# The Green Budget

## January 1999


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**Published by**

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ISBN 1-873357-87-7

Support from the ESRC-funded Centre for Fiscal Policy at IFS is gratefully acknowledged.

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# 1. Summary

## Economic prospects

For most of the past two years, the deliberate aim of policy, in particular monetary policy, has been to slow the rate of UK economic growth, so as to ease inflationary pressures that were beginning to build, especially in the labour market. There is mounting evidence that this has been achieved. Indeed, in recent months, there has been concern that policy may have been too tight, risking a hard landing for the economy.

Many of the characteristic early features of past recessionary episodes are now apparent, and we expect to see negative economic growth in the early part of 1999. For the year as a whole, we expect GDP growth of 0.4%, although there is a risk of a more abrupt downturn. In response to weak growth, the Monetary Policy Committee of the Bank of England is likely to deliver a further aggressive easing of monetary policy, while fiscal policy becomes supportive as public spending rises in 1999–2001. We therefore expect growth to rebound quite sharply later this year, averaging 2.2% in 2000.

## An audit of the public finances

The public finances seem set to be slightly better in 1998–99 than forecast by the Treasury in the November 1998 Pre-Budget Report, but not by as much as suggested by the data in the first nine months of the financial year. We expect public sector net borrowing (PSNB) of –£2.3 billion in 1998–99 and a public sector net cash requirement (PSNCR — the renamed public sector borrowing requirement) of –£5.1 billion. For 1999–00, we are less optimistic than the Treasury, reflecting a lower forecast of growth and inflation which depresses tax revenue, and higher cyclical social security spending. We expect PSNB of £5 billion, a PSNCR of £3 billion, balance on the current budget and a decline in net public sector debt to around 40% of GDP. The Chancellor's fiscal rules should just be met next year if spending and tax policies are left unchanged in the Budget.

Our forecasts for the medium term suggest that the fiscal rules should continue to be met, but only just. Unlike the Treasury forecasts in the Pre-Budget Report, we find very little margin for error. Between 1997–98 and 2003–04, the surplus on the current budget is zero on average, and the ratio of net public sector debt to GDP averages 40%. Any deterioration would see the fiscal rules breached. The principal reason for the difference between our forecasts and the Treasury's is a slightly more pessimistic view of the current cyclical position of the economy.

Given the Chancellor's fiscal rules, there is little scope for any further fiscal loosening of policy in the Budget, and no case for tightening. We do not expect a significant change in the net burden of taxation and public spending in the Budget.

## Productivity

The centrepiece of the Pre-Budget Report was a discussion of the gap in output per worker between the UK and other major industrialised countries. A large part of that gap can be explained by adjusting for differences in hours worked, levels of skill, and the amount and quality of capital used. This indicates that firms operating in the UK may not face the right incentives. Education and training, policies to stimulate innovation in technology and organisational structure, and policies to speed the diffusion of ideas are all important. But specific tax incentives, which often generate unintended and undesirable side-effects, may be an ineffective form of government intervention. The challenge for economists and policymakers is to be clear about where markets may be failing to provide the right incentives, and then to attempt to design policies that are clearly targeted on these failures and that minimise new distortions.

## Company taxation

After two Budgets that radically altered the taxation of dividend income and changed the timing of corporation tax payments, substantial change to the structure of corporate taxation in the 1999 Budget would be surprising (not least because no such reforms were trailed in the Pre-Budget Report). But the Pre-Budget Report did discuss a number of tax changes targeted at reducing the productivity gap. In particular, proposals were outlined for R&D tax credits and the tax treatment of investment in plant and machinery. In both cases, the targets are small firms, but any scheme restricted to small firms will have little effect on aggregate R&D or investment, since the great bulk of both is done by large firms.

We discuss the possibility of changing the tax treatment of losses, for which there is a good economic case but where there are concerns over implementation. We also consider calls for changes to the tax treatment of venture capital and various employee share-ownership schemes. For both of these, it is not clear what role there is for tax policy to affect the perceived problems they seek to address.

## Direct taxes and benefits

Although we do not expect any major alteration in the overall burden of taxation in the 1999 Budget, further changes in direct personal taxes and social security are likely to be announced.

The 10% starting rate of income tax was a central part of the government's election manifesto. There are reasons to be sceptical about the effectiveness of the policy, either in promoting employment or in helping those on low incomes, and it would create administrative complexity. None the less, it seems likely to be introduced. We expect that the 20% band would be removed as a way of funding the 10% band, but even with this change, a band of £1,000 would cost £300 million while a band of £2,000 would cost £3.2 billion. One way around the problems generated by a 10% band would be to see it as a step towards an increase in tax allowances.

Further reform to the employees' National Insurance system is possible, although this would require the resolution of a series of issues related to the so-called contributory principle. Reform of National Insurance contributions for the self-employed would be one way of raising some money and would reduce the extent of the tax privilege associated with self-employed status.

Welfare reform is set to continue, with possible changes to the mechanisms of giving support to families with children. Taxing child benefit sounds like a policy consistent with government objectives but, on closer examination, seems unlikely to be an effective means of delivering any coherent set of objectives. Housing benefit is known to be under scrutiny; radical change here is possible, but would either require substantially increased spending or generate many losers.

## Excise duties

One of the reasons the public finances continue to be sustainable is the very substantial annual increase in revenues from excise duties, as tobacco and fuel duties are raised in real terms each year by at least 5% and 6% respectively. There must be some questions about whether this policy can continue in the long term. Another vexed issue in this area is the taxation of alcohol; alcohol is taxed at very different rates according to the form in which it is consumed, with spirits especially heavily taxed. This seems anomalous, and it may even be the case that a reduction in the rate of tax on spirits would not cause a very substantial fall in total revenue. In the case of beer and wine, any rate cut would seem likely to lead to a large reduction in revenue, even accounting for cross-border shopping.

## Taxation and the environment

The two most detailed consultative documents published at the time of the Pre-Budget Report both related to the environment. One was the report of the Marshall Committee on economic instruments and the business use of energy, which argued that, in the near future, a tax was a more promising route than tradable permits for polluters. We note that such a tax could be a very effective way of charging for carbon dioxide emissions, but that action by one country alone may be difficult. The second substantial consultative document considered reform of vehicle excise duty (VED), to encourage cleaner vehicles. As far as carbon dioxide emissions are concerned, fuel taxes are likely to be more effective, but there may be a role for a graduated VED where cars of similar fuel-effectiveness vary in the non-$CO_2$ emissions they produce because they use different technologies.

## European issues

There has been a great deal of recent media debate over European tax harmonisation. Unless the EU were somehow to force the UK to increase public spending, the consequences of any upward harmonisation of one part of our tax system would be likely to be a reduction in some other tax, rather than an increase in the overall tax burden. The idea that the burden of tax borne by capital is 'too low' and that borne by labour 'too high' is difficult to justify,

given the difficulty in identifying who bears the burden of any particular tax, and attempts to increase taxes on capital in a world of increasingly mobile capital are unlikely to be very effective. Current developments within the EU on a Code of Conduct to address competition in business taxation are discussed.

Finally, we briefly discuss the debate about duty-free, arguing that the economic case for abolition is convincing and that the practical problems of the new system should be solvable.

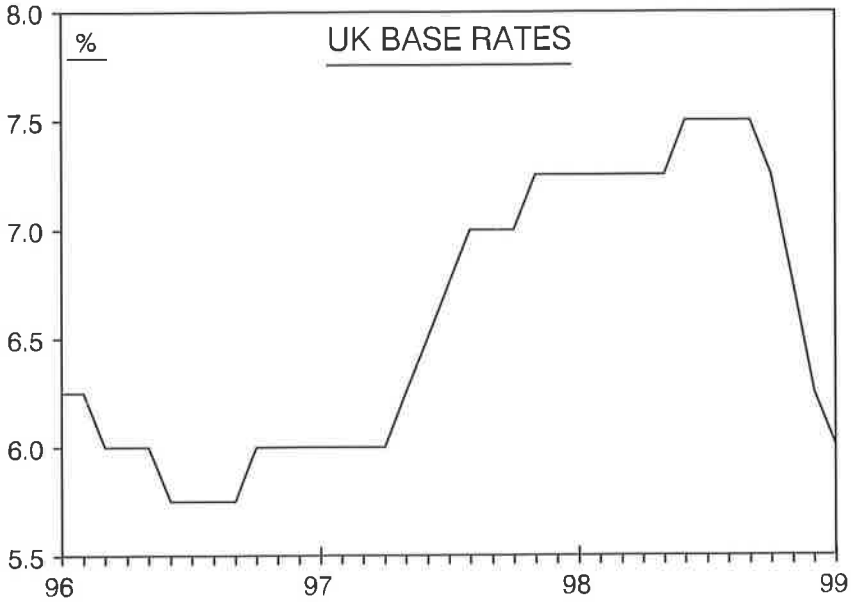
## Individual Learning Accounts

The proposal for Individual Learning Accounts (ILAs) aims to provide extra money for training for up to 1 million account-holders. There are a number of questions about the current, tentative proposals. In particular, there is a reasonable concern over whether the administrative costs of setting up a new system of accounts for the sole purpose of training are justified. It is unclear how much of the £150 million subsidy to account-holders will result in new training, rather than simply being a transfer to people who would have done the training anyway. And many of the ideas implicit in the scheme are already part of government training policy under different names. The forthcoming White Paper on lifelong learning will need to address these issues.

# 2. The economic prospects

For most of the past two years, the deliberate aim of monetary policy has been to slow growth in the UK economy to a below-trend rate, in order to ease the inflationary pressures that were beginning to build, particularly in the labour market. There is mounting evidence that this has been achieved. According to the latest estimates from the Office for National Statistics (ONS), GDP growth has slowed from an annualised rate of 3.8% in the second half of 1997 to 2.4% in the first half of 1998 and 1.5% in the second half. Unemployment appears to have stabilised. The main concern in recent months has been that policy might have been too tight, risking a hard landing for the economy. As recessionary clouds have gathered, the Monetary Policy Committee (MPC) of the Bank of England has responded by cutting interest rates aggressively. The Bank of England has cut interest rates by 1½ percentage points since October to 6%. Interest rates are now back to the level prevailing before the general election. In this chapter, given the sensitivity of the public finances to the economic cycle, we assess the likely severity of the downturn in economic activity in coming quarters and, equally important, the strength of the subsequent recovery. The implications for the public finances are considered in Chapter 3.

**Figure 2.1. An aggressive cut in interest rates**




## 2.1 The official view

In the government's Pre-Budget Report, the Treasury predicted a mild slowdown in GDP growth from 2¾% in 1998 to 1–1½% in 1999, recovering strongly to 2¼–2¾% in 2000. The latest Bank of England forecast was fairly similar. For the purposes of projecting the public finances, the Treasury

assumed growth at the lower end of these ranges. Compared with the forecast made in the March Budget, GDP growth in 1999–00 was revised from 2% to 1%. The Treasury assumed that this shortfall in growth would be recouped in future years — growth was revised up by ¼ of a percentage point to 2½% in 2000–01, by ½ a point to 2¾% in 2001–02 and by ¼ of a point to 2½% in 2002–03. Thus the cumulative growth in GDP from 1998–99 was left unchanged between the March and November forecasts.

There seems little reason to argue with these assumptions. Ultimately, what is most important for the sustainability of the public finances is not the precise path of output from year to year, although this will clearly affect the level of public sector borrowing in a particular year, but the cumulative path of output. Unless one's view of the initial position of the economy has changed, it seems reasonable to assume that any shortfall in growth in one year will be recouped in other years. But such reasoning ignores the fact that there have already been substantial upward revisions to GDP since the last Budget. In March, the Treasury expected GDP to grow by 3% in 1997–98 and 1¾% in 1998–99. Growth is now estimated by the ONS to have been 3¾% in 1997–98, and the latest Treasury forecast is for growth of 2¼% in the current financial year. Thus the starting level of output in 1998–99 is over 1% higher than the Treasury assumed in last year's Budget. Since the Treasury has assumed the same underlying growth rate of 2¼% a year, this implicitly means that it has revised its earlier assessment of the output gap by around 1%. In fact, the Treasury believes that output was ¼% above trend in 1997Q2, rising to a peak of 1% in 1998Q1 and falling back to ¼% in 1998Q4. In the Treasury's view, the output gap was approximately ¾% in 1997–98, and it is projected to fall to ¼% in 1998–99 and –1¼% in 1999–00.

There are two main issues raised by the Treasury's economic projections. First, what happens if the cyclical downturn in economic activity is greater than the Treasury expects? Soft landings are easy to forecast; they are not always quite so easy to achieve. It is evident from the aggressive policy action taken by the MPC since October that there is a risk that the out-turn for growth will be considerably worse than the Bank of England and Treasury believe. The second issue concerns the current cyclical position of the economy. Is the Treasury correct to believe that the output gap has almost been eliminated? If the Treasury has been too optimistic about where output is relative to potential, it follows that the sustainable path for output will be lower than the Treasury projects and thus the path for public borrowing will be permanently higher.

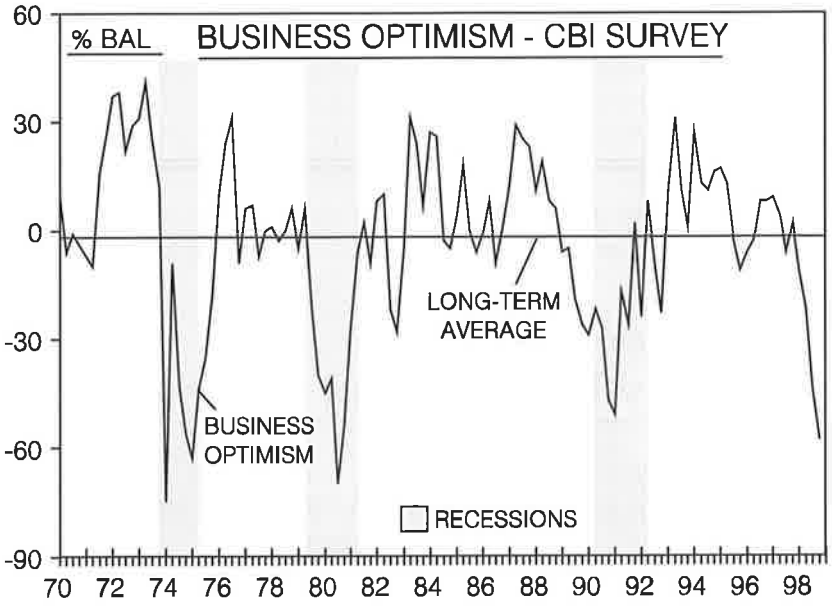
## 2.2 Flirting with recession in 1999

One of the problems with monetary policy is that the lags between interest rate changes and economic activity are 'long and variable'. Monetary policy has been likened to pulling on a piece of elastic with a brick on the end. For quite some time, nothing seems to happen; then, all of a sudden, the full force of the brick is felt. This is what occurred in the UK in the second half of last year. Up until the summer, there was no clear evidence that the economy was slowing sufficiently to keep inflation on target. The labour market was still

tightening and the, now discredited, average earnings data showed a worrying pick-up in wage inflation. But from July 1998 onwards, there was a large decline in business and consumer confidence as the impact of the earlier monetary and fiscal tightening was felt. This was compounded by the turmoil in international financial markets and the worsening in global economic prospects from last August. The domestic and international shocks hit the UK at much the same time and the adverse effects on the UK economy were all the more powerful as a result.

The slump in confidence can be seen most clearly in the quarterly CBI Industrial Trends Survey. Business optimism fell from –11 in January 1998 to –22 in April, –44 in July and –58 in October. This last reading beat even the most pessimistic reading in the recession of the early 1990s (–51 in January 1991). It would be without precedent for the downturn in economic activity to be as mild as the Treasury expects in the face of these business confidence readings. More worrying is what companies have been saying about the recent past. In common with other surveys, the CBI survey has shown a collapse in order books in recent months. Companies have responded by cutting production but demand has fallen more rapidly. As a result, firms have reported an involuntary accumulation of inventories. Recent CBI surveys have shown that the balance of firms reporting higher-than-normal stocks of finished goods was above the level seen even during the deep recession of the early 1990s. This raises the prospect of further sharp cut-backs in production in coming months to bring output back into line with demand. This is dangerous territory. If companies cut production to reduce inventories, they will also cut employment. Consumer confidence, which has already weakened sharply, could take another hit. If households rein back spending further, companies could be frustrated in their efforts to reduce inventories. The process would be repeated, risking a downward spiral into recession.

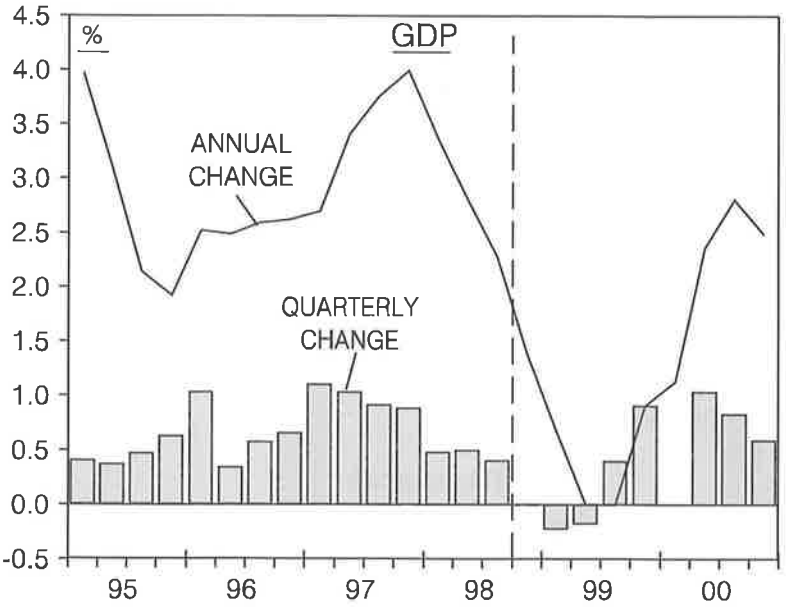
**Figure 2.2. Business confidence slumps**



Thankfully, full-blown recessions occur infrequently in the UK but they can usually be traced to some combination of policy tightening, external shocks and collapsing business and consumer confidence. Several characteristic features of past recessionary episodes are apparent now. First, there has been a large fiscal tightening over the past two years. Second, monetary policy was tightened significantly between early 1996 and mid-1998. This has only partially been unwound by the 1½ percentage point cut in interest rates since October; the trade-weighted exchange rate is still 20% higher than it was three years ago. Third, there are downside risks stemming from the world economy. Fourth, there has been a deterioration in the private sector's financial position — net lending by households and non-financial corporations is 1.5–2% of GDP worse than normal. Fifth, although the economy has avoided a damaging consumer boom, there has been a boom in business investment over the past three years which could easily come to an abrupt end. Sixth, business confidence remains at worryingly low levels.

Taking all these factors together, the UK is likely to experience a period of negative economic growth during the first half of 1999 as companies attempt to reduce inventories — the Goldman Sachs forecast is for GDP to decline at an annualised rate of 0.6% compared with the second half of 1998. The risks are of a more abrupt downturn in the next two or three quarters. All elements of demand are expected to contribute to slower GDP growth this year. In Goldman Sachs's central forecast, consumer spending growth eases from 2.5% to 1.4% between 1998 and 1999, investment growth falls from 7.7% to 0.3% and there are drags on GDP growth this year of ½% from inventories and ½% from net trade. The annual growth of GDP is forecast to fall from 2.5% in 1998 to 0.4% in 1999. For much of this year, it will appear as though the economy is flirting with recession. The consensus forecast for GDP growth in 1999 has fallen steadily in recent months — it now stands at 0.6% but the range is wide, at –0.5% to 1.5%.

**Figure 2.3. GDP forecasts**

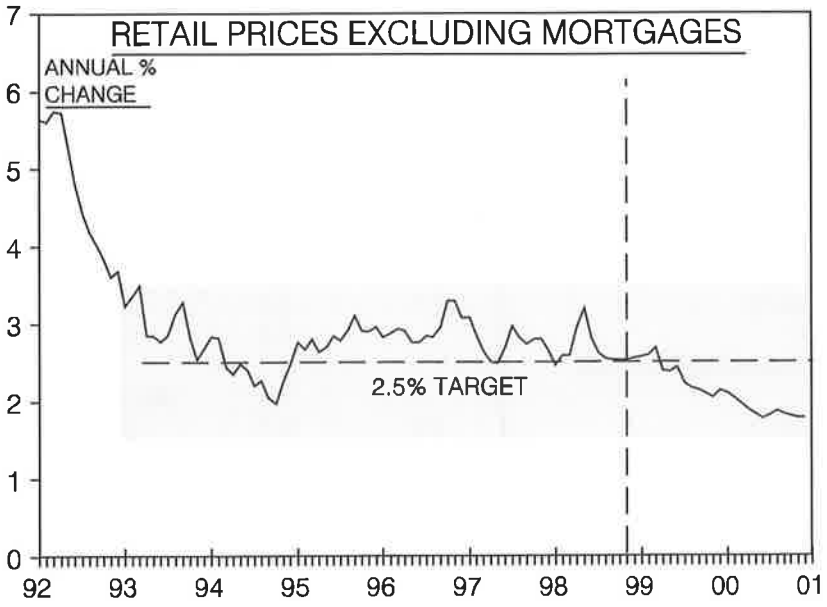


# 2.3 A strong recovery in 2000?

If the economy flirts with recession in 1999, a considerable degree of slack will be created during the course of the year. With potential GDP growing by around 2¼% a year, the output gap would narrow by this amount if the economy stagnates for a year. Estimates of the output gap are very imprecise but there are few forecasters who believe that output is more than 2% above trend. The Treasury believes that the output gap was around ¼% at the end of last year, supported by the fact that underlying retail price inflation has been running at the government's target since August 1998. In our central forecast, we have taken a slightly more pessimistic view. While the stability of inflation is impressive, this owes much to the strong disinflationary forces in the world economy. Domestically generated inflation has been running higher than the government's target, as evidenced by the fact that unit wage costs increased by around 3½% last year. On Goldman Sachs's growth forecasts, the economy will move from being 1¼% above trend in 1998 to ¾% below trend in 1999.

Inflation might normally have been expected to move a little higher in the first half of 1999 in response to the current tightness in the labour market and the past strength of the service sector, but this should be offset by disinflationary pressures from abroad. Furthermore, as the economy moves below trend from this spring, the domestic disinflationary forces should begin to build, leading to substantial downward pressure on inflation later this year and next. The Goldman Sachs forecast is for underlying retail price inflation to remain close to the 2½% target until the spring but then to decline to around 2% by the end of 1999 and lower in 2000.

**Figure 2.4. Inflation forecasts**




Since the inflation target is symmetrical — that is, an undershoot is deemed as bad as an overshoot (in some ways, it is worse) — it is reasonable to believe that the MPC will take whatever action is necessary in coming months to try to head off the threat of an outright recession. The MPC has already embarked on

this course by cutting interest rates by 1½ percentage points since October. In judging how much further interest rates might fall, it is worth appealing to the 'Taylor rule' framework to decide the neutral level of short-term interest rates. The Taylor rule says that interest rates should differ from their neutral level by one-half of the deviation in output from trend and one-half of the deviation in inflation from target. It has provided a reasonable characterisation of monetary policy decisions in recent years. In the UK, the equilibrium level of interest rates is probably somewhere around 5½% — 3% real and 2½% inflation. At 6%, interest rates are still above a neutral level. We also need to take account of where the economy is relative to potential and where inflation is relative to target. On Goldman Sachs's forecasts for the evolution of the output gap and inflation, the Taylor rule suggests that interest rates should currently be around 6% but then fall to under 5% by the end of the year.

The economy will receive a significant boost from the recent and prospective easing in monetary policy. Fiscal policy is also likely to turn more expansionary in 1999–00, after three years of intense fiscal contraction. This contrasts with past recessionary episodes when the scope to ease policy has often been constrained by continuing concerns about inflation. We can also draw comfort from the fact that consumer confidence, though still declining, remains well above typical recession levels. This suggests that, while the near-term prospects for economic activity are fairly bleak, there are good reasons for believing that the economy will recover strongly later this year and in 2000. This is reflected in the forecasts underlying the public finances in Chapter 3.

**Table 2.1. Demand prospects**

| *Annual percentage change* | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|
| **Household consumption** | | | | |
| HMT[a] | | 3 | 1¾ to 2¼ | 2¼ to 2¾ |
| Goldman Sachs[a] | 3.9 | 2.5 | 1.4 | 2.5 |
| Consensus | | 2.9 | 1.4 | 1.8 |
| **Fixed investment** | | | | |
| HMT | | 6¼ | 1¾ to 2¼ | 3 to 3½ |
| Goldman Sachs | 6.6 | 7.7 | 0.3 | 2.8 |
| Consensus | | 6.5 | 0.8 | 1.3 |
| **Exports of goods and services** | | | | |
| HMT | | 3¼ | 2¾ to 3¼ | 4¾ to 5¼ |
| Goldman Sachs | 8.7 | 2.6 | 0.6 | 3.0 |
| Consensus | | 2.9 | 1.6 | 3.6 |
| **Imports of goods and services** | | | | |
| HMT | | 7¼ | 4¼ to 4¾ | 4½ to 5 |
| Goldman Sachs | 9.5 | 6.5 | 1.9 | 3.8 |
| Consensus | | 6.4 | 3.0 | 3.6 |
| **Real GDP** | | | | |
| HMT | | 2¾ | 1 to 1½ | 2¼ to 2¾ |
| Goldman Sachs | 3.5 | 2.5 | 0.4 | 2.2 |
| Consensus | | 2.6 | 0.6 | 1.8 |

[a]Includes non-profit institutions serving households.

Sources: HMT — HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998.
Goldman Sachs — *The UK Economics Analyst*, January/February 1999.
Consensus — HM Treasury, January 1999.

**Table 2.2. Other key indicators**

| | 1997Q4 | 1998Q4 | 1999Q4 | 2000Q4 |
|---|---|---|---|---|
| **Price inflation (%)**[a] | | | | |
| HMT | 2½ | 2½ | 2½ | 2½ |
| Goldman Sachs | 2.8 | 2.5 | 2.1 | 1.8 |
| Consensus | | 2.5 | 2.2 | 2.2 |
| | **1997Q4** | **1998Q4** | **1999Q4** | **2000Q4** |
| **Unemployment (million)** | | | | |
| Goldman Sachs | 1.59 | 1.32 | 1.72 | 1.90 |
| Consensus | | 1.33 | 1.58 | 1.77 |
| | **1997** | **1998** | **1999** | **2000** |
| **Current account (£bn)** | | | | |
| HMT | | –1¾ | –7½ | –8¾ |
| Goldman Sachs | 6.1 | –0.8 | –6.9 | –9.8 |
| Consensus | | –1.9 | –5.5 | –6.6 |

[a]RPI excluding mortgage interest payments.

Sources: HMT — HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998.
Goldman Sachs — *The UK Economics Analyst*, January/February 1999.
Consensus — HM Treasury, January 1999.

In summary, the UK economy seems set to flirt with recession in 1999. In response, the MPC is likely to deliver a further aggressive easing of monetary policy and fiscal policy will become more supportive. Short-term interest rates should fall to under 5% by the end of the year, paving the way for a sharp rebound in economic activity in the year 2000. A summary of Goldman Sachs's main economic forecasts is shown in Tables 2.1 and 2.2.

# 3. An audit of the public finances

Since the last Budget, the Chancellor has announced an overhaul of the way in which fiscal policy will be conducted and presented. But the objectives have remained the same: namely, that public borrowing will meet two strict rules over the economic cycle — the 'golden rule' and the 'sustainable investment rule'. For any given burden of taxation, these rules place limits on the level of current spending and on the overall level of public borrowing. Last summer, the Chancellor also announced a new way of planning and controlling public spending. Departmental spending plans (covering about 50% of public expenditure) were set for the next three years, informed by the government's Comprehensive Spending Review. The remainder — mainly social security spending, debt interest and local authority spending — will be reviewed every year.

In this chapter, we provide an audit of the public finances in the context of these rules. Our main conclusions are:

1. The out-turn for public borrowing in 1998–99 is likely to be about £1 billion better than expected by the Treasury in last November's Pre-Budget Report but not as good as suggested by the data in the first nine months of the financial year.

2. Despite the better expected out-turn in 1998–99, our borrowing forecasts for 1999–00 are about £1 billion worse than the Treasury's. This mainly reflects the impact of lower economic growth and inflation on the growth in tax receipts, and higher cyclical social security spending. But the Chancellor's fiscal rules should just be met next year.

3. In the medium term, on unchanged policies, the fiscal rules should be met. Unlike the Treasury's forecasts, though, there is little margin for error in ours. Between 1997–98 and 2003–04, the surplus on the current budget averages zero and the ratio of net public sector debt to GDP averages 40%. The main reason for the difference between the two sets of forecasts is our slightly more pessimistic view of the current cyclical position of the economy.

4. Given the Chancellor's fiscal rules, there seems no case for a significant fiscal adjustment in either direction in the forthcoming Budget. On cyclical grounds, there is also no strong case for loosening policy to stimulate the economy; the fiscal stance is already set to loosen by about ½% of GDP in 1999–00, bringing an end to three years of severe fiscal contraction. The Chancellor is unlikely to announce a significant net tax change in the Budget.

# 3.1 The fiscal 'rules' and the new format for public borrowing

Since taking office in May 1997, the government has consistently stated that it will keep to two strict fiscal 'rules':

- The *golden rule* — over the economic cycle, the government will borrow only to invest and not to fund current spending. In the new terminology, defined below, the government will run a surplus on current budget.
- The *sustainable investment rule* — over the economic cycle, the ratio of net public sector debt to GDP will be set at a 'stable and prudent' level, defined by the Chancellor as 40% of GDP.

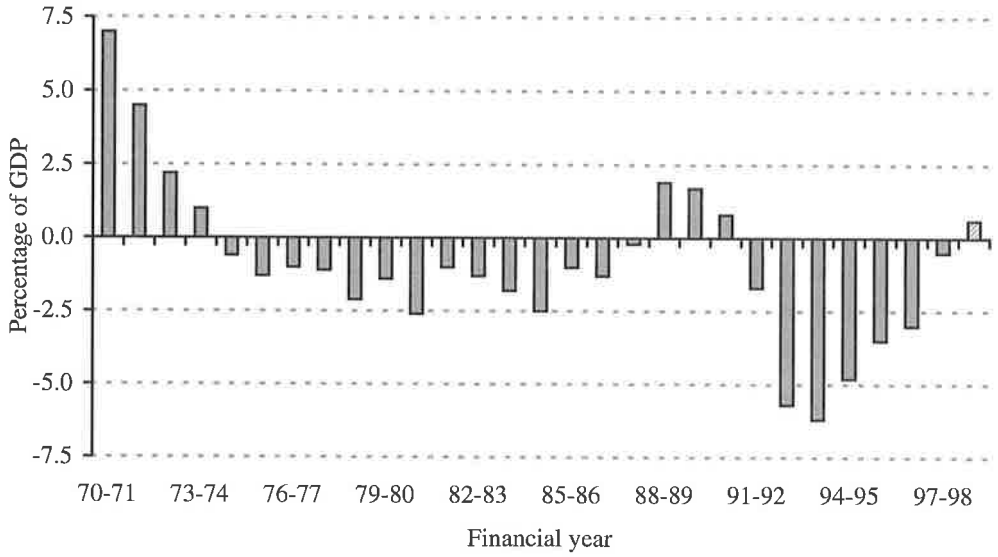
The government's main argument for adopting these rules is a belief that the burden of public spending should fall fairly across generations. All public consumption benefiting the current generation should be paid for by that generation (the golden rule). Furthermore, the public sector should invest responsibly, avoiding the creation of an excessive burden of debt repayments on future generations (the sustainable investment rule).

There is nothing sacrosanct about these two rules, nor are they necessarily optimal. While it is true that meeting them would mean that the public finances were kept in good shape, a failure to do so would not automatically render the public finances unsustainable. The government has provided no justification for a net debt target of 40% of GDP — it could just as easily have chosen 38% or 42%. The Maastricht Treaty, for instance, allows UK net public debt to be as high as 50% of GDP, consistent with gross general government debt of no more than 60% of GDP. Slavish adherence to the golden rule may also be sub-optimal. The definitions of current and capital spending are determined by National Accounts conventions rather than by economic criteria. Assessments need to be made over which types of public spending should be regarded as only benefiting the current generation. For example, some education spending may well be beneficial to future generations. Conversely, government policy can impose costs on future generations that are not reflected in current spending; the most obvious example is future pension liabilities.[1]

The fiscal rules chosen by the government are probably best regarded as sensible rules of thumb, but they are no more than that. This should always be borne in mind when assessing the sustainability of fiscal policy. The golden rule, if adhered to, implies a tougher fiscal stance than achieved under the Conservatives. Between 1979–80 and 1996–97, there was a deficit on current budget averaging 1.9% of GDP a year; a current surplus was only achieved in a three-year period from 1988–89 to 1990–91. Indeed, as shown in Figure 3.1, the golden rule has not been met over any economic cycle since the mid-1970s.

[1] For a discussion of how to measure intergenerational equity and the golden rule, see, for example, M. Robinson, 'Measuring compliance with the golden rule', *Fiscal Studies*, vol. 19, pp. 447–62, 1998.

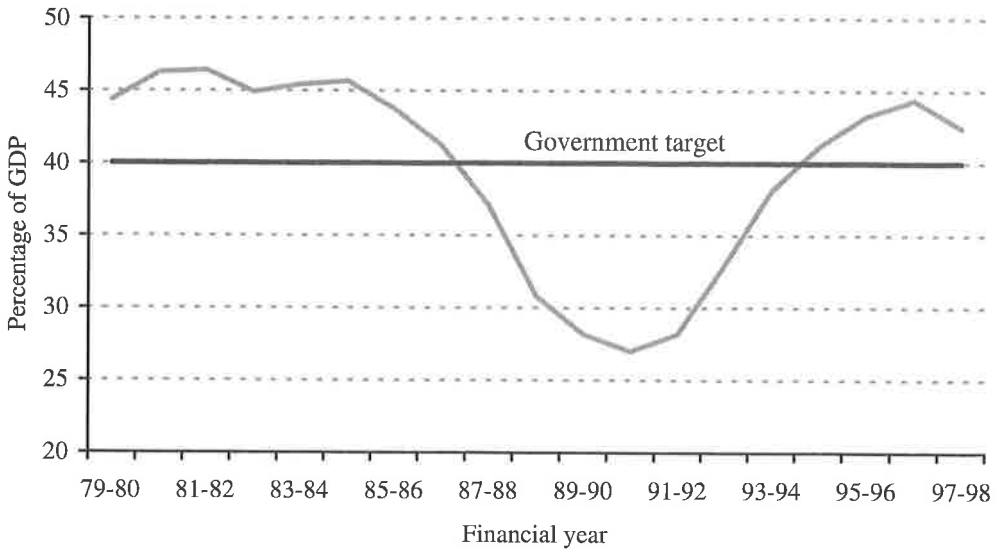
**Figure 3.1. Compliance with the golden rule? Current budget surpluses and deficits (percentage of GDP)**




Note: Treasury forecast used for 1998–99.
Source: HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998, Table B19.

During the Conservatives' period of office, the net debt ratio averaged 39.4% of GDP, which is in line with the second of the government's fiscal rules. This is shown in Figure 3.2. This was only achieved by squeezing public investment. In the process, the government's balance sheet deteriorated markedly. The net wealth of the public sector fell from around 70% of GDP in the late 1980s to 16% of GDP at the end of 1997.

**Figure 3.2. Meeting the sustainable investment rule? Net public sector debt (percentage of GDP)**




Source: HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998, Chart 2.2.

There is one final consideration — European Monetary Union (EMU). Under the terms of the Stability and Growth Pact, EMU members must aim for a medium-term government budget of balance or surplus. This is a tougher requirement than either of the government's fiscal rules and it will become a consideration if the UK joins the single currency in the next Parliament. Interestingly, EU Commissioner Mario Monti recently proposed that there should be greater focus on the golden rule when implementing the Stability Pact.

### New measures of public borrowing

In June 1998, the government announced a number of changes in the way that the public finances are presented, making it easier to monitor the government's two fiscal rules.[2] There is now a clear distinction between current and capital spending in the public accounts. There is also less focus on the old public sector borrowing requirement (PSBR), which has been renamed the public sector net cash requirement (PSNCR). Instead, the government looks at three main fiscal aggregates:

- The *surplus on current budget* — defined as the difference between tax receipts and current public spending (including depreciation) — is the measure used to judge whether the golden rule is being achieved.
- *Public sector net borrowing* (PSNB) is now the Treasury's preferred measure of government borrowing and is the finance needed to meet current and capital spending over and above that raised by taxes. It is similar to the old PSBR but is based on the accrued income and expenditure of the public sector, rather than cash payments, and is therefore fully consistent with the National Accounts. The general government component of PSNB (i.e. excluding public corporations' net borrowing) is the aggregate used in judging compliance with the Maastricht Treaty. Privatisation receipts and other financial transactions are netted off from the PSNB to obtain the PSNCR.
- The *net public debt ratio* is total public sector debt net of liquid assets as a percentage of GDP. This is used to see whether the sustainable investment rule is being met.

There is still a role for the PSNCR since this represents the actual cash needs of the public sector and therefore measures the addition to net public debt each year. The central government component determines the necessary amount of gilt sales.

## 3.2 Public spending plans

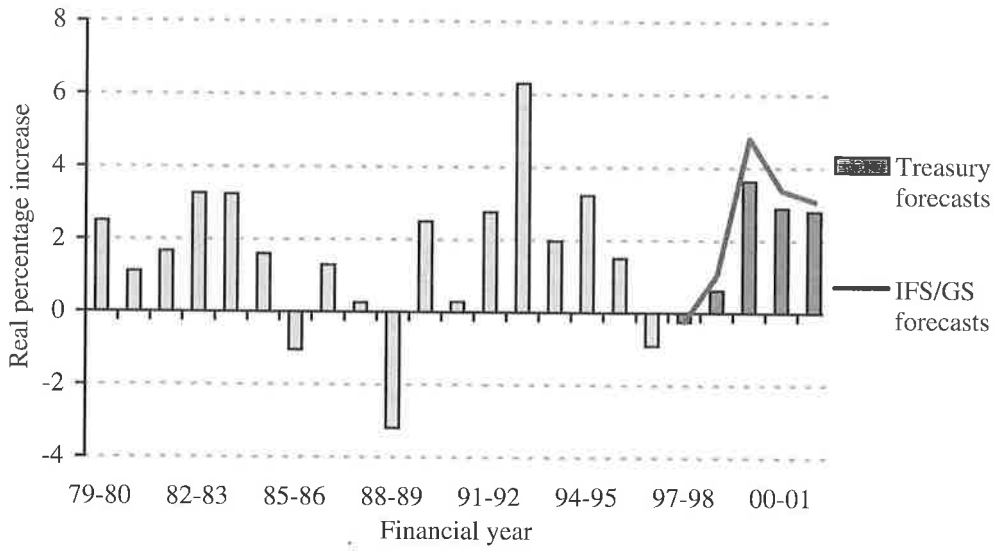
Last summer, the government changed the way in which public spending is planned and controlled. Spending plans now cover the whole public sector and they add up to an aggregate known as total managed expenditure (TME). TME

[2] HM Treasury, *Economic and Fiscal Strategy Report 1998*, Cm. 3978, 1998.

is broken down into two parts — departmental expenditure limits (DELs) and annually managed expenditure (AME). Within TME, capital and current spending are planned separately to prevent public investment from being cut back to meet short-term pressures on current expenditure and to ensure that the fiscal rules are met. DELs, covering about 50% of public expenditure, have already been set for the three years from 1999–00, informed by the results of the government's Comprehensive Spending Review.[3] The remainder (i.e. AME, which is mainly social security spending, debt interest and local authority spending) will be reviewed every year.

When the spending plans were first presented in June 1998, the intention was for current public expenditure to grow by 2¼% a year on average in real terms over the next three years. Total spending, boosted by a large rise in net capital spending, was planned to rise by 2¾% a year on average over this period. On the government's updated projections in last November's Pre-Budget Report, TME grows by an average of 3% a year in real terms over the next three years, as shown in Figure 3.3. This is partly because of lower inflation and partly because of an expected undershoot in spending in the current financial year.

**Figure 3.3. Real increases in total managed expenditure**




Sources: HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998; IFS/Goldman Sachs calculations.

DELs are planned to grow by 3¼% a year, with priority given to education and the National Health Service. Spending in these two areas is planned to rise by 5.1% and 4.8% a year in real terms respectively. Spending on other programmes within DELs is planned to grow, on average, by 1¾% a year in real terms over the next three years. The 3¼% annual real increase in spending factored into DELs is entirely discretionary. Furthermore, the discretionary element of AME is set to grow significantly faster than the overall growth in AME because debt interest payments are expected to decline in real terms

[3] HM Treasury, *The Comprehensive Spending Review*, Cm. 4011, 1998.

while cyclical social security spending is projected to remain broadly flat in real terms. On our estimates, discretionary TME (i.e. excluding cyclical social security and debt interest) is planned by the government to rise by almost 4% a year in real terms on average in each of the next three years. This rapid growth in discretionary spending is, to some extent, masked in the government's presentation of the public finances.

In our projections, we assume that the nominal plans for DELs are adhered to over the next three years. The discretionary element of AME is assumed to grow in real terms at the rate planned by the government. Our forecasts for cyclical social security spending are based on forecasts of unemployment numbers (rather than the constant level of unemployment assumed in government forecasts), while our debt interest forecasts are affected by the path for public borrowing. Reflecting our lower inflation forecasts, we expect the real growth in TME to average 3¾% a year over the next three years while real discretionary TME is forecast to rise by slightly more than 4% a year.

## Spending comparisons over Parliaments

Table 3.1 puts the government's spending plans into context. Although real TME is planned to rise by 3.1% a year over the next three years, it fell by 0.2% in 1997–98 and is projected by the government to rise by only 0.6% in the current year. Thus, over the entire Parliament, real TME is planned to grow, on average, by 1.9% a year. This is less than the 2.4% a year seen during the last Parliament and is only a little stronger than the 1.5% a year achieved during the Conservatives' entire period of office from 1979. Moreover, current spending is planned to rise by only 1.8% a year in real terms during this Parliament. This is in line with that achieved during the Conservatives' period of office but considerably less than the growth of 2.9% a year seen during the last Parliament.

