: they lead to a slight reduction in disposable income in lower deciles (particularly deciles 1 to 3) and a slight increase for those in decile 6 and above.
- Overall, the changes to National Insurance and income tax have a net cost to the Treasury and lead to an average gain amongst households of £1.28 per week.

- The changes in tax credits are progressive and lead to a noticeable gain in disposable income for deciles 1 to 3 (those most adversely affected by the tax changes), whilst those in the top two deciles see effectively no impact.
- The combined impact of tax reforms that benefit those on higher incomes, and tax credit changes that strongly benefit those on lower incomes, is that the reforms set for 2008–09 have a U-shaped distributional impact, benefiting the top and bottom of the income distribution but leaving those in the middle practically unaffected. Absolute cash gains are greatest at the top of the income distribution.
- The increase in fuel duty results in a reduction in disposable income for all deciles but is relatively neutral across the deciles in its distributional impact.
- It should be borne in mind that the average gain to households of 0.42% of their disposable income from the combined package of personal tax, tax credit and fuel duty reforms represents the effect of only a subset of the total set of tax changes to be introduced in April. It does not include the effect of measures that we cannot attribute to specific households (most notably the changes to corporation tax, business rates, capital gains tax and inheritance tax). Together, the full package has an aggregate cost to the Treasury of £470 million in the 2008–09 tax year. Taking this into account means that the average household will be approximately 35p better off per week (rather than £2.32), which is equivalent to 0.06% of their post-tax income (rather than 0.42%).

Tables 14.5 and 14.6 show the following:

- The changes to the direct tax system make non-working couples with children worse off, on average. Most non-workers pay no income tax, but a number have taxable benefit (e.g. incapacity benefit) and other unearned income, which means they do pay some income tax. These have lost out due to the abolition of the 10p starting rate for non-savings income. Employed lone parents typically have low earnings and hence are similarly affected.
- All employed family types, except lone parents, benefit from the changes in direct tax, on average. Pensioners gain the most proportionally from the changes due to the higher age-related tax allowances and the fact that they do not pay employees' National Insurance (which has increased for those with employment income of more than about £36,000).
- The changes in the tax credits leave no family type worse off, on average. Gains are very much concentrated amongst families with children, particularly lone parents and couples with children where at least one parent is not in paid work.
- On average, all household types are better off from the full combination of reforms that we can attribute to specific households. The largest gainers in percentage terms are lone parents and non-working couples with children. In absolute terms, the largest gainers are lone parents and couples with children where at least one parent is not in paid work.

Table 14.5. Percentage gains from reforms in April 2008, by family type

	Income tax and National Insurance	Child tax credit and working tax credit	IT, NI, CTC and WTC	IT, NI, CTC, WTC and fuel duty
Single, not working	0.02%	0.00%	0.02%	-0.08%
Single, employed	0.31%	0.06%	0.37%	0.30%
Single parent, not working	0.00%	2.25%	2.26%	2.19%
Single parent, working	-0.06%	1.87%	1.81%	1.75%
0-earner couple w/o kids	0.06%	0.00%	0.06%	0.00%
0-earner couple with kids	-0.20%	1.91%	1.70%	1.66%
1-earner couple w/o kids	0.28%	0.06%	0.34%	0.29%
1-earner couple with kids	0.23%	0.84%	1.07%	1.03%
2-earner couple w/o kids	0.29%	0.01%	0.30%	0.25%
2-earner couple with kids	0.21%	0.21%	0.42%	0.39%
Single pensioner	0.50%	0.00%	0.50%	0.41%
Couple pensioner	0.61%	0.00%	0.62%	0.56%
MBU w/o kids	0.05%	0.07%	0.12%	0.08%
MBU with kids	-0.07%	0.60%	0.53%	0.50%
Overall	0.23%	0.24%	0.47%	0.42%

Notes: Households are defined as the type of benefit unit living in that household except where there is more than one benefit unit resident, in which case it is classified as a multiple-benefit-unit (MBU) household. Single-benefit-unit (SBU) households are classified as pensioners if either adult is a pensioner (male: aged 65 or over; female: aged 60 or over). Some pensioner households also contain children; some pensioners can be found in MBU households; and some male claimants of the pension credit guarantee can be found in other SBU household types (since this can be received by single men aged 60 to 64 who are not pensioners).

Sources: IFS tax and benefit model, TAXBEN, based on 2005–06 Family Resources Survey; author's calculations.

Table 14.6. Weekly cash gains from reforms in April 2008, by family type (2008 prices)

	Income tax and National Insurance	Child tax credit and working tax credit	IT, NI, CTC and WTC	IT, NI, CTC, WTC and fuel duty
Single, not working	£0.04	£0.00	£0.04	-£0.16
Single, employed	£1.50	£0.31	£1.80	£1.46
Single parent, not working	£0.01	£6.27	£6.28	£6.10
Single parent, working	-£0.23	£7.44	£7.19	£6.95
0-earner couple w/o kids	£0.26	£0.00	£0.26	£0.02
0-earner couple with kids	-£0.76	£7.16	£6.40	£6.22
1-earner couple w/o kids	£1.68	£0.39	£2.07	£1.76
1-earner couple with kids	£1.43	£5.33	£6.75	£6.50
2-earner couple w/o kids	£2.28	£0.11	£2.39	£2.01
2-earner couple with kids	£1.69	£1.71	£3.40	£3.09
Single pensioner	£1.33	£0.00	£1.34	£1.09
Couple pensioner	£2.89	£0.02	£2.92	£2.65
MBU w/o kids	£0.40	£0.49	£0.89	£0.59
MBU with kids	-£0.54	£4.63	£4.09	£3.85
Overall	£1.28	£1.33	£2.61	£2.32

Notes: As for Table 14.5.

Source: As for Table 14.5.

