

# THE EFFECTS OF TAXES AND BENEFITS ON HOUSEHOLD INCOME, 1992

This article examines how the distribution of income amongst households in the UK is modified by government expenditure and taxation. The main findings are:

- The income share of the bottom fifth of households is increased from 2.1% of original income to 6.5% of post-tax income by taxes and benefits.
- The average original income of the top fifth of households is 21 times the average of the bottom fifth, the average final income of the top fifth of households is less than 4 times the average of the bottom fifth.
- Cash benefits make up 70% of the gross income of the bottom fifth of households.
- The top fifth of non-retired households pay 17.1% of their gross income in income tax, the middle fifth pay 11.3%.
- The state pension accounts for 74% of the cash benefits received by retired households.
- The distribution of original income is more equal among non-retired households than retired. But the distribution of post-tax income is more equal among the retired than the non-retired.

## Introduction

During 1992, the government raised and spent £254 billion. Directly or indirectly most of this revenue was raised from households and the expenditure benefited households. This article examines the impact of government taxation and expenditure on the distribution of income by allocating the revenue to those households which paid the taxes and the expenditure to those households which benefited from it, wherever this is possible. Some outlays and revenue of government cannot readily be allocated to households, for example there is no clear conceptual basis for determining the benefit to each household of expenditure on defence. However, about 60 per cent of government revenue and 55 per cent of government spending in 1992 can be allocated to households (see Table 1 and Table 2, Appendix 1). One of the consequences of this redistribution is to reduce the differences in income amongst households.

The stages of redistribution of incomes used in this analysis are shown in Chart 1. Household members receive income from their employment; from occupational pensions; from their investments and from other non-government sources. Total income from these sources constitutes original income. The flow chart shows the various ways in which government then raises revenue through taxation on households and distributes benefits to them both in cash and in kind.

The main data source for this analysis is the Family Expenditure Survey (FES) which covers about 7,000 households per year. People living in hotels, lodging houses and in institutions such as old peoples' homes are excluded. The unit of analysis is the household rather than the individual. Being a sample survey its results are subject to the usual sampling errors - these errors are larger for the household groups with smaller sample numbers (see Appendix 3).

The article aims to present the most meaningful figures for 1992. The figures cannot be easily compared with earlier articles in this series because the tax-benefit system and the FES change over time.

## RESULTS FOR ALL HOUSEHOLDS

### Results for households ranked by unadjusted disposable income

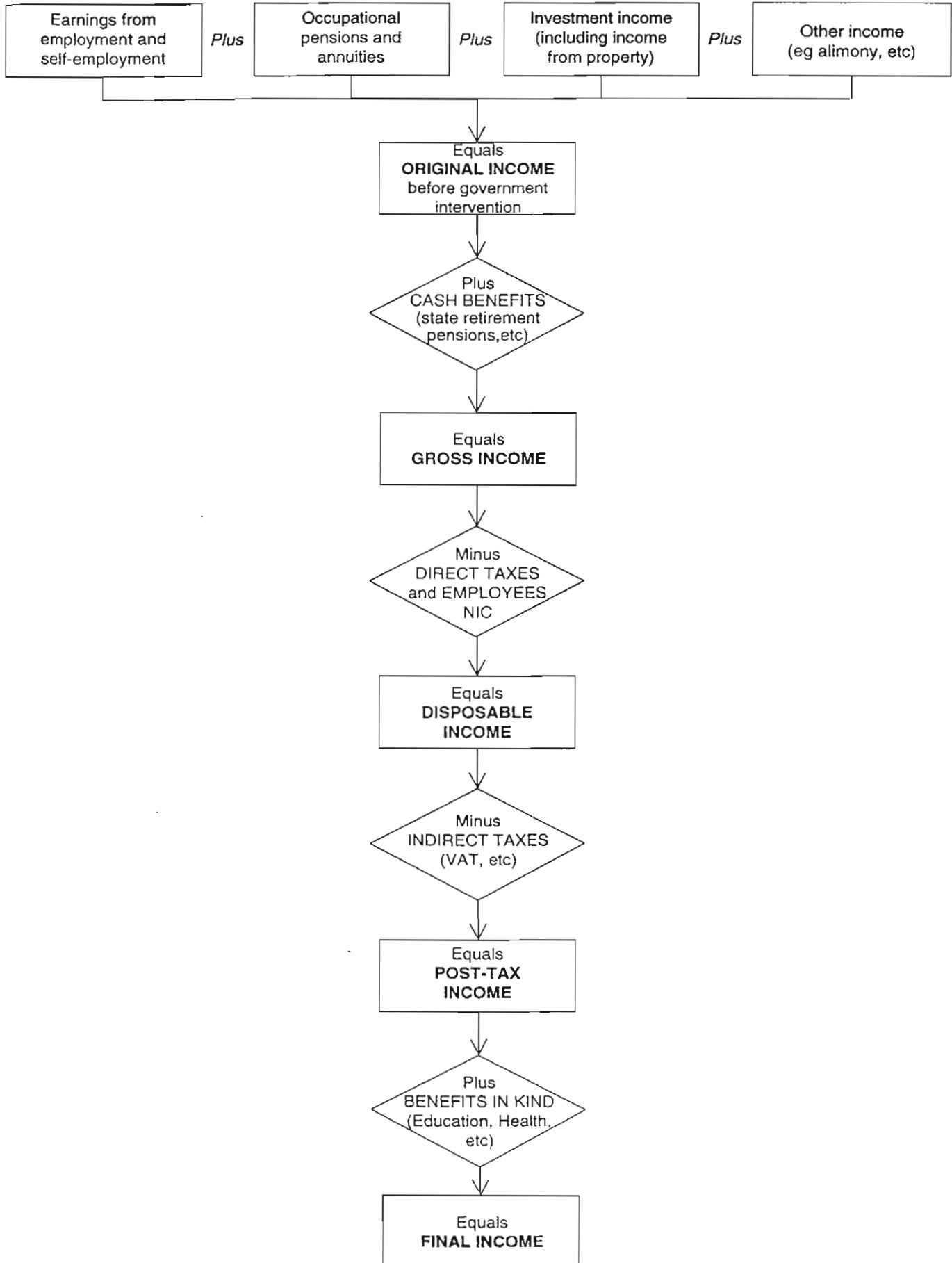
When households are ranked by disposable income as in Table A, there is a strong relationship between a household's position in the income distribution and its size: the average number of persons per household is 3.2 for the highest quintile group and 1.4 for the lowest quintile group (the lowest quintile group contains the 20 per cent of households with the lowest disposable income). The bottom quintile group has a high proportion of retired households - defined as households where at least half the total gross income comes from retired people. In contrast, households with 3 or more adults are over-represented in the top quintile group. Further details of the distribution ranked by unadjusted disposable income are shown in Table 9, Appendix 1.

### Adjustment for household composition

Using income per household to compare the welfare among households does not allow for differences in their composition and thus the differing demands on resources. One way to take such differences into account is to use income per capita but such a measure does not allow for the differing needs of children relative to adults or for economies of scale within households. This analysis therefore uses equivalence scales designed to take into account household size, family composition and age of children. The remainder of this article refers to households ranked by equivalised disposable income (disposable income divided by the equivalence value of the household). Chart 2 shows how the use of the equivalence scale results in larger households moving down the income distribution and smaller ones moving up. Fuller details of the derivation of the equivalence scale are given in Appendix 3.

CHART 1

Stages of redistribution



## Summary of the effects of taxes and benefits by quintile groups of unadjusted disposable income, 1992

TABLE A

	Quintile groups of households ranked by UNADJUSTED disposable income					All households
	Bottom	2nd	3rd	4th	Top	
<b>Average per household (£ per year)<sup>1</sup></b>						
Original income	1 210	4 530	12 070	20 620	40 320	15 750
plus cash benefits	3 580	4 300	2 830	1 710	1 290	2 740
Gross income	4 790	8 830	14 910	22 330	41 610	18 490
less direct taxes <sup>2</sup> and employees' NIC	630	1 160	2 660	4 380	9 070	3 580
Disposable income	4 160	7 670	12 250	17 940	32 540	14 910
less indirect taxes	1 110	1 850	2 780	3 690	5 320	2 950
Post-tax income	3 050	5 820	9 470	14 250	27 220	11 960
plus benefits in kind	2 000	2 720	2 630	2 700	3 000	2 610
Final income	5 050	8 540	12 100	16 950	30 210	14 570
<b>Average per household (number)</b>						
Children <sup>3</sup>	0.2	0.6	0.6	0.8	0.8	0.6
Adults	1.2	1.7	1.9	2.1	2.4	1.8
Persons	1.4	2.2	2.5	2.9	3.2	2.5
People in full-time education	0.2	0.5	0.5	0.6	0.7	0.5
Economically active people	0.3	0.6	1.2	1.7	2.1	1.2
Retired people	0.7	0.7	0.4	0.2	0.1	0.4
<b>Composition (Percentages)</b>						
Household type						
Retired	60	40	20	8	4	26
Non-retired						
1 adult	20	16	16	8	4	13
2 adults	5	14	26	30	30	21
1 adult with children <sup>4</sup>	9	11	3	2	1	5
2 adults with children	4	15	25	35	35	23
3 or more adults <sup>5</sup>	1	4	11	17	26	12
Total	100	100	100	100	100	100

1 The monetary values in the tables in the main body of the article are rounded to the nearest £10.

2 These are income tax (which is after tax relief at source on mortgage interest and life assurance premiums) and gross domestic rates/Community charge.

3 Children are defined as persons aged under 16 or aged between 16 and 18, unmarried and receiving non-advanced further education.

4 This group is smaller than the category of "one parent families" because some of these families will be contained in the larger household types.