**Table 3.1. Average annual real growth in total managed expenditure, from Treasury forecasts (1997–98 prices, %)**

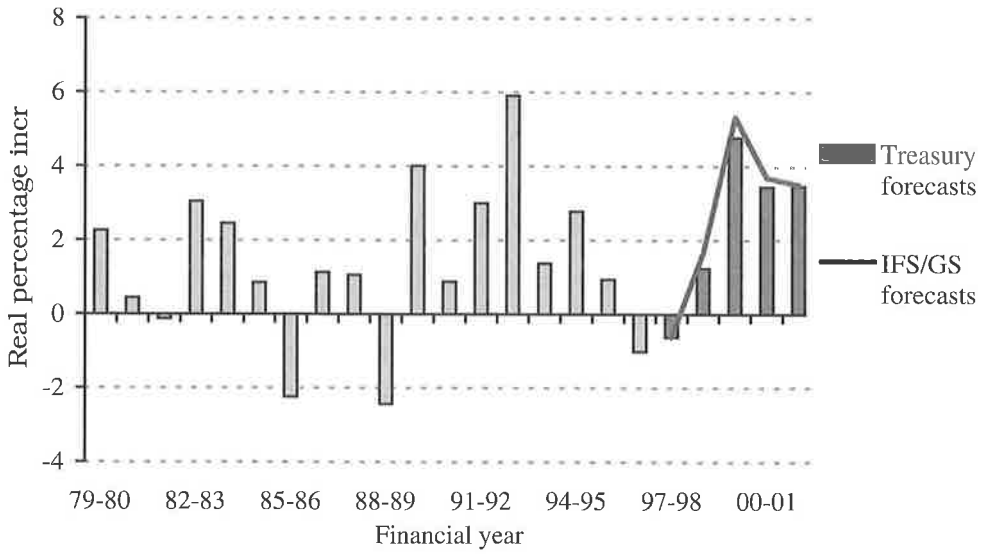
| Spending definition | Planned increases over this Parliament | | | Increases over previous Parliaments | |
|---|---|---|---|---|---|
| | 1996–97 to 1998–99 | 1998–99 to 2001–02 | 1996–97 to 2001–02 | 1991–92 to 1996–97 | 1978–79 to 1996–97 |
| TME | 0.2 | 3.1 | 1.9 | 2.4 | 1.5 |
| TME — current spending | 0.6 | 2.6 | 1.8 | 2.9 | 1.8 |
| TME —capital spending | –21.9 | 32.6 | 7.3 | –12.4 | –4.7 |
| TME —discretionary[a] | 0.3 | 3.9 | 2.4 | 2.0 | 1.3 |
| TME —discretionary current spending[a] | 0.8 | 3.3 | 2.3 | 2.6 | 1.6 |

[a]IFS/Goldman Sachs estimate; excludes cyclical social security spending and debt interest payments.
Source: HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998.

The spending comparisons are more favourable if we look only at discretionary spending. During the last Parliament, there was a considerable rise in debt interest payments while cyclical social security spending dropped

by less than might have been expected, given the fall in unemployment. On our estimates, the government is planning a rise in discretionary TME averaging 2.4% a year in real terms over this Parliament — higher than the 2.0% a year achieved during the last Parliament and the 1.3% a year from 1978–79 to 1996–97. The annual changes are shown in Figure 3.4. Discretionary current TME is planned to rise by 2.3% a year in real terms, compared with 2.6% during the last Parliament and 1.6% a year during the Conservatives' entire period of office.

**Figure 3.4. Real changes in discretionary total managed expenditure**




Sources: HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998; IFS/Goldman Sachs calculations.

While the increase in public spending planned for the next three years is undoubtedly generous, it is far from clear that the British public will notice a dramatic change in the provision of public services compared with under the Conservatives. The overall growth in discretionary current spending planned for this Parliament is less than that seen during the last Parliament, and there are definite upward pressures on public sector pay (see Appendix B). Moreover, the rise in average net capital spending to 1.1% of GDP is less than the average of 1.5% of GDP achieved during the last Parliament. The overall ratio of public spending to GDP remains low by historic standards.

## 3.3 Borrowing in 1998–99 and 1999–00

In 1997–98, the government ran a PSNCR of £1.1 billion (0.1% of GDP), down from £22.7 billion (3.0% of GDP) in 1996–97. The 1997–98 out-turn was about £8 billion lower than forecast by either the Treasury in its November 1997 Pre-Budget Report or by us in the January 1998 Green Budget. Excluding the windfall tax and associated spending, current spending exceeded current receipts by £4.7 billion (0.6% of GDP). Hence the golden rule was missed, particularly given that the economy was operating above

trend last year. PSNB, excluding the windfall tax and associated spending, was £8.4 billion (1.0% of GDP). The ratio of net public sector debt to GDP was just over 42%, slightly higher than the reference value of 40% in the sustainable investment rule.

There has been a further substantial improvement in the public finances this year, reflecting a combination of tax increases and the second successive year of very low public spending growth. In the first nine months of 1998–99, central government receipts were 7.9% higher than a year earlier.[4] This is higher than the Treasury forecast of 6.2% for the increase in total public sector receipts for the year as a whole. Central government outlays were 2.9% higher over this period compared with the Treasury forecast of 3.4% for total public expenditure in 1998–99. If these trends are maintained, the PSNCR will record a surplus of £11 billion in 1998–99, significantly higher than the £4.3 billion surplus predicted by the Treasury in the Pre-Budget Report.

However, there are at least three reasons for expecting much slower tax receipts in the final months of the year. First, the introduction of self-assessment led to an extremely large proportion of last year's income tax revenue being received in January and February, and it seems unlikely that this will continue to the same extent this year. Second, there have been delays in processing personal pension rebates which, once paid, are forecast to total £2.2 billion. Third, there has been an increase in foreign income dividends since the announcement in July 1997 that they would be abolished this April, reducing revenue from advance corporation tax.[5]

As a result, we expect receipts to exceed the Treasury's forecast by only £0.6 billion in 1998–99, mainly from income tax and social security contributions. Combined with a small undershoot in government spending, this results in a slightly more optimistic forecast for public borrowing. On our forecasts, the PSNCR moves into a surplus of £5.1 billion (0.6% of GDP). Excluding the windfall tax and associated spending, we expect PSNB of –£2.3 billion (0.3% of GDP) compared with the Treasury forecast of –£1.5 billion. This is consistent with a surplus on current budget of £6.2 billion (0.7% of GDP). The net debt ratio falls to 40.7% of GDP. Table 3.2 compares our latest forecast for the public finances in 1998–99 and 1999–00 with the Treasury's Pre-Budget Report.[6]

Looking ahead to 1999–00, our forecast is for a similar level of receipts to that expected by the Treasury, despite our less optimistic forecast for economic growth, but an additional £1.7 billion of government spending. This is mainly the result of the impact of higher unemployment on social security spending. Our forecast is for PSNB (excluding the windfall tax and associated spending) of £5 billion (0.6% of GDP) and the current budget falling to zero. The net debt ratio will fall to about 40% of GDP.

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[4] Source: Office for National Statistics, 'Public sector finances', News Release ONS(99)21, December 1998.

[5] This is explained in more depth in Chapter 5.

[6] More details of the IFS/Goldman Sachs forecasts can be found in Appendix A, Table A.4.

## Table 3.2. Forecasts for the public finances, 1998–99 and 1999–00 (£bn)

| | 1998–99 | | 1999–00 | |
|---|---|---|---|---|
| | Pre-Budget Report, Nov. 1998 | Gr. Budget forecast, Jan. 1999 | Pre-Budget Report, Nov. 1998 | Gr. Budget forecast, Jan. 1999 |
| *Inland Revenue* | | | | |
| Income tax[a] | 85.0 | 85.5 | 89.9 | 91.0 |
| Corporation tax[b] | 31.4 | 31.5 | 30.0 | 30.0 |
| Windfall tax | 2.6 | 2.6 | 0.0 | 0.0 |
| Petroleum revenue tax | 0.6 | 0.6 | 0.3 | 0.6 |
| Capital gains tax | 2.3 | 2.3 | 2.4 | 2.4 |
| Inheritance tax | 1.8 | 1.8 | 2.0 | 1.8 |
| Stamp duties | 4.6 | 4.6 | 4.7 | 4.8 |
| **Total Inland Revenue** | **128.4** | **128.9** | **129.3** | **130.6** |
| *Customs and Excise* | | | | |
| Value added tax (VAT) | 52.6 | 52.5 | 55.0 | 54.4 |
| Fuel duties | 21.8 | 21.8 | 23.5 | 23.9 |
| Tobacco duties | 8.3 | 8.3 | 8.9 | 8.9 |
| Spirit duties | 1.6 | 1.6 | 1.6 | 1.6 |
| Wine duties | 1.5 | 1.5 | 1.6 | 1.6 |
| Beer and cider duties | 2.9 | 2.9 | 3.0 | 3.0 |
| Betting and gaming duties | 1.6 | 1.6 | 1.6 | 1.7 |
| Air passenger duty | 0.8 | 0.8 | 0.9 | 0.8 |
| Insurance premium tax | 1.3 | 1.3 | 1.4 | 1.4 |
| Landfill tax | 0.4 | 0.4 | 0.4 | 0.5 |
| Customs duties and levies | 2.0 | 2.0 | 1.8 | 1.9 |
| **Total Customs and Excise** | **94.9** | **94.7** | **99.7** | **99.7** |
| *Other taxes* | | | | |
| Vehicle excise duties | 4.7 | 4.7 | 4.8 | 4.8 |
| Oil royalties | 0.3 | 0.3 | 0.2 | 0.3 |
| Business rates | 15.2 | 15.2 | 15.0 | 15.6 |
| Social security contributions | 54.8 | 55.1 | 57.0 | 55.8 |
| Council tax | 11.8 | 11.8 | 12.8 | 12.3 |
| Other taxes and royalties | 7.7 | 7.7 | 8.0 | 7.8 |
| **Total taxes and NI contributions** | **317.7** | **318.4** | **326.8** | **327.1** |
| Interest and dividends | 6.0 | 6.0 | 5.5 | 5.5 |
| Gross trading surplus and rent | 13.6 | 13.6 | 14.2 | 14.2 |
| Other receipts and adjustments | –1.5 | –1.5 | 1.4 | 1.4 |
| **Current receipts** | **335.9** | **336.5** | **347.9** | **348.1** |
| **Current spending**[c] | **328.6** | **328.5** | **347.5** | **349.2** |
| Windfall tax & associated curr. sp. | –1.8 | –1.8 | 1 | 1 |
| **Current balance**[d] | **5.5** | **6.2** | **1** | **0** |
| Windfall tax & associated cap. sp. | –0.4 | –0.4 | –1 | –1 |
| Net investment | 4.3 | 4.3 | 6 | 6 |
| **Public sector net borrowing**[d] | **–1.5** | **–2.3** | **4** | **5** |
| *Financial transactions* | | | | |
| Windfall tax adjustments | –1.5 | –1.5 | 1 | 1 |
| Loans and sales of financial assets | 0.4 | 0.4 | –2 | –2 |
| Accruals adjustments | –1.7 | –1.7 | –1 | –1 |
| **Public sector net cash requirement**[e] | **–4.3** | **–5.1** | **2** | **3** |

[a]Net of tax credits.
[b]Includes net advance corporation tax.
[c]In line with the National Accounts, depreciation is counted as current spending.
[d]Excluding the windfall tax and associated spending.
[e]Including the windfall tax and associated spending.

On these forecasts, the two fiscal rules would just be met in 1999–00, particularly bearing in mind that the economy will be operating below its trend level of output. A greater decline in the current budget might have been expected, given that our economic forecast has GDP growth ½ a percentage point less than the Treasury's forecast in both 1998–99 and 1999–00. It is perhaps even more surprising, given the relatively large increases in public spending that are planned to take place over the next two years. There are three main reasons for this:

- The starting-point is favourable since there is a relatively large forecast current budget surplus in 1998–99.
- For those taxes that fluctuate over the economic cycle, such as income and corporation tax, there is a time lag between the economy slowing and revenues falling. For example, even with the change to payments in instalments for corporation tax, profits made in the previous financial year will be more important in determining revenues than profits made in the current financial year.
- Substantial tax increases have already been announced and come into effect in April, as shown in Table 3.3. These include the withdrawal of tax relief from profit-related pay (£1 billion), the removal of tax credits for pension schemes (£1.5 billion), corporation tax changes (£0.9 billion) and the escalators in duty on tobacco and fuel (£1.6 billion).

**Table 3.3. What happens if the Chancellor does nothing? Change in government revenues from announcements already made (£bn)**

| | 1999–00 | 2000–01 |
|---|---|---|
| *Income tax* | | |
| Self-assessment | –0.8 | 0 |
| Profit-related pay: withdrawal of tax relief | 1.0 | 0 |
| Abolish payable dividend tax credits for pension funds | 1.5 | 0 |
| Working families' tax credit | –0.4 | –0.9 |
| Abolish quarterly accounting for gilts | –0.6 | 0.6 |
| Married couple's allowance — relief cut from 15% to 10% | 0.7 | 0.4 |
| *Corporation tax* | | |
| Corporation tax cut from 33% to 31% from April 1997 | –0.6 | 0 |
| Corporation tax: 1-point cut in main rate from April 1999 | 0 | –0.7 |
| Abolish advance corporation tax (ACT) and introduce quarterly payments of corporation tax | 1.5 | 0.4 |
| *Social security contributions* | | |
| Abolish entry rate for employee NICs from April 1999 | –1.2 | –0.2 |
| *Fuel duties* | | |
| 6% real terms increase in road fuel duties | 1.2 | 1.3 |
| *Tobacco duties* | | |
| 5% real terms increase in tobacco duties | 0.4 | 0.4 |
| *Other* | 1.2 | 0.3 |
| *Total* | 3.9 | 1.6 |

Note: Increase is additional tax revenue, so, for example, the tax changes already announced for fuel duties are forecast to increase revenues by £1.2 billion next year and £2.5 billion (i.e. an *extra* £1.3 billion) in the following year. Those changes that affect revenues by more than £0.4 billion have been listed, with the remainder included in other.

Sources: HM Treasury, *Financial Statement and Budget Report*, various years; IFS/Goldman Sachs calculations.

# 3.4 The medium-term outlook

Judging whether the government has been able to meet the fiscal rules needs to be done over the economic cycle. In this section, we compare the Treasury's forecasts for public borrowing with our central forecasts for the period 1998–99 to 2003–04.

Any set of forecasts for government borrowing is underpinned by a set of assumptions for growth in the economy. A comparison of our main economic forecasts with those of the Treasury is provided in Table 3.4.[7] Although the Chancellor's Pre-Budget Report contained a downward revision to economic growth in 1999–00 from 2% to 1%, this is still larger than our forecast of ½%. In the following year, we expect the economy to recover more strongly, with growth of 2¾%, before gradually returning to the trend growth rate of 2¼% a year by the end of the period. Over the entire period from 1998–99, the cumulative growth in output is 1 percentage point less than in the Treasury's forecast, reflecting a different judgement about the initial size of the output gap. These differences in forecasts of economic growth are also reflected in our forecasts of other factors that are taken into account — such as levels of employment.

**Table 3.4. Comparison of the Treasury's and our main macroeconomic assumptions**

| | 1998–99 | 1999–00 | 2000–01 | 2001–02 | 2002–03 | 2003–04 |
|---|---|---|---|---|---|---|
| **Real GDP (% growth)** | | | | | | |
| HM Treasury | 2¼ | 1 | 2½ | 2¾ | 2½ | 2¼ |
| IFS / Goldman Sachs | 1¾ | ½ | 2¾ | 2½ | 2½ | 2¼ |
| **GDP deflator (% growth)** | | | | | | |
| HM Treasury | 2¾ | 2½ | 2½ | 2½ | 2½ | 2½ |
| IFS / Goldman Sachs | 2¼ | 2 | 2 | 2¼ | 2½ | 2½ |
| **Money GDP (% growth)** | | | | | | |
| HM Treasury | 5 | 3½ | 5¼ | 5¼ | 5 | 5 |
| IFS / Goldman Sachs | 4 | 2½ | 4¾ | 4¾ | 5 | 4¾ |
| **Money GDP (£bn)** | | | | | | |
| HM Treasury | 855 | 884 | 930 | 979 | 1028 | 1078 |
| IFS / Goldman Sachs | 845 | 866 | 908 | 950 | 999 | 1046 |

Source: Treasury economic forecasts from HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998.

Our medium-term forecasts for the public finances are presented in Table 3.5.[8] Despite having similar borrowing forecasts to the Treasury for 1999–00 with PSNB of £5 billion, our forecasts show a slightly less optimistic picture for the following years. This is caused by a combination of both lower forecasts for government revenues and higher forecasts for government spending. We forecast a current budget deficit of £3 billion in 2000–01, a deficit of £1 billion in 2001–02 and surpluses of £1 billion and £3 billion in the following two years. This compares with Treasury forecasts of current budget surpluses

[7] Further details of our forecasts are provided in Appendix A, Table A.5.

[8] For a breakdown of individual tax receipts over the medium term, see Appendix A, Table A.6.

**Table 3.5. Medium-term public finances forecasts, based on our central macroeconomic assumptions (£bn)**

| | 1998–99 | 1999–00 | 2000–01 | 2001–02 | 2002–03 | 2003–04 |
|---|---|---|---|---|---|---|
| **Current receipts** | 336.5 | 348 | 363 | 382 | 404 | 427 |
| **Current expenditure** | 328.5 | 349 | 367 | 384 | 403 | 424 |
| Windfall tax & ass. curr. sp. | –1.8 | 1 | 1 | 1 | n/a | n/a |
| *Borrowing* | | | | | | |
| **Surplus on current budget**[a] | **6.2** | **0** | **–3** | **–1** | **1** | **3** |
| Windfall tax & ass. cap. sp. | –0.4 | –1 | 0 | 0 | n/a | n/a |
| Net investment | 4.3 | 6 | 8 | 11 | 11 | 12 |
| **PSNB**[a] | **–2.3** | **5** | **11** | **12** | **11** | **9** |
| Windfall tax adjustments | –1.5 | 1 | 1 | 1 | n/a | n/a |
| Financial transactions | –1.3 | –3 | 0 | 2 | 0 | 1 |
| **PSNCR**[b] | **–5.1** | **3** | **12** | **15** | **11** | **10** |
| *HM Treasury forecast:* | | | | | | |
| Surplus on current budget[a] | 5.5 | 1 | 3 | 8 | 10 | 11 |
| PSNB[a] | –1.5 | 4 | 5 | 2 | 2 | 1 |
| PSNCR[b] | –4.3 | 2 | 6 | 5 | 2 | 3 |

[a]Excludes windfall tax and associated spending.
[b]Includes windfall tax and associated spending.
Source: Treasury forecasts from HM Treasury, *Pre-Budget Report*, Cm 4076, November 1998.

of £3 billion, £8 billion, £10 billion and £11 billion over the four years from 2000–01.

In the medium term, on unchanged policies, the fiscal rules should be met. From Table 3.6 it can be seen that, unlike the Treasury, there is little margin for error in our forecasts. Between 1997–98 and 2003–04, the surplus on the current budget averages zero, and the ratio of net public sector debt to GDP averages 40%. The main difference between our forecasts and the Treasury's is a slightly more pessimistic view of the current cyclical position of the economy, as explained in Chapter 2.

**Table 3.6. Compliance with the fiscal rules: the current balance and net public sector debt ratio under our central forecast (percentage of GDP)**

| | 1997–98 | 1998–99 | 1999–00 | 2000–01 | 2001–02 | 2002–03 | 2003–04 |
|---|---|---|---|---|---|---|---|
| Current receipts | 38.9 | 39.8 | 40.2 | 40.0 | 40.2 | 40.5 | 40.8 |
| Current spending | 39.2 | 38.9 | 40.3 | 40.4 | 40.4 | 40.4 | 40.5 |
| Current balance[a] | –0.6 | 0.7 | 0.0 | –0.3 | –0.1 | 0.1 | 0.3 |
| Average since 1997–98[a] | –0.6 | 0.1 | 0.0 | –0.1 | –0.1 | 0.0 | 0.0 |
| Net public sector debt | 42.4 | 40.8 | 40.2 | 39.6 | 39.3 | 38.5 | 37.7 |

Note: In line with the National Accounts, depreciation has been counted as current spending.
[a]Excludes windfall tax and associated spending.

## 3.5 How could things go wrong?

Given our central projections, it would not take much for the public finances to be blown off course. There have been many occasions in the past when it has proved unwise to place too much weight on forecasts of future levels of public borrowing without considering the large margins of error that these

contain. There are three main ways in which the public finances could follow a different course from either our forecasts or the Treasury's.

***Lower-than-forecast economic growth***

If the downturn in economic activity is greater than forecast, then public borrowing will inevitably be higher. This is because lower economic growth reduces tax revenues — in particular from corporation tax and income tax, since profits, employment and wages will be lower than previously forecast. In addition, public spending on social security benefits such as income support and the jobseeker's allowance would be higher than anticipated.[9] The average error in making an autumn forecast for economic growth in the next calendar year is 1½ percentage points.[10] If a downward error of this magnitude occurred now, it would lead to higher public sector net borrowing of around £5 billion in 1999–00 and £9 billion in 2000–01.[11]

In principle, the government's fiscal rules cater for any shortfall in GDP growth, since they are meant to be judged over the entire economic cycle. As growth picks up later, borrowing should fall back. However, there are three ways in which lower growth could lead to a permanent worsening in the public finances. First, the shortfall in growth could lead to an undershoot in inflation. This would hit revenues but there would be no automatic effect on public spending since the plans are set in nominal terms. Second, a downturn in economic activity would increase the pressure on the government to override the automatic fiscal stabilisers and go for a discretionary easing in fiscal policy. Third, higher borrowing would lead to higher debt interest payments.

***Errors in forecasting levels of government spending and receipts***

Even if our macroeconomic forecasts prove to be correct, forecasts for public borrowing are still subject to large margins of errors. Previous forecast errors are not fully explained by errors in the underlying economic assumptions. Table 3.7 shows the average error in Treasury forecasts of PSNB and the average error once the impact of incorrect GDP forecasts has been stripped out. The average absolute error for borrowing in the following year is 1.2% of GDP, which in 1999–00 is equivalent to just over £10 billion. Even if growth is accurately forecast, the error is still equal to 1% of GDP on average, equivalent to nearly £9 billion. Looking further ahead, the errors are much larger. It would not be unusual for the borrowing forecasts for 2001–02 to be £20–30 billion out. Of course, this could mean that the golden rule will be met very comfortably. However, at this stage of the economic cycle, public

[9] We assume that every additional 100,000 unemployed cost an extra £350 million in public spending. For further details, see C. Giles and J. Hall, 'Forecasting the PSBR: the IFS perspective', *Fiscal Studies*, vol. 19, pp. 83–100, 1998.

[10] Source: HM Treasury, *Pre-Budget Report*, November 1998, Table A7.

[11] Figures calculated using Pre-Budget Report estimate that 1% lower growth in GDP leads to an increase in PSNB of 0.4% of GDP in the first year and a further 0.3% of GDP in the following year. A proportionate deterioration in borrowing has been assumed, and applied to the HM Treasury estimates for GDP in 1999–00 and 2000–01.

**Table 3.7. Average errors in forecasting public sector net borrowing (percentage of GDP and £bn)**

| Time period | Average error (% of GDP) | Average error (£bn) | Average error, correct GDP (% of GDP) | Average error, correct GDP (£bn) |
|---|---|---|---|---|
| One year ahead | 1.2 | 10.6 | 1.0 | 8.8 |
| Two years ahead | 2.0 | 18.6 | 1.4 | 13.0 |
| Three years ahead | 3.0 | 29.4 | 2.0 | 19.6 |
| Four years ahead | 4.1 | 42.1 | 2.4 | 24.7 |

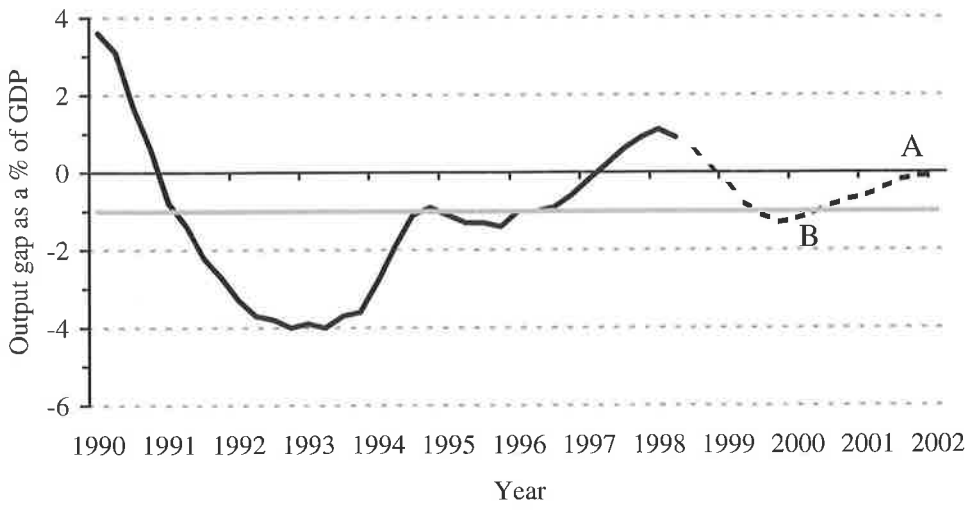
Notes: Figures in £bn calculated assuming HM Treasury GDP forecast. Average error corresponds to the average absolute error.
Source: HM Treasury, *Pre-Budget Report*, Cm 4076, November 1998, Table B13.

borrowing forecasts often turn out to be too optimistic rather than too pessimistic.

### *Incorrect assessment of trend output*

Judging whether the golden rule is being met is not possible without an assessment of where the economy is relative to trend. The golden rule is perfectly consistent with deficits on the current budget, as long as the economy is correctly judged to be operating below its potential level of output. Any revision to trend output will change the assessment of how comfortably the golden rule is being met. Figure 3.5 shows the Treasury forecasts for the output gap from 1990 to 2002. They assume that we will next reach trend output in 2002–03 (shown by point A). However, should trend output actually turn out to be 1% lower than the present estimate, it will be reached at point B, which is during the year 2000–01. This would make meeting the golden rule considerably harder since any cyclical adjustments made would be far less generous.

**Figure 3.5. The position of the economy relative to trend output (percentage of GDP)**




Sources: HM Treasury, *The Economy*, supplementary information to the Pre-Budget Report, November 1998, chart 3; IFS calculations.

In the Treasury's view, the output gap was approximately ¾% in 1997–98 and it is projected to fall back to ¼% in 1998–99. We have taken a slightly more pessimistic view. In our central forecast, output is still running about 1¼% above trend in 1998–99. Hence the cumulative growth in output is about 1% lower in our central forecast than the Treasury's. For this reason, our cyclically adjusted estimates of public borrowing are about ¾% of GDP higher than the Treasury's throughout the forecast horizon.

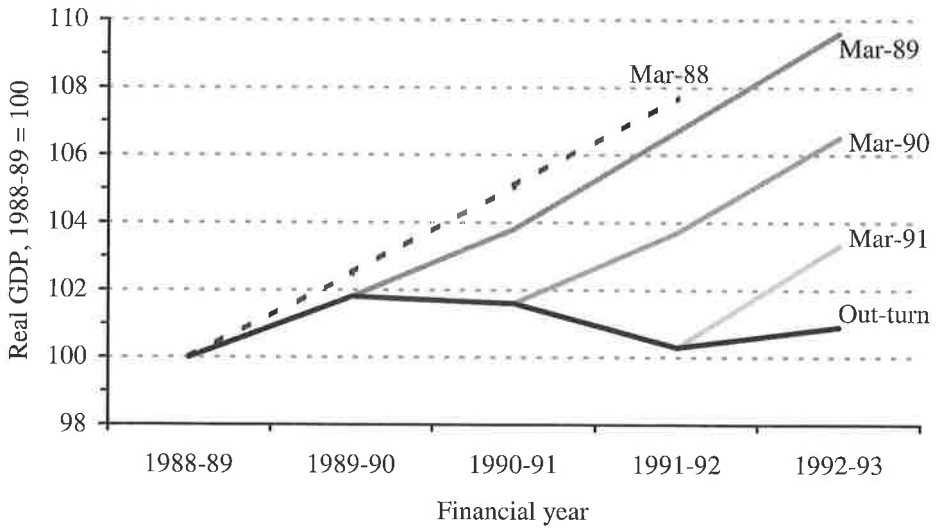
## What happened last time we were here?

The last time there was a major slowdown in economic growth, from 1989–90 onwards, shows how important it is to be aware of the high degree of uncertainty inherent in forecasts of the public finances. These errors are likely to be greatest when there is a high degree of uncertainty about the future path of output.

### *Forecasting economic growth in a downturn*

Figure 3.6 shows the Treasury's errors in forecasting GDP during the last economic slowdown. The severity of the downturn was persistently underestimated, and the strength of the subsequent recovery overestimated. This was at least partly due to an over-optimistic assumption of where the economy was relative to its trend level of output.

**Figure 3.6. Overestimating economic growth: forecast and actual GDP**




Note: Calculations ignore any errors in out-turn figures and simply project growth forecasts forwards.
Sources: Forecasts from HM Treasury, *Financial Statement and Budget Report*, various years. Growth in out-turn GDP on an ESA 1995 basis from Office for National Statistics website.

### *Forecasting receipts in a downturn*

As discussed earlier, errors in forecasting public borrowing still occur even if the forecasts for economic growth turn out to be correct. This is highlighted in Table 3.8, which looks at corporation tax receipts over the period 1989–90 to

1993–94. The out-turn is compared with the Treasury's Budget forecast from the *last* month of that financial year. Also shown is the forecast that the IFS model would have made using the out-turn figure from one and two years earlier, had it been given correct forecasts for the growth in corporate profits.[12] When growth in corporate profits slowed from 14% in 1990–91 to 5% in 1991–92, the Treasury over-predicted revenues by £1.1 billion while the IFS model would have over-predicted by £2.2 billion or £2.4 billion depending on when the forecast was made.[13] In the following year, the Treasury and the IFS model also over-predicted revenues, by £1.1 billion and £0.6 billion respectively, even when the lower out-turn for 1991–92 would have been known.[14]

**Table 3.8. Errors made in the past: corporation tax forecasts (£bn)**

| | Real GDP growth | Corporate profits growth | HM Treasury, Mar. forecast | IFS model, 1 year before | IFS model, 2 years before |
|---|---|---|---|---|---|
| 1989–90 | 1.8 | 17.5 | 1.0 | –1.5 | n/a |
| 1990–91 | –0.1 | 14.4 | –0.9 | 0.2 | –1.3 |
| 1991–92 | –1.3 | 5.4 | 1.1 | 2.2 | 2.4 |
| 1992–93 | 0.5 | 1.2 | 1.1 | 0.6 | 2.6 |
| 1993–94 | 2.9 | 3.9 | –0.3 | 2.0 | 2.7 |

Notes: GDP growth on an ESA 1995 basis. Corporate profits growth is in nominal terms and measured after allowing for stock depreciation. The IFS model forecast will differ from the forecast made at the time since it uses actual rather than forecast growth in corporate profits, but this is clearly likely to reduce rather than increase any errors made.
Sources: HM Treasury, *Financial Statement and Budget Report*, various years; *Economic Trends*, 1996 Annual Supplement; Office for National Statistics website.

This does not mean that we expect our borrowing forecasts to be over-optimistic again. What it does show is that the forecasting errors made were quite large enough to lead to difficulties in meeting the fiscal 'rules'. It is also true that the last time the economy slowed, it did so by more than most commentators, ourselves included, had forecast. This led to systematically over-optimistic forecasts of government revenues and underestimates of the degree to which cyclical spending would increase. While a more favourable out-turn for economic growth, and hence public borrowing, might be just as likely as a less favourable one, the less favourable alternative would be far more problematic. Hence, when planning the fiscal stance, it is important both to consider potential errors and to ensure that the planned out-turns err on the side of caution.

[12] The forecasts of the IFS model include information on any discretionary tax changes announced, some of which would not have been known at the relevant time but are necessary to present strictly comparable forecasts.

[13] Of course, a judgemental approach may have been more accurate than the IFS model alone. This is particularly likely with estimation of any forecast during the financial year being estimated since information on current receipts could be taken into account.

[14] The IFS model forecast made two years previous would not have been able to take into account the lower out-turn figure for 1991–92, and hence could be expected to continue to overestimate revenues.

## An alternative scenario

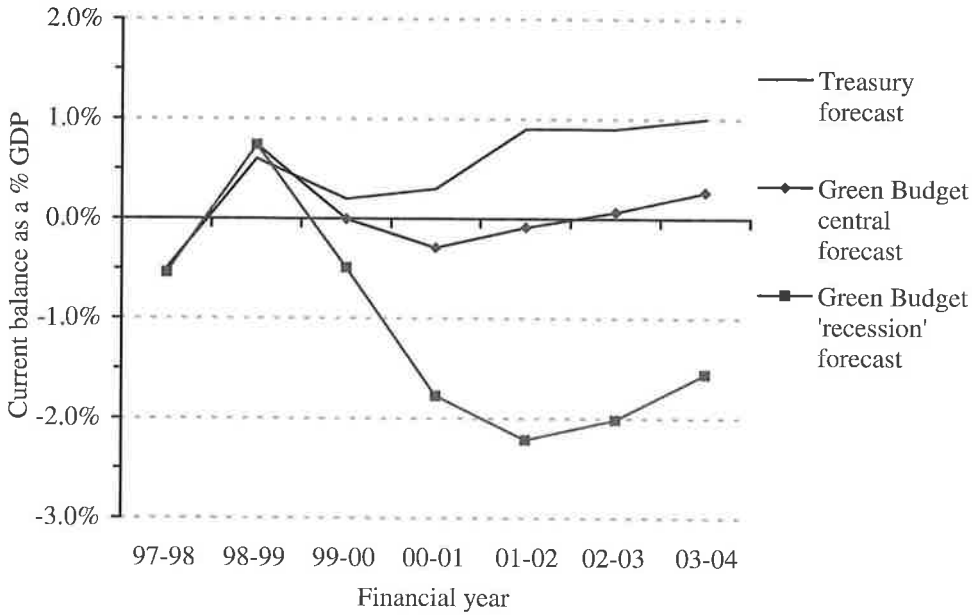
In order to highlight the impact of a more severe slowdown in the economy, Table 3.9 shows our forecasts for the public finances under a different, more pessimistic scenario. In this scenario, the economy shrinks by 1% next fiscal year and only recovers very slowly, with growth of just ¾% in 2000–01. This lower growth is reflected in lower levels of corporate profits and employment

**Table 3.9. Medium-term public finances forecasts under alternative scenarios (£bn)**

| | 1998–99 | 1999–00 | 2000–01 | 2001–02 | 2002–03 | 2003–04 |
|---|---|---|---|---|---|---|
| **HM Treasury forecast** | | | | | | |
| Current balance[a] | 5.5 | 1 | 3 | 8 | 10 | 11 |
| PSNB[a] | –1.5 | 4 | 5 | 2 | 2 | 1 |
| PSNCR[b] | –4.3 | 2 | 6 | 5 | 2 | 3 |
| **Gr. Budget central forecast** | | | | | | |
| Current balance[a] | 6.2 | 0 | –3 | –1 | 1 | 3 |
| PSNB[a] | –2.3 | 5 | 11 | 12 | 11 | 9 |
| PSNCR[b] | –5.1 | 3 | 12 | 15 | 11 | 10 |
| **Gr. Budget 'recession' scenario** | | | | | | |
| Current balance[a] | 6.2 | –4 | –15 | –20 | –19 | –15 |
| PSNB[a] | –2.3 | 9 | 24 | 31 | 30 | 27 |
| PSNCR[b] | –5.1 | 7 | 25 | 34 | 30 | 28 |

[a]Excludes windfall tax and associated spending.
[b]Includes windfall tax and associated spending.

**Figure 3.7. Meeting the fiscal 'rules'? Current budget under various scenarios (percentage of GDP)**




Source: Treasury forecast from HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998.

than in our central scenario, and also very low levels of inflation.[15] Table 3.9 shows how sensitive the public finances are to changes in economic growth.[16]

Figure 3.7 shows that the current budget would be in deficit for at least the next five years. This does not necessarily mean that the public finances would be unsustainable. Provided the initial assessment of the output gap was correct and there is no change in the growth of potential GDP, the cyclically adjusted current balance would remain close to zero. This alternative scenario illustrates the difficulty in judging whether the government's fiscal rules have been achieved.

## 3.6 The Budget judgement

Given the Chancellor's commitment to achieve his two fiscal rules over the economic cycle, there seems no case for a significant fiscal adjustment in either direction in the forthcoming Budget. In our central forecast, the fiscal rules are likely to be met, although less comfortably than in the Pre-Budget Report. On cyclical grounds, there is also no strong case for loosening policy to stimulate the economy; the fiscal stance is already set to loosen by around ½% of GDP in 1999–00, bringing an end to three years of severe fiscal contraction. The Chancellor is unlikely to announce a significant net tax change in the Budget.

[15] Further details of the growth forecasts used under this 'recession' scenario can be found in Appendix A, Table A.7.

[16] A more detailed breakdown of the impact on government spending and various tax revenues is provided in Appendix A, Table A.8.

# 4. The productivity challenge

One of the key themes of the Chancellor's Pre-Budget Report in November was 'the productivity challenge'. It stated that the UK faces a large gap in productivity with its main economic trading partners, and that the challenge we face is how to close that gap. This chapter discusses what economists and policymakers mean when they talk about productivity, whether a gap exists and what size it might be, and what some of the important factors are that influence the level of productivity. As the government recognises in the Pre-Budget Report, the most important factors that influence the level of productivity are macroeconomic stability, which provides a good climate for investment and growth, and a well-educated work-force, which can develop, implement and adapt to new technologies. Individual tax incentives, which can bring about unintended and unfortunate side-effects, might be the least important part of meeting the challenge. The specific tax measures highlighted in the Pre-Budget Report relating to companies, their managers and investors are discussed in some detail in Chapter 5.

## 4.1 What is productivity?

Productivity is a measure of the amount of output (for example, goods or services) we get for a given level of inputs (for example, raw materials, machinery and labour). It is usually measured as the ratio of outputs to inputs. For example, one measure of productivity is how much output is produced per worker. Productivity measures are an indicator of how efficiently the economy is running but do not directly measure the overall level of welfare in society. An increase in productivity might result in a change in the level of use of some inputs, such as skilled labour, relative to others, such as unskilled labour. The impact on welfare will depend upon how the change affects the relative incomes of different individuals and upon how society values the incomes of these different individuals.

The 'productivity gap' is a measure of the difference in productivity levels between different firms, different industries or different countries. If one firm can produce a car using two workers and five pounds of steel, but another firm needs two workers and six pounds of steel, then the second firm is clearly less productive — there is a gap between the productivity levels of the two firms. Unfortunately, differences in productivity are not usually easy to measure — firms do not usually produce exactly the same good or use exactly the same type of inputs. The amount and quality of labour and capital equipment can vary dramatically from firm to firm. This measurement problem increases when the comparison goes beyond two firms, to different industries or different countries.

Policies to increase productivity need to address two aspects of any productivity gap. Firms should not only function as efficiently as possible, given the mixture of resources currently available, but also work to develop and introduce new technologies which change the way that those resources are

used in the future. Firms can be encouraged to adopt technology that has been developed elsewhere, which could lead to relatively rapid gains in productivity at relatively low cost. Other policies can increase the incentives for each individual firm to develop new technologies, which involves investment, i.e. reducing consumption today in order to increase income in the future, so the potential gains are likely to take longer to materialise.

## 4.2 The UK's relative performance

This section considers some alternative measures of productivity and what implications they have. It also discusses some of the evidence that the UK is under-investing in two areas highlighted in the Pre-Budget Report: research and development (R&D) and capital investment. Another important aspect of UK investment which will affect productivity — investment in skills — is discussed in Chapter 10.

### Productivity

In the Pre-Budget Report in November 1998, the government states:

> 'the UK has a productivity gap with the United States of around 40 per cent and around 20 per cent with France and Germany'.

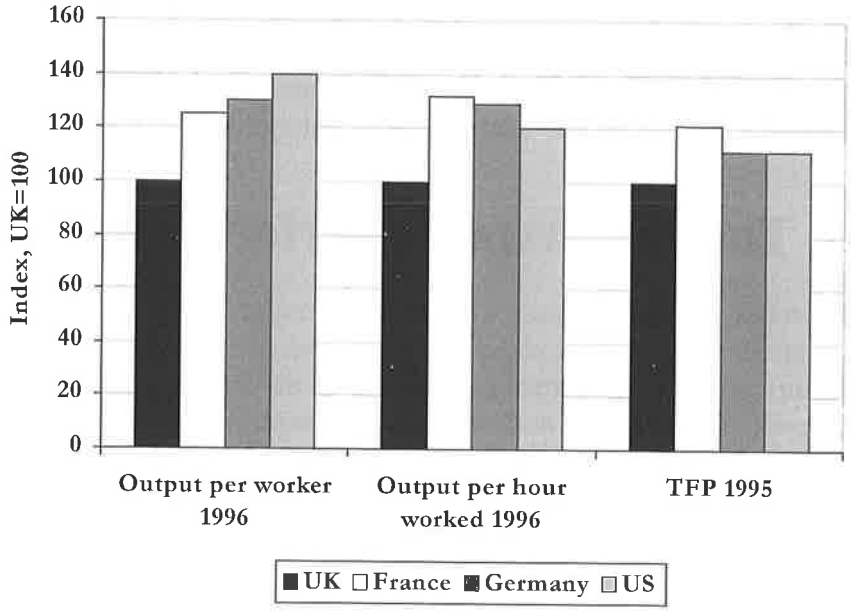
This figure is based on comparing output per worker in each of the countries chosen. There are several problems with using this statistic to compare productivity levels. Measuring aggregate output per worker does not take account of differences in working hours, differences in the amount of capital equipment used and differences in the quality of inputs. The government acknowledges these problems, but adds that

> 'much the same basic picture of the relative weakness of UK performance emerges, whichever data source or approach is used'.

Figure 4.1 shows that alternative measures of productivity can give different pictures of the size of the productivity gap. The productivity gap appears smaller as we take account of differences in hours worked, in capital inputs and in the quality of inputs. The first set of bars shows output per worker in 1996, taken from the Pre-Budget Report. The bars are measured relative to the UK at 100: output per worker is 40% higher in the US than in the UK and about 20% higher in France and Germany. Using a measure that takes account of the fact that employees work longer hours in the US than in the UK, France or Germany — i.e. output per hour worked in 1996 — the productivity gap between the US and the UK halves.[1] The final set of bars shows a measure of total factor productivity (TFP) in 1995, which takes account of the capital equipment used. This reduces the estimated productivity gap still further: it falls to 12% between the US and the UK.

