

**Taxes down, Taxes up:  
The Effects of a Decade of Tax Changes**

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**Published by**

The Institute for Fiscal Studies  
7 Ridgmount Street  
London WC1E 7AE  
(Tel. 071-636 3784)  
(Fax 071-323 4780)

(C) The Institute for Fiscal Studies, February 1994  
ISBN 1-873357-34-6

**Printed by**

KKS Printing  
Stanway Street  
London N1 6RZ

## **Preface**

This paper is based on research supported by the Economic and Social Research Council through research centre funding for the IFS under grant number W 100 28 1002. Family Expenditure Survey data are used by permission of the Central Statistical Office. Thanks are due to Andrew Dilnot and Steven Webb for helpful comments, and to Mary Robinson for copy-editing. The views expressed in this paper, and any remaining errors, are the responsibility of the authors alone.

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# 1. Introduction

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From the middle of the 1980s until the end of that decade the government experienced a growing economy and consequently buoyant tax revenues. In addition to cutting the PSBR and increasing spending, these revenues were used as a means of financing massive tax cuts, and in particular cuts in income tax rates. By the early 1990s, however, it had become clear that tax revenues had been cut to an unsustainably low level as recession led to a PSBR which threatened to run out of control. In response to this, in the two Budgets of 1993 the two Chancellors introduced a package of tax increases which, in terms of revenue raised, will reverse most of the tax reductions of the late 1980s. But taxes were increased in a way very different to that in which they were reduced. The overall effect has been a substantial reform of the UK tax system.

The purpose of this report is to examine the changes that have been made in the tax system as they affect the personal sector, i.e. changes to taxes on personal income, on personal property and on expenditure. We start the analysis with the 1985 tax system as the base, for it was in 1986 that the first cut in income tax rates was introduced and the trend for significant tax cuts was set. And it was from this date that taxation as a proportion of GDP started to fall steadily until the end of the 1980s. We end the analysis with the tax system as it will be at the end of 1995 - by which time all the changes announced in the 1993 Budgets will have come into effect. So the study covers a decade of contrasting tax changes.

In concentrating on personal taxes, we ignore changes to corporate and other taxation which, even though they do not impact directly on the personal sector, are felt by individuals in the end<sup>1</sup>. Assessing the incidence of such taxes is a very complex task<sup>2</sup> and relatively unimportant over the period we are looking at, since most of the changes were to personal taxes. We also avoid taking into account the many changes to the benefit system which have taken place since the mid-1980s<sup>3</sup>. This allows us to focus directly and deliberately on the changes in taxes.

We start by outlining the main tax changes over the period, assessing the change in the tax system as a whole and estimating the revenue consequences of the changes. We then go on to assess the distributional impact of all the changes, looking at how people at differing income levels are affected, and then contrast the effects of the pre-1993 changes with those of 1993. In doing so we show how the 1993 Budgets have affected people's incomes. Finally we go on to look at the progressivity of the tax system in the UK and how it has changed over the period.

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**1** We also do not model Capital Gains Tax or Inheritance Tax as it is impossible to do so in the framework of our model.

**2** See Dilnot, Kay and Keen (1990) for an exposition of the problems of assessing incidence and a possible solution.

**3** See Dilnot and Webb (1988) for an assessment of the Fowler reforms - the most important of the changes to the benefit system - and Johnson and Stark (1989) for an assessment of the distributional impact of tax and benefit changes over the 1980s.

## 2. Changes to the System

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In 1986 the basic rate of income tax was cut from 30% to 29%, then to 27% in 1987, and to 25% in 1988. In 1988 Nigel Lawson also abolished all rates of income tax above 40%, thereby reducing the top tax band from 60% to 40%. Personal allowances were also increased in real terms. Prior to 1993 there were just two significant increases in income tax - they were in the increased income tax charge on company cars and the reduced generosity of mortgage tax relief.

By 1989 all the major cuts in income tax rates had been achieved. But one significant reform to the direct tax system was introduced with the alteration to the structure of employee National Insurance contributions. This reform, which cut NI payments for most people, removed some of the anomalies in the way in which low earners were treated by NICs<sup>4</sup>.

Following an initial announcement in 1987, joint income taxation of husband and wife was replaced by independent taxation in 1990. But the biggest change of that year was in local taxation with the Community Charge (or poll tax as it has become universally known) replacing domestic rates. A tax on the estimated rental value of a home was replaced by a per capita charge unrelated to either income or property value<sup>5</sup>. The unpopularity of the poll tax, prompted in part by its high level, saw it subsidised to the tune of £140 per adult in Norman Lamont's first Budget in 1991. This was paid for by an increase in the standard rate of VAT from 15% to 17.5%. This Budget also saw the first of what has proved to be an enduring series of measures in the restricting of the value of Mortgage Interest Relief at Source (MIRAS) to the 25% basic rate of tax.

Even by 1992, election year, there was no inkling of what was to come by way of tax increases. Indeed the 1992 Budget included the last of the reductions in income tax rates - the introduction of a 20% band on the first £2,000 of taxable income. Prior to the election of that year another major tax change had been announced - the abolition of the poll tax and its replacement with the Council Tax. Rather like the poll tax's predecessor, this is a tax based on the value of a property (but with a reduction for single person households). It is payable according to the value band in which a property falls, rather than constantly varying with rental value as did domestic rates.

By 1993 the burgeoning PSBR had made substantial tax increases, or spending cuts, inevitable. The scale of the direct tax increases announced to take effect in 1993 was rather small, the main measure being the freezing of income tax allowances. There was even a small income tax reduction in the widening of the 20% band from £2,000 to £2,500 initially, and to £3,000 by April 1994. But in both the 1993 Budgets major increases for the future were announced. The

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<sup>4</sup> For a detailed discussion see Dilnot and Webb (1989).