5 With or without children.

Equivalent income is used only to rank the households. Most monetary values shown in the article are unequivalised. Where equivalent amounts are given, they are shown in italics.

### Results for households ranked by equivalent disposable income

The level of original income varies widely between households. Table B shows this and other income measures for quintile groups ranked by equivalent disposable income. In the lowest quintile group the average number of economically active people is 0.5 and hence the average original income is low (£1,770 per annum). In the highest quintile group, there are an average of 1.6 economically active people and average original income is £37,060. In the lowest quintile group, over 40 per cent of the households are retired and the majority of these have virtually no original income since the state retirement pension is a cash benefit.

Chart 3 illustrates the declining importance of cash benefits in gross income as income rises.

Chart 4 shows how the dispersion of incomes is reduced at each stage of the tax-benefit system, so that the average final income for each quintile group ranges from £7,000 to £26,900, a ratio of about 1:4 compared with the ratio for original incomes of about 1:21.

An alternative way to illustrate the extent of income redistribution is to examine how income shares are modified by the tax-benefit system (Table C). For example, households in the highest quintile group (when ranked by equivalent disposable income) receive 50 per cent of all original income. After taking into account cash benefits, this same group's share falls to 43 per cent. At the other end of the scale, the share of the lowest quintile group rises from 2.1 per cent to 6.9 per cent. A further, but comparatively smaller, compression of the income distribution occurs at the stage of disposable income, but this is reversed after indirect taxes are taken into account.

## Summary of the effects of taxes and benefits by quintile groups of equivalised disposable income, 1992

TABLE B

	Quintile groups of households ranked by EQUIVALISED disposable income					All households
	Bottom	2nd	3rd	4th	Top	
<b>Average per household (£ per year)<sup>1</sup></b>						
Original income	1 770	5 380	13 210	21 330	37 060	15 750
plus cash benefits	4 320	4 080	2 720	1 570	1 020	2 740
Gross income	6 090	9 470	15 930	22 900	38 080	18 490
less direct taxes <sup>2</sup> and employees' NIC	780	1 290	2 810	4 540	8 480	3 580
Disposable income	5 300	8 180	13 120	18 360	29 600	14 910
less indirect taxes	1 620	1 920	3 010	3 660	4 550	2 950
Post-tax income	3 690	6 260	10 110	14 690	25 050	11 960
plus benefits in kind	3 320	2 830	2 710	2 330	1 850	2 610
Final income	7 000	9 100	12 820	17 030	26 900	14 570
<i>Equivalised disposable income</i>	<i>5 144</i>	<i>7 941</i>	<i>11 315</i>	<i>15 926</i>	<i>28 810</i>	<i>13 828</i>
<b>Average per household (number)</b>						
Children <sup>3</sup>	0.8	0.6	0.7	0.6	0.4	0.6
Adults	1.6	1.7	2.0	2.0	1.9	1.8
Persons	2.4	2.3	2.7	2.6	2.2	2.5
People in full-time education	0.7	0.5	0.6	0.5	0.3	0.5
Economically active people	0.5	0.7	1.4	1.6	1.6	1.2
Retired people	0.6	0.7	0.4	0.3	0.2	0.4
<b>Composition (Percentages)</b>						
Household type						
Retired	43	46	22	13	9	26
Non-retired						
1 adult	11	9	11	13	21	13
2 adults	8	11	19	28	38	21
1 adult with children <sup>4</sup>	13	7	3	2	1	5
2 adults with children	19	19	28	28	21	23
3 or more adults <sup>5</sup>	7	10	16	17	10	12
Total	100	100	100	100	100	100

1 All the tables in Part 1 of this article show unequivalised income: equivalised income has only been used in the ranking process to produce the quintile groups (and to produce the percentage shares and Gini coefficients).

2 These are income tax (which is after tax relief at source on mortgage interest and life assurance premiums) and gross domestic rates/Community charge.

3 Children are defined as persons aged under 16 or aged between 16 and 18, unmarried and receiving non-advanced further education.

4 This group is smaller than the category of "one parent families" because some of these families will be contained in the larger household types.

5 With or without children.

The Gini coefficient is the most widely used summary measure of the inequality of the distribution of income (see Appendix 3, paragraph 42). It takes values between 0 and 100 per cent - the higher values indicating greater inequality. The fall from 52 per cent to 37 per cent shown in Table C shows that cash benefits contribute the most to the reduction in income inequality.

Attention has already been drawn to the preponderance of retired households in the lower ranges of the distribution of original income; nearly 45 per cent of the households in the bottom two quintile groups are retired (Table B). The income pattern of the retired is very different from that of households whose head is of working age, as is their expenditure pattern (which is reflected in their indirect tax payments). For this reason, in the detailed examination of each stage of the tax-benefit system which follows,

retired and non-retired households are analysed separately.

### RESULTS FOR NON-RETIRED HOUSEHOLDS

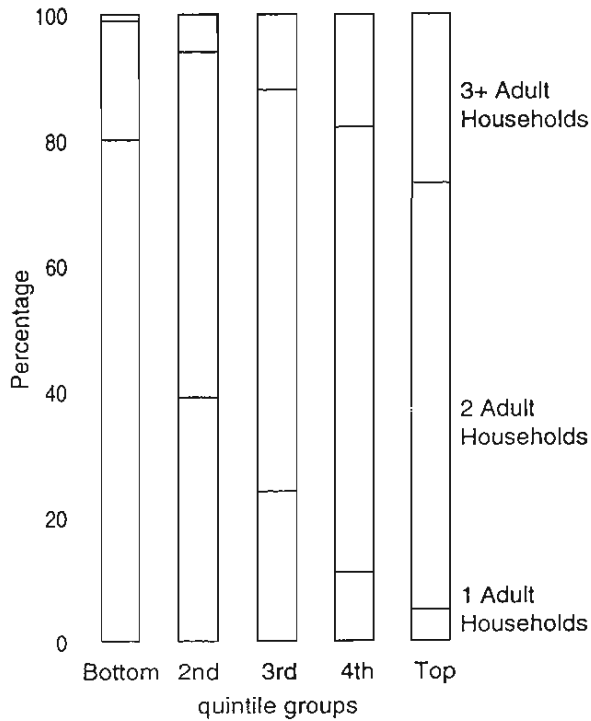
#### Original income

The distribution of original income amongst non-retired households is more equal than among all households, ranging from an average of £3,200 per annum in the lowest quintile group to £41,110 in the highest (Table D), a ratio of 1:13 compared to the ratio of 1:21 for the distribution over all households. There is a relatively strong relationship between the original income of a household and the number of economically active people it contains. Households in the top three quintile groups have, on average, twice as many economically active members as those in the bottom quintile group.

CHART 2

**The effect of EQUIVALISATION**

**Composition of households by quintile groups of UNADJUSTED disposable income.**



**Composition of households by quintile groups of EQUIVALISED disposable income.**

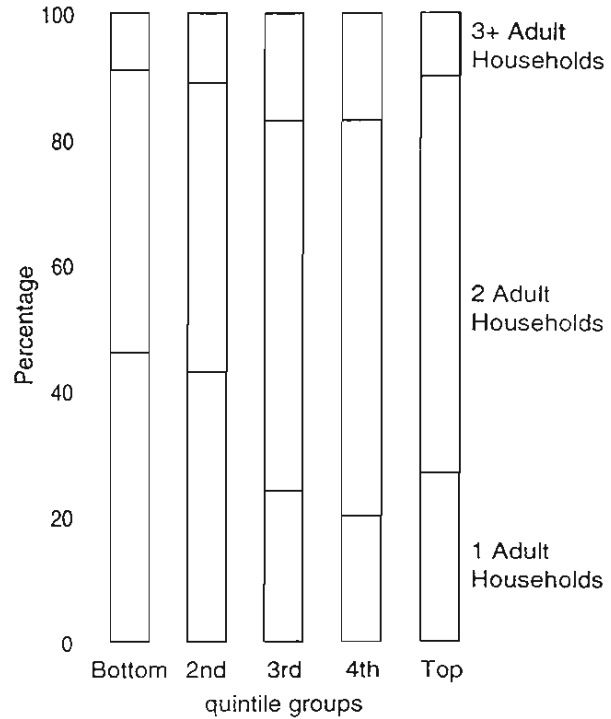
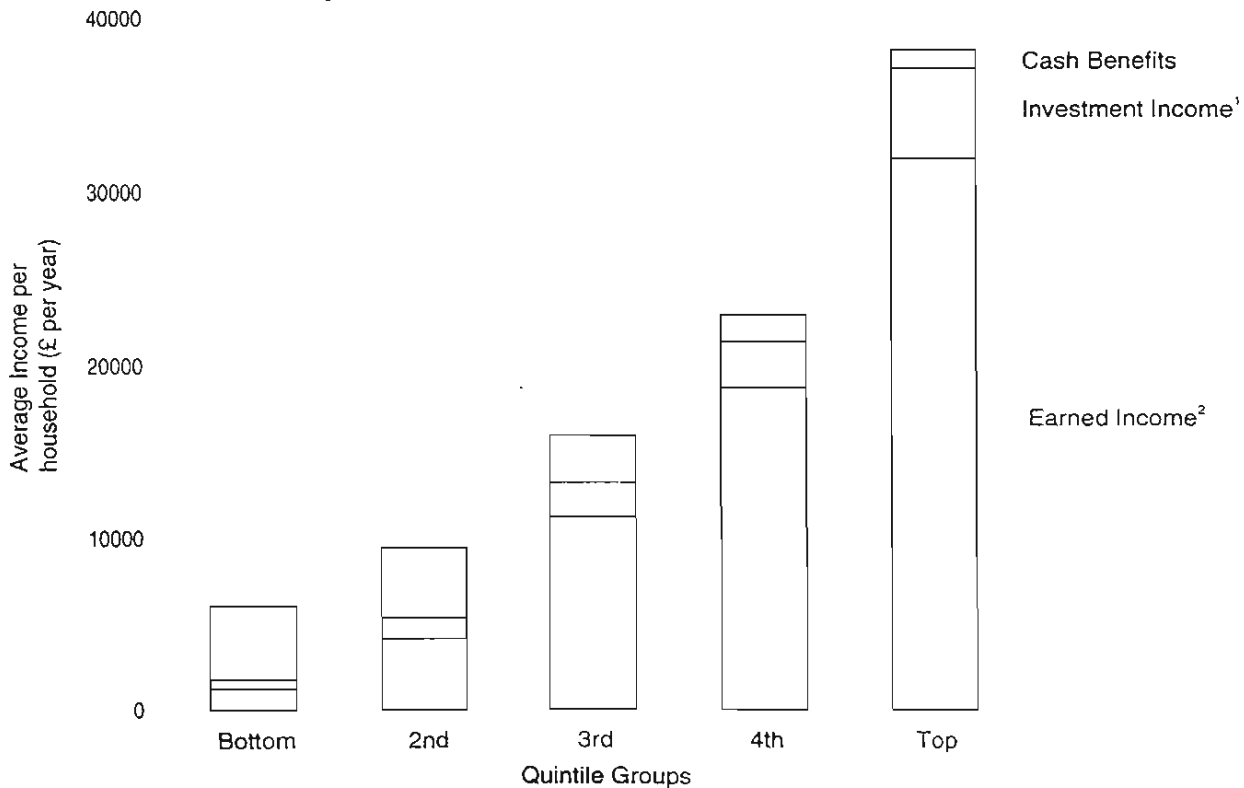