[1] For example, in 1995, average annual hours worked in the US was 1,950, compared with 1,730 in the UK, 1,630 in France and 1,560 in Germany (International Sectoral Database, OECD, 1997).

**Figure 4.1. Alternative productivity measures (relative to the UK)**




Sources: HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998; M. O'Mahony, 'Britain's relative productivity performance, 1950–1996: a sectoral analysis', mimeo, National Institute of Economic and Social Research, 1998.

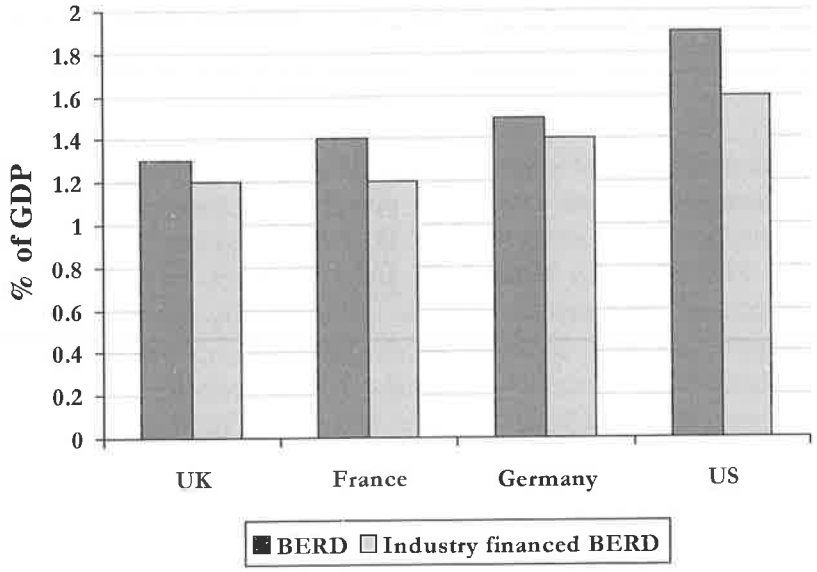
The fact that there is a gap in output per worker of around 40%, but a smaller gap once differences in hours worked and the amount of capital used have been taken into account, indicates that the differences between countries in output per worker are largely due to differences in the way that inputs are being used. The UK has lower levels of some inputs — for example, shorter working hours than the US, less post-school training than Germany and, on average, older capital stock than some other countries. Although it is possible that a choice has been made to have relatively fewer skilled workers and relatively older capital, it is more likely that these factors indicate that UK investment has been constrained in the past. If this is the case, there might be a role for government to play to correct the failures that prevent the market from providing the right incentives to achieve an optimum level of investment and skills. The challenge becomes understanding the ways in which markets are failing and implementing policies that will provide the right incentives.

## Research and development

In the Pre-Budget Report, the government also draws attention to an 'R&D gap' faced by the UK. The government's concern is that business expenditure on research and development (BERD) as a percentage of GDP is low in the UK relative to other countries, and has fallen over time, while it has tended to rise elsewhere. One of the reasons for the fall in BERD in the UK was a reduction in government funding for R&D (largely as a result of reductions in defence spending). Figure 4.2 shows that looking at the amount of BERD financed by industry as a share of GDP in 1996 rather than BERD as a share

of GDP reveals a narrower gap between countries.[2] It is not clear from this that the main source of the UK's R&D gap is the amount of R&D being carried out by UK industry.

**Figure 4.2. Business expenditure on R&D as a percentage of GDP, 1996**




Sources: HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998; R. Griffith and H. Simpson, *Productivity and the Role of Government*, Commentary no. 73, Institute for Fiscal Studies, London, 1998.

## Capital investment

The government points to a long history of under-investment as one cause of the UK productivity problem. There is evidence to suggest that the UK has low levels of aggregate investment relative to other industrialised countries.[3] But this may not be due to lower business sector investment. Table 4.1 shows the proportion of three different categories of investment in GDP for the UK, France, Germany and the US. It appears that the UK has low levels of total investment (gross fixed capital formation), although not much lower than the US. If residential construction is excluded, the four countries look much more similar. Comparing investment in machinery and equipment, the UK has a broadly similar investment level to France and Germany, and a higher level than the US.

[2] See R. Griffith and H. Simpson, *Productivity and the Role of Government*, Commentary no. 73, Institute for Fiscal Studies, London, 1998, for a discussion of this issue.

[3] See, for example, S. Bond and T. Jenkinson, 'The assessment: investment performance and policy', *Oxford Review of Economic Policy*, vol. 12, no. 2, pp. 1–29, 1996.

**Table 4.1. Investment as a percentage of GDP**

| 1960–95 | UK | France | Germany[a] | US |
|---|---|---|---|---|
| Gross fixed capital formation | 17.9 | 22.2 | 22.3 | 18.3 |
| Gross fixed capital formation excluding residential construction | 14.2 | 15.5 | 15.7 | 13.6 |
| Gross fixed capital formation: machinery and equipment | 8.3 | 8.8 | 8.7 | 7.5 |

[a]Figures for Germany refer to West Germany.
Source: *OECD Historical Statistics, 1960–95* (1997 edition).

The comparison of investment levels again raises questions about exactly what is being measured and what conclusions can be drawn as a result. For example, figures from the OECD on business investment per worker suggest that investment by business in the UK is low in comparison with other G7 countries.[4] This measure will be influenced by the number of workers in each country, as well as by business sector investment levels. An alternative measure of investment — business sector investment as a proportion of GDP — presents the UK in a more favourable light, indicating that low public sector investment might underlie any 'investment gap'.[5] While levels of investment in the UK have certainly not been high relative to our counterparts, much of the difference has been due to low public sector investment, and there is little evidence that business investment (other than that in residential construction) is especially low.

# 4.3 Determinants of productivity

If the productivity gap is caused by failure of the market to provide the right incentives to invest in factors that affect productivity, there could be a role for the government to intervene. This section discusses some of the main determinants of productivity growth and what might be the failures in each market. We focus on technological and organisational innovation, increases in human capital and the effectiveness with which new ideas are diffused through the economy. Many of the actual measures in the Pre-Budget Report are aimed at small firms, and we also discuss what rationale there might be for targeting those firms in particular.

## R&D and technological innovation

The incentives for individuals or firms to innovate are shaped by many factors, perhaps the most important of which is the profit (economic rent) that is generated. Most innovative activity (whether measured by R&D expenditure, patents or innovations) is carried out by large firms — firms that are large both in absolute size and with respect to the markets they operate in. There is

[4] DTI, *Building the Knowledge Driven Economy: Analysis and Background*, Department of Trade and Industry, 1998.

[5] DTI, *UK Investment Performance: Fact and Fallacy*, Department of Trade and Industry and Cabinet Office, Competitiveness Occasional Paper, 1996.

evidence, however, that competitive industries produce more innovations.[6] This creates a problem for policymakers, since firms with some market power are more likely to recoup the cost of their innovations but competition encourages more innovative activity. Competition comes not only from the domestic market, but also by opening up domestic and foreign markets through international trade and investment. This can increase firms' incentives to innovate both by increasing the size of the market and by increasing the level of competition from other firms. Much of the government's policy in this area is targeted at competition and regulation issues, such as increasing the budget of the Office of Fair Trading and reviewing the regulatory regime.

Carrying out R&D creates knowledge, but knowledge is a 'public good' in the economists' sense that, once it is in the public domain, it is almost costless for others to acquire and use it, and one person's use of it does not prevent anyone else from also using it. As a result, inventors might not receive sufficient reward for their innovative efforts. This is likely to lead to the underprovision of R&D in an entirely free market. Some current forms of government intervention to prevent this are:

- *operating a patent system*, which gives exclusive rights to the innovator for a period of time, allowing them some temporary market power which increases the return to their investment;
- *funding research* by universities and research institutes (or conducting its own research), which increases the overall level of R&D, can provide funds for research that might not otherwise be carried out by the private sector, and makes it more likely that the results will be widely disseminated.

These are long-standing forms of intervention, which have adapted and developed over time. The government is now considering proposals for a tax credit to encourage more privately-funded R&D, which is discussed in detail in Section 5.2.

One further reason why firms might underinvest in R&D is that they find it difficult to raise finance to do so, perhaps because the firm cannot pass on enough information to potential investors about the likely quality of the research and its possibilities of success. These financial constraints might be more severe for smaller companies, as discussed below.

## Organisational innovation

Technological innovation is not the only way of enhancing performance: organisational innovation can also increase productivity. Many factors potentially influence managerial and employee performance, some of which are covered here.

- *Ownership structures*: The way that companies are structured might affect their performance, and company ownership in the UK is characterised by

[6] S. Nickell, 'Competition and corporate performance', *Journal of Political Economy*, vol. 104, pp. 724–46, 1996, finds evidence that productivity is positively related to the number of competitors a firm faces.

small, dispersed shareholdings, a large proportion of which are held on behalf of individuals by financial institutions. One set of proposals in the Pre-Budget Report aims at improving the communication between institutional investors and their clients, in order to improve accountability between companies and their shareholders.

- *Competitive pressures*: Increasing the intensity of competition might improve incentives for managers to catch up to the best practice in their area and provide incentives to build upon it. The Pre-Budget Report highlights the government's competition legislation and approach to regulation to improve competitiveness.
- *Employee share-ownership*: Theory suggests that linking employees' pay to their own or their company's performance improves work incentives, and, in the case of management, might affect their investment decisions and the speed with which they adopt best practice. It is not clear what evidence there is that the government needs to intervene to encourage more of this, and this issue is discussed in more detail in Section 5.2.

## Human capital

Improvements in the quality of the labour force have played a key role in productivity growth. Human capital is acquired in many ways: through formal education in schools and universities, training both on- and off-the-job and learning by doing. A broad educational background allows workers to do a wider range of jobs and makes them more adaptable to changes in the work-place. Job-specific training can also raise workers' productivity, and some skills acquired in one position may be transferable between jobs and work-places. Human capital is also an essential input to innovative activity: 40% of R&D expenditure goes on skilled labour.[7] Higher education is particularly important for research and innovation.

Governments have long recognised that the market might fail to provide enough education and training, because the social returns from a more highly educated work-force might be greater than the private returns to individuals. In addition, private lenders might be unwilling to lend to those who do want to increase their level of education, suggesting a role for government in funding education and training, as well as in providing it. The government's proposal to provide funding for continued education through Individual Learning Accounts is analysed in Chapter 10.

A skilled work-force will improve labour productivity and is also likely to increase the ability of firms to adapt to the changing technological and economic environment more quickly. The government's desire to improve skill levels, both in schools and within the working population, is perhaps the most important aspect of any attempts to increase productivity.

[7] For the UK in 1996, 45% of current R&D expenditure (current R&D expenditure makes up 90% of total R&D expenditure) was attributed to salaries and wages. Source: http://www.dti.gov.uk/ost/SETstats98.

## The diffusion of ideas

Since productivity is partly determined by how many firms are functioning as efficiently as possible given currently available information and technologies, the effectiveness of the transmission of new ideas — from one firm to another, from one set of workers to another, or from firms and workers in one country to firms and workers in another country — is important for productivity levels. This is the process by which knowledge 'spills over'.

Current technology can spread through the economy through the development of new goods and services, which embody new technology, and through a mobile work-force, which carries new technologies between companies. The level of skills in the work-force will influence how effectively new ideas, techniques and machines are transmitted. In addition, the location of firms in fairly small geographical areas, such as the M4 corridor and Cambridge's 'Silicon Fen', can increase spillovers between firms and provide access to specialist labour and intermediate inputs. In a domestic context, the diffusion of new ideas and work practices will probably also depend upon the level of competition, the organisational structures in place and their ability to adapt to a changing environment.

There are a number of potential gains to be had from increases in the flow of ideas between countries. Foreign firms that locate in the UK can bring new technologies from which domestic firms and workers can learn, increasing the speed with which UK firms acquire the new information.[8] It is also possible that that the presence of foreign firms brings about an increase in productivity at other levels of the supply chain — perhaps by demanding higher-quality intermediate inputs. The underlying skill level will affect Britain's ability to take advantage of these technological spillovers, but foreign firms may also train workers and so increase productivity.

The Pre-Budget Report highlights measures being taken to remove unnecessary barriers to trade and relocation, through international trade agreements and examination of planning regulations. But it is important to balance the desire to encourage the diffusion of ideas — for example, by allowing firms to be clustered in small areas — with the need to control development in areas that might already be heavily populated. The abolition of all planning regulations might well increase productivity, but planning regulations exist for many reasons other than a desire to maximise output.

## The role of small companies and start-ups

Many of the policies being considered by the government are targeted at small companies and start-ups. Do small firms play an important role in generating technological progress and productivity growth? From the data available, small firms with 1–99 employees (some of which will in fact be self-employed) accounted for over 36% of employment in 1997. However, they carried out only 9% of total business enterprise R&D in 1996.[9] Preliminary

[8] Of course, British firms locating abroad can also learn from firms in other countries and bring this knowledge back to the UK.

[9] Sources: DTI statistical press release P/98/597; http://www.dti.gov/ost/SETstats98.

results of the Community Innovations Survey suggest that 52% of small and medium-sized companies are 'innovators' compared with 72% of large firms.[10] While small firms may be a significant source of job creation, they also shed jobs. A significant number of firms start up each year, and a significant number go out of business. This 'churning' is likely to be disproportionately concentrated among small firms.

The rationale for targeting small firms is unclear. If the existence of spillovers from R&D means that the social returns to R&D exceed the private returns to innovators, this can provide a rationale for government intervention to increase the amount of R&D undertaken. But unless they generate more spillovers than large firms do, there is no reason to target policy solely at small and start-up firms.[11] Alternatively, it could be that having a larger number of small firms means that the economy is better at evolving — that is, that it creates a more dynamic economy with many firms starting up and the unsuccessful ones going out of business rapidly. Small firms may not themselves be the innovators, but they may be good at filling in gaps in the market more rapidly than larger firms.[12] On the other hand, economies of size might give larger firms with knowledge and human capital in one production area an advantage in applying these more easily to other areas.

Firms might also underinvest in R&D if they face difficulties in obtaining finance to do so, and it is possible that start-up firms are hit harder by this because they have no trading record to show potential investors. Furthermore, high-tech firms may be reluctant to reveal their ideas, making it harder for investors to assess the risks involved. This suggests that policies to reduce these constraints might be most effective if aimed at start-up and high-tech firms, and some of the specific measures to encourage corporate venture capital are discussed in Section 5.2. However, there is little compelling empirical evidence that financial constraints are significantly worse for small firms than large ones.[13]

## 4.4 Conclusions

The efforts being made to improve UK productivity were given a central place in the government's Pre-Budget Report. Alternative methods of measuring productivity — an indicator of how efficiently the economy is running — give

[10] Innovators are described as 'enterprises that introduced any technologically new or improved products, processes or services between 1994 and 1996'. Source: *Economic Trends*, October 1998.

[11] Given the openness of the economy and the importance of multinational firms, the relevance of the UK's domestic R&D to UK technological performance is questionable. If spillovers are not confined to the area in which R&D is located, the rationale of policies to promote domestic R&D may be in doubt.

[12] See, *inter alia*, P. Geroski, *Market Structure, Corporate Performance and Innovative Activity*, Clarendon Press, Oxford, 1994.

[13] See also Bank of England, *Finance for Small Firms: A Fifth Report*, 1998, for discussion of this issue and R. Cressy, 'Are business start-ups debt-rationed?', *Economic Journal*, vol. 106, pp. 1253–70, 1996.

different pictures of the size of the productivity gap. A large part of the gap in output per worker between the UK and other countries can be explained by differences in the number of working hours, the level of skills and the amount of capital used. This implies that markets in the UK may be failing to provide the right incentives to achieve an optimum level of investment and skills, so that there could be a role for government to intervene to improve those incentives. The factors affecting productivity, and thus the markets we are concerned about, include the development of human capital through education and training, the production of innovations in both technology and organisational structures, and the effective diffusion of new ideas. The challenge for economists and policymakers is to identify where these markets are failing and to design policies that achieve the desired improvement in incentives (and subsequent increase in productivity) without creating unnecessary and unwanted distortions in the process.

# 5. Issues in company taxation

Gordon Brown's first two Budgets introduced significant changes to the taxation of dividend income and capital gains, and to the timing of corporation tax payments by large companies. The tax levied on company profits distributed to pension funds and other tax-exempt shareholders was increased by the changes to dividend taxation in the July 1997 Budget. The new payments system introduced in the Budget of March 1998 will accelerate the payment of corporation tax by large firms, resulting in higher tax payments during a four-year transitional period starting in April 1999. The combined effect of these changes dominates the reductions in corporation tax rates from 33% to 30%, so that taxes on company profits were expected to be about £4 billion higher in each of the next four financial years than they would have been under an unchanged system. Some changes in company financial behaviour during the transition to the new regime are likely to reduce this revenue.

These tax changes have principally affected large corporations and their shareholders. The net increase in the taxation of company profits sits uneasily alongside a desire to raise business investment, and the hurried move to change dividend taxation created unnecessary uncertainty over the future structure of company taxation in 1997. Since then, though, the government has consulted over the operation of the new payment system before finalising its structure in last year's Budget, and did not present any more major changes for large companies in the Pre-Budget Report of November 1998.

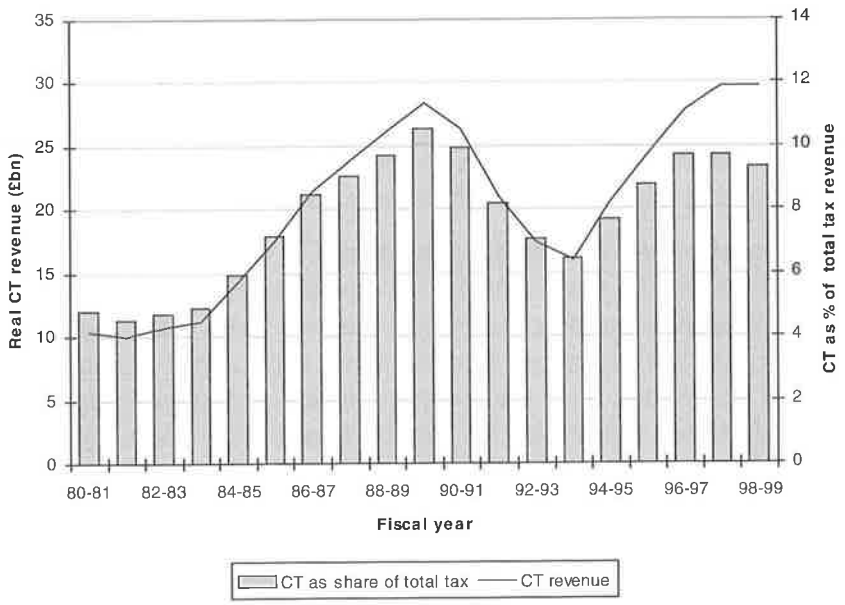
The Pre-Budget Report did raise some tax proposals aimed at smaller companies, particularly high-tech and start-up firms. Although individually there might be persuasive arguments for each of the measures being suggested, the government should always be clear about what market deficiencies it hopes to address by intervening, and be certain that a change in tax policy is the best method to use. In general, government tax policy should aim to raise revenue while minimising the distortions introduced into the way that individuals and companies behave, unless there is a clearly identified failure in the way that the market operates and government intervention can mitigate that failure. Creating a stable tax structure for companies that does not discriminate between different types of investment or methods of financing that investment, or between companies of different sizes or in different industries, is likely to be a more effective method of encouraging investment and growth than attempting to single out a particularly fashionable sector or type of firm for special treatment.

In the remainder of this chapter, we look in more detail at the main proposals relating to companies and those who invest in companies discussed in the Pre-Budget Report. First, we look briefly at the outlook for government revenue from corporation tax.

# 5.1 Corporate tax revenues

Corporate tax (CT) revenues have doubled in nominal terms over the last five years, from a low of just under £15 billion in 1993–94, as a result of the last trough in the business cycle, to a current prediction of just over £31 billion for 1998–99. Figure 5.1 shows how much real CT revenue has fluctuated over the period from 1980–81 to the present. It is clear that during downturns in the cycle, CT revenues can fall quite dramatically, as they did in the early 1990s.

**Figure 5.1. Corporate tax revenues over time, 1996–97 prices**




Note: Corporate tax revenues as a share of total tax are measured in relation to general government revenue (GGR).
Sources: *Inland Revenue Statistics 1998*; *Public Expenditure Statistical Analyses, 1998–99*; *Financial Statement and Budget Report*, various years.

Figure 5.1 also shows that, as corporate tax revenues decline, they also become less important as a share of total tax revenue, as other, less cyclical taxes become more important. In 1993–94, corporation tax provided 6.5% of general government receipts, from a high of over 10% in 1989–90. By international standards, since the 1970s, the UK has consistently raised a higher share of its total tax revenue from corporations than the average for the EU (see Figure 9.2).

Corporate tax revenues are forecast in the Pre-Budget Report to fall from £31.4 billion in 1998–99 to £30 billion in 1999–00. This is despite the fact that the introduction of the new payment system for large companies was expected to raise about £1 billion in extra revenue that year, even after allowing for the cost of reducing the main and small companies' rates of tax to 30% and 20% respectively, the abolition of advance corporation tax (ACT) from April 1999 and other minor changes. The combined changes to corporation tax announced in the last Budget were expected to raise almost £6 billion over the coming

four years, which would dampen the effect of any slowdown in profitability on the level of government revenue.[1] This is because the move to the new system brings about a one-off increase in revenue as large companies have to bring forward their tax payments.

One of the reasons that corporate tax revenues are expected to fall, despite predicted revenue gains from the transition, is that profits have slowed down in 1998–99 and are expected to slow further this year. Perhaps just as important are the behavioural changes brought about by the move to the new payment system and the abolition of ACT. For example, the number of foreign income dividends (FIDs) paid has increased dramatically since the announcement in July 1997 that they were to be abolished, which implies that there will be unusually large repayments of ACT from the Inland Revenue to companies paying FIDs.[2] Any changes that companies make to their dividend payments — for example, deferring them until after ACT is abolished — or to their income flows or to other aspects of their financial behaviour will alter the expected flow of corporation tax revenue during the transition and make it harder to predict what the final effect on revenue will be.

In addition, under the new payment system, CT revenue will follow the timing of the cycle in profits more closely, because the new system reduces the delay between companies earning the profits that are to be taxed and them actually paying the tax. Under the old system, about 40% of CT revenues were made up of ACT, paid soon after the company makes a dividend payment out of its profits and related to the size of that dividend. The other 60% was revenue from mainstream corporation tax, paid nine months after the end of the company's accounting year. Under the new system, half of the tax owed will be paid in the second half of the current year and half during the first six months of the next year.[3] This acceleration of payments means that CT revenues will react more quickly to changes in company profitability.

## 5.2 Tax incentives and productivity

In the 1998 Pre-Budget Report, the government announced its intention to consult on several policy options aimed at increasing corporate investment and productivity. This section discusses the main tax proposals that were outlined and some of the broader issues that arise, including:

- targeting incentives at smaller firms;

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[1] The revenue effects of the package of tax measures related to introducing the new payment system are given in 'A modern system for corporation tax payments', Inland Revenue Press Release 9, 17 March 1998.

[2] The abolition of FIDs from April this year was announced in the Budget of July 1997. In the 2½ years prior to that date, a total of about 140 FIDs were paid; following the announcement, over 430 have been paid. The abolition of ACT and FIDs, and details of the new payment system for large companies, are discussed in A. Dilnot and C. Giles (eds), *The IFS Green Budget: January 1998*, Commentary no. 67, Institute for Fiscal Studies, London, 1998.

[3] There are transitional arrangements for the first four years of the scheme, when a declining proportion of the tax liability will continue to be paid nine months after the company year-end (again, for details see Inland Revenue Press Release 9, 17 March 1998).

- increasing fiscal incentives for research and development (R&D);
- making permanent increased capital allowances for small businesses;
- the tax treatment of losses;
- changes to the tax treatment of venture capital; and
- possible changes to the structure of tax-advantaged employee share ownership schemes.

## Smaller firms

The Pre-Budget Report discusses several proposals to favour certain types of investment by small or start-up companies, particularly in high-tech industries. The government has also published the recommendations of two working groups, the Williams Report on the financing of high-technology businesses and the report on smaller quoted companies.[4] Of course, the government already explicitly targets many policies at small and medium-sized firms. The 1998 Budget announced several such measures, including a reduction in the small companies' rate of corporation tax to 20%, an exemption for smaller firms from the new system of paying corporation tax by instalments, and an extension to the enhanced capital allowance aimed at promoting their investment in plant and machinery. It is worth noting that no amount of schemes limited to investment or R&D by small firms will make much of an impression on the aggregate investment or R&D shortfalls that are suggested as reasons for Britain's comparatively low level of labour productivity: most investment and R&D spending is conducted by large corporations that are outside the scope of such schemes.

That said, there may be good reasons for some changes aimed at small or new firms. The strongest case is where these would remove existing distortions within the tax system. For example, existing tax deductions for investment and R&D spending are of less benefit to new companies that have not yet begun to generate taxable profits than they are to established, profitable companies. This distortion stems from the asymmetric tax treatment of profits and losses, and could be eliminated if tax losses received a rebate at the same rate as taxable profits are taxed. If there is a concern that this symmetric treatment would be open to abuse, a second-best solution would be to allow the tax deductions associated with clearly identifiable levels of investment and R&D expenditures to be refundable to firms in a loss-making position. However, the case for limiting such refunds to firms in certain sectors, firms below a certain size threshold or firms with a certain level of National Insurance contribution payments is much less clear.

This example illustrates what we suggest should be the 'golden rules' for tax measures that are limited to smaller companies: they should be addressed to a clearly identified distortion within the economy or the existing tax code that penalises small firms relative to large firms; and their effect should be targeted at removing or reducing that particular distortion, rather than introducing some

[4] HM Treasury, *Financing of High Technology Businesses*, a report to the Paymaster General, 1998; HM Treasury, *Smaller Quoted Companies*, a report to the Paymaster General, 1998.

new bias in the opposite direction in another area. There are plenty of bad reasons for targeting tax measures at some types of firms or some types of activities: the more targeted the measure, the cheaper it is to implement, but 'picking winners' to invest in is an activity likely to be performed better by investors than by the government. It is not difficult to suggest new and more generous tax breaks for small firms and their owners, but a prudent Chancellor would do well to remember the experience of earlier attempts to target tax concessions, such as the Business Expansion Scheme. Well-motivated attempts to promote enterprise have often had their main success in promoting the tax avoidance industry.

## Fiscal incentives for R&D

### *R&D tax credits*

The Pre-Budget Report states that the government has considered two possible forms of R&D tax credit: a credit available to all firms based on incremental increases in R&D expenditure; and a credit based on the volume of R&D expenditure targeted at small and medium-sized enterprises (SMEs). The government is concentrating on the latter type of credit, and is considering making the credit refundable, allowing firms that do not have a current corporation tax liability to benefit immediately from the incentive. This is an important design issue, which will significantly affect the value of the credit to many firms. The section below on the tax treatment of losses examines this issue in more detail.

Expenditure on R&D falls into one of two categories: current expenditure — on wages and materials, for example — or capital expenditure — for example, on machinery or research laboratories. Current expenditure can be deducted from profits in the year the payments are made, while expenditure on capital can either be deducted over a number of years or qualifies for immediate deduction under the Scientific Research Allowance (discussed below). An R&D tax credit would make the tax treatment of expenditure on R&D more generous than that of other types of expenditure, by allowing firms an additional deduction from their tax bill. This lowers the price of carrying out R&D, which should encourage firms to conduct more of it.[5] It is also one way of putting more cash in the hands of firms that undertake R&D, thus potentially overcoming any financial constraint these firms might face.[6]

Many countries, including most of the G7, have R&D tax credits of some form. In practice, they have proved difficult to design and implement.[7] One important distinguishing feature of different credit systems is whether they are designed to subsidise all R&D or only incremental R&D, i.e. R&D above that

[5] The reduction in the price of R&D could also enable firms to increase expenditure elsewhere.

[6] This may not be the most efficient way to approach such a market failure as it addresses a symptom rather than the underlying cause. The introduction of a tax credit might also induce some relabelling of other expenditure as R&D.

[7] For example, the American system has had at least 10 changes to its design since its introduction in 1981. For a discussion of R&D tax credits see R. Griffith, D. Sandler and J. Van Reenen, 'Tax incentives for R&D', *Fiscal Studies*, vol. 16, no. 2, pp. 21–44, 1995.

which is already being carried out. Incremental systems can be more cost-effective, producing the same reduction in the cost of carrying out additional R&D as would be produced by subsidising total R&D, but at a fraction of the cost. Unfortunately, they can also create perverse incentives when implemented over a number of years, since firms will take into account the fact that raising R&D this year usually means reducing the value of the credit next year. In the US, the incremental tax credit led to some firms facing incentives to reduce R&D, precisely the opposite effect to that intended.[8] The government appears to have acknowledged the practical difficulties with implementing an R&D tax credit aimed at incremental R&D and currently favours a credit based on the volume of R&D, targeted at smaller firms.

Ideally, a tax credit would be evaluated by measuring its overall impact on economic activity, but this is very difficult. It is possible to consider the cost-effectiveness of a credit, i.e. whether it generates at least as much new R&D as it costs in tax revenue. The cost-effectiveness of a volume-based credit will depend, among other things, on the rate at which the credit is applied and the responsiveness of R&D expenditure to changes in the price of R&D, i.e. the price elasticity of R&D. For example, consider a firm that currently spends £100,000 on R&D. If a volume-based R&D tax credit is introduced at a rate of 20%, and the price elasticity of R&D is assumed to be 1.0,[9] the credit will generate £20,000 new R&D expenditure, and the cost of the credit will be £24,000 (20% of £120,000). In order for the policy to be cost-effective, it must be the case either that £1 of R&D expenditure carried out by the firm is more valuable than, for example, £1 of government R&D expenditure, or that the firm's R&D expenditure is more responsive to a reduction in the price of R&D than is implied by the elasticity of 1.0.[10]

The government's favoured route appears to be a volume-based credit, targeted at smaller firms. If it were made available to all firms, most of the credit would go to large firms because R&D activity is concentrated amongst those firms. It would also be extremely expensive. The government does not clearly set out its rationale for targeting this incentive at smaller firms. It would be much cheaper to implement than one applied to all firms, but it also means that the overall impact would be much less. If the aim of this policy were to increase the aggregate level of R&D spending in the UK significantly, it would seem unlikely to achieve it. Introducing a volume-based credit for

[8] See R. Eisner, S. Albert and M. Sullivan, 'The new incremental tax credit for R&D: incentive or disincentive?', *National Tax Journal*, vol. 37, no. 2, pp. 171–85, 1984.

[9] That is, a 1% reduction in the price of R&D induces a 1% increase in R&D expenditure. The example assumes the credit does not affect supply conditions in the market for R&D.

[10] In the above example, the price elasticity of R&D required for the credit to break even is approximately 1.25. The break-even elasticity would be lower if the credit received were taxed as income. There is considerable uncertainty over how responsive R&D expenditure is to changes in price. Studies indicate that the price elasticity of R&D lies between 0.3 and 2.0: see B. Hall, 'Effectiveness of research and experimentation tax credits: critical literature review and research design', report prepared for the Office of Technology Assessment, Congress of the United States, 1995.

SMEs at the rate of 20% would probably increase the ratio of business expenditure on R&D to GDP by less than one-tenth of one per cent.[11]

Finally, if tax incentives are to be targeted at smaller firms, 'smaller firms' need to be defined. There are currently two definitions of 'small' firm used within the tax system. To determine whether a firm is eligible for the small companies' rate of corporation tax and exemption from the system of payment by instalments, a definition based on profits is used. To qualify for the enhanced first-year capital allowance for smaller companies, a firm must satisfy two out of three conditions relating to number of employees, turnover and assets. The former definition applies to all firms with low profits, rather than specifically to small firms, while the latter provides a more stable measure of firm size.

### *The Scientific Research Allowance*

The Pre-Budget Report also states that the scope of the current Scientific Research Allowance (SRA), which allows firms to deduct 100% of their capital expenditure on 'scientific research' from their taxable profits, will be reviewed. Amending the scope of the SRA might represent a way for the government to apply a more generous fiscal treatment of R&D without having to introduce a new type of relief. The key issue in revising the SRA lies in redefining what currently qualifies as 'capital expenditure for scientific research' — for example, extending the coverage to capital expenditure on development. About 10% of total R&D expenditure is on capital (for example, machines and equipment), while the remainder is current expenditure (for example, wages and materials).[12] The annual cost of the SRA at present is unlikely to be greater than around £200 million.

Two possible reforms the government could consider would be to increase the allowance to more than 100% or to extend the allowance to a broader range of R&D expenditure. At present, any *current* expenditure on R&D already receives a 100% deduction. If the SRA were broadened to apply to all *capital* R&D expenditure, and not just that spent on 'basic research', the tax treatment of R&D would be neutral between current and capital R&D expenditure, removing any distortion between these two categories.

## Enhanced capital allowance for smaller firms

The government is considering a permanent enhanced first-year capital allowance for investment in plant and machinery for smaller businesses. Capital allowances allow companies to deduct a certain proportion of their historical investment spending from their taxable profits to reflect the costs of depreciation. Large firms can offset 25% of expenditure per year on plant and

[11] Business enterprise R&D expenditure (BERD) by firms with 1–399 employees accounts for approximately 29% of total BERD, or £2.7 billion (see SET statistics, http://www.dti.gov.uk/ost/SETstats98). Assuming a credit rate of 20%, a price elasticity of R&D of 1.0 and that all such firms carrying out qualifying R&D receive the credit, an R&D tax credit of this type would induce approximately £540 million new R&D expenditure. SMEs are in fact defined as firms with fewer than 250 employees, so a similar tax credit for SMEs only would not induce this much additional R&D.

[12] *Economic Trends*, August 1998, Office for National Statistics.

machinery on a declining-balance basis (with a lower rate for longer-lived assets) and 4% of expenditure per year on industrial buildings on a straight-line basis.[13] The 1997 Budget announced a 'temporary enhanced first-year capital allowance' for smaller firms of 50% for expenditure on plant and machinery carried out between July 1997 and July 1998.[14] The March 1998 Budget extended the enhanced first-year allowance until July 1999, but at the reduced rate of 40%. The 1998 Pre-Budget Report states that the government is considering making this 'temporary' enhanced allowance permanent.

A permanent enhanced first-year capital allowance would be expected to have a different effect on investment from one that is temporary. A temporary increase in the value of capital allowances decreases the current cost of capital (i.e. the required rate of return to investors) relative to the cost of capital in the future, and might therefore alter the timing of investment, but is not likely to have any significant long-run effect. The 'temporary' enhanced first-year allowances announced in the two previous Budgets may therefore have brought forward some investment projects into the period of the higher allowance, although evidence on similar measures used in the past does not indicate much effect.[15] In addition, any timing effect is likely to be reduced by continued extensions to a so-called 'temporary' allowance.

The enhanced first-year allowance for SMEs makes their capital allowances for plant and machinery slightly more generous than those received by large firms. The value of the enhanced capital allowances to smaller firms will depend on both the rate of the allowance and the rate of corporation tax they face — a reduction in the rate of corporation tax lowers the value of capital allowances. A move from a 25% first-year allowance to a 40% first-year allowance implies an increase in the present discounted value of the capital allowance of less than 3%.[16] Given that SMEs account for a relatively small proportion of investment in plant and machinery, as reflected in the fact that the estimated cost of the enhanced allowance is small,[17] it is unlikely that the impact on the total level of investment will be significant.

## Tax treatment of losses

Small and start-up firms are often in a position where they do not currently pay corporation tax. The value of any tax allowance or tax credit for such firms is reduced. This is because firms making taxable profits and those

[13] This means that, for £100 of investment in plant and machinery, £25 is written off in the first year, £18.75 in the second year (i.e. 25% of £75), £14.06 in the third (25% of £56.25) etc. For £100 of investment in industrial buildings, £4 can be written off each year for 25 years. There are no capital allowances for commercial buildings.

[14] This means that, for the first year of the investment, the allowance was 50%, falling back to 25% per year on a declining-balance basis in subsequent years.

[15] See A. Dilnot and C. Giles (eds), *The IFS Green Budget: Summer 1997*, Commentary no. 61, Institute for Fiscal Studies, London, 1997.

[16] Net present value calculations use a 5% interest rate and a small companies' corporation tax rate of 20%.

[17] The 1998 Budget estimated the cost of the temporary enhanced allowance at 40% to be £300 million over the period 1999–2001.

making tax losses are treated asymmetrically under the tax system. In general, when a firm makes taxable profits, it makes a tax payment to the government, but when it makes a loss, it does not receive a corresponding payment from the government. Instead, once any carry-back provisions allowing the firm to offset losses against profits made the year before have been exhausted, the firm has to carry the losses forward, without any interest mark-up, to set against profits that might be earned in the future. The value of this future offset to the firm depends on how long it has to wait until it earns profits.

This asymmetric treatment may therefore discriminate against start-ups and firms undertaking long-term or risky investment projects, two categories into which high-tech ventures would naturally fall. Such firms often face a long wait before positive profits are earned, or a significant risk that they will never be earned at all. The delay before they can offset their losses and recover the value of tax allowances on investment raises their cost of capital. For example, the impact of any permanent enhanced first-year capital allowance will be reduced for those SMEs that are currently making a tax loss. In addition, the delay denies these loss-making firms the immediate cash-flow benefits of the tax allowance.

One possible change the government could consider would be to allow firms to receive an interest mark-up on tax losses carried forward. This would compensate them for the delay in offsetting their losses and leave the cost of capital unchanged by the wait. However, such firms would still face the loss of cash-flow benefits. To the extent that cash flow affects investment and R&D, this could have an effect on innovative activity. It might therefore be more effective to introduce some form of immediate loss relief, although tax avoidance might be a problem if firms were able to generate losses artificially.[18]

If tax avoidance issues are too problematic, the government could choose to link any rebate to specific components of expenditure that are easily measurable and that it wishes to encourage, such as investment or R&D. In the case of the R&D tax credit, the government is considering making the credit refundable — that is, paying the credit directly to firms when they do not have a current tax liability against which to set the credit. While the Pre-Budget Report makes no mention of the same considerations for capital allowances, the same rationale certainly applies.

One proposal put forward in the Williams Report on the financing of high-technology businesses[19] would enable firms to offset corporation tax losses against other payments that these loss-making firms do make to the government — for example, PAYE and National Insurance contributions. It is suggested that such a scheme could be targeted at early-stage firms that face long delays before the commercialisation of their R&D. While linking the loss relief to existing payments would also place a limit on the amount obtainable,

[18] Allowing loss-making firms immediate relief on the value of their tax losses would also affect the stream of corporation tax revenue, which would become more sensitive to economic conditions.

[19] HM Treasury, *Financing of High Technology Businesses*, a report to the Paymaster General, 1998.

it might be preferable to tie any rebate to the type of expenditure, such as investment or R&D, that the government wishes to encourage. Targeting specific firms and specific payments, such as National Insurance contributions and PAYE, is likely to create distortions between different firms and distortions in firms' employment decisions.

The asymmetric treatment under the tax system described above applies to loss-making firms in all sectors and of all sizes. But it is possible that the absence of loss relief discriminates, in particular, against small and start-up companies, exactly the type of firms the government wishes to encourage.

## Investment in enterprise

The possibility that firms face constraints in obtaining start-up finance was suggested in section 4.4 as a rationale for government intervention. In the run up to the Budget, the government will be considering the recommendations of the Williams Report and the report on smaller quoted companies.[20] They include recommendations for a specialist 'Technology Venture Capital Trust' and further modifications to the capital gains tax system.

### *Venture capital*

Venture capital is the provision of equity finance for unquoted companies. Investments can be made by institutions — for example, through venture capital funds — and by individuals — for example, through investments in venture capital trusts (VCTs). A significant proportion of this investment is used in financial restructuring, such as management buyouts, although investment in high-tech and early-stage firms is increasing.[21] In addition to this 'formal' venture capital sector, there is an 'informal' sector of individuals who make direct investments in firms.

Tax incentives are provided for investments by individuals in VCTs and for direct investments by individuals under the Enterprise Investment Scheme (EIS). VCTs are quoted on the Stock Exchange and invest in unquoted companies, allowing investors to spread risk over a number of investments. For individual investors, they offer income tax relief at 20% on investments of up to £100,000 in new shares, subject to certain conditions. They provide exemptions from income tax on dividends received and from capital gains tax on share disposals. Subscribers to new shares can also defer tax on capital gains from disposals of other assets.

One issue to consider is to what extent the provision of tax incentives for the formal venture capital sector affects early-stage financing for start-up firms. Estimates suggest that, in both the US and the UK, the informal venture capital sector provides more finance to start-up firms than the formal sector.[22]

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[20] HM Treasury, *Smaller Quoted Companies*, a report to the Paymaster General, 1998.

[21] The British Venture Capital Association (http://www.brainstorm.co.uk/BVCA/) reports that, in 1997, UK venture capital firms invested £4,184 million (£3,066 million in the UK). Financial restructuring received £2,000 million and high-tech companies £690 million. £159 million was invested in early-stage companies, of which £58 million was in start-ups.

[22] *Venture Capital and Innovation*, OECD, Paris, 1996.

Tax incentives are provided for direct investments by individuals in unquoted companies under the EIS. Income tax relief is available at 20% on investments between £500 and £150,000.[23] Gains from shares that were granted income tax relief are exempt from capital gains tax. Investors can defer capital gains tax from the sale of previous assets where the gains are reinvested under the EIS even if they do not qualify for income tax relief. In 1995–96, £47.7 million was invested under the scheme.[24]

The tax incentives provided for investments in VCTs or under the EIS are already very generous compared with other individual savings instruments in the UK, such as PEPs and ISAs. Investments using all these instruments can receive tax relief on dividend payments and capital gains. But investments in VCTs or under the EIS can also qualify for income tax relief, while investments in PEPs or ISAs are made out of taxed income. Subject to certain conditions, each £100 invested in a VCT or under the EIS can be eligible for a £20 rebate to be set against an individual's income tax liability. This income tax relief on initial investments rewards both successful and unsuccessful investments.

The Williams Report proposes raising the limit on individual VCT investments qualifying for relief. The Report also proposes increases in the generosity of income tax relief under VCTs by the creation of a 'Technology Venture Capital Trust', which would be limited to investments in 'high-tech' firms. This raises problems of defining a 'high-tech' firm. It is proposed that the Technology VCT should be open to institutional investors, possibly giving tax relief for insurance companies.