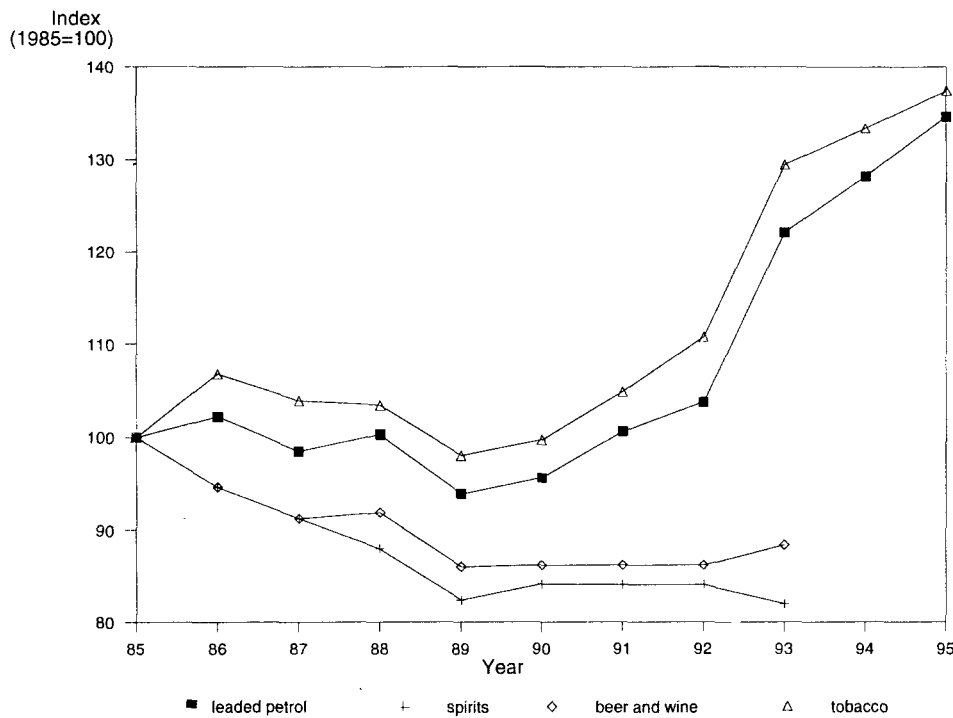
<sup>5</sup> See Ridge and Smith (1991) for details of this change.

main rate of employee National Insurance Contributions was set to rise from 9% to 10% in April 1994. The value of MIRAS will fall from 25% to 20% in April 1994 and to 15% in April 1995. Similarly the value of the Married Couple's Allowance (MCA) will fall to 20% and then to 15%.

The imposition of VAT on domestic fuel, announced in the March 1993 Budget, but not to be fully implemented until April 1995, was probably the most controversial of the measures announced in 1993. It represents the most significant widening of the VAT base since it was introduced in 1973 and will raise nearly £3 billion per year by 1996/97. However, being a tax on a necessity, consumption of which is relatively invariant with income, it would have hit the poor particularly hard. As a result, a compensation package of increases to means-tested benefits and to the state pension was announced in the second Budget of 1993. For pensioners the compensation will come close to offsetting the VAT imposition. The lower compensation for others on means-tested benefits will leave them worse off. Poorer families with children who use more fuel than those without children will be particularly badly affected.

The other main tax increases announced in 1993 were increases in excise duties, notably on petrol and tobacco. They were both increased substantially in 1993 and beyond that the Chancellor has committed himself to raising the former by 5% per year in real terms into the future and the latter by 3% per year. Over the period since 1985 there have been other changes to excise duty levels. All the changes are illustrated in Figure 1, which includes the already announced increases in tobacco and petrol duties for 1994 and 1995. The overall effect has been for the duty on leaded petrol and cigarettes to rise substantially in real terms while real duties on alcohol, especially on spirits, have fallen.

**Figure 1.**  
**Real Changes in Excise Duties, 1985-95**



This completes the description of the main tax changes since 1985 as they have affected the personal sector. Other changes which have occurred gradually are: reductions in the real value of the MIRAS ceiling which has remained at £30,000 in nominal terms over the whole period; and a lowering in real terms of the point at which higher rate tax becomes payable. This, together with real earnings growth, has actually led to an increase in the number of higher rate tax payers. Clearly the scope of changes has been complex but a number of general features can be discerned:

- (1) There has been a general reduction in marginal rates of direct tax. Despite the 1% increase in NICs from 1994 a basic rate tax payer will have a total marginal rate 4% lower than in 1985, higher rate tax payers will face marginal rates up to 20% lower than previously.
- (2) There has been a widening of the income tax base. The falling value of the MIRAS ceiling, the restrictions to the values of MIRAS and the MCA and the substantial increases in the deemed taxable values of company cars have all been part of this move.
- (3) There has been a move towards indirect taxation. Increasing VAT to 17.5% and extending it to domestic fuel are the biggest examples, but the increases in excise duties and indeed the imposition of tax on insurance premiums and aeroplane journeys also form a major part of this change.



(4) Local taxes have been reformed twice, with the final system looking more like the original system than the intermediate one. Had it not been for the dramatic poll tax subsidy of 1991 there would have been a general increase in the level of local taxes, but as it is they have fallen somewhat over the period. The subsidy from VAT formed part of the switch from direct to indirect taxation.

Some of the most important tax rates and levels, as they were in 1985 and as they will be in 1995 are set out in Table 1. Figures are in real 1993 prices. All 1985 values have been uprated by inflation between December 1985 and September 1993 during which time prices increased by 56%. This is what the tax system as a whole would have been by April 1994 if all the government had done over the period had been to increase allowances, limits and duties to take account of inflation.

One way of assessing the relative importance of these changes is to see how much each cost or raised. This will also tell us the size and direction of the net change in personal sector taxation. It is in fact rather hard to determine this change from official publications. For example the higher and basic rate cuts of the late 1980s took place in the context of a rather different tax base to that which now exists. Therefore increasing the rates back to their former levels would raise a different amount of money from that which it cost to cut them in the first place. As incomes have risen, more would be raised by restoring the rates to their former levels. In other words a tax cut that cost £1 billion when it was implemented in 1985 could well be reducing tax revenue in 1994 by, say, £1.5 billion below what it would otherwise have been.