CHART 3

**Sources of gross income by quintile groups of equivalised disposable income, 1992**



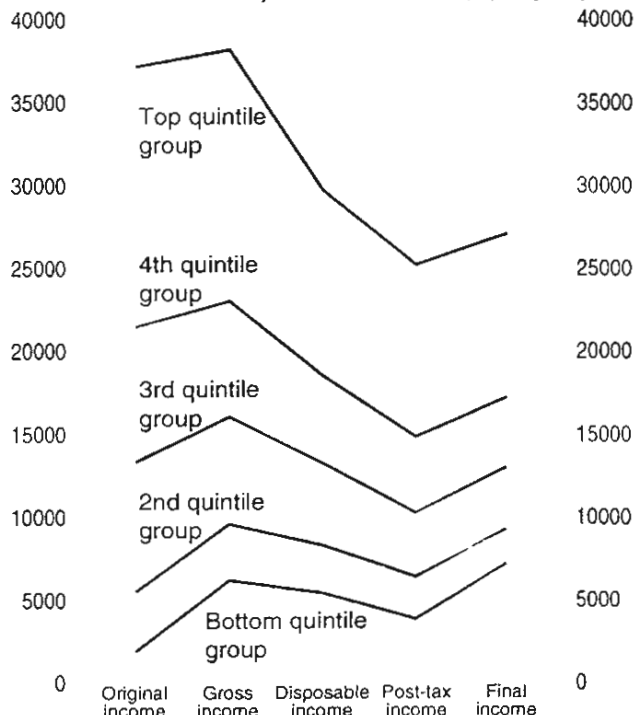
1. Investment income includes occupational pensions and annuities.

2. Earned income includes wages and salaries, income from self-employment and income from "fringe benefits".

CHART 4

**The effects of taxes and benefits on quintile groups<sup>1</sup> of households, 1992**

Average income per household (£ per year)



<sup>1</sup> Households are ranked throughout by their equivalised disposable incomes

**Percentage shares of total household income and Gini coefficients<sup>1</sup>, 1992**

TABLE C

	Percentage shares of total equivalised income for households ranked by equivalised disposable income			
	Original income	Gross income	Disposable income	Post-tax income
Quintile group				
Bottom	2.1	6.9	7.4	6.5
2nd	6	11	11	11
3rd	15	16	16	16
4th	26	23	23	23
Top	50	43	42	44
All households	100	100	100	100
Decile group				
Bottom	0.9	2.9	3.1	2.4
Top	32	27	26	28
Gini coefficient (percent)	52	37	34	38

<sup>1</sup> This is a measure of the dispersion of each definition of income. Unlike the percentage share analysis where household incomes are ranked only once, the Gini coefficient calculation needs a separate ranking for each definition. For example, the coefficient for original income is produced by first equivalising the original income of all the households, then this distribution is ranked and this ranked distribution is used to calculate the coefficient.

**Summary of the effects of taxes and benefits on NON-RETIRED households, 1992**

TABLE D

	Quintile groups of NON-RETIRED households ranked by equivalised disposable income					All non-retired households
	Bottom	2nd	3rd	4th	Top	
<b>Average per household (£ per year)</b>						
Original income	3 200	11 100	18 250	24 940	41 110	19 720
plus cash benefits	4 280	2 810	1 660	960	730	2 090
Gross income	7 480	13 910	19 920	25 900	41 830	21 810
less direct taxes <sup>1</sup> & employees' NIC	1 020	2 320	3 880	5 370	9 410	4 400
Disposable income	6 470	11 590	16 040	20 540	32 420	17 410
less indirect taxes	2 050	2 860	3 550	3 920	4 880	3 450
Post-tax income	4 420	8 730	12 490	16 620	27 540	13 960
plus benefits in kind	4 000	3 210	2 670	2 250	1 800	2 780
Final income	8 420	11 930	15 160	18 860	29 340	16 740
<i>Equivalised disposable income</i>	<i>5 382</i>	<i>9 359</i>	<i>13 001</i>	<i>17 667</i>	<i>31 146</i>	<i>15 312</i>
<b>Average per household (number)</b>						
Children <sup>2</sup>	1.3	1.0	0.8	0.6	0.4	0.8
Adults	1.8	2.0	2.1	2.0	1.9	2.0
Persons	3.1	3.0	2.9	2.7	2.3	2.8
People in full-time education	1.1	0.8	0.7	0.5	0.3	0.7
Economically active people	0.9	1.5	1.8	1.9	1.7	1.6
Retired people	0.1	0.1	0.1	0.1	0.0	0.1

<sup>1</sup> These are income tax (which is after tax relief at source on mortgage interest and life assurance premiums) and gross domestic rates/ Community charge.

<sup>2</sup> Children are defined as persons aged under 16 or aged between 16 and 18, unmarried and receiving non-advanced further education.

## Cash benefits

Cash benefits are of two types: contributory (paid from the National Insurance Fund to which individuals and their employers make contributions while working), and non-contributory (Table E). For non-retired households, non-contributory benefits form the most important source of cash benefit income. Child benefit payments are higher at the lower end of the income distribution, in proportion to the number of children per household (Table D). The other non-contributory benefits, in particular Income Support, are mainly income-related, and so payments are concentrated in the lowest quintile group, although the presence of some individuals with low incomes in high income households means that some payments are recorded further up the income distribution. Contributory benefits, for which the individual's contribution record rather than income is the criterion for payment, are highest for the second quintile group. On average, cash benefits formed 10 per cent of the gross income of non-retired households: their payment resulted in a significant reduction in income inequality.

### Average value of cash benefits for each quintile group of NON-RETIRED households, 1992

TABLE E

	Quintile groups of NON-RETIRED households ranked by equivalised disposable income					All non-retired households
	Bottom	2nd	3rd	4th	Top	
<b>Average per household (£ per year)</b>						
<b>Contributory</b>						
Retirement pension	100	360	330	180	210	240
Sickness/injury related	510	430	300	150	60	290
Unemployment benefit	120	60	70	40	20	60
Other	70	80	70	60	70	70
<b>Total contributory</b>	<b>800</b>	<b>930</b>	<b>770</b>	<b>430</b>	<b>350</b>	<b>660</b>
<b>Non-contributory</b>						
Income support	1 590	560	170	50	30	480
Child benefit	590	460	360	290	190	380
Housing benefit	920	430	170	70	50	330
Sickness/disablement related	130	220	100	80	40	110
Other	260	190	100	40	70	130
<b>Total non-contributory</b>	<b>3 480</b>	<b>1 870</b>	<b>890</b>	<b>530</b>	<b>370</b>	<b>1 430</b>
<b>Total cash benefits</b>	<b>4 280</b>	<b>2 810</b>	<b>1 660</b>	<b>960</b>	<b>730</b>	<b>2 090</b>
<b>Cash benefits as a percentage of gross income</b>	<b>57</b>	<b>20</b>	<b>8</b>	<b>4</b>	<b>2</b>	<b>10</b>

### Income tax, NI contributions and community charge

Both income tax payments and employees' National Insurance contributions are closely related to the size of original income. The payments by households of employees' National Insurance contributions in particular vary with the number of persons in employment and with their earnings. However, since National Insurance contributions are only levied on the first £405 of weekly earnings (the ceiling in operation during most of 1992), households in the top quintile group pay rather less in contributions as a percentage of gross income than the middle 60 per cent of households (Table F).

Income tax was, on average, 4.1 per cent of gross income in the lowest quintile, rising steadily to 17.1 per cent in the top quintile. As the quintile groups are based on equivalised disposable income, ie after direct tax, even the lowest quintile contains individuals who are liable for income tax.

Community charge and domestic rates (in Northern Ireland) are included here with income tax and NICs in line with the treatment of community charge in the National Accounts. Rebates on these local taxes are assessed as part of housing benefit and cannot be separately identified. Table F overstates the regressive impact of local taxation at the lower end of the income distribution, since low income households are likely to be receiving these rebates (see Table E).