It is not clear that the tax treatment of investments by individuals has led to any shortfall in venture capital investment in the UK which might justify further tax breaks. In 1997, overseas sources provided more finance to UK venture capital funds than UK sources. Of the total funds raised, private individuals accounted for only 5%, while pension funds and insurance companies accounted for 31% and 25% respectively.[25] Additional tax incentives for individual UK investors seem unlikely to have a significant effect on the supply of funds to venture capital firms, given that they account for such a small proportion of funds raised. The rationale for incentives for institutions to invest in venture capital is unclear. Pension funds, for example, are already exempt from tax. The potential cost of further incentives should also be considered, especially if there is little evidence to suggest that the incentives are justified.

Providing tax incentives for investors is not necessarily the appropriate way to intervene in the venture capital market, particularly if this intervention does not affect the investment behaviour of the firms they invest in. Other possible methods of government intervention are the direct supply of capital to venture capital firms or to start-up firms, providing guarantees for loans taken out by

[23] The 1998 Budget raised the upper limit for individual investments from £100,000 and abolished the limit of £1 million that could be raised by qualifying companies under the scheme each year.

[24] *Inland Revenue Statistics 1997*, The Stationery Office, London.

[25] British Venture Capital Association (http://www.brainstorm.co.uk/BVCA/).

start-up firms[26] or modifying regulations (for example, those covering investment by institutions in venture capital).

### *Capital gains tax for individuals*

The 1998 Budget introduced a taper system for capital gains tax from April 1998, replacing the previous allowance given to reflect increases in the price of assets over time due to inflation. As Table 5.1 illustrates, the taper system reduces the amount of capital gains tax paid the longer an asset is held. The reduction is greater for business assets.[27]

**Table 5.1. The capital gains tax taper**

| 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 | 92.5 | 37 |
| 2 | 100 | 40 | 85 | 34 |
| 3 | 95 | 38 | 77.5 | 31 |
| 4 | 90 | 36 | 70 | 28 |
| 5 | 85 | 34 | 62.5 | 25 |
| 6 | 80 | 32 | 55 | 22 |
| 7 | 75 | 30 | 47.5 | 19 |
| 8 | 70 | 28 | 40 | 16 |
| 9 | 65 | 26 | 32.5 | 13 |
| 10 or more | 60 | 24 | 25 | 10 |

Source: Inland Revenue News Release 16, 17 March 1998.

The taper system was introduced in order to encourage the long-term holding of assets. But it is not clear that the length of time that shareholders hold their shares has a significant effect on the extent to which firms undertake long-term investment. Macroeconomic instability and the high threat of a hostile take-over, compared with continental Europe, would seem more likely to generate any 'short-termist' behaviour on the part of UK managers.

Even if longer-term holding of assets does have an effect on firms' investment decisions, the taper system may not have a significant effect on shareholder behaviour, simply because of the low proportion of shareholders who actually pay capital gains tax. Many institutional shareholders — in particular, pension funds which own about 30% of total equity owned — are exempt from capital gains tax. No capital gains tax is paid by individuals who make gains of less than their annual tax-free allowance of £6,800 (in 1998–99), and gains on shares held in PEPs and in ISAs (from April 1999) are also exempt from tax.

[26] The DTI's Competitiveness White Paper (*Our Competitive Future: Building the Knowledge-Driven Economy*, Cm. 4176, 1998) announced that the government would be supporting an Enterprise Fund in conjunction with the private sector.

[27] Business assets are generally assets that are used wholly or partly for trading purposes, or shares and securities in a company (subject to certain conditions about the level of ownership those shares confer).

While almost 26 million individuals paid income tax in 1997–98, only 130,000 were liable for capital gains tax.[28]

In general, the relief given by the taper is lost when assets are sold and the proceeds are reinvested in a new asset. Both the Williams Report and the report on smaller quoted companies put forward proposals for allowing reinvestment to be counted under the taper scheme. This would appear to allow consecutive short-term investments, where gains were reinvested, to benefit from taper relief. If it is genuinely believed that the taper encourages long-term asset-holding and that this affects the investment behaviour of firms, then this change goes against the rationale for introducing the taper. As the Chancellor stated in the Budget Speech of March 1998:

> 'The capital gains tax regime we inherited rewards the short-term speculator as much as the committed long-term investor ... [I] will introduce a new structure of capital gains tax which will explicitly reward long-term investment and is based on a downward taper and lower tax rates.'

## Equity incentives

The Pre-Budget Report highlights employee share-ownership as an area where there is potential room for improvement. There are two main components to the government's approach in this area: promoting 'a long-term partnership between employees as shareholders and the company'; and considering whether 'special tax-advantaged share incentive schemes might help encourage more high calibre managers to join and stay with smaller companies'.

### *Employee share-ownership*

There are already two schemes in place to encourage employee share-ownership — profit-sharing schemes and savings-related share options schemes. By the mid-1990s, around 1 million employees were participating in each scheme. Profit-sharing schemes cost about £100 million in income tax relief, while savings-related share option schemes cost about £300 million. One of the government's concerns in the Pre-Budget Report is that employees are not holding shares in these schemes for as long as it would like. The government therefore wants to 'provide stronger incentives for long-term shareholding by all employees'.

Employee share-ownership might improve individual work incentives by tying part of employees' incomes to the performance of the firm. But this would necessarily mean that the employees were bearing more risk with regard to their incomes and wealth. Employees who receive a salary from one firm and hold shares in the same firm have more of their income dependent on that single firm's performance than employees who spread any shareholdings they have over different firms. It is not clear that the current levels of employee share-ownership, and the length of time employees hold their shares, reflect an inappropriate trade-off between the risk of holding those shares and the potential returns from doing so.

[28] *Inland Revenue Statistics 1997*, The Stationery Office, London.

***Management recruitment and retention incentives***

Tax reliefs for entrepreneurs who own shares in their own companies, and the use of equity-based remuneration to recruit high-quality managers to start-up firms, have received particular attention. Equity finance and the stock market can play a dual role for entrepreneurs. As well as a source of finance for investment, the use of shares or share options as part of a remuneration package can provide strong performance incentives for managers, particularly to those in firms with high growth prospects. It is possible that, by increasing the rewards to risk-taking, more entrepreneurial behaviour would be encouraged, and some high-quality individuals would leave established firms and take up employment in high-tech start-up firms. However, it is unclear why firms should be choosing to use too little equity-based remuneration at present.

From 1984 to 1996, the UK operated a discretionary, or 'executive', share option scheme, which allowed employers to target specific employees rather than offer it to all employees. Under that scheme, an employee could hold the greater of £100,000 or four times their annual salary in share options. No income tax would be paid when the option was first granted, or on any increase in the market value of the shares before the option was exercised.[29] Capital gains tax would eventually be owed on the difference between the amount received for the shares when sold and the amount the employee had to pay for the shares.[30]

Although fewer employees participated in this scheme than in the 'all-employee' schemes mentioned above — by the mid-1990s, around 200,000 — the annual cost in income tax relief was about £90 million. The Conservative Chancellor, Kenneth Clarke, announced the abolition of this scheme in response to the recommendations of the Greenbury Committee Report, which argued that there was no case for one form of remuneration to receive preferential tax treatment over any other.[31] However, the scheme was not, in fact, abolished but was replaced by the company share option plan (CSOP), a similar but less generous scheme which only allows options up to the value of £30,000 to be held.

The Williams Report and the report on smaller quoted companies make recommendations for further modifications to the CSOP for managers in early-stage high-tech companies and smaller quoted companies respectively. They propose raising or even abolishing the limits on the value of share options that can be held and further changes to the tax treatment of options. These recommendations raise problems of defining both 'early-stage high-tech

[29] Outside such a scheme, when an employee exercises share options, it is assumed that the income constitutes profit from employment, which is therefore subject to income tax. Capital gains tax is payable when the shares are sold.

[30] The main advantage to capital gains tax treatment over income tax treatment is the additional allowance of £6,800, which means that only gains over and above that amount are subject to tax. There is also an advantage because payment of capital gains tax can be deferred until the shares are sold, but, given that most options were sold as soon as they were purchased, this is unlikely to be significant.

[31] Inland Revenue Press Release IR149/95, 17 July 1995, 'Withdrawal of tax relief for approved executive share option schemes'.

companies' and 'smaller quoted companies'. Making the scheme available to both existing and new managers might not induce sufficient new managers to join such firms to overcome the costs of making the scheme available to those already employed.

Proposals for greater incentives to recruit high-quality managers come without offering any argument that equity-based remuneration is disadvantaged under the current tax rules, without any evidence of the success of past schemes and without suggesting how they could be used selectively for certain managers without being susceptible to abuse. Indeed, some of the current proposals seem to take us back to the original discretionary scheme operated up to 1996. Before any such changes are made, it is important to ascertain that previous schemes aided recruitment and performance in the highly skilled work-force, rather than simply allowing people to shift income out of their salaries and into share options in order to defer (and potentially avoid) tax.

# 6. Direct taxes and benefits

Although we do not expect any major alteration in the overall burden of taxation in the 1999 Budget, changes in personal sector taxation and social security are likely to be proposed. We have already seen substantial reform of the National Insurance contribution system and the in-work benefit system announced in this Parliament. Further changes to direct taxes for those on low incomes and to the means-tested benefit system seem likely.

We begin this chapter with a discussion of the government's long-standing commitment to the introduction of a 10% starting rate of income tax. We then move to a discussion of the National Insurance system, as it affects both employees and the self-employed. In Section 6.3, we discuss possible directions for change to the provision of support for families with children, including the taxation of child benefit. We then consider possible reforms to housing benefit, which the government has been keen to tackle.

Finally in this chapter, we describe and assess the debate over the future tax treatment of charitable giving, a government review of which is due to report soon.

## 6.1 A 10% starting rate of income tax

Since the general election, there has been a great deal of continuity with the direct tax policies of the previous government. In particular, there has been a further dilution of the contributory principle and an increased reliance on means-tested benefits. But there have also been clear distinctions. The most obvious one is in the way additional resources have been spent. Whereas the last government tended to concentrate on general income tax cuts, the Labour government has tended to focus on tax changes that serve particular aims: notably, the redistribution of income and the promotion of the financial incentive to work for those on low pay. These two aims underpinned the move from family credit to working families' tax credit (WFTC), the removal of discontinuities in the National Insurance system and the redistribution of liabilities within employer National Insurance.

The 1997 Labour Party manifesto proposed a 10% starting rate of income tax as a means of furthering these aims — the policy was claimed to promote both employment and 'fairness'. There are reasons to be sceptical about the policy's effectiveness on either count. The effect on employment is meant to arise through reducing effective marginal tax rates for those on low incomes, but, in practice, the benefit system is the dominant factor in determining tax rates for this group. In so far as 'fairness' in the tax and benefit system is taken to mean progressivity, a 10p starting rate of tax is a poor way to deliver it. The poorest families would not gain at all, as they do not pay income tax, while those on

high incomes would gain as much as anyone from this change.[1] In reality, a 10% starting rate of income tax would simply be a general cut in income tax of the kind implemented by the last government.

Even if such a cut is desirable, a 10% starting rate is a poor means of achieving it because of the administrative complexities, particularly with taxation at source, that arise from multiple marginal rates. The essential problem is that applying a particular rate of income tax at source is appropriate less often if there are multiple bands. The more bands there are, the more retrospective adjustments have to be carried out. Adjusting tax liabilities in this way is time-consuming for taxpayers and costly for the Revenue to administer. An alternative policy to achieve such a tax cut — increasing tax allowances — produces similar, though slightly more progressive, distributional results and avoids any administrative problems.

Of course, the UK already has a lower rate of tax of 20% on the first £4,300 of taxable income.[2] If a 10% rate of tax is introduced, abolition of the 20% rate has two attractions. First, it would provide a source of revenue that could help to finance a 10% band of significant width. Second, combining the introduction of a new lower-rate band with the abolition of the existing one would leave the income tax system with three bands, rather than four. The 10% starting rate could then be used as a stepping-stone back to a system with only two rates — a future Budget effectively cutting the rate from 10% to zero. If this route (of making the 10% rate temporary) were followed, it might be possible to accept some of the administrative and fairness problems created in the taxation of savings, since they would not persist once the 10% rate had been cut to zero.

**Table 6.1. Cost of introducing a 10% starting rate of income tax**

| Width of 10% band (£ per annum) | Cost (£ million) |
|---|---|
| 880 | 0 |
| 992 | 300 |
| 2,000 | 3,200 |
| 4,300 | 9,200 |

Table 6.1 shows the cost of introducing a 10% band of various widths assuming that the 20% band of income tax was simultaneously abolished. The small amount that each tax reduction 'claws back' in reduced means-tested benefit expenditure has been netted off these costings.

[1] See A. Dilnot and C. Giles (eds), *The IFS Green Budget: Summer 1997*, Commentary no. 61, Institute for Fiscal Studies, London, 1997, for a detailed discussion of where in the income distribution the gains from the 10p starting rate of income tax accrue.

[2] The history of the lower-rate band, introduced just before the 1992 election, is a good illustration of the problems of having multiple marginal rates. By 1995, almost 5 million taxpayers were entitled to small tax refunds on savings accounts. This was resolved by equalising the lower and basic rates of tax on savings at 20%. This leaves the UK in the ludicrous situation of taxing basic-rate taxpayers at 23% for some forms of income and at 20% for others — simply because of a decision about electoral tactics made in 1992.

A 10% band of £880 could replace the existing lower-rate threshold in a revenue-neutral reform. Any narrower band, combined with the abolition of the 20% rate of income tax, would actually increase revenue. The significance of a 10% band of £992 width is that it would ensure that only existing lower-rate taxpayers would gain from the change. For basic- and higher-rate taxpayers, the loss of the £4,300-wide 20% band exactly offsets the value of the new 10% band.[3] This reform does allow the gains from a 10% tax rate to be targeted on those with lower incomes. But it also prevents introduction of the 10% tax rate amounting to anything other than a very small tax cut, and it leaves the band so narrow as to limit severely the number of individuals who would face a 10% marginal rate.[4] Any 10% band wider than £992 awards a flat-rate tax cut to all higher- and basic-rate taxpayers.[5] Table 6.1 shows the scale of the tax cut implied by the introduction of two such bands. A £2,000-wide band would cost £3.2 billion, which is equivalent to a cut in the basic rate of tax of just under 2 percentage points. The full replacement of the existing (£4,300-wide) lower-rate band with a 10% band would cost £9.2 billion, equivalent to nearly five points off the basic rate.

## 6.2 National Insurance

The original National Insurance (NI) system was based upon flat-rate contributions made by all those in work (and their employers and the state) to cover the cost of flat-rate benefits for those who, for one reason or another, could not work. The scheme was gradually changed in the 1960s and 1970s as contributions became more closely linked to earnings. In the 1980s and 1990s, however, the flat-rate origins of the system remained discernible. Both employer and employee contributions contained a number of 'steps' where a small increase in earnings resulted in significant increases in NI liability, producing marginal tax rates of over 100%. Furthermore, there was (and remains) a great deal of inconsistency between the NI and income tax treatments of earned income.

In the 1980s, Nigel Lawson instituted reforms to the system of National Insurance contributions (NICs), for employees in particular, that left the system looking far more like an income tax than previously.[6] In the last Budget, Gordon Brown took the process further. He announced that he was seeking to align NICs with income tax, and moved towards this by scrapping

[3] This is because the fall in the tax from 20% to 10% on £992 of income equals the increase in tax from 20% to 23% on the remaining £3,308 (of the original lower-rate band).

[4] The numbers affected by a 10% marginal rate of income tax are reduced by the effects of the married couple's allowance (MCA) and additional personal allowance (APA): a band of £880 or £992 would leave no recipients of either allowance facing the 10% rate of income tax at any income level. For a full discussion of this interaction see J. McCrae, 'Simplifying the formal structure of the UK income tax', *Fiscal Studies,* vol. 18, pp. 319–34, 1997.

[5] Gains could straightforwardly be 'clawed back' from higher-rate taxpayers if the higher-rate threshold were cut at the same time as the 10% rate were introduced. But there is no simple way to stop basic-rate taxpayers from gaining in full.

[6] See A. Dilnot and S. Webb, 'Reforming National Insurance contributions: a progress report', *Fiscal Studies*, vol. 10, no. 2, pp. 38–47, 1989.

the last of the 'steps' in payment for employee contributions and by setting the lower earnings limit (LEL)[7] equal to the income tax personal allowance for employer contributions.[8] Further reform to the NI system is likely to involve moving the employee LEL in line with the change to employer contributions, and also perhaps an overhaul of the system for the self-employed, which still contains an important element of flat-rate contributions.

## National Insurance contributions for the employed

In last year's Budget, the government announced it would reform employer NICs. Box 6.1 describes the operation of the old and the new systems. The system is to be simplified dramatically with the removal of the 'steps' in the employer NIC schedule and with all contributions being paid at a single rate of 12.2% on all earnings above the LEL.

**Box 6.1. Employer (Class 1 secondary) National Insurance contributions**

| Old system | New system |
|---|---|
| LEL: £64 per week | LEL: £81 per week (income tax personal allowance) |
| 3% of *all* earnings if earn £64–£110 | 12.2% of all earnings *above* the LEL |
| 5% of *all* earnings if earn £110–£155 | |
| 7% of *all* earnings if earn £155–£210 | |
| 10% of *all* earnings if earn over £210 | |

Notes: All thresholds in 1998–99 prices. Reduced rates apply for those contracted out of SERPS.

**Box 6.2. Employee (Class 1 primary) National Insurance contributions**

| Old system | New system |
|---|---|
| LEL: £64 per week; UEL: £485 per week | LEL: £64 per week; UEL: £485 per week |
| 2% of LEL when earnings reach LEL | Abolition of 2% 'entry fee' |
| 10% of earnings between the LEL and UEL | 10% of earnings between the LEL and UEL |

Notes: All thresholds in 1998–99 prices. A lower rate of 8.4% applies for those contracted out of SERPS. LEL = lower earnings limit; UEL = upper earnings limit.

These very welcome reforms are aimed at removing the distortions in the labour market created by the old 'step' system, where movement into each earnings band triggered a higher employer contribution on *all* earnings (not just on that part of earnings within the band). One of the consequences of this structure was a 'bunching' in the earnings distribution just below the LEL.[9]

At the same time, the 2% 'entry fee' was abolished on employee NICs. Box 6.2 shows how employee NICs are now structured. Together with reforms to

[7] The level of earnings where NICs become payable.

[8] See *Financial Statement and Budget Report*, March 1998, for details.

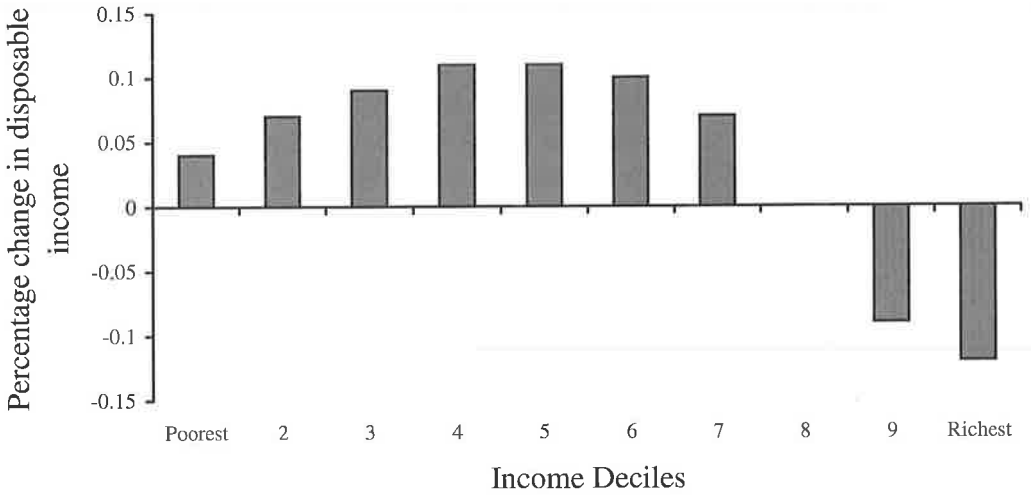
[9] See A. Dilnot and C. Giles (eds), *The IFS Green Budget: January 1998*, Commentary no. 67, Institute for Fiscal Studies, London, 1998, for evidence of this distortionary effect.

the employer schedule, this removes the distortions inherent in the old system due to discontinuities in the NIC schedule for those on low earnings.

In addition, the threshold for employer NICs was aligned with the starting-point of income tax. A corresponding increase in the LEL for employee contributions to the income tax personal allowance was not announced, however, but this is stated as a longer-term objective.

We consider the distribution of gains and losses from an increase in the LEL for employee NICs in Figure 6.1, assuming that the reform is revenue-neutral. This reform would cost the government around £1.4 billion, which we have assumed would be recouped through an increase in the employee rate to 10.7%.[10]

**Figure 6.1. Distributional impact of increasing the employee LEL**




Source: IFS tax and benefit model.

Increasing the employee LEL in line with the increase announced for employer NICs in last year's Budget results in gains to all individuals liable to pay NICs. Those at the bottom of the earnings distribution, i.e. earning below the new £81 LEL, would be taken out of paying NICs altogether. All those earning above £81 a week would gain from the increase in the LEL, but would simultaneously lose out from the new higher rate of employee contributions. For those on the highest earnings (deciles 9 and 10 in Figure 6.1), the average losses from the increase in the employee rate more than offset the benefits from the higher LEL under this revenue-neutral reform.[11] On average, the first seven deciles all gain, although those in the bottom deciles gain proportionately less as they contain fewer people paying NICs under the existing system.

[10] 9.1% for contracted out rate.

[11] Deciles are derived by dividing the total population into 10 equally sized groups according to income adjusted for family size. Decile 1 contains the poorest tenth of the population, decile 2 the second poorest and so on, up to the top decile (decile 10) which contains the richest tenth.

## The future of contributory benefits

Increasing the LEL for employee NICs is complicated by the fact that contributions are related to entitlement to certain state benefits, including the basic state retirement pension, the State Earnings-Related Pension Scheme (SERPS), incapacity benefit, contributory jobseeker's allowance and statutory maternity pay. Consequently, aligning the LEL with the income tax personal allowance would necessitate a rethink of the contributory principle. Otherwise, those who are taken out of NICs would lose their right to accrue benefit entitlement. The government has said that it is

> '... committed to aligning [the LEL for employees] with the personal allowance as soon as it has reformed the rules for contributory benefits'.[12]

It is difficult to think what this could mean other than crediting the low-paid with contributions they have not made. But, over the last 20 years, successive governments have gradually diluted the importance of the contributory principle in social security to such an extent that the logical next step may well be its total abandonment, rather than further modification to protect entitlement for those who make no contributions. The relative importance of contributory benefits declined continuously under the previous government, as their value failed to keep pace with the growth in wages. Other changes to the social security system have eroded the value of contributory benefits further. For example, additions for dependants were cut back, time limits on entitlement for certain benefits were reduced and elements of means-testing were brought into the system.

The new Labour government has signalled that it is pursuing the same strategy, by limiting the length of time for which the widow's pension is payable and by introducing an element of means-testing into assessment for incapacity benefit. More fundamentally, the Pensions Green Paper[13] could signal the beginning of the end of the contributory principle in social security. Under both Labour and Conservative governments, the relative importance of other types of benefits has increased: health-contingent benefits that have no relation to contribution records (such as disability living allowance) have become more generous and the real value of many means-tested benefits has increased.

An instructive way to illustrate how far the contributory principle has lost its central role in social security policy is to look at the shift in the relative importance of contributory benefits for the sick and disabled. Figure 6.2 illustrates this trend in terms of the growing importance of means-tested benefits and health-contingent benefits as a source of income for disabled people.

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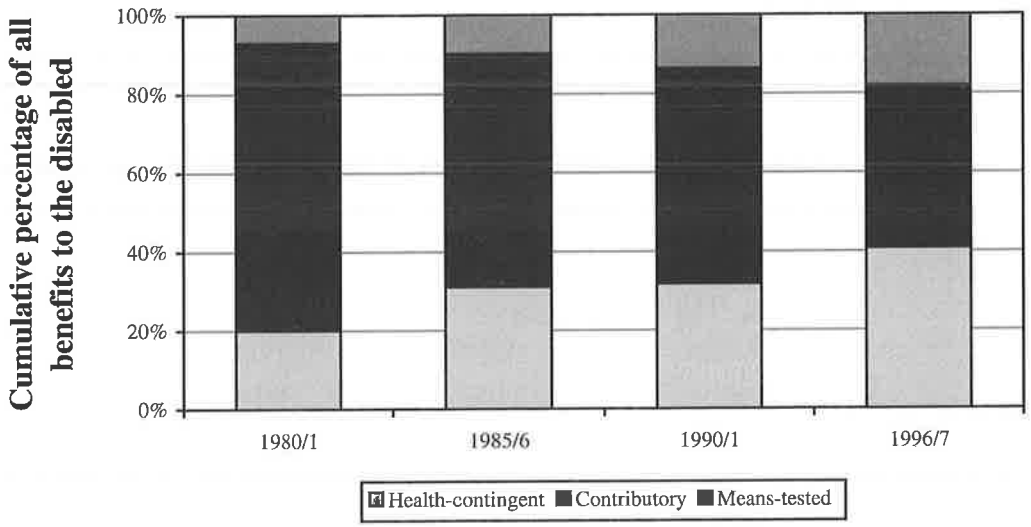
[12] *Financial Statement and Budget Report*, March 1998.

[13] DSS, *A New Contract for Welfare: Partnership in Pensions*, Cm. 4179, 1998.

**Figure 6.2. The decline of contributory benefits for the disabled**




*Health-contingent benefits* include attendance allowance, mobility allowance, disability living allowance and severe disablement allowance.
*Contributory benefits* include incapacity benefit and its predecessors (sickness benefit and invalidity benefit).
*Means-tested benefits* are income support payments to disabled people.
Source: *Social Security Statistics*, various years.

There are certainly arguments in favour of the contributory principle. Advocates stress the importance of contributory benefits in rewarding work, promoting 'inclusiveness' and reducing reliance on means-testing. But governments over the last 20 years have shown that they attach more importance to other objectives, such as containing the cost of benefit expenditure and targeting resources on those in greatest need, whether this need arises from low income or health problems. The resulting fall in the relative generosity of contributory benefits has undermined the extent to which these benefits can be said to reward work or to minimise reliance on means-testing.

The remaining case for keeping contributory benefits would appear, therefore, to be dependent on the belief that the system remains peculiarly popular, as people are happy to pay into a scheme where revenue is hypothecated to expenditure from which they believe they will benefit. If the relative value of contributory benefits continues to dwindle, it is difficult to believe that this perceived link will not be weakened. And the question will have to be asked whether it is worthwhile maintaining the complexities of a notionally contributory system, even where the real transfers it effects are increasingly close to those that could be achieved by a system of benefits that is not dependent on contributions.

## National Insurance contributions for the self-employed

There are four 'classes' of NICs. Class 1 NICs are those paid by employees and their employers, discussed earlier. They account for 97% of total NIC revenue. Class 3 contributions are voluntary and can be paid to maintain a

contribution record in certain circumstances. They account for 0.13% of total revenue.

The self-employed pay two different classes of NICs — Class 2 and Class 4. Class 2 contributions are payable by those whose earnings from self-employment exceed the 'small earnings exception'. Those who qualify then pay a flat rate of £6.35 per week. Class 4 contributions are payable by individuals whose profits exceed the 'lower profits limit'. The contribution paid is then 6% of gains above the lower profits limit (LPL) and below the upper profits limit (UPL). No further contributions are paid on profits above the UPL. Class 2 and Class 4 NICs each account for 1.5% of the total revenue from NICs. The NIC burden on the self-employed is much lower than that on employees: rates are lower and there is no equivalent to the employer element. Box 6.3 describes the parameters of the current system and provides an illustrative example.

**Box 6.3. Self-employed National Insurance contributions**

| **Class 2 contributions** | **Class 4 contributions** |
|---|---|
| £69 a week small earnings exception | LPL: £140 a week |
| £6.35 flat-rate charge when earnings reach small earnings exception | UPL: £485 a week |
| | 6% of taxable profits between the LPL and UPL |

***Example: Individual with £250 weekly profit***

Class 2 contributions = £6.35

Class 4 contributions = (Profit – LPL) × Class 4 rate

= (250 – 140) × 0.06

= £6.60

Total NIC liability = £6.35 + £6.60

= £12.95

Note: All rates and thresholds in 1998–99 prices.

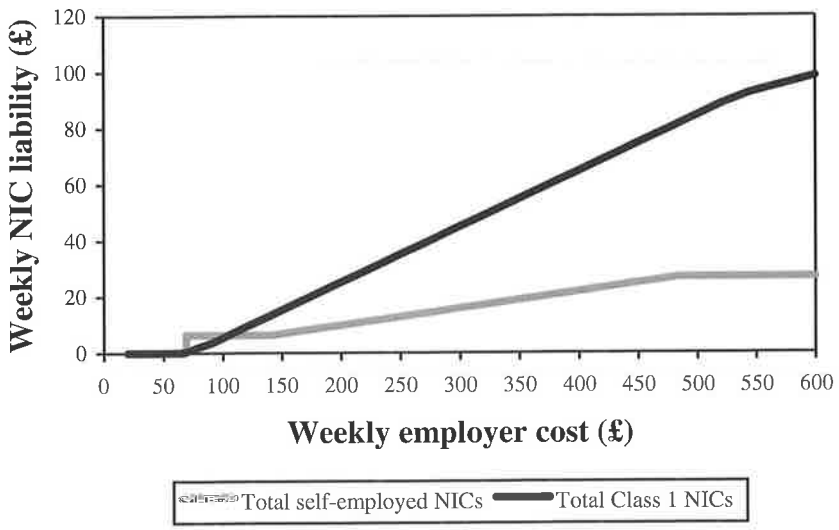
The example in Box 6.3 shows that the total NIC liability of a self-employed individual with weekly profits of £250 is £12.95. If this individual were an employee working for someone else, his or her total NIC liability would be much higher, at £35.14.[14] The lower NI liability of the self-employed is illustrated fully in Figure 6.3. At almost all levels of income, total NICs for the self-employed are substantially lower than for employees.[15] And, whilst total NICs for employees continue to rise even beyond the £600-a-week mark since the upper earnings limit (UEL) does not apply to employer contributions, self-

[14] It is assumed that the total employer cost of an employee is equal to the profits of the self-employed. This is consistent with a perfectly competitive labour market. Other assumptions about market structure could lead to different interpretations of consistent treatment between employees and the self-employed.

[15] There is a small group of the self-employed for which NIC liability is higher than it is for employees on a comparable wage, because of the remaining 'step' in the Class 2 system.

employed contributions do not increase further with profits once the UPL has been reached.

**Figure 6.3. NIC liability of the self-employed**




*Total self-employed NICs* includes Class 2 and Class 4 contributions.
*Total Class 1 NICs* includes both employee (primary) and employer (secondary) Class 1 contributions.

While the self-employed pay much lower NICs, their entitlement to contributory benefits is lower than that of employees. The self-employed receive the basic state pension and all means-tested benefits, but they are not entitled to contributory jobseeker's allowance or SERPS.[16] But even allowing for this reduced entitlement, the self-employed, especially those on high incomes, contribute markedly less to the NI Fund than employees with comparable incomes.

A significant proportion of the self-employed population report very low incomes, but it is also true that the self-employed account for a disproportionate share of the very highest incomes. For example, 25% of all annual earned income above £50,000 comes from self-employment, compared with an average of 12% coming from self-employment for all ranges of earned income.[17] Given the increasingly non-contributory, means-tested nature of the social security system, with employer NICs in particular giving no entitlement to benefits, it seems rather odd to maintain a system where the self-employed receive more generous treatment in terms of NIC liability than their employed counterparts. In light of the general movement away from contributory benefits, as discussed above, a review of the system of self-employed NICs seems appropriate in order to address this particular anomaly.

[16] This might become less of a concern as SERPS is eroded further under the new stakeholder pension scheme.

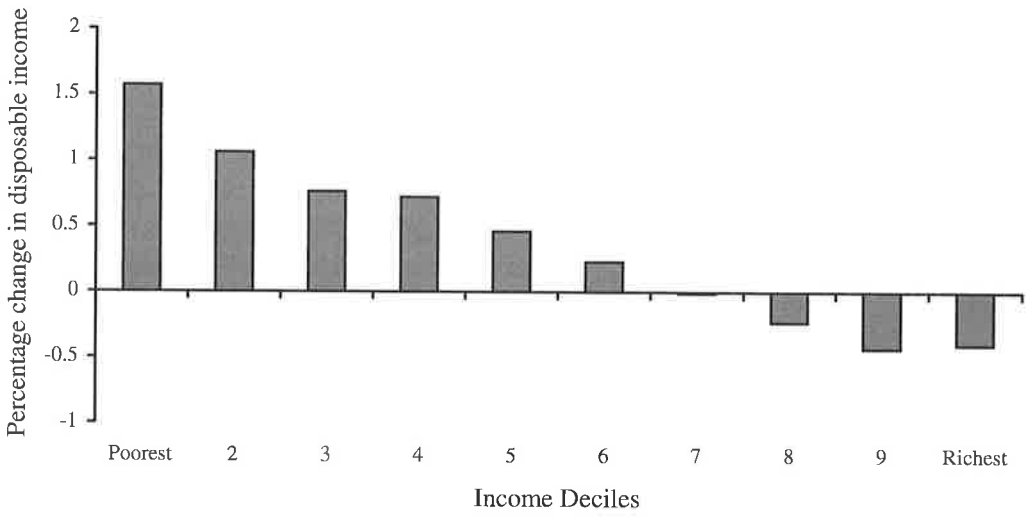
[17] *Inland Revenue Statistics 1998*, Table 3.6.

The Taylor Report[18] proposed a package for the reform of NICs for the self-employed, composed of three elements:

- alignment of the LPL with the LEL;
- abolition of the Class 2 charge; and
- an increase in the Class 4 rate (at least sufficient to fund lost revenue from the abolition of Class 2 contributions).

Support for a reform of this nature is further provided by a recent report by the National Audit Office,[19] which highlights severe difficulties in collecting debts on Class 2 contributions. Arrears amounting to £513 million were found at 31 March 1998, which represents a huge collection cost relative to the Class 2 NI yield (which was £590 million in 1995–96). The 'Taylor package' therefore offers one solution to this problem, through the abolition of separate collection of Class 2 and Class 4 contributions.

**Figure 6.4. Distributional impact of 'Taylor' reform to self-employed NICs**




Source: IFS tax and benefit model.

Figure 6.4 illustrates the distributional effects from a revenue-neutral reform of this nature, showing the average percentage change in the income of self-employed individuals in each decile of the total income distribution. The abolition of the Class 2 charge is partly funded by the reduction in the LPL

[18] *The Modernisation of Britain's Tax and Benefit System, Number Two: Work Incentives,* HM Treasury, March 1998.

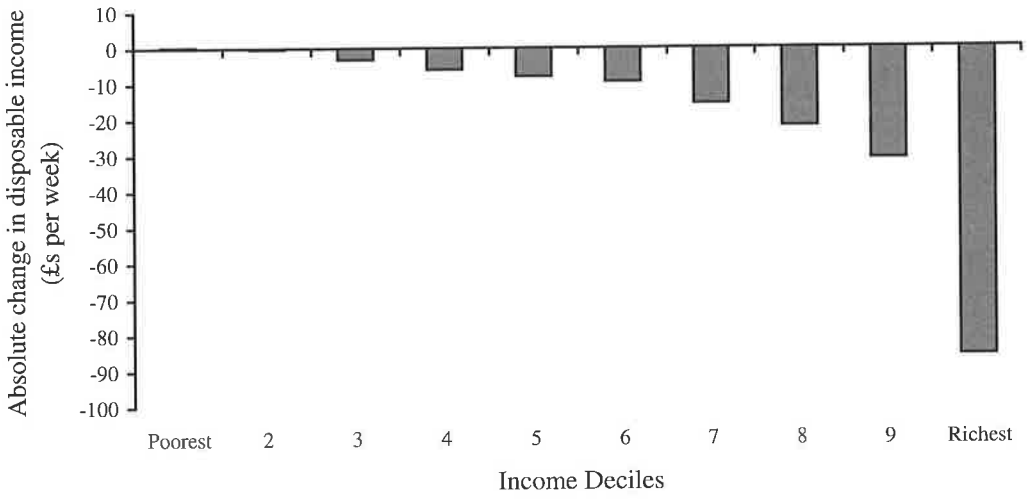
[19] *National Insurance Fund Account 1997–98,* HC 130 1998/99, 13 January 1999.

from £140 to £81 (the same level as the employer LEL). The additional cost is met by an increase in the Class 4 rate to 7.6%.[20]

From Figure 6.4, it is apparent that the greatest proportionate gains from this reform go to those in the poorest groups. This is because the abolition of the flat-rate Class 2 charge is worth more to them than to those higher up the income distribution and because they do not earn enough to be paying Class 4 contributions. Moving up the income scale, the gains from the abolition of Class 2 contributions are worth proportionately less and increasingly are offset by the higher Class 4 rate. For the richest groups (those in deciles 7 and above), higher Class 4 contributions more than offset the gains from the abolition of the Class 2 charge, so that self-employed individuals in these groups lose out from this reform.

There are legitimate reasons for considering a revenue-*raising* reform of self-employed NICs, as the Taylor Report rightly argues, on the grounds that the self-employed significantly under-contribute to the NI Fund even relative to their reduced benefit entitlement. Such a reform might include raising or abolishing the UPL or increasing the Class 4 rate further. Alternatively, the government could consider complete reorganisation of the self-employed system of NICs, so that the self-employed faced the same liability as employees. This would increase the revenue by almost £5 billion.[21] The distributional effects of such wholesale reform are illustrated in Figure 6.5.

**Figure 6.5. Distributional impact of bringing self-employed NICs into line with the system for employees**




Source: IFS tax and benefit model.

[20] An administrative problem arises with this reform, however, because Class 2 contributions give entitlement to contributory benefits, so a new entitlement test would need to be established (perhaps tied to a minimum Class 4 contribution).

[21] This assumes that there are no compensating changes to the income tax system.

Not surprisingly, practically all the self-employed lose from this reform, since they currently gain significantly from favourable treatment in terms of their NICs relative to employees, as illustrated in Figure 6.3 above. The magnitude of the loss increases as income increases, with self-employed people in the top decile losing £85 a week, on average. The exception is the small group of self-employed on the lowest earnings, who gain from the abolition of the 'step' at the start of the current Class 2 schedule, just as the lowest earners gained from the abolition of the 'entry fee' in the employee system in the last Budget.

Bringing the system of self-employed NICs into line with Class 1 contributions for employees would involve a substantial amount of redistribution. As highlighted above, the self-employed currently have lower entitlement to certain contributory benefits on the basis of their lower 'employee'[22] NICs, so reforming the NIC system for the self-employed would require a rethink of the treatment of this group in terms of social security eligibility. Furthermore, the distributional impact illustrated in Figure 6.5 only relates to first-round effects. In the longer run, as the self-employed adjust to higher NI charges, part of this additional cost would be passed on in terms of higher prices to customers. Although the effects seem enormous, it is worth remembering that, in his 1985 Budget, Nigel Lawson abolished the employer UEL for NICs, leading to increases in employer liability of very similar amounts.

## 6.3 Financial support for families with children

The present government has introduced a number of changes to the level of financial support going to families with children. It has announced increases in the level of child benefit and in the child premiums in means-tested benefits and the introduction of the working families' tax credit (WFTC) for low-income working families with children. All of these changes have increased the resources going to families with children.[23] It seems likely that the government will move further in this direction. This section examines the means by which this may be achieved.

The section begins by briefly examining the current means by which support is provided and how this has changed since the start of this Parliament. It then examines how the level of support might be increased in the future, using resources currently devoted to the married couple's allowance and the additional personal allowance. Finally, we discuss other potential mechanisms for delivering such support and assess whether there is a role for a new mechanism within the current tax and benefit system.

[22] Class 2 charges (these give entitlement to contributory benefits for the self-employed).

[23] The one exception to this pattern of increasing resources going to families with children is the removal of lone-parent benefits. It remains difficult to see how this change could be rationalised within the context of overall government policy.

## The present system

There are currently two major mechanisms for providing financial support to families with children — universal child benefit payments and the means-tested payments of income support, housing benefit, council tax benefit and family credit.[24] Figure 6.6 shows the levels and sources of income for families with children. It divides the population between lone parents in the top panel and couples in the bottom panel, as the distribution of income is very different between these groups. There are 1.7 million lone-parent families and 5.3 million couples with children in the UK. The height of each bar shows the proportion of each group that falls into each £1,000 income range. For example, almost 16% of lone-parent families have incomes in the £7,000 and £8,000 per year income range.

The incomes of lone parents are highly concentrated in the £5,000 to £15,000 range, which contains some 85% of all lone-parent families. Couples are more evenly spread across the income distribution, with 30% having incomes between £5,000 and £15,000, while almost 20% have incomes above £30,000 per annum.

The sub-division of the area within each bar in Figure 6.6 shows the proportions of income for the families in that range that come from universal child benefit, means-tested benefits and other sources. For families on the lowest incomes, much of it comes directly from the state, either in the form of child benefit or means-tested benefits. Child benefit is universal, and so goes to all families with children, but only accounts for a significant proportion of family income at low income levels. The system therefore achieves two distributional outcomes: it provides large-scale redistribution to those on the lowest incomes and ensures that the costs of children are to some extent recognised at all income levels.