In order to give an estimate of the cost/benefit of each change we used the IFS tax and benefit model<sup>6</sup>, on which the rest of this analysis is based, to simulate each of the major reforms cumulatively. The model shows the effects of tax changes by calculating their impact on a sample of over 7,000 households drawn from the 1992 Family Expenditure Survey (FES). The data are uprated to 1993 prices, thereby allowing us to determine the present-day cost/benefit of each change. One further point to bear in mind, however, is that the cost of each change will differ according to the order in which the simulation is carried out. For example, the apparent costs of cutting the basic rate and introducing the 20% lower band will individually depend upon which is done first - though of course the total cost will be unaffected. Where this issue arises the changes were simulated according to the chronological order in which they were originally made.

Table 2 shows the revenue effects of the major changes, each having been cumulatively added to the 1985 base tax system. The overall effect has been to reduce the direct burden of taxes on the personal sector by around £5.2 billion annually in current prices. As we see below this implies an average gain to households of about £4 per week, though this gain is very unevenly spread.

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<sup>6</sup> For a full description of the model, see Johnson, Stark and Webb (1990).

**Table 1.**  
**Main Tax Changes Between 1985 and 1995**

	1985	1995
<b>Income Tax</b>		
Basic rate	30%	25%
Highest rate	60%	40%
Lowest rate	30%	20%
Personal allowance	£3,445	£3,445
MCA level	£1,950	£1,720
MCA rate	Marginal rate	15%
Basic rate limit	£25,300	£23,700
MIRAS ceiling	£46,800	£30,000
MIRAS rate	Marginal rate	15%
<b>National Insurance Contributions</b>		
Main rate	9%	10%
<b>Indirect Taxes</b>		
VAT rate	15%	17.5%
VAT rate on domestic fuel	0%	17.5%
Excise duty on a gallon of petrol	£1.27	£1.69
Excise duty on 20 cigarettes	£0.81	£1.13
Excise duty on a pint of beer	£0.28	£0.24
Excise duty on a bottle of wine	£1.15	£1.01
Excise duty on a bottle of spirits	£7.38	£5.55

Notes : The Figures in the Table for 1995 are based on the real value of allowances and duties in 1993 prices. They do not include the "RPI effect" of the reforms to indirect taxation on inflation. We included these effects in our modelling and they are described later.

Easily the biggest single change in revenue terms was the 5% reduction in the basic rate of income tax. This is followed by the costs of reducing the higher rate of tax and the introduction of the 20% band. All of these are of course reductions in income tax rates. Even NI raises £1.3 billion less now than it would have done had it not been changed, despite the 1% rise in the main rate; this reflects the costs of the reforms implemented in 1989.

As one would expect, most of the large revenue-raising measures were the indirect tax increases with VAT on fuel and the excise duty increases from 1993 raising £3 billion each and the 2.5% rise in the VAT rate raising £2.7 billion<sup>7</sup>. But the single biggest revenue raising change has been to MIRAS. The reduction in the real value of the ceiling and the restriction of its value to 15% combine to make changes to MIRAS raise £3.3 billion. At higher levels of interest rates the saving would be higher still. The restriction of the Married Couple's Allowance to 15% raises £2.5 billion.

Three other points need explaining further in relation to Table 2. The first is the "other income tax" row. In this are included all the changes to income tax not specifically mentioned elsewhere in the Table. These include the increases in company car taxation, the lowering of the basic rate limit, the abolition of composite rate tax and other minor changes to the levels of allowances. Secondly, there are the changes to benefit rates and tax allowances that follow from the effects on the RPI of the imposition of VAT on domestic fuel and the large excise duty increases from 1993<sup>8</sup>. These include the compensation package for VAT on fuel. The £2 billion cost represents one third of the £6 billion gross raised by these measures. Finally, the £0.7 billion raised by the lowering of local tax bills represents the savings on Council Tax benefit resulting from the lower bills.

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<sup>7</sup> This is a significant underestimate of the total amount of revenue raised by increasing VAT. This reflects two factors. Firstly, not all VAT paid by companies is reclaimed and so a small proportion of VAT acts effectively as an intermediate tax. Secondly, total consumer expenditure is under-recorded in FES, in particular spending on goods on which VAT and excise duties are charged.

<sup>8</sup> From 1993 to the end of 1995, we calculate the effect of the 1993 Budgets on inflation will increase the RPI to a level 1.49% higher than it otherwise would have been. This results from VAT on fuel, increased excise duties and higher than inflation increases in the Council Tax in 1994. We have adjusted benefit rates and tax thresholds to a level for the 1995 tax system accordingly. The "RPI effect" would also have presented a problem for the 1985 system, but changes in taxes from 1985 to 1993 had almost a neutral effect on the RPI so the problem did not exist.

**Table 2.**  
**Revenue Raised / Lost**

Measure	Gross revenue effects (£ bn raised / lost)	Net revenue effects (£ bn raised)
Basic rate to 25%	-10.3	
	0.0	<b>-10.3</b>
Top rate to 40%	-3.8	
	0.0	<b>-3.8</b>
20% band introduced	-3.5	
	0.0	<b>-3.5</b>
Other income tax	0.0	
	1.9	<b>1.9</b>
MCA restriction	0.0	
	2.5	<b>2.5</b>
MIRAS reductions	-0.1	
	3.3	<b>3.2</b>
NI reforms and increase	-3.5	
	2.2	<b>-1.3</b>
VAT raised to 17.5%	0.0	
	2.7	<b>2.7</b>
Local tax changes	-1.8	
	0.7	<b>-1.1</b>
Excise duties, pre-93	0.0	
	0.2	<b>0.2</b>
VAT on domestic fuel and post-93 excise duties	-2.0	
	6.0	<b>4.0</b>
Insurance tax	0.0	
	0.3	<b>0.3</b>
Total	-25.0	
	19.8	<b>-5.2</b>

### 3. Effects of the Changes

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#### *Measurement Issues*

We turn now to explain the impact of all these tax changes on people's incomes. There are many ways of doing this. The simplest is to choose a range of "representative" individuals and calculate the tax bills faced by them in each of two regimes. Such a method, however, gives little idea of the effect of taxes on the population as a whole. It is impossible to choose just a few individuals and make them genuinely representative. Instead, as explained above, we use a model which allows us to estimate the effects of all the changes on the population as a whole.

