

IFS

Tax Reform for the Fourth Term

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Published by

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London WC1E 7AE
(Tel. 071-636 3784)
(Fax 071-323 4780)

(C) The Institute for Fiscal Studies, October 1992
ISBN 1-873357-19-2

Printed by

KKS Printing
Stanway Street
London N1 6RZ

Preface

IFS Commentary number 6 - *Tax Reform: Options for the Third Term* - opened with the line: 'There has never been a better moment for tax reform'. The major piece of tax legislation that followed its publication, and which dominated the whole third term, was not entirely what the contributors to that volume had recommended.

One Prime Minister later, it could be argued that there has never been a worse time for tax reform. With the public finances in a poor state of repair, and a government that has other issues on its mind, tax reform may be some way off.

But this would be to misread current events. While tax reform is difficult in austere times, recent macroeconomic instability provides the strongest indication possible that the economy's microeconomic foundations should be managed well.

This report surveys some of the issues that should be on the Government's mind if it wishes to look after those microeconomic foundations.

The support of the Economic and Social Research Council is gratefully acknowledged. The work was part of the programme of the ESRC Research Centre for the Micro-Economic Analysis of Fiscal Policy. Judith Payne provided invaluable help in the preparation of the document and was responsible for copy-editing it; Chantal Crevel-Robinson helped prepare the manuscript.

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Introduction

EVAN DAVIS AND ANDREW DILNOT

Despite a general election campaign during which taxation received an unprecedented amount of coverage, the future of tax policy in the UK is uncertain. The Government has said little apart from that it would like to cut the aggregate burden of tax and the basic rate of income tax; the Labour Party is about to reconsider its approach in its Commission on Social Justice; and the Liberal Democrats will presumably also reassess their strategy.

Too often tax is discussed either too vaguely - 'tax should be cut/raised' - or in too much detail - 'VAT should/should not be imposed on take-away food' - with little attention or thought given to the development of a coherent strategy for the whole tax system and its constituent parts. Often, debate which focuses on the overall level of taxation distracts attention from debate on the structure of taxation.

Our aim in this volume is to overcome these problems, providing some strategic priorities for the British tax system, drawing on trends that have become clear in recent years and the implications of economic theory.

Some Themes

Three themes run through many of the contributions. The first is that in the same way as it is easier to hit someone who cannot run away, it is easier to impose taxes where the subject of taxation is not mobile, able to move either to another place or another form. The second theme is that there remain many areas in the tax system with apparently indefensible distortions which should be removed, but that removing these distortions will not liberate large sums of money, since losers need to be compensated. The third theme is that although at any time there are roles which are best filled by the state, changes in the structure of the population and the economy will change the appropriate mix of state and private action.

1. Taxing mobile activities/transactions/assets is difficult and distortionary

Attempts to impose tax on anything which can easily change location or form will be futile. The tax will be avoided, will fail to raise revenue and will distort the location and form of real activities. It will also impose the costs of tax avoidance activity on those who successfully escape it. Although this has always been true, the range of areas in which mobility is a genuine concern has grown in recent years. Increasing internationalisation of the world economy means that the ability of different countries to sustain radically

different tax regimes on the company sector, or on capital income more generally, is diminishing rapidly. If Luxemburg, for example, attempts to maintain higher taxes than Liechtenstein, activity and assets simply transfer to Liechtenstein. Within countries, it has long been true that the main effect of differential tax treatment of different assets has been to direct individuals to hold their wealth in tax-favoured form, and this trend has become even clearer in the wake of such innovations as PEPs, TESSAs and Personal Pension Plans. Imposition of tax on mobile activities will only work if the same or a similar tax is imposed in all the places or on all the assets/activities to which the mobile activity might move.

This realisation has clear implications for the future of taxes on company income, and especially international issues related to this; for the direction in which the taxation of personal savings should move; and even for the scope for imposing taxes for environmental reasons. All of these are discussed below and in the chapters that follow.

2. Structural reforms create losers who want compensation, rather than liberating resources

Many of the obvious targets for reform in the UK are areas where removing distortions would impose increased tax burdens on a large group. Integrating income tax and National Insurance contributions, extending the VAT base, imposing a carbon tax to deal with externalities from fuel consumption, or phasing out mortgage interest relief, all have attractions and would raise significant amounts of revenue. But to imagine that these amounts of revenue can be used in any way that a policy-maker might choose is to fantasise. The losses imposed by such changes will in general fall on groups that will lobby loudly and with some justification for any losses to be offset by other changes. Once such changes are made, the distributional problems raised by reform can often be neutralised, but there may be little extra revenue left over. Such reforms must stand or fall on the basis of their desirability rather than on the basis that they will raise significant extra revenues.

3. The tax system has to adapt to the changing role of the state

Some things are best done by the state, but these things change over time. Deciding the right mix between state and private sector activity is difficult enough, but the mix changes as the structure of the population and the economy develops.

One clear example of this in the UK has been in the area of pensions policy. Fifty years ago, the link between old age and poverty was strong, average length of life was shorter than now, private sector provision was rare, and a subsistence level flat-rate state pension seemed sensible. The flat-rate state pension has now been eroded as a fraction of earnings, and private sector provision has expanded significantly. In future it may make more sense for the state to focus on poverty prevention for those with no or little private income while

encouraging individuals to redistribute their own income over their own life cycles. This question of the changing role of state and private sector is clearest in income maintenance, but is also relevant in discussion of industrial policy - should government subsidise certain activities such as training or R&D or leave the level to the market? - and environmental policy. The vital point in these areas is to recognise that the appropriate role of government may change as the economy develops.

The Contributions

Much has happened since the last volume of this kind, *Tax Reform: Options for the Third Term*, was published five years ago. Britain has endured a major - and dramatically unsuccessful - fiscal upset in the form of the poll tax, and has seen the VAT rate rise as a consequence. The Single Market Act and events since have more firmly entrenched Britain in Europe, and our companies have become more international - with, on average, foreign sales overtaking domestic sales for Britain's larger companies for the first time. There has been a dramatic increase in interest in environmental affairs.

The contributions to this volume largely cover issues raised by these developments, yet they are satisfyingly close in the principles and policies they adopt to those outlined in earlier IFS publications.

On one reading, they propose the abolition of National Insurance, the state pension, income tax on dividends, capital gains on company investments, corporation tax and all zero rating in the VAT system. This could be seen as a radical manifesto. In fact, there are two reasons why it is not.

Firstly, many of these reforms slot together in packages of offsetting measures whose overall impact is markedly smaller than that of individual pieces. Secondly, the reforms outlined are based on a logical view of what purposes the tax system is trying to achieve, and what negative effects it is trying to avoid. The authorities have, over time, themselves adapted the tax system to the very same influences, but have done so in an *ad hoc* and unsystematic way. One can thus outline principled major reforms of the system, which in a single stroke remove many of the complications under which it currently suffers.

It is still true that several of the contributions outline a longer-term vision of the system, others plot an incremental route to that vision, while others look at issues both in the short term and in the longer term.

Harold Freeman's chapter is perhaps the hardest to categorise. On the one hand, it outlines proposals for a complete recasting of business and investment taxes. Its emphasis is on integrating taxes collected at the company level into the more general system of taxes that face individuals and institutions in their investments. Tax would still have to be collected from companies, but not in quite the same way as now, and the rates of the taxes collected from companies would be set with reference to the prevailing income tax rates.

The strength of the paper is that rather than focusing simply on taxes on companies, the analysis considers the personal tax treatment of income derived from companies. It is emphasised that we cannot tax companies in any final sense, because all taxes are finally borne by individuals whether as owners, consumers or suppliers. It is also emphasised that the current tax treatment of company income and of other forms of investment imposes very diverse tax rates on highly substitutable forms of income.

The proposals outlined extend the tax treatment of PEPs and TESSAs to all assets, reform corporation tax by introducing a new Allowance for Corporate Equity, and suggest that the rates of corporate and other taxes be aligned. These reforms would produce an economically coherent and effectively neutral tax system.

International company taxation is perhaps the area where problems caused by mobility are at their greatest. Michael Devereux's chapter draws out the problems potentially caused by transnational taxation, and the potential for solutions. Two policy decisions need to be made: what unilateral steps can be taken to increase national welfare, and what multilateral steps can be taken to increase national (or global) welfare? Even if governments want to achieve certain goals, are they able to? The ability to achieve set goals is greatly circumscribed by mobility of location and structure. Possible responses to one current problem for the UK, surplus ACT, are discussed, but a real solution here requires international agreement. In the long term it is clear that disputes over international company taxation will only be completely resolved as a result of international agreement over the tax base and the allocation of revenues.

The increase in the rate of VAT to 17¹/₂ per cent in the 1991 Budget has widened the gap between the tax rate on those goods subject to VAT and those not subject to it, mainly food, fuel, children's clothing, passenger transport, books and newspapers. Paul Baker argues that the distributional argument often advanced against broadening the VAT base is wrong, since the revenue raised by extending the base could be used to offset the losses imposed on those with low incomes. Increasing income tax allowances and raising some benefits is shown to neutralise the impact on low incomes, but obviously significantly reduces the amount of revenue released.

Environmental arguments for changes in tax policy are becoming more commonly used. Stephen Smith analyses the current proposal for a carbon tax within the European Community, as a way of drawing out some of the issues that environmental taxes raise. The European Commission's proposal is for a tax which would be a combination of a tax on the carbon content of fossil fuels and a tax on all non-renewable forms of energy (including nuclear power). The proposals raise the possibility of exemptions for six highly energy-intensive sectors from the tax.

One problem is the mobility of energy-intensive activity. If the EC imposes such a tax, it might drive such activity to areas without such a tax. This led the Commission to make its proposal conditional on the adoption of similar legislation in competitor countries. A second problem lies in the proposal to exclude energy-intensive sectors. This would

actually introduce a new bias in favour of such activities within the EC. A final problem is the distributional impact, both in terms of cash and energy consumption. Low-income households would reduce their energy consumption and face cash losses. The cash losses could be compensated using some of the revenue raised, but there may still be a problem with reducing energy consumption among vulnerable groups such as the elderly.

The European Community budget is a subject of continuing controversy. Although small (around 1.1 per cent of EC GDP in 1991), it is growing, and there have been calls for a tax or element of a tax to be allocated to the EC by all Member States. The main argument here is one of accountability. In practice, the variation in taxes across Member States makes any such arrangement difficult to implement. Given this, the most sensible route seems to be to calculate contributions as some fraction of Member States' GNP, or possibly aggregate consumption.

Much the largest item of public spending in the UK is the flat-rate state retirement pension. Andrew Dilnot and Paul Johnson note the decline of the pension relative to earnings, the fact that means-tested additions are now common, and the recent growth of private income. Any attempt to increase the flat-rate pension to its earlier level relative to earnings, and maintain that relationship, would imply significant tax increases now and in the future. There is need for a clear review of policy in this area, with one option being a gradual shift of resources towards those on the lowest incomes, implying a further reduction in the relative value of the pension. This seems to have been government policy for some time, but has become so without the benefit of sensible debate.

If government were to reduce its part in the redistribution of income through the life cycle, the importance of a flourishing private sector pensions regime would be heightened. Richard Disney and Edward Whitehouse note the rapid growth in personal pensions in recent years, and some of the problems inherent in defined benefit occupational pension schemes. They expect to see a further shift from defined benefit schemes to defined contribution schemes, but point out the shift in risks this implies. If defined contribution schemes are to be suitable for all, greater flexibility is needed. The possibility of making it compulsory for employers who offer occupational pensions to offer equal-value contributions to an employee's personal pension is considered; the public sector might take a lead in this.

The integration of income tax and National Insurance contributions is revisited by Steven Webb, who points out that this has come to mean many different things. He identifies four problems which would be solved by full integration: the fall in marginal and average direct tax rates above the upper earnings limit for NICs, the avoidance of NICs by various means, the inappropriately generous NIC treatment of the self-employed, and the administrative costs of running two direct tax systems. Two routes to integration are identified, one which avoids real losses to high-income individuals but which costs nearly £8 billion, and a second which allows inflation to erode the problem, imposing significant real losses but no cash losses. The point that structural changes create losers who often need compensating is clear.

We make no claim for completeness in this volume. We have not included anything on local government, or on housing, or on most areas of social security, although in all these areas there is much to be said. We do hope to have pointed to proposals which, taken together, are coherent and which would simplify and make more transparent the tax and transfer system in the UK. They would move towards a system based more nearly on economically sensible categories, and recognise the developing nature of our population and economy.

Chapter 1

Towards a National Investment Tax

HAROLD FREEMAN

The corporate tax system last underwent radical upheaval in 1984. At that time, there was wide belief that the reforms of that year were part of a coherent and long-term vision of the ways in which the tax system should treat companies. The changes were intended to recognise that 'There is no corporate tax-paying capacity which is independent of individual tax-paying capacity, and people who talk about business bearing its "fair share" are talking economic nonsense',¹ and that taxes should be 'structured in the way that does least damage to the nation's economic performance.'

It has become increasingly obvious that the reforms fell short of their laudable intentions. At the time, many commentators were disappointed by the complexities and distortions that remained in the system. As the investment boom of the mid-1980s petered out, critics of all political shades have voiced concern over the negative effects of the reformed system on the incentive to invest.² The CBI has regularly sought the reinstatement of bigger capital allowances; there have been extensive complaints about the problem of unrelieved ACT and other international issues (discussed in the next chapter); and there have been suggestions that the tax system causes problems in real company behaviour. The Hume Institute's Inquiry into Corporate Takeovers advocated the abolition of corporation tax (Peacock and Bannock, 1991).

The sentiments behind these calls for reform may sometimes be little more than familiar self-interested pleading. However, there are also some good arguments for reviewing taxes on business activity. The recent falls in company profits and in mainstream corporation tax receipts - now comparable in revenue terms to business rates - make this a good time to think about the direction of reform.

There is a temptation when looking at business tax to consider corporation tax in isolation, with personal taxes on dividends and share price capital gains as an afterthought. Only sometimes is the taxation of other investments considered relevant at all. The result of this fragmentation is that we too often lose the thread that connects the three, that they are all taxes on investment.

¹ Nigel Lawson, 1984 Budget Speech.

² See, for example, the 1992 Budget submissions from the TUC, the CBI, the Institute of Directors and the Labour Party.

This chapter presents a long-term strategy to replace the current combination of corporation tax and personal taxes with a new integrated system of personal and investment taxes.

Although this does represent radical upheaval, it need not significantly disrupt tax administration or revenues. The aim of this reform package is to use some elements of the existing system as building blocks to create a more coherent system.

The Current System

Corporate taxes

There are two levels of tax on corporate investment in the UK: corporation tax, which is levied on profits, and personal taxes - income tax and capital gains tax - which may be levied on the returns to investment. Although corporation tax is a tax on companies in the sense that the company name is on the cheque to the Inland Revenue, it is the owners who have the most to gain or lose from taxation. They bear the burden of any tax liability, in the form of a reduced return, unless they can pass it on to employees, customers or lenders.

So the only real difference between the two layers of tax is that the personal layer depends on the status of the investor - whether they are an institution, or a top rate taxpayer, or a foreign investor - while corporation tax is independent of the status of the investor.¹

The interrelations between the different layers are complex, and our interpretation of them affects the assessment of the present system. Under the imputation system, distributed profits are taxed at both levels, but are deemed to be received net of basic rate tax. Retained profits are taxed at the corporate level, and any rise in the value of the firm may be subject to capital gains tax (although a repayment may be due if the profit is subsequently paid out). The attraction of debt finance depends on interest costs relative to the opportunity cost of equity finance. And the level of interest cost depends on the attraction of corporate debt relative to other portfolio investments.

If this was not complicated enough, the significance of each of the various branches for financial incentives and the overall incentive to invest has been subject to fierce debate.²

We can, however, conclude that there are four major problems with the current system:

¹ Capital gains tax is slightly different in that it may tax the present value of expected future profits.

² See Zodrow (1991) for a recent non-technical survey of the debate between the 'old' and 'new' views of dividend taxation, and underlying debate in the theory of corporate finance.

- it reduces the incentive to invest;
- it favours the use of some sources of finance over others;
- it favours the use of some business assets over others;
- it is sensitive to inflation.

The first three are direct failures of *economic efficiency*. If a tax affects business decisions, this represents a welfare loss to the community as a whole. The loss may be manifested as a lower-than-desirable level of the capital stock; as the diversion of investment from more productive into less productive assets; as the costs associated with arranging finances in order to minimise tax liabilities; or as the distortions associated with other taxes, if the fall in the tax yield associated with tax minimisation requires the Government to raise more revenue elsewhere.¹

Thus first the system reduces the incentive to invest by driving a wedge between the pre-tax and post-tax rates of return on investment. This renders some investment projects uneconomic, even though they would be perfectly viable in the absence of tax. Figures 1.1(a) and 1.1(b) give an indication of the scale of this effect for different taxpayers. Assuming a required post-tax real return of 5 per cent and an inflation rate at the OECD average of 4.5 per cent, the tax raises the pre-tax rate of return by around one percentage point for exempt investors, and around two percentage points for top rate taxpayers.

Secondly, the system distorts financial decisions. For one thing, nominal interest payments are deductible from corporation tax, so that the additional layer of tax on corporate investment applies only to equity investment. This is bound to increase the attraction of debt relative to equity. Additionally, the imputation system applies unevenly between distributed and retained profits, and this will affect equity payout and investment decisions.

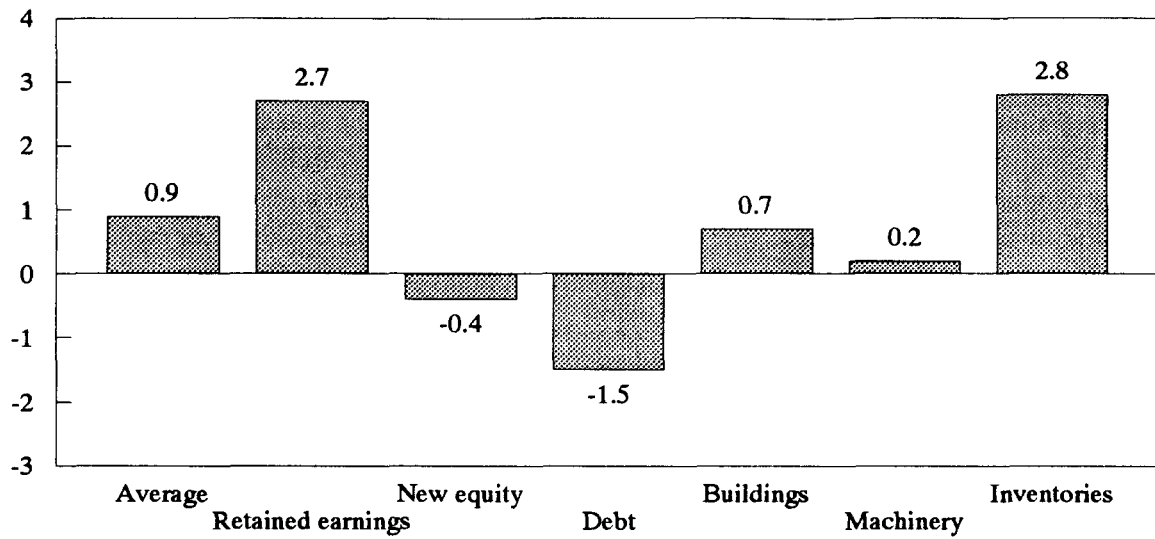
For tax-exempt investors, who form a large part of the UK market, this means that there is a strong incentive to issue new equity and require the payment of dividends, relative to the retention of earnings, and that debt finance is generally favoured over equity finance because of the extra level of tax, the gap widening as inflation rises.

For taxable shareholders the position is less clear. Depending on the holding period and the effect of capital gains tax, higher rate taxpayers may even see the 33 per cent corporation tax rate as a tax shelter. In general, however, debt finance is favoured over equity finance.

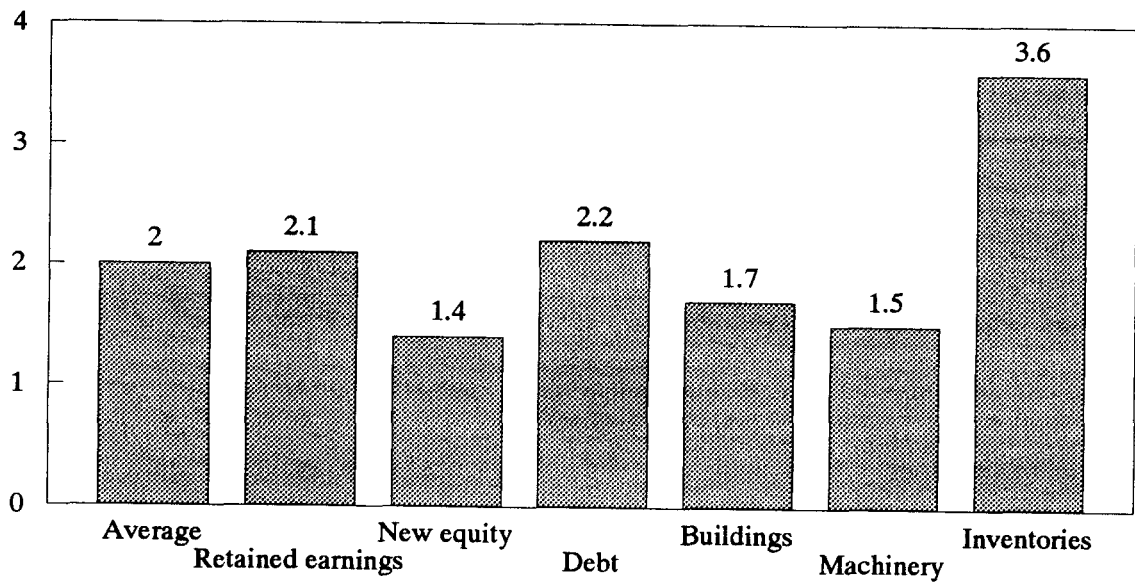
The third problem is that a tax will only be neutral between investment in different assets if it levies tax uniformly across them. Figures 1.1(a) and 1.1(b) illustrate the relative incentive to invest in certain broad groups of assets. The true picture is even more diverse than this, because each group shows an average of assets depreciating or appreciating at

¹Of course, in certain cases, we may wish to deliberately introduce a distortion, to encourage a particular activity, to overcome specific market failures or to offset distortions elsewhere in the system. But the possibility of special cases does not undermine the general argument for neutrality; the system should be neutral except where we can demonstrate specific reasons to introduce a particular distortion.

Figure 1.1
 (a) Corporate Tax Wedges: Zero Personal Taxes



(b) Corporate Tax Wedges: Top Rate Taxpayers



Note: Assuming a 5 per cent post-tax return and 4.5 per cent inflation.
 Source: OECD, 1992.

different rates, and investment in some assets is not shown at all. The problem is that the profits that accrue to any particular investment are difficult, and in some cases impossible, to measure. The problems that arise are precisely those associated with a comprehensive income tax at the personal level: valuation and indexation for inflation.¹

Finally sensitivity to inflation creates obvious practical problems, and contributes less directly to economic inefficiency by exacerbating the other problems (see Bond, Devereux and Freeman (1990)). It also injects an element of instability into the system; even under conditions of certainty, with the statutory tax rate held constant, the expected future tax rate will vary with current and future inflation rates, generating further distortions in the timing of investment.²

The personal tax system

The personal tax system faces similar problems. Again, the situation is highly complex but we can identify two basic problems.

Firstly, there are substantial divergences in the incentives to save in different assets, which distort portfolio choice, thereby creating welfare losses for individuals, regardless of the market outcome.

Figures 1.2(a) and 1.2(b) chart effective tax rates on different types of savings for basic rate taxpayers. The record of the last 30 years is testimony to the enduring problems of the personal income tax. The contrast between the graphs shows that little has changed other than the inflation rate and the removal of the tax privileges on life assurance. The

¹Edwards, Kay and Mayer (1987) contains a more detailed discussion of the measurement of profits. Kay and King (1990) and the Meade Committee (1987) discuss the difficulties of taxing comprehensive income. The general argument is as follows.

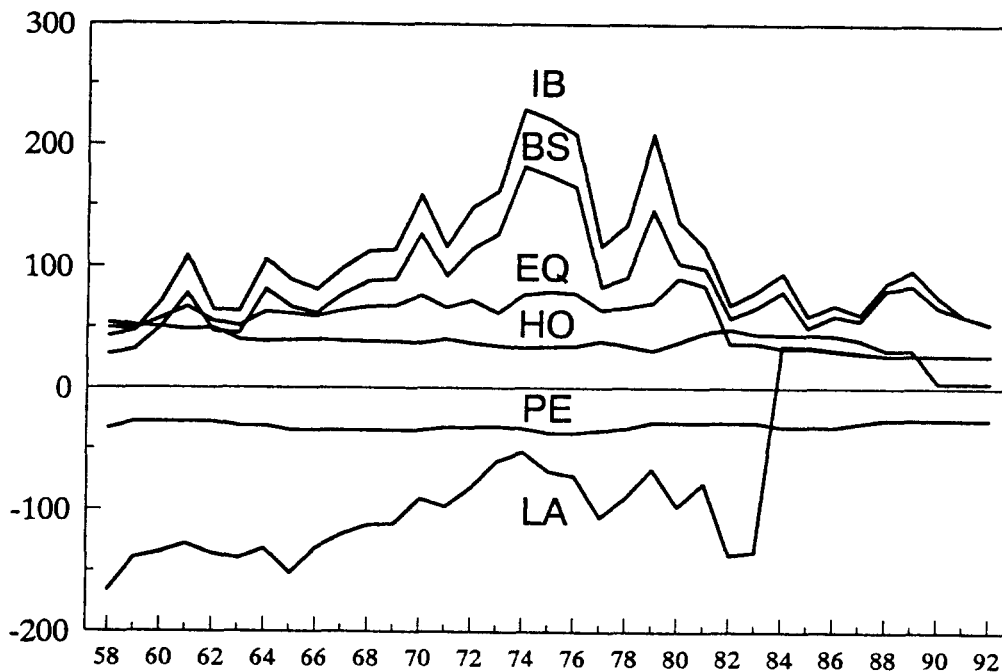
If an asset changes in value, we would need to tax (or relieve) that change as it accrues, at the same effective rate as flows of other income. We already have some mechanisms to tax changes in value in the form of capital allowances and taxes on capital gains, but these apply to only some assets, are unlikely to tax more than vague approximations to true values and, in the case of capital gains, are deferred until realisation and subject to roll-over relief. With inflation, conventional profit measures become even less accurate, and valuation even more complex.

Full neutrality basically requires careful indexation. An unindexed system with correct nominal valuation would also be neutral in the choice of investment under non-zero but constant inflation. But with varying inflation, an unindexed system will distort the timing of investment and may not be neutral between investments that endure, in their nature, for different periods.

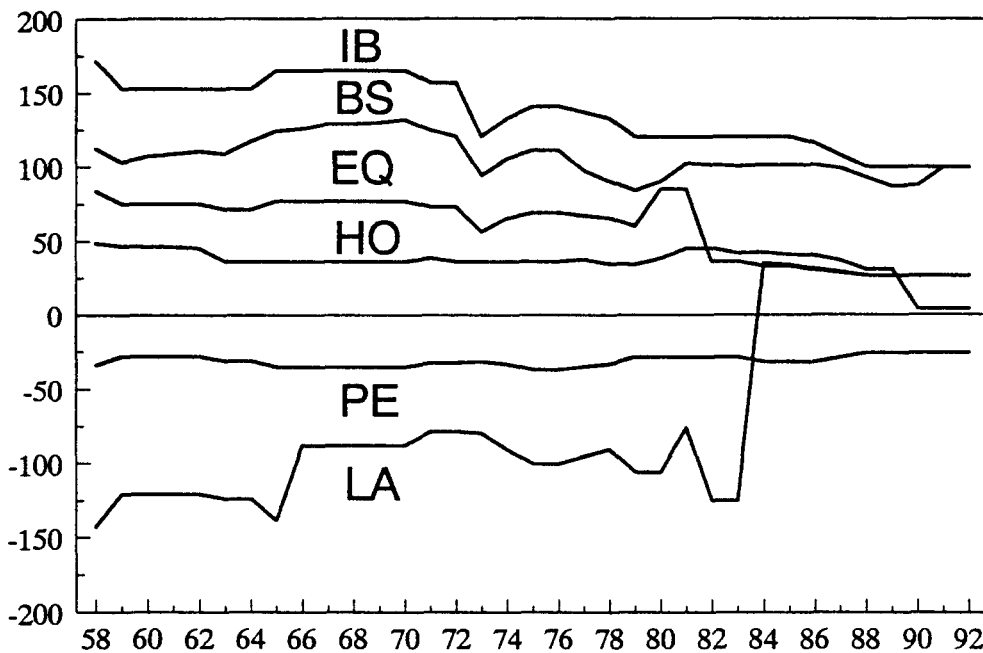
²In the real world, both the tax system and the inflation rate, along with other variables in the business environment, will be uncertain, but this is a separate argument.

Figure 1.2

(a) Effective Tax Rates, 1958-92: Basic Rate Taxpayers, Actual Inflation



(b) Effective Tax Rates, 1958-92: Basic Rate Taxpayers, Constant 10 Per Cent Inflation



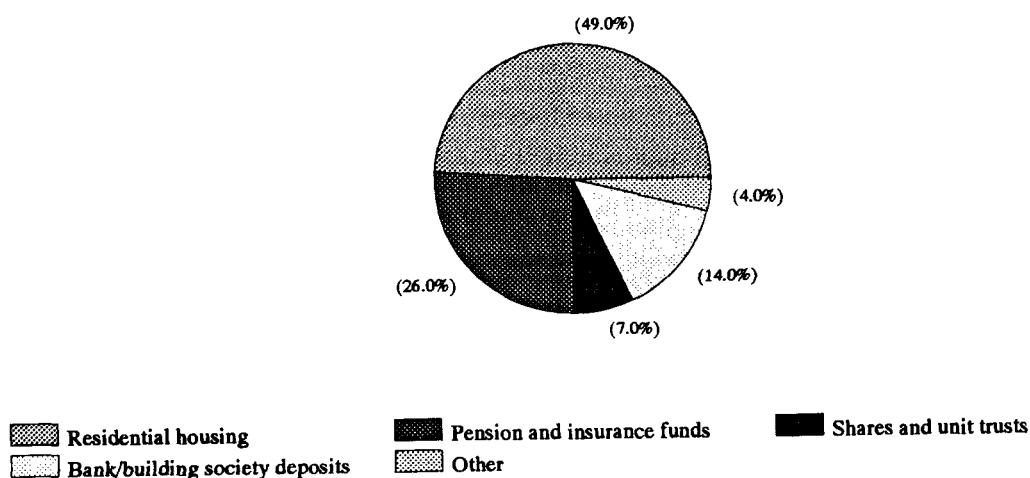
Key: IB - interest-bearing savings BS - building societies
 EQ - equities HO - housing
 PE - pension (10 years) LA - life assurance (5 years)

Source: IFS calculations.

steady convergence in Figure 1.2(b) mainly reflects the fall in the basic rate of tax. Even this is a simplification that glosses over some more serious valuation and indexation problems.¹

In fact, the vast majority of personal savings are already held in assets with an effective tax rate of zero or below (see Figure 1.3). Taxes on investment income at the personal level raise very little net revenue, and what little is raised comes mainly from a few heavily penalised assets.

Figure 1.3
Asset Holdings in 1990



Source: National accounts, 1992.

Secondly, the personal tax system may favour present consumption over future consumption. If people can only save in taxable vehicles at the margin then this reduces the incentive to save at any given income level, introducing an implicit welfare cost. However, this does not mean that the system necessarily reduces overall saving taking into account tax revenue raised. And as we have argued above, so many assets are subject to low effective tax rates that many UK savers already have ample opportunity to invest in tax-free or low-tax forms at the margin.