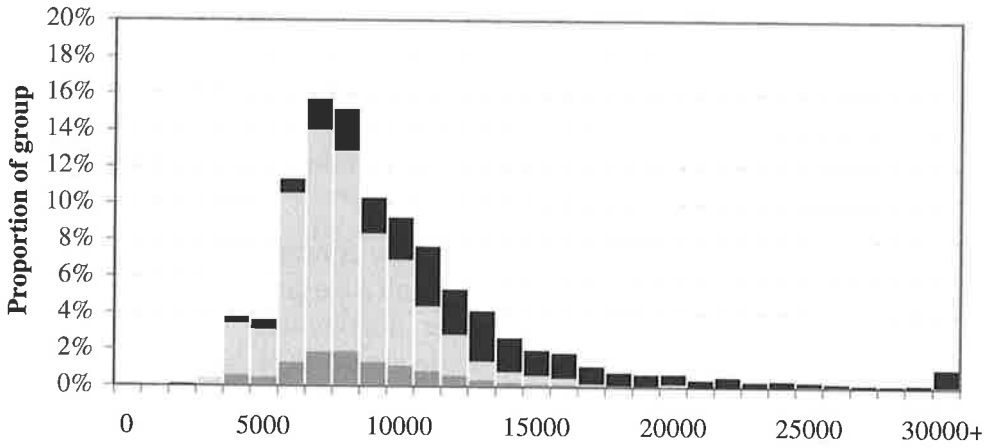
Table 6.2 shows how the changes to the tax and benefit system that have been announced since May 1997 have affected families with children. The changes include all the measures outlined in footnote 24, along with the changes to National Insurance and the restrictions to the married couple's allowance, the additional personal allowance and mortgage interest tax relief. The table is broken down by family type and income quintile (or fifth) of the whole population. Within each quintile, it shows the proportion of lone parents and families with children that will either lose or gain more than £1 per week. For couples with children, 68% will gain more than £1 per week as a result of these changes, including 91% of those in the poorest quintile. The pattern is different for lone parents: only 38% will gain more than £1 per week, while

[24] A number of changes to these systems have been announced by the government but not yet implemented. Lone-parent benefit and the lone-parent premiums in means-tested benefits are to be abolished through a combination of non-indexation for current recipients and non-eligibility for new claimants. In April 1999, the child benefit rate for the first child will be increased by £2.50 with corresponding adjustments to the family premiums in the means-tested benefits. From October 1999, family credit will be replaced by the working families' tax credit, which will include a substantially more generous system for subsidising the costs of childcare. For the purposes of this section, the present system is taken to be the 1998 tax and benefit system with all these pre-announced changes implemented in full. As such, it shows the long-term outcome if the government were to announce no further changes to the system of providing support to families with children.

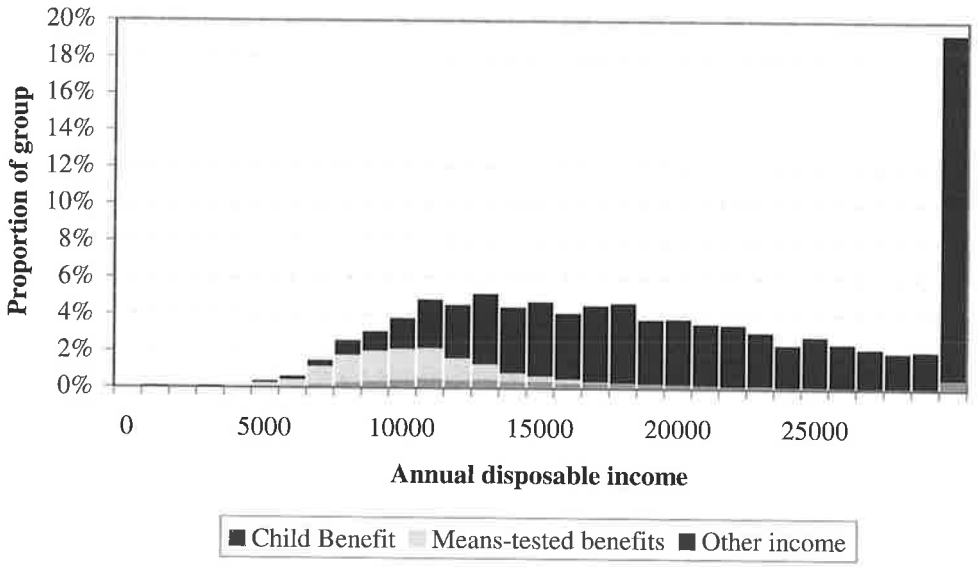
over a quarter of those in the poorest fifth of the population will lose more than £1 per week.

**Figure 6.6. Distribution and source of income for families with children**

*Lone parents*




*Couples with children*




Source: Family Resources Survey, 1995–96.

**Table 6.2. Proportions gaining or losing from changes since May 1997**

| Quintile of total population income distribution | Lone parents | | Couples with children | |
|---|---|---|---|---|
| | Lose over £1 | Gain over £1 | Lose over £1 | Gain over £1 |
| Poorest quintile | 27% | 39% | 1% | 91% |
| 2nd | 22% | 36% | 3% | 79% |
| 3rd | 36% | 44% | 4% | 56% |
| 4th | 74% | 23% | 4% | 63% |
| Richest quintile | 88% | 8% | 7% | 60% |
| Overall | 30% | 38% | 4% | 68% |

Source: IFS tax and benefit model.

## Increasing the level of support

With the exception of the cuts in lone-parent benefits, this government has tended to increase the level of support directly concentrated on children. In the last Budget, the Chancellor argued that

> 'the only way to make sense of the chaotic system [of subsidy for the family] is to make our primary aim that of supporting families through supporting children.'

This rationale underlay the decision to finance an increase in child benefit by restricting the married couple's allowance (MCA) to 10%.[25] It seems likely that the government will move further in this direction and fund increases in child support through additional reductions in the MCA for non-pensioners.[26] See Box 6.4 for a discussion of what might happen to the pensioner MCA. Abolishing the non-pensioner MCA would raise about £1.7 billion. Table 6.3 shows where this revenue comes from, by family type and by income quintile. Just over half of the revenue would come from families without children, allowing the policy to redistribute this money to families with children.

**Table 6.3. Source of revenue from MCA abolition**

| Quintile of total population income distribution | Family type | | Overall |
|---|---|---|---|
| | No children | With children | |
| Poorest | 1.7% | 2.1% | 3.8% |
| 2nd | 4.5% | 6.5% | 11.0% |
| 3rd | 9.4% | 16.1% | 25.6% |
| 4th | 13.9% | 14.8% | 28.7% |
| Richest | 20.5% | 10.4% | 30.9% |
| Overall | 50.1% | 49.9% | 100.0% |

Source: IFS tax and benefit model.

The revenue from the abolition of the non-pensioner MCA could be used to increase universal or means-tested benefits for children. Universal child benefit could be increased by about £2.60 per week for every child.[27] Alternatively, the child premiums in all means-tested benefits could be increased by £5.55 per child per week. Figure 6.7 (after Box 6.4) shows the overall redistribution within families with children of these two alternatives, which indicate the range of distributional outcomes open to the government using the current system of child support.

[25] The tax system also features an allowance for lone parents and cohabitants with children, the additional personal allowance (APA), which is identical in value to the MCA. Throughout this section, 'MCA' will be used to refer to both the MCA and APA.

[26] For pensioners, the MCA is considerably larger. In this section, we assume the pensioner MCA is left at its current rate, but in Box 6.4 we consider how it might be phased out.

[27] We assume that the necessary changes are made to the means-tested benefits to ensure that their claimants gain in full from the increase in child benefit.

**Box 6.4. The pensioner MCA**

Pensioners currently receive larger personal allowances and married couple's allowances than other taxpayers. For pensioners with incomes above a certain threshold, the additional value of the allowances is tapered until only the standard rate of the allowance remains.[28] If the MCA is to be abolished for those under 65, the continued existence of a tax subsidy for marriage for those who are over 65 will become anomalous. The issue of abolishing this allowance therefore arises.

Table 6.4 shows what the value of the MCA for recipients of different ages will be next year if the government indexes it for inflation in the usual way and increases pensioner allowances to compensate for the forthcoming restriction of the MCA to 10%.[29] The difference between the value of the allowance for pensioners and its value for non-pensioners has grown in recent years because successive Chancellors have increased the level of the MCA enjoyed by pensioners to compensate for the restrictions in the rate of the allowance.

**Table 6.4. Projected MCA for pensioners and non-pensioners, April 1999**

| Age of oldest partner in couple | Allowance (£ p.a.) | Maximum reduction in annual tax bill |
|---|---|---|
| Under 65 | £1,970 | £190 |
| 65–74 | £5,287.5 | £528.75 |
| 75 or over | £5,362.5 | £536.25 |

Outright abolition of the allowance for pensioners would release revenue of about £550 million, but would create a number of losers without high incomes. It is therefore likely that the revenue from this change would be used to attempt to compensate pensioners for their loss. A possible means of achieving this within the tax system would be to increase the generosity of personal allowances for pensioners. Indeed, the Pre-Budget Report implied that an increase in these allowances was under consideration.[30] If the full £550 million were used, personal allowances for those of over 65 could increase from £5,410 to £6,580, and for those of over 75 from £5,600 to £6,775.

The distributional effects of combining the abolition of the MCA for pensioners with this increase in the value of the personal allowance would be complex. Large numbers of losers would remain. In particular, those couples where only one partner has a taxable income would be clear losers. The MCA

[28] Tapering starts at a total income of £16,200 in 1998–99: for each £1 of income possessed above this level, the personal allowance is reduced by 50p until only the standard (non-pensioner) allowance is left. Once tapering of this allowance is completed, the MCA is tapered in the same way.

[29] All allowances shown are uprated from those in 1998–99 using the formula set out in the 1981 Finance Act, and the pensioner allowances have been multiplied by 1.5 to exactly offset the restriction to 10%.

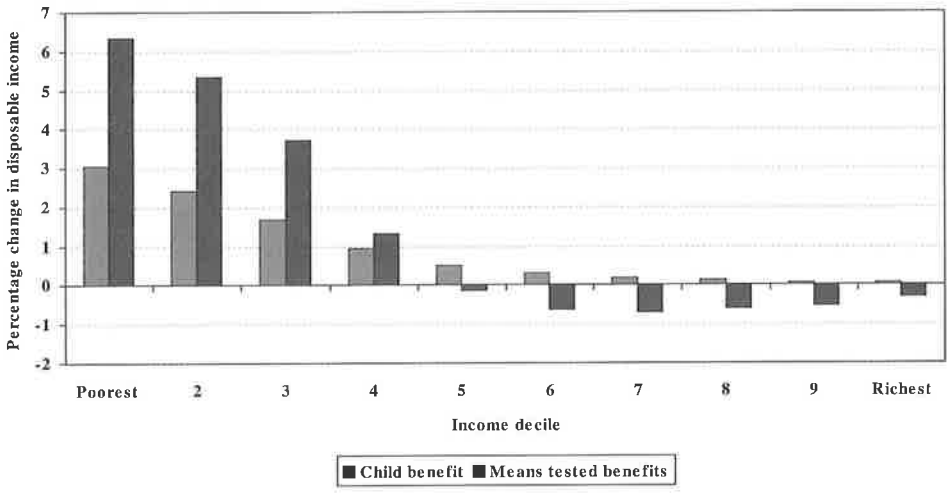
[30] It stated that there would be 'a minimum guarantee on tax, so that pensioners will have no income tax to pay unless their income rises above a level to be determined in the next Budget', (HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998).

currently reduces the tax bill of a pensioner couple (both aged between 65 and 75) in this situation by up to £496 a year; but the increased personal allowance would benefit them by a maximum of £269.10, leaving them £226.90 a year worse off.

Such losers could be eliminated if the government were to increase the personal allowance by more than the revenue from abolition of the MCA alone would allow. In particular, if the government increased the personal allowance for under-75s to £7,888.75 and for over-75s to £8,108.75, those 65- and 75-year-old individuals who had previously received their respective full, age-related MCA would be fully compensated.[31] This would protect the middle-income, one-taxpayer couples who lost heavily under the revenue-neutral reform, at a cost of just under £500 million. In other words, the cost of the pensioner personal allowance would have to increase by roughly twice as much as the saving from the abolition of the MCA.

It is clear that personal allowances can only be used to compensate losers from the abolition of the pensioner MCA if significant extra revenue is spent on them. Consequently, other mechanisms, such as increasing the value of benefits, might be considered. But such packages still fail to target resources freed by the abolition of the MCA efficiently towards the losers that it creates. If, for example, the basic state pension were increased for married couples, two large groups that currently do not benefit from the age-related MCA would gain — non-taxpayers and those with incomes above the age-related taper.

**Figure 6.7. The distributional effect of abolishing the MCA: child benefit versus means-tested benefits increases (families with children)**




Source: IFS tax and benefit model.

[31] This assumes that the personal allowance is used on income that would otherwise be taxed at 20%, which is true if all income is savings income. If the personal allowance is fully or partially used against income taxed at 23%, a former recipient of the pensioner MCA will be slightly overcompensated for their losses.

Not surprisingly, concentrating resources on increasing means-tested benefits produces much bigger average gains among poorer households than a general increase in child benefit, and the gains reach less far up the income distribution, with average losses for each of the top six deciles. The increase in child benefit would mean that, on average, all deciles would gain from the change, though all families with only one child currently receiving the MCA would lose.

Concentrating the revenue raised from scrapping the MCA on fewer families — the effect of increasing means-tested benefits rather than increasing child benefit — necessarily reduces the numbers who will gain from the reform relative to the number of losers. Table 6.5 shows the fraction of different kinds of families with children losing and gaining by more than £1 a week under the two different reforms. Most lone-parent families and no-earner couples gain significantly under both reforms. Few in either group have sufficient income to benefit from the MCA but all gain from the increase in child benefit, and almost all gain from the increase in means-tested benefits.

**Table 6.5. Winners and losers for different types of families with children**

| Family type | Abolish MCA, increase child benefit | | Abolish MCA, increase means-tested benefit | |
|---|---|---|---|---|
| | Losing > £1 per week | Gaining > £1 per week | Losing > £1 per week | Gaining > £1 per week |
| Lone-parent family | 6.9% | 86.8% | 10.5% | 87.7% |
| Workless couple | 4.6% | 94.8% | 6.4% | 91.3% |
| One-earner couple | 24.1% | 69.2% | 58.2% | 39.5% |
| Two-earner couple | 37.5% | 60.6% | 88.1% | 11.3% |

Source: IFS tax and benefit model.

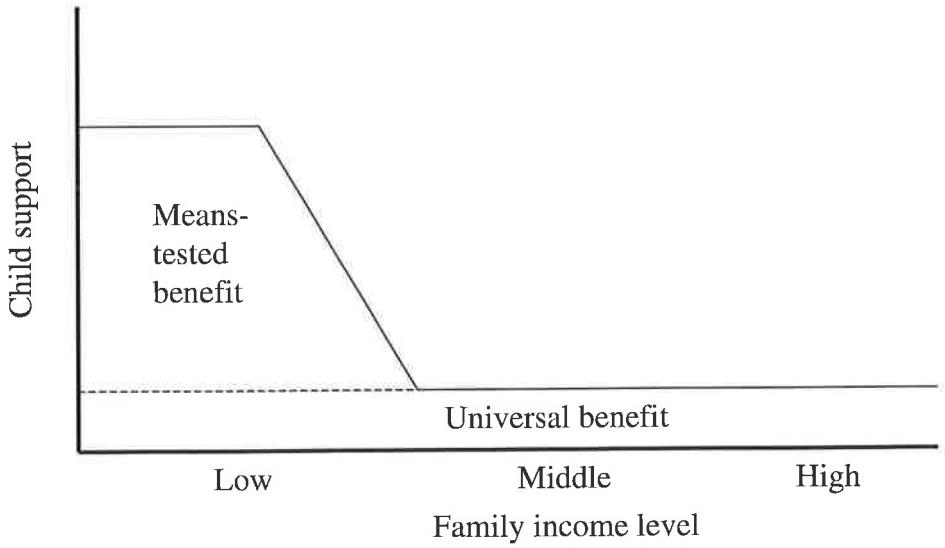
Since one-earner couples with children have relatively low levels of entitlement to means-tested benefits, the majority lose under the means-tested benefits reform. In sharp contrast, the child benefit reform leaves the majority of this group better off. For two-earner couples, the difference in the balance between winners and losers under the two reforms is even more dramatic: whereas the clear majority gain under the child benefit reform, just 11% do so under the means-tested benefits one while 88% lose, reflecting low levels of entitlement to means-tested benefits amongst this group.

The ideal balance between the level of means-tested and universal child support will depend on factors other than their distributional effects. The complexity of means-tested benefits means that they cost more to administer, and are also more subject to problems of take-up, fraud and delay in the processing of claims. A second set of complications concerns labour supply. Increasing out-of-work means-tested benefits such as income support risks making it less worthwhile for recipients to move into work, as the financial gains from doing so are decreased. If this problem is offset by increasing in-work means-tested benefits, such as the WFTC, more families are 'floated into' the means-tested system. The above reform to means-tested benefits would increase the number of families entitled to WFTC by 17%. For most of these families, this would move their effective marginal tax rate from 33% to a little under 70%.

## Changes to the system of support for children

The previous section showed the wide range of distributional effects that could be achieved using the current universal and means-tested benefit systems. Universal child benefit allows increases in the level of support to be delivered to all families with children. The means-tested benefit system can be used to concentrate the gains on lower-income families. The increased generosity of the WFTC means that the means-tested system can be used to deliver support to those on higher incomes than was previously possible. A stylised version of this system of child support is shown in Figure 6.8.

**Figure 6.8. Stylised version of child support system**




Not all distributional outcomes can be achieved using these mechanisms. In particular, there is no means of altering the level of support provided to 'high-income' families from that provided to 'middle-income' families. The government indicated that is interested in such a distributional outcome in the November 1998 Pre-Budget Report, which stated that

> 'if child benefit were increased in future there would be a case in principle for higher rate taxpayers paying tax on it.'

This would allow child support to be increased for those on incomes that are too high to receive means-tested benefits, without having to give the same level of increases to those with incomes high enough to be paying higher-rate tax.

Besides taxing child benefit, there are other potential means of achieving such a distributional outcome. Either a new or an existing means-tested benefit could be used to deliver the benefit to income levels outside the traditional scope of the means-tested system, or a joint assessment element could be introduced into the tax system.

This section examines each of these alternatives in terms of their feasibility. In light of this discussion, we conclude that, unless the government has very strong preferences over slight changes to the distribution of support payments, the first two of these alternatives amount to complex and undesirable reforms.

The third option, of returning to joint assessment in the tax system, would involve large-scale changes to the current system.

### *The taxation of child benefit*

The government is considering exactly how it might bring child benefit into tax.[32] The simplest way to do this would be to treat it as taxable income of the recipient. But many relatively poor groups have sufficient incomes to pay tax and so would lose. For example, even if the money raised from taxation of child benefit were ploughed into increasing its rate, 69% of employed lone parents would lose out, in spite of their relatively low average incomes.[33]

To get around this problem, child benefit could be treated as a special income source taxable only at the higher rate. But very few of the overwhelmingly female recipients of child benefit have sufficiently high incomes to pay tax at the higher rate, so this would severely restrict the revenue raised by the reform. In addition, neither of these forms of taxation would achieve the objective of limiting the value of the child benefit paid to richer families. This is because the UK operates an independent tax system — the potentially very high incomes of the partners not in receipt of child benefit would be ignored by the tax system.[34]

These problems have led to proposals to tax child benefit as joint income, in the sense that it could be treated as the income of either the recipient or their partner. If either of these were a higher-rate taxpayer, the payment would be taxed.[35] This form of taxation would raise £450 million, enough to increase child benefit by 70p for each child. The package would produce a small but strongly progressive redistribution of income.[36] But taxing child benefit in this way raises difficult issues.

First, there is the practical issue of implementing joint treatment of one type of income in a system of independent taxation. In order to see whether the child benefit received by one partner should, for tax purposes, be treated as income of the other, it would be necessary to link the incomes of partners, one of whom received child benefit. Since all higher-rate taxpayers already have to complete tax returns, this information could be requested from families without excessive difficulty. However, there would be an incentive for higher-rate taxpayers to minimise their tax bill by not revealing the existence of partners receiving child benefit. Some form of enforcement mechanism would

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[32] HM Treasury, *Pre-Budget Report*, Cm. 4076, November 1998.

[33] All taxpayers in receipt of child benefit would lose from such a package except for some recipients of WFTC with more than one child.

[34] The UK system of income tax has been independent since 1990. It is independent in that the amount of income tax that an individual pays is independent of the amount of income earned by their partner. It is not, however, independent of family structure because of the existence of the MCA and the APA.

[35] For examples of such proposals, see Liberal Democrats, *Moving Ahead: Towards a Citizens' Britain*, 1998, or Commission on Social Justice, *Social Justice: Strategies for National Renewal*, 1994.

[36] For detailed distributional analysis of the effects of taxing child benefit see T. Clark and J. McCrae, *Taxing Child Benefit*, Commentary no. 74, Institute for Fiscal Studies, London, 1998.

be necessary to check on people's living arrangements, similar to that undertaken by the Benefits Agency.

Second, some of the distributional consequences might be undesirable in the context of concentrating resources on families with children. Table 6.6 shows how the impact of taxing child benefit, and using the proceeds to raise its value, varies with the number of children. As is clear from the table, the reform takes more from families with larger numbers of children. This does not have to be the case. Table 6.6 also shows the impact of an alternative reform where the 70p increase in the child benefit rate is funded by a reduction in the higher-rate threshold. Both reforms have a similar impact on the income distribution, although lowering the higher-rate threshold is somewhat more progressive.[37] There are two important differences. First, because lowering the threshold increases tax for all higher-rate taxpayers, the reform redistributes from high-income childless individuals to those with children. Second, the loss from lowering the threshold is partially offset by increases in child benefit for each child.

**Table 6.6. Change in net weekly income for higher-rate taxpayers: joint taxation of child benefit versus reduction of the higher-rate threshold**

| Family structure of higher-rate taxpayer | Joint taxation of child benefit at higher rate (£ per week) | Cutting the higher-rate threshold (£ per week) |
|---|---|---|
| Childless | 0 | –3.76 |
| *Family with one taxed at higher rate* | | |
| One child | –5.16 | –3.06 |
| Two children | –8.46 | –2.36 |
| Three children | –11.76 | –1.66 |

A further potential objection to taxing child benefit as a special joint income source could be based on equity: the tax system that results from the reform does not treat all families on equal incomes equally. A two-earner couple where both partners have incomes of £25,000, and therefore neither is a higher-rate taxpayer, escapes taxation, whereas a lower-income family in which there is only one earner on £35,000 is taxed in full on its child benefit. This is because the system remains far short of full joint taxation: the rates and bands of the income tax system continue to apply to individual income.

Finally, the reform raises questions about the principles underlying our tax system. It is hard to rationalise the treatment of child benefit as a uniquely 'joint' income source, which leads to a much broader question about the independent nature of our tax system.

### *An extension to means-testing*

An alternative to taxing child benefit would be to extend the system of means-tested benefits to those not currently in receipt of such benefits. For families with children, the introduction of the WFTC, which is substantially more generous than the family credit system it replaces, increases the highest

[37] Again, see T. Clark and J. McCrae, *Taxing Child Benefit*, Commentary no. 74, Institute for Fiscal Studies, London, 1998.

income level at which means-tested benefits could be received. This is shown in Table 6.7. All families on incomes below these levels could have additional resources targeted on them through the existing benefit system. Given that the higher rate of income tax becomes due for an individual at £31,295, some higher-rate taxpayers could, in future, be entitled to the WFTC.

**Table 6.7. Highest annual incomes at which family credit and the WFTC can be received**

| Number of children | Basic family credit | Basic WFTC | WFTC with full childcare credit |
|---|---|---|---|
| One | £11,653 | £15,078 | £24,956 |
| Two | £13,023 | £17,174 | £31,111 |
| Three | £14,392 | £19,269 | £33,399 |
| Four | £15,761 | £21,365 | £35,739 |

But what about those on incomes above these levels or with little or no childcare expenditure? It would be possible to devise an extension to the WFTC in which, for example, the last £10 of benefit was not tapered away until income reached some higher income level. Such a benefit would allow increases in benefit to be passed on to families outside the current range of the means-tested system.

However, there is a major problem with such a means-tested benefit — the take-up is likely to be extremely low. The take-up of all means-tested benefits is linked to the level of the benefit that would be received and the level of other income available to the family. Take-up is likely to be very low for a benefit that would produce low levels of entitlement for relatively well-off families. For many of this group, the cost of applying for the benefit — in terms of time, hassle and possible stigma — is likely to outweigh the gains.

One potential solution to the problem would be to make receipt of the benefit automatic for those in the relevant income range. This could be achieved by using the income tax records on the individuals in the family unit. However, linking the tax records of individuals would require all taxpayers to supply information on their family status. Some new mechanism would be required to obtain this information from over 15 million taxpayers who do not currently fill in a tax return. And, of course, there would still be the problem of enforcing the system, as families would have an incentive to appear as a single person and a lone parent, rather than as a couple with children, under this system. This amounts to a large degree of administrative complexity to deliver a benefit that many people, left to their own devices, would not bother to claim in the first place.

### *Return to joint taxation*

The main difficulty with taxing child benefit at the higher rate is that the tax system treats a couple as two individuals. If the system already treated the couple as a single unit, taxing child benefit at the higher rate would be far more straightforward. The other main problem encountered is that of ensuring that people supply accurate information about their family structure. This could be overcome in a joint tax system by designing the system in such a way

that most families had an incentive to appear as such, rather than as a single person and a lone parent.

A system of joint taxation would therefore allow support to families with children to be delivered to all points of the income distribution as an integral part of the tax system, rather than through some complex add-on. Movement to a joint system of taxation would be a much larger reform in itself than anything considered here, but if a high priority is attached to achieving distributional effects related to family income beyond the scope of the means-tested benefit system, it seems the only sensible option. Of course, an alternative and plausible view is that such small distributional objectives would never, by themselves, justify such large-scale changes to the UK tax system.

## 6.4 Housing benefit

Since May 1997, the generosity of means-tested benefits has been increased for the elderly, for the disabled and for families with children. But, beyond a change in the method of payment of family credit and the WFTC, there has been little reform of the structure of the system. This is not for lack of areas that require attention — foremost of which is the housing benefit system.

### The problems with housing benefit

Housing benefit is intended to cover the rental costs of those on low incomes. Without this benefit, the wide variations in rent levels would produce significant variations in the disposable incomes, after housing costs, of the poorest. The maximum value of the benefit is the rent faced by the recipient in the social rented sector or the local reference rent in the private rented sector.[38] This is paid in full to all on income support. Those not on income support have the benefit withdrawn at the rate of 65p of every £1 of net income above the 'needs' level of the household.

A number of features of housing benefit have attracted critical attention. First, the cost of the benefit has risen sharply. The government expects that it will spend £11.7 billion on the benefit from 1998–99, up from £6 billion in 1987–88 in real terms. Much of this increase has been due to rent increases, in both the social and private sectors (partly as a result of government policy), rather than to increases in the number of claimants.

Second, housing benefit is bad for work incentives. This problem is shared by all means-tested benefits — money given on a means-tested basis to those not working needs to be withdrawn as they move into jobs. The withdrawal will reduce the financial returns to working. This is an inevitable trade-off in the design of any benefit system — that between maintaining out-of-work incomes and 'making work pay'. But housing benefit worsens the situation by complicating the trade-off. For example, family credit and, in the future, the

[38] Local reference rents are determined by local authority rent officers as the average rent that would be payable for the type of property in the local area. In addition to this, there are further restrictions for single people under 25.

WFTC are designed to produce an incentive to work for at least 16 hours a week. For many people, the interaction of housing benefit with these benefits greatly reduces this incentive.

The complexity of the system has other consequences. From October 1999, the four main means-tested benefits will be administered by three different agencies — income support by the Benefits Agency, the WFTC by the Inland Revenue, and housing benefit and council tax benefit by local authorities. This creates numerous problems. Claiming is time-consuming so take-up rates are reduced. Administrative error is more likely and opens up opportunity for fraud. The system's complexity makes it harder for claimants to know whether they are entitled to benefit. This is particularly true of housing benefit, where many people are unaware that they can receive it while working.

Finally, as housing benefit is intended to cover actual rental costs, those in receipt of the benefit gain nothing from a rent decrease and lose nothing from an increase — the amount of benefit they receive changes to offset these alterations in full. Steps have been taken to address this problem in the private rented sector by setting maximum benefit equal to local reference rents rather than to the actual rent of the property in question. But the policy of relying on reference rents has disadvantages — it has added yet another dimension of uncertainty to housing benefit, as claimants no longer know how much benefit they will be entitled to before claiming.

## The problems with reforming housing benefit

Housing benefit is designed to meet the varying needs of claimants. As such, there is wide variation in the level of the benefit that is received. In part, this variation is a direct result of government (both central and local) policy. In the social rented sector, rents reflect not only, and sometimes not even, differences in the size, quality and area of properties, but also differences in the financial arrangements of local authorities and the grant regimes for housing associations.

To illustrate the extent of these variations, Table 6.8 shows the result of moving to a housing benefit system that fixed eligible housing costs at a flat rate, varying by family size, rather than using actual rental costs. The flat rate is set to ensure revenue-neutrality.[39] This produces a large-scale redistribution among housing benefit recipients. Over a million low-income households could expect to gain more than £10 a week and more than a million others would expect to lose equivalently. And the average losses among these groups are very high, close to £25 a week for both gainers and losers. The fact that the majority of the losers created are likely to be at or below the income support line (the majority of housing benefit recipients in the social rented sector have their rent paid in full) will give rise to concerns. The only way to prevent the creation of large numbers of losers would be to increase the cost of housing benefit.

[39] Couples on full benefit would receive £46.40 each. For other families, the level of benefit is adjusted in line with McClements equivalence scales.

**Table 6.8. Effect of flat-rate housing benefit for social renters**

| | Losses | | Change | Gains | |
|---|---|---|---|---|---|
| | £10 p.w. or more | £1–£10 p.w. | under £1 p.w. | £1–£10 p.w. | £10 p.w. or more |
| **All households** | | | | | |
| No. of households (thous.) | 1,240 | 880 | 1,598 | 694 | 1,201 |
| Average change (£ p.w.) | –23.51 | –5.50 | 0.00 | 5.33 | 24.84 |
| **Working over 16 hours** | | | | | |
| No. of households (thous.) | 63 | 65 | 5,353 | 63 | 64 |
| Average change (£ p.w.) | –23.32 | –4.92 | 0.00 | 5.65 | 19.38 |

Note: 100% take-up assumed.
Source: IFS tax and benefit model.

If both creating large numbers of losers and sharply increasing the cost of housing benefit are seen as unacceptable, then, in the short term, the variability of rents dictates the maintenance of a benefit whose level varies directly with housing costs. In the longer run, the government could aim to reduce variability in rents, in the hope of altering this situation.

More modest changes may still be possible in the short term. Housing benefit that matched rent could be kept for those out of work, but replaced with a flat-rate payment for those who work more than 16 hours a week (the current limit on the number of hours that can be worked by income support recipients).[40] The results of such a change are displayed in Table 6.8. The average gains and losses are on the same scale as under the previous reform, but far fewer households are affected. Whereas in the previous reform, just under three-quarters of households were affected by more than £1 a week, this reform only affects about 5% of households in the social rented sector. Since the reform was restricted to households working more than 16 hours per week, the losers are unlikely to be those with the lowest incomes. Such a change could allow the removal from the benefit system of a specific housing benefit for those in work, as flat-rate payments could be merged more easily into other benefits, such as WFTC.

But problems would remain. Payment of flat-rate support in recognition of housing costs would make the package look relatively unattractive for those living in high-rent areas. The same group might find itself exposed to replacement rates of over 100% if rent were paid in full when out of work but only a much smaller maximum rebate were available in work. Finally, the exclusion of those without work from the effects of the reform would, of course, leave the existing problems of housing benefit to continue to affect its largest group of recipients.

One other change that might be considered in the short term would be to move the administration of housing benefit away from local authorities. Not only would this simplify the process of applying for benefits, it would also help to reduce the wide variability in the time taken to process applications. However, if large-scale reform of housing benefit is on the medium-term agenda, it is

[40] To keep the reform revenue-neutral, it turns out that, for this group, the flat rate needs to be fixed at £38 for a couple (we adjust for family size in the same way as in the last reform).

arguable that any change in administration should be left until such a reform is implemented.

## 6.5 Taxing individual charitable giving

The government is nearing the end of a consultation process on charity taxation and a likely area for reform is the tax treatment of charitable donations by individuals. At the moment, you can give tax-free by covenant, Gift Aid or a payroll giving scheme (see Box 6.5). But total tax-free giving accounts for less than one-fifth of all individual donations.[41] To give tax-free, you have to give to the same charity for a minimum of four years, give at least £250 (or £100 to particular overseas charities) or work for an employer who has a payroll giving scheme. The Prime Minister has declared that he wants this to be a giving age. Could an extension of tax-free giving be a way to achieve this?[42]

Before considering particular reforms to the tax treatment of donations, it is worth considering general economic arguments for tax-free giving. The case that is often given for making donations tax-free is that charities provide goods and services that deserve government support. If charities provide public goods (such as environmental clean-up) or merit goods which have positive spillovers (such as education), there is an economic case for government intervention. Whether these arguments apply to each individual charity is clearly an issue that is pertinent to the debate, although possibly not one that economists alone should decide.

But these arguments establish a case for some form of government intervention, not, directly, for tax relief. The government could provide the goods and services itself, or give charities grants of money. Tax relief for donations is often seen, unequivocally, as 'a good thing'. Yet it is not a free lunch. The opportunity cost of the tax relief can clearly be seen as the government giving up tax revenue which could be passed on to charities as grants.

One aim of tax relief might be to increase charities' incomes. But if seen in terms of potential grants forgone, this relies on a knock-on effect of tax relief on individual donations.[43] There is a possible danger that tax relief may cause givers to reduce the size of their donations, knowing that the government is providing a top-up. Evidence from the US suggests that the financial incentive provided by tax relief has only a small positive effect on individual donations.[44] A second aim might be to foster a healthy relationship between

[41] *NCVO Research Quarterly*, September 1998.

[42] For a wider discussion of the issues raised in this section, see J. Banks and S. Tanner, *Taxing Charitable Giving*, Commentary no. 75, Institute for Fiscal Studies, London, 1998.

[43] The decision to introduce tax relief is unlikely to involve such an explicit trade-off between grants and tax relief. In this case, the introduction of tax relief will benefit the charitable sector, but as a result of a deliberate policy decision by the government to direct more revenue towards the charitable sector.

[44] See W. Reece and K. Zieschang, 'Consistent estimation of the impact of tax deductibility on the level of charitable contributions', *Econometrica*, vol. 53, pp. 271–93, 1985.

individuals and charities. The government may not care simply about charities' total income, but also about having a society in which individuals interact with charities. Granting tax relief, rather than handing out grants, is a way of allowing individuals rather than government to decide which charities should get government money (and relieves the government of an administrative burden), although, depending on which individuals get tax relief, this could lead to some charities benefiting more than others compared with the allocation of the same amount of money through grants.

**Box 6.5. Tax-free giving**

**Covenants**
Individuals (and companies) can set up a covenant committing them to donate a fixed amount to a particular charity each year. As long as the covenant runs for a minimum of four years, covenanters can get relief from income or corporation tax on their donations. There is no upper limit on the size of covenanted gifts. The charity claims back basic-rate tax on the gift; higher-rate taxpayers can claim the difference between the basic rate and the higher rate.
*Total donated in 1997–98: £1,125m.*[45] *Estimated tax expenditure: £310m.*[46]

**Gift Aid**
Established in 1990, Gift Aid allows individuals (and companies) to get tax relief on one-off donations of £250 or more. Donors may not meet the threshold through a series of smaller gifts, or pass on money raised through fundraising by others. Gift Aid operates in a similar way to a covenant — donations are made net of basic-rate tax, the charity recovers the basic-rate tax, and higher-rate taxpayers may claim additional tax relief. Millennium Gift Aid, introduced in July 1998, reduced the threshold to £100 on donations to charities supporting education, health and anti-poverty projects in 80 nominated 'poor countries'. The scheme also allows smaller donations to be bundled up and still qualify for tax relief. Millennium Gift Aid will run until 31 December 2000.
*Total donated in 1997–98: £260m.*[47] *Estimated tax expenditure: £79m.*

**Payroll giving schemes, 'Give As You Earn'**
Under a payroll giving scheme, employees can authorise their employer to deduct amounts from their pay and nominate the charities to which their gifts should go. This requires the employers to contract with an Inland Revenue approved collection agency. The donation is deducted from pay *before* calculating tax due under Pay-As-You-Earn. On its introduction in 1987, gifts made under payroll giving schemes could not exceed £120 a year. The current upper limit is £1,200.
*Total donated in 1997–98: £27m. Estimated tax expenditure: £6m.*

[45] This figure is for total donations by individuals and companies.

[46] This figure, and the tax expenditures that follow in this section are taken from *Inland Revenue Statistics 1998*. The tax expenditure figures are first-round estimates only and assume no other change in behaviour.

[47] This figure is for total donations by individuals.

The relative importance that the government attaches to these different objectives will affect the form that tax relief should take. If the government is concerned only with trying to increase the total income of the charitable sector (and is unconcerned about who gives — and to whom they give), it might choose to target tax relief at high-earning givers. If the government cares about letting a wider range of individuals express their preferences for different charities, it should choose a system of tax relief that opens up tax-free giving to a wider range of individuals.

A targeted tax relief such as Millennium Gift Aid is likely to be attractive to the government. It will be reasonably cheap because of its limited coverage and it can be neatly packaged and easily sold to the public. But it is likely to draw money away from other good causes by making it relatively cheaper to give to the targeted good causes. Before introducing such a policy, therefore, there should be a very precise idea of the underlying economic rationale for doing so. It only makes sense if there is a particular reason why giving to one good cause is too low relative to giving to other good causes. And, if this is the case, giving grants out of tax revenue to these particular good causes might be a more effective way for the government to achieve the same goal.

Since the announcement of the consultation process, much attention has been paid to 'US-style tax deductions'. In the US, individuals can deduct charitable donations from their taxable income on their tax forms. Given that almost all taxpayers file tax returns, this makes almost all donations tax-free to almost all taxpayers. Given the very different administration of the tax system in the UK, however, simply applying the administrative features of US-style tax deductions would not have the same effect in the UK as in the US. In particular, it would have no effect at all for the overwhelming majority of taxpayers, who do not currently file tax returns. For those who do file (mainly higher-rate taxpayers and the self-employed), the effect would be to allow almost all gifts to be tax-free.[48] For these people, US-style tax deductions would be more attractive than the current system because they would extend tax relief to one-off, or irregular, gifts of less than £250.

The same end-result could be achieved either by making covenanted giving more flexible or by reducing the minimum threshold on Gift Aid.[49] One obvious option would be to extend Millennium-Gift-Aid-type treatment to donations to all good causes. The advantage of either of these alternatives compared with US-style tax deductions is that they would be available to all taxpayers. It might be argued that US-style tax deductions have an additional psychological effect, but there is little evidence for this one way or the other. There may also be an information effect associated with government backing for a new scheme, but this is not unique to the nature of US-style tax deductions. The argument applies equally to increasing the level of information about the current ways of giving to charity.

[48] Presumably there would be a minimum and/or maximum threshold to make the scheme administratively feasible and to keep the costs down.

[49] It should be noted that reforming either of these schemes along these lines would make the other effectively obsolete.

# 7. Excise duties

Excise duties are often known as the sin taxes. They are additional taxes on goods, such as alcohol, tobacco and petrol, whose consumption is thought to have harmful social effects. Putting additional taxes on drinking, smoking and driving is one way of getting individuals to pay the full social cost. It may also be a way of trying to encourage individuals to reduce their consumption. In addition to these economic arguments for additional taxes, excise duties are an important source of revenue, raising just over £39 billion in 1997–98 — almost half the amount collected in income and capital gains taxes. For the coming Budget, the Chancellor has pre-committed himself to real increases in excise duties on tobacco and petrol of 5% and 6% respectively. In the case of alcohol, there continues to be pressure on the Chancellor to cut duties to reverse the flow of cross-border shopping. In this chapter, we review the current system of alcohol taxation and discuss the revenue case for cutting duties. We also examine the distributional effects of changes to excise duties, including duties on fuel and tobacco.

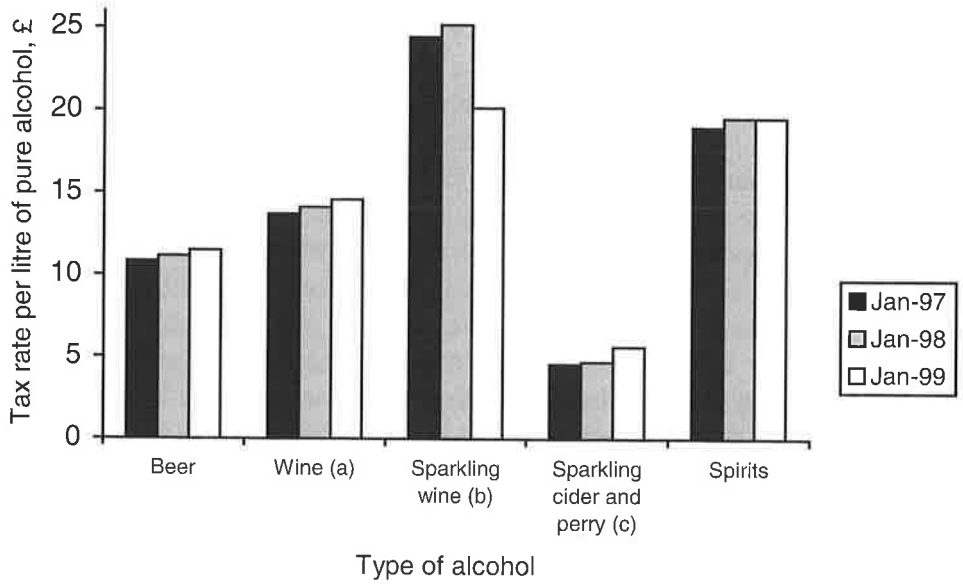
## 7.1 The taxation of alcohol

Different forms of alcohol are taxed in different ways in the UK. Wine, cider and perry are taxed per hectolitre (100 litres), spirits are taxed per litre of pure alcohol, and beer is taxed per hectolitre per percent of alcohol by volume (abv). There are large variations in the implied taxes per litre of pure alcohol, as shown in Figure 7.1. In particular, tax rates on spirits are high, whereas taxes on cider and perry are low.

Apart from raising revenue, two possible economic justifications for taxing alcohol are that people may lack information regarding the harmful effects of drinking alcohol and that its price may not adequately reflect the cost that is incurred by society when excessive quantities of alcohol are consumed. If these are the reasons for imposing excise duties on alcohol, there is little explanation for the different tax rates across different forms of alcohol, once their different strengths have been taken into account. In both cases, it is the quantity of alcohol that is drunk that causes the problem, not the form in which it is drunk. In order to justify higher taxes on spirits, the form in which alcohol is consumed would have to matter. If the fact that spirits contain a higher concentration of alcohol means they are more easily consumed in excessive quantities, and this leads to a higher incidence of alcohol-related problems, spirits should attract the highest duties. If not, there seems little justification for the higher tax rate on spirits illustrated in Figure 7.1.