That leaves us with the question of exactly what we are comparing. In this exercise we look at the effects of two different tax systems on the same population. In other words we are not comparing the effect of the 1985 tax system on the 1985 population with that of the 1995 system on the 1995 population. We are comparing the effects of the two systems on the same population.

To allow us to do this, we need to be able to express all the variables in terms of the same prices. We have done this by uprating the 1985 tax system<sup>9</sup> so that prices are in line with 1994 prices. This methodology means that we take no account of the effect of increasing real incomes on tax revenues and average tax rates. For the fact that average real earnings grow means that, if the tax system is uprated in line with prices, average tax rates will grow if the tax system is progressive. Hence if the government made no changes to a tax system over a number of years other than to index it in line with price inflation, tax revenues would grow as earnings grew. Taxes paid by someone on average earnings would be higher at the end of the period than at the beginning simply because average earnings are higher.

Given that the statutory requirement is only to raise components of the tax system in line with prices, and that we are interested in the effects of the two tax systems on people at particular income levels, we deliberately avoid showing the effects of this "fiscal drag" as a tax change.

The most difficult part of the tax system to model satisfactorily, given the data that we have, is the local tax system. In the data that we use we have no information on the value of the house let alone rateable value or Council Tax level or banding. In modelling changes in local taxes we make use of a hedonic price index developed by Davies and Rajah (1992) and used by Giles and Ridge (1993) to estimate house value on the basis of such variables as region, number of rooms and other household characteristics. This gives us an ordering of values which we then match to Council Tax bands so that we have the right number of households in each band.

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<sup>9</sup> Uprating the tax system effectively involves uprating the income tax allowances and thresholds, the NI Lower Earnings Limit (LEL) and Upper Earnings Limit (UEL), MIRAS threshold and excise duties.

Regional information in the FES allows us to make an estimate of band D Council Tax for each household. Because we have no information on rateable values or previous rates bills we do not attempt to model the rates system explicitly when calculating taxes in the 1985 system. Instead, we use the Council Tax structure, except that we do not allow the 25% rebate for single person households, and impose higher bills in 1985 reflecting the degree to which local tax bills have fallen over the period. This fall combines the effects of both central and local government policies. It includes the 7% increase in local tax bills implied by the measures introduced in the November 1993 Budget.

Finally, what is the role of the benefit system in all of this? We use the same (1994) benefit system throughout - the model calculates benefits as well as taxes - except that it is uprated in the 1995 system to take account of the compensation package for VAT on fuel and the impact of the VAT and excise duty changes on the RPI. In fact the full impact on the RPI of all the tax changes which will come into effect by the end of 1995 is included in the benefit system even though some of these increases will not feed through to benefits until April 1997 because of the lags involved in indexing benefits.

### *Effects Over the Whole Period*

Overall the tax changes since 1985 have resulted in households' disposable incomes rising by an average of £4 per week. This is the direct implication of the changes costing £5.3 billion annually - a sum of money which is distributed between over 20 million households in the UK. Note that this does *not* mean that the average household gained £4 per week. An average gain overall is quite consistent with the household in the middle of the income distribution, or the household with mean income, losing, either because gains are concentrated at the top or at the bottom of the income distribution.

In fact the gains were distributed very unevenly. Rather than all households gaining £4 per week, 47% of households gained, 37% lost. The main determinant of how much a household gained, or indeed whether or not it gained at all, was its income. High income households gained substantially from the reductions in income tax rates. For most high income households these outweighed the negative impact of indirect tax rises. For poorer households, however, who gained little or nothing from the reductions in income tax rates, the overall effect of the changes was to reduce post-tax incomes. This pattern is illustrated in Table 3 and Figure 2.

Table 3 shows average gains/losses and numbers of gainers/losers<sup>10</sup> by equivalent income decile. Households are placed in deciles according to their actual income in the data adjusted using the

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**10** In all the Tables that follow we count gainers or losers as those whose net income changes by at least £1 per week. Those who lose or gain less than £1 are counted as having unchanged incomes. This avoids classing trivial changes as gains or losses.

McClements equivalence scale<sup>11</sup> (1977) to take account of household size. Decile 1 contains the 10% of households with the lowest incomes, decile 10 the 10% with the highest incomes. There is a clear pattern - the richer the decile the greater the gain, with the poorest four deciles actually losing on average as a result of the changes. The improvement in fortunes is gradual until the richest decile is reached. The average gain here is nearly five times that of the ninth decile and approaching eight times that of the whole population. The only deviation from this pattern of increasing gains (decreasing losses) as higher deciles are reached is at the second decile. Households in this decile do rather less badly than those in the next group. This reflects the heavy concentration of pensioners in this decile. They do somewhat less badly than other families with roughly similar incomes, partly because they are less badly affected by excise duty increases - being less likely than the average to smoke or drive - and partly because they were more generously compensated for the imposition of VAT on domestic fuel than were other groups dependent upon benefits.

Changes as a percentage of disposable income display a similar pattern, though the differences are less marked between the top decile and lower income groups.

**Table 3.**  
**Impact of Tax Changes 1985-95, by Decile Group**

Decile	% losing	% gaining	Average gain/loss (£ per week)	Average gain/loss (% of net income)
1	66	7	-3.0	-2.9
2	44	13	-1.4	-1.4
3	47	23	-1.8	-1.5
4	43	40	-1.1	-0.8
5	37	50	0.7	0.4
6	33	57	1.6	0.7
7	29	64	3.1	1.2
8	25	69	4.4	1.5
9	23	72	6.3	1.8
10	20	76	31.3	5.8
All	37	47	4.10	1.70

<sup>11</sup> This is the scale used in official government statistics such as Households Below Average Income (DSS, 1993) and in articles on income distribution in Economic Trends (CSO, 1993).