¹The basic methodology used is found in Hills (1984).

A New System of Taxing Investments

If the current system of taxing companies and their investors is somewhat disorganised, what steps can be taken to rationalise it and remove some of the distortions it creates?

We propose here a coherent package which deals with the problems at both personal and business level, whilst recognising the interaction between them. One way of simplistically caricaturing the package is that in broad effect it firstly introduces expenditure tax treatment to cover all forms of investment, and secondly, removes special company taxes from the system. Our package, however, achieves this structure whilst nevertheless maintaining substantial collection of taxes at the company level. Of course, there are other possible packages, and the different elements of this package can certainly be argued for separately. The reason that we present them simultaneously is that they work well together, and that they demonstrate the importance of having any consistent overall strategy for the taxation of capital. In the absence of an overall view, reforms and developments in one area will often have unforeseen and undesirable interactions with the other areas.

Tier 1: Reforming the Personal Tax

- | |
|---|
| <ul style="list-style-type: none">• PEPs and TESSAs gradually extended and merged• Mortgage interest relief continues to be phased out |
|---|

It has been argued extensively (Meade, 1978; Kay and King, 1990) that the only practical way of rationalising the personal tax system is to move to an expenditure tax. It is perhaps not accidental that most of our saving is already subject to expenditure tax treatment, if not a more generous regime.

Under a standard expenditure tax, saved funds attract a tax credit, while the returns to saving are fully taxable, the effect being that only spent income is ever subject to tax. There is an alternative route to a similar destination, suggested by the IFS Capital Taxes Group (1991), among others. This is a 'prepayment' expenditure tax, under which saving does not attract a tax credit, but the returns to saving are not taxable. The effect on incentives at the margin is identical in each case, but in the latter case, the saver 'prepays' the tax on spending by forgoing the initial credit. This is the approach of the PEPs scheme. If all investments in companies were treated in this way, no income tax would have to be paid on dividends, and no capital gains tax on share price increases.

It is this alternative which appears to be the more desirable choice, for several reasons.

Firstly, we already have highly flexible instruments of reform, in the form of PEPs and TESSAs. The proposal is therefore to gradually widen the group of assets included in these regimes, and liberalise the rules under which they are held, eventually merging them.

Secondly, as the contribution limits are increased, fewer and fewer assets will be held outside these schemes, until finally it will not be worth levying tax on any assets.

Thirdly, as we shall see, our proposal makes it far easier to merge the treatment of incorporated and unincorporated business.

Fortunately, a move in this direction is unlikely to be costly, because the effective personal tax rates on saving are already so low. Mortgage interest relief is already effectively being phased out through the gradual erosion of the real value of its upper limit, and the extension of a more rational system of savings taxation seems a natural way to use the additional revenue.

Nor need a move to this style of treatment be particularly regressive relative to the current system, because the current system does so little to promote progressivity. The available evidence¹ suggests that high income groups save mostly in more tax-privileged assets, while the more simple and accessible vehicles - bank and building society accounts - are generally penalised.

The main advantage of the standard expenditure tax over the PEP regime proposed here is that the expenditure tax allows the Government to share in the good fortune of savers who make particularly high returns on their investments. Our overall package gets around this problem, and it does so by taxing these high returns at the level of the company or business, rather than at the personal level.

Tier 2: Reforming the Business Tax

- **A new Allowance for Corporate Equity introduced on all investment to replace the imputation system**
- **Merging of small and large business regimes**

We aim to restore neutrality to the business tax system by giving companies a new tax allowance, an Allowance for Corporate Equity (ACE), reflecting the opportunity cost of equity finance, to replace the current imputation system. The new relief would be calculated as the rate of interest on a government bond, applied to the historical value of past equity issues and retained profits. This allowance would ensure that the only profit taxed at the company level is that which exceeds the normal rate of return.

The effect of this new allowance is to restore the incentive to invest evenly across all assets and regardless of the inflation rate. The details are discussed elsewhere (Capital Taxes Group, 1991; Devereux and Freeman, 1991), but we summarise here.

¹ See, for example, Saunders and Webb (1988).

The key to the ACE proposal is that shareholders' funds for tax purposes, and therefore future tax allowances, are measured with reference to taxable profits rather than actual profits. This ensures that errors in the measurement of profits do not affect the present value of tax due.

The intuitive reasoning behind this is that the company can borrow, or raise further equity finance, to cover any overpayments of tax, with the Government effectively footing the bill. For example, if profits are overestimated by £100 in the current year, an additional tax payment of £33 would be due (assuming a 33 per cent rate). The company then raises an additional £33 to replace the tax paid and restore the size of the investment. The total additional shareholders' fund is now £100, yielding 'interest' in the form of an annual tax credit of $£33 \times i$, where i is the interest rate. The same logic (in reverse), applies to underpayments of tax, the Government effectively charging interest on any underpayments in the form of reduced future allowances.

This deals with errors in measuring the tax base, but it does so relative to a correct measurement of profits, net of the ACE. This restores the *incentive to invest* by giving investors an allowance for the opportunity cost of their investment.

Since tax liabilities are no longer affected by errors in the measurement of profits, the effective *tax rate on different business assets* must be equal, and the tax does not alter the choice of business asset.

The ACE restores *financial neutrality* at the corporate level by introducing an allowance analogous to interest deductibility on the returns to equity. The system as a whole will only be neutral if the treatment of investment returns at the personal level is also neutral.

In the real world, investors require a minimum expected return higher than the government bond rate to compensate them for the riskiness of their investment. The Government levies tax on some of that risk premium, but it compensates investors to some degree by sharing some of the risk. If an investment turns out badly, the loss can be offset against another investment, or carried forward. The precise effect on risk depends on the tax treatment of losses, as it does under the current system, but under widely used assumptions about risk preferences, the two effects, sharing in the risk and in the premium, cancel out under a symmetric system.¹

Although the annual tax base does not alter the present value of tax returns, it does alter the cash-flow position, which may itself affect investment. Of course, the same is true of the current, or any, tax system. With the ACE, one possibility would be to allow companies some flexibility in measuring their taxable profits, allowing the use of accounting profits or a degree of immediate expensing. Taking this to an extreme, we could allow expensing of all investment, and move to a cash-flow base. In other words, the flow-of-funds

¹See Devereux and Freeman (1991) for elaboration of this point.

corporation tax (Meade, 1978) is a special case of the ACE.¹ The point of all this is not that we would necessarily want to move to a cash-flow base, but that we can design the tax base to suit the demands of liquidity without doing harm to the aim of efficiency. A concrete example is that small and growing businesses, often heavily reliant on internal finance, could be allowed to opt for cash-flow tax treatment, without compromising the overall neutrality of the system.

Corporation tax is the only significant tax on investment in the UK.² Can we really afford to introduce a substantial new allowance? The proposal here is to finance it by rearranging the tax base: introducing the ACE, removing the imputation system and reforming other taxes on investment. Even in the long run, this switch could in principle raise money, depending on the level of profitability, although it seems unlikely in practice. In the short run, the revenues depend entirely on the transitional package chosen; it could certainly raise revenue if desired.

One obvious choice for the rate of tax on companies' abnormal returns is the top rate of personal tax. This rate can then be conceived as the national rate of tax, with lower and zero rates as graduated allowances against that rate. In practical terms, the advantage of this choice is that it makes the system neutral in the choice between taking income as profit or as salary, where the investor is also an employee; both will be taxed at the same rate. Nor are lower income tax bands an obvious problem. If an owner-employee is genuinely in the basic rate band, they will have the opportunity to pay themselves a salary taxable only at the basic rate. The lower tax bands are there as a concession to those on modest incomes, and there is no reason to deny this concession to the owner-employee on a modest income.

Non-Corporate Investment

Investment outside the corporate sector is problematic in that it straddles personal and company tax systems. There are good reasons in principle why we would want to treat all investment on an equal basis. This could be achieved in one sense by ensuring that the effective tax rates on all marginal investments are equal.

However, if there is substitutability between different kinds of investment, then average tax rates may matter as well as marginal tax rates. The obvious example here is substitution between incorporated and unincorporated business; unless the true economic profits

¹The version described here is an R-base cash-flow tax. The R+F base requires further adjustments, but can be similarly incorporated.

²This statement would have been astonishing from the perspective of the early 1980s when revenues were so low that abolition was a serious option.

earned at the company level could arise only in the corporate form, then the tax system distorts the decision to incorporate. And since the corporate and non-corporate business forms are not perfect substitutes, this distortion implies an overall welfare loss.

The other aspect of the argument is that rents may accrue outside the corporate sector. If market power is the main source of economic profits, then we need to ask 'do companies have a monopoly on monopoly?'. If we are taxing rents in the corporate sector because we can, then it seems sensible to tax rents in the non-corporate sector if we can.

The aim then is to bring as much investment as possible within the bounds of a single investment tax regime.

Unincorporated business

As long as a trade can be brought within the net of the business tax, extending exemption to investment income does not present a problem. The Capital Taxes Group (1991, sections A.3.5-12) briefly considers how the assets of unincorporated business might be brought into the ACE scheme, and suggests that a business could 'opt in' to the ACE/PEP-style scheme by drawing up accounts distinguishing personal from business funds. An even simpler plan would be to allow cash-flow treatment at the fixed national tax rate, obviating the need to identify particular sets of funds, in favour of the identification of particular sets of assets (which is necessary under the present system in any case). The problem of dividing assets between business and personal use remains, but it is not clearly worse than under the present system.

Housing

Under the PEP-style system, there would be no tax on the returns on owner-occupied housing, on capital gains or on the imputed income of occupation, but neither would there be relief for the costs of borrowing or investment. The effect of this, as with other investment, is that house-buyers prepay tax on both the consumption of housing services and the financial returns to housing.

It is possible that economic profits are made in this sector¹ that could be taxed without distorting decisions, but it is difficult to see, both in principle and in practice, how housing can be brought within the net of an investment tax. Even if we leave housing outside the investment tax, incentives at the margin are unaffected by differences in the regimes.

¹ The idea that considerable economic rents are made in the owner-occupied property sector always seems more attractive in a property boom than in a property crash.

Towards a National Investment Tax

With all these elements in place, the overall picture is of a single layer of business tax, at a single rate, applied evenly across all types of business, based on true economic profits or the expenditure of investors. Investment in non-business assets, mainly owner-occupied housing, is not brought within this net, but this omission does not affect incentives at the margin.

The system outlined here retains the company-level tax, while effectively removing the personal-level tax. It is more practical to move in this direction rather than, for example, moving towards abolishing company-level taxes and reforming the personal level. PEPs, TESSAs and other exemptions already exist as instruments of reform. It involves a lower number of tax units, which is bound to yield administrative benefits. Most taxes are already administered at the company level, even if liability is calculated on a personal basis. As we have argued, the investor eventually bears the tax regardless, and with a flat-rate proposal it is simpler to levy at the company level.

There is also a case for levying tax at the company level because it lets us share in the returns on foreign direct investment. As capital becomes more mobile, there is a strong case that the only possible source-based taxation is a tax on locational rents, the returns that arise in a particular location over and above the opportunity cost of finance. Conceived in an international context, this is precisely what the ACE taxes, as argued in Capital Taxes Group (1991).¹

By recognising the interaction between different layers of tax, we have generated a reform strategy that eliminates one layer. The simplicity of one-layer taxes is attractive. Why have two layers of tax when one layer will do the same job? It is not surprising that other attempts at reform have recognised the difficulty of integrating corporate and personal tax levels. The US Comprehensive Business Income Tax proposal,² for example, also involves levying tax at the company level and discharging further liability, although within the overall context of an income tax. Hall and Rabushka (1985) propose a special case of the ACE/PEP-style strategy, a combination of a flow-of-funds base at the corporate level and exemption at the personal level.

¹ Taking this argument further, Gammie (1992) and McClure (1992), arguing for the cash-flow version of the ACE, both suggest that a tax on locational rents on a source basis, combined with (neutral) personal taxes on a residence basis, provides a natural split between the rights of jurisdictions to revenue, as well as a degree of what is described as 'administrative independence'. In the context of an ACE, this means that we can allow the source country the right to set the rate and cash-flow profile of the corporate tax, without jeopardising capital export neutrality. Musgrave (1992) counter-argues that taxable rents may also arise from residence-based factors, such as entrepreneurship, which would reduce the source country's moral claim to rents.

² See US Treasury (1992). Gammie (1992) includes a comparison of the ACE and CBIT proposals.

The approach outlined here has two advantages. Firstly, it means that reform can take place incrementally by adapting and extending existing institutions, which allows for the friction inevitable in the political process and enables us to smooth transitional effects. Secondly, it means that the current legal and administrative apparatus of taxation can be retained, except where it is made redundant by simplification. There is some advantage in sticking to tried and tested practical methods of tax collection. Where old methods work well they should be retained, and if possible put to better use.

Moving to a national investment tax is a viable long-term goal, and one that could be achieved by gradual change using existing elements of the present system. Even if these particular proposals are not adopted, serious consideration must be given to the interaction of the existing elements of capital taxation, and how the system might be made more coherent.

Chapter 2

International Company Tax

MICHAEL DEVEREUX

The taxation of large companies with international operations is becoming an increasingly important issue. Unfortunately, it is an area of taxation where both the economic and administrative principles which should govern the apportionment of taxes between states are often unclear. If a company has its headquarters in London, production plants in Birmingham, Manchester and Glasgow, and retail outlets in every major city in the country, it would be ridiculous to expect the Inland Revenue and the company to identify profits earned in each location and tax each element of profit accordingly. But a multinational might have its headquarters in London, undertake R&D in the US, produce in Asia and sell all over the world. In this case, such an allocation of profit is required.

These issues have important practical manifestations. For example, two of the most significant corporate tax issues now facing large British companies are those of unrelieved ACT and transfer pricing (including US government proposals for dealing with it). For the British Government, there are also important policy questions relating to its response to EC initiatives on company taxation. European Community Member States have already agreed to two Directives aimed at reducing transnational distortions which were instituted with a view to improving welfare throughout the EC,¹ and several more proposals are on the table in different forms. One of the issues facing the UK Government over the next four years is how to respond to these proposals.

This chapter looks at some problems arising out of international activities. It first looks at some principles and objectives of national government in this area. Then it looks at the limitations of unilateral action with reference to the problem of surplus ACT. Finally, it looks at possible multilateral initiatives in the medium and long term.

The discussion thus splits the subject into two. The first looks at what unilateral measures should be taken, under the assumption that the policies of all nations are determined without co-operation. How can the national interest be served by the adoption of a 'British policy in British interests'?

¹The Parent/Subsidiary Directive and the Merger Directive were adopted by the Council in July 1990, with a view to being implemented in all Member States by 1 January 1992. In fact, none of the Member States had fully implemented either of the Directives by this deadline.

The second type of consideration is what the UK's 'tax foreign policy' should be. A number of questions arise. What multilateral steps can it try to promote in order to advance the interests of the British people, and how should it promote them? It is possible that agreeing to some degree of convergence in international taxation may improve global welfare but reduce national welfare:¹ what compromises could it make internationally in order to extract welfare-enhancing concessions from other nations? Are there changes that could be made to the international tax system that overcome the difficulties of each nation acting in its own interests?

In short, there are two issues: is it possible - at least in the medium term - for a single government to help its population with unilateral measures; and is it sensible for a government to improve national welfare through multilateral measures?

Principles

In the absence of international agreements, a government may be expected to promote its own national interests. For example, for the UK, there are clearly direct benefits for UK citizens from activities taking place in the UK rather than elsewhere: indeed, the Government actively competes with other countries to attract inward investment from third countries (and has had some success in doing so). And the UK has an interest in ensuring that revenue raised from the taxation of multinationals accrues to the UK Government, rather than to other governments.

It is still possible that national governments acting in their national interest are unable to be very effective. One reason is the possible response of other governments. Suppose the UK reduced its corporation tax rate to 20 per cent. This may both improve the UK as a location for real investment and encourage multinationals to locate their profits in the UK rather than in higher tax rate countries. But, as is often argued, such a policy may well lead to other countries following suit - or possibly imposing penalties on profits repatriated out of the UK. If they did so, the short-term benefits of being an attractive location would disappear; the UK Government would be left with less revenue, but little advantage in terms of extra economic activity.

Of course, this is an extreme case, which is sometimes used to justify the absence of international co-ordination of taxation on the grounds that such competitive forces would in any case bring about co-ordination. More generally, however, the UK Government would face a high level of uncertainty if it attempted such a policy. Not only is it uncertain how much additional activity and profit would be generated in the UK if there were no response from other governments; the size of such a response is also uncertain.

¹This question mirrors the debate over trade policy currently conducted in the latest GATT round.

In contrast to the setting of all policy domestically, it may be possible to increase national welfare through international agreement. Uncoordinated transnational taxes may create unnecessary costs relative to co-ordinated tax systems. This may make it sensible for nations to get together to reach agreement on how taxes should be collected. If the benefits that derive from these agreements are shared widely, mutually advantageous deals will be possible. There are several reasons that co-ordination can generate these benefits. The first three are concerned with distortions to company behaviour, and the fourth results from the complexity of international aspects of taxation.

Firstly, the location of activities may be affected by tax considerations. Suppose a multinational decides to set up a factory in a relatively high-cost location because of the tax advantages of doing so. The higher cost of production represents a reduction in overall welfare which might be borne by the owners of the company, its work-force or the consumers of its products - who may be resident in any country.

Secondly, a company resident in, say, the US may have a competitive advantage over a company resident in Britain which is derived solely from the differential tax they face which may outweigh the greater efficiency of the company in Britain. Again, the higher cost of production due to it being carried out by the company resident in the US may be borne by the residents of any and all countries.

Thirdly, the financial and legal structure chosen by a company operating in several countries may be affected by international tax considerations. This may lead the company to have too great a reliance on one form of finance, for example, which may affect its long-run stability.

Fourthly, and possibly most importantly, the compliance and administrative costs involved in operating the current structure of international taxation may be very high. Again, these costs may be shared between the company's owners, workers and customers.

One further factor might be added to these inefficiencies: that is that the tax system should be 'fair'. It may be a desirable feature of a global tax system that it is fair, but this raises questions as to what 'fair' means in the context of international tax. One implication might be that the allocation of revenues between jurisdictions should be 'fair'.¹ Another is that taxpayers or shareholders should be treated 'fairly'. However, this is even more difficult to make precise. Should companies resident in the same location be treated equally,

¹Quite what represents a 'fair' distribution is debatable and can be left to one side for present purposes.

companies operating in the same location be treated equally, or neither of these? Clearly, both cannot be true without all taxes in all jurisdictions being the same. Even asking this question makes clear that there is no obvious or easy answer.¹ We return to the issue below.

Any individual government would be right to be concerned about these potential inefficiencies or injustices, and to support international action to counter them. Usually, there will be some mutually advantageous deal between governments that eradicates these distortions. Often, it is more important for governments to reach some agreement than any particular agreement. In these cases, the policy of a responsible government - attempting to act in the interests of its own population - should be to promote international co-operation, to foster agreement and to ensure that the benefits of international agreement are distributed equitably enough to ensure that each nation can agree.

Limitations of Unilateral Action: Unrelieved ACT

One major source of complaint about the current UK corporate tax system is the existence of unrelieved ACT. This illustrates the difference between the appropriate unilateral policy and the most desirable multilateral policy.

When a UK company pays a dividend to its shareholders, it makes what is effectively a prepayment of the shareholders' UK income tax, paid at the basic rate of 25 per cent. This prepayment is called advance corporation tax (ACT). UK shareholders receive a tax credit equal to the amount of ACT paid which can either be used to offset against their income tax liability or be reclaimed if the shareholder's tax rate is less than the basic rate. However, the ACT can also be offset against the company's UK corporation tax liability. For a purely domestic company, this system reduces the 'double taxation' of dividends.

However, the amount of the ACT which can be offset against corporation tax is limited: it can only be offset to the extent that the gross dividend does not exceed taxable profit earned in the UK. Any excess ACT is 'unrelieved' and can be carried forward to offset against corporation tax liabilities in later years.²

In the context of a purely domestic company, this limitation prevents companies receiving the tax advantage when paying dividends out of capital rather than income and avoids infinite round-tripping possibilities; otherwise, for example, a pension fund (which pays

¹ This is true even if we abstract from the question of who bears company taxes. Since such taxes must eventually be borne by individuals - whether shareholders, employees or customers - it is not clear what it means to talk about 'fairness' between companies. Which individuals bear the tax will depend on the market conditions in which the company operates.

² ACT can also be carried back to set against corporation tax in the previous six years, in which case it is not 'unrelieved'.

a zero rate of income tax) could continually buy new shares issued by the company, the proceeds of which are paid out in the form of a dividend, with the pension fund able to profit by the amount of the tax rebate paid by the Government.

By contrast, a UK-based multinational may earn a large proportion of its profits abroad on which it pays foreign tax and little, if any, UK corporation tax. If it pays a dividend to its shareholders commensurate with its world-wide earnings, it may not be able to offset all the ACT paid against UK corporation tax: UK taxable profits will be less than the gross dividend. Some income deriving from such a company will face taxation twice - as profit in one country, and ACT in the UK.

It can be asked whether the current treatment is 'fair'. It has already been suggested that the issue of fairness is difficult to pin down. Certainly, the multinational faces a higher average tax rate than a purely domestic company. If the multinational is operating in another country with an imputation system, then it may also be facing a higher average tax rate than domestic companies in that country. But if it is operating in a country operating a classical system (such as the US and Japan) - that is, one in which no relief is given for the double taxation of dividends - then it probably faces roughly the same average tax rate as domestic companies in the 'classical' country. However, as argued above, there are no easily identifiable ways of measuring the fairness of how UK resident multinationals are taxed relative to purely domestic companies or other multinationals, resident in, and possibly operating in, different countries.

Opinions are divided on whether this is a problem which should be dealt with by the UK Government unilaterally. There are several arguments which have been used to justify reform.

The average tax rate faced by a multinational is higher than it would have been if all of its profits had been generated in the UK. Thus, the system gives an incentive to such companies to locate their activities (or profit, at least) in the UK. Gammie (1991) has pointed out that distorting the growth of UK resident multinationals may not be in the best interests of those multinationals. In the long term, this may have important consequences for the UK economy. But in the present economic climate, providing employment opportunities in the UK which would not otherwise occur can only increase 'national welfare'.

And it would be costly to give additional relief to UK-based multinationals with unrelieved ACT, to make it more profitable for them to invest overseas. The additional relief would effectively compensate multinationals for taxes paid abroad: in effect, the UK Government would be saying 'invest abroad, and we will pay some of your foreign taxes'. This is not obviously a good unilateral measure.

If the UK was inclined to act unilaterally to give additional relief of some form against unrelieved ACT, in order to remove the discrimination against outward investment by UK

resident multinationals, several possible forms of relief exist, and have already been outlined or discussed (see Higson (1991) and Gammie (1991)). For example, the Government could:

1. allow ACT to be offset against foreign taxes;
2. exempt foreign source dividends from corporation tax, ACT and income tax;
3. allow ACT to be marketable between companies, so that those with low dividends would be prepared to buy unrelieved ACT from multinationals;
4. tinker with the current system, for example, by relaxing current restrictions on group relief for ACT, or increasing the set-off limit so that ACT can be written off even when gross dividends exceed UK taxable profit;
5. revert to a classical system or net UK rate system for taxing dividends.

None of these options is persuasive, however. They all involve the UK Government in a loss of revenue. Only the first would remove the discrimination against outward investment, but it would obviously be very costly.

The second would be less costly than the first for zero-rated shareholders - effectively because the tax rebate would not be available - but would be more costly for higher-rated shareholders, unless some additional charge were made.¹ The impact on the discrimination against outward investment would depend on how managers respond to changes in the net income of the shareholders. To the extent that zero-rated institutions are important shareholders and that managers seek to maximise the post-tax income of their shareholders, the second reform would have little effect on incentives.

The third is simply a roundabout way of the Government giving relief directly and could hence potentially be as costly as the first.² The fourth would be less costly, but would correspondingly have less impact on the disincentive to outward investment which currently exists.

¹Let X be the foreign-source dividend net of foreign tax and suppose that UK corporation tax is not due on the receipt of the dividend. Under the current system, if the UK company does not have spare UK taxable profit against which to offset the ACT, it would be able to pay a net dividend of $(1-c)X$ and ACT of cX , where c is the basic rate of income tax. After personal tax, domestic shareholders end up with $(1-m)X$, where m is the shareholder's income tax rate. If ACT could instead be offset against foreign profits, the company could pay a dividend of X , with an associated tax credit of $cX/(1-c)$, and shareholders would end up with $(1-m)X/(1-c)$. This is more than under the current situation for all shareholders. If, alternatively, foreign-source income were exempt from UK tax, shareholders would end up with X . This is the same as the current situation for zero-rated shareholders, but more than the current situation for other shareholders; for top-rated shareholders it would be more generous than giving relief against foreign profits. To avoid this, some residual tax could be charged on top-rated shareholders (see Gammie (1991)).

²It also highlights the distortion which arises in the current system between the effective rate of tax on dividends and retained earnings. At the cost of purchasing unrelieved ACT from other companies, some companies would be able to reduce the effective tax rate on their retained earnings.

Neither of the fifth options is likely to be very popular. Reverting to a classical system would remove the discrimination against outward investment by reducing the tax relief on domestic investment - a kind of levelling-up of tax liabilities. Reintroducing the net UK rate would be complex, would leave domestic shareholders with the same post-tax income as under the current system and would raise tax treaty problems with respect to foreign shareholders (see Gammie (1991)).

To summarise, there are few unilateral measures that are attractive to counter any ACT-induced distortion in favour of UK activity by UK multinationals.

However, there is a second problem caused by unrelieved ACT, which is that it makes Britain less attractive to foreign multinationals as a location for a European holding company. This is because the ACT (net of any credit reclaimable by the foreign multinational) is a form of withholding tax charged on profits passing through the UK. There is a clear interest for the UK in attracting holding companies which bring valuable income to local service industries.

So should the Government give some form of relief to remove the tax disadvantages of the UK as a location for European holding companies?

This is an issue on which the UK Government could legitimately and unilaterally act: not only is economic activity in the UK likely to be reduced as a consequence of the current situation, but revenue cannot in any case be raised if such companies choose to locate elsewhere. Without going into details (see Gammie (1991) for discussion), the UK could exempt such companies from paying ACT on dividends paid to a foreign parent. And from a global point of view, this would be acceptable, as the location of a European holding company should - in global welfare terms - be determined without reference to taxes.

We have seen that the domestic options facing the UK Government on ACT are very limited. Apart from resolving the problems of UK-based international holding companies, unilateral action does not seem very attractive. This is therefore one of those cases where multilateral action may be the most attractive route to pursue. It is the multilateral forum to which we now turn.

Multilateral Action

The ACT problem

The only action proposed on this has emanated from the EC's Ruding Committee, described below. Two proposals have been put forward. The first would enable ACT to be offset against foreign corporation taxes and the second would imply that dividends from domestic and foreign sources would be given equivalent reliefs. The Commission intends to discuss with Member States appropriate ways of putting these recommendations

into effect. In particular, it does not want to introduce these proposals on a reciprocal basis. Certainly the economic benefits would be greater if they were applied to all countries; however, the cost to the UK, for example, would be much greater in this case.

Unfortunately, not all countries offer their domestic companies an equivalent of the ACT relief that the UK does against mainstream corporation tax. They are hardly likely to offer it to British companies. This makes international agreement extremely difficult except in a world where all countries had the imputation system.

Overall, however, it must be more attractive to attack unrelieved ACT as part of an international effort rather than as a single country acting alone.

Other European Community issues

The last two years have seen unprecedented activity in making proposals and securing agreement between Member States on various aspects of the co-ordination of company taxes within the European Community. As well as the Parent/Subsidiary Directive and the Mergers Directive, the Commission has instituted the Arbitration Convention and a proposed Directive on interest and royalty payments. In addition, the Ruding Committee proposed many reforms to corporate taxation in the Community to which the Commission responded in June of this year.

One of the issues confronting the UK Government over the life of the current Parliament is how to respond to such proposals. One central question is whether to accept the Commission's response to the Ruding Committee's proposals. Very broadly, the Commission welcomed those proposals aimed at reducing or eliminating the 'double taxation of cross-border income flows' and indicated that it would act on several of them, in ways ranging from 'proposals for directives will be drawn up by the end of the year',¹ to 'welcoming' and 'endorsing' proposals. Very broadly again, however, the Commission reacted unfavourably towards those proposals which it considered aimed at aligning national corporation tax laws, such as minimum and maximum tax rates and a harmonised base.

Certainly most of the first set of proposals would improve the taxation of multinationals. Many of them would reduce the complexity, uncertainty and hence compliance costs of international taxation; it is hard here to see any distinction between national interest and 'global' interest. Although many of the proposals are so far extremely vague (for example,

¹This was the Commission's response to proposals to extend the range of the two existing Directives.

to adopt a common approach to the definition and treatment of thin capitalisation), and therefore need to be spelled out in more detail, the principles embedded in them are generally sound.¹

Certainly, too, some of the second set of proposals give signs of not having been thought through in a very consistent manner. However, three proposals are worth considering. Firstly, the Ruding Committee proposed a minimum rate of corporation tax. There are some unpersuasive reasons for a minimum rate, such as the distortion to the location of real economic activity or the need to avoid damaging tax competition between Member States. However, one more persuasive reason is that it would tend to move statutory rates closer together, thereby reducing the gains that can be made by shifting profits from one jurisdiction to another. This would in turn reduce the importance of features such as transfer pricing rules and thin capitalisation rules.

The longer term

One of the fundamental problems in the international taxation of companies is that of allocating the profits of a multinational company to individual jurisdictions.² The problem arises because in many cases there is no economic rationale for allocating profits between different jurisdictions.

Certainly, there exist rules for determining such an allocation. Unfortunately, any such rules must be *ad hoc*, simply because there is no economic answer to the question of where profits that are created through the combining of resources from different geographical areas arise. Furthermore, with the increasing internationalisation of business and the dismantling of frontiers within Europe, this issue can only grow in importance.

The current dispute over recent 'Schedule 482' proposals by the US Internal Revenue Service to introduce the concept of the Comparable Profit Interval as the most important yardstick in determining whether a transfer price is acceptable to the IRS is just one example of this problem.³ These proposals were introduced because of a widespread belief

¹ For example, one potential problem arising from the abolition of withholding taxes within the EC is that Member States do not treat third countries in the same way. This would give rise to opportunities for treaty shopping.

² One-third to one-half of trade between developed market economies consists of intra-firm trade of multinationals.

³ Essentially, this means that the IRS proposes to test the income derived from inter-company transfers against the income derived by similarly situated domestic taxpayers engaged in comparable transactions with unrelated parties. In practice, this means comparing the profit earned by foreign-owned companies within the US with profit earned by domestically owned companies - quite possibly competitors in the same market.

in the US that foreign-owned companies were transfer-pricing profits out of the US.¹ The fact that the widely accepted arm's length principle, embodied in the 1977 OECD Model Tax Treaty, is now coming under fire suggests that this may be a good moment to raise fundamental questions.

The only way that such disputes can ever be completely resolved is to end the need to allocate profits between countries. The only way this can be done is for all countries to agree on a common tax base to be applied to multinationals, so that world-wide income for such companies is computed only once. Within this framework there are at least three possibilities for raising revenue and allocating it to national tax authorities.

Firstly, the taxable profit so computed could be allocated to individual countries on some formula apportionment basis, where the formula is based on relatively easily identifiable variables as in the US. Given the impossibility of identifying a 'true' allocation, this should not be 'unfair' to any individual country. If the taxable profit were allocated in this way, individual countries would then have the right to set their own tax rate and would therefore still have some control over the revenue which they raise. Alternatively, the taxable profit could be taxed at a single agreed rate. The proceeds could then again be divided between countries using some apportionment method, or perhaps, more controversially, the revenue could be used for some international purpose (in the context of Europe, funding the activities of the European Commission, for example).