In the last Budget, the Chancellor increased duty on sparkling cider and perry by 20%, while the duty on sparkling wine was reduced by 20%. This was an attempt to bring the duty rates on these similar drinks closer into line. Duty on spirits was frozen, as was also the case in the Budget of 1994, while in 1995 and 1996 there was a 4% cut. Figure 7.1 shows that, while these changes have closed the gap, large differences in duty rates still exist.

**Figure 7.1. Implied duty rates per litre of pure alcohol**




(a) There are four tax bands for different strengths of wine. The graph refers to wine of typical strength 12% abv.
(b) There are two tax bands for different strengths of sparkling wine. The graph refers to sparkling wine of strength 8% abv.
(c) There are two tax bands for different strengths of sparkling cider and perry. The graph refers to sparkling cider and perry of strength 8% abv.

# 7.2 Cross-border shopping

This Budget, as with every previous one since the introduction of the Single Market, there will be pressure on the Chancellor to cut excise duties to reduce the level of cross-border trade that is being driven, at least in part,[1] by differentials between duty rates in the UK and those in other EU countries, particularly neighbouring countries such as France and Belgium (see Table 7.1).

From an economic perspective, cross-border shopping is inefficient to the extent that decisions are determined by taxes rather than by underlying economic factors. The difference in duties on beer, for example, might make it worthwhile for British producers and retailers to sell British beer to British consumers in France. Clearly, it would be more efficient for British producers and retailers to sell to British consumers in the UK. In this case, both the cost of transporting beer from the UK to France and the cost to consumers of travelling to France represent an inefficient use of resources.

A second problem is that domestic producers and retailers are losing revenue and, from the government's point of view, cross-border shopping represents a loss of indirect tax revenue. The most recent estimates from Customs and Excise show that the total amount of indirect tax revenue lost in 1996 because

[1] Differences in pre-tax prices would also create an incentive for cross-border shopping.

**Table 7.1. EU excise duties, £, 1997**

| | Spirits, 70cl 40% abv | Beer, pint 5% abv | Wine, 75cl 11% abv | Cigarettes, pack of 20 | Hand-rolling tobacco, 50g |
|---|---|---|---|---|---|
| Austria | 1.34 | 0.07 | Nil | 1.23 | 1.69 |
| Belgium | 3.07 | 0.08 | 0.23 | 1.35 | 1.05 |
| Denmark | 6.83 | 0.17 | 0.50 | 2.33 | 2.68 |
| Finland | 9.54 | 0.55 | 1.45 | 2.03 | 1.85 |
| France | 2.67 | 0.05 | 0.02 | 1.59 | 1.66 |
| Germany | 2.41 | 0.03 | Nil | 1.34 | 1.35 |
| Greece | 1.75 | 0.06 | Nil | 1.01 | 2.58 |
| Ireland | 5.50 | 0.40 | 1.45 | 2.20 | 5.03 |
| Italy | 1.21 | 0.06 | Nil | 1.00 | 1.99 |
| Luxemburg | 1.93 | 0.04 | Nil | 0.90 | 0.64 |
| Netherlands | 2.79 | 0.08 | 0.24 | 1.15 | 1.25 |
| Portugal | 3.75 | 0.05 | Nil | 0.94 | 0.95 |
| Spain | 1.28 | 0.03 | Nil | 0.54 | 0.76 |
| Sweden | 10.61 | 0.32 | 1.54 | 2.16 | 2.92 |
| UK | 5.32 | 0.31 | 1.05 | 2.44 | 5.53 |

Sources: HM Customs and Excise, *Report of the Alcohol and Tobacco Fraud Review*, 1998; 'The economic significance of the UK tobacco industry', 1997, *Pieda*.

of legitimate cross-border trade in alcohol and tobacco was £220–£245 million (compared with total revenue collected of nearly £20 billion).[2] The indirect tax revenue lost because of smuggling is greater, although most of this is on hand-rolling tobacco, where cross-border trade is estimated to represent more than two-thirds of the UK market (see Table 7.2).

**Table 7.2. Lost revenue from cross-border trade, £ million, 1996**

| | Legitimate | Smuggling |
|---|---|---|
| Beer | 40–45 | 115–130 |
| Wine | 95–110 | 45–50 |
| Spirits | 40–45 | 25–30 |
| Hand-rolling tobacco | — | 540 |
| Cigarettes | 45 | 145 |

Source: HM Customs and Excise, *Report of the Alcohol and Tobacco Fraud Review*, 1998.

Cutting excise duties is unlikely to be an appropriate response to smuggling, just as abolishing income tax would not be an appropriate response to income tax evasion. In its recent review of alcohol and tobacco fraud, Customs and Excise concluded that the correct response was an increase in anti-smuggling measures. The arguments that follow here apply only to legitimate cross-border shopping and hence predominantly to cross-border sales of alcohol.

For domestic producers and retailers, any increase in sales that followed a cut in excise duties would represent a clear gain. The problem for the Chancellor is that he would get more duty revenue from extra sales, but would lose revenue on the alcohol that is currently being bought in the UK. For the overall effect on duty revenue to be positive, the extra revenue from additional

[2] Customs and Excise estimates of the amount of revenue lost assume that 100% of cross-border tobacco sales and 70–80% of cross-border alcohol sales are substitutes for domestic products.

sales in the UK would have to outweigh the amount lost on the units of alcohol that were being sold before the duty cut. This depends on the responsiveness of domestic alcohol sales to changes in the price. The more responsive demand is to price changes, the more likely it is that a cut in duty will lead to a large enough increase in demand to compensate for the reduced amount of duty collected per unit sold.

In fact, there is a critical level of price-responsiveness of demand ('price elasticity') at which it will just be the case that a cut in price results in an increase in total tax revenue.[3] If demand is more price-responsive than this critical level, the Chancellor would be able to raise more tax revenue by cutting duty rates. In practice, the critical level of price-responsiveness is different for each type of alcoholic drink — beer, wine and spirits — and varies in a systematic way according to the current rate of duty. The higher the rate of tax, the smaller the impact of a marginal cut in tax on total revenue already collected, and the smaller the demand increase required to make the overall effect positive. The critical elasticity for spirits (the most heavily taxed form of alcohol) is –1.66. This means that a 1% price cut must cause demand to increase by at least 1.66% for total revenue to increase. For wine, the critical elasticity is –2.05, while for beer (the least taxed form of alcohol), it is –3.44.

The most recent IFS estimates of price elasticities from the first year after the introduction of the Single Market suggest that, at least for beer and wine, demand is significantly less responsive than these critical levels.[4] At the estimated level of price-responsiveness, a cut in duty on beer or wine would lead to a fall in total duty revenue collected.[5] In the case of spirits, estimates of the actual level of price-responsiveness of demand are much closer to the critical level, making it more likely that a cut in the rate of duty would not lead to a loss in total duty revenue.[6]

This is not to say that we will never reach a point at which a cut in duty on beer and wine could raise revenue. The key issue is the long-term impact of the Single Market on domestic demand, since it may take time for people to change their behaviour. However, the level of domestic spending on beer, wine and spirits from 1978 up to the end of 1996, shown in Figure 7.2, displays no significant change following the completion of the Single Market.[7]

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[3] See Appendix C for a more detailed exposition.

[4] The estimated price elasticity of demand for beer was –0.67 in 1994, while for wine the estimated price elasticity of demand was –1.40. See I. Crawford and S. Tanner, *Alcohol Taxes and the Single Market*, Commentary no. 47, Institute for Fiscal Studies, London, 1995.

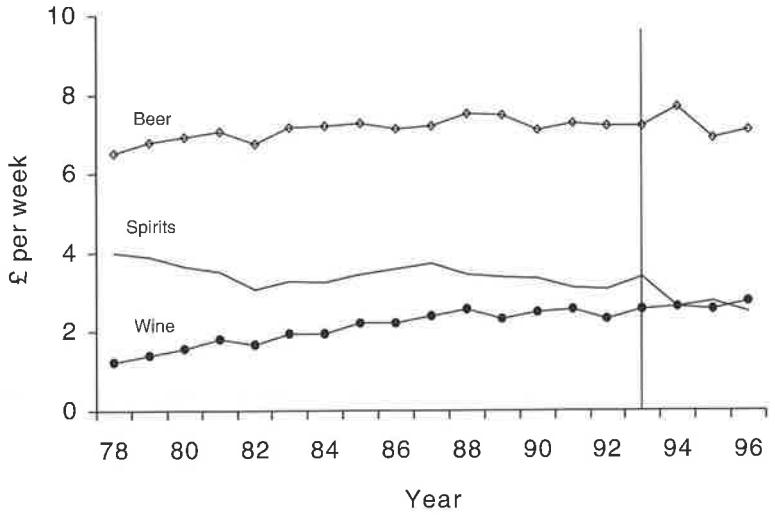
[5] It has been argued that there would be effects on income and corporate tax revenues of an increase in demand and that these should also be taken into account. However, given the most recent estimates of the level of price-responsiveness of demand for beer, the size of these additional effects would have to be very large for there to be a net revenue gain. This is shown in more detail in Appendix C.

[6] The estimated price elasticity of demand for spirits was –1.18 in 1994, which is smaller (in absolute terms) than the critical elasticity, but large enough for it to be impossible to reject statistically that the actual elasticity is in fact –1.66.

[7] In addition, a regression of average total spending on beer, wine and spirits on average total spending on all non-durable goods and a yearly trend, allowing the trend to change following the completion of the Single Market, showed no significant difference in the later period.

This is true even in the South-East, where we might expect to find a greater impact of the Single Market, given the lower fixed costs of cross-border shopping. The biggest changes over the period have been a long-term decline in spending on spirits and an increase in spending on wine.

**Figure 7.2. Household spending on alcohol, £ per week, 1997 prices**




Source: Family Expenditure Survey.

# 7.3 Excise duty changes

The Chancellor has pre-committed himself to real increases in excise duties for the coming Budget. Table 7.3 shows the price effects of revalorisation using the annual inflation figure to October 1998, which was 3.2%. In addition to price inflation, the pre-announced annual escalators of 5% for cigarettes and 6% for fuel have also been included.

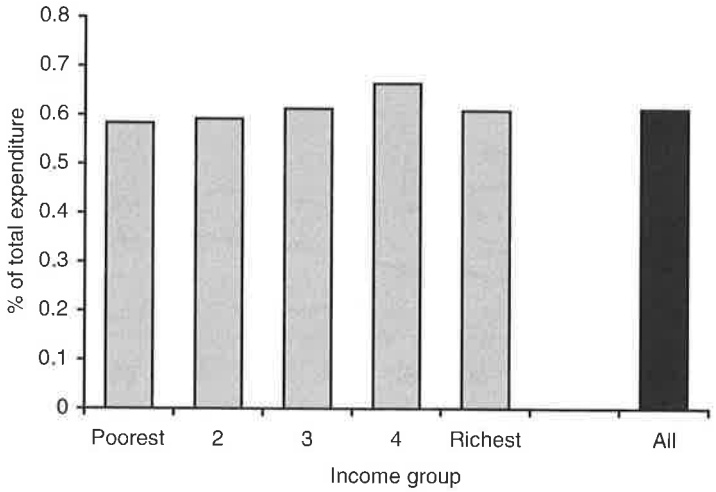
**Table 7.3. The price effects of excise duty revalorisation**

| | Beer | Wine | Spirits | Cigarettes | Petrol, 4-star | Unleaded petrol | Derv fuel |
|---|---|---|---|---|---|---|---|
| **Current** | | | | | | | |
| Duty | £0.25 | £1.12 | £5.48 | £1.54 | £0.49 | £0.44 | £0.45 |
| VAT | £0.25 | £0.47 | £1.76 | £0.51 | £0.11 | £0.10 | £0.10 |
| *Ad valorem* | | | | £0.76 | | | |
| Old price | £1.70 | £3.13 | £11.78 | £3.44 | £0.72 | £0.66 | £0.66 |
| **Revalorised** | @3.2% | @3.2% | @3.2% | @8.2% | @9.2% | @9.2% | @9.2% |
| Duty | £0.25 | £1.16 | £5.65 | £1.67 | £0.54 | £0.48 | £0.49 |
| VAT | £0.26 | £0.47 | £1.79 | £0.54 | £0.12 | £0.11 | £0.11 |
| *Ad valorem* | | | | £0.80 | | | |
| New price | £1.71 | £3.17 | £11.99 | £3.64 | £0.78 | £0.71 | £0.71 |

Notes: Typical prices are from *HM Customs and Excise Annual Report 1997–98*, January 1998, uprated to September 1998 using RPI sub-indices. The prices are for a pint of bitter (3.9% abv) on licensed premises, a 75cl bottle of table wine in retail premises, a 70cl bottle of whiskey (40% abv), a packet of 20 cigarettes and a litre of 4-star petrol, unleaded petrol or derv fuel (diesel). All numbers are rounded to the nearest penny.

We can show the effect that these price changes will have on households in different income groups. Figure 7.3 shows the average increased spending as a result of the combined duty changes as a proportion of total expenditure by income group, or quintile,[8] assuming that households buy the same quantity of the good before and after the tax increase. The effect across all households together is shown in the last column.

**Figure 7.3. The combined effect of excise duty changes as a proportion of total spending**




Source: Family Expenditure Survey, 1996.

The total effect of all the tax increases is to increase total expenditure by 0.6% on average. There is not a great deal of variation across income groups, although the effect is slightly progressive over the four lowest quintiles, i.e. the increased spending as a result of the price changes accounts for a greater proportion of total expenditure for richer groups than for poorer groups.[9] There is greater variation across households in the effect of price changes on cigarettes, petrol and alcohol when analysed individually, as in Figure 7.4. For all households, the price increase represents 0.2% of total expenditure for cigarettes, 0.4% for petrol and 0.05% for alcohol. The effect of the price increase for petrol is progressive, whereas for cigarettes it is regressive, i.e. it accounts for a larger proportion of total expenditure of poorer households. Although the effect for alcohol is smaller, it is slightly progressive.

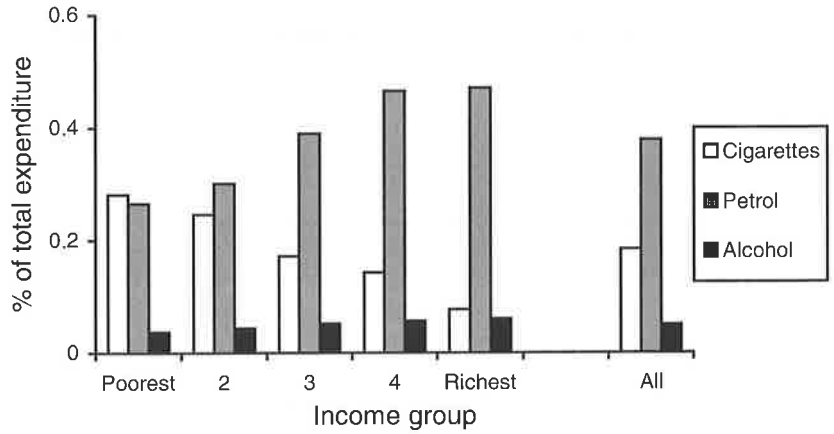
Of course, the effect on individual households will differ according to whether the household actually purchases petrol, cigarettes and alcohol. Figure 7.5 shows the proportions of households in each income group with at least one smoker but no driver, at least one driver but no smoker, both a driver and a smoker, and neither. The final column shows all households. The proportion

[8] Quintiles are derived by dividing the total population into five equally-sized groups according to income adjusted for family size.

[9] This is the effect of the tax change, not the effect of the tax levels, so even though the effect of the tax change is slightly progressive, it does not necessarily mean that the tax overall is progressive.

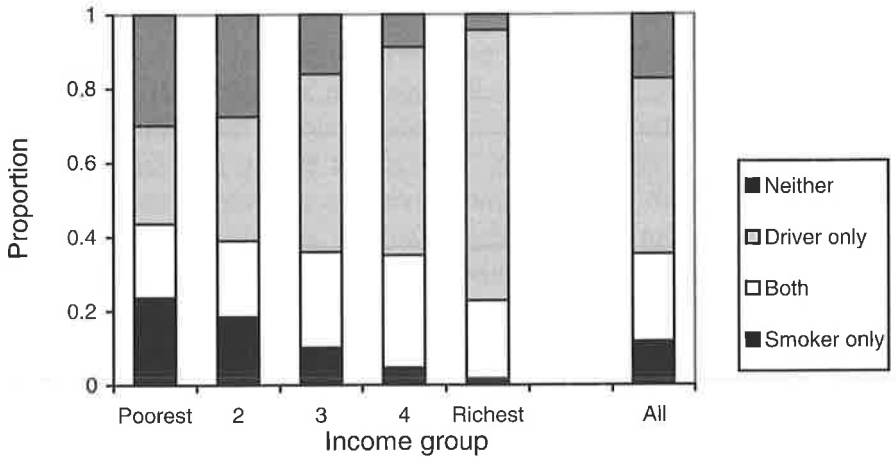
of households with a driver increases across the income quintiles, while the proportion with a smoker decreases.

**Figure 7.4. The effect of individual excise duty changes as a proportion of total spending**




Source: Family Expenditure Survey, 1996.

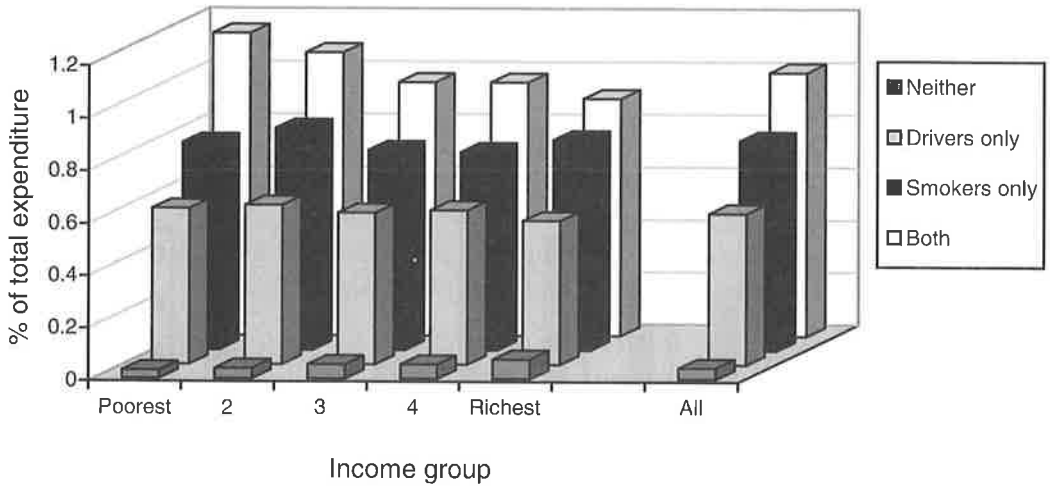
**Figure 7.5. Proportions of households who smoke and drive, by income group**




Source: Family Expenditure Survey, 1996.

Figure 7.6 shows the effect of the price changes across income groups according to whether the household contains a smoker and/or a driver. The effect of the price increases for the drivers and smokers is similar across all income groups. Amongst households containing both a smoker and a driver, the effect is more regressive — the increased spending as a result of the tax change represents 1.1% of total expenditure for the poorest group and only 0.9% for the richest. The effect on households with neither a smoker nor a driver (i.e. the effect of changes in alcohol taxes on this group) is small but progressive.

**Figure 7.6. The combined effect of excise duty changes as a proportion of total spending**




Note: As can be seen from Figure 7.5, the group consisting of only smokers represents a very small proportion of the quintile groups. For the richest quintile, there are only 22 in this sub-group, and so, for smokers, the above figure should be treated with caution.
Source: Family Expenditure Survey, 1996.

# 7.4 Conclusions

Revenue from excise duties has grown rapidly in recent years — more quickly than revenue from income tax and corporation tax. Most of this growth has come from large real increases in duties on tobacco and petrol. There is an economic justification for duties on these goods if there are additional costs to society from their consumption. This is not to say that the amount of social cost associated with smoking and driving is reflected exactly in the level of duty each year. But the fact that smoking and driving are known to have harmful consequences makes them soft targets for a government reluctant to raise income taxes. One question is whether the large real duty increases can continue, particularly given the distributional consequences of high excise duties. Tobacco taxes are becoming more regressive to the extent that smoking is increasingly concentrated among poorer households, while high taxes on petrol have a greater impact on those with little access to public transport. There are also the revenue effects of higher excise duties to consider. Cross-border shopping has led to some debate over the revenue consequences of further increases in alcohol duties, although, as we show, cutting duties on beer and wine would probably lead to a loss in revenue rather than an increase. Cross-border trade in cigarettes appears to be less about the revenue effects of shopping than the revenue effects of smuggling, for which changes to excise duties are not the most appropriate response. A greater threat to future revenue from tobacco duties comes from the government's aim of cutting the number of smokers for health reasons. Equally, duties on petrol have been raised in the hope of reducing car use for environmental reasons. This is the contradiction that lies at the heart of excise duties. They are targeted at changing behaviour. They are also good sources of revenue. In the long run, they cannot be both.

# 8. Taxation and the environment

As a result of the Kyoto Conference on climate change in December 1997, the UK government has committed itself to a legally binding target of reducing greenhouse gas emissions to 12.5% below their 1990 levels by 2008–12. The government also has a self-imposed target of reducing carbon dioxide ($CO_2$) emissions to 20% below their 1990 levels by 2010. Carbon dioxide is the major greenhouse gas among six, and is produced by the combustion of fossil fuels (oil, gas, coal, road fuels (petrol, diesel)).

The main fiscal instrument used to date to tackle the problem of greenhouse gas emissions has been duties on road fuels. In March 1993, Kenneth Clarke promised annual real increases in road fuel duties of at least 3%, subsequently increasing this to 5%. Gordon Brown raised this commitment to real increases of at least 6% per annum in his first Budget in July 1997. But the transport sector accounts for only 23% of $CO_2$ emissions in the UK, with road transport being responsible for 85% of this. This clearly leaves scope for addressing the greenhouse gas emissions from other sectors of the economy. The government has pledged itself to not increasing the costs of domestic energy, since the policy of VAT on domestic fuel introduced by the previous Conservative government proved so unpopular. The Labour government subsequently reduced the level of VAT on domestic fuel to 5%, the minimum allowable under EU law.[1]

This leaves the business sector, which produces around 40% of UK $CO_2$ emissions, as the main potential new area for introducing policies aimed at tackling greenhouse gas emissions. In 1998, the government appointed Lord Marshall to lead a task force to investigate the use of economic instruments to help reduce the greenhouse gas emissions of the business sector. His Report, *Economic Instruments and the Business Use of Energy*, was published in November 1998. It assesses the potential of two instruments — tradable emissions permits and a tax. Some of the main issues in this area are discussed below, followed by a review of some of the government's environmental policies aimed at the transport sector.

## 8.1 Business emissions of greenhouse gases

In this section, we start with a general outline, in Box 8.1, of how economic instruments can be used to tackle environmental problems, such as the emission of greenhouse gases. This is followed by a summary of the comparative advantages and disadvantages of different policy instruments. We then move on to the question of reducing greenhouse gases and discuss the potential problems specific to this policy, such as who and what should be taxed or permitted. The conclusions of the Marshall Report, which comes down in favour of a tax, are then summarised. Next, we discuss some other issues that might arise from an emissions tax, such as the financial effect on

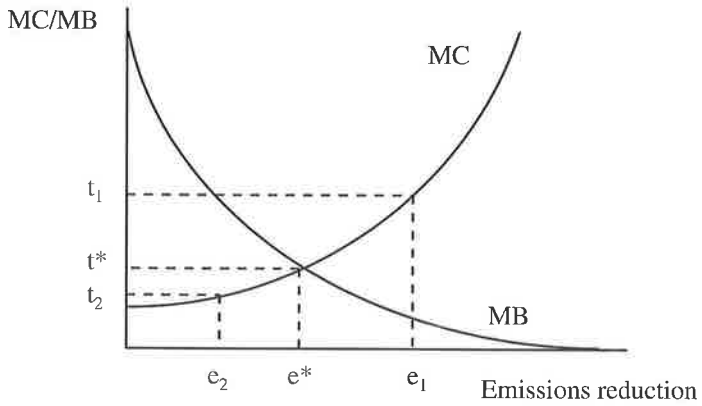
[1] HM Customs and Excise News Release, 2 July 1997.

firms (particularly the effect on international competitiveness) and hence the possibility of special treatment for energy-intensive sectors, and how the revenue raised could be used. Finally, we offer some conclusions.

**Box 8.1. Taxes and tradable permits**

Producers who emit greenhouse gases face a cost of reducing these emissions from either investing in pollution-abatement equipment or reducing output. There is also a social benefit to reducing emissions. This is illustrated in Figure 8.1, where MC depicts the marginal cost of pollution abatement and MB its marginal benefit, and the horizontal axis indicates the level of reduction in pollution undertaken.

**Figure 8.1. Setting a tax or issuing permits**




The vertical axis indicates the point at which producers emit their desired level of pollution and there is no emissions reduction induced by government policy. At this point, marginal benefits exceed marginal costs, giving a rationale for some kind of intervention to reduce emissions. Suppose emissions are taxed at a rate $t_1$ per unit; then producers will reduce emissions by $e_1$, where the cost to them of abating an extra unit of emissions is just equal to the tax they would have to pay on it. Similarly, a tax of $t_2$ per unit would lead to a reduction in emissions of $e_2$. The socially optimal level of emissions reduction is e*, where the marginal cost is equal to the marginal benefit, which dictates a tax level of t*. The government could achieve the same outcome by simply regulating emissions reductions to the level e*, or it could issue a number of emissions permits equal to the unrestricted emissions level minus e*. With a competitive market for permits, these will end up trading at a price t* per permit. A firm with a marginal cost of less than t* will want to sell permits, and a firm with a marginal cost greater than t* will want to buy them, until all firms have an equivalent marginal cost of abatement.

## A comparison of policies

As Box 8.1 illustrates, the perfectly informed government could achieve a given emissions reduction via regulation, taxes or permits. In practice, the

fiscal instruments may have some advantage over regulation. This advantage arises when the costs of reducing emissions varies from firm to firm, and accurate information on these costs is not available to the government. In this situation, the use of permits or a tax ensures an efficient pattern of abatement across firms (as noted above, the marginal costs of abatement will be equalised across firms). Achieving the same overall level of abatement through, say, uniform quotas may be less efficient, since the resulting marginal costs of abatement will not necessarily be the same for all firms.

Taxes might have some long-run advantages over both regulation *and* permits. With an emissions tax, firms pay for each unit of pollution they produce. There is thus a dynamic incentive to find cheaper ways of pollution abatement which would lead to further reductions in pollution. With regulation, there is an incentive to meet the regulated standard as efficiently as possible, but no reason to go beyond the minimum compliance level. Similarly, with tradable permits, the number of permits issued determines the emissions levels, so whilst there is an incentive for each firm to reduce emissions as cheaply as possible so they do not need as many permits, this will simply affect the trading price of permits — there is no incentive to reduce overall pollution below the number of permits available.

On the other hand, a common argument is that permits are preferable to taxes because they deliver a guaranteed level of emissions reduction, whereas the reaction to a tax can be uncertain when policymakers do not know abatement costs. In fact, uncertainty over abatement costs can favour either instrument depending on the exact circumstances. If achieving a certain level of emissions reduction is very important, then this adds to the superiority of permits over taxes. But if large errors are made in assessing the cost to firms of reducing emissions, then this can favour taxes.[2]

## Practicalities

### *What should be taxed or permitted?*

To reduce greenhouse gas emissions, it is desirable to control them as directly as possible, i.e. tax emissions or issue permits for emission levels. This means that it must be possible to measure emissions in order to enforce the permits or impose the tax. This may not always be possible, or may be prohibitively expensive, in which case some second-best tax or permit base has to be found which is as closely related to emissions as possible. Carbon dioxide emissions have the attractive property that the amount of $CO_2$ produced is proportional to the amount of carbon in the fuel being burnt. This means that it is not necessary to measure emissions: it is possible simply to apply a carbon tax to each fuel type based on its carbon content. Alternatively, with permits, compliance can be checked from the firm's fuel purchases. A carbon tax is a superior way of addressing $CO_2$ emissions compared with an energy tax, for example, since energy does not necessarily reflect carbon content. For other greenhouse gases, which do not have this convenient property, taxing emissions or using permits will be more problematic, since measurement of

[2] Anyone interested in a full economic analysis of this is referred to M. L. Weitzman, 'Prices vs quantities', *Review of Economic Studies*, vol. 41, pp. 447–91, 1974.

individual emissions is probably not feasible and an alternative base that is directly related to emissions may not be available.

***Who should be taxed or permitted?***

Primary fossil fuels are extracted and then supplied to different users. Some of this fuel use will be final use, and some will be used as an input to the production of other fuels that are then supplied to final users. This last category is mainly electricity generation, but also, for example, the use of coal to make coke. When primary fuels are used to make energy products, emissions can be controlled either 'upstream' on the input of primary fuel or 'downstream' on the final use of the energy product. Theoretically, the point of control makes little difference (apart from the timing of revenue collection), but in practice, a problem can arise if the implied emissions from the energy product are difficult to calculate, as is the case with electricity. In addition, the government's policy of protecting domestic consumers from taxes on energy may influence the point of control. These points are elaborated on below.

Permits could be used 'upstream', by requiring suppliers of primary fuels to hold permits based on the carbon content of the fuels they extract, or further 'downstream' either on users of primary fuels (i.e. including electricity generators) or only on final users of all fossil fuels and energy products. Similarly, taxes could be applied either 'upstream' to the use of primary fuels by industry (i.e. including fuels used in the generation of electricity) or 'downstream' to the use of fuels and energy products by final users only.

The Marshall Report concludes that upstream permits are not viable since it would not be possible to require foreign suppliers to hold permits for their fuel exports to the UK. This leaves the question of how to deal with energy products. If generators are required to participate, they might pass on permit costs in electricity prices in some way. This is problematic since, as clearly stated in the Report, the government is committed to not affecting the price of domestic energy, and so some rebate to domestic consumers would have to be calculated. The solution to this problem is the second option of requiring final business users of electricity to hold permits. This has the problem that, since it is not always possible to identify the generating source at the point of supply, and since electricity is generated in different ways, calculating the emissions caused by electricity use is difficult. An average level of emissions based on aggregate electricity generation might have to be used. Also, if end-users hold the permits, and emissions implied by electricity use are based on an industry average, then individual generators have no incentive to reduce greenhouse gas emissions. If generators hold permits, this might give them such an incentive, although competition between generators and the determination of prices are complicated processes, and the government has recently proposed significant reforms to the running of the electricity market. Indeed, as part of these reforms, the government intends (for various reasons) to apply stricter controls on the granting of clearances to build new gas-fired generating plants.[3] Since gas is one of the lower $CO_2$-producing methods of generating

[3] 'Conclusions of The Review of Energy Sources for Power Generation and Government response to fourth and fifth Reports of the Trade and Industry Committee', Department of Trade and Industry, October 1998.

electricity, such a policy would limit the possibilities for fuel switching and would seem to go against the aim of reducing greenhouse gas emissions that Lord Marshall has been asked to explore.

A similar problem, naturally, arises for a tax. If the tax is applied upstream, then generators will pass on the tax to domestic consumers; if it is applied downstream, then the appropriate tax would be difficult to calculate and there is little incentive for generators to reduce emissions.

***Allocation of permits***

There are at least three ways of allocating permits.

- *Grandfathering* — permits are allocated on the basis of existing emissions. This could be considered inequitable since firms that had been following good practice with regard to energy efficiency and greenhouse gas emissions would be penalised by receiving fewer permits. This would be particularly true for those firms whose $CO_2$ emissions will be regulated under the EU Integrated Pollution Prevention and Control Directive (which comes into force during 1999) and those that had entered into voluntary agreements with the government. It could also encourage an increase in emissions before the allocation of permits unless the allocation was based on a range of historical emissions data.
- *Bench-marking* — permits are allocated according to some assessment of the level of emissions reduction that it is fair to expect each firm to achieve. This offers a solution to some of the problems of grandfathering.
- *Auctioning* — firms bid for the permits that the government has decided to issue.

For a given level of permits, the difference between the three options is distributional, since with grandfathering and bench-marking the government simply hands permits out, and so forgoes the revenue it would receive from an auction.

## Conclusions of the Marshall Report

The report concludes that it will probably never be possible to include the small business sector in any tradable permit scheme. This is because of the costs to small businesses of supplying auditable information on energy use, and the transaction costs of permit trading. In addition, as well as emissions monitoring, the use of permits requires keeping track of entitlements, which may be administratively very costly with many, small firms.

The message is that a system of tradable permits is not viable at present, because of the need to use permits downstream from primary fuel producers, and the subsequent practical difficulties of including small and medium-sized enterprises which account for some 60% of business emissions of $CO_2$. Restricting the scheme to just a small number of large firms seems inequitable (why should only they be penalised for greenhouse gas emissions?), not the ideal way of achieving the maximum reduction of greenhouse gas emissions (as many emitters as possible should be covered) and raises issues as to whether a competitive market in permit trading would emerge (small numbers

of large players can be problematic). In addition, the Kyoto protocol allows for an international system of greenhouse gas emissions trading. Since it would be desirable for any domestic trading scheme to be compatible with the international scheme, there is an argument for waiting to see what emerges from the Kyoto agreement. The main option under consideration, then, seems to be a tax, probably applied downstream because of the desire to exempt domestic consumers.

## Effects of tax and treatment of energy-intensive industries

A common criticism levelled at environmental taxes is that they are not worth imposing because they will not change behaviour very much. In the case of a carbon tax, the reasoning is that the possibilities for using energy more efficiently and substituting away from energy products are limited. Hence, firms will face a new tax burden, particularly energy-intensive industries, whilst the environmental goal will not really be achieved. This view needs some discussion. All policy decisions require a comparison of costs and benefits. If the 'demand' for $CO_2$ emissions by industry is not very responsive to changes in their 'price', then this indicates that it is costly for firms to change their behaviour and this should form a part of the assessment of the policy. The UK has taken a decision to reduce greenhouse gas emissions, which implies that the assessment of the benefits outweighs that of the costs. As explained above, regulation, taxation or permits could potentially achieve the same level of reductions in emissions. A price-unresponsive 'demand' for $CO_2$ emissions by industry simply means that the carbon tax necessary to achieve the desired reduction in emissions will have to be higher than if demand was more responsive. This does not mean that reducing $CO_2$ emissions will be any more difficult for industry than if it was simply told to do it. But it does impose an extra financial burden compared with regulation, because firms have to pay the tax on residual emissions. The distributional differences between the different regimes are summarised here, assuming the same reductions in emissions in each case.

- *Tax* — firm pays abatement costs plus tax on each unit of emissions, government collects revenue.
- *Regulation* — firm pays abatement costs, government collects no revenue (equivalent to tax with revenue transfer from government to firms — distribution of revenue depends on quotas).
- *Auctioned permits* — firm pays abatement costs plus cost of permit for each unit of pollution, government collects revenue (same as tax).
- *Grandfathered or bench-marked permits* — firm pays abatement costs, government collects no revenue (equivalent to tax with revenue transfer from government to firms — distribution of revenue depends on initial allocation of permits).

Naturally, a tax will increase production costs, but this is because it ensures that the price of fossil fuels reflects the full cost to society of their use. It is true that more energy-intensive industries would be likely to suffer a high financial burden from this tax, but, in theory, any production process that then becomes unprofitable does so rightly, because the benefits of having the good

produced are not as great as the costs (although, of course, in reality, we will be concerned about the immediate effects on industries suffering a large burden from a new tax, particularly the effects on employment). However, this ignores the fact that domestic firms are in competition with foreign producers who may not face greenhouse gas taxes and so can produce the good more cheaply. This might prevent domestic firms from passing on some of the increased costs of the tax (for example, in higher prices) which they otherwise would be able to do. The effect of a carbon tax on international competitiveness concerns many businesses, and this raises several points.

- All three options, not just a tax, would affect domestic firms' costs compared with those of foreign competitors, since they would face abatement costs. Different options have different effects depending on whether the government gets the revenue or whether it is distributed among firms.
- In the long run, equilibrium in the UK's balance of payments will require offsetting changes (for example, in the exchange rate) to restore international competitiveness. This argument may not hold much sway with industry faced with an imminent tax increase. In addition, although competitiveness on average would be restored, some sectors would be losers and some would be winners, depending on the energy intensity of their production processes.
- The effect on competitiveness will depend to a large extent on whether our major EU trading partners are planning to adopt similar policies. This is one reason why the EU is attempting to co-ordinate an EU-wide policy on greenhouse gas emissions. At present, six other EU countries have a carbon or energy tax, although all have special arrangements for some sectors.[4]
- The difference between a tax and auctioned permits compared with the alternative policies is that the government receives some revenue. One of the recommendations in the Marshall Report is that, under either of these scenarios, the revenue should be returned to industry in some way to ameliorate the financial burden of the policy on it. This is certainly an option. Using the revenue to reduce an existing distortionary tax raises the possibility of an additional welfare gain, or 'double dividend', compared with simply recycling it in an efficiency-neutral way (such as handing it out as a lump sum). Letting firms keep the revenue in the first place, as under regulation or non-auctioned permits, is similar to simply handing the revenue from a tax or auctioned permits back to them. Thus there could be extra welfare gains from taxation or auctioned permits compared with regulation or non-auctioned permits if the revenue is 'returned' to firms by reducing an existing business tax that distorts behaviour.

[4] In March 1997, the European Commission published a proposal for a Directive regarding the Community-wide taxation of energy products. This lays down minimum duty rates for all energy products. It also suggests that any tax changes should be fiscally neutral, and that the revenue should be used to reduce labour taxes. By proposing minimum duties for all energy products, this would put limits on the extent to which each Member State can favour their domestic energy industries. As with all proposals on Community tax policy, acceptance is subject to unanimous agreement.

The Marshall Report discusses the possibility of special treatment for energy-intensive industries. A tax on greenhouse gases works by giving a financial incentive to reduce emissions. Any special treatment that entirely removes the incentive to reduce emissions (such as a total exemption) would contradict the original reason for introducing the tax, particularly since energy-intensive industries may be precisely where the greatest potential for emissions reduction lies. Special treatment should be designed to reduce the tax burden while leaving incentives at the margin to reduce emissions. In addition, the way in which the tax revenue is recycled may itself reduce the burden on energy-intensive industries, although if it were used to reduce labour taxes, say, this might not provide much help for energy-intensive industries since they are unlikely to be labour-intensive.

### Conclusion

A tax on fossil fuels based on their carbon content is an excellent method of charging for $CO_2$ emissions, although it might be less well related to other greenhouse gas emissions. A carbon tax would be simple to apply — it would be very similar to an excise duty. If domestic consumers are to be exempted from the tax, it would probably have to be applied downstream on final suppliers of energy, which has the drawback of not giving individual electricity generators the correct environmental incentive to reduce emissions. Energy suppliers would have to distinguish between domestic and business users, but this would not be an extra burden since they already make this distinction for VAT purposes. The main difficulties lie in how to deal with the questions of the effect of such a tax on international competitiveness and of how the revenue raised should be used.

## 8.2 Restructuring VED

In his last Budget, the Chancellor announced a future reform of vehicle excise duty (VED) to encourage cleaner vehicles, in particular that VED would be cut by £50 for the smallest, cleanest cars. In November 1998, the Treasury issued a consultation document on how to take this policy forward, although the document does not consult on the actual rates that might be used. The stated aim of the policy is to use VED principally to reflect $CO_2$ emissions of different vehicles, and also perhaps the emissions of other local air pollutants to some extent.

### How well can VED target emissions?

#### *Carbon dioxide*

Carbon dioxide emissions from a vehicle depend on emissions per kilometre and on kilometres driven. Emissions per kilometre in turn depend on fuel efficiency and on type of fuel used, since $CO_2$ is emitted in direct proportion to the amount of a given road fuel used and varies from fuel to fuel according to their carbon content (for example, a litre of diesel produces more $CO_2$ than a litre of petrol). Fuel efficiency varies from car to car and can change for a given car over time depending on how it is driven and maintained. The exact

fuel efficiency on any given journey can depend on the precise circumstances of that journey (for example, driving in congested conditions tends to be very fuel inefficient). It would not be feasible to base VED on all these factors — it is necessary to know not only vehicle characteristics and how they change over time, but also the characteristics of each journey taken.

Even if it were possible to approximate $CO_2$ emissions per kilometre fairly accurately, perhaps the most obvious problem with VED is that it cannot be varied by distance driven. VED is a fixed annual tax, and once it has been paid, it has no effect on decisions about how much to use the car. The same car would be subject to the same VED whether it was used a lot or a little, whereas its $CO_2$ emissions would be greater in the first case.

### *Other pollutants*

The emissions of other pollutants not only depend on the amount and type of fuel used, but can also vary per litre of a given fuel according to drivers' behaviour and vehicle technology (for example, whether the car is fitted with a catalytic converter). Because of this, fuel taxes are not a perfect proxy for taxes on these emissions, and there may be a role for a graduated VED where cars of similar fuel efficiency vary in the emissions they produce because they use different technologies.

### *Existing cars*

A graduated VED system could encourage the demand for and manufacture of less-polluting vehicles in the future, but a question remains of whether such a system should be applied to the existing stock of vehicles, which have already been produced and bought. A graduated VED could only affect the composition of the existing stock by altering sale and purchase decisions in the second-hand market and encouraging more-polluting vehicles to be scrapped more quickly, unless it were possible to alter the level of VED for a car by, for example, retro-fitting a catalytic converter.

## The consultative document

### *Carbon dioxide*

From the beginning of 2000, EU legislation requires detailed information on $CO_2$ emissions per kilometre driven to be collected for new cars, which could be used as the basis for a graduated VED. The figure used to determine VED would have to be some average, since exact fuel efficiency can depend on journey characteristics, and would not account for deterioration with age. For existing cars, even information on average emissions performance when new may not be known and would have to be proxied by other characteristics of the vehicle that are known. The document suggests using engine size and possibly fuel type, since diesel cars have slightly better $CO_2$ performance than petrol cars of the same engine size.

Given that emissions standards or engine size would be used as the basis for a graduated VED, one further question is whether to have a continuous scale or a banded scale. Whilst bands might be administratively simpler, they lead to significant differences between largely similar vehicles at the top of one band and the bottom of the next. This might encourage manufacturers to bunch

engine sizes at the top of scales, although, of course, the UK is only a small part of the market for cars of any particular type.