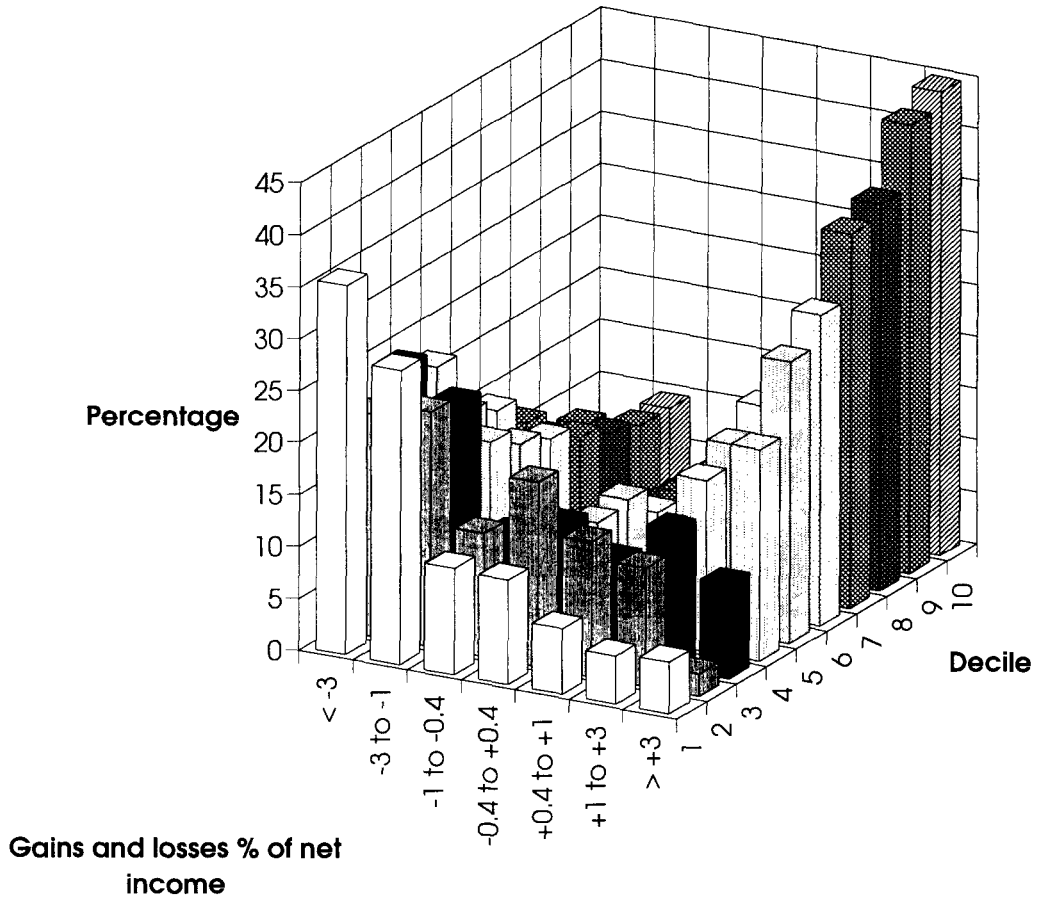
The variation even within deciles is very clear from the Table. Despite the very large average gains in the top decile, 20% of those in it are actually losing as a result of the changes. These are largely households losing heavily from the restrictions to MIRAS or the increases in the taxation of company cars or with exceptionally large VATable expenditures. Conversely there are a few households right at the bottom of the income distribution who are left better off. These are typically households with very low expenditures benefiting from VAT compensation measures.

This mixed pattern of gainers and losers, and the distribution of gainers and losers even within deciles, is displayed graphically in Figures 2 and 3. They show the proportions of each decile losing or gaining particular amounts. Figure 2 shows the pattern of changes as a percentage of income, while in Figure 3 they are shown as changes in £ per week. They show quite clearly that it is among the rich deciles that a large proportion of households are gaining significant amounts and that there are many large losers in the bottom decile, although Figures 2 and 3 also show that there are exceptions to the norm in each decile of income.

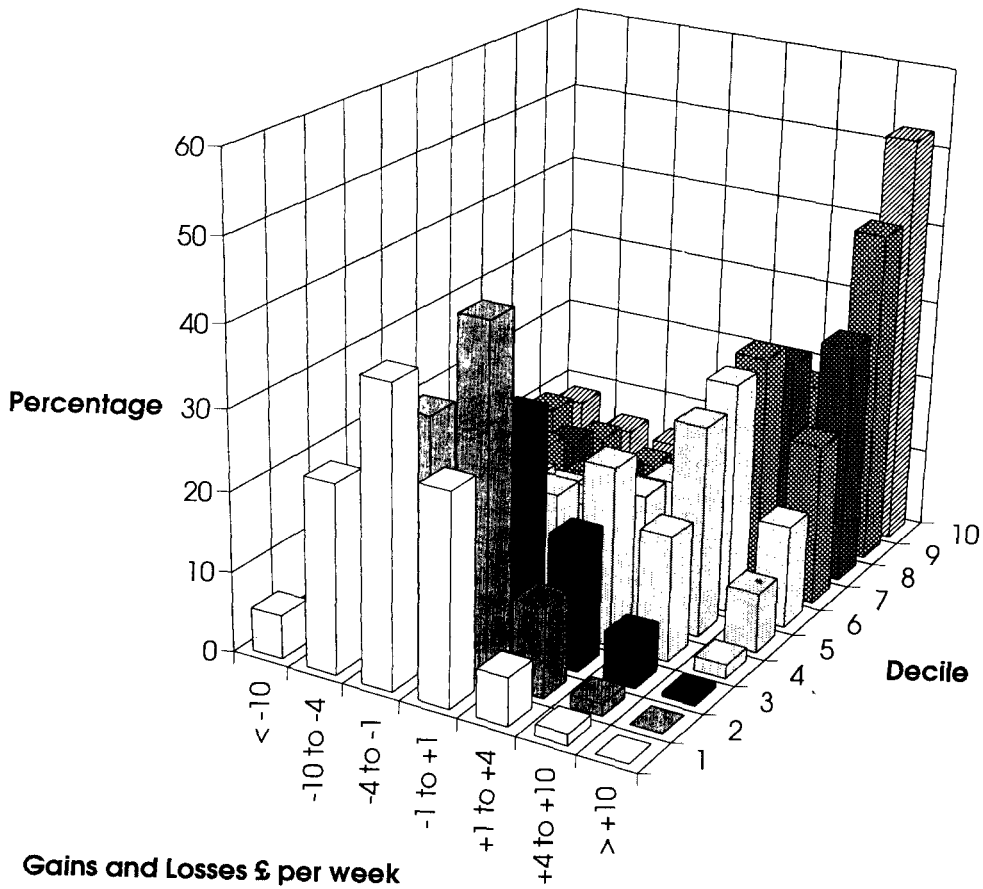
The bars near the front represent poorer deciles with the top decile up against the back wall. Bars on the left show big losers, those on the right show big gainers. For example, Figure 2 shows that over a third of the bottom decile lost more than 3% of their net income, while 45% of the top decile saw their net income increased by more than 3% compared with tiny proportions of the bottom deciles.