Such a scheme raises the issue of which companies are taxed in this way. Clearly a large number of companies operate only within a single jurisdiction. There is no reason why the tax authorities of that jurisdiction should not continue to tax such companies independently of the tax systems of other jurisdictions. The problem identified above related primarily to those companies with significant international activities and it is therefore these companies which could be taxed on a global - or European - scale. Criteria could be laid down for determining the relative size of foreign activities which would switch a company to the global tax base. Alternatively, some measure of discretion might be left to the national tax authority and/or to the company itself.

This may not be a feasible aim of the UK Government over the next four years. But over the next 10 or 20 years it may be seen to be the only way of successfully taxing multinationals.

¹ Whether this would be a rational strategy for such companies from a tax point of view does not appear to have much impact on US opinion.

Chapter 3

Value Added Taxation

PAUL BAKER

In the 1991 Budget, against a background of discontent at the level of Community Charge bills, the Chancellor announced an initiative to finance cuts in the Community Charge through an increase in the VAT rate to 17½ per cent.

Throughout most of the 1970s, the standard rate of VAT was set at 8 per cent, with a higher rate, applied to 'luxury goods', of 12½ per cent.¹ The Budget of 1979 saw a rationalisation of the structure of VAT, with an increase in the standard rate to 15 per cent. This upward trend in UK VAT rates is far from unique; as is illustrated by Table 3.1, standard rates of VAT have been rising throughout the European Community, as they have elsewhere.

Table 3.1
Standard VAT Rates in European States

Country	Year of introduction	Rate at introduction	Rate in 1980	Rate in 1992
Denmark	1967	10	22	25
France	1968	16.7	17.6	18.6
Germany	1968	10	13	14 ^a
Netherlands	1969	12	18	18.5
Luxemburg	1970	8	10	15
Belgium	1971	16	16	19.5
Ireland	1972	16.4	20	21
Italy	1973	12	14	19
UK	1973	10	15	17.5

^a 15 per cent from 1 January 1993.

Source: Aaron, 1981; HM Customs & Excise, 1992.

¹The principal categories of expenditure subject to higher rate VAT were most domestic electrical appliances, photographic equipment, jewellery, pleasure boats, caravans and petrol.

It is less clear that further increases in the standard VAT rate remain at the forefront of the current Government's policy objectives. At the last general election the Conservative manifesto made no reference to VAT, although there was an unwritten commitment not to raise the VAT rate.

However, there are two important reasons for VAT staying high on the tax agenda. The first is that it remains an issue of importance in the European Community, with an effect on the ease with which border controls can be removed under the single market campaign. The second is that with the rate increase of March 1991, the tax treatment of zero-rated items is looking disturbingly anomalous.

European Community Issues

Analysis of the current system of VAT must be set against the background of the European Community. UK VAT is already subject to the provisions of the EC Sixth VAT Directive¹ which lays down a common structure of VAT for all Member States. More importantly, with the coming of the Single European Market in 1993, the recent focus of VAT discussion within the EC has been on the means by which rates and administration of VAT need to be changed in order to support the scrapping of border controls. In July of this year European Community Finance Ministers reached provisional agreement on a package of binding minimum excise duties and VAT rates.² After a series of proposals, counter-proposals and protracted negotiations, that the Ministers managed to reach agreement was in itself an achievement. To some, however, the agreement represented further Community encroachment into domestic fiscal policy. Amidst claims that the UK had ceded tax sovereignty to Brussels, the Chancellor responded that the agreement 'preserves the flexibility of future British governments and parliaments to set VAT rates' and 'requires no increase in any UK tax rate or duty'.³

Despite the protests, the UK is one of the few Member States, along with Denmark and the Netherlands, that has not been required to adjust its indirect tax structure to accommodate the move towards a barrier-free Europe. This, in part, has been due to our relatively simple structure of VAT and high levels of excise duties. Further, the UK has been aided by simple geography, which ensures that we are much less open to potential loss of revenue through cross-border shopping than many Member States. The pressure to reach agreement had therefore been greater on our continental partners and, given the

¹ European Commission, Sixth VAT Directive, no.77/388/EEC, *Official Journal of the European Communities*, no. L145, 13 June 1977.

²In fact the Member States' Finance Ministers had reached unanimous agreement on minimum VAT rates at the Economic and Financial Council (ECOFIN) meeting on 24 June 1991.

³As quoted in *Financial Times*, 28 July 1992.

requirement for unanimous agreement on fiscal matters, the UK could maintain a relatively strong bargaining position. There is little reason to believe that this position should have changed by the time the agreed rates of taxation are due for review in 1996.

The question still remains, however, as to what extent the agreement impinged upon the flexibility of the UK Government to make future changes to the structure of indirect taxation. With respect to VAT, the main points of the agreement, excluding specific arrangements not applicable to the UK, are that:

- Member States should apply a standard rate of not less than 15 per cent.
- Up to two reduced rates, in excess of 5 per cent, can be allowed. Reduced rating will be permitted on a list of goods, still to be finalised, which should include basic foods, energy, passenger transport, children's clothing, housing and books.¹
- Existing super-reduced rates, including the UK's extensive zero rating, may be maintained.
- Increased rate bands should disappear.

There is nothing in these proposals which will require any adjustment to the current structure and rates of UK VAT. In practice the main policy options removed by the agreement are that of cutting the standard rate of VAT below 15 per cent or reintroducing high rate VAT. It would appear that these were not options in the mind of the Chancellor at the time the agreement was reached.

It is possible, however, that Europe may yet exert an influence on the direction of future VAT reform. In fact, in the eyes of the European Commission, the current agreement is viewed only as part of a transitional system. In particular, the current agreement retains the 'destination' principle of indirect taxation whereby goods are to be taxed at the rate applicable in the location at which they are consumed. Importantly, for intra-Community trade, under the 'destination' principle goods are exported tax-free and become liable, on import, to the tax of the importing Member State. The Commission, however, still retains the ultimate objective of adopting an 'origin'-based system whereby goods are taxed before export, at the rate of the exporting Member State, and are then imported 'tax paid'. Beside the numerous administrative issues raised by such a switch, one obvious implication is that it would be far more difficult for individual Member States to retain differences in their tax rates. The debate over the need for and appropriateness of tax rate approximation looks set to be repeated once again. Whether, given the Commission's and Community Finance Ministers' ability to compromise over such issues, approximation will ever occur is another question.

¹The list of goods upon which reduced rates may be applied will be reviewed every two years.

The Case for Extending the VAT Base

Preserving the structure of zero rate VAT is an area of notable political sensitivity. This was apparent during negotiations over the European Commission's proposals for VAT harmonisation which, in their original form, would have ended zero rating. In all other Member States, with the exception of Ireland, zero rate coverage is minimal although there is more extensive use of reduced rate VAT. In the UK, however, around 24 per cent of consumers' expenditure is zero rated.¹ Thus, zero rating proved to be one of the most contentious issues during negotiations over indirect tax harmonisation in the run-up to the Single European Market.

Table 3.2
Estimated Yield Forgone on Zero-Rated Goods and Services, 1991-92^a

	£ billion
Food	7.0
Domestic fuel and power	2.5
Construction of new dwellings ^b	3.4
Passenger transport ^c	2.3
Books, newspapers etc.	1.0
Children's clothing	0.6
Water and sewerage services	0.5
Drugs and medicine on prescription	0.4

^a Not all expenditure under these headings is zero rated. No allowance is made for changes in behaviour.

^b Includes zero-rated expenditure on land purchased for construction of new dwellings.

^c Includes aviation.

Source: HM Treasury, 1992.

It is unlikely that any Chancellor will seek to extend the VAT base unless the potential revenues are sufficiently high to compensate for the political cost that such a change would generate. Some insight into the magnitude of these revenue gains may be obtained from Table 3.2, which shows HM Treasury's own estimates of the yield forgone as a result of

¹Based on 1990 Family Expenditure Survey data and a 15 per cent VAT rate: zero rate 24 per cent, standard rate 54 per cent, exempt goods 4 per cent, new housing (technically zero rated) 18 per cent.

zero rating. These may be compared with an estimated additional £3.9 billion¹ revenue from the increase in the standard rate to 17¹/₂ per cent and a total VAT yield for the same period of £35.5 billion.²

Apart from the revenue implications of extending the VAT base, the economic arguments in favour of moving towards a more uniform system of expenditure taxation are well established. If different items are taxed at different rates, consumers will switch their spending to low-taxed items. In so far as they do switch their spending, the government receives no tax revenue, and consumers make a sacrifice in not buying items that they might value more highly. Indeed, while there are arguments in support of differential tax rates where the range of goods to be taxed is of necessity very limited, there is a generally accepted basic economic presumption in favour of imposing a uniform rate of indirect taxation across all goods. This presumption rests not least upon the absence of a well-defined economic criterion by which one commodity should be taxed more heavily than another.

In general, then, there are two main arguments against the use of multiple rates or exclusions:³

- Changes in relative prices due to taxation will result in distortions in the allocation of resources amongst different goods and services for both consumers and producers. For consumers this will be particularly the case where they can readily substitute away from goods which are more heavily taxed. Unless these distortions compensate for existing market imperfections, they will impose costs upon the economy as a whole. It follows that the greater the differences between tax rates, the larger will be the costs imposed.
- There are significant administrative advantages to operating a uniform system of taxation. The main problems stem from the difficulty in providing a legally acceptable means of classifying goods between VAT categories, and from the difficulty in monitoring and policing the system.

There is little evidence as to the size of the costs imposed as a result of a multiple-rate system. In the case of administrative costs, this lack of quantification follows from the fact that a high proportion is borne by the private sector,⁴ although it is well accepted that

¹This is the estimate for the addition for the tax year 1991-92; the full impact is estimated at £5.5 billion for 1992-93.

²HM Treasury, 1991.

³A more detailed analysis of the arguments in favour of uniformity may be found in Davis and Kay (1985) and Tait (1988).

⁴Private compliance costs associated with value added tax have been estimated at more than 9 per cent of revenue and public administration costs at 2 per cent (1977-78); see Sandford et al. (1981).

administering zero-rate VAT has a significant impact. None the less, in light of the above, there exist a number of pointers for the direction in which one might wish to proceed with future tax reform:

- Unless a strong case may be made for the special treatment of a particular good or service, there is a general presumption in favour of tax uniformity.
- Reducing differences in relative tax rates will, a priori, reduce the level of distortion in the allocation of resources resulting from the tax system. Further, this will reduce the incentive for tax evasion.
- Increased uniformity, particularly reducing the extent of zero rating, should reduce the administrative and compliance costs of the tax system.

Regardless of changes to the tax base, the second of the above points suggests that continuing the upward trend in the standard rate of VAT will, by itself, serve only to exacerbate the level of distortion it causes whilst increasing the incentive for tax evasion. It is worth noting, however, that as a result of changes in consumer expenditure patterns, there has been a gradual reduction over time in the average proportion of consumers' expenditure excluded from standard rate VAT.

Table 3.3
Main Exempt Expenditure Categories

Land
Insurance
Postal services
Betting, gaming and lotteries
Finance
Education
Health and welfare
Burial and cremation
Trade unions and professional bodies
Sports competitions
Works of art

Source: HM Treasury Tax and Benefit Reference Manual.

As Tables 3.2 and 3.3 show, there is considerable variation in the expenditure types subject to preferential VAT treatment. If, however, the basic presumption in favour of a uniform rate of VAT can be taken as accepted, the question raised is what justification may be found for the existing structure of VAT?

The preservation of the zero rate is more the product of political history than economic sense. At its root are perhaps two principal causes: first, the perception that a uniform VAT structure, without zero rating, would be particularly regressive in its impact; second, and related closely to the first, is a long history of political debate over the appropriateness of taxing food, by far the largest category of expenditures currently zero rated. It is for these distributional reasons that zero rating has become one of the sacred cows of tax policy.

Two other reasons underlie the list of zero-rated and exempt goods: preferential treatment for 'merit' goods (items for which it is politically desirable to encourage consumption, such as newspapers) and the existence of major practical and administrative problems associated with particular goods and services. These categories are by no means mutually exclusive; thus, for example, children's clothing may be excluded both on distributional and merit grounds. In addition there is a further category of goods which are, or have traditionally been, supplied primarily by the state (public transport, health) or for which the state fixes the price and level of service (television licences, prescription charges).

The most justifiable reason for special treatment is that of practical and administrative complexity. Foremost of the expenditure categories which come under this heading are financial and related services and housing. Briefly, since financial services are generally financed out of differences between lending and borrowing rates, which do not represent sales for VAT purposes, the VAT system simply does not work effectively in this area.¹ This suggests that an alternative means of taxation may be necessary rather than, as has become the generally accepted principal, simply exempting financial services.

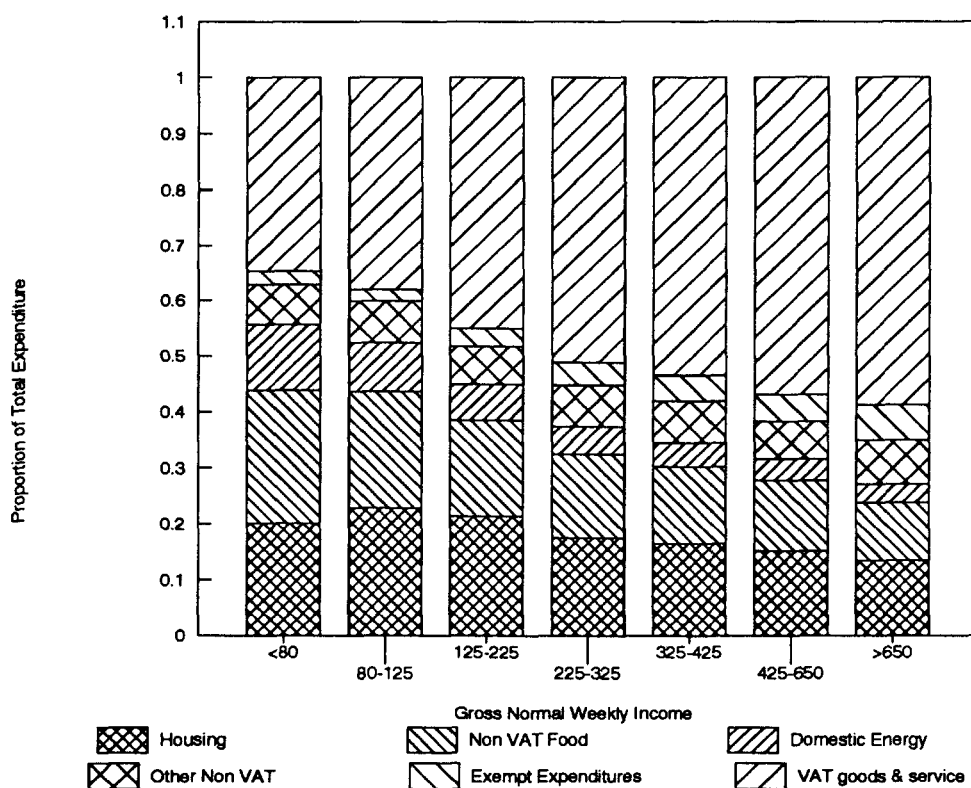
Similarly, housing raises its own specific problems which stem from the intrinsically durable nature of housing and the fact that consumption of housing services is not concurrent with their purchase. Firstly, if the principle of taxing only those items produced after the introduction of the tax is observed, the tax base will be significantly reduced and the market distorted against new construction. Secondly, if tax were to fall due both on the sale of new housing and on subsequent resale, it would represent a serious penalty on 'second-hand' housing. Attempting to tax the services that individuals receive from their housing, perhaps through the taxation of rents, would require imputation at least for owner-occupiers and potentially require a VAT return from each one of them.

Items which come most easily under the heading of merit goods are children's clothing, books and newspapers, burial services, and private schools and medical services. For each of these items one could easily imagine goods or services which are equally meritorious but yet remain subject to VAT.

¹ See Edwards and Mayer (1983).

In the case of goods which are or have been supplied primarily through the public sector, the most important (in expenditure terms) are public transport and domestic energy and power. Public transport has traditionally operated at a loss and would therefore yield little net revenue, whilst electricity and gas remain subject to a degree of regulation. It does not follow, however, that because these sectors have prices that are already adjusted in some way, they should be subject to further special treatment under the VAT system. Moreover, if these sectors move towards market prices and profitability, why should they remain zero rated?

Figure 3.1
Distribution of Household Expenditure by VAT Category, 1990



Source: IFS calculation based on 1990 Family Expenditure Survey.

The most strongly defended reason for zero rating and exemption is the distributional impact of the VAT system. As Figure 3.1 illustrates, zero-rated goods form a higher proportion of the spending of low-income households, although as can be seen this result is driven by the expenditure pattern of food and fuel and, to a lesser extent, housing. Exempt goods, however, form a higher proportion of the spending of high-income

households. Of course, within each of these income groups particular household groups will gain more or less from the structure of VAT. The most obvious example is households with children who will gain most from the zero rating of children's clothing.

Although the indirect tax system is seen to be progressive, it does not follow that it represents the most appropriate means of achieving progressivity. It is not even clear, if the desired objective of the tax system is to achieve progressivity in the taxation of income, why one should resort to taxation of a proxy for income, namely consumption, rather than income itself.¹ Differential rates of indirect taxation represent a very blunt instrument for achieving this objective. It should further be remembered that in absolute terms, zero rating is of more benefit to rich than poor households since expenditure on zero-rated (and exempted) items does rise with income, even if this rise is proportionately less. Thus, for example, of the income groups in Figure 3.1, on average the lowest income group (less than £80 per week) gained £2.10 per week from the zero rating of food, whilst those in the highest group (over £650) gained £6.50.

As Davis and Kay (1985) clearly illustrate, the overall progressivity of the VAT system is small relative to that of income tax, and income tax is a more effective means of achieving progressivity than VAT. It is not necessary, for example, to exclude food from the tax base in order to protect low-income households from the burden of indirect taxation if appropriate adjustment is made elsewhere in the tax and benefit system. Thus distributional implications should not by themselves rule out possible reform of the structure of the indirect tax system. It may not even follow that zero or reduced rates of VAT benefit final consumers. Traders faced with recouping a certain level of VAT may adjust prices in line with what the market would bear regardless of the tax rate. Thus, for example, supermarkets may alter their prices on food such that they cross-subsidise items on which VAT is charged.

Implications of Extending the VAT Base

The previous section has indicated that there are strong economic arguments in favour of a uniform system of VAT. It has also been suggested that concern over the distributional impact of extending the VAT base may be overcome by appropriate changes to the direct tax and benefit system. In this section we attempt to assess some of the possible impacts of changes to the VAT system. On the one hand, there will be revenue gains and possibly administrative savings and, on the other, distributional and inflationary implications. Any revenue gains may be used to finance changes in other parts of the tax and benefit system, in public spending, or in the VAT rate.

¹ The justification that taxation of income has a disincentive effect on work behaviour may also be applied to high rates of tax applied to the goods consumed by high-income individuals.

It is not the purpose of this section to suggest what these changes may be, although, given the distributional sensitivity of zero rating, it is impossible to imagine that any Chancellor would consider such major changes to the tax base without offsetting changes elsewhere. However, in assessing the impact of changes to the VAT base, some attempt will be made to illustrate how the most serious distributional impacts may be offset.

The arguments in favour of uniformity suggest that the appropriate change would be to move to a single uniform VAT system. In reality, it is unlikely that the specific problems relating to the treatment of housing (and land) and financial services may be overcome directly through the VAT system. Many of the goods and services included within the list of exempt categories are associated with specific administrative and other practical problems and have only minor revenue implications. The major impacts of an extension to the VAT base may be assessed by considering the zero-rated expenditure categories: food, domestic energy, public transport, children's clothing, books and newspapers.

There are a variety of adjustments which could be made, varying from extending the base to cover selected items to a general extension to all the above zero-rated goods. Table 3.4 shows estimates of the revenue and inflationary impacts of a number of changes to the VAT system. Extending standard rate VAT to cover all the main zero-rated items would raise in the region of £11 billion. Combining the extension of the VAT base with a reduction in the VAT rate to 15 per cent, the minimum possible under the European Community agreement, would still raise an additional £5.3 billion. Alternatively, in common with other Community members, a reduced rate of VAT of, say, 5 per cent could be introduced.

Of the above changes, imposing standard rate VAT at $17\frac{1}{2}$ per cent would entail the most serious distributional impacts, as is shown by Table 3.5. The table provides calculations, for household (equivalised) income deciles, of average additional tax payments and proportional changes in net disposable income. Although in absolute terms higher-income households are seen to pay more in additional VAT, the proportionate reduction in their disposable income is much smaller. The regressive impact of increasing the VAT base alone is well illustrated. However, as already discussed, such a change would raise substantial additional revenues which could be used to alleviate the distributional impact of the tax change.

Table 3.4
Revenue and Price Effects of Changing VAT Base

Change to VAT system	Net additional revenue from personal sector (£ billion)	Effect on consumer prices (%)
Standard rate VAT (17½%) on expenditures currently zero rated (excluding housing)	10.7	3.7
Reduced rate VAT (5%) on expenditures currently zero rated (excluding housing)	3.4	1.0
Reduced standard rate VAT (15%) on expenditures currently zero rated (excluding housing)	5.3	1.9

Source: IFS estimates.

Table 3.5
Effect on Household Net Incomes of Extending the VAT Base

Equivalent income decile ^a	Change in net income (£ per week)	Percentage change in net income
Lowest	-6.97	-6.79
2	-6.06	-6.45
3	-7.56	-6.42
4	-8.80	-5.58
5	-9.55	-4.71
6	-9.98	-4.09
7	-9.82	-3.51
8	-10.14	-3.01
9	-10.39	-2.72
Highest	-10.81	-1.77
All households	-9.01	-3.56

^a Income adjusted for family size.

Source: IFS calculations based on 1990 Family Expenditure Survey.

Given the nature of the expenditures on which VAT may be imposed and the characteristics of households across the income distribution, potential areas for offsetting changes may be identified. Under the basic principle that increases in income tax allowances are of relatively more benefit to low-income households, they represent one potential area for compensating actions. Such actions would, however, be of little assistance to benefit-receiving households, suggesting the need for additional changes to the benefit system. Any automatic increase from indexation of benefits would be insufficient to compensate for the loss of zero rating. This is because the weights attached to zero-rated expenditures in the RPI reflect average expenditure proportions on these items which are smaller than those of benefit recipients. Further, the imposition of VAT on children's clothing suggests that some change to compensate households with children could be appropriate.

Table 3.6
Effect on Household Net Incomes of Extending the VAT Base
(with Offsetting Measures)

Equivalent income decile ^a	Change in net income (£ per week)	Percentage change in net income
Lowest	2.17	2.11
2	0.82	0.87
3	-0.46	-0.39
4	-1.70	-1.08
5	-2.78	-1.37
6	-3.91	-1.60
7	-4.37	-1.56
8	-4.83	-1.43
9	-5.58	-1.46
Highest	-6.14	-1.01
All households	-2.68	-1.06

^a Income adjusted for family size.

Source: IFS calculations based on 1990 Family Expenditure Survey.

Table 3.6 illustrates that it is possible to go some way to offsetting the regressive impact of extending the VAT base. The additional changes made are to increase tax allowances by 10 per cent, increase income support and state pensions by £5 for single adults and by £8 for couples, and increase child benefit to £12 for each child. The purpose of this exercise is *not* to suggest that this is an appropriate 'package' of reforms but to show that offsetting changes can be effective in reducing distributional impacts. As with Table 3.5, the figures are averages across households and will undoubtedly conceal households that remain

particularly adversely affected. Further, full take-up of benefit entitlements is assumed which may not, of course, occur. Overall the 'package' of changes is not revenue-neutral, as can be seen from the reduction in average disposable income; it raises an additional £3.2 billion.

Concluding Remarks

Value added tax, as the recent increase in the standard rate illustrates, may be called upon to provide additional revenues when other sources are constrained. It is not unforeseeable, therefore, that in the current economic climate attention may be focused once again upon the VAT system. Increasing the standard rate of VAT would, however, represent too blatant a political U-turn on Conservative commitments made prior to the general election. This suggests that any alterations are perhaps more likely to take the form of changes to the VAT base. At a theoretical and administrative level, there are strong arguments in favour of moving towards a more uniform system of indirect taxation. Against these arguments must be weighed the strong political and social attachment to zero rating. Without appropriate changes elsewhere, either in the tax and benefit system or public expenditure priorities, it is unlikely that any Chancellor (or government) could ride the 'political storm' stemming from far-reaching changes to the VAT base.

Chapter 4

Tax and the Environment: EC Carbon Tax Proposals

STEPHEN SMITH

One of the newest themes in debate over tax policy is the use of taxation as a tool for environmental protection. While it is possible that the UK itself could introduce a variety of such taxes, serious debate has focused on one main proposal, that is for a 'carbon tax' to be introduced at a European Community level.¹ It is this which is discussed here.

This would represent part of the Community's response to the environmental problem of global warming, taxing fossil fuels in proportion to their carbon content, thus reducing carbon dioxide emissions by encouraging industry and consumers to reduce their use of carbon-based energy. Many details have still to be worked out, especially those concerning how the tax could be administered and enforced, but the Commission's outline of the main features of the proposed tax has already sparked considerable interest and discussion.

The proposed tax would be a combination of a tax on the carbon content of fossil fuels and a tax on all non-renewable forms of energy. Thus, fossil fuels such as gas, coal and oil would bear a tax comprising two components, one related to their carbon content, the other related to their energy content. Non-renewable forms of energy other than fossil fuels (mainly nuclear power) would be subject to the energy-related part of the tax, but would not bear the carbon component. It is currently envisaged that the two components would be combined in equal proportions, in the sense that half of the tax on a typical barrel of oil would be related to the carbon component and half to the energy component.

According to the Commission's proposals, the tax would be introduced in stages. It would start at a level equivalent to \$3.00 per barrel of oil in 1993, and would then be increased by \$1.00 per barrel annually, until it reached a level of \$10.00 per barrel of oil in the year 2000. The tax revenues would accrue to the Member States, and it would be for Member States to decide how to use the revenue - for example, to choose which other taxes might be reduced.

The Commission's proposals raised the possibility of exempting six highly energy-intensive sectors, such as the steel and cement industries, from the tax. The rationale for these exemptions is set out in terms of the effects that a carbon tax could have on the international competitiveness of energy-intensive sectors. Initially, it was suggested that

¹ Contained in Commission of the European Communities (1991).

the removal of the sectoral exemptions might be made conditional on the adoption of similar legislation in competitor countries, especially in the United States and Japan; subsequently, it has become clear that the Community will be reluctant to introduce the tax at all unless major competitors take similar measures.

This chapter outlines the main issues involved in the use of a carbon tax to control carbon dioxide emissions.

Policy Objectives

The aim of a carbon tax would be to control the problem of global warming that appears likely to be caused by growing concentrations of greenhouse gases (carbon dioxide, CFCs, methane, etc.) in the earth's atmosphere. Since this is a global problem, the context for policy is global too - the contribution that the European Community alone can make to improving the situation is limited. Total EC emissions of carbon dioxide, the principal greenhouse gas, amount to only some 13 per cent of current global emissions, and given the growth rates of emissions projected elsewhere in the world, especially in the developing countries, even a large cut in European carbon dioxide emissions would not be able to reverse the upward trend in emissions.

The European Commission's proposals come against the background of international discussions and negotiations about the possibility of concerted action to combat the greenhouse effect. Many countries have already committed themselves to quantitative targets to stabilise or reduce carbon dioxide emissions by a given date, but not all countries have so far been willing to contemplate major policy measures. The United States, in particular, appears to be unpersuaded of the need for action to reduce carbon dioxide emissions. Whether unilateral action by the Community is appropriate in these circumstances has been the subject of considerable debate (see, for example, Barrett (1990)).

There are, indeed, some major uncertainties surrounding the greenhouse effect itself. Although a broad consensus appears to exist that some amount of global warming will take place if emissions of carbon dioxide and other greenhouse gases continue to rise (see IPCC (1990)), there is uncertainty about the range of mechanisms that might be involved (for example, whether increased cloud cover could help to counteract the impact on surface temperatures) and little firm basis on which to assess the risks and uncertainties involved in changes in temperatures beyond the range of past experience (see Cline (1991) for a review of some of the principal scientific arguments).

Over and above these scientific uncertainties, there is also scope for legitimate debate about the need for policy measures to combat global warming. As Nordhaus (1991) discusses, measures to reduce greenhouse gas emissions would involve significant economic costs, and these can only be justified if they are exceeded by the costs of uncontrolled global warming. Unfortunately, the costs of a rise in the sea level and of

climate-induced changes to agriculture are particularly difficult to estimate, and it is possible that, taking the earth as a whole, the effects on agriculture could in fact be in either direction - some regions could gain whilst others lose. It is also conceivable that strategies of adaptation (building sea walls, and moving activities to reflect the change in climate patterns) could prove cheaper than the policy measures required to prevent global warming taking place.

There are thus important areas of uncertainty in relation to both the physical science and the economics of global warming. Nevertheless, as Pearce (1991) points out, it may not be possible to postpone policy action until conclusive evidence has been assembled on all of these areas of uncertainty, without in the mean time experiencing irreversible changes in climate and in the global environment. Where policy measures can be taken which have low cost, immediate action would then avoid the risk of irreversible damage, whilst leaving the full range of policy options open, should future studies make major revisions to the scientific and economic assessments of the risks of global warming.

For the rest of this discussion, we take the objectives of policy, in the form of the goal of reducing carbon dioxide emissions, as given. We aim to consider the implications of tackling the problem in one particular way - namely through the introduction of a carbon tax of the form proposed by the European Commission.

The Case for a Tax

In principle, the objective of reducing carbon dioxide emissions could be achieved in a number of different ways. Regulations of various forms may be employed. These may require the use of particular low-emission technologies, or may impose limits on energy use or emissions from particular activities. Subsidies may be paid to encourage industry or households to install or use low-emission technologies. Taxes may be used to provide a market incentive to cut back on emissions or on the use of fuel inputs which will subsequently lead to carbon dioxide emissions.

The case for market-based instruments

Any given pattern of pollution reduction could in theory be achieved using any of these approaches. One important difference, however, is between the costs of restricting pollution by regulation and the costs of using market incentives such as taxes. There may be considerable differences between polluters in the costs of reducing pollution - some firms may, for example, be able to install pollution control devices more cheaply than others. Regulations requiring all polluters to reduce emissions by the same amount will then impose higher costs on some polluters than on others, and those polluters able to reduce emissions at low cost will not be encouraged to make greater reductions in emissions

than those for whom reducing emissions is very costly. A policy based on uniform emissions cuts will not be the least-cost way of achieving any desired reduction in total pollution.

In comparison with the conventional regulatory approach to the control of environmental pollution, market mechanisms such as charges, taxes and tradable permits have the major virtue of minimising the costs of controlling pollution. Because they allow firms and individuals to choose to reduce pollution where the costs of doing so are least, they can thus achieve a given degree of pollution control at lower economic cost than regulations applied across the board.

A second attraction of market-based instruments is that they provide a continuous incentive to develop less-polluting products and processes, whereas regulations tend to encourage only minimum compliance.

Thirdly, market-based instruments may have the added advantage that they raise revenue. This may allow part of the government's overall revenue requirement to be raised using taxes which correct existing distortions in the economy (the failure to price pollution in the market system). Other taxes, such as those on labour and capital, which may distort individual decisions and thus impose economic costs on the economy, can be reduced. In this sense, there may be a 'double dividend' from a carbon tax: not only does it tackle the problem of global warming, but it also provides the opportunity to reduce taxes elsewhere in the economic system which may have distortionary costs.