### Income tax, employees' NIC and domestic rates/Community charge as percentages of gross income for each quintile group of NON-RETIRED households, 1992

TABLE F

	Quintile groups of NON-RETIRED households ranked by equivalised disposable income					All non-retired households
	Bottom	2nd	3rd	4th	Top	
<b>Percentages</b>						
Income tax <sup>1</sup>	4.1	7.8	11.3	13.2	17.1	13.0
Employees NIC	2.0	4.2	4.7	4.9	3.8	4.2
Community charge/ Domestic rates	7.5	4.7	3.5	2.6	1.6	3.0
<b>Total</b>	<b>13.6</b>	<b>16.7</b>	<b>19.5</b>	<b>20.7</b>	<b>22.5</b>	<b>20.2</b>

<sup>1</sup> After tax relief at source on mortgage interest and life assurance premiums.

### Indirect taxes

Households' payments of indirect taxes are estimated from their expenditure recorded in the FES. Because the data on expenditure and incomes in the FES are compiled in different ways, they are not fully compatible (see Appendix 3, paragraph 5). Indeed, measured expenditure substantially exceeds measured income in the bottom decile group of households.

In total, indirect taxes expressed as a proportion of disposable income fall as disposable income rises (upper part of Table G), though the highest quintile pay most in indirect taxes in cash terms.

VAT, tobacco duty, beer duty, duty on hydrocarbon oils (mainly motoring fuels) and intermediate taxes (see Appendix 3, paragraph 27) all fall as a percentage of disposable income as income rises. The fall in tobacco duty payments as a percentage of income is particularly marked.

Although some indirect taxes are less regressive than others, Table G (upper part) shows that the impact of virtually all the indirect taxes declines for the top quintile group compared with the fourth quintile group. This is so partly because higher income households tend to save a larger proportion of their income than households with smaller incomes.

**Indirect taxes as a percentage of (a) disposable income and (b) expenditure on goods and services for each quintile group of NON-RETIRED households, 1992**

TABLE G

	Quintile groups of NON-RETIRED households ranked by equivalised disposable income					All non-retired households
	Bottom	2nd	3rd	4th	Top	
<b>(a) Percentages of disposable income</b>						
VAT	11.7	9.8	9.1	8.3	7.1	8.5
Duty on beer and cider	1.1	0.9	0.9	0.7	0.5	0.7
Duty on wines and spirits	0.6	0.6	0.7	0.6	0.6	0.6
Duty on tobacco	5.7	3.1	2.1	1.1	0.5	1.7
Duty on hydrocarbon oils	2.2	2.0	2.0	1.6	1.1	1.6
Car tax and vehicle excise duty	0.9	0.8	0.9	0.8	0.5	0.7
Other taxes on final goods and services	2.0	1.6	1.3	1.1	0.7	1.1
Intermediate taxes	7.4	5.9	5.2	4.8	4.0	4.9
<b>Total indirect taxes</b>	<b>31.6</b>	<b>24.7</b>	<b>22.2</b>	<b>19.1</b>	<b>15.0</b>	<b>19.8</b>
<b>(b) Percentages of expenditure on goods and services<sup>1</sup></b>						
VAT	8.2	8.5	8.8	8.8	8.4	8.6
Duty on beer and cider	0.8	0.8	0.9	0.8	0.5	0.7
Duty on wines and spirits	0.4	0.5	0.7	0.6	0.7	0.6
Duty on tobacco	4.0	2.7	2.0	1.2	0.6	1.7
Duty on hydrocarbon oils	1.6	1.7	1.9	1.7	1.3	1.6
Car tax and vehicle excise duty	0.6	0.7	0.8	0.9	0.6	0.7
Other taxes on final goods and services	1.4	1.4	1.3	1.1	0.9	1.1
Intermediate taxes	5.2	5.2	5.0	5.0	4.7	5.0
<b>Total indirect taxes</b>	<b>22.2</b>	<b>21.5</b>	<b>21.4</b>	<b>20.1</b>	<b>17.8</b>	<b>20.1</b>

<sup>1</sup> Excludes savings, investments and superannuation contributions but includes mortgage interest (see paragraph 30 of Appendix 3 for the full definition of expenditure).

Because of the imbalance between measured income and expenditure already mentioned. Table G also shows estimates of indirect tax payments expressed as a percentage of expenditure on goods and services (in the lower part of the table). When assessed in this way, indirect taxes are more neutral. The apparent paradox of indirect taxes being regressive against disposable income but neutral against expenditure is explained, in part, by higher income households channelling an increased proportion of their disposable income into savings, investments and mortgage payments.

**Benefits in kind**

The Government provides certain goods and services to households either free at the time of use or at subsidised prices. These benefits in kind are allocated to individual households in order to arrive at final income. The imputed value of these benefits is based on estimated costs of providing them. The largest two items for which such imputations are made are the health and education services, which together accounted for 24.4 per cent of total general government expenditure in 1992. Other items for which imputations are made are school meals and welfare milk, the housing subsidy and travel subsidies, together accounting for a further 1.5 per cent of general government expenditure.

Education benefit is attributed to households according to the members' usage of state education (see Appendix 3, paragraph 32). The bottom quintile group contains the highest number of children and consequently the highest number of those in full-time education (Table D). This is the main reason for this quintile group being allocated the highest average imputed benefit (Table H). In addition, the majority of student-only households, for whom the costs of education are greatest, are in this quintile group. Similarly the

**Average value of benefits in kind for each quintile group of NON-RETIRED households, 1992**

TABLE H

	Quintile groups of NON-RETIRED households ranked by equivalised disposable income					All non-retired households
	Bottom	2nd	3rd	4th	Top	
<b>Average per household (£ per year)</b>						
Education	2 360	1 710	1 330	1 030	690	1 420
National health service	1 320	1 330	1 230	1 130	990	1 200
Housing subsidy <sup>1</sup>	140	80	40	20	0	60
Travel subsidies	40	50	50	70	110	70
School meals and welfare milk	140	30	20	10	0	40
<b>Total</b>	<b>4 000</b>	<b>3 210</b>	<b>2 670</b>	<b>2 250</b>	<b>1 800</b>	<b>2 780</b>
<b>Benefits in kind as a percentage of post-tax income</b>						
	90	37	21	14	7	20

<sup>1</sup> Does not include tax relief at source on mortgage payments. These are taken into account in the income tax payments shown in Table F.

impact of expenditure on school meals and welfare milk is greatest in the lower income groups where children are more likely to have school meals provided free of charge.



The benefit from the health service is estimated according to the age and sex of the household members (see Appendix 3, paragraph 34). Table H indicates that the distribution of these benefits is fairly equal across the lower three quintile groups and then the benefits decline as income goes up.

The housing subsidy (see Appendix 3, paragraph 35) has been spread between public sector tenants, and since such households tend to be concentrated in the lower half of the income distribution this is where the imputed benefit is highest.

Travel subsidies cover the passenger element of the grants made to various public operations covering both buses and railways. The use of public transport by non-retired households is partly related to the need to travel to work and thus to the number of economically active people in a household and so the combined effect of these travel subsidies increases over the income distribution.

Table H shows that taken together the absolute values of these benefits in kind clearly decline as household income increases. As a proportion of post-tax income, benefits decrease from 90 per cent in the lowest quintile group to 7 per cent in the highest quintile group, indicating that this expenditure contributes to the reduction in income inequality.

### Summary

The overall effect of the various stages of the tax-benefits system on non-retired households is summarised in Table J. Households in the highest quintile group receive 45 per cent of all (equivalised)

## Percentage shares of total household income and Gini coefficients<sup>1</sup> for NON-RETIRED households, 1992

TABLE J

	Percentage shares of total equivalised income for NON-RETIRED households ranked by equivalised disposable income			
	Original income	Gross income	Disposable income	Post-tax income
Quintile group				
Bottom	2.8	6.5	7.0	6.0
2nd	10	12	12	11
3rd	17	17	17	16
4th	25	23	23	23
Top	45	42	41	43
All non-retired households	100	100	100	100
Decile group				
Bottom	1.0	2.6	2.7	2.1
Top	29	26	25	27
Gini coefficient (percent)	44	36	34	38

<sup>1</sup> This is a measure of the dispersion of each definition of income. Unlike the percentage shares analysis where the household incomes are ranked only once, the Gini coefficient calculation needs a separate ranking for each income definition. For example, the coefficient for original income is produced by first equivalising the original income of all the households, then this distribution is ranked and this ranked distribution is used to calculate the coefficient.

## Summary of the effects of taxes and benefits on RETIRED households, 1992

TABLE K

	Quintile groups of RETIRED households ranked by equivalised disposable income					All retired households
	Bottom	2nd	3rd	4th	Top	
<b>Average per household (£ per year)</b>						
Original income						
Earnings	40	50	130	210	640	210
Occupational pensions	290	550	1 110	3 130	8 440	2 700
Investment income	330	260	600	1 400	6 060	1 730
Other income	20	40	70	90	220	90
Total original income	690	900	1 900	4 830	15 360	4 740
plus Contributory benefits	3 350	3 660	3 660	3 870	3 850	3 680
Non-contributory benefits	580	1 060	1 250	1 000	490	880
Gross income	4 620	5 610	6 810	9 710	19 700	9 290
less Income tax <sup>1</sup>	100	40	180	610	2 890	760
Employees'NIC	10	0	10	10	30	10
Community charge/Rates	520	490	490	550	620	530
Disposable income	4 000	5 090	6 130	8 540	16 150	7 980
less indirect taxes	1 130	1 010	1 220	1 760	2 720	1 570
Post-tax income	2 870	4 080	4 910	6 780	13 430	6 410
plus National health service	2 110	1 930	2 000	1 900	1 830	1 950
Housing subsidy <sup>2</sup>	40	110	110	70	20	70
Other benefits in kind	120	90	80	90	120	100
Final income	5 140	6 210	7 110	8 830	15 400	8 540
<i>Equivalised disposable income</i>	<i>4 959</i>	<i>6 530</i>	<i>7 734</i>	<i>10 217</i>	<i>19 104</i>	<i>9 709</i>

<sup>1</sup> After tax relief at source on mortgage interest and life assurance premiums.