Table 14.7. Winners and losers from income tax, National Insurance and tax credit reforms

	Income tax, NI & tax credits (thousands of households)	Income tax & NI (thousands of households)
Single, no children		
losing £1 to £9.99	538	667
staying within +/- £1	1,854	1,852
gaining £1 to £9.99	1,455	1,329
gaining > £10 a week	12	12
Single, children		
losing £1 to £9.99	0	332
staying within +/- £1	21	988
gaining £1 to £9.99	1,088	184
gaining > £10 a week	395	1
Couple, no children		
losing £1 to £9.99	1,153	1,263
staying within +/- £1	997	1,021
gaining £1 to £9.99	2,323	2,189
gaining > £10 a week	209	209
Couple, children		
losing £1 to £9.99	444	1,125
staying within +/- £1	625	1,235
gaining £1 to £9.99	2,754	2,049
gaining > £10 a week	670	84
Pensioners		
losing £1 to £9.99	275	278
staying within +/- £1	3,360	3,367
gaining £1 to £9.99	2,557	2,548
gaining > £10 a week	201	199
MBU, no children		
losing > £10	23	35
losing £1 to £9.99	983	1,144
staying within +/- £1	967	961
gaining £1 to £9.99	1,173	1,021
gaining > £10 a week	141	125
MBU, children		
losing >£10	1	10
losing £1 to £9.99	193	572
staying within +/- £1	138	333
gaining £1 to £9.99	772	326
gaining > £10 a week	161	23
Total		
losing > £10 a week	24	46
losing £1 to £9.99	3,585	5,379
staying within +/- £1	7,963	9,759
gaining £1 to £9.99	12,121	9,647
gaining > £10 a week	1,788	653

Sources: IFS tax and benefit model, TAXBEN, based on 2005–06 Family Resources Survey; author's calculations.

Table 14.7 shows the numbers of winners and losers from the reforms to income tax, National Insurance and tax credits (i.e. it excludes the impact of the rise in fuel duty). It shows that the number of winners from these changes considerably outweighs the number of losers: about 14% of households lose more than £1 per week, 55% gain at least £1 per week and the remaining 31% see little change. Furthermore, the table shows the following:

- Very few households with children lose from the entire package taken together (about 9%, including virtually no lone-parent families), but about 28% would have been losers without the reforms to child tax credit and the working tax credit. Hence, the reforms to the tax credit system are important in reducing the number of families with children that lose from the reform package.
- The reform of the working tax credit does less to compensate the losers from the tax reforms amongst (non-pensioner) families without children: 23% lose out as opposed to the 26% that would have lost without the increased working tax credit threshold.
- Large gains (of greater than £10 per week) are most common for families with children.
- Some pensioner households lose out from the reform (those where there is an income-tax-paying woman aged 60 to 64) but the vast majority are better off or unaffected. The tax credit reforms make little difference to this group as few have children or are in paid work.⁹

14.5 The impact of tax and benefit changes since 1997

In this section, we look at the impact of all the tax and benefit changes that have taken place since Labour came to power in 1997 (including the impact of increased council tax) and see how the full effect of the reforms announced in Budget 2007 and Pre-Budget Report 2007 and due to be implemented in April 2008 changes the picture.

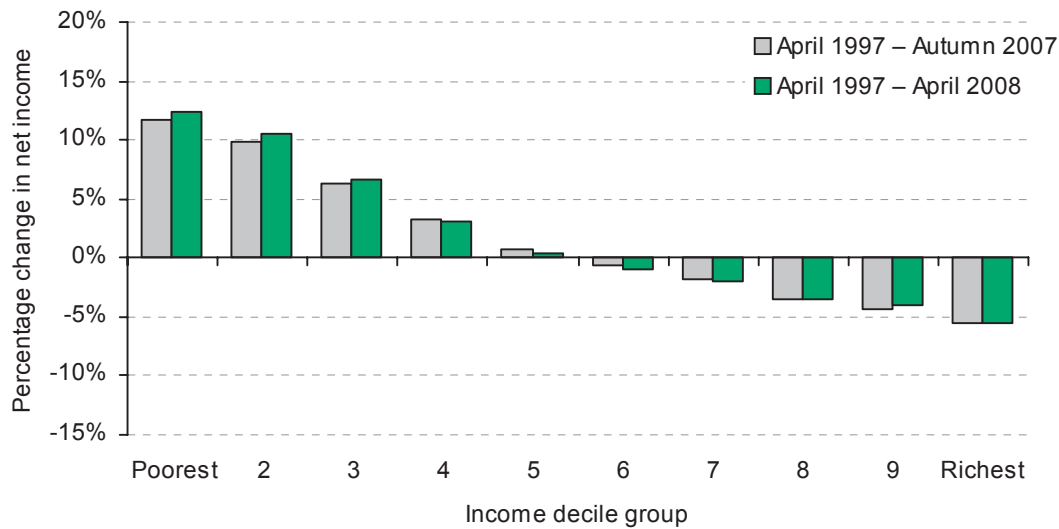
Over the past 11 years, there have been many important changes to the tax system that we are unable to model explicitly but that we should account for given the significant amounts raised or given away. Full details of our methodology for dealing with this can be found in the Notes to Figure 14.5, but the crux of the matter is this: we assume that the residual change in tax take after accounting for what we can model is shared proportionally across income deciles and household types.¹⁰ This assumes that unmodelled tax changes (e.g. changes in corporation tax, inheritance tax and capital gains tax) affect each group proportional to their income and so are neutral in distributional terms. This is unlikely to be strictly true, but it represents the simplest and most conservative arbitrary apportionment possible.¹¹

⁹ See the Notes to Table 14.3.

¹⁰ We do not use this assumption in Section 14.4, where we focus purely on those reforms we can model.