**Figure 2. Proportions of each decile gaining certain percentages of net income**



**Figure 3. Proportions of each decile gaining certain amounts in £ per week.**



There are numerous ways other than by income decile in which one could look at the distributional effects of the changes, but in general it is the difference in effects according to income which dominate. We look briefly here at distributional effects by household type; these display some interesting patterns that are not immediately clear from what we know about the effects of the changes on households at different points in the income distribution.

Table 4 shows the pattern of changes among the different types of household. A majority of all those non-pensioners where there is nobody in work lost over the period. Worst hit were unemployed couples with children, followed by lone parent families, with over three-quarters of the former and nearly two-thirds of the latter losing from the changes. This partly reflects the fact that families with children are hit particularly hard by the imposition of VAT on domestic fuel and are more likely to have a mortgage. Even among earners, those with children are much more likely to have lost than are those without. Even so average changes were positive within these groups, reflecting the fact that the gains of the minority were much greater than the losses of the majority. Two earner couples gained much more frequently than single earner couples, reflecting higher total incomes and twice the opportunity to gain from direct tax cuts.

Perhaps surprisingly, pensioners appear to do rather better than the average, particularly in terms of the small proportion losing. This is largely explained above in terms of the VAT compensation package and their low use of excisable goods.

### *Changes Before and After 1993*

Until 1993 the direction of tax changes, if not entirely one-way, was very much in a downward direction. The biggest increase before 1993 was the increase in the rate of VAT from 15% to 17.5% and this was specifically intended to be offset by a reduction in local taxes. As late as 1992, income tax was cut by the introduction of the 20% band. Given the tax increases that followed in 1993, it seems natural to split the period in two and look at the impact of tax changes prior to 1993 and those announced in the two Budgets of that year. This we do in Tables 5 and 6<sup>12</sup>.

The contrast between the Tables is startling. While only 10% of the population lost between 1985 and 1992, over 80% will lose as a result of the Budget measures announced in 1993. There was an average gain of nearly £14 per week prior to 1992. The loss per household as a result of the 1993 changes will be nearly £10 per week. Virtually all those in the top deciles gained between 1985 and 1993, they virtually all lost from the 1993 Budgets.

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**12** For the purposes of these Tables we ignore the effect of the poll tax and treat the 1992 system as though the council tax were in place.

**Table 4.**  
**Proportions Gaining / Losing by Family Type**

Family type	%	%	Average gain	Average gain
	losing	gaining	(£ per week)	(% of net income)
Single Unemployed	58	21	-1.1	-1.1
Single Employed	16	76	8.0	3.9
Single Parent Family	64	13	-1.6	-1.0
Unemployed couple, no children	53	31	0.1	0.1
Unemployed couple with children	78	8	-4.4	-2.7
One earner couple, no children	44	46	5.3	2.1
One earner couple with children	62	28	6.0	2.0
Two earner couple, no children	28	65	6.0	1.7
Two earner couple with children	46	47	4.7	1.3
Single pensioner	16	48	3.8	3.3
Couple pensioner	29	51	3.2	1.7
All	37	47	4.00	1.71

The other contrast between the periods was the effect the pre-1993 changes had in making the after-tax income distribution much less equal. Looking at the changes as a percentage of income one sees the contrast between the losses and small gains in the bottom few deciles and the very large gains in the higher deciles, reaching 9.5% of net income in the richest group. By contrast, the 1993 Budgets have actually hit the bottom deciles less hard than the middle and higher deciles in terms of the losses imposed as a proportion of their income, despite the undoubtedly regressive effect of the imposition of VAT on domestic fuel. This reflects the income tax and NI increases also imposed.

The fact that losses as a percentage of income peak in the seventh decile, however, reflects the fact that the NI and income tax increases were not as progressive as they might have been. The drop in losses at the top decile especially reflects the fact that most changes have been effectively lump sum above a certain income. All those with earnings above the UEL will have lost the same amount in cash terms from the increase in NICs, just as all those with mortgages over £30,000 will have lost the same amount irrespective of their incomes. The imposition of VAT on fuel will have hit the lower middle deciles hardest, as they will not have gained from the compensation package but spend a higher proportion of their income on fuel than do the higher deciles.

**Table 5.**  
**Impact of Tax Changes 1985-92, by Decile Group**

Decile	% losing	% gaining	Average gain/loss (£ per week)	Average gain/loss (% of net income)
1	39	6	-0.8	-0.7
2	19	10	-0.2	-0.2
3	20	37	1.2	1.0
4	12	72	5.0	3.4
5	5	89	9.6	5.2
6	3	95	13.3	5.9
7	2	96	16.3	6.5
8	1	98	19.5	6.5
9	1	98	23.0	6.5
10	1	99	51.7	9.5
All	10	70	13.9	6.0

**Table 6.**  
**Impact of tax changes 1993-95, by decile group**

Decile	% losing	% gaining	Average gain/loss (£ per week)	Average gain/loss (% of income)
1	60	6	-2.1	-2.0
2	38	10	-1.2	-1.1
3	57	7	-2.9	-2.4
4	79	4	-6.0	-3.9
5	91	1	-8.8	-4.5
6	94	1	-11.5	-4.8
7	98	0	-13.0	-4.9
8	98	0	-14.9	-4.7
9	98	0	-16.5	-4.4
10	98	0	-20.2	-3.4
All	81	3	-9.7	-3.9

## 4. Progressivity of the Tax System

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There is a considerable literature on methods of measuring the progressivity of the tax system, including measures of the divergence from proportionality of the tax system and measures of the degree to which the tax system reduces inequality. Here we illustrate the degree of progressivity in the UK system using a straightforward numerical approach showing the proportions of the income of each income decile taken by direct and indirect taxes.