Taxation as a market mechanism

Often, economic analysis of the role of taxation in environmental policy implicitly assumes that a system of measurement or metering can be used to charge polluters for each unit of pollution emitted. However, taxation of measured emissions will remain impracticable in many instances, such as where there are many emission sources or no single point where emissions can be monitored. In the case of carbon dioxide emissions, the huge number of emission sources (motor vehicles, domestic heating appliances, industrial energy combustion, etc.) rules out the use of direct metered charging. Moreover, even if it were to be confined to a limited number of large emission sources, explicit emissions taxation would also require the establishment of new administrative procedures, with associated administrative costs.¹

Taxes on products or production inputs provide a route for the introduction of market-based incentives for pollution control, which may sometimes be able to use existing administrative procedures and apparatus, and which may often involve simpler administration than taxes levied on the basis of measured emissions. Rather than taxing

¹ There is also the risk that a system of partial emissions charging could lead to an inefficient pattern of emissions reductions.

each unit of pollution emitted, using taxes on goods and services to pursue environmental objectives would provide indirect incentives, making use of the relationship between polluting activities and transactions which can more easily be taxed. Thus instead of taxing the emissions from car exhausts, additional tax may be levied on petrol purchases, on the assumption that the environmental damage caused is proportional to the amount of petrol used. The carbon tax is perhaps the most promising large-scale application of an environmental tax of this sort.

For input taxes to be an acceptable substitute for direct pollution charges based on measured emissions, it is necessary that there should be a close 'linkage' between the basis on which the tax is levied (usually the value of a transaction) and the activities causing environmental pollution. Where the relationship between the tax base and emissions is insufficiently close, a policy based on taxes may not always encourage pollution reductions in the most efficient form. Actual or potential alternative technologies may change the relationship between pollution and the tax base. This may be a particular problem where the environmental aspects of a production process can be chosen independently of the choice of process. For example, where the technological options for pollution control include effluent-cleaning technologies (as in the case of the sulphur emissions that contribute to acid rain), input taxes will not provide any encouragement to deal with pollution by effluent-cleaning, and could therefore distort the pattern of pollution control away from the most efficient areas. This qualification, however, does not appear to be a serious objection to the use of an input tax to control carbon dioxide emissions; in this case the use of inputs is closely related to polluting output, and there is currently no cost-effective end-of-pipe treatment technology.

Further circumstances where taxation instruments may be less effective than other market-based instruments or direct regulation as a means of pollution control include cases where the concentration of pollution, either in particular localities or over certain time periods, is of importance. It is in general difficult to envisage tax structures that would adequately reflect the different values of pollution reductions in different places or at different times. Consequently, where pollution control objectives have a 'spatial' aspect, pollution taxes may be inappropriate instruments. Again, however, this issue is not a problem for the carbon tax; pollution damage from carbon dioxide emissions does not differ depending on the location of the emission sources, and there is therefore no potential problem of local 'hot spots' that require more stringent emission controls.

Impact on Energy Use

Whatever the theoretical attractions of a carbon tax, would it work in practice? What evidence is there that it would succeed in reducing emissions of carbon dioxide, and how large an impact might the tax proposed by the Commission be expected to have?

The carbon tax would have effects on fuel use of two main sorts. Firstly, it would establish an incentive for fuel substitution, away from the most carbon-intensive fuel sources towards those that generate less carbon dioxide per unit of energy. Secondly, it would encourage energy conservation, in the form of reductions in the overall level of energy consumed.

The carbon tax would impose different levels of tax per unit of energy on different fuels, according to their carbon content. The carbon content per unit of energy is lowest for natural gas and highest for the various coal-based fuels. In comparison with a tax structure that taxed all units of energy at an equal rate, a carbon tax would thus tend to encourage substitution away from coal and towards gas. The existing pattern of taxation of fuels in the UK and other EC countries does not reflect their relative carbon content. In particular, petrol tends to be taxed more heavily than other fuels purchased by households, and coal tends to be favoured strongly by the tax system in comparison with other industrial fuels.

In addition to its impact on the pattern of relative taxation of different fuels, the carbon tax proposed by the European Commission would increase the price of all fuels above current levels. Given the pattern of taxation, and the fact that the price of each unit of energy tends to be higher for households than for industry, the percentage impact of the carbon tax on the prices of fuels will vary widely. The proposed Community carbon tax would increase the price of fuels used by industry by between one-third (for gas) and three-fifths (for coal). Domestic fuel would rise in price by about 15 per cent, whilst the price of petrol (which already contains a substantial tax component) would rise by only 6 per cent.

There is a reasonable amount of evidence, discussed briefly below, about the likely impact of changes in the general level of energy prices. There is, however, little evidence about how large would be the substitution effects of changing the relative pattern of taxation of different energy sources.

The effects of a carbon tax on fuel use

The experience of the oil price rises during the 1970s provides a useful source of historical evidence from which to assess the likely impact of the general increase in the price of energy that would result from the introduction of a carbon tax.

Most studies of energy demand in the UK have found quite a low overall price elasticity of the demand for energy. Hunt and Manning (1989), using time-series data on aggregate UK energy demand, found a short-run price elasticity for energy of about -0.1 and a long-run elasticity of about -0.3. As they noted from a survey of other studies, their results were consistent with the broad range of estimates from recent UK studies. Lynk (1989), for example, in a time-series study of the energy demand of UK manufacturing industry, found a long-run price elasticity of -0.69, whilst Manning (1988), estimating a time-series demand system for UK households, found an energy price elasticity of -0.09.

Microeconomic estimates of the effects of higher energy prices on the demand for domestic energy and petrol by private households seem to confirm this general conclusion that the price elasticity of demand for energy is low. Estimates using the IFS model of consumer expenditures indicate that an increase in domestic energy prices of 15 per cent would cut household energy consumption by 5.5 per cent, and an increase in petrol prices of 55p per gallon would cut petrol consumption by something over 8 per cent (Pearson and Smith, 1990).

The implication of a low price elasticity is that relatively high taxes would be necessary to have a significant impact on the overall demand for energy. Thus, if a long-run price elasticity of -0.3 is assumed, energy prices would need to be increased by one-third to reduce overall energy demand by 10 per cent.

The various studies of elasticities seem to suggest a rather pessimistic conclusion that high tax rates will be necessary to reduce overall energy consumption and carbon dioxide emissions. However, in practice, estimated price elasticities of demand may tend to be minimum estimates, and the actual long-term effects of an increase in energy prices could be somewhat higher. This is because it is very difficult to separate out the effects of increasing the price of energy on the demand for energy from the effects on the whole global economy of increasing the price of energy. For example, the oil shocks reduced the demand for energy, but part of this was no doubt due to the consequent recessions, and not simply the increase in the relative price of energy.

It is unlikely, too, that the estimates can fully take account of all the possible ramifications of a change in prices. In addition to changes in energy demands which reflect reduced energy use or fuel switching with the existing capital stock, there are likely to be longer-term adjustments in the capital stock itself. Thus, when industry and households replace their current stock of energy-using capital they will choose replacements which are more energy-efficient. In addition, the capital goods supplied by capital goods manufacturers will change over time to emphasise energy conservation more than before the introduction of the energy tax.

Such long-term effects are unlikely to be fully reflected in econometric studies of energy demand. Yet they undoubtedly exist, and it would be surprising if they were not an important way in which the carbon tax affected energy demand. Since the first oil shock of 1973, the fuel efficiency of motor cars of any given engine size has increased by approximately 30 per cent according to official road tests. It is difficult to believe that such gains would have been made without the impetus provided by the increase in prices. Technological progress cannot be certain and cannot be predicted, but one of the strongest influences a carbon tax could have on energy use may be through its impact on research and development effort.

The Impact on Government

Unlike conventional environmental policy measures such as the direct regulation of technological standards or polluting emissions, environmental taxes and charges generate additional fiscal revenues. These additional revenues present both problems and opportunities. On the one hand, the distribution of the environmental tax revenues across taxpayers may conflict with other objectives of policy. On the other hand, the additional revenues provide scope for various forms of offsetting policy measure, either in the form of reductions in other taxes or through additional expenditures (we return to this issue later).

Table 4.1
Tax Revenues from a Mixed Carbon/Energy Tax
Equivalent to \$10 per Barrel of Oil
(based on 1988 energy use and CO₂ emissions, and 1988 prices and revenues)

	Carbon/ energy tax revenue (ECU million)	Carbon/ energy tax revenue as a percentage of GDP	Carbon/ energy tax revenue as a percentage of total tax revenue	Carbon/ energy tax revenue as a percentage of indirect tax revenue
Belgium	2,112	1.7	3.1	12.2
Denmark	953	1.0	1.7	5.0
France	8,440	1.0	2.0	6.8
Germany	13,484	1.3	3.0	11.9
Greece	787	1.8	4.2	9.2
Ireland	492	1.8	3.7	8.7
Italy	6,404	0.9	2.1	7.4
Luxemburg	147	2.6	4.5	17.9
Netherlands	3,146	1.6	2.9	11.1
Portugal	471	1.3	3.3	6.8
Spain	3,404	1.2	3.0	9.8
UK	9,459	1.3	3.1	9.9

Note: The calculations assume that the carbon tax would apply to all industrial energy users, including the six sectors which the Commission suggests may be exempted. Excluding these sectors would reduce revenues by about 14 per cent.

Source: IFS calculations.

A carbon tax at the level proposed by the European Commission would raise substantial revenues and have a major impact on the public finances of Member States. Table 4.1 makes some estimates of the revenues that would be raised from a tax on carbon and energy applied to all industrial and domestic energy uses, based on the 1988 pattern of energy consumption. On this basis the tax would have raised revenues equivalent to some 1-1½ per cent of GDP, and, on average, about 3 per cent of existing tax receipts.

In practice, of course, the numbers should be regarded as indicating the likely order of magnitude only. Assuming that the revenues from the tax accrue to Member States in proportion to their consumption of carbon and energy, either because the tax is levied on final fuel products or because revenues from a carbon tax levied at the point of primary fuel extraction or fuel import are redistributed to Member States according to their fuel consumption, the impact on the public finances of individual Member States would be as shown in Table 4.1. The rise in UK revenues would amount to over 1 per cent of GDP, about average for the Community countries. France, with a high proportion of nuclear-generated electricity, would raise rather less.

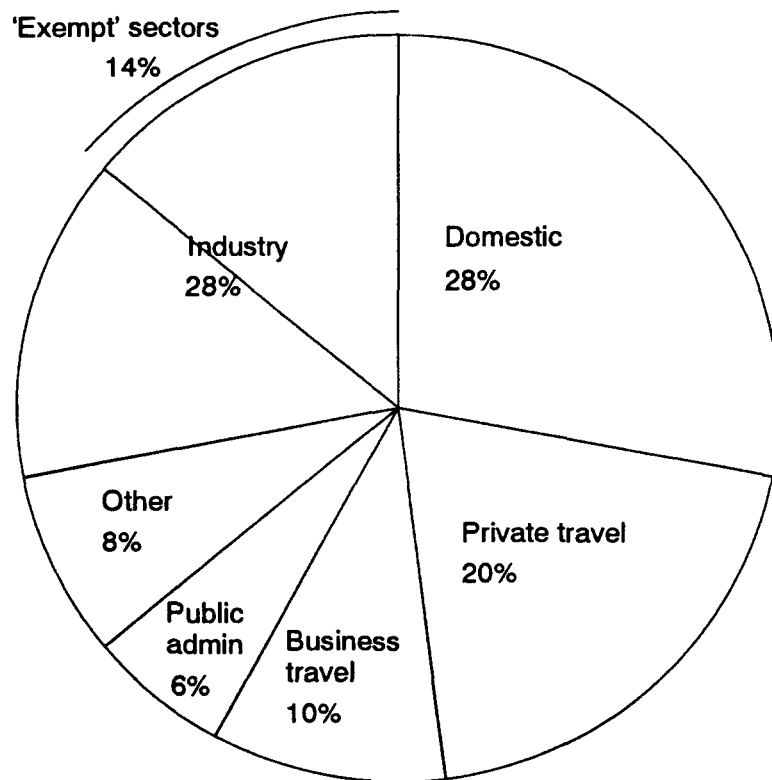
The Impact on Households

How would these additional tax payments be distributed, between industry and consumers, and across households at different levels of income? Clearly, much depends on where the ultimate burden of the carbon tax falls - whether it is passed on in higher prices for fuels and products manufactured using energy, or whether it is passed back, for example to the owners of energy resources in the form of lower pre-tax prices for energy, or to various other factors of production. The extent to which the tax is passed on in prices will depend, in part, on the international context in which a carbon tax is introduced in the European Community; if other countries also implement similar measures, it is more likely that some of the burden of the tax will be borne by the owners of energy resources, rather than by energy consumers.

Figure 4.1 indicates the pattern of energy use in the UK in 1988. About half of all energy is used by households, for domestic heating and lighting and for motor fuel. About a quarter is used in industrial production, and a further 10 per cent for industrial transport, including distribution. If a carbon tax was reflected fully in the price of fuels purchased by industry and consumers, then Figure 4.1 shows the broad division between industry and consumers of the additional tax payments. The share of industry in the additional tax payments would be rather less than half, and would be reduced still further if the six energy-intensive sectors being considered for exemption (steel, chemicals, non-ferrous metals, cement, glass, and pulp and paper) were entirely exempted from the carbon tax.

Of course, this initial division of tax payments between industrial and domestic taxpayers is not the end of the story. Ultimately all taxes on industry are borne by households, as shareholders, customers or employees of businesses. The division between the initial

Figure 4.1
Sectoral Pattern of Final Energy Consumption
(UK, 1988, heat supplied basis)



Source: Calculated from data in *Digest of United Kingdom Energy Statistics, 1989*.

impact on industrial and domestic consumers thus is a simplification of a more complex pattern of ultimate incidence, in which both direct and indirect distributional effects need to be taken into account. Higher taxes on household purchases of domestic energy and motor fuels will affect household living standards in a direct manner, in that more of their spending will be subject to tax. Higher taxes on industrial energy inputs will affect households' living standards in an indirect manner, increasing the prices of energy-intensive products that households buy, and through a range of other effects - on industrial profits and dividends, employment, etc.

Nevertheless, it is clear from Figure 4.1 that a large part of the impact on households of the proposed tax would come through the 'direct' channel of households' purchases of domestic energy and motor fuels. The remainder of this section focuses on these effects.

Table 4.2
Household Spending on Domestic Fuel and Petrol:
The Distributional Effects of a Mixed Carbon/Energy Tax at \$10 per barrel in the UK
(by quintile of gross equivalent household expenditure, 1988 prices)

	All households	Quintile of equivalent expenditure				
		Poorest	2	3	4	Richest
Household total expenditure (£ p.w.)	£205.34	£67.38	£125.84	£174.09	£233.59	£425.94
Spending on domestic fuel before tax change (£ p.w.)	£10.43	£8.10	£9.22	£10.48	£11.57	£12.78
Spending on petrol before tax change (£ p.w.)	£6.18	£1.02	£3.73	£6.42	£8.73	£10.99
Carbon tax payments, excluding behavioural response (£ p.w.)	£2.21	£1.45	£1.84	£2.25	£2.58	£2.95
- as a percentage of spending	1.4%	2.4%	1.5%	1.3%	1.2%	0.8%
Carbon tax payments, including behavioural response (£ p.w.)	£2.08	£1.29	£1.69	£2.08	£2.45	£2.91
- as a percentage of spending	1.3%	2.1%	1.4%	1.2%	1.1%	0.8%
Change in consumption of domestic fuel (%)	-6.7%	-12.0%	-9.6%	-8.0%	-6.2%	-0.5%
Change in consumption of petrol (%)	-5.2%	-5.0%	-5.2%	-5.4%	-5.4%	-5.0%

Source: Calculations based on the 1988 UK Family Expenditure Survey, and simulations using the IFS Simulation Program for Indirect Taxes (SPIT).

The distributional effects of higher prices for domestic energy (fuels for domestic heating, lighting and power) may bear particularly heavily on poorer households. Household spending on energy in most European countries is only weakly related to income; in the UK, for example, the spending of the richest quintile of households is only some 60 per cent higher than the spending of the poorest quintile (Table 4.2). A general carbon tax on all forms of energy purchased by households would be likely to be less regressive in its direct distributional impact than a tax on domestic energy alone. Spending on motor fuel

tends to rise sharply with income, so that the spending on petrol of the richest quintile is more than ten times that of the poorest quintile. Additional taxes on motor fuel would thus have a broadly progressive effect on the overall income distribution.

The calculated impact of a tax on carbon and energy at a level equivalent to \$10 per barrel is shown in Table 4.2 for the sample of about 7,000 households in the 1988 UK Family Expenditure Survey. Estimates of the impact are made on two bases. The first takes the existing pattern of household energy consumption as given, and calculates the level of carbon tax payments excluding any behavioural response to the higher prices that households would face for energy products. On this basis, the average household would have paid an additional £2.21 per week in tax, equivalent to 1.4 per cent of household spending. The poorest 20 per cent of the population would have paid an additional £1.45 per week, and the richest 20 per cent an additional £2.95 per week. Expressed as percentages of total spending, however, the burden of the additional tax would be higher for the poorest quintile (2.4 per cent) and lower for the richest (0.8 per cent).

The second basis of calculation uses the IFS Simulation Program for Indirect Taxes to predict how household spending patterns would adjust to the higher prices for fuel. The model is based on a demand system of the Almost-Ideal form, estimated using data from the UK Family Expenditure Survey over the period 1970-87.¹ It can be used to simulate the effects of tax changes on eleven broad groups of goods and services, and calculates the effects for each of the households in the most recent survey year. The simulation results shown here calculate household carbon tax payments after allowing for the behavioural responses of households. The figures are slightly lower than those which ignore behavioural responses, but show broadly similar effects: higher tax payments amongst the rich than the poor, but the burden of the tax in relation to household spending being higher for the poor than for the rich. The greatest difference between the two sets of estimates is found for poorer households, reflecting the much greater impact of the carbon tax on the domestic fuel expenditure at the lower end of the income distribution.

The Impact on Industry

Higher taxes on energy use by industry could have a range of macroeconomic and structural effects on the European economy, including effects on output and employment in particular sectors and on average, and effects on the price level. These effects may differ in the short run, during the transitional phase of adjustment to new relative prices, from the effects in the long run, once all producers and consumers have fully adjusted to the new situation. They may also be affected by how the revenues from the additional energy taxes are used; effects on the price level, for example, could be broadly offset if the revenue was used to reduce the level of other indirect taxes.

¹The model is described in Baker, McKay and Symons (1990), and the underlying demand system estimates in Blundell, Pashardes and Weber (1989).

An important consideration in evaluating higher taxes on industrial energy inputs is how they would affect the international competitiveness of European industry. Here the impact will depend not only on how the revenues are used, but also on any exchange rate adjustments between the Community countries and the rest of the world that take place in response to the initial change in cost competitiveness. Even if exchange rates adjusted fully, however, so as to ensure no overall change in the balance of trade, there would be a change in the *composition* of the Community's exports and imports, and consequently in the industrial structure and pattern of employment. Adjustments to the exchange rate could ensure *average* competitiveness was unchanged. However, those sectors relatively unaffected by the input tax would benefit from the fall in the exchange rate, so becoming more competitive and expanding output, whereas industries requiring large amounts of the taxed input would be imperfectly compensated by the exchange rate change and their activity would contract.

As a result, countries imposing carbon taxes would produce less carbon dioxide per unit of GDP. However, the opposite effects occur elsewhere in the world, where the competitiveness of energy-intensive branches of industry would improve, and carbon dioxide emissions would thus rise. Thus unilateral implementation of a carbon tax could lead to some 'leakage', in the form of higher emissions elsewhere. The most effective route to limiting carbon emissions is in fact likely to be through international agreement and co-ordinated implementation rather than unilateral policy actions by a single country.

The European Commission's proposals provide for the exemption of six energy-intensive industries (steel, chemicals, non-ferrous metals, cement, glass, and pulp and paper) from the carbon tax, at least until it is clear that other countries adopt similar policies to control carbon emissions. The benefits of exemption in circumstances where other countries do not adopt similar measures are obvious: the loss of sectoral competitiveness of industries which would be most severely affected by the carbon tax is avoided. If such industries were not exempted, then they would be disadvantaged in world competition, leading to a relocation of energy-intensive production to other countries which have not undertaken measures to control carbon emissions. Exemption of energy-intensive sectors would make it possible to avoid the most serious parts of the dislocation that might result from changes in the pattern of competitiveness, as first the Community and then other countries introduced policies to control carbon dioxide emissions.

Nevertheless, there are also arguments against excluding certain industries from the tax.

Firstly, it reduces the overall impact of the carbon tax on carbon emissions; hence, to obtain any given effect, a larger carbon tax would need to be applied to other sectors.

Secondly, because only some sectors are exempted, the exemption encourages changes in the industrial structure which are in the opposite direction to those which would be desirable. For example, if there are parts of the exempt sectors which are not significantly exposed to international competition (for example, because they produce goods which are not traded or because their products have other characteristics which insulate them from

strong price competition) then exemption will actually tend to stimulate these activities, both relative to others which are less energy-intensive and over and above the current level. Hence exemption of some sectors cannot be seen as a no-cost strategy, doing no harm to other industries and the overall welfare of the Community. It distorts the structure of the economy, and does so in such a way as to increase carbon emissions.

Thirdly, and most importantly, it is not clear how long-lived the exemptions would be. The world economy is littered with 'temporary' measures of assistance and protection that have become institutionalised and permanent. There are in particular two key areas of ambiguity which may make it difficult to remove the exemptions at a later date. One is over the actions which other countries would have to take before the Community abolished the exemptions. The second is over the Community's response if some competing countries do not take the action which is being demanded as a precondition for abolishing the exemptions. The danger that such exemptions may become permanent is a strong reason to be extremely cautious about introducing them in the first place.

Requirements for Offsetting Fiscal Policies

What should be done with the large amounts of revenue that Community Member States would raise from the carbon tax? There would seem to be broadly two possibilities, corresponding to the objectives of economic efficiency and equity which tax policies must balance.¹

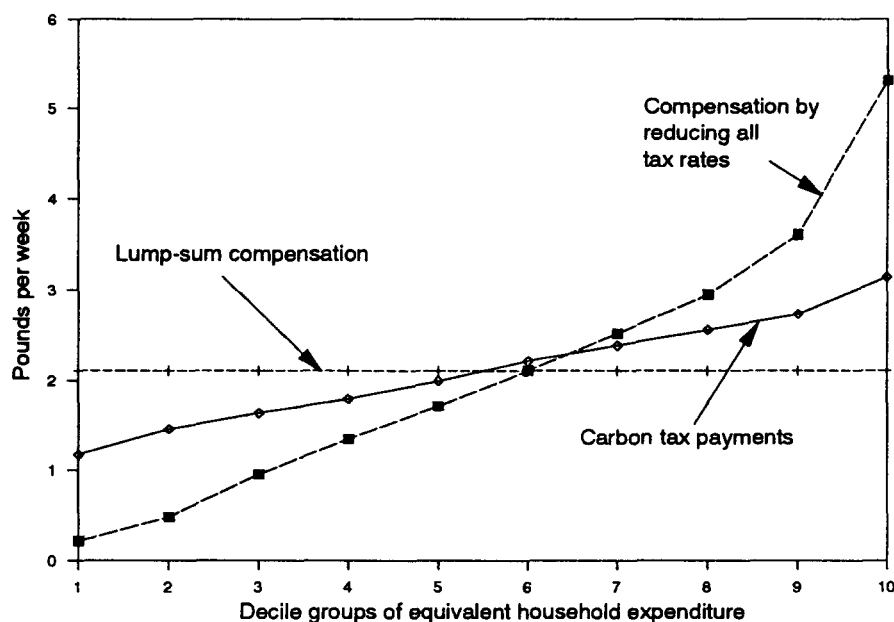
Economic efficiency would be maximised by the use of the revenues to reduce the most distortionary aspects of other taxes. Thus, for example, if existing income tax rates were believed to discourage work and effort, or high corporate tax rates were believed to discourage investment, the carbon tax revenues would make it possible to reduce these rates of tax. In this sense it has been argued that there would be a 'double dividend' from the carbon tax (Pearce, 1991); not only would the tax have environmental benefits, but it would also have a second set of benefits, in terms of a reduction in the overall economic cost of raising government revenues (Lee and Misiulek, 1986). Existing estimates of the distortionary costs of government taxation in the US suggest that the marginal welfare costs of existing tax revenues could be quite substantial - of the order of 20-50 cents for each dollar raised (Ballard, Shoven and Whalley, 1985). If the tax systems of Community Member States have similar costs, the use of carbon tax revenues to reduce the rates of other taxes could significantly reduce the efficiency costs of raising tax revenue.

¹In addition to the possibilities which we discuss here for using the revenue within the Community, there has been some debate over possible uses of the revenue *outside* the Community, for example, to fund energy efficiency improvements in Eastern Europe or the less-developed countries. It is clear that such expenditures could make a large impact on global carbon dioxide emissions, possibly at lower economic cost than emissions reductions within the Community. However, full consideration of this issue is beyond the scope of this discussion.

Unfortunately, the use of carbon tax revenues in a way which maximises the efficiency gains may conflict with objectives of equity. As described above, a carbon tax would have a regressive impact on the distribution of income in the UK, in the sense that the additional tax would be a greater percentage of the spending of poorer households than of that of richer households. For the poorest 20 per cent of the population, the extra tax would be equivalent to more than 2 per cent of their total spending, compared with less than 1 per cent for the richest 20 per cent.

How the additional tax revenue is used will be critical in determining the overall distributional impact. If the revenue is used in a way which maximises the ‘double dividend’ efficiency gains, it will tend to be used to reduce tax rates, which will confer much greater benefits on better-off households (Figure 4.2), and the overall distributional impact of the carbon tax will remain regressive.

Figure 4.2
Distributional Incidence of the Use of Carbon Tax Revenues
(Great Britain, 1988)



Note: The figure shows payments of the mixed carbon/energy tax predicted using the IFS Simulation Program for Indirect Taxes, and the distribution of equivalent revenue compensation (a) as an equal lump sum to all households, and (b) through an equal percentage reduction in the rates of income tax, National Insurance contributions, VAT and excise duties.

The revenue could, however, be used in a way which returned at least as much, on average, to poorer income groups as they paid in carbon tax, by making a lump-sum return of revenues. A weekly lump sum of £2.08 per household could be financed from the carbon tax revenues, and as Figure 4.2 shows, this would be more than enough to compensate households in the bottom half of the income distribution (on average) for the carbon tax. Designing an effective lump-sum redistribution mechanism within the existing tax and social security system is complicated (Johnson, McKay and Smith, 1990), but could be approximated through a package involving increases in state pensions, social security benefits and income tax allowances.¹ It is clear, however, that these measures are not those that would be chosen if it was intended to maximise the efficiency gains from reductions in other taxes that the carbon tax would permit. There is thus a clear trade off between efficiency and equity in the use of the revenues, and the double dividend efficiency gains can only be achieved by sacrificing the distributional neutrality of the package.

Conclusions

The European Commission's proposals for a carbon tax attempt to harness market forces to the protection of the environment. By levying a tax on fossil fuels in proportion to their carbon content, the Community carbon tax would aim to encourage industries and households both to economise on the overall use of fossil fuel energy sources and to switch to fuels with lower carbon dioxide emissions for each unit of energy.

The revenues from the carbon tax proposed by the Commission would amount to about 3 per cent of existing tax receipts in Britain. These tax revenues present both problems and opportunities. The problems have to do with the burden of the additional tax payments on both industry and households; the opportunities arise because the carbon tax revenues would allow other taxes to be reduced. It is clear that the distributional impact of the tax on households would be regressive, in that the tax would be a larger percentage of the incomes of poorer households than of those of the rich. Nevertheless, a carefully designed policy package could deal with the regressivity of the tax, returning at least as much revenue to poorer households as they pay in extra tax.

¹ It will be noted that some of these measures constitute public expenditure rather than tax measures. We see no difference in principle between increasing public expenditures, by increasing the level of social security benefits, and increasing 'tax expenditures', by raising tax allowances, and the former cannot be avoided if poorer households are to be adequately compensated.

Chapter 5

The European Budget

STEPHEN SMITH

The existing agreements, dating from 1988, on the financing of the European Community have come up for review during 1992. The Commission's own proposals, the *Delors II* package (Commission, 1992), have not envisaged any major change in the basis on which the Community is financed, although it made proposals for increasing the role played by contributions based on Member States' GNP.

This chapter considers how the European Community budget should be financed - in particular, whether certain taxes should be assigned to the Community as 'own resources' and how far the budget should, instead, be funded by financial contributions from Member States.

Background: Financing the Present Community Budget

The European Community's budget is small in relation to the national budgets of Member States, accounting for some 1.1 per cent of EC GDP in 1991, compared with more than 30 per cent of GDP, on average, for the budgets of Member States' national governments. Many areas of Community policy are regulatory in nature and have little requirement for spending, except in administration; thus, for example, the Community's role in policing the customs union, or in competition policy, requires limited financial resources. The largest area of Community spending is on agricultural policy (especially on the system of agricultural price guarantees), which takes about 58 per cent of total Community spending (see Table 5.1).

Unlike the budgets of national governments, the Community's budget is circumscribed by a strict prohibition on borrowing: budget balance is written into the Treaty of Rome. As a result, the financial resources available to the Community have been of central importance in determining the timing and pace at which EC policies have developed. Decisions about the financial resources of the Community have been the key steps in determining the future scale of EC activities.

Most of the past budget negotiations have taken place in situations of budgetary crisis, reacting to a situation where the Community's spending commitments have run ahead of its financial resources (usually due to the voracious budgetary appetite of the CAP). The

Table 5.1
The Composition of the EC Budget in 1991

	Billion ECU	Percentage
<i>I. Expenditure (payment appropriations)</i>	56.1	100.0
Agricultural policy	32.5	58.0
Structural operations	14.3	25.5
External policy	2.7	4.7
Research policy	1.7	3.1
Administrative expenditure	2.7	4.8
Other policies	2.2	3.9
 <i>II. Revenue</i>	 56.1	 100.0
Agricultural and sugar levies	2.8	4.9
Customs duties	11.2	20.0
VAT	30.3	54.0
GNP-based additional resource	7.4	13.2
Miscellaneous	4.4	7.9
 As a percentage of EC GDP	 1.1%	

Note: Miscellaneous revenue includes tax and other deductions from staff salaries, interest on bank deposits, and the remainder of the balance from 1990.

Source: Commission of the European Communities.

present comparatively calm budgetary situation makes it possible to make a more considered appraisal of the basis on which Member States and their citizens should pay for the functions of the EC.

Since 1970, the EC budget has been financed from the 'own resources' of the Community - in other words, revenues which Member States have agreed should be the resources of the Community by right. Initially the own resources system had three elements - revenues from customs duties, revenues from agricultural levies, and a share in the VAT revenues of Member States. A 'fourth resource', in the form of GNP-based contributions by Member States, was added by the 1988 Brussels agreement.

Since renegotiation of the UK's terms of entry to the EC in 1974, the EC budget has contained various provisions for correcting the contribution made by the UK, to bring the UK's contribution more closely into line with the expenditures of the Community within the UK. Since the 1984 Fontainebleau agreement, 'compensation' for the UK has taken

the form of an abatement of the UK's VAT contribution to the Community budget, offsetting part of the difference between the UK's percentage share of VAT payments to the Community and the UK's percentage share of Community expenditure.

Because the goods subject to VAT in different Member States vary,¹ the VAT element is calculated on a hypothetical 'harmonised' tax base. The initial own resources decision restricted the VAT revenues to which the Community was entitled to at most a 1 per cent VAT rate applied to this harmonised base. The maximum VAT call-up rate was raised to 1.4 per cent in the 1984 Fontainebleau agreement (which also introduced the VAT rebate for the UK).