¹¹ Alternative approaches would require other *arbitrary* distributional assumptions that require a 'story' of the incidence of other taxes – e.g. corporation tax may lead to lower returns on capital, lower returns for labour or higher prices (affecting both returns).

Figure 14.5. Impact of reforms to date on distribution of income



Notes: We are able to model most of the changes to the benefit system, income tax, National Insurance, tax credits and council tax (using the Family Resources Survey 2005), along with VAT and most excise duties (using the Expenditure and Food Survey 2005) and stamp duty land tax payable on residential property (using the British Household Panel Survey 2006). Other tax changes are not modelled explicitly but amount to a tax rise of roughly £18 billion under the Autumn 2007 system and £21 billion under the April 2008 system. This means the figures here include a reduction in net income of 2.45% for all deciles and household types under the Autumn 2007 system and of 2.83% under the April 2008 system.

The population deciles used here are based on the Autumn 2007 tax and benefit system. Hence the first column is the impact on net income of the reforms since 1997 on those estimated to have the lowest incomes under the current system rather than those estimated to have the lowest incomes under the April 1997 tax and benefit system. If we believe the reforms undertaken were progressive but benefited some groups of people more than others, this would tend to make the set of reforms look less progressive than it actually was – because some of those with lower incomes in 1997 have been pushed up into higher income deciles, and some of those initially with middle incomes have been pushed down into lower deciles. This methodology is, however, the easiest to interpret particularly when comparing the Autumn 2007 and April 2008 tax and benefit systems. Percentage gains and losses are calculated as gains/losses as a proportion of net income under the Autumn 2007 tax system.

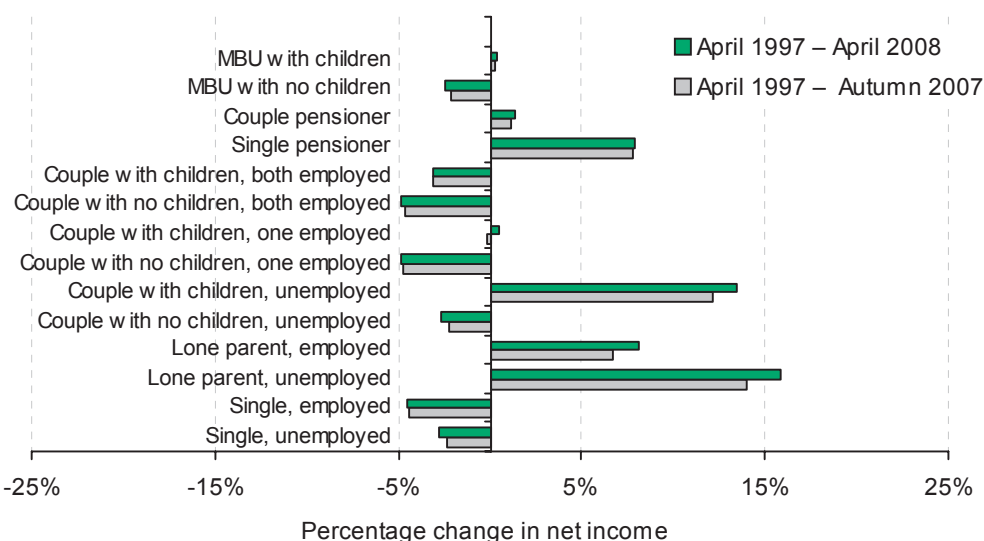
Sources: IFS tax and benefit model, TAXBEN, based on 2005–06 Family Resources Survey; author’s calculations.

Figure 14.5 shows first the impact across the income distribution of Labour’s reforms up to Autumn 2007 and then the impact including reforms made in April 2008. It shows the following:

- Under both the Autumn 2007 and April 2008 systems, gains are proportionally largest for those in the lowest decile (and in the second in absolute terms), at up to about 12% of net income. They decline with each decile as income rises, and those in deciles 6 and above see losses of up to 5.6% of net income.
- On average, Labour’s tax and benefit reforms have cost households approximately £6.93 a week, comparing the Autumn 2007 system with that which Labour inherited. As a result of the modest net giveaway to be implemented in April, this cumulative cost will fall to £6.64 per household per week under the April 2008 system. This tax increase has been used to finance the increase in spending on public services (particularly health and education) and reductions in government borrowing that have occurred under Labour.

- The changes taking place in April 2008 do little to change the overall picture. Those in deciles 1 to 3 and 8 to 10 see a small improvement, on average, whilst those in deciles 4 to 7 a small loss, on average.¹²
- It should be borne in mind that disposable income has been rising in real terms in every decile under Labour, as we would expect given the fact that the economy grows in real terms over time. In 2005–06, real-terms disposable incomes were 19% higher on average than in 1997–98 with, for instance, an increase of 20.2% at the 95th percentile (i.e. the middle of the top decile), despite the fact that Labour’s tax and benefit reforms have in themselves reduced disposable incomes for this group.¹³

Figure 14.6. Impact of reforms to date on different households



Notes: As Figure 14.5.

Sources: As Figure 14.5.

Figure 14.6 demonstrates the same analysis for different household types. It shows the following:

- Pensioners and low-income households with children are the big gainers from the changes in the tax and benefit system over the last 11 years, with the latter being the group that benefits most from the reforms taking place in April 2008. Non-working lone parents gain on average about 15% of net income, whilst non-working couples with children gain about 13%, relative to the April 1997 tax and benefit system.
- In contrast, working-age households without children with no-one in paid work are, on average, worse off following the complete set of tax and benefit reforms of the last 11 years. This emphasises that the strongly redistributionist changes introduced by Labour are also targeted almost solely upon lower-income households containing children or pensioners.

¹² Assuming that those taxes that we do not model explicitly are distributionally neutral.

¹³ Source: Households Below Average Income data-sets, courtesy of the Department for Work and Pensions.