<sup>2</sup> Does not include tax relief at source on mortgage payments, which is included in the income tax payments shown above.

original income, compared with 2.8 per cent received by the lowest quintile group. However, after direct taxes and benefits are taken into account, the share of the lowest quintile group rises to 7.0 per cent and that of the highest falls to 41 per cent. Cash benefits are the major factor underlying these changes, causing the Gini coefficient to fall from 44 per cent based on original income to 36 per cent based on gross income. Income tax, employees' National Insurance contributions and rates produced a further reduction in inequality, but payment of indirect taxes increases inequality.

## RESULTS FOR RETIRED HOUSEHOLDS

Retired households (see Appendix 3, paragraph 8 for definition) have quite distinct income and expenditure patterns and so the tax-benefit system affects them in a different way from non-retired households (Table K). Few retired households have substantial original income; those who do are concentrated in the top two quintile groups and are receiving occupational pensions. The majority of retired households are dependent on cash benefits, in the form of state retirement pensions and income-related benefits such as Housing Benefits and Income Support to pensioners.

Cash benefits form a very high proportion of gross income for all but the better-off retired households. However, unlike non-retired households, the bulk of these cash benefits (80 per cent) are paid from the National Insurance Fund into which the recipients will have made contributions throughout their working lives.

All households except those in the highest quintile group of retired households pay very little income tax, because their income is unlikely to exceed their tax allowances unless they have significant income from investments or occupational pensions in addition to their state retirement pension. The largest indirect tax payment made by retired households is VAT, and the top quintile group pays more than twice as much as the average for all retired households.

Retired households derive significant benefits from health services and, to a lesser extent, the housing subsidy and travel subsidies, though of course virtually none from the education service. Health benefit is spread fairly evenly within the group of retired households, but housing subsidy is substantially higher for the middle three quintile groups since they have the highest concentration of public sector tenants. The benefits received by retired households from travel subsidies are mainly for bus travel, particularly in the form of concessionary fares, passes, etc, for senior citizens, and since these are not usually means-tested but depend instead on what sort of scheme is being operated by their local authority, there is no particular relationship with income.

Table L shows the extent to which income inequality amongst retired households is reduced by the tax-benefit system. Cash benefits play by far the largest part in bringing about this reduction and income tax payments make a further, though much smaller, contribution. Payments of indirect taxes result in an increase in inequality.

A comparison of Table L with Table J shows that although the distribution of original income amongst retired households is much more unequal than that within the non-retired household group, the distribution of post-tax income is more equal amongst the retired than amongst the non-retired. Chart 5 illustrates the different impact which the tax-benefit system has on retired and non-retired households.

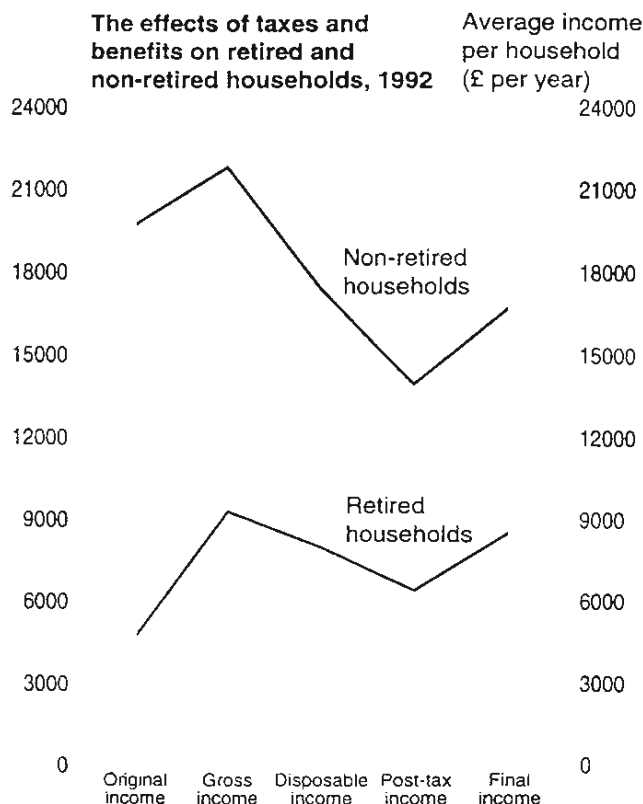
## Percentage shares of total household income and Gini coefficients<sup>1</sup> for RETIRED households, 1992

TABLE L

Quintile group	Percentage shares of total equivalised income for RETIRED households ranked by equivalised disposable income			
	Original income	Gross income	Disposable income	Post-tax income
Bottom	2.9	10.1	10.2	9.2
2nd	4	13	13	13
3rd	8	15	16	16
4th	20	21	21	21
Top	65	41	39	41
All retired households	100	100	100	100
Decile group				
Bottom	1.3	4.6	4.5	3.8
Top	45	27	25	26
Gini coefficient (percent)	67	31	28	33

1 This is a measure of the dispersion of each definition of income. Unlike the percentage shares analysis where the household incomes are ranked only once, the Gini coefficient calculation needs a separate ranking for each income definition. For example, the coefficient for original income is produced by first equivalising the original income of all the households, then this distribution is ranked and this ranked distribution is used to calculate the coefficient.

CHART 5



## Detailed tables for 1992

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A table showing the average incomes, taxes and benefits for 1992 by quintile groups within household type is available from the CSO on request.

## General government expenditure in 1992

TABLE 1 (Appendix 1)

	£ million	Percentage of total expenditure
<b>Allocated expenditure<sup>1</sup></b>		
Allocated cash benefits		
Contributory (National Insurance, etc)		
Retirement	26 680	10.5
Widows and guardians	1 030	0.4
Unemployment	1 780	0.7
Sickness/ Statutory sick pay	1 030	0.4
Invalidity	6 180	2.4
Maternity/ Statutory maternity pay	420	0.2
Other	480	0.2
Non-contributory		
Family benefits	7 060	2.8
Income Support	14 740	5.8
War pensions	960	0.4
Other	5 160	2.0
Student maintenance grants <sup>2</sup>	1 100	0.4
Rent rebates and allowances	7 180	2.8
Allocated benefits in kind		
Health services	33 250	13.1
Education	28 640	11.3
School meals and welfare milk	740	0.3
Housing subsidy	1 430	0.6
Travel subsidies <sup>3</sup>	1 560	0.6
	139 420	54.9
<b>Unallocated expenditure</b>		
Other current expenditure	79 840	31.4
Capital expenditure	14 100	5.5
Debt interest	17 170	6.8
Non-trading capital consumption	3 600	1.4
<b>Total expenditure</b>	254 130	100.0

1 Including benefits to people not living in private households. It not possible (for the reasons given in Appendix 3, paragraph 1) to allocate all of Government expenditure to households.

2 Estimated.

3 Including concessionary fares expenditure.

Source: United Kingdom National Accounts, 1993 edition, Table 9.4

## Financing of general government expenditure in 1992

TABLE 2 (Appendix 1)

	£ million	Percentage of total financing
<b>Allocated financing<sup>1</sup></b>		
Income tax <sup>2</sup>	57 720	22.7
Employees' and self-employed NI contributions	15 470	6.1
Community charge	7 860	3.1
Taxes on final goods and services		
VAT	28 210	11.1
Duty on beer and cider	2 350	0.9
Duty on wines and spirits	2 390	0.9
Duty on tobacco	5 840	2.3
Duty on hydrocarbon oils	5 250	2.1
Car tax and vehicle excise duty	2 360	0.9
Other	3 540	1.4
Taxes and NI contributions on intermediate goods and services		
Employers' NI contributions	7 220	2.8
Commercial and industrial rates	6 350	2.5
Duty on hydrocarbon oils	3 030	1.2
VAT	2 260	0.9
Vehicle excise duty	630	0.2
Other	640	0.3
	151 110	59.5
<b>Unallocated financing</b>		
Employers' NI contributions not allocated	14 780	5.8
Taxes on expenditure not allocated	24 830	9.8
Other taxes		
Corporation tax	15 670	6.2
Petroleum revenue tax	-10	0.0
Taxes on capital	2 910	1.1
Other receipts <sup>3</sup>	11 670	4.6
Non-trading capital consumption	3 600	1.4
General government borrowing requirement	29 560	11.6
<b>Total financing</b>	254 130	100.0

1 Including taxes paid by people not living in private households.

2 Net of tax relief at source on mortgage interest and life assurance premiums.

3 Receipts of rent, royalties and licence fees on oil and gas production, interest, dividends, trading income and miscellaneous transactions (net).