In the Brussels agreement, the overall limit on EC revenues was set in the form of an upper limit of 1.2 per cent of EC GNP, and the Community introduced a five-year forward budgetary projection showing how spending would move towards this limit. In addition, the VAT base used to calculate Member States' VAT contributions was 'capped' at a maximum of 55 per cent of each Member State's GNP, which reduced the contributions made by Member States with a high VAT base to GNP ratio.

In the Delors II package of financing proposals unveiled earlier this year, the Commission proposed a number of, mostly incremental, changes in the structure of revenues. Under these proposals, the own resources ceiling would be increased from 1.2 per cent of Community GNP to 1.37 per cent by 1997. The role of the VAT base in financing the Community would be reduced, by cutting the uniform rate of VAT applied to the harmonised VAT base to 1 per cent (from 1.4 per cent) and by bringing down the 'cap' on the harmonised VAT base from a maximum of 55 per cent to a new upper limit of 50 per cent of a Member State's GNP. As a result, an extended role would be played by contributions based on Member States' GNP: the proportion of EC finances deriving from the GNP-based contributions would be doubled, to about 40 per cent. The Delors II proposals did not explicitly consider the issue of the distribution of Member States' contributions to the budget, although the provisions for making a budgetary 'rebate' to the UK are inevitably part of any discussion of reforms to the EC's finances.

The Choice of Taxes

Should the Community have its own taxes, and if so, which taxes should be assigned to the Community? Clearly, this is a question which cannot be addressed independently of the issue of the political destiny of the Community. For the Community to have powers of taxation, independent of Member States, would clearly change the balance of power between Member States and the Community, and would reduce the ability of Member States to control aggregate Community spending and to determine all aspects of the level

¹ The UK, for example, has a large proportion of consumer spending subject to zero rates, but some or all of the goods zero-rated in the UK are subject to positive VAT rates in other Member States.

and incidence of the taxes levied on their citizens. Similarly, it would change the nature of public accountability at the Community level; decisions to increase Community spending would carry direct and identifiable implications for the taxes that would be paid by Community citizens. Just as the British Government believed that the introduction of the Community Charge and reforms to other aspects of the local government finance system would have benefits by strengthening local government accountability by making a direct link between local spending and local taxes, so an argument can be made that democratic accountability at Community level would be better served by a Community financed through its own taxes than by one financed through contributions derived from Member States.

Over and above these essentially political issues, are there any economic considerations which would be relevant in deciding what taxes, if any, should be assigned to the Community?

Probably the most important economic criterion which has been suggested for identifying taxes that should be assigned to the Community is the existence of tax policy spillovers between Member States, when particular taxes are operated at a decentralised level. These spillovers may take the form of effects on private sector behaviour, on the level of tax revenues, and on the effectiveness of enforcement. The assignment of taxes on efficiency grounds should, it is often argued, assign to the EC those taxes with substantial cross-country spillover effects on private sector behaviour. Thus, for example, taxes on capital income can have a major impact on the allocation of savings between Member States, and if assigned to Member States, it is possible that they would take decisions which inadequately reflect the impact of their decisions on the interests of other Member States. In fact, however, whilst this argument appears to make a case for the *harmonisation* of tax rates, it does not provide any strong reason to channel the revenue from taxes on capital income to the Community.

The main taxes where there appears to be an efficiency case for allocating the revenues to the Community are those where there is ambiguity or arbitrariness in revenue assignment between Member States (Spahn, 1991). Corporate taxes, in particular, have an uncertain geographical pattern of incidence, as described in Chapter 2. While it may be difficult - both theoretically and in practice - to identify the cross-country distributional incidence of tax contributions to the EC, the use of corporate taxes would probably result in a more progressive distributional incidence of payments across Member States than other possible tax bases, but the pattern of formal incidence of corporate tax payments would almost certainly be seriously misleading as an indication of their ultimate incidence. 'Transparency' in financing, where the indicator concerned is manifestly misleading, may be undesirable.

A further practical problem with relying on corporate tax as the basis for Community finance arises because of the prohibition on deficit financing by the Community; corporate tax receipts tend to be highly pro-cyclical, and the Community's budget would therefore be subject to large swings in the level of financial resources available, without the

possibility of recourse to borrowing to cover temporary revenue shortfalls. It would be desirable for some type of stabilising mechanism to accompany the assignment of corporate tax revenues to the EC, possibly taking the form of automatic GNP-based contributions bringing the total Community budget up to a predetermined level. The assignment of corporate taxes to the Community would then affect the distributional incidence of payments to the Community (albeit in an uncertain direction), but would not affect the overall level of Community resources.

VAT Contributions

The tax chosen as the base for Community financing to date has been VAT. Under each of the financial agreements since 1970, the Community has received a contribution from Member States based on a harmonised VAT base.¹ In two important respects, these arrangements have not been equivalent to providing the Community with its own tax base, and have instead amounted simply to an arrangement where contributions to the Community are calculated according to a particular measure of economic activity in Member States.

Firstly, the link between Member States' contributions to the Community and their VAT revenues is weakened by the existence of substantial differences between the actual VAT base in some Member States and the harmonised VAT base used to calculate contributions to the Community. There are obvious reasons for the Community to choose the harmonised base for contributions, since to choose the actual base would allow Member States to reduce their contribution by reducing the range of goods and services subject to VAT. But the system does have the effect that it is difficult to identify the proportion of the tax burden on goods and services which is due to the spending of the Community. A 1 per cent VAT call-up rate does not necessarily correspond to a 1 per cent rate of VAT in any Member State.

Secondly, there is no evidence that changing the VAT rate at which the Community 'calls up' revenue from Member States has had any impact on the level of VAT levied in any Member State. In most years, of course, the change in the VAT call-up rate has been very small, and for this reason, it is likely that Member States would adjust their VAT rates only infrequently in response to the steady increase in Community VAT-based contributions. However, given that the tax base is shared between Member States and the Community, it is impossible to demonstrate any direct relationship between the Community's financing decisions and the level and pattern of taxes levied in Member States. In particular, although an increase in the rate at which the Community calls up VAT from Member States presumably increases the overall tax burden in Member States,

¹ Since 1988, the VAT base applied has been 'capped' at a maximum of 55 per cent of a Member State's GNP.

there is no reason to believe that this increase in tax burden is borne by Community citizens according to their pattern of VAT payments, as it would be if the tax were not shared and were under the sole control of the Community.

For both the above reasons, there is a clear sense in which 'accountability' through the tax system is weaker than it would be if the Community were required to raise its revenues through a tax which could be directly attributed to the Community, and which was the sole responsibility of the Community. Nevertheless, choosing VAT as the basis for financing the Community appears to have reflected an original intention that such a direct link of accountability between Community spending and consequent tax levels should ultimately exist. There have, intermittently, been suggestions that the harmonised base should be abandoned in favour of the actual VAT base, as the basis for calculating contributions; these would appear to be motivated by the aim of making VAT into a 'real' Community tax.

It is clear, however, that both the use of the harmonised base and the fact that the tax base is shared contribute to the weakness of the link between spending and tax, and that, in some respects, it is the latter that is a more significant obstacle to developing 'accountability' between Community spending decisions and citizens through taxation. It is also more difficult to see how VAT could function without revenue sharing in the foreseeable future; the revenue needs of the Community are much lower than the revenues raised from VAT. Accordingly, if accountability through taxation were seen as an important objective, it would be necessary to find a smaller tax to assign on an exclusive basis to the Community. There would appear to be no particular merit in continuing the pretence that the contributions of Member States have anything to do with VAT; if a suitable tax base for the Community cannot be found, there is no obvious reason to prevent the Community moving to a more explicit system of financial contributions, without the apparent linkage to the VAT system.

Contributions Based on GNP

In recent years the Community has begun to move towards financial contributions based on Member States' GNP. Thus, the 1988 Brussels settlement began to reduce the use of VAT as a basis for Community revenues, by introducing an 'additional resource' keyed on Member States' GNP. At the same time, the VAT base used to calculate Member States' contributions was 'capped' at a maximum of 55 per cent of GNP; for those Member States affected by this provision, the VAT base effectively is replaced by a GNP base.¹ The recent Delors II proposals would extend this process, by increasing the proportion of revenues to be derived from the GNP component. The reasons for this partly appear to

¹This reduced the contributions of five Member States (Greece, Ireland, Luxemburg, Portugal and the UK) in 1991, compared with the contributions they would have made if the VAT base had not been capped.

have to do with a recognition that the VAT contributions do not perform any function of ensuring accountability. In addition, objections have also been raised to the use of VAT rather than GNP-based contributions on distributional grounds.

Thus, the Commission's Delors II proposals argued that VAT provides a regressive distributional incidence of contributions across Member States. If VAT is used as the revenue source for the Community, those Member States with a high VAT base relative to GNP will contribute more, in relation to GNP, than others. Table 5.2 shows the VAT base in each Member State in 1991 as a percentage of GNP.

Table 5.2
The Harmonised VAT Base as a Percentage of GNP in Member States, 1991

	Percentage of GNP
Italy	40.6
Denmark	42.8
Belgium	46.6
Germany	48.6
Netherlands	50.3
Spain	52.3
France	52.6
Greece	56.5
UK	60.8
Luxemburg	66.0
Ireland	67.2
Portugal	67.6
EC average	50.5

Source: Commission of the European Communities.

There are a number of reasons why the ratio of VAT base to GNP may differ between Member States, despite the harmonised definition of the VAT base employed for the purposes of calculating VAT contributions to the Community. In general, the relationship between VAT base and GNP is heavily influenced by the share of consumption in GNP (since VAT is a broadly based tax on most components of private consumption). Member States with a high share of investment or public consumption in GNP will tend to have a correspondingly low VAT base relative to GNP, and a correspondingly low VAT-based contribution to the Community in relation to their share of Community GNP. To the extent that high rates of investment or public consumption are believed to be positively correlated with GNP, the use of the VAT base for calculating Member States' contributions to the EC budget will then be regressive in relation to GNP.

It is, however, open to argument whether GNP provides the appropriate pattern for assessing the regressivity of Member States' contributions. In the microeconomic literature on distributional incidence, it has been argued that lifetime income, rather than current income, may be the appropriate basis for comparing standards of living, and that current consumption levels could be better than current incomes as a proxy for lifetime incomes. Using consumption as the basis for assessing the regressivity of excise taxes has tended to show a less regressive distributional incidence than found in conventional distributional analysis based on incomes. Analogously, it could be argued that GNP, which includes investment, is no more of an appropriate indicator of relative living standards in Member States than is a measure of aggregate consumption. There may be a case for considering some measure of consumption (ideally, of aggregate public and private consumption) as the basis for contributions; this, of course, would mark a smaller departure from the existing VAT basis than a complete move to a GNP basis.

Conclusions

In this chapter we have considered whether greater use should be made of taxes on the revenue side of the Community budget, and the appropriate basis for financial contributions by Member States.

The main reason for seeking taxes to be assigned to the Community level is in terms of the political evolution of the Community. Parliamentary 'accountability' at the Community level in decisions about Community expenditures will be greater if the Community institutions have to take responsibility for raising their own financial resources from identifiable Community taxes.

Other lines of argument do not establish a strong case for handing over the revenues from particular taxes to the Community. In particular, the existence of spillovers or 'policy externalities' from the tax policy decisions of Member States is not a sufficient condition for assigning particular taxes to the Community. As with other areas of policy, externalities can in principle be restrained by agreement between Member States, specifying rules for the conduct of national policy. Fiscal harmonisation of this sort will in many cases be an adequate response to fiscal policy spillovers between Member States, and will in general only be inadequate where rules for harmonisation cannot be clearly specified and compliance monitored.

However, tax harmonisation may be inadequate as a solution to cross-country spillovers where tax administration requires a large element of judgement, which cannot adequately be monitored and regulated at Community level, or where there is ambiguity or arbitrariness in the allocation of revenues between countries. In the case of corporate taxes, ambiguity in revenue incidence may be severe, and may constitute a reason for revenues

to be assigned to the Community. However, since the Community is prohibited from borrowing, it would be necessary to devise specific arrangements to offset cyclical fluctuations in the Community's revenues from this source.

The VAT-based revenues of the Community have become, in effect, contributions keyed on a particular indicator of economic activity; their relationship to tax levels in Member States is weakened by the use of a hypothetical tax base and by the fact that the tax base is shared with Member States. It is unlikely that VAT will ever develop into a genuine Community tax, since its revenues are likely to continue to exceed the Community's financing needs for the foreseeable future, and revenue sharing will thus be unavoidable. In these circumstances, there is little reason to prefer the VAT basis for contributions to contributions keyed more explicitly on measures of Member States' living standards. Equally, however, there is no particular virtue in using GNP rather than other possible indicators of living standards (such as aggregate public and private consumption), which may mark a less radical departure from the pattern of contributions given by the existing VAT base.

Chapter 6

The State Pension

ANDREW DILNOT AND PAUL JOHNSON

Social security spending accounts for almost 30 per cent of public expenditure and is projected to reach £74.7 billion in 1992-93. Almost half of this spending goes to the elderly, with £25.6 billion projected to be spent on the basic state pension. The cost of social security to the elderly has grown steadily in the post-war period, and will continue to grow given current policy, as the number of elderly people increases.

Despite its large and growing cost, the flat-rate retirement pension has consistently fallen relative to average earnings over the past decade and this fall seems set to continue. Indeed, the flat-rate pension is now significantly lower than the means-tested income support, so that a pensioner with no private income is automatically entitled to income support, as well as the flat-rate retirement pension. This is certainly not what Beveridge had in mind when he designed his system in 1942.¹

If current policies are sustained, the flat-rate pension will fall further and further behind average earnings, and yet continue to be very costly. The implied tax burden on those of working age will grow even more quickly than spending, unless the basic state pension is allowed to continue dropping relative to wages, as the number of those of working age, relative to the number of pensioners, declines in the next century. If we attempt to increase the flat-rate pension to a more generous level, and subsequently maintain it in relation to average earnings, the additional expense will be enormous, and not well targeted on the poor. Some new ideas seem vital, as does a long-term strategy for implementing them, since any changes in this field must be phased in slowly so as to avoid unreasonable disruption of expectations.

Policy towards the basic pension will therefore be vital to the Government, both from the short-term perspective - because of its current large share in public spending - and in the long term. But decisions need to be made now if costs and other problems are to be faced in the more distant future. In what follows, we try to outline what policies have been pursued; what problems might be faced; and ways in which policy might be adapted to deal with them.

¹See Creedy and Disney (1985) and Dilnot, Kay and Morris (1984) for further discussion of the development of the post-war state pension.

The Current System

The basic state pension is a flat-rate benefit payable to all individuals over state pension age (currently 65 for men and 60 for women) who have paid National Insurance contributions (NICs) for around nine-tenths of their working lives.¹ Reduced pensions are payable where contributions gaps remain. While virtually all men over pension age receive the full pension, around a quarter of women with pensions deriving from their own contributions have their pension reduced.

The other main government expenditure on social security for pensioners is on the income-related benefits - income support, housing benefit and community charge benefit. These are received by 1.5 million, 2 million and 3.2 million pensioners respectively. Thus around 15 per cent of pensioners receive income support and one-third receive some form of income-related benefit. Income support entitlement is reduced by 100 per cent of any private income, housing benefit by 65 per cent and community charge benefit by 15 per cent.

Of the 1.5 million who receive income support, the vast majority, around 1.3 million, are also in receipt of the basic state pension. This is made possible not solely by the fact that some of these people are receiving reduced amounts of the pension, but because income support rates are actually higher than the level of the basic state pension. Thus any pensioners whose only source of income is the basic pension will also be eligible for some income-related benefit. This situation has been particularly evident since the replacement of supplementary benefit by income support in 1988, since when, for example, the income support level for a single pensioner over 80 has gone up by 40 per cent, compared with a rise of 31 per cent in the level of the basic pension.

The relatively low level of the retirement pension has followed a period, since 1980, during which it has been increased annually in line with price rises as opposed to the previously used formula of rising with the higher of prices and earnings. The result is that the basic pension for a single person now stands at just over 15 per cent of average male earnings, as against a high of 20 per cent in 1977-78.

The final form of state-provided income for the elderly comes from the State Earnings-Related Pension Scheme (SERPS). This was introduced in 1978 following the 1975 Social Security Pensions Act. In 1990, 3 million pensioners were receiving an average of just over £9 per week from SERPS.

¹This contributions test is eased by a number of provisions, such as home responsibility protection for years spent bringing up children, which reduce the number of years of contributions necessary to obtain a full pension.

SERPS payments will be much less generous in the next century than was intended when the scheme was first introduced, following amendments made by the 1986 Social Security Act. Prior to the 1986 Act, SERPS was to provide 25 per cent of average earnings in the best 20 years of working life, rather than 20 per cent of average earnings over the whole working life as now. The current cost of SERPS is only £1 billion p.a., because relatively few of the retired have entitlements yet, and those who do have low entitlements. The cost will grow steadily until the scheme reaches maturity around 2030, when almost all of the retired will have complete SERPS entitlements.¹

These direct social security benefits payable to the elderly are supplemented by policies encouraging the provision of private pensions. Historically, occupational pensions have been encouraged by relatively lenient tax treatment and by arrangements allowing contributors to 'contract out' of SERPS. Since 1988, holders of personal pensions have also been able to contract out and their popularity has been immense, with 25 per cent of employees now holding one.

What we see by way of government social security policy, then, is an expensive basic pension paid irrespective of means to virtually all pensioners but at a very low level, with income-related benefits paid at a slightly more generous level to those without other income. The value of the basic pension has been allowed to fall relative to average earnings over the past decade and for a single person now stands at just 15 per cent of average male earnings. The other government-provided pension, SERPS, is currently relatively unimportant and even at maturity will not provide a very generous level of earnings replacement. The Government's main response to these problems has been to encourage private pension provision. Occupational pensions cover around half of the work-force at any one time. Personal pensions are now held by around one-quarter of the work-force.

Future Costs

The direction of government policy regarding support for the elderly must be heavily influenced by concern about future demographic trends and the associated costs of pension provision. The direction of these trends is well known and we only describe them briefly.

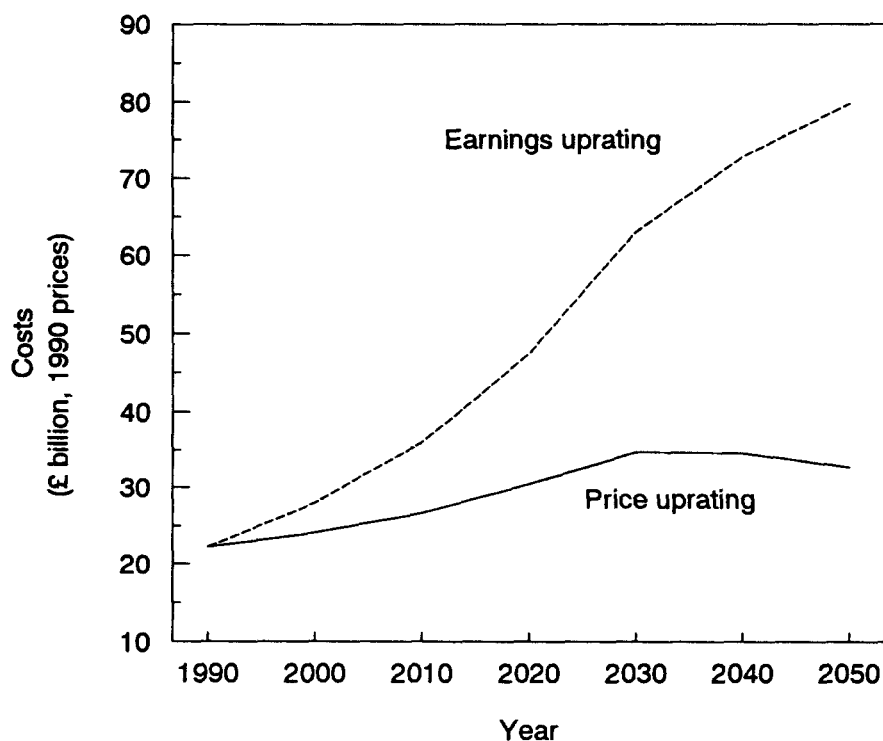
There are currently 10.3 million men and women over state pensionable age compared with 34.3 million working-age individuals, representing a ratio of 3.3 working-age persons to every person over retirement age. Over the next 20 years or so, these numbers are not expected to change significantly, but from 2010 major changes will occur. The Government Actuary's central prediction (Government Actuary, 1990) is that by 2030 the ratio of working-age individuals to pensioners will be 2.4 to 1. This significant

¹ See Creedy and Disney (1988) for a detailed description of SERPS following the reforms introduced by the 1986 Act.

worsening in the old-age dependency ratio, together with the approaching maturity of SERPS, has focused attention on future costs and sustainability of state pension commitments.

Based on these demographic trends, it is possible to forecast future costs of the basic and earnings-related state pensions. Figure 6.1 shows the projected future costs of just the basic pension under two alternative scenarios: continued price indexation of the basic pension or earnings indexation (assuming real earnings growth of 1.5 per cent per year). The difference in effect is substantial. Assuming price indexation, costs in 1990 prices will rise to a maximum of £34.7 billion in 2030-31, dropping to £32.6 billion by 2050-51. Under the alternative of earnings indexation, costs would rise to nearly £80 billion by 2050-51, more than three times current cost.

Figure 6.1
Effects of Price and Earnings Indexation on the Cost of the Basic State Pension



The difference in costs between price and earnings indexation is emphasised by considering the National Insurance (NI) rates which would be required under each scenario. At present, the combined employees' and employers' NI contribution rate is 19.4 per cent of gross earnings. Were price indexation to be continued, NIC rates could actually be reduced to around 18 per cent by 2020 or 2030, and as far as 14 per cent by 2050. This reflects the fact that higher contributions from higher earnings would more

than offset the effect of higher costs if the pension is allowed to fall relative to average earnings. On this basis, the basic pension would stand at just 8 per cent of average male earnings by 2030 and 6 per cent by 2050.

If, on the other hand, the pension were to be raised in line with earnings, and thus maintain its current level of 15 per cent of average male earnings, NI rates would have to increase to 21 per cent in 2010, 23.5 per cent in 2020 and 26.4 per cent by 2030, a rise of around seven percentage points on current rates. To return the level of the state pension to 20 per cent of average male earnings would require NI rates of 28 per cent in 2010, 31 per cent in 2020 and 34 per cent by 2030, a rise of around 15 percentage points on current rates.

All these figures, of course, depend on a number of assumptions regarding future fertility, mortality, activity and unemployment rates, but the broad picture is similar under any reasonable set of assumptions. Continuing to pay the basic pension at its current real level relative to prices will be easily affordable compared with current expenditure, but its value will drop to an even smaller proportion of average earnings. If, instead, it were to maintain its current position relative to earnings, the cost of provision would become very high indeed, involving a significant, though by no means fanciful, rise in direct tax rates. Furthermore, this expenditure would simply be on maintaining the value of a benefit that is currently below income support levels. To return the state pension to its peak relative to average earnings would require an increase in tax rates by 2030 which would be enough to double current spending on the health service.

Pensioners' Incomes

Any choice about how benefits should be paid to pensioners requires a detailed knowledge of the levels, composition and distribution of pensioners' incomes. In this section we use data from various years of the Family Expenditure Survey (FES) to describe their incomes and to show how they have been changing.¹

Incomes are measured for family units, i.e. a single pensioner or a married couple is each taken to be a single unit. To allow comparisons among these two groups, total incomes are equivalised.² Total incomes are also shown net of tax.³ By contrast, each component of income is shown unequivalised and gross of tax.

¹ More details of pensioners' incomes can be found in Dilnot and Johnson (1992).

² The equivalence scale used is the McClements (see McClements (1977)), which implies multiplying the incomes of single pensioners by 1.64 to make them comparable with those of married pensioners.

³ Total income includes housing benefit, though housing costs are not netted off. This may lead to some problems in interpreting results between years for the poorest groups, since incomes will go up if housing benefit increases to cover higher rents. (See Johnson and Webb (1992).)

Table 6.1 shows mean and median net equivalent incomes of pensioners in 1979 and 1989. Also shown are the proportions of pensioners with each of the four main components of income - earnings, private pensions, income from investment and income from the state - along with non-zero means and medians of each. All figures are in 1989 prices to make direct comparisons possible.

Table 6.1
Pensioners' Incomes, 1979 and 1989
(1989 prices, £ per week)

	1979	1989
<i>Net equivalent income</i>		
Mean	110	140
Median	94	109
Earnings: percentage with some		
Non-zero mean	16%	11%
Non-zero median	59	80
Private pension: percentage with some		
Non-zero mean	41%	55%
Non-zero median	36	51
Investment income: percentage with some		
Non-zero mean	62%	75%
Non-zero median	12	22
Social security: percentage with some		
Non-zero mean	99%	99%
Non-zero median	58	65
	56	66

Source: Authors' calculations based on 1979 and 1989 FES.

Between 1979 and 1989, average pensioner incomes increased by around 27 per cent in real terms, with the median increasing by 16 per cent. While virtually all pensioners had some income from social security in both periods, the proportions with the other forms of income changed substantially. The proportion with some earned income fell from 16 per cent to 11 per cent, reflecting the well-documented fall in participation rates among older people both before and after state pension age. By contrast, the proportions with private pensions and income from investment rose from 41 per cent to 55 per cent and from 62 per cent to 75 per cent respectively. Non-zero mean and median income levels from all sources also rose over the period.

The biggest increases in levels were also in levels of private pensions and investment incomes. Among those with some private pension, the mean level increased by about 40 per cent and the median by 55 per cent. The increases in investment incomes were larger still in percentage terms but from a much lower level. Many of those with investment income have just a few pence a week of interest from small amounts of saving.

The increasing average real incomes of pensioners were accompanied by a widening in the income distribution. This is illustrated in Table 6.2 where the median income levels of pensioners in each income decile in 1989 are shown along with the real percentage changes since 1979.

Table 6.2
Real Changes in Decile Medians, 1979-89

Decile	Median net equivalent income, 1989 (£ per week)	Real percentage change, 1979-89
Lowest	67	3
2	81	9
3	90	13
4	99	16
5	106	16
6	113	17
7	128	21
8	154	29
9	196	35
Highest	308	44

It is clear from Table 6.2 that the income distribution among pensioners is widely spread. The top decile median is more than four-and-a-half times the bottom decile median. It is also clear that gains in income levels have been very unevenly distributed. The bottom decile has seen only a very small increase in its median income level, whilst the top decile has seen its income rise by more than 40 per cent. This is partly explained by the large increases in private incomes enjoyed by the richest pensioners and the low increases in state benefits on which the poorest are almost wholly dependent.

Overall among pensioners we see a picture of increasing incomes for many as the coverage and level of private income grow, but still with a large number dependent on relatively low social security benefits. The income distribution has widened since 1979 and pensioners have become less homogeneous as a group. The most important reasons for

these changes have been increased coverage and levels of occupational pensions. There is every reason to expect these trends to continue, especially that in increased levels of private pensions.

A Framework for Pension Policy

A number of facts stand out from our analysis so far. The first is that paying social security benefits to pensioners is already expensive. The second is that demographic change and the maturation of SERPS will make it prohibitively expensive to index the basic state pension in line with earnings. If it is indexed in line with prices, its relative value will become derisory. Thirdly, while a large number of pensioners remain relatively poor and almost entirely dependent on state benefits, a growing minority are becoming quite well off. Whilst the poorest pensioners in 1989 were little better off than the poorest in 1979, the richest in 1989 were more than 40 per cent better off than the richest in 1979.

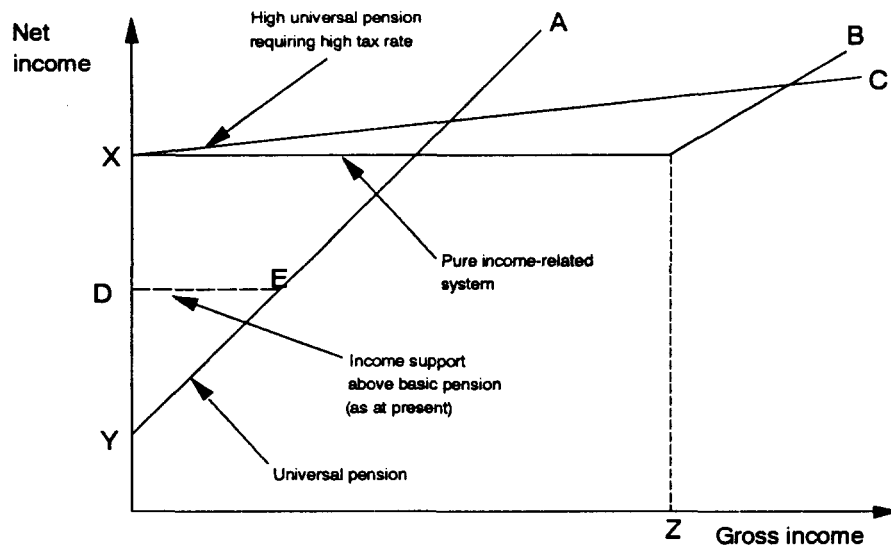
Given these facts and given the current low level of the retirement pension and the higher levels of income support, some questions must be put about the role of the basic pension. It is not a benefit which is high enough to provide a reasonable level of earnings replacement. Nor is it enough to lift pensioners clear of the income support system. Raising it to current income support levels in each of the three income support pensioner age bands would cost at least £1.5 billion whilst increasing the incomes only of those above the income support line. Raising it to, say, 20 per cent of average male earnings (its level relative to earnings in the late 1970s) - about £72 per week for a single person - would cost around £5 billion net (equivalent to more than 2p on the basic rate of income tax). This would be of greater benefit to those not currently on income support than to the very poorest. Raising income support levels to the same level would cost £2.5 billion, targeting all extra expenditure on the poorest.

These options for the Government are illustrated in Figure 6.2. Along the horizontal axis is gross income (i.e. all non-state incomes) and along the vertical axis net (disposable) income. The three lines shown are intended to represent the relationship between gross and net income under three possible benefit regimes. The slopes of the lines indicate the rate at which net income increases as gross income increases.

Line B represents a system of purely income-related benefits. If someone has no original income then he receives £X from the state. As original income increases, the income from the state is withdrawn pound for pound until it is exhausted at point Z. From then on, net income rises with gross income except in so far as some may be lost through income tax. This is effectively a description of how the current income support system works.

If line B represents a purely income-related system, then line A represents a system of universal benefit payment, with everybody receiving £Y, but this is not withdrawn as gross income increases. Y is less than X because the expense involved in paying money

Figure 6.2
A Graphical Representation of Different Pension Schemes



to everybody, and not recovering it from those on higher incomes, means that a lower basic benefit would have to be paid. Any increase in gross income is matched by an increase in net income, again other than as a result of income tax payments.

Finally, line C represents a universal benefit paid at the same level as the income-related benefit. Although increases in gross income result in some increase in net income, the flatness of the line indicates the high marginal tax rate which would have to be levied to pay for the high universal benefit.

In fact the present system lies somewhere between lines A and B since income support is more generous than the basic pension. This is represented by the addition of the dashed line DE to line A. This shows that over a small range of gross income, net income does not change until income support is exhausted.

Given the known shape of the income distribution and the known costs of various alternatives, the questions that need to be addressed by future government policy relate to the position and slope of the lines shown in Figure 6.2. This illustrates the framework within which policy for providing minimum incomes for pensioners must be made. To a large extent, the choice of benefit regime reflects a choice over the relationship between original income and net income.

Some Illustrative Policies

The effects of possible choices can be seen by looking at the distributional consequences of some illustrative policies. To do this, some simulations were run using the IFS Tax and Benefit Model, a computer model based on a representative sample of the UK population, which allows the effects of various tax and benefit policies to be examined (see Johnson, Stark and Webb (1990) for details). For illustrative purposes, it was assumed that approximately an extra £1 billion per year was available to be spent on social security benefits for pensioners. Three possible ways of spending this money were modelled: firstly, spending all the money on raising means-tested benefits; secondly, spending it on raising the pension and means-tested benefits; and thirdly, spending it just on raising the pension. The results are shown in Table 6.3. This shows average gains under each policy in pounds per week at each level of original income. Original income is defined as all income *before* any taxes have been paid or benefits received. The numbers in each of these categories are shown in the second column which emphasises the large proportion of pensioners who have little or no income from private sources.