Figures 4, 5 and 6 show the proportions of income of each decile taken in direct, indirect and all taxes respectively in 1985 and 1995. Households are sorted by *equivalent gross income* for placement in deciles. The proportion of tax taken as shown by the bars is the ratio of total taxes to gross income in each decile. The line on each graph shows how this proportion changed between 1985 and 1995. In all cases the taxes are calculated by the tax benefit model for each system - they are not taxes as recorded in the FES.

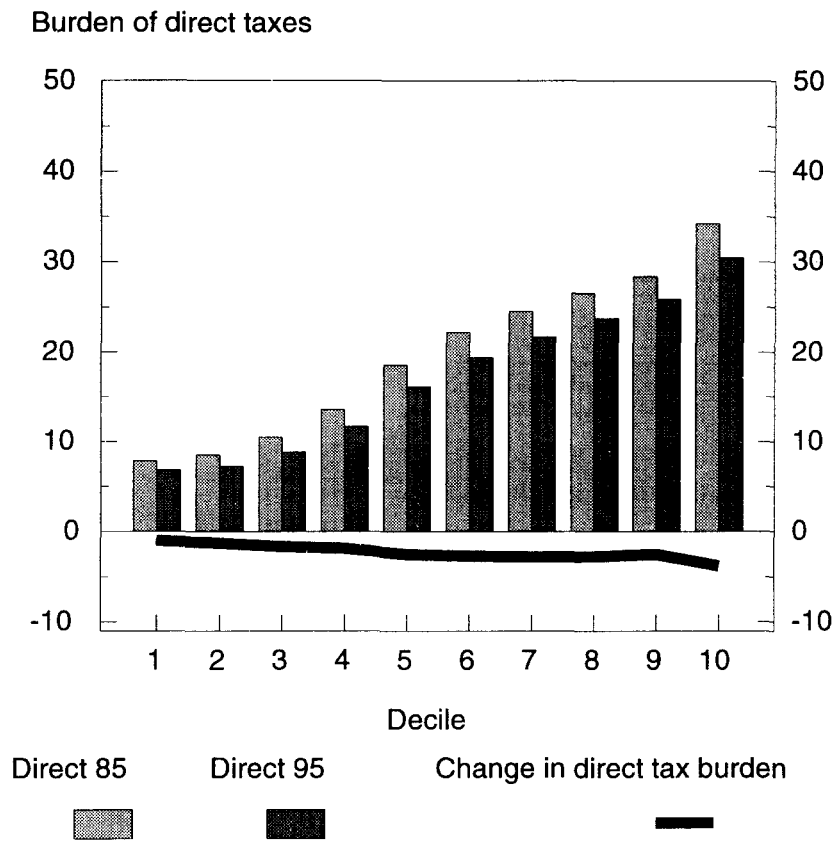
From Figure 4 the progressive nature of the direct tax system is evident. The proportion of income taken rises steeply by decile from 7% in the bottom decile to 30% in the top decile (in 1995). This largely reflects the impact of personal tax allowances which mean that most of those in the bottom deciles pay no direct tax at all, and that the average rate increases as income rises further up the scale. Direct tax cuts since 1985 are indicated by the fact that each of the dark (1995) bars is below the corresponding bar from 1985. The fact that the line underneath, indicating the change in the direct tax burden, is sloping downwards shows that the direct tax changes went in a regressive direction - they reduced the proportion of the incomes taken in tax of the richer deciles by more than that of the poorer deciles.

The biggest gap between deciles is between the ninth and the top decile and the largest tax reduction was enjoyed by the top decile whose direct tax burden fell from about 34.25% to about 30.5%. The numbers for the top decile are in fact heavily affected by the very richest households in that decile - the top 1% of the income distribution<sup>13</sup>. The top percentile's direct tax burden fell from 46.2% to 36.2% over the period - a drop of 10 percentage points. Both the total burden and the change are much bigger for this small number of the very richest households than for even the rest of the households in the top decile. For here are the people whose incomes are high enough for them to have benefited in full from the cutting of the very highest rate of income tax

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**13** It is not generally possible to use the FES by itself to look at the top 1% of the income distribution because of sampling problems. However, we have supplemented the data by using information from the Inland Revenue Survey of Personal Incomes to give us an accurate indication of both the number of people with very high incomes and the levels of those incomes.

**Figure 4**  
**Proportions of Income taken in Personal Direct Tax, by Decile**



from 60% to 40%. The very high average tax rate and large gains for this group indicate more than anything else the very high levels of income that they enjoy by comparison with the rest of the population. The very richest are quite different from the quite rich.

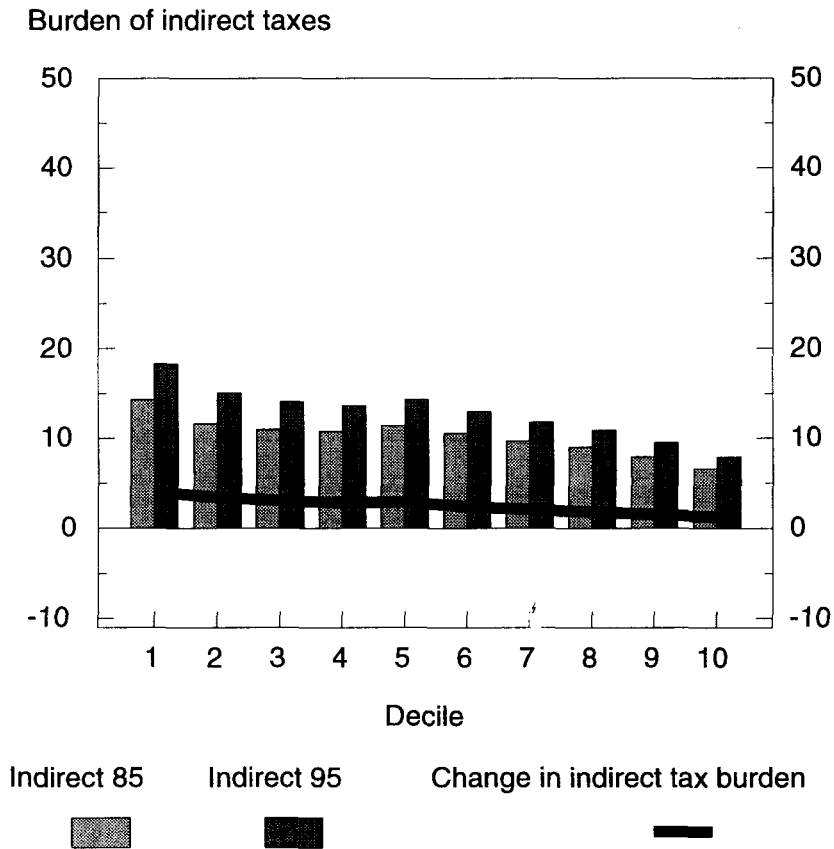
Figure 5 shows the same information as Figure 4 but for indirect taxes. Here we see both the lower levels of indirect taxes and their relative regressivity. In 1995 the poorest decile will see nearly 20%<sup>14</sup> of their gross income taken in indirect taxes as against 8% taken from the richest