Source: United Kingdom National Accounts, 1993 edition, Table 9.1

## Average incomes, taxes and benefits by decile groups of ALL households, 1992

TABLE 3 (Appendix 1)

	Decile groups of households ranked by equivalised disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
<b>Average per household (£ per year)</b>											
Decile points (equivalised £)	5 416	6 663	7 857	9 450	11 261	13 272	15 777	19 176	24 879		
Number of households in the sample	742	742	741	742	742	742	742	741	742	742	7 418
<b>Original income</b>											
Wages and salaries	683	1 180	2 191	4 846	8 402	11 359	14 820	18 305	21 891	31 510	11 519
Imputed income from benefits in kind	11	3	14	50	58	109	234	383	555	1 222	264
Self-employment income	334	244	477	759	1 045	1 388	1 610	2 010	2 160	6 414	1 644
Occupational pensions, annuities	136	295	467	847	932	1 201	1 273	1 246	1 613	2 172	1 018
Investment income	212	176	288	455	556	983	974	1 236	1 698	4 236	1 081
Other income	131	131	180	195	204	188	233	336	178	476	225
Total	1 506	2 028	3 616	7 151	11 197	15 229	19 145	23 516	28 095	46 030	15 752
<b>Direct benefits in cash</b>											
<b>Contributory</b>											
Retirement pension	1 111	1 825	1 791	1 527	1 126	1 014	709	516	520	467	1 060
Unemployment benefit	106	56	49	41	47	56	65	30	31	13	50
Incapacity pension and allowance	163	415	355	395	373	280	185	129	54	15	236
Statutory sick pay	3	3	6	17	23	31	34	36	22	16	19
Industrial injury disablement benefit	-	9	21	22	22	18	31	17	11	14	16
Sickness, industrial injury benefit	35	4	21	19	16	16	11	13	7	0	14
Widows' benefits	16	54	58	60	26	62	33	26	26	23	38
Statutory Maternity Pay/ Allowance	5	4	7	7	12	14	23	34	40	38	18
Christmas bonus for pensioners	5	8	8	7	5	5	3	2	2	2	5
<b>Non-contributory</b>											
Income support	1 164	996	813	473	306	165	107	48	23	29	392
Child benefit	414	305	239	298	331	308	278	269	189	165	280
Housing benefit	594	849	786	532	295	209	110	59	41	41	352
Invalid care allowance	2	7	15	21	21	15	2	2	2	4	9
Attendance allowance	-	16	65	97	65	63	15	20	10	12	36
Mobility allowance	6	33	33	67	64	49	27	27	10	11	32
Disability living allowance	11	28	24	56	64	29	59	10	3	13	30
War pensions	4	2	16	23	12	16	20	31	10	19	15
Severe disablement allowance	20	32	53	34	34	27	29	11	10	5	25
Student maintenance awards	92	48	48	44	31	42	35	23	27	36	43
Government training schemes	29	28	29	32	54	28	21	15	5	1	24
Family credit	42	67	46	49	13	3	2	0	4	-	23
Other non-contributory benefits	18	9	36	23	32	16	14	9	29	31	22
Total cash benefits	3 841	4 798	4 318	3 843	2 973	2 464	1 813	1 327	1 075	957	2 741
Gross income	5 347	6 826	7 934	10 994	14 170	17 694	20 958	24 843	29 170	46 986	18 493
<b>Direct taxes and Employees' NIC</b>											
Income tax	321	149	393	809	1 388	2 144	2 783	3 655	4 804	9 048	2 549
less: Tax relief at source <sup>1</sup>	72	45	67	148	198	271	329	424	486	555	259
Employees' NI contributions	65	69	144	312	539	716	921	1 111	1 281	1 539	670
Community charge/Domestic rates(gross)	535	544	517	609	633	669	691	678	669	658	620
Total	848	717	988	1 582	2 362	3 258	4 066	5 021	6 267	10 689	3 580
Disposable income	4 498	6 109	6 947	9 412	11 808	14 436	16 893	19 822	22 903	36 297	14 913
Equivalised disposable income	4 226	6 063	7 245	8 636	10 359	12 271	14 462	17 392	21 615	36 004	13 828
(Standard error)	80	63	75	111	132	147	174	213	282	946	158
<b>Indirect taxes</b>											
<b>Taxes on final goods and services</b>											
VAT	629	571	614	872	1 127	1 342	1 517	1 658	1 773	2 498	1 260
Duty on tobacco	256	275	241	259	311	315	268	218	172	144	246
Duty on beer and cider	51	52	49	72	94	110	142	139	142	139	99
Duty on wines	10	6	9	14	20	24	36	44	48	100	31
Duty on spirits	30	28	29	51	56	87	80	83	88	110	64
Duty on hydrocarbon oils	109	93	110	162	221	274	301	313	338	362	228
Car tax	6	6	7	8	16	34	40	38	38	51	24
Vehicle excise duty	45	36	40	60	80	102	116	124	119	125	84
Television licences	59	62	61	68	69	71	72	72	72	74	68
Stamp duty on house purchase	6	2	3	6	10	10	14	18	20	36	13
Customs duties	25	24	25	32	39	47	49	52	56	75	42
Betting taxes	20	33	30	34	61	47	55	59	51	47	44
Other	9	9	9	11	10	12	14	12	13	17	12
<b>Intermediate taxes</b>											
Commercial and industrial rates	132	118	129	174	214	243	272	300	325	441	235
Employers' NI contributions	144	129	141	193	237	269	301	332	361	494	260
Duty on hydrocarbon oils	64	58	63	85	101	111	127	136	148	198	109
Vehicle excise duty	12	11	12	17	20	22	26	28	30	41	22
Other	62	56	61	83	102	116	130	142	153	208	111
Total indirect taxes	1 668	1 569	1 632	2 201	2 785	3 237	3 561	3 766	3 947	5 160	2 953
Post-tax income	2 831	4 539	5 315	7 211	9 023	11 199	13 332	16 056	18 956	31 137	11 960
<b>Benefits in kind</b>											
Education	1 736	1 126	1 018	1 022	1 239	1 108	1 323	351	736	598	1 056
National health service	1 596	1 677	1 593	1 646	1 444	1 378	1 303	1 204	1 136	1 021	1 400
Housing subsidy	94	125	124	88	72	46	28	12	9	4	60
Rail travel subsidy	16	12	13	21	28	29	36	47	59	107	37
Bus travel subsidy	31	41	44	39	30	27	24	20	17	17	29
School meals and welfare milk	123	58	31	22	12	12	11	6	5	-1	28
Total	3 596	3 038	2 824	2 840	2 825	2 600	2 425	2 240	1 961	1 746	2 610
Final income	6 427	7 578	8 138	10 051	11 848	13 799	15 757	18 296	20 917	32 983	14 570

1 On mortgage interest and life assurance premiums.

## Average incomes, taxes and benefits by decile groups of NON-RETIRED households, 1992

TABLE 4 (Appendix 1)

	Decile groups of NON-RETIRED households ranked by equivalised disposable income										All non-retired households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
<b>Average per household (£ per year)</b>											
Decile points ( <i>equivalised</i> £)	5 656	7 517	9 357	11 135	12 976	15 033	17 516	20 828	27 011		
Number of households in the sample	545	546	545	545	546	545	545	545	546	545	5 453
Original income											
Wages and salaries	1 197	3 162	7 200	10 790	13 741	16 458	19 041	22 792	25 824	35 835	15 603
Imputed income from benefits in kind	14	18	71	71	124	228	386	488	783	1 395	358
Self-employment income	532	565	1 291	1 312	1 742	1 792	2 415	1 934	2 835	7 861	2 228
Occupational pensions, annuities	100	84	205	298	327	453	469	306	834	1 033	411
Investment income	131	118	161	298	656	524	643	878	1 157	3 910	848
Other income	194	282	275	235	190	273	326	203	303	461	274
Total	2 168	4 230	9 202	13 003	16 780	19 728	23 281	26 601	31 737	50 495	19 721
Direct benefits in cash											
Contributory											
Retirement pension	59	145	339	386	411	250	203	151	180	231	236
Unemployment benefit	130	112	68	56	68	75	44	35	29	14	63
Incapacity pension and allowance	240	678	373	369	299	145	133	47	29	15	233
Statutory sick pay	6	5	26	25	38	40	37	34	29	13	25
Industrial injury disablement benefit	-	12	6	16	19	28	16	16	6	19	14
Sickness, industrial injury benefit	47	25	32	18	21	8	13	8	9	-	18
Widows' benefits	23	90	96	27	48	49	33	24	12	24	43
Maternity/ Statutory maternity pay	7	13	10	14	20	21	27	42	60	34	25
Christmas bonus for pensioners	1	3	3	2	2	1	1	1	1	1	2
Non-contributory											
Income support	1 724	1 456	754	369	181	152	73	30	18	35	479
Child benefit	638	550	490	439	378	339	316	266	206	168	379
Housing benefit	855	977	549	317	216	125	76	59	49	42	327
Invalid care allowance	3	20	21	26	15	6	-	-	3	3	10
Attendance allowance	-	12	27	24	21	9	16	3	5	5	12
Mobility allowance	12	53	61	48	40	28	28	5	10	12	30
Disability living allowance	15	45	61	62	30	8	73	6	6	12	32
War pensions	-	-	17	3	-	3	9	2	2	3	4
Severe disablement allowance	22	70	56	42	28	10	12	9	13	7	27
Student maintenance awards	141	85	83	48	52	52	24	16	47	31	58
Government training schemes	43	43	58	61	46	26	19	5	6	2	31
Family credit	83	104	91	18	4	3	-	1	5	-	31
Other non-contributory benefits	7	7	13	5	13	1	8	6	12	43	11
Total cash benefits	4 056	4 504	3 233	2 378	1 949	1 379	1 161	766	736	715	2 088
Gross income	6 224	8 734	12 435	15 382	18 728	21 107	24 441	27 366	32 474	51 210	21 809
Direct taxes and Employees' NIC											
Income tax	399	414	1 050	1 592	2 361	2 815	3 460	4 285	5 416	10 072	3 186
Less: Tax relief at source <sup>1</sup>	98	96	215	252	321	369	434	495	579	594	345
Employees' NI contributions	103	194	472	688	866	1 021	1 193	1 354	1 470	1 705	906
Community charge/Domestic rates(gross)	555	560	649	656	686	700	698	670	683	654	651
Total	958	1 072	1 955	2 684	3 591	4 166	4 916	5 814	6 990	11 838	4 398
Disposable income	5 265	7 662	10 481	12 697	15 137	16 942	19 525	21 553	25 484	39 372	17 411
Equivalised disposable income	4 205	6 557	8 454	10 264	12 062	13 942	16 226	19 109	23 467	38 839	15 312
(Standard error)	110	110	135	144	157	175	202	242	356	1 198	199
Indirect taxes											
Taxes on final goods and services											
VAT	729	785	1 037	1 233	1 421	1 505	1 672	1 757	1 927	2 685	1 475
Duty on tobacco	341	398	352	377	355	321	245	223	174	146	293
Duty on beer and cider	69	73	98	111	128	157	153	153	158	142	124
Duty on wines	13	10	16	21	25	33	41	48	56	114	38
Duty on spirits	30	25	47	54	78	84	80	81	94	108	68
Duty on hydrocarbon oils	139	149	205	253	309	317	324	344	364	373	278
Car tax	6	8	6	20	29	27	45	44	45	46	28
Vehicle excise duty	51	45	69	87	105	115	124	124	124	121	96
Television licences	53	58	68	70	71	72	73	71	73	73	68
Stamp duty on house purchase	7	3	8	11	11	15	18	19	25	40	16
Customs duties	29	32	38	43	50	50	53	56	60	79	49
Betting taxes	19	40	41	59	61	69	47	71	60	36	50
Other	10	12	13	11	12	15	11	13	13	19	13
Intermediate taxes											
Commercial and industrial rates	151	153	204	233	259	274	305	318	358	471	273
Employers' NI contributions	165	166	225	258	286	302	338	353	399	527	302
Duty on hydrocarbon oils	74	75	98	110	119	126	141	145	164	212	126
Vehicle excise duty	14	14	20	22	24	25	29	30	34	41	26
Other	72	72	97	111	124	131	145	151	169	222	129
Total indirect taxes	1 973	2 119	2 642	3 084	3 466	3 639	3 844	4 002	4 298	5 459	3 452
Post-tax income	3 293	5 543	7 839	9 614	11 670	13 303	15 681	17 551	21 185	33 913	13 959
Benefits in kind											
Education	2 736	1 987	1 792	1 637	1 410	1 258	1 111	945	774	566	1 424
National health service	1 317	1 317	1 337	1 324	1 238	1 220	1 139	1 119	1 063	926	1 200
Housing subsidy	133	151	91	72	48	31	19	15	3	5	57
Rail travel subsidy	24	20	26	31	35	33	41	57	86	111	46
Bus travel subsidy	18	19	25	23	24	18	17	16	12	15	19
School meals and welfare milk	181	96	41	15	16	15	9	6	5	2	38
Total	4 409	3 590	3 311	3 103	2 770	2 573	2 336	2 157	1 944	1 651	2 784
Final income	7 701	9 133	11 150	12 717	14 441	15 876	18 017	19 708	23 130	35 564	16 743