Table 6.3
The Distributional Effects of Three Possible Pensions Policies

Original income (£ p.w.)	Number in range (million)	Policy A (raising income support)		Policy B (raising pension and income support)		Policy C (raising the pension only)	
		Average gain (£ p.w.)	Per- centage gaining	Average gain (£ p.w.)	Per- centage gaining	Average gain (£ p.w.)	Per- centage gaining
Under 10	2.4	4.30	98	2.20	100	0.85	58
10-49	1.8	1.90	60	2.30	97	2.95	92
50-99	0.8	0.40	10	2.10	95	3.95	92
100-149	0.4	0.10	2	2.00	92	3.70	85
150-199	0.4	0.10	2	1.80	91	3.15	81
200-299	0.4	0	0	1.60	90	3.30	87
300+	0.4	0	0	1.30	76	2.80	76
All	6.6	2.10	54	2.10	96	2.30	77

Spending just over £900 million allows the income support and housing benefit pensioner premiums to be raised by £7 a week for a married couple and £4 a week for a single person. This results in immediate increases of these amounts for pensioners on income support. It would also result in an extra half a million pensioners being brought into the income support net for the first time. As Table 6.3 confirms, such a policy directs the resources of the state directly at those pensioners with very little income of their own, without any extra money going to those with more than about £50 per week of their own income. This sort of policy is similar to that described as being followed by the current Government, only taking it rather further.

The same money could be spent increasing the basic pension and income support by £3 a week for married couples and £2 for single people. As the table shows, such a policy would result in the same average gain in pensioners' incomes as the previous one, but the increases would be spread over the whole pre-benefit income distribution. Those at the bottom would gain very much the same as everyone else, and hence less than they would under the policy targeting money directly at them. The different amounts involved are quite substantial. Under the previous policy, the poorest group of pensioners gained an average of £4.30 per week. Under this one, they gain £2.20 per week.

Finally the money could be spent just on raising the basic pension without any corresponding increases in means-tested benefits. This would give relatively little to those without other income of their own, the poorest group gaining less than £1 per week on average, and the benefits would be spread further up the income distribution.

These analyses indicate the advantages that would go with introducing a greater degree of means-testing into the benefit system. Resources could be better targeted on those in need, raising the incomes of the poorest to a higher level than is possible under a system of universal benefits which are paid to all. By contrast, increasing the basic pension gives money to *all* pensioners, including the relatively well off, and hence makes the cost of raising minimum incomes considerably greater.

There are, however, many well-known disadvantages associated with an increased degree of means-testing. In the case of pensioners, the two most important are levels of benefit take-up and incentives to save for, or indeed to work into, retirement. The latest available official figures suggest that in 1987 only 74 per cent of those pensioners entitled to supplementary benefit (income support's predecessor) actually received it, though most of those not taking up benefit to which they were entitled were entitled only to small amounts.¹ Nevertheless this problem could be a major obstacle to any policy dependent on widespread means-testing.

¹ See Fry and Stark (1991) for a detailed discussion of the take-up of means-tested benefits by pensioners.

The Way Forward

It is clear that benefits will have to be related to income if the poorest pensioners are to have their living standards raised to a significant extent. With a limited amount of resources, and given the relative affluence of a growing minority of pensioners, attempting to support the poorest through a universal benefit payable to all, including the relatively affluent, will prove too expensive. But as stated above, relating benefits to income causes problems of its own. Ways need to be found to mitigate the effects of low take-up and of reduced incentives to save.

Part of the reason for the considerable degree of non-take-up of income-related benefits is undoubtedly linked to the separation between the system of basic pensions 'earned' through NI contributions and the means-tested benefits systems. In particular the survival of the 'contributory principle', if only in name, may make people feel that while they have earned the right to a basic pension, they have not earned the rights to other benefits, thereby causing more stigma to be attached to these benefits. One possible solution to this might lie in a form of integration of the pension and income support systems. For example, one might combine them into a single benefit, in name at least, called, say, the 'retirement benefit'. Part of this would be non-means-tested and universal, like the current basic pension, whilst part would be income-related, like the current income support system. On reaching pensionable age, each individual would claim this benefit, just as they now claim the state pension, but in doing so they would make a declaration of income. The non-income-related part of the benefit could then be paid automatically and any income-related part paid on the basis of the income declaration. This declaration would then need to be made annually to take account of changing income and benefit levels.

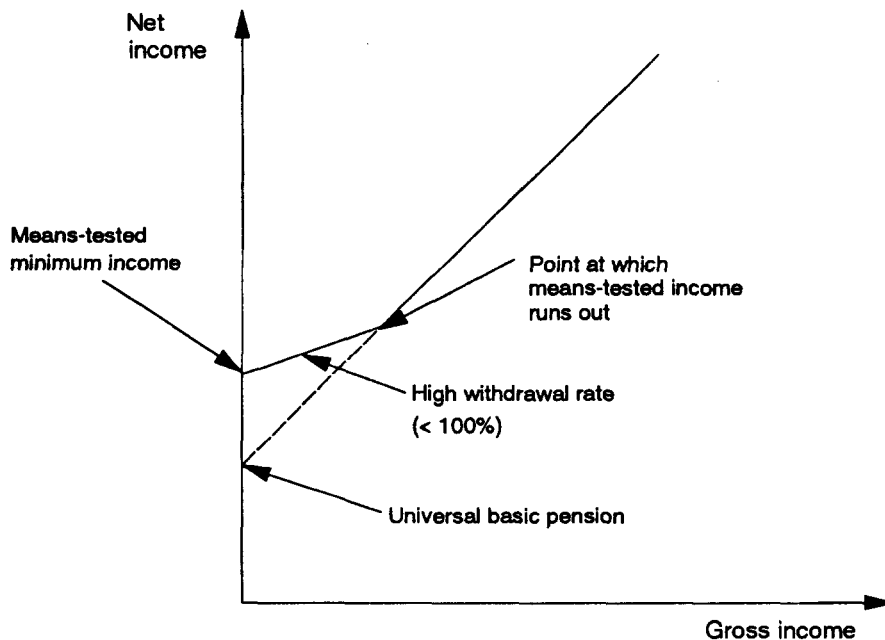
Such a change would undoubtedly complicate the retirement benefit system administratively but could play a vital role in ensuring full take-up of benefits.

The second problem related to means-tested benefits, that of reduced incentives to save for retirement, is a more fundamental result of any such system. While administrative schemes may be sufficient to overcome problems of inadequate take-up levels, reduced returns to saving over some range of income are a basic and inevitable result of the means-testing of incomes in retirement. At current levels of income support, £5 or £10 above the basic pension, this is unlikely to be a problem, but if it were to become the case that somebody with, say, £40 per week of occupational or personal pension on top of their state pension was no better off than somebody with no private provision at all, then incentive problems would undoubtedly exist. Furthermore, in this case there would be a straightforward problem of equity if someone who had saved money for retirement during a working lifetime were to see no benefit by comparison with someone who had spent all that they earned. Certainly this implies that the speed of any shift in the balance of

means-tested and universal benefits must be determined by the speed with which the underlying pensioner income distribution is changing. It may also mean that some reduction in the rate of withdrawal of income support to below 100 per cent is appropriate.

One could then envisage a system which worked something like the current family credit system. Any pensioner with income (including the basic pension) below a certain minimum level could receive the full extra benefit. Any income above this minimum would see the benefit payable reduced by a percentage of the difference between the income and the full benefit. For example, suppose the system ensured that anybody with income (including basic pension) below or equal to the basic state pension received a benefit to take that income to £70 (£15.85 above the current pension) with a 70 per cent withdrawal rate on higher incomes. Then anyone with income above the basic pension level could receive a benefit equal to $£15.85 - 70\% \times (£15.85 - X)$ where X is the amount of income above the basic pension level. (Again this is purely illustrative; this change introduced immediately would be quite expensive.) Thus while pensioners within this income range would see less than the full benefit of their earlier saving, they would at least see some benefit relative to those not saving.

Figure 6.3
A Possible Scheme for Paying Pensions



Such a system is illustrated graphically in Figure 6.3 using the same framework of analysis as that seen in Figure 6.2. With no gross income, net income is equal to a level above the universal basic pension at the means-tested minimum. Once gross income rises above

zero, net income also immediately increases but only slowly relative to gross income. Once the means-tested income runs out, net income increases pound for pound with gross income.

We now have a framework within which a way forward can be seen towards containing social security expenditure on pensioners whilst improving the living standards of the poorest pensioners. To make more widespread income relation of benefits feasible, a change in the administrative structure of retirement benefits would be required, with income-related and universal elements being calculated and paid simultaneously. To make it equitable, a change in the structure of the income-related benefits themselves would be necessary, with the introduction of a rate of withdrawal of less than 100 per cent over a certain band of income. Any such system could, of course, maintain, and might well extend, the age-related parts of the current benefit system.

The introduction of any reform along these lines would itself be a long-drawn-out process, much as the current Government's policy of moving the income support line above the pension and letting the pension fall over time relative to earnings is a gradual process and long-term strategy. Gradual increases in the scope of income-related benefits need not imply large increases in the numbers reliant upon them. There are currently fewer pensioners receiving income support than there were receiving supplementary benefit in 1979, despite higher levels of income support relative to the pension. This is a direct result of increasing pensioner incomes from other sources, including SERPS.

The non-means-tested part of the system might be built on the basic pension continuing to be paid at its current real level relative to prices, which as we saw will actually result in a falling burden on resources because of growing earnings, despite demographic pressures. More money could be released to increase the minimum benefits available if the basic pension were under-indexed relative to price inflation. One per cent under-indexation could provide around £¹/₄ billion per year to add to income-related benefits. This would, of course, leave those pensioners just above the ceiling for income relation worse off than they would otherwise have been. The degree to which the real value of the pension is eroded, if at all, and to which means-testing becomes relied upon would inevitably be a difficult decision, and one that will depend upon the way in which the pensioner income distribution develops in the future.

This policy debate cannot take place independently of government decisions about the provision of earnings-related pensions, either by the state or, more likely, through government encouragement of private pension provision, discussed in the next chapter. Neither the basic pension nor any income-related supplement is ever likely to provide a good level of earnings replacement except for those who have experienced very low pay, and it must undoubtedly be a vital part of policy to encourage the private provision of retirement income by the greatest possible proportion of the population. In this way, the recent sizeable increases in pensioner incomes could continue and a better rate of earnings replacement be provided.

Nevertheless it will remain the duty of government to provide as high a standard of living as possible, given economic and political constraints, to those pensioners with little or no income of their own. Until recently, universal provision of the basic pension was seen as the best way of doing this. Now that many pensioners have high incomes of their own and given demographic pressures, it is no longer easy to argue that universal provision is the most effective way of maintaining the incomes of those in need. A system which combines income-related benefits with mechanisms to ensure that they are received by those who need them may prove to be the only way of making the significant improvements that are undoubtedly needed in the living standards of the poorest pensioners.

Chapter 7

The Future of Private Pensions

RICHARD DISNEY AND EDWARD WHITEHOUSE

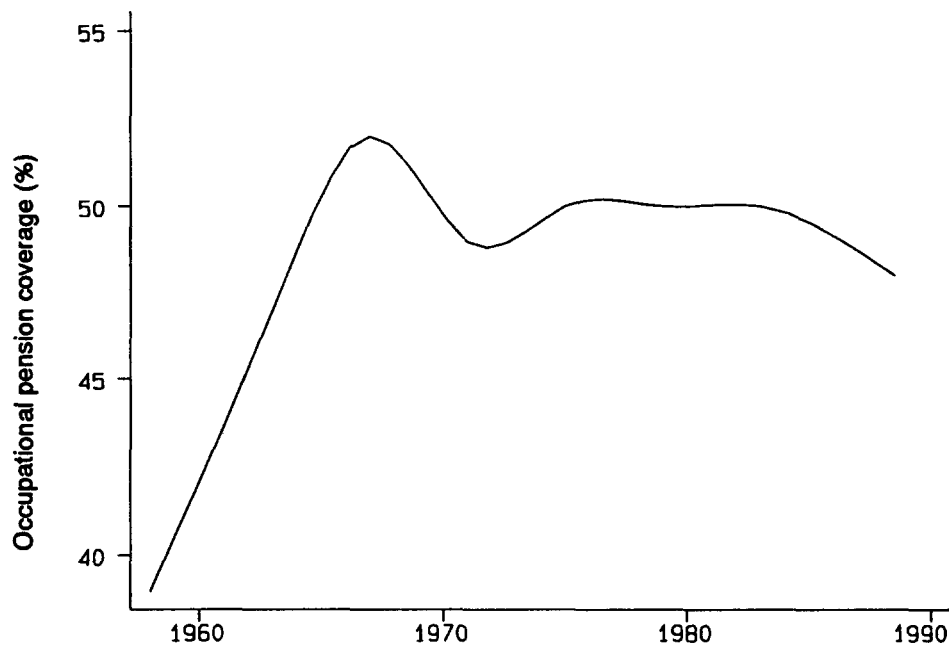
The declining importance of state-provided pensions in the income of the elderly has been accompanied by an increasing importance of privately provided pensions. The growing importance of private pensions has itself been accompanied by a shift towards individually purchased annuities - personal pensions - and away from the traditional, collectively provided occupational pension. For those in the working population, coverage by occupational pension schemes reached its peak in the late 1960s and has steadily declined since, with younger workers opting to go down the money purchase route.

These trends raise numerous questions about the Government's attitude towards private pensions: how and whether it should promote them, regulate them or compete with them. In this chapter, we document the spread of private pensions, and project the trends that may develop by outlining the attractiveness of different pension strategies for individuals. In essence, workers can now choose between joining an occupational scheme (if they work for an employer who provides a scheme and are eligible), buying a personal pension or remaining contracted in to SERPS. We consider first that people will choose the option that provides the best pension, subject to current cost, and then look at the role of risk and uncertainty.

Private Pension Coverage

The significant expansion in occupational pension coverage in the post-war period ended in the mid-1960s (Figure 7.1). Since then, coverage has declined as a proportion of the employed by around 5 per cent. Coverage fell further among private sector workers, but the increased share of public sector employment in the 1970s stabilised the overall pattern. Occupational pension scheme coverage is strongly associated with particular types of workers, industrial sectors and employer characteristics. For example, Disney and Whitehouse (1990) calculate the probability of coverage for a non-manual man working in a unionised job in the public sector at 95 per cent, compared with 3 per cent for a non-unionised part-time non-manual woman in the private sector. In general, the composition of the work-force is shifting away from groups associated with high levels of occupational pension coverage.

Figure 7.1
Occupational Pension Coverage, 1958-90
(number of current occupational pension scheme members
as a percentage of total employment)



Sources: Government Actuary, 1991; Smyth and Browne, 1992.

While occupational pension coverage among the working population is declining, it is still of increasing importance among the retired population. Table 7.1 shows the trend in coverage among pensioners. Those who are old today worked for much of their life when occupational pension membership was a good deal lower than today. So over a 20-year period, the proportion of men who received occupational pension entitlements increased from one-half to 70 per cent. Among women the increases were more dramatic; over a fifth of more recently retired married women, and one-half of single or widowed women, received income from this source.

Coupled with the rise in *numbers* with occupational pensions, there has been an increase in the *values* of pensions received. The more recently a group enters retirement, the larger will be the proportion of their lives in an occupational pension, and the higher will have been their final salaries due to continued real earnings growth (Table 7.2).

Table 7.1
Proportion of Birth Cohorts Recording Occupational Pension Receipts
(percentage of men aged 65 and over and women aged 60 and over with an income
from an occupational pension, by birth cohort)

Cohort	Men	Married women	Single/widowed women
1900-04	54	4	26
1905-09	56	5	30
1910-14	61	7	33
1915-19	67	11	40
1920-24	70	17	46
1925-29	-	22	49

Source: Authors' calculations using Family Expenditure Survey data, 1970-90.

Table 7.2
Average Occupational Pension Receipt by Cohort, Sex and Marital Status
(mean value of occupational pension received by men aged 65-69 and women aged
60-64 with income from an occupational pension, by birth cohort;
£ per week, 1990 prices, net of income tax deducted at source)

Year of birth	Men	Married women	Single/widowed women
1900-04	40	-	-
1905-09	45	34	30
1910-14	44	29	36
1915-19	57	29	35
1920-24	65	29	40
1925-29	-	31	47

Source: Authors' calculations using Family Expenditure Survey data, 1970-90.

Among the working population, occupational pensions and SERPS have been giving way to money purchase schemes since the late 1980s. Around five million people have taken out a personal pension since their introduction in April 1988: almost a quarter of those in

employment.¹ The majority of those who opted for personal pensions were young: half were under 30. The take-up rate among men aged 22-26 approaches 50 per cent, whilst for those aged 47-51 it is little over 10 per cent. As we shall see, this result is not surprising if individuals make a rational economic calculus of the returns to taking out a personal pension. Nevertheless, it does contradict the traditional view that younger workers exhibit myopia as to their retirement income in 30 or 40 years' time.

In the future, the terms on which individuals can take out personal pensions will become less generous,² and some currently in personal pensions may find it advantageous to rejoin the state scheme. Nevertheless, moves to make personal pensions attractive to older workers could extend the potential market for personal pensions significantly.³

Individual Pensions Strategy

How will the balance of pension coverage evolve in the 1990s? One way of answering this question is to calculate what pension strategy is likely to be most suitable for people to adopt in. In other words, if we assume that individuals make informed pension decisions, what will they be doing in future?

Individuals can choose at present between remaining in SERPS, purchase of a personal pension and (when their employer provides a scheme and they are eligible) membership of an occupational pension plan. The optimal pension strategy for different types of individual has been modelled at IFS.⁴ Utilising simulated earnings profiles based on econometric analysis of Family Expenditure Survey (FES) data for 1978-86, covering some 30,000 employees, we derive age-earnings profiles disaggregated by occupation, industry, schooling and region.⁵

¹ See Disney and Whitehouse (1992c) and National Audit Office (1991).

² The 2 per cent 'incentive' rebate of National Insurance contributions will be reduced to 1 per cent for those over 30 only in April 1993. The Government has committed itself to introducing a closer relationship between the rebate payable and age from April 1996. Such a reform is proposed and discussed in Disney and Whitehouse (1992a).

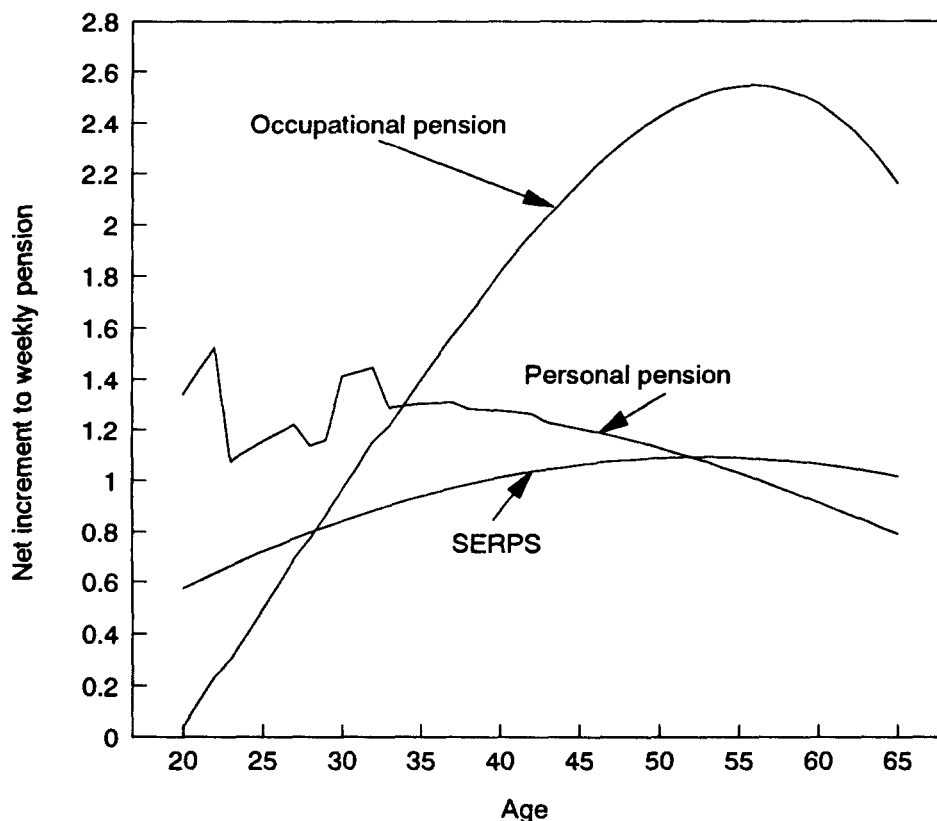
³ Disney and Whitehouse (1992c) find that men over 45 and women over 40 would not find it attractive to take out a personal pension due to the structure of SERPS and the rebate for contracting out. In 1990, this group comprised around 30 per cent of both men and women in employment, according to the General Household Survey (Smyth and Browne, 1992).

⁴ On the return to SERPS, see Creedy, Disney and Whitehouse (1992). On the optimality of contracting out, see Disney and Whitehouse (1992b). On the returns to personal pensions, see Disney and Whitehouse (1992a, 1992c). On occupational pensions, see Disney and Whitehouse (1992d).

⁵ Disney and Whitehouse, 1991a.

Here, we will use an individual example of an administrative or managerial worker, who was born in 1970, and so was 20 in 1990. The predicted earnings profile assumes 2 per cent per annum real earnings growth and that the individual does not change occupation. Earnings growth is typically more rapid in early working years, and slows down as the individual reaches retirement age.

Figure 7.2
Marginal Increment to Net Weekly Pension by Age and Pension Scheme



Notes: 1990 prices.
Calculation method as described in text. Further details are given in Disney and Whitehouse (1992c, 1992d).

Box 7.1 outlines the way in which we have to model the build-up of pension entitlements under the three main choices facing our hypothetical individual. Figure 7.2 shows the results of the modelling exercise. The vertical axis shows the *marginal* pension increment, that is the addition to total pension entitlement earned by spending a year in a particular scheme. The horizontal axis shows the age of the individual. What does Figure 7.2 tell us?

Box 7.1

Modelling Marginal Pension Entitlements

The way that pension entitlements build up in different types of pension scheme is a complicated process to model.

The relationship between earnings in a particular year and the SERPS pension earned is a complex one (see Disney and Whitehouse (1991b) for a detailed discussion). Firstly, any earnings above the upper earnings limit (UEL) of the National Insurance system are ignored. Earnings below the UEL are revalued in line with economy-wide average earnings to the year prior to the year in which state pensionable age is reached. The value of the lower earnings limit (LEL) is then deducted from the total figure. The rationale for this deduction is that the LEL is set approximately equal to the value of the basic state pension which they will also receive. The surplus is then multiplied by an accrual factor. Our example case will reach pensionable age in 2035, after the SERPS scheme has matured, so the relevant accrual factor is 20/49 or 0.41 per cent.

The value of a personal pension is more difficult to predict since it depends both on accumulated contributions and on uncertain future investment returns. We model a personal pension based on the minimum level of contribution, namely the rebate of National Insurance contributions and the additional 2 per cent 'incentive' rebate payable until 1992-93, both applicable only to earnings between the LEL and UEL. The current rebate (5.8 per cent) will fall to 4.8 per cent in 1993-94, and will fall further in the future. The Government Actuary (1990) forecasts a 3.4 per cent level by 2018-19. The part of the rebate attributable to the employee is paid in net of income tax relief. Our baseline assumption is that the rebate will earn a 3.5 per cent real return (beyond prices) until the year of retirement. On reaching state pension age, the accumulated fund must be converted to a whole life annuity with a number of stipulations covering benefit indexation and the provision for surviving spouses. In calculating the value of the pension entitlement, we have used an annuity rate of 8.3 per cent.

Occupational pensions, like SERPS, are generally 'defined benefit' schemes. (Less than 5 per cent had a defined contribution formula in 1987 according to Government Actuary (1991).) The pension is related to earnings. However,

rather than average salary, the majority relate pension to some measure of final salary in the scheme. As a condition of contracting out of SERPS, the scheme must agree to provide a pension at least as large as the guaranteed minimum pension (GMP). This is calculated in a formula similar to SERPS, though the GMP is normally less than the notional SERPS entitlement. After reaching pension age, the Government will pay the difference between notional SERPS entitlement and the GMP. Individuals leaving a scheme before reaching state pension age will see their pension level increase to take account of rises in prices. Between them, the Government and the pension scheme will ensure that the GMP part of the pension is uprated fully in line with prices to pension age. Since 1991, the pension beyond the GMP must be 'limited price indexed', that is increased in line with the lower of inflation (measured by the RPI) or 5 per cent.

A further complication with modelling occupational pensions is heterogeneity in scheme rules. We have modelled a 'typical' private sector scheme, using data on scheme rules from the Government Actuary's Survey of Occupational Pension Schemes, descriptive statistics of which were published as Government Actuary (1991). We assume it offers a pension of 1/60 of final salary for each year of membership. The scheme is assumed to be 'integrated' with the state scheme; the value of the basic pension is deducted from the pension along the lines of the deduction of the LEL in SERPS. We have assumed that the pension in payment is not uprated to take account of price rises, though we have taken account of limited price indexation of the GMP (up to 3 per cent) and the fact that some residual SERPS entitlement will be paid, resulting in the Government indexing the GMP fully to price rises. In contrast to the personal pension case, some contribution to the pension fund is required, though the individual (and their employer) will receive a rebate of National Insurance contributions. In valuing the pension entitlement, we have deducted the value of the individual's contributions, net of the 2 per cent employee's rebate. In the future, we have taken the Government Actuary's (1990) projections of the rebate and assumed that the proportion attributable to the employee remains at its current level (that is, a little over a third).

In the case of *personal pensions*, it shows that pension entitlements earned are higher earlier in life - a weighting known as 'front-loading'. This is despite the fact that earnings are greater in later years. Front-loading arises from two effects. The first is that compound interest ensures that contributions made in earlier years accrue a larger investment return. Secondly, the rebate the Government pays for contracting out of SERPS will fall over time as SERPS reaches maturity, from 7.8 per cent now (including the incentive) to 3.4 per cent from 2018-19. This fall also lies behind the discontinuities in the personal pension curve. Also, on reaching 30 our hypothetical individual will receive a 1 per cent extra rebate.

SERPS benefits have a hump-shaped profile. Revaluation of earnings in earlier years in line with average earnings gives greater weight to earlier years than, for example, would revaluation in line with prices (Disney and Whitehouse, 1991b).

Occupational schemes are 'back-loaded': the marginal benefits earned in later years are substantially greater than in earlier life. These marginal benefits have two components: the first derives from having spent an extra year in the scheme and the second results from earnings growth over the lifetime, which retrospectively increases the pension earned in all previous years.

These different profiles have important implications for individuals' optimal pension strategy. A lifetime in SERPS would give our individual example a pension of £43 per week on top of the basic state pension. If instead he contributed the contracting-out rebate into a personal pension, he could increase that to £53 per week, including the residual between the GMP and notional SERPS entitlement. The optimum strategy would involve shifting between the two schemes in his mid-50s. The resulting pension would then be £55. Note that an individual need not incur any current cost when taking out a personal pension.

If covered by an occupational pension, net of the individual contribution and allowing for the reduced rate of National Insurance contribution that he would pay, an occupational pension would yield a benefit of £78 per week, significantly larger than the SERPS or personal pension case. This benefit represents the pension accruing from the employer's contribution to the pension scheme. But in the early years of his working life, our example would derive only a small *net* benefit from an occupational pension. The benefit accrued is only a little larger than the contribution required. He would be better off delaying entry to the occupational pension until his mid-30s, and taking out a personal pension instead in the years before that. This would give a total pension of some £87 per week.

These results, which we have replicated for a variety of individuals, suggest that individuals seeking to maximise their pension, subject to knowledge of expected returns, should belong to a money purchase scheme such as a personal pension for at least the first decade of their working life, but should at some stage contract back in to SERPS or sooner, if available, to an occupational pension. It is even theoretically possible, especially for

women, that membership of all three types of scheme might be the dominant strategy. In the long run, we anticipate that people will retire with a more heterogeneous range of *types* of provision than in the past.¹

In the medium term, the main impact will be on the pattern of coverage among the work-force, since few employees retiring in the next 20 years will have invested wholly in a money purchase scheme.

We expect high coverage among young people, although the reduction in the incentive contribution rebate will reduce the excess return to younger workers described in Disney and Whitehouse (1992a, 1992c). The growing heterogeneity of pension holding will occur far sooner among the work-force than among the retired. However, the gradual ageing of the work-force will mean that there will be an increased proportion of older people in the work-force, with the latter presumably preferring defined benefit schemes.

Although Figure 7.2 suggests that occupational pensions are still an attractive option for covered individuals for much of their lifetime, it should be noted that the 'true' costs to the individual of taking up an occupational pension are not fully represented in the figure. Indeed, this is one of the uncertainties to which we return shortly, and it is important to explain why this is the case.

For a money purchase scheme, by definition, the annuity offered at retirement is equal to the value of the contributions, if discounted at the rate of interest and assuming that annuity values fully adjust for heterogeneity in expected longevity. In similar vein, under certain steady-state assumptions, the state pension scheme can be treated as 'self-financing', even though pensions are financed on a 'pay-as-you-go' basis. (In fact, with an ageing population, individuals will tend to earn slightly better returns than their contributions as the tax burden of providing state pensions falls on younger workers (Government Actuary, 1990; Disney and Whitehouse, 1992e).)

In the case of the occupational pension scheme, however, there is no presumption that the employee's contributions and the contracted-out rebate, which we net out of the expected benefit in Figure 7.2, will together pay for the expected pension entitlement depicted there. Pension schemes exact an employer's contribution to maintain the value of the pension fund in line with expected liabilities. This 'tops up' individual contributions, which may of course be zero.

Now, it is possible that employers provide their contribution as an *ex gratia* 'bonus' on top of contributions from employees. However, economic logic tells us that ultimately the costs of the employer's contributions are borne by employees in lower wages than they would have obtained in the absence of an employer's scheme. Quite how the burden

¹ Although measures to enhance the portability of occupational pensions through transfers to new schemes have diminished the phenomenon of people retiring with a number of smaller entitlements from different schemes.

of these 'compensating wage differentials' is borne is an issue of some debate in economic literature.¹ But our assumption behind Figure 7.2 is a strong one and favourable to occupational pension schemes: that an individual within a defined benefit pension scheme has exactly the same earnings profile as an individual not covered by an employer's scheme who purchases an annuity or remains in SERPS. Any compensating wage differential will take the form of a *lower* wage for an individual covered by an occupational pension scheme than for an individual who has to bear the full cost of purchasing his or her own annuity.

What is the implication of this? If people have a full understanding of their pay/deferred pay (pension) relationship, it is to be expected that they will take account of it in their pay bargaining. Individuals who choose the money purchase option may increasingly be able to bargain successfully with employers to pay a wage premium to finance their pension contributions. Put in an alternative form, it is interesting to speculate as to what would happen to occupational pension scheme membership were the employer's notional contribution on behalf of each employee to be statutorily abolished, and for all contributions to be levied directly on the worker. For many individuals, this would increase the attractiveness of other forms of provision substantially. This would threaten the viability of defined benefit schemes, as the employees who elect to stay in them will be precisely those who are unable to attract a favourable alternative scheme, and whose characteristics make them expensive for an occupational scheme - the so-called adverse selection problem. We return to this question below.