- Working households without children have lost, on average, an amount equal to about 5% of net income following the complete set of tax and benefit changes of the last 11 years, and they represent the main net contributors to the tax and benefit reforms of the Labour government. However, despite this, they were, on average, 15% better off in 2005–06 than in 1997–98, the year of Labour’s election, because of the economy growing in real terms over time.
- Again, the latest reforms do not drastically change this picture, although they reinforce the strong redistribution to non-working families with children and single parents.

It is also worth asking the following question: ‘how many people have seen their incomes change (due to tax and benefit changes) to such an extent that they are now in a different income decile?’. Table 14.8 shows the movements between deciles, with a focus on those in the bottom half of the distribution; movement was less marked further up the distribution, particularly amongst those at the very top.

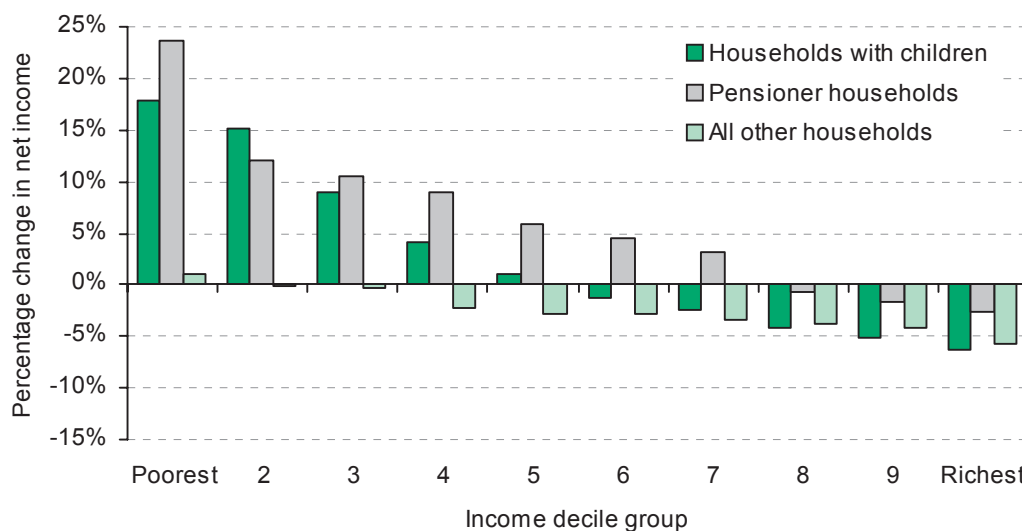
Table 14.8. The changing income distribution (thousands of households)

Decile in 1997	Decile in 2008					
	Poorest	2	3	4	5	6 or above
Poorest	2,002	526	16	2	2	1
2	539	1,324	603	73	9	2
3	8	686	1,191	587	70	6
4	0	11	730	1,317	413	77
5	0	1	9	559	1,618	361
6 or above	0	0	0	10	436	12,295

Note: Overall, as many people must move down as up, since each decile remains 10% of the population.

Source: IFS tax and benefit model, TAXBEN, based on 2005–06 Family Resources Survey.

Figure 14.7. Impact of reforms to date on distribution of income, by family type



Notes: As Figure 14.5. ‘All other households’ include working-age singles and couples without children and households containing multiple benefit units (MBUs) where no benefit units contain children.

Sources: As Figure 14.5.

Movement between deciles has been greatest for deciles 2 to 4, with those originally in the lowest two deciles seeing, on average, moves up the income distribution, whereas those in deciles 3 to 5 have been somewhat more likely to see their relative position fall. Underlying this is the targeting of Labour's redistributive efforts to lower-income families with children and to pensioners. These groups have thus seen an improvement in their relative position (particularly the lowest-income families in these groups), at the expense of other households (particularly single working-age adults). Figure 14.7 shows the impact of the reforms in the period 1997 to 2008 by income decile, separately for families with children, pensioners and all other households. It shows the following:

- Pensioners are, perhaps, the main beneficiaries of the reforms of the last 11 years, with the incomes of the poorest having increased by nearly 24% and sizeable gains far up the income distribution.
- Low-income families with children are also major beneficiaries, with gains equivalent to almost 18% for the poorest tenth. However, as income rises, gains decline quite quickly and, as with the population as a whole in Figure 14.5, for deciles 6 and above there are net losses.
- Of the remaining households (mostly working-age households without children), only the poorest see net gains and these are, on average, equivalent to only 1% of net income. Those in deciles 2 and above are net losers from the tax and benefit changes since 1997.

14.6 Conclusions

So how should we view the set of reforms to the tax and benefit system due in April 2008?

- When combined with further reforms due in 2009–10, they represent an important simplification of the marginal rate structure and could form the basis of further integration of income tax and National Insurance. Keeping the starting rate for savings income seems to have only a tenuous justification, and abolition of this (perhaps with a rise in the personal allowance to ensure revenue neutrality) would be a sensible reform. Furthermore, the increase in the working tax credit threshold has moved the income tax and tax credit systems away from alignment.
- A significant proportion of the population will see their marginal tax rates fall, but those facing the highest marginal rates, and thus the weakest work incentives, will not. Indeed, the numbers facing such high rates are likely to increase somewhat as more people are brought into the reach of the tax credit system. The reforms evidently reflect a desire for tax simplification rather than a desire to strengthen work incentives, which the government would claim to have tackled in other ways.
- The reforms benefit most those at the top and bottom of the distribution – but not by much. Within this group, there are some particular gainers: low-income working families with children; those households with adults who earn between £18,500 and £40,000; and people aged 65 and over with incomes in excess of £7,850. Losers are mainly concentrated amongst those ineligible for the working tax credit (e.g. the young, second

earners, non-working women aged 60 to 64) and those failing to claim their entitlement to tax credits.