<sup>1</sup> On mortgage interest and life assurance premiums.

## Average incomes, taxes and benefits by decile groups of RETIRED households, 1992

TABLE 5 (Appendix 1)

	Decile groups of RETIRED households ranked by equivalised disposable income										All retired households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
<b>Average per household (£ per year)</b>											
Decile points ( <i>equivalised £</i> )	5 113	5 949	6 544	7 088	7 688	8 602	10 086	12 313	16 888		
Number of households in the sample	197	196	197	196	197	196	197	196	197	196	1 965
Original income											
Wages and salaries	17	43	52	45	132	113	138	223	646	439	185
Imputed income from benefits in kind	-	-	-	-	-	-	4	-	7	24	3
Self-employment income	26	4	-	11	4	2	18	30	-	164	26
Occupational pensions, annuities	169	409	545	556	899	1 313	2 436	3 836	5 924	10 965	2 703
Investment income	376	286	274	240	545	661	1 175	1 627	3 222	8 914	1 730
Other income	28	18	28	45	73	67	93	91	143	304	89
Total	616	761	898	898	1 652	2 156	3 863	5 807	9 942	20 810	4 737
Direct benefits in cash											
Contributory											
Retirement pension	2 891	3 479	3 624	3 350	3 181	3 284	3 502	3 352	3 569	3 263	3 349
Unemployment benefit	31	30	1	-	19	12	-	12	15	0	12
Incapacity pension and allowance	35	152	193	98	214	416	349	342	502	164	247
Statutory sick pay	-	-	-	-	-	1	-	8	5	-	1
Industrial injury disablement benefit	-	-	14	-	48	43	41	38	53	-	24
Sickness, industrial injury benefit	3	-	-	3	-	5	-	10	-	13	3
Widows' benefits	15	43	-	-	50	19	-	59	14	62	26
Statutory maternity pay/ Allowance	-	-	-	-	-	-	2	-	-	-	0
Christmas bonus for pensioners	11	14	14	13	13	13	13	14	14	12	13
Non-contributory											
Income support	178	199	218	199	220	143	155	122	75	6	152
Child benefit	18	-	-	-	-	4	11	-	-	8	4
Housing benefit	156	387	643	811	697	707	442	270	83	6	421
Invalid care allowance	-	8	-	8	-	32	-	16	8	8	8
Attendance allowance	-	19	23	55	99	236	216	204	108	70	103
Mobility allowance	-	15	7	23	-	100	69	105	61	23	40
Disability living allowance	8	33	8	8	-	25	53	54	39	12	24
War pensions	14	-	2	14	44	50	21	71	75	183	47
Severe disablement allowance	10	25	9	9	24	31	12	-	85	4	21
Student maintenance awards	3	-	-	-	-	-	-	-	-	-	0
Government training schemes	5	14	-	7	-	-	10	18	-	-	5
Family credit	-	-	-	-	-	-	-	-	-	-	-
Other non-contributory benefits	57	5	9	71	51	35	27	128	47	78	51
Total cash benefits	3 445	4 423	4 764	4 669	4 661	5 157	4 923	4 822	4 755	3 913	4 553
Gross income	4 061	5 183	5 662	5 567	6 313	7 313	8 786	10 629	14 697	24 723	9 290
Direct taxes and Employees' NIC											
Income tax	162	63	49	54	180	205	464	802	1 481	4 381	783
less: Tax relief at source <sup>1</sup>	15	8	13	13	12	20	25	30	33	41	21
Employees' NI contributions	9	2	1	1	11	6	6	24	33	35	13
Community charge/Domestic rates(gross)	502	533	518	455	479	509	547	554	627	622	534
Total	657	589	556	497	658	700	992	1 350	2 107	4 997	1 309
Disposable income	3 404	4 594	5 106	5 070	5 656	6 614	7 795	9 279	12 590	19 726	7 981
<i>Equivalised disposable income</i>	4 379	5 541	6 246	6 815	7 358	8 112	9 268	11 171	14 186	24 047	9 709
(Standard error)	96	82	73	74	85	130	200	272	437	1 017	181
Indirect taxes											
Taxes on final goods and services											
VAT	473	417	365	339	427	533	617	896	1 114	1 458	664
Duty on tobacco	101	122	157	112	111	136	104	125	113	62	114
Duty on beer and cider	23	27	32	21	27	26	27	29	36	49	30
Duty on wines	6	5	4	5	8	9	9	21	28	36	13
Duty on spirits	27	36	37	19	30	32	68	78	91	111	53
Duty on hydrocarbon oils	61	52	48	39	61	72	90	117	167	205	91
Car tax	4	6	4	0	5	17	1	42	26	42	15
Vehicle excise duty	34	31	28	25	30	35	45	69	96	120	51
Television licences	71	67	67	63	60	63	68	69	74	74	68
Stamp duty on house purchase	4	3	1	1	2	2	3	5	6	12	4
Customs duties	17	18	15	15	18	21	21	31	34	48	24
Betting taxes	19	20	35	20	19	26	24	30	22	28	24
Other	8	6	8	7	7	7	6	7	14	11	8
Intermediate taxes											
Commercial and industrial rates	98	95	88	84	97	111	129	158	191	247	130
Employers' NI contributions	107	104	96	93	105	124	144	178	213	275	144
Duty on hydrocarbon oils	46	46	43	43	46	54	64	76	37	106	61
Vehicle excise duty	8	9	8	8	8	10	13	14	17	20	12
Other	45	45	42	40	46	54	61	77	59	110	61
Total indirect taxes	1 151	1 109	1 078	934	1 107	1 333	1 497	2 023	2 418	3 015	1 566
Post-tax income	2 253	3 486	4 028	4 136	4 548	5 281	6 298	7 256	10 172	16 711	6 414
Benefits in kind											
Education	110	-	17	23	23	-	34	-	35	23	33
National health service	2 082	2 134	1 973	1 884	1 902	2 105	1 969	1 833	1 568	1 795	1 955
Housing subsidy	24	66	97	123	106	110	90	50	31	4	69
Rail travel subsidy	2	4	0	5	5	-	18	23	9	27	10
Bus travel subsidy	53	69	65	65	58	66	56	50	54	43	58
School meals and welfare milk	2	-	-	-	-	-	2	-	0	-	0
Total	2 272	2 273	2 152	2 100	2 094	2 298	2 160	1 957	2 047	1 893	2 125
Final income	4 525	5 759	6 180	6 236	6 642	7 578	8 458	9 213	12 219	18 604	9 539

1 On mortgage interest and life assurance premiums.



**Average incomes, taxes and benefits by decile groups of NON-RETIRED households without CHILDREN, 1992**

TABLE 6 (Appendix 1)