Other Trade-Offs in Pension Choice

The discussion so far has assumed that expected values are known and that these expected values carry no risk. But this is unrealistic and needs further consideration.²

Investment risk

Investment performance is the most obvious source of risk in a defined contribution type scheme such as a personal pension. However, it should be possible to select an investment strategy with low variance of real rates of return.³ In theory, the availability of a number of alternative risk/return strategies in financial markets makes defined contribution schemes more flexible to individuals than defined benefit plans. In the latter case, the pension is linked to the realised level of future earnings, and people may prefer more diverse risk strategies.

¹ See, for example, Bulow (1982), Lazear (1979, 1981), Barnow and Ehrenberg (1979) and Kotlikoff and Wise (1985).

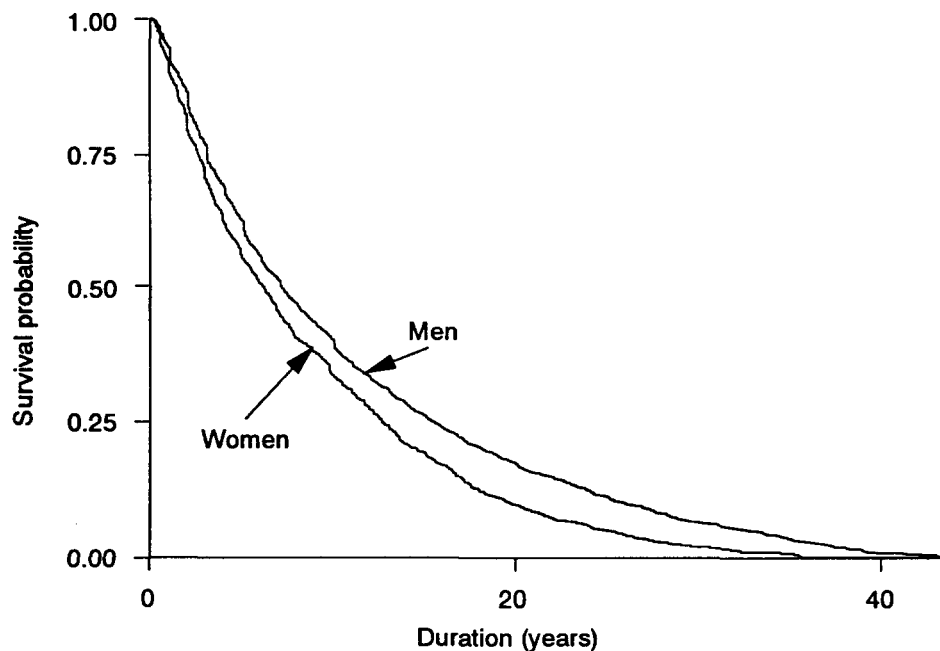
² See Bodie, Marcus and Merton (1989) on which this section draws. Also Green (1985).

³ See, for example, Bodie (1980).

Portability

'Back-loading' of benefits in defined benefit schemes makes these pensions inflexible with regard to job mobility. Termination of scheme membership involves forfeiting future indexation of accrued benefits to individual earnings and the prospect of earning large future pension increments. 'Front-loading' is not a necessary characteristic of defined contribution schemes; for example, the contribution rate could be varied with age to offset the compound interest effect. In general, though, both personal pensions and employer group money purchase plans tend to be front-loaded.

Figure 7.3
Duration of Occupational Pension Scheme Membership
(length of spells of membership across the lifetime
of men and women aged 55-70 in 1989)

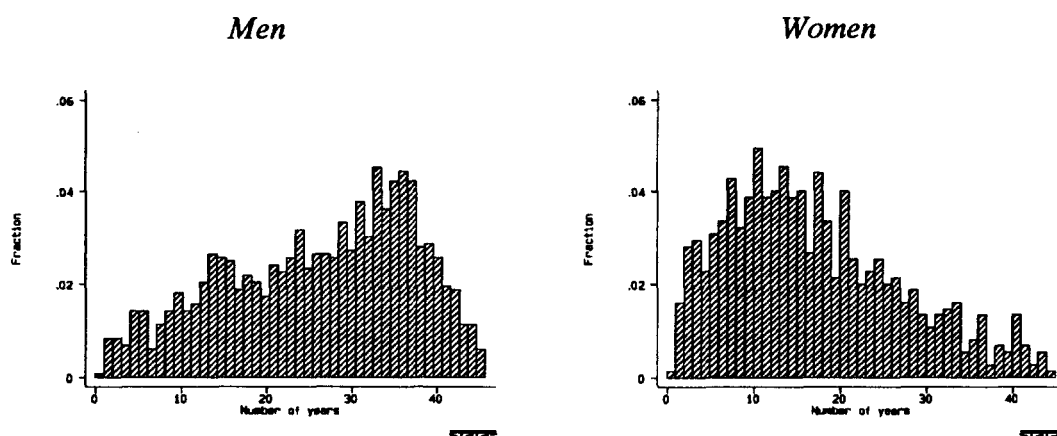


The significance of portability is underlined by the fact that very few individuals remain their whole working lives in one occupational pension scheme. Among the sample of 55- to 70-year-olds interviewed in 1998-89 for the Retirement Survey, 80 per cent of men and 40 per cent of women had at some point in their life been a member of an occupational pension scheme. But only a few spent very long in the scheme. The data we use are drawn from the employment histories of the individuals in the data set. We therefore have a sample of over 5,000 completed employment spells as a member of an occupational pension, and over 500 individuals working at the time of the survey who were scheme members. Figure 7.3 shows the survival curve for scheme tenure. The survival curve gives

the probability that an individual joining a particular scheme leaves the scheme after a given duration or longer.¹ It can be seen from Figure 7.3 that less than half of men and women joining a pension plan remain in it for more than 10 years.

It is also interesting to look at time spent in *any* occupational pension, rather than in one particular scheme. Figure 7.4 looks at the sample of those spending some time in a pension scheme, and looks at how many years in total across the working life have been covered by any occupational pension. There is a marked difference between the pattern for men and women. Of the (smaller) number of women who have ever joined a pension scheme, the majority spent only a small part of their working life covered. For men the distribution is skewed in the opposite direction, with a significant number spending most of their working life in an occupational pension. But overall, both distributions are strikingly flat. Given the penalty in terms of pension benefit to shorter scheme tenures, since women tend to spend shorter periods covered by schemes, occupational pensions will redistribute away from women and towards men.

Figure 7.4
Number of Years Spent in an Occupational Pension Scheme
(men and women aged 55-70 in 1989)



The overwhelming majority of individuals who join a pension scheme provided by their employer will be 'early leavers', who terminate scheme membership before reaching pensionable age. Pension benefits will be lower for 'leavers' than 'stayers', since those leaving forgo future increments to benefits in line with individual earnings and merely see their preserved benefits uprated partly in line with inflation. Over time, this effect will

¹These survivor functions were estimated using the 'Kaplan-Meier' or product-limit estimator. See Kiefer (1988) for an excellent survey of duration models.

be large. With 3 per cent real individual earnings growth, even that part of the accrued pension that is price indexed will be worth only half the value had the individual stayed. Portability is an important issue for most occupational pension scheme members.

Incentives

In contrast to measures to encourage portability, it is often argued that occupational pensions have a role in providing efficient contracts between employers and employees.¹ Some theories, prevalent in a strand of economic literature, assert that occupational pensions are used to restrict inefficient labour mobility; that is, encouraging both a particular tenure pattern and retirement behaviour.

For example, it is not legally possible for workers to commit themselves to stay with an employer for many years, even though they may sometimes wish to do so, perhaps to persuade the employer to send them on an expensive training course. Back-loading pay gives the employee a financial incentive to stay on.

Secondly, in situations where an employer is unable to monitor a worker's efforts comprehensively, and where shirking may only be observed occasionally, occupational pensions may act as an incentive to work hard, by providing a large penalty to dismissal. Offering occupational pensions serves this purpose better than simply using seniority-based wage profiles because it is possible to create greater shirking disincentives later in the working life. However, doubts have been cast on these accounts, because if they were true, the same effect could more effectively be served by simply using the deposit of a bond, either by an employee or by an employer on the employee's behalf, repayable at some future date if shirking has not been observed.²

There is therefore a trade-off between portability and incentives, though a defined contribution plan need not necessarily be 'front-loaded' and so could achieve the same incentive structure as a defined benefit scheme.

Information and retirement planning

One frequently cited advantage of defined benefit schemes is that they most clearly provide an easily interpretable income in retirement. If individuals target an income replacement rate in retirement as a percentage of salary, then defined benefit schemes offer an informational advantage. But mobility ensures that very few individuals reach a set target replacement rate with respect to pre-retirement income; the numbers who receive

¹ See, for example, Lazear (1979, 1981, 1985), Viscusi (1985) and Ippolito (1991). For empirical evidence of the incentive effect in the UK, see McCormick and Hughes (1984).

² Akerlof and Katz, 1989. For a critical view of the incentives argument (and of occupational pensions generally) from Marxian and Institutionalist perspectives see Ghilarducci (1992, Ch. 2).

‘two-thirds of final salary’ or some other clearly defined multiple are very small. Any supposed replacement rate advantage is not anyway unique to defined benefit schemes. A ‘target benefit’ defined contribution scheme would be possible, with periodic adjustments to contribution rates to achieve the target pension level. Some schemes of this nature have been set up in the US.

Annuity markets

A potential difficulty with defined contribution schemes is that the lump sum must be used to buy an annuity from a life insurance company, and annuity markets may not be perfect. For the US, Friedman and Warshawsky (1989) find that adverse selection¹ in insurance markets results in a minimum 14 per cent premium in annuity prices above the actuarially neutral level for the population of annuity purchasers, and an additional 18 per cent ‘load factor’ attributable to insurance companies’ costs and profits. If ‘fair’ annuities are not available to individuals, risk-pooling in collective schemes (such as occupational pensions) may allow annuities to be bought at a lower cost to all individuals. But purchasers of single premium annuities are a smaller and more biased sample than holders of personal pensions. The latter are pre-committed by legislation to buying an annuity before they are likely to have sufficient information to predict longevity. The impact of adverse selection on annuity prices for personal pension holders is therefore likely to be small.²

Fiscal incentives

Following a number of changes in the 1989 Budget, the tax system shifted in favour of money purchase schemes. The maximum contribution rates for attracting tax relief were relaxed. A £60,000 ceiling, indexed to prices, was imposed on earnings for contribution purposes and on the measure of salary for computing defined benefit pensions. Given that real earnings are generally highest near to retirement, this will be much more significant for defined benefit schemes than for money purchase schemes, which are front-loaded. The indexation of the ceiling to prices and the existence of real earnings growth mean that in the future the ceiling will bite lower down the earnings distribution. The current tax system favours defined contribution schemes, particularly for those with higher earnings and pensions.³

¹ Adverse selection occurs in insurance markets because individuals have better information about ‘risk’ than insurers. Those who purchase insurance are therefore likely to be of above average risk, in this case longevity. The price of annuities therefore rises above the neutral level to reflect this. See Rothschild and Stiglitz (1976).

² Again, Disney and Whitehouse (1992c) look at the sensitivity of our results to a number of annuity rate assumptions.

³ Dilnot and Disney, 1989.

A Public Sector Role in Private Provision

Although personal pensions have grown in recent years, there are important questions remaining in pensions policy. Firstly, there is the issue of regulation of occupational schemes. Secondly, the state must decide what balance to promote between SERPS and personal pensions.

Regulation, security and individual expectations

A typical view among a number of pensions commentators - particularly among occupational pension providers - has been that personal pensions are inherently more 'risky' than defined benefit schemes, because they depend on capital market returns rather than earnings (see, for example, Davies and Ward (1991)). However, the loss of some £420 million from pension funds under the control of Robert Maxwell has highlighted another pension risk: the security of the promise to pay pension benefits from an occupational scheme during retirement. The Social Security Committee of the House of Commons (1992) concluded its recent investigation:

the evidence ... convinces us that pensions of individuals in other schemes are not as securely based as many contributors had previously believed. In addition, there is still too much flexibility within the legal framework which could result in the loss of benefits by innocent error or design.

The Committee concluded that pension schemes needed a new legal framework. The current system is a complex combination of antiquated trust law, Inland Revenue requirements, contract and employment law, social security regulations, European Community legislation and an *ad hoc* series of statutory requirements. In June 1992, the Secretary of State for Social Security set up a committee (the Pension Law Review Committee) chaired by Professor Roy Goode to consider the legal framework, the ownership of pension funds and the roles of pension fund trustees and advisers.

At the heart of the pension protection problem seems to be the divergence between legal entitlements, pension payments and scheme members' expectations. The 'typical' occupational pension scheme is often described, for example, as one which will provide a pension of two-thirds of final salary on retirement. In fact, the proportion of occupational scheme members who will actually achieve this amount is extremely small. For a number of reasons, there is a gap between expectations and out-turns and a great deal of 'risk' or uncertainty attached to the value of pension benefits:

- Employees may leave the scheme before normal retirement age. Even though rules for indexation of preserved rights have been improved significantly, part of the preserved pension is uprated in line with prices, and another part is limited price indexed. If the individual had stayed in the pension scheme, the accrued pension would have increased in line with their earnings.

- The value of the pension above the GMP may not increase during retirement. In 1987, 55 per cent of private sector schemes specified discretionary or no increases to pensions in payment and only 5 per cent offered full indexation.¹ Over a period of 10 or 20 years, the erosion in the purchasing power of the occupational pension will be substantial. Five per cent inflation for 20 years would reduce the real pension benefit to one-third of its original value.
- The employer may choose to wind the scheme up,² though, since the 1990 Social Security Act, not if the fund is in deficit and the employer is solvent. As in the case of 'early leavers', future increments to pension entitlement in line with individual earnings are then lost. The scheme may be amended (retrospectively) to alter previously accrued pension rights. The trustees of a pension fund may forfeit pension rights or make them available only on a discretionary basis.
- Employees may not have sufficient information relating to these and other rules of the scheme and so may be unable to project the benefits due to them under the pension plan.³ In particular, they may not be aware of the discretionary powers granted to the employer and the trustees.

In many specific cases, schemes may be wound up or amended and benefit expectations will not be met. But in general, many members of occupational pension schemes may have perceptions about future pension benefits that may or may not turn out to be accurate.

How much do members undervalue or overvalue their occupational pension entitlements? Evidence for the UK is confined to retirement incomes as a whole. The 1989 Retirement Survey⁴ asked some 1,700 retired men and women between the ages of 55 and 70 how their post-retirement income as a whole compared with their expectations before retirement. Just 10 per cent said their expectation was exceeded, and 40 per cent said that their income proved to be less than they thought. Expectations do not seem to be particularly high: only one-third of survey respondents still working said that they thought their post-retirement income would be the same or greater than their income whilst working. Another third thought that their income in retirement would be less than a half

¹ From Government Actuary's Department survey. See Government Actuary (1991) and Disney and Whitehouse (1992d).

² See Nobles (1992) and Davies (1992).

³ Pension Law Review Committee, 1992.

⁴ See Bone et al. (1992).

of the pre-retirement level. Those nearing retirement generally have a low expectation of their post-retirement income; those who have recently retired generally find that their expectations were too high.¹

On occupational pensions specifically, employees are likely to have greater expectations of future benefits. In the US, for example, the President's Commission on Pension Policy (set up by the Carter administration in 1979 and which made recommendations in 1981) surveyed employers, employees and actuaries for a sample of pension plans. Each was asked for their estimate of the projected benefit at retirement and what benefits were currently accrued and would be paid in the event of a scheme termination or leaving the job. Using these data, Ghilarducci (1984) found that for projected benefits, the employee evaluation was 77 per cent above that of the employer. For accrued entitlements, the difference is much greater: the employee estimate is 3.6 times the employer's. But the employer's estimate is larger than that of the actuary, by 21 per cent. Thus, in the event of leaving the job or a scheme termination, the actuarial computation would result in the employee getting a benefit less than a quarter of the value they expected.

Reform is clearly needed to the current legal framework for occupational pension schemes. But changes in the law, clearer disclosure requirements and greater member involvement in pension fund management will not eliminate the divergence between expectations and outcomes if pension benefits continue to be related to final salary. In any event, occupational pensions will never do much for women, part-time workers and those with peculiar contractual status.

We are happy to leave the details of reform of the legal framework for occupational pensions to the Goode Committee. But we do not believe that legal changes to prevent fraud and restrict discretion will solve the central problem of the occupational pension system: the effect of portability on pension value and its impact on the expectations gap, which result from the final salary, defined benefit nature of pensions.

SERPS versus personal pensions

There has been a significant shift in the balance between public and private provision as a result of the UK personal pensions 'experiment' which is viewed with interest in other

¹ The retirement decision is endogenous to these income expectations, so there may be a sample selection bias in these statistics (those with high expectations of retirement income retire, those with lower expectations remain in work).

countries.¹ Nevertheless, the Government may still wish to go further. The number taking up personal pensions was unexpectedly very large, but so was the cost (£6 billion). In the future this cost will be reduced as the rebate for contracting out will be related to age, and so rebates will be more closely related to benefits forgone. This will reduce the adverse selection problem (from the exchequer perspective) in the current rebate structure.

The rationale for the introduction of SERPS was never clear. Although it did extend (compulsorily) pension provision for one-half of the population, it did so in a regressive manner. For the majority of workers,² SERPS entitlements rise *faster* than pay as earnings increase. Put another way, the replacement rate provided by SERPS increases with lifetime income. In a life-cycle context, the state pension system as a whole is redistributive, giving proportionally larger benefits to those with lower pay.³ But this is a result of the flat-rate basic state pension. Although SERPS currently costs very little (2.5 per cent of spending on National Insurance benefits), as the scheme reaches maturity costs rise substantially. By 2030, it is projected⁴ to cost some £15 billion a year in 1990 prices, or 27 per cent of the expenditure of the National Insurance Fund. This would be sufficient to fund a 45 per cent increase in the basic state pension, with a significant redistributive impact.

The Government did indeed propose to abolish SERPS in 1985 but the response to this proposal led to its withdrawal.⁵ Some people still propose its abolition, for example, the Liberal Democrats (1992) at the election. The paternalistic objection to abolishing SERPS has often been the difficulty of putting something in its place. Replacing it with nothing, it is argued, would mean that myopic individuals may not make any provision for income in retirement. The state would therefore be liable to claims for income-related benefits. Indeed, individuals with low incomes would have little incentive to save in the absence of myopia, since this would be offset by lower payments from the state. If paternalism is accepted as an objective, then some form of compulsory state or private provision is of course necessary. But personal pensions succeeded in obtaining five million contributors

¹ Thus far, shifts of this magnitude have been confined to countries such as Chile. The Chilean reform discontinued employer pension contributions, and set up a compulsory defined contribution scheme where workers could choose to which private financial company they paid their contribution. This replaced the whole of the state pension system, though subsistence benefits remained available for those with an inadequate pension in retirement. A detailed description of the reform can be found in Lopez (1991); Tamburi (1992) provides a critique.

² Those earning below the upper earnings limit of the National Insurance system.

³ Creedy, Disney and Whitehouse, 1992.

⁴ Government Actuary, 1990.

⁵ See Department of Health and Social Security (1985). For a splendid discussion of the reform process, see Peacock (1992).

(10 times the number originally expected by the Department of Social Security), particularly among groups regarded as myopic. This casts doubt on the paternalism argument, although the subsidy to these individuals has been very large.¹

Nevertheless, there may be a role for government. Personal pensions do not have a universal appeal since they are subject to investment risk. Older workers in particular may be risk averse. A significant expansion of this sector would require the Government to produce an incentive structure that persuades insurers to provide the sorts of pensions products individuals want to buy. The weakness of the proposal of the last Social Security Green Paper to abolish SERPS (DHSS, 1985) is the failure to recognise this.

In particular, we need to find forms of money purchase pensions which are attractive to all segments of the population. Mixed options could provide some attractive features of defined benefit schemes (insurance against capital market loss and a link to salary), whilst retaining the same flexibility, portability, transparency and avoidance of unrealisable expectations as defined contribution schemes. One method would be to require insurers to offer some guarantee of the minimum level of the pension at an appropriate level. This in effect requires individuals to put some of their pension contribution into a deferred annuity. An alternative scheme would be the 'target benefit' contribution scheme. Individuals could work out with their insurer their target retirement income, and periodically be advised to adjust their contribution rate to reflect capital market performance. This type of scheme would therefore operate along the lines of the current system for employer funding of occupational pension liabilities.

Finally, the tying of employee and employer² pension contributions to traditional final salary schemes is, in an important respect, a significant restriction on individual choice. Even if the security of the promised pension in such schemes could be strengthened, it is apparent that pension out-turns will often be less than individuals anticipate. There is a strong case for making the offer of a contribution to an employee's personal pension compulsory,³ and to extend the individual's choice of pension arrangement to the employer's as well as the employee's contribution. Eventually, such proposals might lead to compensating changes in wage structure and the offer of alternative arrangements by employers (such as contracted-out money purchase plans as well as final salary schemes - see *Occupational Pensions* (1992)). These changes, by making all aspects of the compensation package 'overt', would be desirable in themselves.

¹The National Audit Office (1991) calculated the cost of the rebates given to personal pension holders for the period 1988-93 at £9 billion, with an eventual saving on SERPS expenditure of £3 billion in the next century.

²The idea of an individual employer contribution is something of an arbitrary one in the current legal framework. The concept of 'ownership' of parts of an occupational pension fund is ill defined currently, and is very difficult to define at all satisfactorily (Pension Law Review Committee, 1992).

³See the discussion in Johnson et al. (1992).

A shift in the balance of provision away from the state scheme and occupational pensions towards personal pensions would have significant economic effects. The substitution of private for public savings and the switch to a front-loaded pension vehicle would have significant effects on capital markets, on choice of savings instruments and on life-cycle consumption patterns. These effects are the subject of future work at IFS.

Chapter 8

Income Tax and National Insurance: Better Together?

STEVEN WEBB¹

The last decade has seen a number of detailed improvements to the structure of both income tax and National Insurance contributions. At the start of a new term of government it is, however, desirable to take a more strategic look at the whole structure of personal direct taxation. In particular, it is a time to reassess the rationale for having two separate taxes on personal incomes. In this chapter we examine the scope for integrating the system of personal income tax and the National Insurance contributions (NICs) of employees and the self-employed.²

Although an apparently simple idea, ‘integration’ could take many forms. At one extreme would be a complete merger to produce a single tax with no identifiable National Insurance component. At the other extreme, integration could simply mean a further unification of collection mechanisms with the National Insurance system left intact.

This chapter begins, therefore, with a discussion of the case for various forms of integration. Next it considers the economic, administrative and political obstacles to reform. Finally it examines the likely distributional effects of a comprehensive merger of the two tax systems, and assesses whether the barriers to integration could be overcome.

The Case for Integration

A complete merger of income tax and NICs would require a considerable administrative upheaval, could bring into question the whole basis of the system of contributory benefits and has the potential to create large numbers of losers. In the face of these obstacles (which are discussed more fully below), it is necessary to assess very clearly what is to be gained by bringing the two taxes together. It is worth highlighting four principal advantages of integration.

¹The author would like to thank the CSO for supplying the anonymised FES data used in this analysis, and the Inland Revenue for supplying the data presented in Table 8.2. All subsequent interpretations of the data are the responsibility of the author.

²The proposals set out here would, however, be consistent with the retention of a separate system of National Insurance contributions levied on employers.

Coherence of the personal tax system

A tendency which has bedevilled the development of the UK tax system has been a failure by policy-makers to consider the tax system as a whole when considering reform. Changes to one part of the tax system inevitably have implications for other parts of the system, and piecemeal reform can often produce as many problems as it solves. Even in the narrow area of personal direct taxation, it is clear that the two relevant taxes combine to produce a rather bizarre structure. Although during the last decade a number of reforms to income tax and employee NICs have increased the structural similarities between the two taxes (see Box 8.1), their combined marginal rate structure is far from coherent (see Figure 8.1).

Box 8.1

Converging Taxes: Changes Since 1979 which Have Increased the Structural Similarities between Income Tax and Employee NICs

- *April 1990: introduction of independent taxation of husband and wife*
With the principal exception of a residual married couple's allowance, income tax is now similar to employee NICs in being levied on the individual.
- *October 1985, October 1989: NICs lower earnings limit reformed*
Until October 1985, an employee whose earnings reached the lower earnings limit (LEL) became immediately liable for NICs on the whole of his or her earnings. This contrasted with income tax where tax was due only on marginal earnings in excess of the personal allowance. Successive reforms have, however, reduced the jump in NIC liability when the LEL is reached to just 2 per cent of earnings below the LEL.
- *April 1979, April 1988: number of income tax bands reduced*
Whereas NICs are generally levied at one of two rates depending upon membership of the State Earnings-Related Pension Scheme, the 1978-79 income tax system had 11 separate marginal rates. This was reduced to six with effect from April 1979 and further reduced to two in the 1988 Budget. With the reintroduction of a reduced rate band in 1992, it has risen to three, although it is the Government's intention that a two-rate structure will eventually be restored.
- *May 1988, April 1991: extension of employer NICs to benefits in kind*
Although not directly affecting employee NICs, the extension of employer NICs to payment in gilts and unit trusts and to the provision of company cars represented an important change of principle. The case for levying an integrated income tax and employee NIC on benefits in kind is now much easier to establish.

Figure 8.1
Income Tax Plus NICs: Combined Marginal Rate, 1992-93

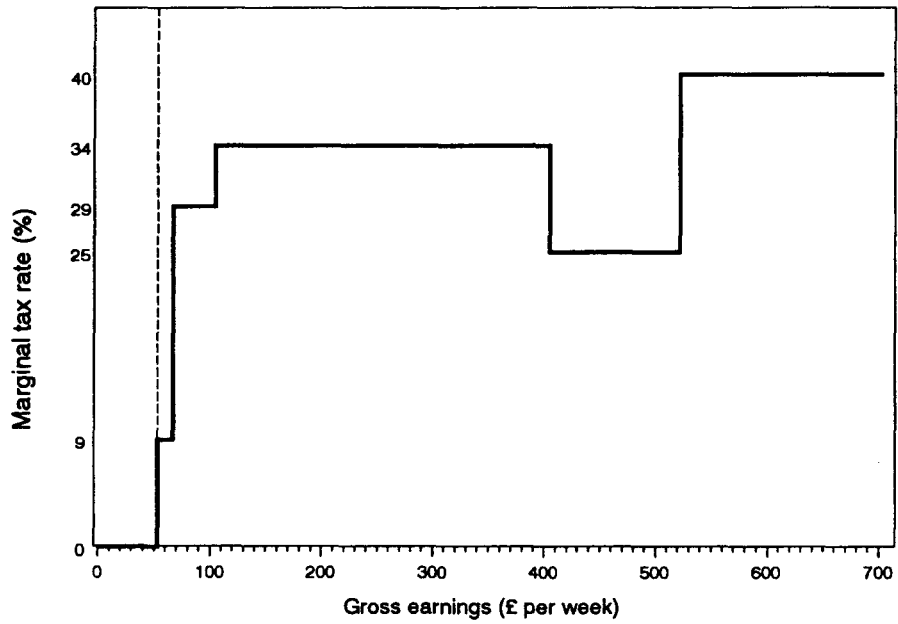
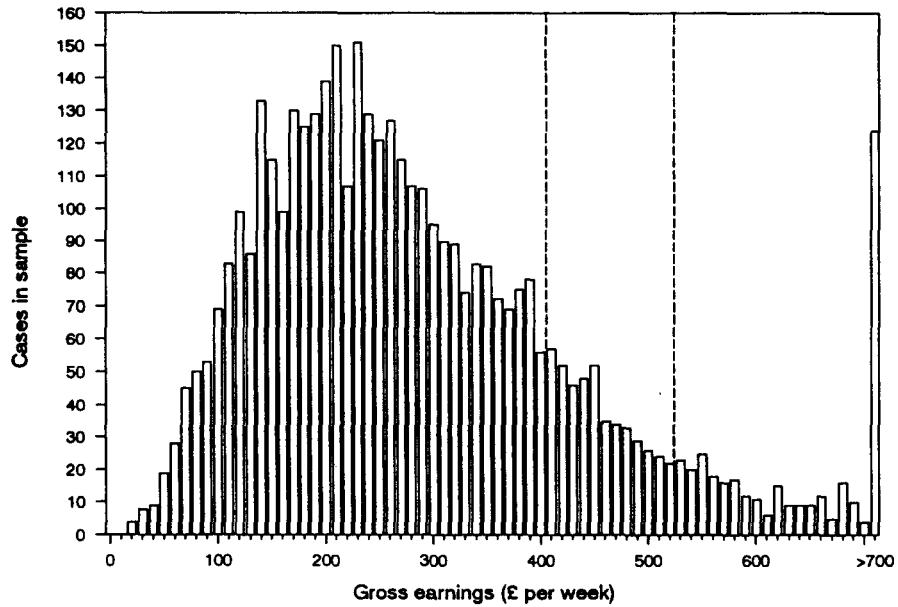


Figure 8.2
Full-Time Workers: Distribution of Earnings, 1992-93



Source: Projection of 1990 Family Expenditure Survey.

On gross earnings below the lower earnings limit (LEL) of £54 per week, neither income tax nor NICs are due. Once the LEL is reached, an employee becomes liable for 2 per cent of £54 (hence the infinite marginal rate indicated in Figure 8.1) and then 9 per cent of any earnings up to an upper earnings limit (UEL). At gross earnings of around £66 per week a single person begins to pay income tax at the reduced rate of 20 per cent, giving a combined marginal rate of 29 per cent. This continues until the floor of the basic rate band at gross earnings of around £105. Over a broad band of earnings, the marginal rate is then 34 per cent, before falling to 25 per cent on earnings in excess of the UEL (£405). Only when gross earnings exceed £522 per week does the marginal rate rise to 40 per cent with the onset of higher rate income tax.

One obvious respect in which the present system is incoherent is with respect to its redistributive impact. As Figure 8.1 indicates, the presence of an upper earnings limit for NICs peculiarly favours those basic rate taxpayers who earn in excess of this amount. Not only do they face a lower *marginal* rate than most other taxpayers, but some will even be facing a lower *average* rate of tax and NICs than those on significantly lower incomes (see Table 8.1). Such a structure is difficult to justify.

Table 8.1
Average and Marginal Tax Rates at Different Earnings Levels

	Gross annual earnings		
	£20,000	£25,000	£27,000
NICs (£)	1,603	1,699	1,699
Income tax (£)	4,039	5,289	5,789
Total tax + NICs	5,642	6,988	7,488
Average tax rate	28.2%	28.0%	27.7%
Marginal tax rate	34.0%	25.0%	25.0%

To give an idea of the magnitude of this inequity, Table 8.2 presents Inland Revenue estimates of the number of basic rate taxpayers earning in excess of the upper earnings limit (or upper profits limit for the self-employed) for the period 1978-79 to 1992-93.

Table 8.2
Basic Rate Taxpayers with Earnings Above the
Upper Earnings Limit / Upper Profits Limit^a

	Employees (thousands)	Self-employed (thousands)	Total (thousands)
1978-79	1,500	130	1,630
1979-80	2,000	160	2,160
1980-81	1,700	140	1,840
1981-82	900	80	980
1982-83	900	90	990
1983-84	1,000	120	1,120
1984-85	1,100	130	1,230
1985-86	1,400	140	1,540
1986-87	1,400	150	1,550
1987-88	1,700	170	1,870
1988-89	2,000	190	2,190
1989-90	2,300	240	2,540
1990-91*	2,200	230	2,430
1991-92*	1,900	200	2,100
1992-93*	1,800	180	1,980

* Projections.

* Figures prior to 1990-91 are for tax units, and from 1990-91 onwards for individuals. This discontinuity is, however, likely to have had only a minor effect on the trend shown in the table.

Source: Inland Revenue, based on Survey of Personal Incomes.