***Other pollutants***

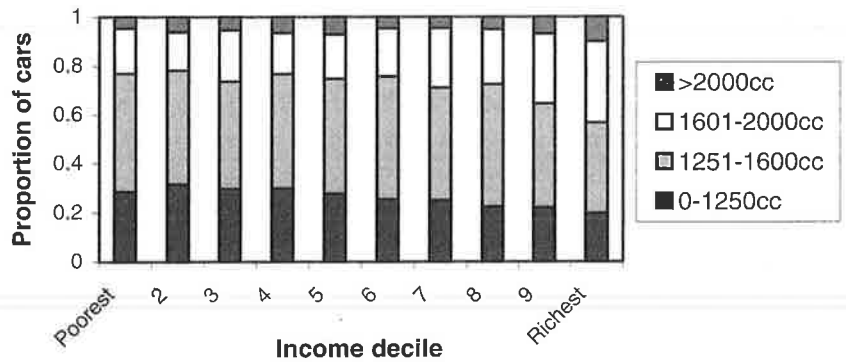
The document suggests using two characteristics in addition to the proxies for fuel efficiencies: whether the car uses diesel, since diesel produces more particulates and nitrogen oxides than petrol, and whether the vehicle meets various EU emissions standards. In the past, the EU has specified emissions standards that all new cars being built had to meet. These standards have tightened over time, and the scheduling of two future improvements has been agreed upon.

For new cars, the document suggests basing VED on the standards met by the vehicle. As vehicles have to meet a certain standard by law, it is not clear how large an extra incentive a graduated VED could give. It could encourage the early production of vehicles that meet future standards and could speed up decisions to purchase new, less-polluting vehicles.

As discussed, the proposed bases for graduating VED (standards when new, or engine size and age) will not be perfect proxies for emissions. The annual MOT test now includes direct measurement of emissions performance, and basing VED on this plus, perhaps, mileage would be a closer approximation to environmental costs and would encourage the maintenance of vehicles over time. However, this would be more administratively complex than the proposed system, and more open to fraudulent measurement. The scale of administration costs must always be considered in the design of a new policy.

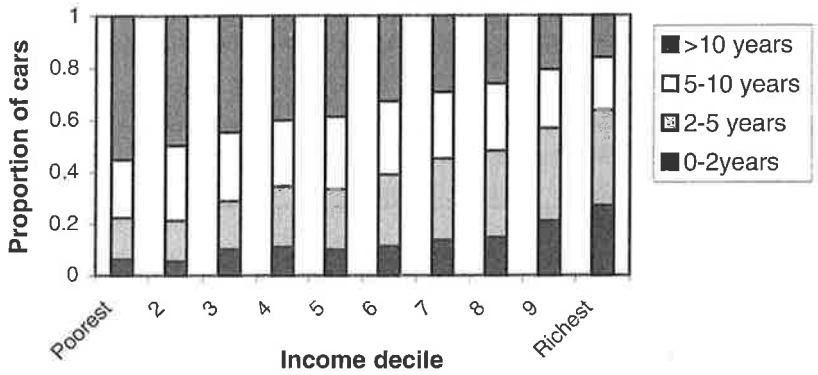
The distributional effects of a graduated VED based on age and engine size are illustrated in Figures 8.2 and 8.3. These show the proportion of cars owned by each income decile falling into four age and engine-size categories. These figures illustrate that cars owned by lower income deciles are slightly more likely to be of a smaller engine size than those owned by a higher decile, and considerably more likely to be older. Figure 8.4 illustrates that any kind of car is less likely to be owned by a low-income household.

**Figure 8.2. Car ownership by income decile: proportions by engine size**



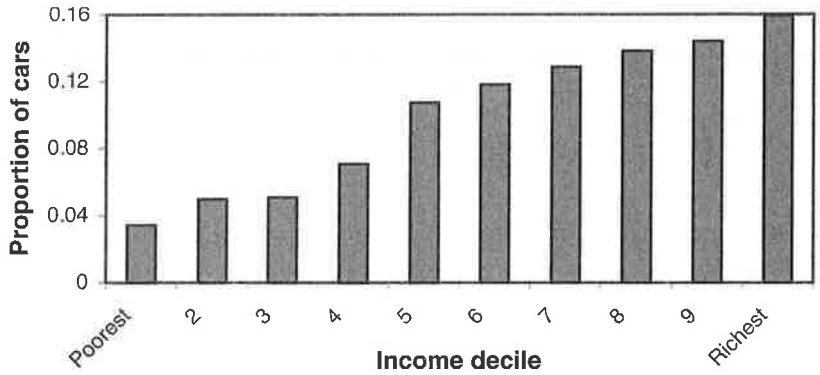

Note: Income deciles have been equivalised to account for household size.
Source: National Travel Survey, 1991–93.

**Figure 8.3. Car ownership by income decile: proportions by car age**




Note: Income deciles have been equivalised to account for household size.
Source: National Travel Survey, 1991–93.

**Figure 8.4. Proportion of all cars owned by each income decile**




Note: Income deciles have been equivalised to account for household size.
Source: National Travel Survey, 1991–93.

## Conclusions

As discussed in Section 8.1, the nature of $CO_2$ emissions from fossil fuels means that an almost perfect tax to address them is a per-litre road fuel tax which varies according to fuel type. If people correctly account for fuel costs when buying a car, then a graduated VED system would never be able to tax $CO_2$ emissions more directly than a fuel tax. Indeed, the government has started to use differential duties on road fuels to reflect their differing carbon content. For four years prior to the last Budget, unleaded petrol and diesel had attracted the same level of excise duties. In the last Budget, a differential was introduced in favour of petrol to reflect its lower per-litre carbon content compared with diesel. The main reason for using a graduated VED in addition to a differentiated fuel tax to address $CO_2$ emissions would be if people did not fully take into account future savings from reduced or alternative fuel consumption when making decisions about which vehicle to buy. Graduated VED would thus be an extra incentive to buy cars with relatively low $CO_2$ emission levels.

Fuel taxes are not a perfect proxy for taxes on other emissions, since these can vary per litre of a given fuel and according to vehicle technology. To the

extent that these emissions are related to fuel use and type of fuel, they should be reflected in a differential fuel tax. This is now done to some extent. In the last Budget, the duty differential between ordinary diesel and ultra-low-sulphur diesel (which is a cleaner fuel) was widened, and the Chancellor announced his intention of making further increases in future years to both this differential and the one between petrol and diesel. But where emissions can be substantially affected by vehicle technology, then a graduated VED could be used to reward this.

The government feels that graduated VED is necessary in addition to fuel taxes, and that a large part of the value of this policy will come from the signal it sends to people about environmental concerns. It is true that it may be complicated to consider fuel efficiency and future running costs fully when purchasing a vehicle, and a graduated VED system would send a clear signal as to which cars are relatively 'clean'. In addition, the UK is the only country in the EU without some form of environmentally graduated VED. However, since VED is currently generally small in comparison to other purchase and running costs, there is a question as to what level and extent of graduation would be needed to influence ownership decisions.

## 8.3 Congestion charging

Both the previous and present governments have acknowledged the possibility of using economic instruments to tackle the problem of congestion. This policy was again discussed in the Transport White Paper published in 1998,[5] which states the government's intention to introduce legislation allowing local authorities (LAs) to apply road user charges and taxes on workplace parking provided by employers. It is intended that the revenue raised will go to LAs and will be used to improve public transport. There may be good reasons for devolving the administration of congestion charging to LAs if they are better placed to assess the requirements of their area than central government, but this does not necessarily imply that the revenue should accrue to local government, nor does it indicate what the revenue should be spent on.

Improving public transport is one way of influencing travel decisions and it could help to solve problems of congestion, air pollution and other environmental concerns. But, in theory, public spending and the source of revenue should be entirely separate. The government should decide its spending plans and then raise revenue using whichever tax instruments are the most efficient. If public transport needs to be improved, this should be funded regardless of the method used to tackle congestion. The fact that congestion charging yields revenue is useful, but should not influence spending in one particular area, and there is no reason why optimal spending on improving public transport should coincide exactly with the revenue raised from a congestion charge.

In practice, it might be difficult to ensure that money raised by LAs through a congestion charge will be spent on new plans to improve public transport. LAs

[5] *A New Deal for Transport: Better for Everyone*, Department of the Environment, Transport and the Regions, 1998.

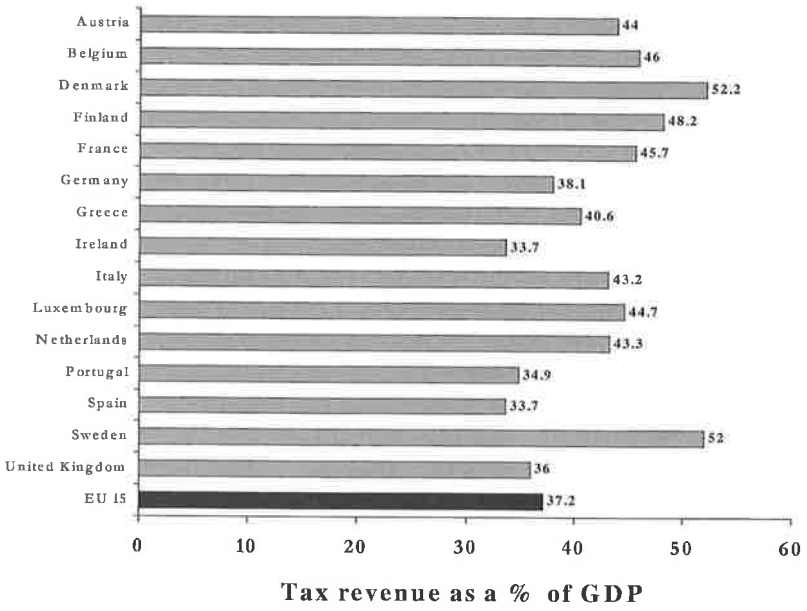
do not produce long-term spending plans for particular purposes, so it is not possible to ascertain whether spending plans for public transport are genuinely new or were already planned so that the extra revenue is in fact being used elsewhere. The only genuine restriction that LAs will face is that realised total spending on public transport does not fall short of the revenue from congestion charging.

Finally, congestion charging by LAs could raise a problem of accountability. Many people driving in congested areas of a particular LA might not be resident in that area, and so the immediate burden of congestion charging could fall largely on people who have no vote over the tax and spending decisions of the LA. Residents may vote for congestion charges which they perceive will be paid by residents in other areas but will benefit their local services.

# 9. European issues

The debate within the UK about European tax harmonisation has recently become somewhat heated. The overall level of total tax revenue as a share of GDP varies substantially between EU states, as Figure 9.1 shows. With the UK towards the lower end of the scale, and other northern European countries tending towards the top of the scale, the implication behind much public comment has been that somehow the process of tax harmonisation would, if it were to continue, lead to the UK tax level rising towards that of its EU neighbours.

**Figure 9.1. Tax revenue as a share of GDP, 1996**




Source: *OECD Revenue Statistics*, 1998.

But tax revenues are raised to fund public spending, and, unless the EU forces Member States to increase public spending, there is no reason to expect any individual tax harmonisation measure to lead to an increase in the overall level of taxation. Currently, if the UK agrees to an upward move in any tax as a result of harmonisation, it would be free to cut the burden of some other tax, and we would expect it to do so. It would, in principle, be possible for the EU to force increases in public spending, but this has little to do with tax harmonisation. If the taxes under discussion in the harmonisation debate — broadly those on corporate profits and savings — formed a large share of total tax revenues, adjustments in response to harmonisation might be hard to achieve. But this is not the case. In 1996, for example, revenue from corporate income taxes provided only 7.5% of the EU's total tax revenue on average, suggesting that if the UK were forced to increase its revenue from corporate taxes, compensating adjustments to other taxes should be possible. If we were to move, in the longer run, towards a more federal Europe, with greater central

powers, further tax harmonisation would be likely, and, in the long run, overall tax levels might move closer together. But it would principally be the process of centralisation driving spending decisions and therefore tax levels, rather than tax decisions determining spending.

In the remainder of this chapter, we first discuss the current proposals related to corporate profits and savings taxes and then consider the future of duty free, due to be abolished in June 1999.

# 9.1 Corporate tax: competition or harmonisation?

Recent debate over the potential for tax harmonisation within the EU has highlighted the fact that there are moves to reduce 'harmful tax competition' between member states. The EU is implementing a Code of Conduct for business taxation designed to reduce the number of preferential tax regimes that exist within the EU. The debate in the UK went beyond the specific details of current activity in the Commission, at least partly as a result of widely-reported comments made by the German Finance Minister, Oskar Lafontaine, who suggested that harmonisation of corporate taxes was high on the list of priorities for the German presidency of the EU in the first half of 1999.[1]

The question of the possible harmonisation of corporate taxes within the EU has been studied at length in the past, without the political will developing to carry out the kind of reforms previously suggested.[2] The proposals currently in progress are limited to considering special regimes that reduce the effective rate of tax for specific types of companies, activities, investments or investors, rather than addressing the broader question of what overall tax rate countries apply to corporate income or how they choose to define the tax base. In the background of this initiative lies a concern, expressed by both Oskar Lafontaine and European Commissioner Mario Monti, that taxes on capital have fallen to too low a level, taxes on labour have risen too high, that these trends can and should be reversed, and that the result would be an increase in total employment.[3] This section discusses the underlying difficulties with this view, before considering the specific developments within the EU.

## The incidence of corporate income tax

One of the perennial questions for taxation policy is 'who bears the burden of a tax?'. The impact of any tax is difficult to determine, because the fact that a particular individual or corporate entity makes *payment* of a tax does not

[1] See, for example, 'Pressure mounts for Brown over single tax plan', *Daily Telegraph*, 24 December 1998.

[2] See the Report of the Committee of Independent Experts on Company Taxation, European Commission, 1992, and the Report of the Fiscal and Financial Committee, European Commission, 1962.

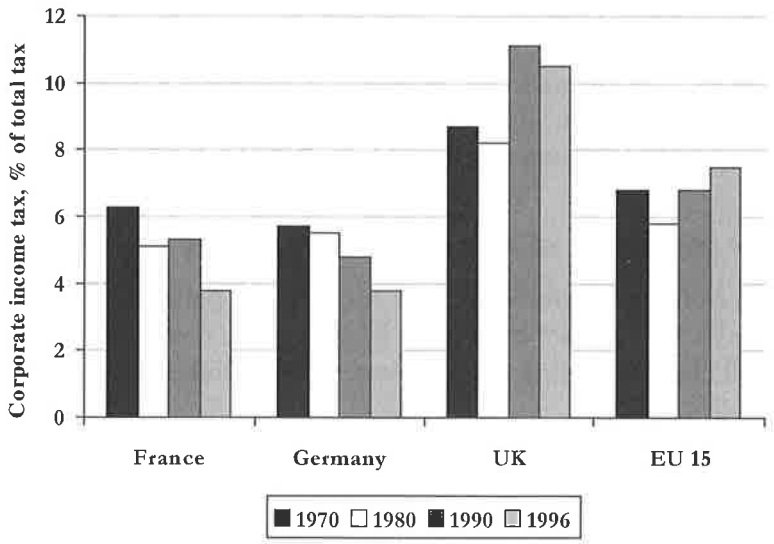
[3] See, for example, 'Lafontaine links tax to EU budget', *Financial Times*, 17 December 1998.

necessarily mean that the same individual or entity actually bears the *burden* of the tax. When a company pays tax on its income, the tax could be paid by the company itself, or, more accurately, by the owners of the company via a lower return on their investment, or the cost of the tax could be passed on to employees through lower wages, or to customers through higher prices, or some combination of all three effects. The important point to note is that simply increasing taxes on corporate income is no guarantee that the providers of the capital that generated the corporate income will bear the burden of the tax.

This is a crucial point. We do not know how much of the burden of corporation tax falls upon these different groups. However, if capital is perfectly mobile between countries, and the country concerned is not large enough to influence the required rate of return on capital (i.e. the minimum rate of return that investors need in order to be persuaded to make the investment), then owners of capital will not bear the burden of an increase in corporate income tax. It is the after-tax return on other, less mobile, factors that will fall to compensate for the increase in taxation, not that on capital.

In the case of the EU acting together to increase corporate taxes in combination or to set a minimum level of corporate tax, as long as there is the opportunity for capital to flow out of the EU into other areas (such as the US, for example), there can be no guarantee that increasing corporate taxes will increase the burden of tax borne by the owners of capital. As a result, the argument that higher corporate taxes will help to shift the burden of taxation away from labour and onto capital, and hence lead to greater employment of the relatively cheaper input of labour, is an extremely doubtful one. Unless it is possible to reverse the tide of increasing globalisation of capital markets, there can be no guarantees that higher corporate taxes translate into a lower post-tax return on capital.

**Figure 9.2. Corporate income tax revenue (percentage of total tax)**




Source: *Revenue Statistics, 1965–97*, OECD, 1998.

As we highlighted in last year's Green Budget, it is not clear whether, or by how much, the amount of tax raised from corporate taxes has declined in EU countries. The statutory tax rate on corporate income has indeed fallen in many countries, but this has usually been accompanied by an increase in the tax base.[4] In many countries, these rate-reducing, base-broadening reforms have led to an increase in the tax bills faced by companies. Figure 9.2 shows what share of total tax revenue is raised from corporate income tax in the UK, France, Germany, and the EU as a whole, for several years from 1970 to 1996. Although France and Germany have seen a decline in the share raised from corporate income tax, the UK has experienced an increase, and, on average, there has been a slight increase for the 15 countries of the EU.

Whilst countries remain able to collect revenue from corporate taxes, there are some concerns about whether individual countries operate their tax systems in such a way as to compete for revenue from potentially footloose investment. This has led to an initiative aimed at reducing the extent to which this occurs.

## The Code of Conduct

In December 1997, the Commission agreed upon a Code of Conduct for business taxation designed to curb harmful tax measures. The Code specifies that tax measures that 'provide for a significantly lower effective level of taxation, including zero taxation, than those levels which generally apply in the Member State in question' should be regarded as potentially harmful. It gives several criteria for assessing whether the measures are harmful, including, amongst others, whether the lower effective level of tax applies to non-residents only and whether the lower tax level is given even when there is no substantial economic presence in the Member State.

Under the Code, countries commit not to introduce new harmful tax measures (the standstill provision) and to examine their existing laws with a view to eliminating any harmful measures (the rollback provision). As part of that effort, a working group chaired by Dawn Primarolo (Paymaster General) has produced a list of over 80 special regimes within the EU (and their dependent territories), which are being reviewed against the criteria mentioned above to see if they should be classed as 'harmful'. If they are, Member States are committed to removing them by 1 January 2003 (a few measures might take longer, but it is assumed that most will only take two years to remove).

At the moment, it is still unclear how many of the 80 or so special regimes will survive the process of review, or exactly how the review will proceed. The EU already operates a set of rules in Articles 92–94 on state aids, which are intended to prevent Member States from using state resources to distort competition and trade in the EU, rules that can be applied to business tax measures just as much as to grants or other types of aid. As a result of the Code of Conduct, the Commission issued a clarification of how state aids rules applied to direct business taxes and committed itself to strict application of the

[4] See L. Chennells and R. Griffith, *Taxing Profits in a Changing World*, Institute for Fiscal Studies, London, 1997.

relevant aid rules, to contribute to the objective of tackling harmful tax competition.

The commitment of Member States to draw up the list of special regimes and assess their potential to distort competition in the EU should lead to greater co-operation between national revenue authorities and greater transparency in these areas of their respective tax systems.[5] This is a welcome development. Members have not agreed to examine the possibility of greater harmonisation of their overall corporate tax rates, which spans a wide range, from a 10% rate on manufacturing and some other activities in Ireland, to rates above 40% in France and Germany, with the UK at 30% from April 1999. Following a ruling that its 10% rate on manufacturing companies and some financial service companies constituted state aid,[6] the Irish government agreed to phase out the rate by the end of 2002 (with a slower transition for those already entitled to the lower rate). But Ireland also received clearance from the Commission to reduce its overall corporate tax rate in stages to 12.5% by 2003, beginning this year. This suggests that, if a proposal for a minimum rate were put forward, it is extremely unlikely that all 15 members of the Union could currently agree upon its level.

Perhaps more important than the rhetoric over corporate tax rates is the gradual harmonisation of corporate tax bases. Companies that operate in several European countries are increasingly keen for issues such as transfer pricing, loss reliefs and compliance costs to be addressed by the EU as a whole, rather than on a piecemeal basis. Gradual moves towards the development of a European Company Statute, which would allow companies to register within a common legal and tax framework at the EU level, should reduce the costs of operating under many different systems, but might also tend to highlight the tax differences that remain.

## The savings directive

In addition to the Code of Conduct, Member States have been considering a proposal to introduce a withholding tax on savings. Sponsored by Germany, it requires EU states either to withhold tax on interest paid to individuals from another EU state or to provide information about those payments to the tax authorities (which is being described as the 'co-existence model'). It is intended as a measure to prevent, for example, German citizens holding large accounts in Luxemburg in order to avoid paying German income tax on the interest. It is a good example of the difficulties involved in reaching agreement over how to tax mobile capital, since its opponents argue that the result would be an increase in revenue, not for EU states, but for neighbours and trading partners, such as Switzerland and the US. During the six-month German presidency of the EU, which began in January 1999, there will be strong

[5] In a separate, but complementary, move, the OECD has established a Forum to address tax havens and preferential tax regimes in financial and other services (see *Curbing Harmful Tax Competition*, OECD, Paris, 1998).

[6] See Commission Decision of 22 July 1998 in the 'Irish Corporation Tax' case (SG(98)d/7209).

pressure to reach agreement over this directive, as with a directive relating to interest and royalty payments between firms.

## 9.2 Duty-free

June 1999 will mark the end of duty-free shopping within the EU unless there is a unanimous decision by all Member States to delay abolition, something for which the UK government is currently lobbying. At present, duty-free shopping is available on all air and ferry — but not road and rail[7] — journeys within the EU, and the change is likely to have the greatest impact on peripheral regions in the EU, particularly those off mainland Europe. In absolute terms, sales of duty-free goods are greatest in the UK (over 1 billion ECU in 1996), although, given their smaller population sizes, the relative scale of duty-free shopping is larger in Finland and Denmark. For the UK, 52% of duty-free goods are sold through airports, 12% through airlines and 36% through ferries. Breaking down duty-free sales by type of goods, alcohol accounts for 26% of UK sales, tobacco 24% and fragrances & cosmetics 22%.[8]

The Commission's argument for abolishing duty-free is that it makes no sense in the context of a genuine single market. You cannot buy duty-free goods if you fly from London to Edinburgh; why should you be able to buy them if you fly from London to Paris? The pro-duty-free lobby argues that the EU does not operate as a genuine single market, at least as far as indirect taxes are concerned. The decision to abolish duty-free was taken in 1991, when the intention was that indirect tax rates across the EU would be harmonised. In practice, progress towards harmonisation has been very slow and there are still wide disparities between the duty — and VAT — rates of Member States. In this context, it is argued, duty-free is not an anomaly.

The first point to make is that complete harmonisation of indirect tax rates is not a necessary condition for a single market, as the US shows. The second point is that there are several other sound economic arguments for abolishing duty-free, irrespective of the degree of harmonisation. Effectively, duty-free acts as a subsidy to air and ferry operators. This is clearest where operators can artificially keep fares low by charging more than the net-of-duty price for duty-free goods. But even if operators charged the cost price, the fact that air and ferry passengers can buy duty-free goods more cheaply than from domestic retailers reduces the effective cost of travelling by air and ferry for those who buy duty-free.

There may be good reasons for subsidising air and ferry services, but duty-free is an inefficient way to do it. The case for receiving this subsidy should be made explicitly by air and ferry operators in terms of the social costs and benefits of providing the services. This would be more efficient and more transparent than a blanket subsidy for all air and ferry services, irrespective of the level of need or the social justification. A blanket subsidy allows

[7] Except the Channel Tunnel.

[8] Source: European Travel Research Foundation.

inefficient air and ferry operators to keep on running services even where there is no overriding social justification. Some consumers will lose from the abolition of duty-free. But the consumers who currently benefit are those who travel by air and ferry, particularly those such as businessmen who travel frequently. The subsidy implicit in duty-free is regressive in that the main benefits fall on richer people while all taxpayers are required to foot the bill.

Duty-free distorts the price of goods sold by air and ferry operators compared with the price of goods sold by domestic retailers. Keeping duty-free sales of tobacco represents an artificial inducement to buy tobacco, which contradicts the UK government's current policy of reducing smoking through duty — and price — increases. Duty-free also distorts the price of different forms of travel since it is available only on air and ferry journeys, and not road and rail journeys (except the Channel Tunnel). There may be separate environmental reasons to encourage consumers and businesses to travel in these ways, but there are more direct ways of achieving the same goal (such as raising fuel taxes).

The ultimate effect on employment of abolishing duty-free is hard to predict. It depends on what action air and ferry operators take to develop alternative revenue streams. It also depends on where consumers spend the money they would have spent on duty-free goods. Of course, with lower rates of alcohol duty in France than in the UK, one possibility is that British consumers will switch from buying duty-free to buying alcohol in France. The abolition of duty-free could have distributional consequences across EU Member States. But this is not a reason not to abolish it. Rather, if the distributional consequences are felt to be undesirable, it is a case for the European Commission ensuring that the losers are compensated.

In theory, the economic case for abolishing duty-free is convincing. In practice, conversion of duty-free concessions to duty- and tax-paid retailing may encounter some difficulties, at least for planes and ferries that move between different Member States. Directive 92/12/EC requires excise duties to be charged at the rate of the Member State where the goods are acquired.[9] This is difficult enough in the case of cross-Channel ferries, which would have to charge UK duties for one half of the journey until the ship left UK waters, and then change to French duties for the other half. Other journeys, which pass through the territories of several Member States, will require multiple changes. This complication is a direct consequence of the lack of progress towards harmonisation in indirect tax rates. If all Member States charged the same tax rates, the issue would not arise. But the problem should not be overstated. The Commission is likely to produce a workable solution for duties, as it already has done for VAT. Even if it does not, it is extremely unlikely that we will see the 'tax chaos' predicted by the pro-duty-free lobby. It is more likely that planes and ferries will simply choose to sell excisable goods at the lowest rate they possibly can — and keep the shops closed for the rest of the journey.

[9] The case of VAT is slightly less complicated since the 6th VAT Directive Article 8(1)c provides that the rate of VAT to be applied is that of the country of departure for the whole journey.

# 10. Individual Learning Accounts

Since its election in 1997, the government has embarked on a series of reforms to the structure of post-school education and training in the UK. One aspect of these reforms is a commitment to 'lifelong learning', described in Labour's 1997 manifesto as the ability to 'learn throughout life, to retain employment through new and improved skills'.[1] One strand of this commitment involves a proposal for 'Individual Learning Accounts' (ILAs). The government outlined its initial proposals for launching ILAs in a Green Paper published last year,[2] and a White Paper containing the details of the policy is expected soon. The first accounts in the scheme are scheduled to be set up by April 1999. In this chapter, we analyse the rationale behind ILAs and what difference they might make to training and adult education in Britain. First, we discuss the main features of ILAs as outlined in the government's proposals. Then we evaluate the economic case for ILAs. We ask from an economic perspective whether there are good reasons for thinking there is a shortfall in training and/or adult education in Britain and, if so, whether ILAs are the best way of addressing this shortfall.

## 10.1 Main features of ILAs

Individual Learning Accounts are planned to operate as actual accounts, akin to a bank or building society account, and the government hopes that financial institutions will co-operate in offering ILAs, perhaps by repackaging some of their existing products. Once the institutional framework is in place, it is expected that people will have a choice of which bank, building society or other body to open an account with. The government has not yet indicated whether ILAs will be a tax-favoured form of saving in the way that some other forms of accounts (such as the forthcoming Individual Savings Accounts) are. However, the government will offer a direct financial incentive for the first wave of up to 1 million accounts — it is promising to pay up to £150 into each account on the condition that the account-holder pays in at least £25 of his or her own money. It is hoped that employers will also make contributions to the accounts, either in the form of actual cash contributions or in the form of promises to pay for specific courses. The government's financial contribution will be channelled through Training and Enterprise Councils (TECs) and Chambers of Commerce.[3] Individuals considering taking out an ILA will be

[1] Labour Party manifesto, 1997 General Election.

[2] *The Learning Age: Renaissance for a New Britain,* February 1998.

[3] TECs were established in the early 1990s by the previous government, with the aim of co-ordinating training policy at a local level by bringing together government, employers and employer organisations, providers of training in the educational sector, trade unions and other interest groups concerned with training.

able to obtain advice on the options available from TECs, local careers and guidance services, and the newly set-up University for Industry (UfI).[4]

The funds in the accounts will be used to buy training courses of various types or to pay for related services such as childcare if these are necessary for someone to be able to go on a training course. It is not yet clear whether or not the training courses will have to lead to an accredited qualification such as an NVQ (National Vocational Qualification). It is expected that, in certain circumstances, individuals will be able to use the ILA to borrow money for training courses under some type of loan arrangement (perhaps analogous to the way Career Development Loans work at the moment), but the exact details of this are yet to emerge.

The Green Paper suggests that the resources devoted to the first 1 million ILAs should be directed in two ways:

- a *universal* approach — the offer to 'take up the challenge' of opening an account will be open to anybody in work but not in full-time education;
- *targeting* some resources on people with particular learning needs, such as people who need particular skills, employees of small firms and people who are returning to work (for example, mothers who took time out of the labour market to have children).

# 10.2 Training: the case for intervention

Why do policymakers feel that it is necessary for the government to intervene in the market for training? What is the problem that they are trying to address? There are several possible arguments for government intervention, but the common factor is that training will be in some sense *too low* in the absence of government action to increase the amount of training undertaken. There are five main arguments, which can be summarised as follows:

- externalities arising from training;
- borrowing constraints;
- the 'poaching' problem arising from transferable training;
- extra help for the low-skilled and low-paid;
- 'lifelong learning' and work-force flexibility.

## Externalities arising from training

One condition for markets to be able to allocate resources efficiently is that the parties engaged in an economic transaction (for example, an individual buying something from a firm) face the full costs or benefits of that transaction. This condition is violated when a commodity generates benefits or imposes costs that fall on people other than the buyer and seller. These additional benefits

[4] The UfI is a government initiative designed to advise individuals and employers on the best way to obtain the training and education they need and to promote 'lifelong learning' on a national basis through a network of learning centres. It is due to be launched in the year 2000.

and costs, or 'externalities', can provide a case for government intervention in the economy on efficiency grounds. In the case of training, the externality will arise if training produces benefits to society *over and above* the benefits to the individual or firm who paid for the training. At least two possible forms of social benefits have been proposed:

- *Technological externalities and skills:* If training helps firms to produce technological innovations (new products, inventions, patents etc.), then other firms can exploit the innovations at no extra cost. These 'spillovers' are an extra social benefit.
- *Benefits from teamworking:* In many firms, employees work together in teams. If a team member's own individual productivity is improved through training, this may also improve the productivity of the other team members, extending the benefits of training beyond the person receiving the training.

If these externalities do exist, the efficiency of the economy could be improved by increasing the amount of training undertaken, providing a rationale for government intervention to increase training.

## Borrowing constraints

Many adults may need to borrow to finance the education and training that they wish to undertake to improve their wages and employment prospects. This will be particularly true for young men and women who have recently left school and have not yet accumulated savings (for example, university students). If banks and other financial institutions are willing to lend to them, then there is little cause for intervention on efficiency grounds. In some circumstances, however, individuals may not be able to borrow enough to pay for the training they want. These 'borrowing constraints' can arise because future earnings are an uncertain asset to borrow against — they have not been earned yet. Financial institutions may be unwilling to lend money to individuals who wish to undertake training but have little or no assets other than their potential future earnings. If the expected earnings are never realised — for example, because the trainee chooses not to join the work-force — and the trainee has insufficient other assets to pay the loan back, the bank will have lost its money. Again, the implication here is that too little training may take place.

## Transferable training and the 'poaching' problem

In the economics of training, a distinction is made between 'firm-specific' training — that is, training that enhances productivity and skills in one specific firm[5] — and 'transferable' training, which enhances skills relevant to many firms. If the skills from training are transferable and the firm pays the costs of training, there is a danger that the trained employee can be 'poached' by another firm. Hence firms are unlikely to pay for training that involves transferable skills, because they have no means of securing the benefits of that

[5] An example of specific training might be learning how to operate a piece of machinery or computer software that is used by only one firm.

training. If workers can pay for transferable training themselves, this does not matter. But if workers are unable or unwilling to finance training, this 'poaching' problem may be serious and will tend to lead to the underprovision of transferable training.

## Extra help for the low-skilled and low-paid

Even if none of the above efficiency-based arguments is valid, there might be *equity-based* arguments for providing extra resources for some groups. Traditionally, economists think that the amount that employees in the labour market earn bears a relation to how productive they are — which will be affected by the amount of skill or 'human capital' that they possess. If training improves the skills of the trainee, it should also increase their earnings potential, and there is a substantial body of empirical evidence that this is in fact the case.[6] If the earnings-enhancing potential of training is well known, low-skilled and low-paid people might invest in training on their own account. None the less, if society feels that the wages of the lowest-paid in the economy are still unacceptably low, or that there are many people who are currently unemployed but would be able to move into work at a reasonable wage with enough training, there may be a case for subsidising training and education at the lower end of the earnings distribution to reduce inequality.

## 'Lifelong learning' and work-force flexibility

One of the slogans that the government has used in its education and training reforms is the encouragement of 'lifelong learning', and this phrase has been taken up enthusiastically by many of the organisations and interest groups concerned with promoting training.[7] The proponents of lifelong learning argue that, in the past, the UK has not had a work-force that viewed training and education as an ongoing process throughout their working lives, and that this has been to the detriment of British industry compared with our international competitors. This argument requires closer examination. It is certainly true that a comparison of aggregate training and higher education statistics shows that the amount of post-school academic and vocational qualifications being undertaken in Britain is low in some ways compared with other major industrialised countries,[8] although the British situation has improved since the

[6] For example, an IFS study by R. Blundell, L. Dearden and C. Meghir (*The Determinants and Effects of Work-Related Training in Britain*, Institute for Fiscal Studies, 1996) found that, for a sample of men and women aged 33 in 1991, those who undertook some employer-provided training between 1981 and 1991 secured around a 5% increase in earnings over the period as a result.

[7] See, for example, the publication *Learning for the Twenty-First Century* (1997) by the National Advisory Group for Continuing Education and Lifelong Learning, set up by the Secretary of State for Education and Employment in June 1997 to advise on the policy reforms.

[8] See, for example, the introduction to L. Lynch (ed.), *Training and the Private Sector: International Comparisons*, University of Chicago Press, 1994.

mid-1980s.[9] Perhaps British firms and employees do not provide or receive enough training to maximise the private returns to training, let alone the social ones. It is puzzling that this should be the case if there is no economic constraint on individuals and firms being able to train more if they wish to. But it is possible that cultural factors influence the amount of training that people in Britain think is the 'right' amount, and, if this is the case, the government might be justified in using additional measures to promote training and education.

# 10.3 Are ILAs the best way?

Given that there are several possible justifications for government support for training, this section addresses whether ILAs are the best way of encouraging training in the UK, or whether other policies might be more appropriate.

## Who should the policy be aimed at?

The government needs to consider where, if at all, any extra financial support for training undertaken in the UK should be targeted. One problem is that different arguments for government intervention imply different priorities. For example, if the government wants to subsidise training and education for low-skilled groups in order to improve the wage prospects of the lowest-paid, policy should encourage training for men and women with little or no formal qualifications. On the other hand, the argument that training fosters technological innovations suggests that training should be promoted in specific sectors and jobs — research and development, for example — and might imply focusing resources on a highly-skilled 'élite'. Meanwhile, the argument that training delivers benefits to teamworkers might justify a more general subsidy across the board.

There is also the question of what age-groups should be targeted. The proportion of school-leavers attaining qualifications at various levels and the numbers undertaking higher education have gradually increased over time, so that younger cohorts of workers are generally more highly skilled than older cohorts;[10] this might justify targeting policies to upgrade skills on the older sections of the work-force. On the other hand, younger people have more of their working lives ahead of them, which implies that there could be a greater return to investment in younger workers than older workers. Clearly the arguments are complex, but before considering where any extra money for training should go, it is useful to know who is undertaking training at present.

[9] For example, figures from the UK Labour Force Survey show that the fraction of employees who received any training in the four weeks prior to being interviewed showed a rise from around 10% in 1984 to around 15% in 1990, and has since remained at that higher level.

[10] Assuming that the necessary skills required to complete a qualification have not declined over time.

## The distribution of training at present

Table 10.1 shows statistics from the Labour Force Survey (LFS) for the UK in Autumn 1997 on how many people in employment were studying for some form of vocational qualification at the time of being interviewed. The qualifications have been divided into 'higher', 'medium' and 'lower' vocational qualifications, ranging from degree-level qualifications at the top end to GCSE or equivalent qualifications at the bottom end. Each column shows the percentage of male and female employees who are studying for one of these qualifications. The individuals are classified according to their highest level of previous educational attainment.

**Table 10.1. Studies for vocational qualification by education group, Autumn 1997**

| Previous educational attainment | Qualification being studied for (as a percentage of education group): Higher vocational | Medium vocational | Lower vocational | None |
|---|---|---|---|---|
| Degree or equivalent | 7.6 | 0.9 | 5.7 | 85.8 |
| A level or equivalent | 3.1 | 1.6 | 4.8 | 90.4 |
| GCSE grade A–C or equivalent | 1.4 | 3.1 | 6.4 | 89.0 |
| GCSE grade D and below or equivalent | 1.2 | 0.6 | 3.8 | 94.4 |
| None | 0.1 | 0.4 | 1.6 | 97.9 |

*Qualifications being studied for*
'Higher vocational' includes degrees and NVQ levels 4 and 5 or equivalent.
'Medium vocational' comprises A level and NVQ level 3 or equivalent.
'Lower vocational' comprises GCSE and NVQ levels 1 and 2 or equivalent.
*Previous educational attainment*
'GCSE grade A–C or equivalent' includes O level grade A–C and CSE grade 1.
'GCSE grade D and below or equivalent' includes CSE below grade 1, NVQ level 1 or equivalent vocational qualifications.
Source: Labour Force Survey.

Table 10.1 shows that the group with degree-level qualifications were most likely to be studying for a vocational qualification at the time of interview — just over 14% of this group were studying at the time. Around 10% of A level and GCSE holders were also studying for qualifications. By contrast, only around 2% of men and women with no previous qualifications were studying for any form of vocational qualification. It appears that men and women who are already qualified are more likely to undertake vocational qualifications than the unqualified. Further evidence is given in Table 10.2, which shows the incidence of training in the last three months from the LFS by educational qualification group. The LFS asks employees 'over the last 13 weeks, have you taken part in any education or training connected with your job, or a job that you might be able to do in the future?'. Table 10.2 shows the results of this question from Autumn 1997.

**Table 10.2. Training in the last three months by education group, Autumn 1997**

| Educational attainment | Percentage of education group: Did training | No training |
|---|---|---|
| Degree or equivalent | 12.4 | 87.6 |
| A level or equivalent | 7.1 | 92.9 |
| GCSE grade A–C or equivalent | 8.8 | 91.2 |
| GCSE grade D and below or equivalent | 6.0 | 94.0 |
| None | 1.7 | 98.3 |

Source: Labour Force Survey.

As with Table 10.1, it is clear that employees with no previous qualifications are significantly less likely, on average, to be doing training than qualified people. These results are not the whole story, since they do not include individuals who have taken time out from the labour market to study full-time for academic or vocational qualifications, and they do not include people who are unemployed or inactive in the labour market. But they do suggest that, currently, the lowest-skilled groups with little or no formal qualifications are most in need of extra support to increase the amount of training undertaken.

## Is the format right?

Even if it is accepted that the half-way house between a universal and a targeted approach that the government proposes for ILAs is the right one, is the scheme structured in the right way? There are several issues to consider.

### *Choice of training courses*

The Green Paper is very clear that the individual account-holders should have a free choice over which training or educational courses they choose to spend the money on. The rationale for this is that individuals (rather than the state or employers) are best placed to decide what and how they want to learn. This is a defensible argument, and offering a free choice of training courses will probably help encourage individuals to sign up as account-holders. On the other hand, many people undertake adult education for recreational or social reasons as well as to improve performance at work, so it is possible that giving a free choice to the account-holders might not be the best way to maximise the benefits of the ILA scheme in improving productivity. Specifying that courses paid for with ILA funds should lead to an accredited qualification might help to ensure that the training courses undertaken are of acceptable quality.

### *Are separate accounts needed?*

The fact that ILAs will be a separate account with a bank or building society seems unnecessarily complicated. Costs will be incurred in setting up the accounts which would probably be avoided if the government subsidy were channelled into existing savings accounts and schemes. The government is considering the options for integrating ILAs with other savings schemes — for example, Individual Savings Accounts (ISAs) which are to be launched in April 1999. But the present proposals do raise the possibility that there will be myriad ILAs with nominal amounts invested in them to take advantage of the £150 gift. If one aim of ILAs is for account-holders to be able to invest for

training at a later date, they are likely to earn a higher return if the funds are pooled with money being saved for other purposes. This would exploit economies of scale, although it might have the disadvantage of making it harder to identify whether funds being paid into the account were actually being spent on training at a later date.

***Employer incentives to contribute***

The government is certainly keen for employers to make contributions to ILAs once they are in place, either in the form of cash contributions or in the form of offers to pay for specific courses. However, ILAs seem to offer no additional financial incentive to *employers* to invest in general and transferable training beyond that which already exists. Similarly, if the 'poaching' problem described earlier is the root cause of inadequate training, then it is hard to see how ILAs help this, since the individual holds the account and loses nothing by switching employers.

***Is the money being spread too thinly?***

The government is planning to spend £150 million to provide incentives for individuals to open ILAs (in practice, this is being reallocated from the budgets of TECs and Chambers of Commerce). For an individual account, the £150 is a 'carrot' to encourage people to take the account seriously and also to invest funds of their own (indeed, individuals are required to invest at least £25). But if we suppose that an employee opens an account with the minimum £175 balance, how much training will this buy? The Green Paper estimates that £175 would buy around two days' attendance at a Word for Windows training course. However, for longer courses such as NVQs at level 3 or above, the cost of the fees can run into thousands of pounds. It is clear that further investment from account-holders, employers or the government on a large scale will be needed in most cases to make widespread 'lifelong learning' a reality. If £150 per account-holder from the government does not prove to be the catalyst to further ILA investments that the government hopes it will be, then the money would perhaps have been better spent on a smaller number of people but with more funding per person.

***Existing government training and education policy***

It is important to remember that the government already intervenes in the training and adult education market in several ways. Some of the most important policies currently in existence are:

- *Career Development Loans (CDLs):* These are loans that individuals seeking to undertake particular training courses, higher education courses or professional qualifications can apply for from TECs and similar bodies. If a loan is granted, the individual pays back the cost of training over a period after finishing a course, in a similar fashion to a student loan. In the tax year 1995–96, just under £50 million of CDLs were taken out.
- *Small Firms Training Loans:* These are similar to CDLs but are targeted at employers in small firms who wish to offer extra training to their work-force.