- The reforms due in April 2008 have not materially changed the overall distributional impact of the Labour Government since 1997. Labour's tax and benefit reforms have been strongly progressive, and furthermore have focused resources on two particular groups – lower-income families with children, and pensioners. The gains for the former are generally acknowledged in public discourse, but the large gains for pensioners are less well appreciated. A focus on rises in council tax and the basic state pension (which has grown only modestly) means that the gains to this group (mainly through means-tested support) are sometimes forgotten. Labour's generosity to its favoured groups has been paid for by working-age households without children, especially the majority that are employed.

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 2006–07 in last year’s Green Budget and the December 2006 Pre-Budget Report with the eventual out-turn. It then goes on to provide more background information for the short-term and medium-term public finance forecasts that are set out in Chapter 5.

A.1 The accuracy of our previous forecasts

As Table A.1 shows, the January 2007 Green Budget forecasts for current receipts and current spending were both slightly higher than those published by the Treasury in the December 2006 Pre-Budget Report. The out-turn for the public finances in 2006–07 was stronger than either the 2006 PBR or the 2007 Green Budget forecast as a result of higher-than-forecast receipts and lower-than-forecast spending (both lower current spending and lower public sector net investment). The December 2006 Pre-Budget Report forecast that the current budget deficit in 2006–07 would be £7.9 billion, while the 2007 Green Budget forecast that it would be £9.2 billion. (The Treasury’s subsequent March 2007 Budget was more pessimistic still, predicting a deficit of £9.5 billion.) The actual estimated out-turn from the 2007 Pre-Budget Report was a deficit of just £4.7 billion. Lower-than-forecast investment spending meant that the out-turn for net borrowing diverged even more from the earlier forecasts, with net borrowing in 2006–07 estimated in the October 2007 Pre-Budget Report to have been £31.0 billion, compared with the December 2006 Pre-Budget Report forecast of £36.8 billion and the January 2007 Green Budget forecast of £38.1 billion.

Table A.1. A comparison of last year’s IFS Green Budget forecast and the Treasury’s December 2006 Pre-Budget Report forecast with the estimated out-turn for 2006–07 from the October 2007 Pre-Budget Report

£ billion	HM Treasury PBR forecast, December 2006	IFS Green Budget forecast, January 2007	Estimate, PBR, October 2007
Current receipts	517.9	518.5	519.1
Current expenditure ^a	525.7	527.7	523.8
Surplus on current budget	–7.9	–9.2	–4.7
Net investment	28.9	28.9	26.3
Public sector net borrowing	36.8	38.1	31.0

^a Includes depreciation.

Sources: Out-turn figures for 2006–07 from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/pbr_csr07_index.cfm). Forecasts from HM Treasury, *Pre-Budget Report 2006*, December 2006 (http://www.hm-treasury.gov.uk/pre_budget_report/prebud_pbr06/report/prebud_pbr06_repindex.cfm), and table 5.2 of R. Chote, C. Emmerson, A. Leicester and D. Miles (eds), *The IFS Green Budget: January 2007*, IFS Commentary 102 (<http://www.ifs.org.uk/budgets/gb2007/index.php>).

Current receipts came in £1.2 billion stronger than forecast in the December 2006 Pre-Budget Report and £0.6 billion stronger than forecast in the January 2007 IFS Green Budget. Current spending (including depreciation) came in £1.9 billion lower than forecast in the December 2006 Pre-Budget Report and £3.9 billion lower than forecast in the January 2007 IFS Green Budget. Public sector net investment was also lower than either of the previous forecasts suggested – the out-turn for public sector net investment was £2.6 billion lower than forecast by both the December 2006 Pre-Budget Report and the January 2007 Green Budget.

However, a classification change to the accounting treatment of local authorities' Housing Revenue Accounts was made in June 2007, which has boosted both current receipts and current expenditure by £1.6 billion (and therefore has no impact on measures of borrowing or debt).¹ Adjusting for this change, receipts came in just £0.4 billion lower than the December 2006 Pre-Budget Report forecast and £1.0 billion lower than the January 2007 IFS Green Budget forecast. Both projections – at least for aggregate tax receipts – were therefore very accurate.

The spending projections were considerably less accurate. Adjusting for the same accounting change, current spending (including depreciation) came in £3.5 billion and £5.5 billion lower than the December 2006 Pre-Budget Report and the January 2007 IFS Green Budget projection respectively. The IFS error was larger due to spending growth by central government departments being very low in the last three months of 2006–07.

Table A.2. IFS Green Budget and Treasury main errors in forecasting tax receipts, 2006–07

£ billion	Pre-Budget Report, December 2006	IFS Green Budget, January 2007
Income tax (net of tax credits)	–1.9	–2.4
National Insurance contributions	+1.2	+1.2
Value added tax	–1.2	–0.4
Corporation tax (net of tax credits)	+3.1	+3.1
Stamp duties	–0.7	–0.4
<i>Net taxes & National Insurance contributions</i>	+1.2	+1.9
Non-tax receipts ^a	–2.5	–2.5
<i>Total current receipts</i>	–1.2	–0.6

^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 PC corporation tax payments.

Sources: As Table A.1.

Table A.2 shows the breakdown of the main errors in the forecasts for tax receipts contained in the December 2006 Pre-Budget Report and the January 2007 IFS Green Budget. Both sets of predictions overestimated receipts of net taxes and social security contributions. Net income tax receipts were underestimated by the December 2006 Pre-Budget Report by about £2 billion and by the January 2007 IFS Green Budget by £2.4 billion. However, this was

¹ Source: Paragraph B.34, page 166 of HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/pbr_csr07_index.cfm).

offset by an overestimate of £1.2 billion in both forecasts of receipts from National Insurance contributions. The largest absolute forecast error in tax receipts was in the forecasts for corporation tax receipts: both the December 2006 Pre-Budget Report and the January 2007 IFS Green Budget overestimated corporation tax receipts by £3.1 billion. Outside of net taxes and social security contributions, there was also an apparently large absolute error in both forecasts for non-tax receipts: both the December 2006 Pre-Budget Report and the January 2007 Green Budget underestimated non-tax receipts by £2.5 billion. However, of this, £1.6 billion is explained by the reclassification of local authorities' Housing Revenue Accounts mentioned above.