A first point to note is that the number of people benefiting from this bizarre fall in the marginal tax rate is substantial, and currently stands at around two million. However, it is also apparent from Table 8.2 that the numbers affected have fluctuated greatly since 1978-79. This fluctuation has arisen from variations in the rate at which the UEL and the higher rate threshold have been updated.

The UEL, whose value is linked to that of the basic state pension, has been price indexed for most of the 1980s. Given that earnings typically grow faster than prices, the numbers with earnings in excess of the UEL would thus tend to increase. This phenomenon accounts for most of the rise in the numbers between 1981-82 and 1989-90. However, the threshold at which higher rate tax becomes payable has on some occasions been frozen or under-indexed. This has tended to increase the number of higher rate taxpayers, and thereby reduce the numbers in the 'gap' between the UEL and the higher rate threshold. This accounts for the falls in 1981-82, 1991-92 and 1992-93.

Whether or not this inequity increases or decreases in the future depends therefore on the Government's policy towards the UEL and the higher rate threshold. If it chooses to index both in line with prices, then the numbers in the 'gap' will tend to increase steadily. This is apparent from the earnings distribution shown in Figure 8.2. If, however, it chooses to increase the UEL at a faster rate than the higher rate threshold then the numbers affected could decline relatively rapidly. It is this observation which forms the basis for one of the integration schemes reported later.

Whilst moves to reduce the numbers in this 'gap' are entirely consistent with the retention of separate systems of income tax and NICs, it is clear that reform would be much easier under a more closely aligned system. In particular, the case for reform would be more clearly apparent in a merged system whilst the scope for packages of NI increases and tax cuts to reduce the size of this gap would be greatly enhanced.

Reduced tax avoidance

Differences in the base on which income tax and NICs are levied continue to provide an incentive for individuals and employers to rearrange their financial affairs with the sole intention of reducing their overall tax liability. This situation is neither efficient nor equitable. Not only does such activity reduce the effective progressivity of the direct tax system, it also diverts taxpayers, employers and their financial advisers from more productive occupations.

Box 8.2

Income Tax and NICs: Principal Differences in the Tax Base

Items subject to income tax but not to NICs

- Most forms of investment income
- Benefits in kind (subject to employer NICs only)
- Earnings in excess of the upper earnings limit (employer NICs only)
- Incomes of those over pension age (employer NICs only)
- Most National Insurance benefits

Items which reduce income tax liability but do not affect NICs liability

- Pension contributions
- Mortgage interest
- Charitable donations
- Various minor tax reliefs (e.g. profit-related pay)

Box 8.2 lists some of the principal differences between the base for income tax and that for NICs.

The exemption of many forms of income from NICs has led during the 1980s to a sort of cat-and-mouse game between employers and the authorities. In this 'game', the objective of the employer is to find new and ever more obscure ways of providing income to their employees in ways which produce no liability to NICs.¹ Examples have included payment via benefits in kind (such as company cars or shares) or in gilts and unit trusts. The authorities in turn have extended the employer NIC base to include these items, thus driving employers to seek ever more obscure forms of payment.

Perhaps the most exotic example of this occurred in the run-up to the 1992 general election, when the Labour Party was pledged to remove the ceiling on employee NICs. In the desperate search for forms of remuneration which were not subject to NICs, some employers were driven to payment in gold bars! Such examples highlight the considerable waste which arises from the difference in tax base between income tax and NICs. Once again, a harmonisation of tax bases which stopped short of merger would be feasible, but the case for having two separate taxes would be further weakened.

Anomalous NIC position of the self-employed

A related issue which strengthens the case for integration is the anomalous position of the self-employed under the existing National Insurance system.

At present, employees whose earnings exceed the LEL pay a 2 per cent rate on the slice of earnings up to the LEL and then 9 per cent on earnings between the LEL and the UEL.² These are known as Class 1 contributions.

The self-employed by contrast pay NICs under two different Classes - 2 and 4. Class 2 is a flat-rate contribution (£5.35 per week in 1992-93) payable by anyone with self-employment income in excess of a given threshold (£3,030 per year in 1992-93). Class 4 contributions are levied at a rate of 6.3 per cent of self-employment profits between a lower profit limit (£6,120 in 1992-93) and an upper limit (£21,060 in 1992-93). Half of the value of Class 4 contributions may be offset against income for income tax purposes.

The way that this regime favours the self-employed is illustrated in Box 8.3 for two individuals with annual income of £20,000 - one from employment and the other from self-employment.

¹ See Skinner and Robson (1992) for a more technical discussion of this phenomenon.

² The corresponding rate is 7 per cent for those who have 'contracted out' of the State Earnings-Related Pension Scheme in favour of an occupational pension.

Box 8.3

**National Insurance Contributions
for Employees, Employers and the Self-Employed**

Annual National Insurance contributions if £20,000 comes from:

Earnings		Self-employment	
Class 1: employee	£1,603	Class 2	£278
Class 1: employer	£2,080	Class 4	£874
		<i>less value of tax relief on Class 4*</i>	(£109)
Total	£3,683	Total	£1,043
Effective average NIC rate	18.4%	Effective average NIC rate	5.2%

* Calculated as half of £874 relieved at 25%.

A further advantage for the self-employed person over the employee is that National Insurance contributions are also required of employers (also illustrated in Box 8.3). In the case of an employee earning in excess of £190 per week, an employer is required to pay 10.4 per cent of the whole of the employee's earnings, including benefits in kind such as company cars. Although the self-employed have a more limited entitlement to NI benefits than do employees,¹ the effective difference in contribution rates clearly outweighs this disadvantage.

There is thus a strong incentive for individuals to move from being employees, where the combined average NIC rate can exceed 18 per cent, to becoming self-employed, where the effective NIC rate can be as low as 5 per cent. It seems likely that this differential accounts at least in part for the increase of more than one million in the number of self-employed people during the 1980s. Once again, such tax avoidance behaviour is inequitable (in that others with similar incomes pay more tax) and inefficient (not least in terms of the costs involved in setting up as self-employed) and as such adds weight to the case for reform.

¹ Class 2 contributors are not entitled to unemployment benefit or earnings-related pension. Class 4 contributions bring no entitlement to benefit.

In principle, the anomalous position of the self-employed could be tackled by reform to the NICs system in isolation. Integration with the tax system would, however, provide the opportunity to re-evaluate the basis for this anomalous treatment and to introduce a more rational system.

Administrative savings

It is likely that the integration of income tax and NICs for the employed and the self-employed would result in some net administrative savings, although without a corresponding reform to the whole system of contributory benefits, the magnitude of such savings would probably be small.

Enforcement costs on the part of the tax authorities would be reduced as they would effectively be administering one tax rather than two, whilst compliance costs on the part of employers and the self-employed would similarly be reduced. Thus, for example, the self-employed would no longer be required to make a weekly Class 2 contribution (perhaps via a visit to a post office) but would pay their NICs at the same time as their income tax.

There are, however, respects in which a combined system of income tax and NICs would be more complex than the present system. One example is taxpayers over pension age who are currently exempt from paying NICs. If an integrated system were to retain this privilege, then this would create complications in areas such as the taxation of interest income at source. Consequently, the administrative savings from unifying the structure of the two taxes might be rather limited.

Barriers to Integration

The foregoing discussion has indicated that an integration of the systems of income tax and NICs would increase the coherence of the personal direct tax system, would reduce the scope for tax avoidance and might yield modest administrative savings. Whilst these are all desirable objectives, such a reform would not be without its problems, both practical and political. In this section we set out the main areas which would have to be tackled if integration were to be successfully implemented.

Differences in philosophy: 'the contributory principle'

One of the fundamental differences between income tax and NICs is that payment of NICs gives an individual rights to future benefits (most notably the retirement pension) whereas income tax payments convey no such rights and are just one source of total government revenue. Any reformer who would merge income tax and NICs must therefore specify what relationship (if any) would exist between payments of the integrated tax and future entitlement.

At one extreme, integration of tax and NICs could coincide with an end to any link between present NIC (or tax) payments and future benefits. Such an approach would have a number of attractions. In the first place there would be substantial administrative savings since it would no longer be necessary to maintain a contributions record for tens of millions of NI payers. Secondly, the scope for targeting of benefits would be greatly increased since benefits could be paid only to those on low incomes or who satisfy certain contingencies, rather than to anyone with a particular record of contributions.

In this context, it should be noted that the link between contributions and benefits has in any case been substantially eroded over the past decade, even by a government apparently committed to the 'contributory principle'. Obvious examples of this include the scaling down of SERPS for those who will retire in the next century and the dramatic tightening of the contribution rules for unemployment benefit. These two examples show that the link between contributions and benefits is far from sacrosanct, and suggest that there is little 'principle' left in the contributory principle.

It would, however, be unfortunate if an otherwise desirable reform (the integration of income tax and NICs) were to be blocked because of public attachment to the idea of contributory benefits. An alternative would therefore be that NICs could simply be grafted on to the income tax system with no change in the relationship between contributions and benefits. Thus 9 per cent of taxable income between the present lower and upper earnings limits would be labelled 'NI contributions', and would confer entitlement to NI benefits as at present. In this case, the combined tax and NIC rate structure would exactly resemble that presented in Figure 8.1.¹

It seems likely that such a presentational device could only be sustained in the short term. In the longer term, the incoherence of the combined rate structure would be so apparent as to lead to pressure for a restructuring of the integrated tax. It may, however, be politically necessary to continue to offer homage to the contributory principle if this will facilitate a desirable structural reform of the personal direct tax system.

Differences in the period of assessment

Class 1 National Insurance contributions are assessed on the basis of earnings over the relevant pay period of an employee - typically weekly or monthly. Income tax is assessed on the basis of taxable income over the financial year. Although the PAYE system attempts to deduct the correct amount of tax from the weekly or monthly pay-packet, an end-of-year check is undertaken to ensure that the correct amount of tax has in fact been deducted.

¹ In practice there might be some modest restructuring, such as an alignment between the LEL and the personal allowance, and an ending of the 2 per cent contribution rate on the slice of earnings below the LEL. Neither of these changes would, however, suggest that the 'contributory principle' was in jeopardy.

For many employees, there will be no practical difference between the two systems. Those who work throughout the year and have relatively stable incomes would typically be in the same position whichever method of assessment was used. However, for those who have erratic earnings (from bonuses or commission, for example) or those who work for only part of the year, the period of assessment will affect the total amount of tax / NICs paid.

For those earning below the UEL, irregular work patterns will be a problem. This is because those who do work for only part of the year gain less benefit from the 2 per cent NIC rate on the first slice of earnings. To take a simple example, a person who works for two weeks gets the first £54 charged at 2 per cent in both weeks, whereas a person who earns the same amount in one week gets the first £54 charged at 2 per cent only once.

By contrast, those whose earnings intermittently exceed the UEL can benefit from a period of assessment under a year. Where earnings are lumped together, the operation of the UEL means that some earnings escape NICs altogether. Where the same earnings are evenly spread, more of them fall below the UEL and are thus subject to NICs.

If the two taxes were to be merged, it would be necessary for them to have a common basis of assessment. Since there can be little rationale for differential treatment of those who have erratic earnings during the course of the year, it would seem sensible to move to an annual basis of assessment for the combined tax.

Differences in tax base

One of the main arguments in favour of integration of income tax and NICs advanced in the previous section was that differences in the base on which the two taxes are levied leads to scope for tax avoidance. The converse of this is that individuals whose income is in a form which is currently not subject to NICs would lose from a harmonisation between the bases of the two taxes. As the list in Box 8.2 suggests, the main groups affected would be pensioners, others receiving National Insurance benefits and those with investment income.

As noted above, income from NI benefits is not currently subject to NI contributions. The rationale for this is that NI contributions are levied during periods of employment or self-employment and are used to finance earnings-replacement benefits when earnings are interrupted due to old age, disability, unemployment, sickness or widowhood. Since few recipients of NI benefits will be earning, the logic of this scheme is that benefits should not be subject to NICs.

Under a unified tax and NIC scheme which retained a link between contributions and benefits, it would seem reasonable for this principle to be preserved. In the case of pensioners, this would be relatively straightforward. The tax authorities will already be

aware of the age of any taxpaying pensioner, since this information is needed to calculate entitlement to age allowances. It would therefore be fairly simple for the authorities to apply only the income tax component of the combined rate to the income of pensioners.

More problematic would be widows and those receiving short-term NI benefits, since in principle these groups should also be exempt from the NI component of the new combined tax. Where widows or the short-term sick or unemployed have no other taxable income during the financial year, then no liability to tax would arise because the value of these benefits is below the personal allowance. Complications arise when widows have other taxable income (such as private pensions) or where the sick or unemployed also have employment income during the year.

In the case of widows receiving NI benefits and also private pension income, under the present system tax would typically be deducted at source by those who administer the pension fund. Under a reformed system it would be relatively straightforward to instruct such bodies to continue to deduct tax at the current income tax rates rather than at the combined tax plus NIC rate. In the case of the short-term sick or unemployed who find work, it would similarly be necessary to instruct employers to apply tax to the NI benefit income at income tax rate only. It would seem unlikely therefore that these administrative adjustments need represent a major obstacle to the implementation of an integrated tax and NIC scheme.

Integration of the bases of income tax and NICs would also involve the levying of a higher rate of tax on income currently exempt from NICs such as interest or dividend income. Such a change would not be without its difficulties.

A major problem relates to the current pattern of tax privilege attaching to different forms of savings. At present, investment in pensions or in owner-occupied housing is highly tax privileged, whilst interest income from a bank or building society is taxed relatively heavily.¹ If a key constraint on the tax system is that it should minimise distortions to individual behaviour, then a reform which increases those distortions might be seen as unwelcome. Furthermore, since bank and building society accounts are an important savings medium for relatively unsophisticated investors, an increase in the tax rate on interest income would probably be regressive.

The question of the most appropriate tax treatment of savings is, however, one which goes beyond the narrow issue of integration of income tax and NICs. One suggestion, outlined in Chapter 1, is for more unified tax treatment of investment generally. Clearly such a change could only take place gradually, but a move in this direction would reduce the problems associated with integration of tax and NICs.

¹ See Hills (1984) and Saunders and Webb (1988) for a discussion of the fiscal privilege of different forms of savings.

Tax reliefs

Certain forms of expenditure, most notably on mortgage interest and on pension contributions, are allowable against income tax. What would be the most appropriate treatment of such items under an integrated tax plus NIC?

In the case of pension contributions, it would seem reasonable to allow relief only at the income tax component of the combined tax rate. The rationale for this is as follows. Pension contributions are a form of deferred earnings. On this basis they come out of pre-tax earnings and instead are taxed when they are received as pensions. Given that we have proposed that pension income (from either the state or the private sector) should only face the income tax component of the integrated tax, by the same token tax relief on pension contributions should also be allowable at the income tax rate only.

As regards mortgage interest relief, there seems to be little justification for allowing relief against a combined rate of tax plus NICs. It seems already to be the Government's policy to phase out this relief by freezing the threshold on allowable mortgages, and this should be allowed to continue unhindered.

In addition to these two major reliefs, there are a number of other items which are allowable against income tax such as charitable donations and pay under profit-related pay schemes. In each case the approach should be to consider the original rationale for the tax relief and to assess whether this would also apply to a combined tax plus NIC. Again, it does not seem that these differences in tax base need be an obstacle to an integration of the two taxes.

Differences in tax rates

A simple model of an integrated tax and NICs system would take the existing income tax rates and add nine percentage points to each of them. There are, however, a number of groups who do not face the main 9 per cent rate on marginal earnings and whose position under an integrated tax would need to be considered.

Perhaps the most obvious group for whom an additional 9 per cent tax on all earnings would produce losses is those who earn above the NI upper earnings limit, which stood at £21,060 per year in 1992-93. These individuals pay no NI on any earnings above the UEL, and so could lose heavily from an additional 9 per cent on all earnings above this level. One way of limiting the damage would be a simultaneous reduction of 9 percentage points in the higher rate of income tax, so that the combined tax rate on earnings in excess of the higher rate threshold would be unchanged.

As discussed earlier, however, there remains a problem with those basic rate taxpayers who earn in excess of the UEL but who would not benefit from a fall in the higher rate. A married man earning £30,000 per year and with £1,200 per year in pension contributions

would still be paying basic rate tax, but would lose around £800 per year from the uncapping of NICs. As the last general election suggested, losses of this order are likely to be politically unrealistic.

The problem facing the would-be reformer is therefore to introduce an integrated system which gets rid of the anomaly of the UEL whilst avoiding large losses. The most obvious solution is a gradualist approach which, for example, freezes the higher rate threshold and indexes the UEL so that the gap between the two becomes narrower and narrower. An alternative approach would be to combine more substantial increases in the UEL with promised cuts in the basic rate of income tax. In this way, those earning in excess of the UEL would not share in the tax cuts of the population as a whole but would at least avoid large cash losses. The distributional implications of these two approaches are considered later.

A second group who would be worse off with a combined tax rate nine percentage points above the present income tax rate would be those who have contracted out of the State Earnings-Related Pension Scheme (SERPS) and whose marginal NIC rate is thus 7 per cent rather than 9 per cent. If SERPS were to be retained, it would clearly be unfair to charge the full NIC rate on those who would be receiving little benefit from the scheme.

In practice, however, this should present no problem. On employment income there is no reason why, even under a combined tax plus NICs, those who have contracted out of SERPS should not continue to be taxed at a rate two percentage points lower than those still in the state scheme. In the case of unearned income there would be no need for a separate rate for those who were contracted out. On the grounds that NI benefits are designed to replace *earnings* only, individuals who choose to make their own provision for earnings replacement should not also receive a more favourable tax treatment on their unearned income.

A third group affected by the change would be some married women and widows. Until 1977, married women could opt for a reduced rate of NICs. In exchange for this concession they were entitled to a much more limited range of benefits. Although this option is no longer available to new optants, there were in 1989 around one million women who had continued to pay NICs at the reduced rate of 3.85 per cent. Clearly, to impose a 9 per cent rate could result in considerable losses for those who were still paying the reduced rate.

In practice, this problem is likely to be rather limited in scale. Not only can no new optants choose to pay NICs at the reduced rate, but also a woman who ceases paying NICs (due to unemployment, for example) cannot then resume at the reduced rate. As a result the numbers of women paying the reduced rate have fallen by around 70 per cent in the last decade. Furthermore, with the restructuring of employee NICs implemented in October 1989, the financial incentive for low-paid women to continue paying the reduced rate was diminished, and so the numbers are likely to have fallen still further since then. Given that

any integration of the income tax and NICs system might in any case be implemented over a number of years, it is unlikely that married women on the reduced rate are likely to be a sizeable group at that stage.

The final major group for whom an across-the-board 9 per cent tax rate could create problems is the self-employed. As discussed earlier, the self-employed pay a flat-rate weekly contribution plus a profits tax of 6.3 per cent of profits between a lower and upper profits limit. Given further that half of any profit-related contribution is allowable against income tax, the effective NIC rate on the self-employed is only around 5 per cent at the margin.

Under an integrated system, one obvious step would be to abolish the flat-rate component of the NICs of the self-employed. The flat-rate component of employee NICs (the 2 per cent rate on the first slice of earnings) would naturally disappear when merged with income tax and there is no reason to retain a flat-rate element for the self-employed. None the less, even with a saving of £5.35 per week from the abolition of Class 2 contributions, the self-employed could still end up substantially worse off.

For example, the self-employed person shown in Box 8.3 with a profit of £20,000 per year is paying total NICs (net of tax relief) of £1,043. If Class 2 were abolished, a NICs rate of 9 per cent levied on all profits between the lower and upper profits limits, and tax relief on Class 4 NICs ended, the same person would end up paying £1,249 per year (or around £4 per week more). If, further, the lower profits limit were set equal to the current lower earnings limit (rather than being around double as at the moment), then the total bill would rise to £1,547 (or around £10 per week more than at present).

Though it would be possible to devise schemes where the self-employed were protected from losses, this would not be money well spent. In the first place, as we have seen, the self-employed currently enjoy a decidedly favourable NI treatment. Not only is their main NI rate lower than that for employees, but there is also no issue of employer contributions to be considered. In practice this means that a self-employed person who contracts to an organisation can expect higher pay than his salaried counterpart since the employer can in this way avoid NIC liability at 10.4 per cent.

To sum up, the losses which the self-employed would face represent the ending of an unduly favourable treatment. Although such losses should be phased in gradually, it is not necessary further to complicate the system in order to preserve the favourable position of the self-employed.

Two Routes to Integration

We have argued above that there is a strong case for having one tax on personal incomes rather than two. Though there are problem areas, many of these can be tackled by relatively minor adjustments to the combined tax. There remains, however, the practical question of how integration might be achieved. In this section we use the IFS Tax and Benefit Model (see Johnson, Stark and Webb (1990) for details) to simulate the distributional effects of two different routes to integration. The two routes have in common that they tackle the major distributional obstacle to comprehensive integration, namely the two million people with earnings above the upper earnings limit but below the higher rate threshold. In the one case this is achieved by coupling increases in the UEL with basic rate tax cuts; in the other, inflation is used to erode the gap. We assess here the relative merits of the two approaches.

The 'transparent route'¹

Under this route the objective of integrating income tax and NICs is made politically explicit. Ministers announce that the upper earnings limit will be gradually increased until it is coincident with the higher rate threshold, at which point the two taxes will be merged.² It is also announced that any real increases in the UEL will coincide with basic rate cuts so that those between the UEL and the higher rate threshold will not be cash losers. Given that from 1993 decisions on income tax and NIC changes will be made at the same point in the year, such a combined package need not be implausible.

The arithmetic of the scheme is relatively straightforward. For a single person whose earnings exactly coincide with the UEL, a cut of one percentage point in the basic rate produces a saving of around £156 per year. This is roughly 9 per cent of £1,750, and so a package consisting of a one-point cut in the basic rate and an increase of £1,750 in the UEL would produce no losers. If this process were repeated, the gap between the UEL and the higher rate floor would gradually diminish. By the time four points had been taken off the basic rate, the UEL would have overtaken the start of higher rate tax and integration could take place without producing large losers.

By the time integration had taken place, the following changes would have been made:

¹ An earlier version of this proposal was presented in Dilnot and Webb (1988).

² In the interim, those whose NI contributions had risen would not accumulate additional entitlement under SERPS, perhaps by the device of a 'SERPS ceiling' set at the original UEL and price indexed as at present.

- basic rate down to 21 per cent;
- upper earnings limit abolished;
- higher rate reduced by nine percentage points (so that the combined tax plus NIC rate would be unchanged at 40 per cent);
- lower earnings limit raised to the personal allowance;
- 2 per cent rate of NICs abolished;
- Class 2 NICs abolished;
- Class 4 NICs aligned with Class 1 (i.e. rate set at 9 per cent, lower profits limit reduced to personal allowance, upper profits limit abolished, tax relief on Class 4 ended);
- NICs base extended to cover unearned income, excluding NI benefits; pensioners continue to pay only income tax rate;

Table 8.3 shows the effects of this package of reforms on families at different income levels, ranging from the poorest 10 per cent to the richest.

Table 8.3
Effects of 'Transparent' Integration of Income Tax and NICs
on Family Disposable Incomes, by Income Range

Decile	Percentage of families who are:				
	Gainers		'Unaffected'	Losers	
	> +3%	+3% to +1%	+1% to -1%	-1% to -3%	> -3%
Poorest	2	1	95	2	0
2	0	1	98	0	0
3	7	7	86	1	0
4	21	20	58	1	0
5	30	33	36	1	0
6	40	34	24	1	0
7	51	31	17	0	0
8	53	32	14	1	0
9	52	29	18	2	0
Richest	21	30	40	7	1
All families	28	22	49	2	0

Table 8.4
Effects of 'Transparent' Integration of Income Tax and NICs
on Family Disposable Incomes, by Family Type

	Percentage of families who are:				
	Gainers		'Unaffected'	Losers	
	> +3%	+3% to +1%	+1% to -1%	-1% to -3%	> -3%
Non-pensioners					
<i>Single people</i>					
Single parent	8	8	81	2	0
Not working	1	2	94	2	1
Employee	50	30	17	2	1
<i>Couple, neither working</i>					
No children	1	13	84	1	1
With children	1	0	98	1	0
<i>Couple, one working</i>					
No children	44	25	30	1	0
With children	34	21	40	4	0
<i>Couple, both working</i>					
No children	48	33	17	2	0
With children	39	36	23	2	0
Pensioners					
<i>Single</i>	2	10	87	0	0
<i>Couple</i>	2	17	81	0	0
All families	28	22	49	2	0

As the bottom row of Table 8.3 shows, just under half of the population would be broadly unaffected by this package, exactly half would gain, and just 2 per cent would face any significant loss. The poorest families are almost entirely unaffected since they typically do not pay either tax or NICs. Middle-income families generally do well from the reform, since they benefit from a substantial cut in the tax rate. It is only at the highest incomes where the number of losers begins to increase. Those affected here are principally the self-employed (who lose their favourable NIC position) and those with substantial amounts of unearned income, which is now subject to the 9 per cent NIC rate.

The distributional effects of this package on families of different types is shown in Table 8.4.

From the table it is apparent that the families which benefit most from the changes are those where one or more person is in employment. Pensioners, lone parents and the unemployed are largely unaffected.

The small number of losses among low-income families (also reflected in Table 8.3) arise from the curious way in which mortgage interest tax relief is currently administered. For ease of administration, mortgage interest relief is currently allowed at the basic income tax rate of 25 per cent. This is because the relief is given at source by lenders in the form of lower mortgage payments. There is, however, a small group of low-income home-owners whose marginal tax rate is lower than 25 per cent (namely, non-taxpayers or those facing the reduced rate of 20 per cent). If the basic rate of tax falls (as in this reform) but the marginal tax rate of this group does not, then such households find themselves worse off via a rise in their mortgage payments.

None the less, it is clear from this distributional analysis that an integration of income tax and NICs can be achieved without producing large numbers of substantial losers. The main drawback of such a scheme is its cost, which amounts to just under £8 billion. Given the current position of the public finances, such fiscal largesse may be thought to be a very long-term prospect. However, the Government is itself committed to a reduction in the basic rate to 20 per cent, which would cost well over £8 billion. All that is argued here is that when the basic rate is reduced, the UEL should simultaneously be raised.

Realistically, an integration of income tax and NICs which has to wait for a 4p reduction in the basic rate may well end up being a tax strategy which would take not one but two terms of government to achieve. This raises the question of whether a government with little money to spare can make some progress towards the desirable objective of integration without spending large sums. One such approach, which we label 'back-door integration' is described in the next section.

'Back-door' integration

We have seen that one of the principal obstacles to integration is the two million people in the 'NI gap' immediately above the UEL. Abolition of the UEL, even coupled with a cut in the top rate of income tax, produces substantial losses for this group. However, we have also seen that the number in this position has fluctuated greatly in recent years, from just under one million in 1981-82 to more than two-and-a-half million in 1989-90 (Table 8.2). Clearly, the fewer people there are in this 'gap', the easier integration is to achieve.

It follows that a government with no money to spend could still make progress towards integration by reducing the gap between the UEL and the higher rate threshold. The most obvious way to do this without producing cash losses would be to index the UEL as at

present but to freeze the higher rate threshold. In this way the distance between the two thresholds would diminish each year, and when they were coincident, integration could take place.

Once again, the arithmetic of such a scheme is relatively simple. In 1992-93, a single person would have to earn at least £27,145 before paying higher rate tax, whilst the UEL stands at £21,060. If the higher rate threshold were frozen and the UEL price indexed, the length of time taken to close the gap would depend on the rate of inflation. At the current level of around 3.5 per cent, the gap would be closed in eight years, at 5 per cent in six years, and at 10 per cent in three.

There are two ways of looking at the distributional impact of this period of transition prior to integration. One is to argue that since no one would see their cash income actually decline during the transition, there are 'no losers'. However, it is quite clear that as nominal wages rise, many individuals will be paying higher rate tax sooner than they would have done under an unchanged policy and so they are quite clearly losers. Put another way, their position is unchanged in cash terms, but worse in 'real terms'.

Table 8.5
Effects of 'Back-Door' Integration of Income Tax and NICs
on Family Disposable Incomes, by Income Range

Decile	Percentage of families who are:				
	Gainers		'Unaffected'	Losers	
	> +3%	+3% to +1%	+1% to -1%	-1% to -3%	> -3%
Poorest	1	1	96	1	0
2	0	1	98	0	0
3	4	9	87	0	0
4	8	29	61	1	0
5	3	49	45	3	0
6	1	54	38	6	1
7	0	53	34	11	2
8	0	41	41	15	3
9	0	23	49	23	5
Richest	0	2	29	48	22
All families	2	26	58	11	3

Tables 8.5 and 8.6 show the distributional impact of this policy in 'real terms'. It is assumed that the UEL has been raised to the level of the higher rate threshold and that income tax and NICs have then been merged exactly as under the first reform option. The only difference is that the basic rate of tax remains at 25 per cent. For comparison with Tables 8.3 and 8.4, all values are presented in 1992-93 prices.

Table 8.6
Effects of 'Back-Door' Integration of Income Tax and NICs
on Family Disposable Incomes, by Family Type

	Percentage of families who are:				
	Gainers		'Unaffected'	Losers	
	> +3%	+3% to +1%	+1% to -1%	-1% to -3%	> -3%
Non-pensioners					
<i>Single people</i>					
Single parent	1	13	83	2	1
Not working	0	0	98	0	1
Employee	3	47	32	13	5
<i>Couple, neither working</i>					
No children	0	0	97	2	2
With children	0	0	100	0	0
<i>Couple, one working</i>					
No children	9	37	31	16	7
With children	3	34	34	22	7
<i>Couple, both working</i>					
No children	4	42	28	20	6
With children	2	42	29	23	5
Pensioners					
<i>Single</i>	0	0	99	1	0
<i>Couple</i>	0	1	96	2	0
All families	2	26	58	11	3

From Table 8.5 it is immediately apparent that what we have labelled 'back-door integration' is a much more severe route than the first reform option. Table 8.3 showed that when softened by basic rate cuts, only one family in 50 loses more than 1 per cent of their net income as a result of integration. By contrast, the freezing of the higher rate

threshold produces losses of this magnitude for one in seven. Among the richest decile the contrast is still more marked. The tax-cutting approach left only one in a 100 more than 3 per cent worse off, whilst the under-indexation approach leaves more than one in five with losses of this magnitude.

Even under this relatively severe approach there are, however, substantial numbers of modest gainers, notably amongst families with one or more employees. These families gain in particular from the abolition of the 2 per cent NI rate, and also from the levelling up of the LEL to the personal allowance. Given the substantial losses of those on high incomes, however, the net effect of the package is to increase aggregate tax revenues by a little under £1 billion.

Conclusion

A comprehensive integration of the systems of income tax and National Insurance contributions would produce a major improvement to the structure of the personal direct tax system in the UK. The tax system would be more coherent, the scope for removing structural anomalies would be greater, and the scope for tax avoidance would be reduced.

Such an integration would not, however, be without its problems, both practical and political. On a practical level, the differences between the two taxes in terms of tax base, rate structure and period of assessment would need to be tackled, but none presents insurmountable problems. More problematic are the political objections in terms of adherence to a 'contributory principle' and the prospect of large losses among middle-to-high earners.

We have shown that income tax and NICs can be merged whilst preserving a distinctive part of the tax schedule labelled 'NICs'. This is a far from ideal solution but it may help to overcome one of the main barriers to reform. We have also shown that it is possible to integrate the taxes without producing large numbers of losers. This can be done either by stealth, which limits cash losses during the transition, or more overtly by combining UEL increases with basic rate cuts. The latter approach would in particular avoid a torrent of opposition of the sort which faced the opposition parties who in June 1992 proposed the immediate abolition of the UEL.

The transition to an integrated system would undoubtedly be messy and could take many years. We have shown, however, that the practical and political obstacles to integration can be overcome. With an integrated system in place, the foundations would have been laid for a far more coherent approach to the structure and reform of personal taxation. At the start of a new term of government, now is the time to begin moving towards that objective.

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