- *Tax relief:* Individuals who have left school can claim relief on income tax for payments made for course and examination fees whilst studying for an NVQ at any level. People aged over 30 can also claim relief on any training course lasting over four weeks that confers job-related skills, whether it leads to a qualification or not. In 1997–98, it is estimated that these tax reliefs cost the government around £45 million.[11]
- *The New Deal:* The various New Deal schemes that have been set up for unemployed 18- to 24-year-olds and lone parents, with planned extensions to other groups of the population, offer the prospect of full-time education and training courses to individuals who have been out of work for six months or more. In addition, the subsidised jobs that are being offered as another option to New Dealers must include at least one day a week of training towards an accredited qualification.

The government also provides a unified framework of recognised vocational qualifications in the shape of NVQs and GNVQs, and has set up organisations designed to co-ordinate training policy at both a local level (TECs) and a sectoral level (National Training Organisations). In the light of this, it is important to ask what ILAs will add to government policy that is not being done already. Some of the schemes already available to individuals (such as CDLs) seem to fulfil some of the stipulated aims of ILAs.[12]

***The 'dead-weight' problem***

An important problem with any subsidy or tax relief to encourage training is that it is difficult to ensure that it finances training that would not otherwise have been undertaken in the absence of the subsidy. If some of the training that is bought with the subsidy is training that would have happened anyway, then part of the subsidy is simply a dead-weight loss — it is a (costly) redistribution to account-holders from the public purse. The extent of the dead-weight loss is difficult to assess; none the less, there is a possibility that it could be substantial. In so far as some of the funds will be targeted on those individuals who have limited resources and so would have been unlikely to undertake any training without the subsidy, the dead-weight loss might not be so serious. However, this problem may be a real drawback to the 'universal' aspect of the government's plans.

# 10.4 Conclusions

There are many possible reasons why government might want to intervene in the market for training and education of the UK work-force. However, if we accept the need for intervention, it is important to be sure that Individual Learning Accounts are a better way to improve the training performance of British industry than any alternative strategies for intervention. The ILA proposals will provide extra money for employee training and education for up to a million account-holders and, if the scheme is a success, will put a new and

[11] Source: *Inland Revenue Statistics 1998.*

[12] Indeed, in the Green Paper, the government does mention that it is considering integrating CDLs into the framework of ILAs if ILAs are a success.

bold institutional framework in place which may be an ideal springboard for increased investment in training by employees, employers and the government alike. However, there are several grounds for concern with the proposals as they stand. In particular, it is questionable whether the administrative costs of setting up completely new accounts for the sole purpose of training are justified. It is unclear how much of the £150 million subsidy to account-holders will result in new training which would not have happened in the absence of the scheme, rather than just being a dead-weight transfer to people who would have done the training anyway. The scheme does not sufficiently address the 'poaching' problem which may be responsible for underinvestment by employers. Many of the ideas contained in the scheme are already part of government training policy under different names. And the £150 million government investment may be spread too thinly to promote a blossoming of 'lifelong learning' among the section of the population with little or no qualifications to start with, who are least likely to be doing training at the moment. It is to be hoped that the forthcoming White Paper on lifelong learning will address some of these problems.

# Appendix A: Forecasting the public finances

This appendix describes the techniques we used for our public finance forecasts. We first compare the forecasts made for 1997–98 by both the Treasury and ourselves with the eventual outcome. We then outline the methodology behind our forecasts for the current financial year. We also consider the path of the public finances over the medium term under both our central economic forecast and a more pessimistic 'recession' scenario.

## A.1 An assessment of our previous forecasts

In last year's Green Budget, we forecast that public sector borrowing in 1997–98 would be £9.9 billion. The Pre-Budget Report (PBR), published two months earlier, forecast slightly more optimistic borrowing of £9.5 billion. In fact, government borrowing was £1.1 billion, substantially lower then either of these forecasts, as shown in Table A.1. The main reason for this was higher levels of receipts than either the Green Budget or the PBR forecast, although spending was also slightly lower than either of the projections.

**Table A.1. Comparison of last year's IFS Green Budget and Treasury public borrowing forecast with the actual out-turn for 1997–98 (£bn)**

| | IFS Green Budget forecast, January 1998 | Pre-Budget Report forecast, November 1997 | Out-turn figure, Pre-Budget Report, November 1998 |
|---|---|---|---|
| General government receipts | 308.0 | 308.4 | 315.8[b] |
| General government expenditure | 318.7 | 318.7 | 317.5 |
| PSBR[a] | 9.9 | 9.5 | 1.1 |

[a]The public sector borrowing requirement (PSBR) is not equal to government receipts minus government expenditure due to the borrowing of public corporations. The PSBR is now known as the public sector net cash requirement (PSNCR).
[b]IFS estimate of general government receipts which, due to the definitional changes, is no longer published.

A closer analysis of why our forecast for government receipts was so low reveals that our forecast of income tax receipts of £74.4 billion was too low by £2.4 billion. This explains nearly a third of our total error on the receipts side. We also slightly underestimated receipts on a range of other taxes, as broken down in Table A.2. These types of errors show how small percentage errors in forecasting tax receipts can easily lead to apparently large errors in the forecast for borrowing.

**Table A.2. IFS Green Budget and Treasury main errors in forecasting tax receipts, 1997–98 (£bn)**

| Tax receipt | IFS Green Budget forecast, January 1998 | Pre-Budget Report forecast, November 1997 |
|---|---|---|
| Income tax | –2.4 | –1.3 |
| Corporation tax | 0.6 | –0.1 |
| Value added tax | –0.8 | –0.5 |
| Fuel duties | –0.7 | –0.7 |
| Customs duties and levies | –0.4 | –0.4 |
| Business rates | –0.6 | –0.6 |
| Social security contributions | –0.6 | –1.1 |
| Council tax | –0.5 | –0.5 |
| Other | –2.4 | –2.2 |
| *Total* | *–7.8* | *–7.4* |

Source: Out-turn figure for 1997–98 from HM Treasury, *Pre-Budget Report*, Cm 4076, November 1998.

# A.2 Techniques used to forecast borrowing

For the current financial year, we use three different sources of information before coming to a judgement for each element of government revenues and spending. These are the latest Treasury forecast from the November 1998 PBR, the revenues implied by our current receipts method, and the IFS modelled approach.[1]

- **Current receipts approach.** This uses the information on the receipts received in the current financial year compared with that received up to the same point in the last financial year. An estimate for the current year's receipts is provided using the following formula:

$$\textit{1998–99 forecast} = \frac{\textit{Receipts received so far this year}}{\textit{Receipts received to the same point last year}} \times \textit{1997–98 receipts}$$

  While this is useful when forecasting revenues in the current financial year, it cannot provide projections for borrowing in future years. Caution should also be used when revenues are cyclical or changes have been made that may affect the timing of payments, for example with the introduction of self-assessment.

- **Modelled receipts approach.** This estimates growth in each of the taxes using forecasts for the growth in the relevant tax base combined with an estimate of the elasticity between growth in the tax base and growth in tax revenues. Information on pre-announced tax changes from previous Budgets is added in order to reach a forecast. Hence modelled receipts can be summarised by the following formula:

$$\textit{1998–99 forecast} = (\textit{1997–98 receipts} \times \textit{Taxbase change} \times \textit{Elasticity}) + \textit{Tax changes}$$

[1] For a more detailed explanation of both these techniques, see C. Giles and J. Hall, 'Forecasting the PSBR: the IFS perspective', *Fiscal Studies*, vol. 19, pp. 83–100, 1998.

In the past, we have estimated the responsiveness of income tax revenue to changes in both employment and wages. However, these elasticities were estimated over a period that may have had different relationships between earnings, employment and income tax revenues from the present day, especially given that the rate structure of income tax has changed considerably. Another technique used previously has been to estimate the relationship between income tax revenue and incomes directly from TAXBEN, the IFS tax and benefit model. This gives an elasticity of 1.5, which means that a 1% increase in incomes increases income tax revenues by 1.5%. An elasticity greater than one demonstrates the progressivity of the income tax system. Table A.3 shows estimates of income tax receipts using both the elasticities on the components of income tax used in the previous Green Budget and the simple elasticity of 1.5 in order to see how forecasts would differ. In fact, the differences between the two techniques were found to be relatively small. The elasticity of 1.5 was used for the income tax forecasts since it gave slightly less optimistic results, which seemed more appropriate, given the dangers of overestimating revenues as economic growth slows, and because of our concern that our earlier model was estimated over a period when the system was significantly different, especially given the introduction of self-assessment.

**Table A.3. Income tax forecasts over the medium term (£bn)**

| | 1998-99 | 1999-00 | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
|---|---|---|---|---|---|---|
| Normal IFS modelled approach | 86.4 | 92.5 | 95.7 | 101.3 | 107.7 | 114.5 |
| Simple TAXBEN elasticity | 85.9 | 91.6 | 95.1 | 100.7 | 106.9 | 113.5 |
| Difference | 0.6 | 0.8 | 0.6 | 0.6 | 0.7 | 1.0 |

# A.3 Forecasts for 1998–99

Our forecast for the current financial year is presented in Table A.4 alongside the three sources used to reach that judgement. There is very little difference between our judgemental forecast and that of the Treasury, which is not surprising, given that very little additional information has become available since the Treasury's last forecast was made.

### *Inland Revenue taxes*

Our forecast is for receipts from Inland Revenue taxes of around £½ billion higher than the Treasury's. This comes almost entirely from a more optimistic forecast of **income tax** receipts. Our forecast of £85.5 billion represents a downward revision to our modelled receipts. This is because there is uncertainty about the impact of the introduction of self-assessment. If some of the increase in revenues from self-assessment last year is actually tax being paid from previous years, this revenue will not be received again. Hence the model would overestimate receipts, making a downward revision necessary. Our current receipts forecast of £91.5 billion for income tax and capital gains

**Table A.4. Forecasts for the public finances, 1998–99 (£bn)**

| | Pre-Budget Report, Nov. 1998 | Current receipts | IFS/GS modelled receipts | IFS/GS judgement |
|---|---|---|---|---|
| *Inland Revenue* | | | | |
| Income tax[a] | 85.0 | 91.5[f] | 85.9 | 85.5 |
| Corporation tax[b] | 31.4 | 31.5 | 31.9 | 31.5 |
| Windfall tax | 2.6 | n/a | 2.6 | 2.6 |
| Petroleum revenue tax | 0.6 | 0.6 | n/a | 0.6 |
| Capital gains tax | 2.3 | see [f] | 1.6 | 2.3 |
| Inheritance tax | 1.8 | 1.8 | 1.6 | 1.8 |
| Stamp duties | 4.6 | 4.9 | 4.2 | 4.6 |
| **Total Inland Revenue** | **128.4** | **132.9** | **128.3** | **128.9** |
| *Customs and Excise* | | | | |
| Value added tax (VAT) | 52.6 | 52.0 | 52.1 | 52.5 |
| Fuel duties | 21.8 | 21.6 | 21.9 | 21.8 |
| Tobacco duties | 8.3 | 5.8 | 9.1 | 8.3 |
| Spirit duties | 1.6 | 1.7 | 1.6 | 1.6 |
| Wine duties | 1.5 | 1.5 | 1.4 | 1.5 |
| Beer and cider duties | 2.9 | 2.8 | 3.0 | 2.9 |
| Betting and gaming duties | 1.6 | 1.5 | 1.7 | 1.6 |
| Air passenger duty | 0.8 | 1.1 | 0.8 | 0.8 |
| Insurance premium tax | 1.3 | 1.4 | 1.3 | 1.3 |
| Landfill tax | 0.4 | 0.4 | 0.4 | 0.4 |
| Customs duties and levies | 2.0 | 1.4 | 2.0 | 2.0 |
| **Total Customs and Excise** | **94.9** | **91.3** | **95.2** | **94.7** |
| *Other taxes* | | | | |
| Vehicle excise duties | 4.7 | 4.7 | 4.7 | 4.7 |
| Oil royalties | 0.3 | 0.0 | 0.5 | 0.3 |
| Business rates | 15.2 | n/a | 15.7 | 15.2 |
| Social security contributions | 54.8 | 55.1[g] | 53.2 | 55.1 |
| Council tax | 11.8 | n/a | 11.5 | 11.8 |
| Other taxes and royalties | 7.7 | n/a | 7.2 | 7.7 |
| **Total taxes & social security contribns** | **317.7** | **318.7** | **316.3** | **318.4** |
| Interest and dividends | 6.0 | n/a | n/a | 6.0 |
| Gross trading surplus and rent | 13.6 | n/a | n/a | 13.6 |
| Other receipts and adjustments | –1.5 | n/a | n/a | -1.5 |
| **Current receipts** | **335.9** | **336.8** | **334.4** | **336.5** |
| **Current spending**[c] | **328.6** | **328.5** | **328.5** | **328.5** |
| Windfall tax & assoc. current sp. | –1.8 | n/a | n/a | -1.8 |
| **Current balance**[d] | **5.5** | **6.6** | **4.1** | **6.2** |
| Windfall tax & assoc. capital sp. | –0.4 | n/a | n/a | –0.4 |
| Net investment | 4.3 | 4.3 | 4.3 | 4.3 |
| **Public sector net borrowing**[d] | **–1.5** | **–2.7** | **–0.2** | **–2.3** |
| *Financial transactions* | | | | |
| Windfall tax adjustments | –1.5 | n/a | n/a | –1.5 |
| Loans and sales of financial assets | 0.4 | n/a | n/a | 0.4 |
| Accruals adjustments | –1.7 | n/a | n/a | –1.7 |
| **Public sector net cash requirement**[e] | **–4.3** | **–5.5** | **–3.0** | **–5.1** |

Note: Items marked n/a are not appropriate for forecasting using the current receipts or IFS modelled receipts method. Hence the HM Treasury Pre-Budget Report estimate is used instead.

[a]Net of tax credits.

[b]Includes net advance corporation tax.

[c]In line with the National Accounts, depreciation is counted as current spending.

[d]Excluding the windfall tax and associated spending.

[e]Including the windfall tax and associated spending.

[f]Net income tax includes capital gains tax.

[g]Adjusted for pension rebates.

tax combined[2] has been largely discounted for similar reasons. For **corporation tax**, we are forecasting receipts of £31.5 billion — the same as suggested by the current levels of receipts but slightly below those provided by our model. There has been a large increase in the payment of foreign income dividends since it was announced in July 1997 that FIDs would be abolished this April. Repayment of some advance corporation tax attached to these dividends will reduce the revenue from ACT in 1998–99 and in the subsequent year.

### *Customs and Excise taxes*

For **value added tax**, the current receipts number is discounted, since changes announced in the November 1996 Budget appear to have significantly altered the timing of payments. Our forecast of £52.5 billion is based on the Treasury forecast, due to the effect of changed accounting arrangements, although a slight downwards revision has been made on the basis of the IFS model. For **fuel duties**, we agree with the Treasury forecast of £21.8 billion, which is consistent with the forecasts from both the current receipts and IFS modelled approach. For **tobacco duties**, we ignore the current receipts approach, since the impact of two Budgets in 1997 might have changed the monthly pattern of receipts. In addition, the proportion of total receipts received by November has fallen in every year since 1992, suggesting that the current receipts approach is not appropriate for forecasting tobacco revenues. We are using the more cautious Treasury forecast rather than the IFS modelled forecast.

### *Social security contributions*

For **social security contributions**, we forecast revenues of £55.1 billion using our current receipts method, since the proportion of receipts received by November has been fairly consistent over the last five years. This figure has been adjusted from the raw data to allow for the expected level of pension rebates.

### *Government expenditure*

We believe that **current spending** will be £328.5 billion this year, which is slightly lower than the Treasury's forecast despite the downward revision made in the PBR. This is on the basis of information on current outlays, and only represents a very small further revision.

### *Government borrowing*

Our judgemental forecast is for a surplus on the PSNCR of £5.1 billion, £0.8 billion more optimistic than the Treasury's PBR forecast. This compares with forecast surpluses of £5.5 billion from the current receipts estimate and £3.0 billion from the IFS modelled approach.

[2] Disaggregated data on income tax and capital gains tax are no longer available.

# A.4 Medium-term forecasts

Any assessment of the fiscal stance, and whether the Chancellor is going to be successful in meeting his two fiscal 'rules', should be judged over the economic cycle. This section presents our central forecast for the path of the economy and the medium-term public finances. In addition, we present the public finances under an alternative, more pessimistic, 'recession' scenario.

## Central forecast

Table A.5 presents the macroeconomic forecasts underlying the central Green Budget forecasts for government borrowing. These are slightly less optimistic than those of the Treasury. We forecast GDP growth of just ½% next year, compared with the 1% used by the Treasury.

**Table A.5. Main macroeconomic assumptions used in the central forecast**

| *% growth in variable* | **1998-99** | **1999-00** | **2000-01** | **2001-02** | **2002-03** | **2003-04** |
|---|---|---|---|---|---|---|
| Gross domestic product (GDP) | 1¾ | ½ | 2¾ | 2½ | 2½ | 2¼ |
| Consumers' expenditure | 2 | 1¾ | 2¾ | 3 | 2½ | 2¼ |
| Corporate profits (lagged 1 year) | 6 | -3 | -5 | 5 | 8 | 8 |
| Employment (lagged 1 year) | 1¾ | ¼ | -¾ | ¼ | ½ | ½ |
| Wage growth | 4¾ | 4 | 3¾ | 4½ | 4½ | 4½ |
| GDP deflator | 2¼ | 2 | 2 | 2¼ | 2½ | 2½ |

**Table A.6. Medium-term public finances forecasts, based on central macroeconomic assumptions (£bn)**

| | **1998-99** | **1999-00** | **2000-01** | **2001-02** | **2002-03** | **2003-04** |
|---|---|---|---|---|---|---|
| *Receipts* | | | | | | |
| Income tax[a] | 85.5 | 91.0 | 94.5 | 100.1 | 106.3 | 112.8 |
| Corporation tax[b] | 31.5 | 30.0 | 30.5 | 32.2 | 34.9 | 37.7 |
| Windfall tax | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Value added tax | 52.5 | 54.4 | 56.9 | 59.6 | 62.7 | 65.6 |
| Excise duties | 42.2 | 45.3 | 49.1 | 52.7 | 56.7 | 61.0 |
| Other taxes and royalties | 49.0 | 50.5 | 52.3 | 54.1 | 56.1 | 58.2 |
| Social security contributions | 55.1 | 55.8 | 58.0 | 61.0 | 64.2 | 67.5 |
| Other receipts & adjustments | 18.1 | 21.1 | 21.5 | 22.0 | 22.6 | 23.2 |
| **Current receipts** | **336.5** | **348** | **363** | **382** | **404** | **427** |
| **Current spending** | **328.5** | **349** | **367** | **384** | **403** | **424** |
| Windfall tax & ass. curr. sp. | –1.8 | 1 | 1 | 1 | n/a | n/a |
| *Borrowing* | | | | | | |
| **Surplus on current budget[c]** | **6.2** | **0** | **–3** | **–1** | **1** | **3** |
| Windfall tax & ass. cap. sp. | –0.4 | –1 | 0 | 0 | n/a | n/a |
| Net investment | 4.3 | 6 | 8 | 11 | 11 | 12 |
| **PSNB[c]** | **–2.3** | **5** | **11** | **12** | **11** | **9** |
| Windfall tax adjustments | –1.5 | 1 | 1 | 1 | n/a | n/a |
| Financial transactions | –1.3 | –3 | 0 | 2 | 0 | 1 |
| **PSNCR[d]** | **–5.1** | **3** | **12** | **15** | **11** | **10** |

[a]Net of tax credits.
[b]Includes net advance corporation tax.
[c]Excludes windfall tax and associated spending.
[d]Includes windfall tax and associated spending.

Table A.6 shows our central forecast for the public finances. Despite forecasting higher current receipts than the Treasury for 1998–99, we forecast lower levels of receipts thereafter. In 1999–00, this is due to less optimistic forecasts of value added tax and social security contributions. For later years, it is not possible to compare forecasts for individual taxes, since the Treasury only publishes forecasts for aggregate receipts for 2000–01 onwards. We also forecast higher levels of current spending in future years. This is because we use a forecast of rising unemployment as growth slows, as opposed to the Treasury's assumption of constant unemployment. Since we forecast higher levels of borrowing from 1999–00 onwards, we also forecast higher levels of spending on debt interest in subsequent years. While our central forecast is for higher levels of borrowing than those forecast by the Treasury, we still predict that the golden rule is achieved.

## 'Recession' scenario

The macroeconomic assumptions for our 'recession' scenario are shown in Table A.7. GDP falls by 1% next year and recovers only very slowly after that. This fall in GDP leads to a much larger reduction in profits and employment, and also very low levels of inflation.

**Table A.7. Main macroeconomic assumptions used in the recession scenario**

| *% growth in variable* | **1998-99** | **1999-00** | **2000-01** | **2001-02** | **2002-03** | **2003-04** |
|---|---|---|---|---|---|---|
| Gross domestic product (GDP) | 1¾ | –1 | ¾ | 2½ | 3 | 3 |
| Consumers' expenditure | 2 | ½ | 1 | 3 | 3 | 3 |
| Corporate profits (lagged 1 year) | 6 | –3 | –5 | –3 | 8 | 12 |
| Employment (lagged 1 year) | 1¾ | ¼ | –2 | –1 | 0 | ½ |
| Wage growth | 4¾ | 3¾ | 3 | 3½ | 4 | 4 |
| GDP deflator | 2¼ | 1½ | 1 | 1½ | 1¾ | 2 |

**Table A.8. Medium-term public finances forecasts: recession scenario (£bn)**

| | **1998-99** | **1999-00** | **2000-01** | **2001-02** | **2002-03** | **2003-04** |
|---|---|---|---|---|---|---|
| *Receipts* | | | | | | |
| Income tax[a] | 85.5 | 89.8 | 90.5 | 93.3 | 98.0 | 103.7 |
| Corporation tax[b] | 31.5 | 30.0 | 29.3 | 29.4 | 32.3 | 36.2 |
| Windfall tax | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Value added tax | 52.5 | 53.5 | 54.6 | 57.0 | 59.8 | 62.8 |
| Excise duties | 42.2 | 44.7 | 47.5 | 50.6 | 54.2 | 58.3 |
| Other taxes and royalties | 49.0 | 50.1 | 50.9 | 52.3 | 54.0 | 55.9 |
| Social security contributions | 55.1 | 54.9 | 55.9 | 58.1 | 61.0 | 64.4 |
| Other receipts & adjustments | 18.1 | 21.1 | 21.3 | 21.6 | 22.0 | 22.5 |
| **Current receipts** | **336.5** | **344** | **350** | **362** | **381** | **404** |
| **Current spending** | **328.5** | **349** | **366** | **383** | **400** | **419** |
| Windfall tax & ass. curr. sp. | –1.8 | 1 | 1 | 1 | n/a | n/a |
| *Borrowing* | | | | | | |
| **Surplus on current budget[c]** | **6.2** | **–4** | **–15** | **–20** | **–19** | **–15** |
| Windfall tax & ass. cap. sp. | –0.4 | –1 | 0 | 0 | n/a | n/a |
| Net investment | 4.3 | 6 | 8 | 11 | 11 | 12 |
| **PSNB[c]** | **–2.3** | **9** | **24** | **31** | **30** | **27** |
| Windfall tax adjustments | –1.5 | 1 | 1 | 1 | n/a | n/a |
| Financial transactions | –1.3 | –3 | 0 | 2 | 0 | 1 |
| **PSNCR[d]** | **–5.1** | **7** | **25** | **34** | **30** | **28** |

Notes for Table A.8 as for Table A.6.

The path of the public finances under this 'recession' scenario is shown in Table A.8. Current receipts are now much lower due to the impact of lower economic growth and very low levels of inflation. In addition, spending is now higher, with higher social security spending on the unemployed and higher debt interest payments. The real increase in discretionary spending announced in the Comprehensive Spending Review is also much larger, due to the lower levels of forecast inflation. Under this scenario, there is a current budget deficit for at least the next five years. However, this may not be inconsistent with meeting the golden rule, as long as it is still believed that our initial estimates of the output gap and potential growth in the economy were correct.

# Appendix B: Pay management in the public sector

Public pay costs currently make up just under a third of total public expenditure, so the time-path of public sector pay has a major influence on government spending and on whether government targets for debt and net borrowing can be achieved. Keeping public sector pay costs down has been a major priority of successive governments since 1992, using a running-cost cash-freeze policy, with public sector pay rises supposed to be matched by offsetting input reductions. Although this system of public sector pay management is intended to apply to the whole of the public sector, in practice different arrangements have covered some groups. Nurses, teachers, doctors, dentists, armed forces and some senior salaried staff, including MPs, have had the benefit of a semi-independent Pay Review Body system, with national pay rises recommended by government-appointed independent advisers after considering evidence presented by the unions and government. The recommendations are not always honoured in full and are often staged rather than paid in full from the due date. Nevertheless the outcome has been to increase the pay of these groups faster, in general, than that of groups in the public sector that rely on negotiated outcomes. The police and firefighters have also had pay formulas, which have averted the need for negotiation and which have helped both groups to do better than average over the 1980s and the early 1990s.[1]

## B.1 What has happened to pay in the public sector?

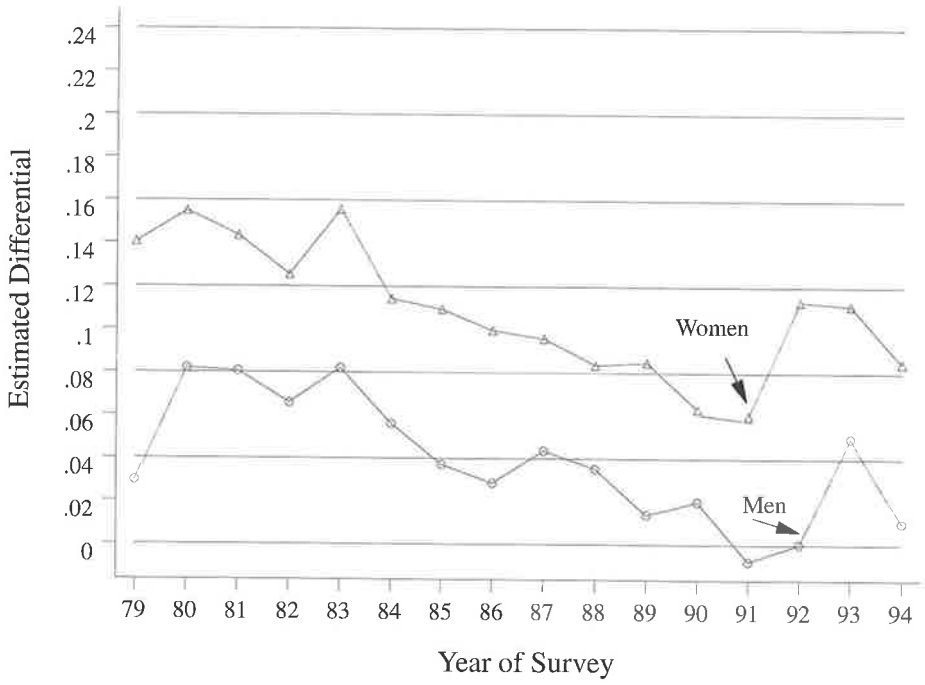
There is a general perception among public sector workers that wage increases in the public sector have failed to keep pace with those in the private sector in recent years. However, aggregate data, such as the annual New Earnings Survey, suggest little evidence of a downward trend in public pay relative to private sector pay over the last two decades, despite strong cyclical swings in the pay differential between the two sectors. The private sector tends to fare relatively well in booms, while the public sector fares relatively well in recessions. Moreover, in the 'raw' data, public sector workers, especially women, earn more, on average, in the public sector than in the private sector. These 'raw' differentials for men and women, of course, take no account of differences in skills between different workers, whether in the public or private sector, or of differences in the jobs that men and women do in the public and private sectors. For example, the average age of public sector workers is slightly higher than that of private sector workers, and 56% of men in the public sector have A-level qualifications or above compared with only

[1] For further details, see R. Disney, A. Goodman, A. Gosling and C. Trinder, *Public Pay in Britain in the 1990s*, Commentary no. 72, Institute for Fiscal Studies, London, 1998.

40% of private sector men. This 'skill-intensive' aspect of the public sector has increased over time: the processes of privatisation, contracting-out and compulsory competitive tendering (CCT) have tended to reduce the number of relatively unskilled public sector jobs such as cleaning and hospital portering, while conversely the development of autonomous agencies in the public sector, reforms to the NHS and education, and other related developments have tended to increase the numbers of higher-paid professional, managerial and financial appointments in the public sector.

If we control for these changes in the occupational composition of the public sector, a rather different picture of public–private pay relativities emerges from that given by the 'raw' averages. Figure B.1 'nets out' the impact of occupation on pay in the New Earnings Survey, so that the observed pay 'premium' to public sector status over time is the difference in pay between employees in the private and public sectors controlling for the effect of occupation.[2] Figure B.1 shows that, even though women still earn, on average, somewhat more in the public than in the private sector, the 'premium' has been falling steadily. For men, by 1994, there is no longer any evidence of a 'premium' to working in the public sector.

**Figure B.1. Public sector wage 'premiums' controlling for occupation: New Earnings Survey data**

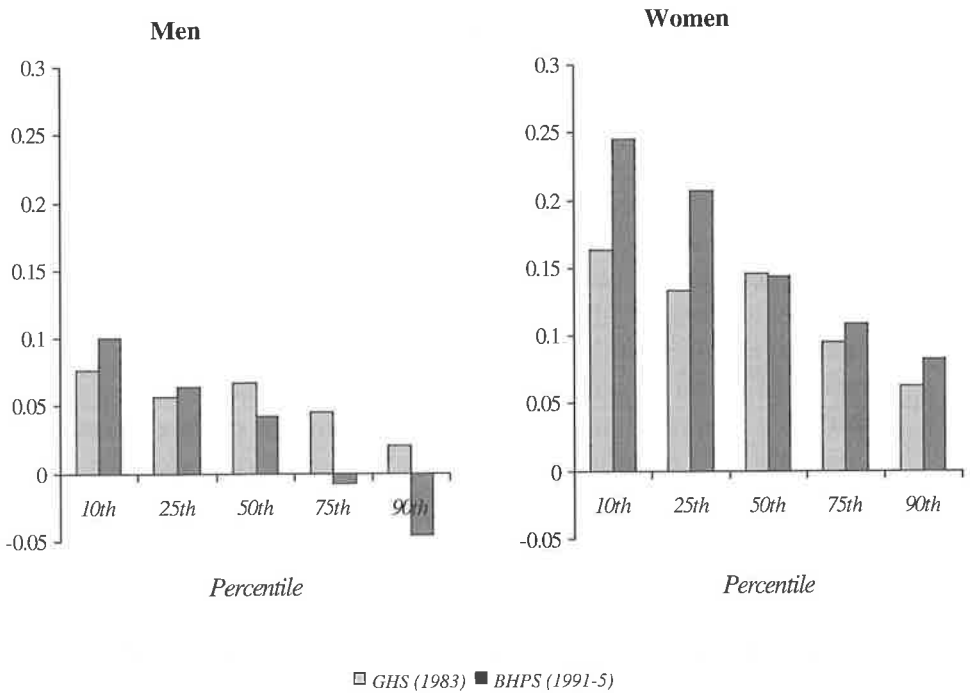



Source: R. Disney, A. Goodman, A. Gosling and C. Trinder, *Public Pay in Britain in the 1990s*, Commentary no. 72, Institute for Fiscal Studies, London, 1998.

[2] For further details on the methodology, see R. Disney and A. Gosling, 'Does it pay to work in the public sector?', *Fiscal Studies*, vol. 19, pp. 347–74, 1998. It should be noted that Figure B.1 does not control explicitly for differences in age and skill variables across the public and private sector work-forces, although occupation will indirectly pick up the latter.

Another pertinent aspect of pay trends in the 1980s and 1990s has been growing wage inequality in Britain, especially in the private sector. Over time, the public sector has increasingly had a compressing impact on pay differentials, relative to the private sector, especially as another force of compression — trade unions — has declined disproportionately in the private sector over the same period. Figure B.2 illustrates this pay compression effect of the public sector by examining public sector pay relative to private sector pay at different percentiles of the pay distribution — the 10th (from the bottom), the 25th, the 50th (median), the 75th and the 90th.[3] It is apparent that lower-paid workers earn a pay 'premium' in the public sector relative to the private sector, and that women do better than men. However, men at the upper end of the public sector wage distribution actually incur a wage 'penalty' from working in the public sector. Furthermore, the disparity in 'premiums' has intensified over time, when comparing 1983 with the early 1990s, especially for men.

**Figure B.2. Public sector pay 'premiums' across the pay distribution**




Source: R. Disney, A. Goodman, A. Gosling and C. Trinder, *Public Pay in Britain in the 1990s*, Commentary no. 72, Institute for Fiscal Studies, London, 1998.

Further analysis shows, not surprisingly, given the earlier discussion, that these public sector pay 'premiums' and 'penalties' differ widely across the pay distribution and across educational and occupational groups. Some men and women with few or no school-leaving qualifications have fared very badly in the public sector, reflecting loss of union rights, CCT and other forms of contracting-out. Some higher-paid female-dominated public sector

[3] These estimates are obtained from quantile regressions, using the General Household Survey for 1983 and the British Household Panel Survey averaged over 1991–95. The estimates control for the effect of age, and year of the BHPS.

occupations have done reasonably well relative to the private sector. Groups in the public sector with Pay Review Bodies and special arrangements such as civil servants, doctors and the police have fared much better than average, leading other groups such as academic staff to demand similar Pay Review Bodies in their occupations.

## B.2 Policy implications

In general, public sector pay has been eroded in recent years relative to the private sector, especially at the upper end, although there are exceptions both among the highest-paid and the lowest-paid public sector workers. There remain significant disparities in pay across the public and private sectors: workers with apparently similar skills may earn different wages in the two sectors. These differences may be related to differences in bargaining arrangements between the public and private sector and also between different groups within the public sector.

The government should be concerned by some of these adverse and disparate trends. Public pay policy in the recent past, including that of the present government, seems to have been driven by a predominant concern to manage public expenditure by forestalling the public pay 'explosions' of governments in earlier decades, coupled with *ad hoc* pay-setting arrangements for particular groups. Failure to think about public–private pay relativities in a coherent manner may induce disparities between public and private sector pay. These could either lead to 'voice' — such as public sector union unrest and demands for an extension of the Pay Review Body system — or 'exit' with, say, brighter graduates choosing to work in the private sector, given the steady erosion of relative public sector pay. This is an intrinsic consequence of combining largely unfettered, decentralised private sector pay-setting (especially with the almost complete elimination of national pay bargaining in the private sector), with partially managed public sector pay.

So far, policy initiatives on public sector pay are characterised by lack of uniformity. In some sectors, such as local government and the NHS, efforts have been made to make pay rates more 'comparable' with local private sector pay rates. In other sectors, we have seen pay restraint used as a crude weapon to keep costs down. Further issues, such as the finance of unfunded public sector pension rights, are simply not on the agenda. There is a strong case for a much more co-ordinated public sector analysis and response to the effects of disparate trends in pay and fringe benefits across the public sector on recruitment, productivity, labour quality and service provision. With the continued fragmented approach, there is a risk of storing up trouble in future if the government wishes to maintain an efficient and motivated work-force.

# Appendix C: The revenue effects of cutting excise duties on alcohol

A simple, stylised example of a cut in the rate of duty on beer will illustrate the revenue effects of cutting alcohol duties. We assume that the current price of a pint of beer is 100 pence, of which 30 pence is tax. This is fairly close to the current situation where total tax represents 29.8% of the price of a pint of bitter (3.9% abv) on licensed premises. We assume that current demand for beer at this price is 1000 units, yielding the government 30,000 pence of duty revenue. These assumptions are summarised in Box C.1.

**Box C.1. Situation before a cut in duty**

| | |
|---|---|
| Price of beer, per pint | 100 pence |
| Tax on beer, per pint | 30 pence |
| Demand | 1000 units |
| Duty revenue | 30,000 pence |

Assume the government is considering whether to make a 10% cut in the tax rate on beer. This will reduce the amount of tax per pint to 27 pence, and the overall cost of a pint of beer to 97 pence (assuming the whole of the cut in duty is passed on to the consumer). This represents a 3% cut in the price of a pint of beer. What happens to duty revenue will depend on the responsiveness of demand to the cut in price. Table C.1 illustrates the effects of assuming different levels of demand-responsiveness. If there is no change in demand, the government will lose 3 pence on every pint of beer sold and 3,000 pence overall. If demand increases following the price cut, the extra revenue generated on the additional units sold will begin to offset the revenue lost on the existing units. The greater the demand increase, the smaller the revenue loss. If the demand response is sufficiently large, the overall revenue effect will be positive. In this case, to get the original level of duty revenue (30,000 pence), 1111.1 units of beer must be sold at the new tax rate of 27 pence, a required increase of 11.1% in demand when the price falls by 3%. The implied critical price elasticity of demand is –3.7.

It has been argued that the effect of the increase in demand on other tax revenues (from income tax and corporate tax, for example) should also be taken into account. It is relatively straightforward to calculate what the amount of 'other tax revenue' per additional unit sold would have to be for the total tax effect of a duty cut to be positive. We simply take the amount of duty revenue lost and divide it by the number of additional units sold. Clearly, if demand does not change at all, there can be no additional 'other revenue' effect. As the level of demand-responsiveness increases, the amount of 'other revenue' that has to be raised on each additional unit sold falls. There are two effects working here. The first is that the total amount of 'other revenue' that has to be generated is smaller. The second is that the number of additional

units sold is greater, which means that the per-unit amount of 'other revenue' is smaller. The most recent IFS estimates suggest that the price elasticity of demand for beer is –0.67. In this case, the required level of 'other revenue' per additional unit sold is very high at 123 pence — or more than the price of a pint in our example.

**Table C.1. Revenue effects of a tax cut on revenue, assuming different levels of demand-responsiveness**

| | **Percentage increase in demand in response to 3% price cut** | | | | |
|---|---|---|---|---|---|
| | 0% ($\varepsilon = 0$) | 3% ($\varepsilon = -1$) | 6% ($\varepsilon = -2$) | 9% ($\varepsilon = -3$) | 12% ($\varepsilon = -4$) |
| Price of beer | 97 pence | 97 pence | 97 pence | 97 pence | 97 pence |
| Tax on beer | 27 pence | 27 pence | 27 pence | 27 pence | 27 pence |
| Demand | 1000 | 1030 | 1060 | 1090 | 1120 |
| Duty revenue | 27,000 | 27,810 | 28,620 | 29,430 | 30,240 |
| Duty revenue change | –3,000 | –2,190 | –1,380 | –570 | +240 |
| Required 'other revenue' per unit | — | 73 pence | 23 pence | 6.3 pence | –2 pence |

Note: $\varepsilon$ is the implied price elasticity of demand, which is the percentage change in demand following a 1% change in the price.

# Appendix D: Tax revenues ready reckoner

**Table D.1. Direct effects of illustrative changes in taxation to take effect April 1999**

| *£ million* | Cost/yield (non-indexed base) | |
|---|---|---|
| | 1999–00 | 2000–01 |
| **Income tax** | | |
| **Rates** | | |
| Change standard rate by 1p | 1,450 | 2,050 |
| Change lower rate by 1p | 1,000 | 1,200 |
| Change higher rate by 1p | 360 | 720 |
| **Allowances** | | |
| Change personal allowance by £100 | 430 | 610 |
| Change married couple's allowance by £100 | 70 | 100 |
| **Lower-rate band** | | |
| Increase lower-rate band by 10% | 190 | 260 |
| **Basic-rate limit** | | |
| Change basic-rate limit by 1% | 70 | 130 |
| Change basic-rate limit by 10%: | | |
| increase (cost) | 660 | 1,200 |
| decrease (yield) | 850 | 1,500 |
| **Allowances, bands and limits** | | |
| Change all main allowances, lower-rate band and basic-rate limit: | | |
| increase/decrease by 1% | 310 | 480 |
| increase by 10% (cost) | 3,000 | 4,550 |
| decrease by 10% (yield) | 3,350 | 5,100 |

*Continues*

Note: The revenue effect is computed for changes to the 1999–00 tax system and relates to the first-year (1999–00) and the full-year (2000–01) effects.

**Table D.1. Direct effects of illustrative changes in taxation to take effect April 1999** *(continued)*

| *£ million* | Cost/yield (non-indexed base) | |
|---|---|---|
| | 1999–00 | 2000–01 |
| **Corporation tax** | | |
| Change full rate by 1 percentage point | 1,050 | 1,050 |
| Change smaller companies' rate by 1 percentage point | 90 | 120 |
| **Capital gains tax** | | |
| Increase annual exempt amount by £500 for individuals and £250 for trustees | — | 12 |
| **Inheritance tax** | | |
| Change by 1 percentage point | 25 | 45 |
| Increase threshold by £5,000 | 15 | 30 |
| **Excise duties** | | |
| Beer up 0.3p a pint[a] | 5 | 30 |
| Wine up 1.3p a bottle (75cl)[a] | — | 10 |
| Spirits up 6.4p a bottle (70cl)[a] | — | 5 |
| Cigarettes up 3p a packet (20 king-size)[b] | 5 | 90 |
| Petrol up 0.5p a litre | 120 | 140 |
| Derv up 0.5p a litre | 70 | 80 |
| Change insurance premium tax (both standard and higher rates) by 1 percentage point | 230 | 320 |
| **VAT** | | |
| Change both standard and reduced rate by 1 percentage point | 2,375 | 3,150 |
| **VAT coverage** | | |
| | *1998–99 effect* | |
| Extend VAT to: | | |
| food | 8,100 | |
| domestic and international passenger transport | 3,050 | |
| construction of new homes | 2,150 | |
| books, newspapers, etc. | 1,300 | |
| water and sewerage services | 1,000 | |
| children's clothing | 1,000 | |
| prescriptions | 750 | |

Note: The revenue effect is computed for changes to the 1999–00 tax system and relates to the first-year (1999–00) and the full-year (2000–01) effects.

[a]Assumes change implemented in January 2000 to reflect pattern in previous Budgets.

[b]Assumes change implemented at end of November 1999 to reflect pattern in previous Budgets.

Sources: *Inland Revenue Statistics 1998*, Table 1.5; *HM Customs and Excise Annual Report 1997–98*, Tables A4 and C9.