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<sup>14</sup> Actually the range is percentiles 2 to 10. The bottom percentile biases the results considerably because in the data there appear to be a number of households which have extremely low, even zero, incomes and very high expenditures.

decile<sup>15</sup>. This relative regressivity results from both the high expenditures on excisable goods at the bottom of the income distribution and the higher incidence of saving higher up the distribution.

**Figure 5.**  
**Proportions of Income Taken in Personal Indirect Tax, by Decile**

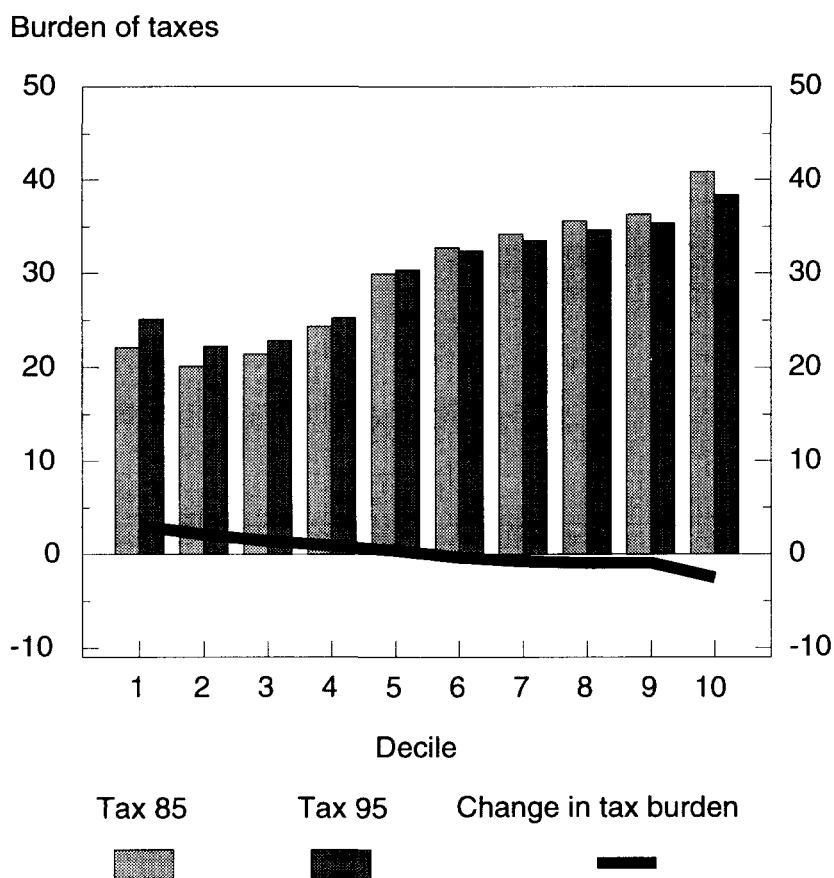


The change between 1985 and 1995 is to increase the burden of indirect taxation in every decile, but by considerably more (as a proportion of income) in the poorer deciles than in the richer ones. This increased regressivity is again illustrated by the slope of the line indicating the change in the indirect tax burden. It increased by 4% of income at the bottom of the income distribution and by about 1.5% at the top.

**15** Note firstly that, as explained earlier, we underestimate the burden of indirect taxes and secondly that we take no account of saving here. The more somebody saves, the lower their indirect tax burden will be in this period, but assuming that they eventually use their savings to buy goods and services, they will eventually pay some indirect tax.

Figure 6 simply combines the information contained in Figures 4 and 5 to show the burden of direct and indirect taxes together. It shows that, from the second decile onwards, the progressivity of the direct tax system overcomes the regressivity of the indirect system. In 1995 the second decile will be paying just over 22% of their income in taxes, the ninth decile will be paying 35% and the top decile 38%. The poorest decile<sup>16</sup> see over 25% of their gross income taken in taxes. Again the line describing the change in the tax burden slopes down from left to right indicating the overall changes in the tax burden by decile. It has gone up in the bottom deciles and down in the top ones, especially the very highest decile. This simply reflects the findings of gains and losses shown in Table 3.

**Figure 6.**  
**Proportions of Income taken in Personal Tax, by Decile**



<sup>16</sup> Again, actually percentiles 2 to 10.



## 5. Conclusions

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The UK tax system has been substantially reformed since 1985: structures and rates of tax have changed; and there has been a shift away from direct taxation and towards indirect taxation. All of this has led to a big change in the way the tax system affects individuals.

We have shown that the effects of all the changes together have been diverse. Although there have been gains overall these have been concentrated on those with high incomes while those at the bottom of the income distribution have lost out on average. This is effectively explained by the pattern of progressivity that we have showed. Indirect taxes tend to be regressive, direct taxes progressive. The switch from direct to indirect taxes has reduced the progressivity of the tax system to the advantage of those on high incomes and at the expense of those on low incomes.

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