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 October 2007 Pre-Budget Report, we use information from the revenues implied by a current receipts method, and the IFS modelled approach.²

1. **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 current year's receipts is then calculated using the following formula:

$$2007-08 \text{ forecast} = \frac{\text{Receipts received so far this year}}{\text{Receipts received to the same point last year}} \times 2006-07 \text{ receipts.}$$

While this is useful when forecasting revenues in the current financial year, it cannot provide projections for borrowing in future years. Also, particular caution should be used when revenues are cyclical or changes have been made that may affect the timing of payments.

2. **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:

$$2007-08 \text{ forecast} = (2006-07 \text{ receipts} \times \text{Tax-base change} \times \text{Elasticity}) + \text{Tax changes.}$$

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.

² 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(1): 83–100.

The elasticities are largely estimated from TAXBEN, the IFS tax and benefit model. For fuel, an elasticity calculated from previous IFS research is used.³ Elasticities for beer, spirit, wine and tobacco duties are taken from the median elasticity found in a range of UK studies.⁴

A.3 Forecasts for 2007–08

The Green Budget forecast is a judgement based on the Treasury's latest forecast contained in the October 2007 Pre-Budget Report, the current receipts method and the IFS modelled approach. Each of these is presented in Table A.3. Our forecast for total receipts in 2007–08 is £2.5 billion below that which the Treasury made in PBR 2007 as a result of anticipated shortfalls in corporation tax and stamp duty receipts. There is, however, no divergence between our expectation of spending in 2007–08 and that published in the Pre-Budget Report.

HM Revenue and Customs receipts

For **income tax** (net of tax credits), we forecast £149.6 billion. This is the same as the Treasury forecast and is also roughly in line with the current receipts method, which suggests that receipts will be £149.2 billion.

Our forecast for **National Insurance contributions** matches that of the Treasury (£96.5 billion). This is between the current receipts forecast (£97.6 billion) and the IFS modelled receipts forecast (£92.2 billion).

Our forecast for **corporation tax** (net of tax credits) is £44.3 billion. This is £2.0 billion below the Treasury's forecast of £46.3 billion and reflects weak in-year growth in corporation tax revenues, which to date have been no higher in nominal terms than they were in 2006–07. Our forecast therefore reflects the assumption that over the remainder of this financial year there will continue to be no growth in nominal receipts.

Our forecast for receipts from **stamp duties** of £14.6 billion is lower than the Treasury's forecast of £15.1 billion. This reflects two factors. First, the decline in the stock market on 21 January 2007 has resulted in the FTSE All Share Index being significantly below where the Treasury assumed it would be when it made its forecast of stamp duty revenue from shares in October 2007. Consequently, we assume that this will reduce stamp duty revenues over the last three months of 2007–08 by about £150 million relative to the Treasury's forecast. Second, we assume that stagnation in the property market in the final months of this financial year will lead to no nominal growth in receipts of stamp duty land tax over this period. This reduces our forecast for stamp duty receipts by a further £350 million.

We forecast **VAT** receipts of £81.4 billion, which is the same as the Treasury's forecast and in line with the current receipts projection of £81.3 billion.

³ L. Blow and I. Crawford, *The Distributional Effects of Taxes on Private Motoring*, IFS Commentary 65, December 1997 (<http://www.ifs.org.uk/comms/comm65.pdf>).

⁴ 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 2007–08

<i>£ billion</i>	PBR Oct. 2007	Current receipts method	IFS forecasting model	IFS forecast judgement
<i>HM Revenue and Customs</i>				
Income tax (net of tax credits)	149.6	154.0 ^e	152.2	149.6
National Insurance contributions	96.5	97.6	92.2	96.5
Value added tax (VAT)	81.4	81.3	82.6	81.4
Corporation tax (net of tax credits)	46.3	44.2	44.3	44.3
Petroleum revenue tax	1.5	1.3	2.2	1.5
Fuel duties	24.9	24.8	23.8	24.9
Capital gains tax	4.8	n/a	4.7	4.8
Inheritance tax	3.9	4.0	3.8	3.9
Stamp duties	15.1	15.6	14.7	14.6
Tobacco duties	8.1	7.9	8.5	8.1
Spirits duties	2.3	2.3	2.5	2.3
Wine duties	2.6	2.7	2.6	2.6
Beer and cider duties	3.3	3.3	3.5	3.3
Betting and gaming duties	1.4	1.5	1.5	1.4
Air passenger duty	2.0	2.1	2.0	2.0
Insurance premium tax	2.4	2.3	2.5	2.4
Landfill tax	0.9	0.9	0.8	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	2.4	2.4	2.4	2.4
Total HMRC	450.4	449.2	447.8	447.9
Vehicle excise duties	5.5	5.5	5.6	5.5
Business rates	21.9	21.9	21.8	21.9
Council tax ^a	23.7	23.7	23.7	23.7
Other taxes and royalties ^b	15.3	15.3	14.8	15.3
Net taxes and NI contributions^c	516.8	515.6	513.7	514.3
Other adjustments ^d	34.4	34.4	34.4	34.4
Current receipts	551.2	550.0	548.1	548.7
Current spending	559.5	559.5	559.5	559.5
Current balance	-8.3	-9.5	-11.4	-10.8
Net investment	29.7	29.7	29.7	29.7
Public sector net borrowing	38.0	39.2	41.1	40.5

^a 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.

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

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

^d 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 PC corporation tax payments.

^e Current receipts estimate of income tax revenues includes capital gains tax.

Sources: PBR forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/pbr_csr07_index.cfm); this table is similar to table B8, page 168. IFS calculations.

We forecast that **fuel duties** will yield £24.9 billion, which is the same as the Treasury's projection and in line with the current receipts projection of £24.8 billion.

Other government receipts

For all other receipts, we take the Treasury's forecasts for 2007–08.

Government expenditure

We forecast that **current spending** in 2007–08 will be £559.5 billion, which is the same as the Treasury's forecast. So far this year, central government has slightly underspent relative to the forecast from PBR 2007. Growth in spending on net social benefits has been slightly ahead of what the Treasury forecast in October. However, growth in other current spending by central government (including that on the delivery of public services) has been slower on average over the year so far than was forecast in October. We assume that this slow spending growth does not persist during the final three months of the financial year and that, therefore, spending for the year as a whole will be in line with the Treasury's forecast in PBR 2007. This might be likely given that there was a considerable slowdown in current spending by central government departments in the last three months of 2006–07 which may not be repeated – for example, were spending to follow the pattern seen during 2005–06 then central government would be on course to over- rather than under-shoot the PBR forecast.

We assume that the Treasury's forecast for £29.7 billion of **public sector net investment** in 2007–08 is accurate. Despite the fact that net investment spending since the publication of the PBR has been running ahead of the level consistent with the PBR projection being met, there remains a chance that the Treasury will in fact underspend on public sector net investment, as in recent years net investment has tended to be revised down *ex post*. Either way, a deviation on the Treasury's forecast on net investment would have no impact on the golden rule.

Government borrowing

As a result of forecasting lower current receipts (which is not forecast to be offset by any current underspend), we forecast a **deficit on the current budget** of £10.8 billion for 2007–08. This is £2.5 billion more pessimistic than the £8.3 billion deficit forecast by the Treasury.

Since we forecast the same level of net investment in 2007–08 as the Treasury does, our forecast for **public sector net borrowing** (£40.5 billion) is also £2.5 billion higher than the Treasury forecast of £38.0 billion.

A.4 Medium-term forecasts

Compliance with the golden rule is judged over the economic cycle, and 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 three economic scenarios used.

For the Green Budget baseline forecast, the Treasury's macroeconomic forecasts are used. These assume that national income will grow by 3% in 2007–08, followed by 2% in 2008–09, 2¾% in 2009–10 and 2½% thereafter (which for the period from 2008–09 onwards is a ¼ percentage point below the Treasury's central estimate of trend growth).

Table A.4. Alternative macroeconomic assumptions underlying medium-term public finances forecasts

	2007– 08	2008– 09	2009– 10	2010– 11	2011– 12	2012– 13
Green Budget baseline (PBR assumptions)						
Gross domestic product (GDP)	3	2	2 ³ / ₄	2 ¹ / ₂	2 ¹ / ₂	2 ¹ / ₂
Real consumers' expenditure	2.7	2	2 ¹ / ₄	2 ¹ / ₄	2 ¹ / ₂	2 ¹ / ₂
Employment	³ / ₄	¹ / ₂	¹ / ₂	³ / ₄	³ / ₄	³ / ₄
Real wages	0	1 ¹ / ₄	1 ¹ / ₂	1 ³ / ₄	1 ³ / ₄	1 ³ / ₄
GDP deflator	3 ¹ / ₄	2 ³ / ₄	2 ³ / ₄	2 ³ / ₄	2 ³ / ₄	2 ³ / ₄
Alternative Green Budget scenario I (Morgan Stanley central case)						
Gross domestic product (GDP)	2 ³ / ₄	1 ³ / ₄	2 ¹ / ₄	2 ³ / ₄	2 ³ / ₄	2 ³ / ₄
Real consumers' expenditure	2 ³ / ₄	1 ¹ / ₂	2	2 ¹ / ₄	2 ¹ / ₂	2 ¹ / ₂
Employment	¹ / ₂	¹ / ₂	1	1	1	1
Real wages	0	1 ¹ / ₂	1 ¹ / ₂	1 ¹ / ₂	1 ¹ / ₂	1 ¹ / ₂
GDP deflator	3 ¹ / ₄	2 ¹ / ₄	2 ¹ / ₄	2 ¹ / ₂	2 ¹ / ₂	2 ¹ / ₂
Alternative Green Budget scenario II (Morgan Stanley 'pessimistic case')						
Gross domestic product (GDP)	2 ³ / ₄	¹ / ₂	1 ³ / ₄	2 ¹ / ₂	2 ¹ / ₂	2 ¹ / ₂
Real consumers' expenditure	2 ³ / ₄	¹ / ₄	1 ³ / ₄	2 ¹ / ₄	2 ¹ / ₄	2 ¹ / ₄
Employment	¹ / ₄	– ³ / ₄	¹ / ₂	¹ / ₂	1	1 ¹ / ₄
Real wages	0	2 ¹ / ₂	2	1 ¹ / ₄	1 ¹ / ₄	1 ¹ / ₄
GDP deflator	3	1 ¹ / ₂	1 ³ / ₄	2 ¹ / ₂	2 ¹ / ₂	2 ¹ / ₂

Sources: Authors' calculations; Treasury forecasts from HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, October 2007 (http://www.hm-treasury.gov.uk/pbr_csr/pbr_csr07_index.cfm).

Under the first alternative Green Budget scenario (the Morgan Stanley central case), growth in national income is expected to be ¹/₄ percentage point below the Treasury's forecast this year and next year, ¹/₂ percentage point below in 2009–10 and ¹/₄ percentage point above thereafter.

The second alternative Green Budget scenario (the Morgan Stanley 'pessimistic case') assumes that the growth rate of national income is ¹/₄ percentage point lower in 2007–08 and is also lower than the Treasury's forecast in 2008–09 and 2009–10. From 2010–11 onwards, growth in national income under the Morgan Stanley 'pessimistic case' is the same as under the Treasury's assumptions.

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 5, we assume that corporation tax receipts over the medium term are weaker than the Treasury has forecast and that, in light of developments in the stock market since the Treasury made its forecasts in October, stock market performance is weaker than the Treasury had assumed.

Appendix B. Headline tax and benefit rates and thresholds

	2007–08 level	2008–09 level ^a
Income tax		
Personal allowance: under age 65	£5,225 p.a.	£5,435 p.a.
aged 65–74	£7,550 p.a.	£9,030 p.a.
aged 75 and over	£7,690 p.a.	£9,180 p.a.
Married couple's allowance, restricted to 10%:		
aged 65 or over on 6 April 2000	£6,285 p.a.	£6,535 p.a.
aged 75 or over	£6,365 p.a.	£6,625 p.a.
Starting rate	10%	n/a ^b
Basic rate	22%	20%
Higher rate	40%	40%
Starting-rate limit	£2,230 p.a.	£2,320 p.a. ^b
Basic-rate limit	£34,600 p.a.	£36,000 p.a.
Tax rates on savings income	10%, 20%, 40%	10%, 20%, 40%
Tax rates on dividend income	10%, 32.5% ^c	10%, 32.5% ^c
National Insurance		
Lower earnings limit (LEL)	£87 p.w.	£90 p.w.
Upper earnings limit (UEL)	£670 p.w.	£770 p.w.
Earnings threshold (employee and employer)	£100 p.w.	£105 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	20%	21%
standard rate	30%	28%
Capital gains tax		
Annual exemption limit: individuals	£9,200 p.a.	£9,600 p.a.
trusts	£4,600 p.a.	£4,800 p.a.
Non-business assets: higher-rate taxpayers	24%–40%	18%
basic-rate taxpayers	12%–20%	18%
Business assets: higher-rate taxpayers	10%–40%	18%
basic-rate taxpayers	5%–20%	18%
Inheritance tax		
Threshold	£300,000	£312,000
Rate for transfer at or near death	40%	40%

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	2007–08 level	2008–09 level ^a
Value added tax		
Standard rate	17.5%	17.5%
Reduced rate	5%	5%
Registration threshold	£64,000 p.a.	£66,000 p.a.
Excise duties		
Beer (pint at 3.9% abv)	30p	31p
Wine (75cl bottle at 12% abv)	133p	137p
Spirits (70cl bottle at 40% abv)	548p	562p
20 cigarettes: specific duty	218p	224p
<i>ad valorem</i> (22% of retail price)	109p	116p
Ultra-low-sulphur petrol (litre)	50p ^d	52p
Ultra-low-sulphur diesel (litre)	50p ^d	52p
Air passenger duty		
Destinations within the EU: economy	£10	£10
club/first class	£20	£20
Destinations outside the EU: economy	£40	£40
club/first class	£80	£80
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:		
standard residential threshold	£125,000 p.a.	£125,000 p.a.
residential threshold in disadvantaged areas	£150,000 p.a.	£150,000 p.a.
non-residential threshold	£150,000 p.a.	£150,000 p.a.
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–£300 p.a. ^e	£0–£400 p.a. ^e
Standard rate	£180 p.a.	£185 p.a.
Small-car rate (engines up to 1,549cc)	£115 p.a.	£120 p.a.
Heavy goods vehicles (varies according to vehicle type and weight)	£165–£1,850 p.a.	£170–£1,900 p.a.
Landfill tax		
Standard rate	£24 per tonne	£32 per tonne
Lower rate (inactive waste only)	£2 per tonne	£2.50 per tonne

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	2007–08 level	2008–09 level ^a
Climate change levy		
Electricity	0.441p/kWh	0.458p/kWh
Natural gas	0.154p/kWh	0.160p/kWh
Coal	1.201p/kg	1.248p/kg
Liquefied petroleum gas	0.985p/kg	1.023p/kg
Business rates		
Rate applicable for high-value properties ^f in: England	44.4%	46.2%
Scotland	44.4%	46.2%
Wales	44.8%	44.6%
Council tax		
Average rate band D council tax in England and Wales	£1,302 p.a.	Councils to set
Income support / income-based jobseeker's allowance		
Single (aged 25 or over)	£59.15 p.w.	£60.50 p.w.
Couple (both aged 18 or over)	£92.80 p.w.	£94.95 p.w.
Basic state pension		
Single	£87.30 p.w.	£90.70 p.w.
Couple	£139.60 p.w.	£145.05 p.w.
Winter fuel payment: for those aged 60–79	£200	£200
for those aged 80 or over	£300	£300
Pension credit		
Guarantee credit for those aged 60 or over: single	£119.05 p.w.	£124.05 p.w.
couple	£181.70 p.w.	£189.35 p.w.
Savings credit for those aged 65 or over:		
threshold – single	£87.30 p.w.	£91.20 p.w.
threshold – couple	£139.60 p.w.	£145.80 p.w.
maximum – single	£19.05 p.w.	£19.71 p.w.
maximum – couple	£25.26 p.w.	£26.13 p.w.
withdrawal rate	40%	40%
Child benefit		
First child	£18.10 p.w.	£18.80 p.w.
Other children	£12.10 p.w.	£12.55 p.w.
Child tax credit		
Family element (doubled for first year of a child's life)	£545 p.a.	£545 p.a.
Child element	£1,845 p.a.	£2,085 p.a.
Disabled child element	£2,440 p.a.	£2,540 p.a.
Working tax credit		
Basic element	£1,730 p.a.	£1,800 p.a.
Couples and lone-parent element	£1,700 p.a.	£1,770 p.a.
30-hour element	£705 p.a.	£735 p.a.
Disabled worker element	£2,310 p.a.	£2,405 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%
	Continues	Continues