	Decile groups of households ranked by equivalised disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
<b>Average per household (£ per year)</b>											
<i>Deciles points (equivalised £)</i>	6 410	8 885	10 908	12 839	14 740	17 145	19 799	23 169	29 750		
Number of households in the sample	309	309	309	309	309	308	309	309	309	309	3 089
Original income											
Wages and salaries	1 068	3 952	7 742	11 408	13 810	16 459	20 130	22 425	26 023	33 924	15 694
Imputed income from benefits in kind	17	6	41	71	100	159	213	517	843	1 113	308
Self-employment income	468	825	980	1 024	1 268	1 728	1 239	1 752	2 151	6 924	1 836
Occupational pensions, annuities	192	258	484	496	738	779	336	747	1 003	1 427	646
Investment income	185	173	318	536	996	775	764	1 078	1 567	4 206	1 060
Other income	153	261	185	60	214	171	105	130	186	390	186
Total	2 083	5 474	9 750	13 595	17 126	20 072	22 786	26 649	31 773	47 984	19 729
Direct benefits in cash											
Contributory											
Retirement pension	155	417	852	696	459	346	223	165	277	344	393
Unemployment benefit	164	115	68	74	98	69	27	43	23	11	69
Invalidity pension and allowance	561	736	574	489	214	216	59	31	44	-	292
Statutory sick pay	3	19	18	51	39	40	54	24	33	9	29
Industrial injury disablement benefit	6	14	29	19	32	39	21	6	29	9	20
Sickness, industrial injury benefit	38	58	32	33	16	13	14	1	3	-	21
Widows' benefits	85	149	75	36	79	25	41	4	18	20	53
Statutory Maternity Pay/ Allowance	-	-	0	2	1	8	6	11	9	-	4
Christmas bonus for pensioners	2	4	5	4	2	2	1	1	1	1	2
Non-contributory											
Income support	929	682	293	159	89	79	37	36	27	30	236
Child benefit	6	8	9	6	9	4	2	10	4	4	6
Housing benefit	680	674	330	228	142	108	80	51	47	45	239
Invalid care allowance	5	20	26	11	-	-	-	-	5	-	7
Attendance allowance	4	35	29	26	5	19	9	-	10	-	14
Mobility allowance	64	61	99	50	35	30	19	-	20	11	39
Disability living allowance	25	27	61	61	-	136	11	-	10	12	34
War pensions	-	7	9	-	6	15	3	-	3	6	5
Severe disablement allowance	40	131	55	41	6	13	17	-	13	6	32
Student maintenance awards	192	142	30	44	80	9	23	36	24	46	63
Government training schemes	59	61	52	53	34	11	10	10	4	-	29
Family credit	-	2	4	5	-	-	-	-	-	-	1
Other non-contributory benefits	1	13	6	0	3	15	4	20	0	72	13
Total cash benefits	3 022	3 376	2 657	2 088	1 350	1 199	660	448	603	627	1 603
Gross income	5 104	8 850	12 407	15 682	18 476	21 270	23 446	27 097	32 376	48 611	21 332
Direct taxes and Employees' NIC											
Income tax	360	656	1 107	1 733	2 554	2 928	3 576	4 424	5 604	9 185	3 213
less: Tax relief at source <sup>1</sup>	63	124	118	186	237	317	406	495	531	569	305
Employees' NI contributions	93	254	484	691	869	1 044	1 240	1 394	1 565	1 661	929
Community charge/Domestic rates(gross)	530	587	656	670	683	695	644	654	648	623	639
Total	920	1 373	2 129	2 907	3 868	4 350	5 054	5 978	7 285	10 900	4 476
Disposable income	4 184	7 477	10 279	12 775	14 608	16 920	18 392	21 119	25 091	37 710	16 856
<i>Equivalised disposable income</i>	<i>4 557</i>	<i>7 671</i>	<i>9 914</i>	<i>11 895</i>	<i>13 795</i>	<i>15 922</i>	<i>18 421</i>	<i>21 438</i>	<i>26 113</i>	<i>42 015</i>	<i>17 175</i>
<i>(Standard error)</i>	<i>181</i>	<i>193</i>	<i>197</i>	<i>208</i>	<i>215</i>	<i>272</i>	<i>287</i>	<i>328</i>	<i>508</i>	<i>1 660</i>	<i>282</i>
Indirect taxes											
Taxes on final goods and services											
VAT	665	810	1 079	1 202	1 290	1 571	1 567	1 708	1 883	2 526	1 430
Duty on tobacco	277	355	352	358	337	277	232	211	183	118	270
Duty on beer and cider	85	86	122	132	170	174	161	162	158	150	140
Duty on wines	13	13	23	20	28	42	42	45	67	114	41
Duty on spirits	31	41	66	92	96	95	68	84	104	112	79
Duty on hydrocarbon oils	131	151	206	272	284	294	337	352	345	360	273
Car tax	3	8	19	18	20	33	49	33	44	32	26
Vehicle excise duty	49	50	75	98	114	119	123	117	121	116	98
Television licences	51	63	69	70	89	70	70	71	72	72	68
Stamp duty on house purchase	5	3	6	7	10	11	16	19	24	38	14
Customs duties	24	29	35	41	41	51	49	53	54	80	46
Betting taxes	24	45	67	74	66	71	79	48	74	34	58
Other	9	10	9	13	12	13	11	15	14	16	12
Intermediate taxes											
Commercial and industrial rates	131	160	199	213	233	273	272	307	326	438	255
Employers' NI contributions	142	175	221	234	257	298	303	338	362	493	282
Duty on hydrocarbon oils	62	77	97	98	109	122	126	136	148	200	118
Vehicle excise duty	12	15	20	19	22	24	26	28	31	42	24
Other	61	75	93	100	109	129	129	145	154	205	120
Total indirect taxes	1 776	2 166	2 758	3 061	3 268	3 668	3 658	3 875	4 164	5 145	3 354
Post-tax income	2 408	5 311	7 521	9 714	11 340	13 252	14 734	17 244	20 928	32 565	13 502
Benefits in kind											
Education	1 026	602	274	255	366	109	117	254	223	132	336
National health service	745	903	1 076	996	962	904	784	762	772	727	863
Housing subsidy	89	99	72	62	39	29	13	12	4	3	43
Rail travel subsidy	29	40	36	22	38	35	54	64	95	104	55
Bus travel subsidy	14	25	31	26	21	16	16	16	13	18	20
School meals and welfare milk	3	-	-	-	-	-	-	-	-	-	3
Total	1 904	1 668	1 489	1 362	1 427	1 092	990	1 109	1 109	1 012	1 316
Final income	4 312	6 980	9 011	11 076	12 766	14 344	15 724	18 353	22 036	33 573	14 819

<sup>1</sup> On mortgage interest and life assurance premiums.

**Average incomes, taxes and benefits by decile groups of NON-RETIRED households with CHILDREN, 1992**

**TABLE 7 (Appendix 1)**

	Decile groups of households ranked by equivalised disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
<b>Average per household (£ per year)</b>											
Decile points ( <i>equivalised £</i> )	5 170	6 404	7 858	9 375	10 865	12 606	14 544	17 221	21 793		
Number of households in the sample	236	237	236	237	236	236	237	236	237	236	2 364
Original income											
Wages and salaries	1 046	2 344	5 378	9 517	13 057	15 877	19 227	21 650	26 433	40 339	15 485
Imputed income from benefits in kind	11	-	45	134	93	163	324	749	820	1 892	423
Self-employment income	639	384	910	1 453	1 650	2 548	2 394	3 068	4 033	10 323	2 739
Occupational pensions, annuities	49	-	49	71	102	107	145	39	113	363	104
Investment income	120	12	107	153	262	341	249	541	819	3 104	570
Other income	213	267	353	329	263	308	408	552	358	852	390
<b>Total</b>	<b>2 079</b>	<b>3 007</b>	<b>6 842</b>	<b>11 656</b>	<b>15 427</b>	<b>19 342</b>	<b>22 747</b>	<b>26 599</b>	<b>32 576</b>	<b>56 873</b>	<b>19 711</b>
Direct benefits in cash											
Contributory											
Retirement pension	13	12	38	87	24	41	27	24	-	25	29
Unemployment benefit	119	97	76	37	53	42	43	35	31	17	55
Incapacity pension and allowance	148	453	289	184	141	154	82	48	52	-	155
Statutory sick pay	5	8	8	29	29	29	32	30	18	17	21
Industrial injury disablement benefit	-	8	2	-	8	17	8	-	9	-	5
Sickness, industrial injury benefit	64	7	19	16	8	0	6	5	22	-	15
Widows' benefits	6	28	48	28	31	46	28	17	39	17	29
Statutory Maternity Pay/ Allowance	17	6	28	19	29	46	37	60	126	157	53
Christmas bonus for pensioners	1	1	1	1	1	1	1	0	0	0	1
Non-contributory											
Income support	2 180	2 356	1 532	783	521	145	285	122	15	29	797
Child benefit	1 050	1 008	921	876	866	844	792	798	777	728	866
Housing benefit	990	1 248	873	480	348	149	173	75	39	38	441
Invalid care allowance	-	14	27	21	26	21	14	6	-	7	13
Attendance allowance	-	-	37	-	19	10	12	16	6	5	10
Mobility allowance	-	6	45	28	13	26	19	26	6	5	17
Disability living allowance	19	32	67	65	65	17	6	5	-	12	29
War pensions	-	-	-	23	-	-	-	-	-	-	2
Severe disablement allowance	17	47	35	11	22	25	8	17	22	-	20
Student maintenance awards	55	103	51	57	73	31	54	31	15	46	52
Government training schemes	19	54	53	28	72	49	26	20	7	-	33
Family credit	100	193	191	153	30	9	7	-	13	-	69
Other non-contributory benefits	8	11	11	11	5	23	3	0	7	6	8
<b>Total cash benefits</b>	<b>4 811</b>	<b>5 691</b>	<b>4 352</b>	<b>2 936</b>	<b>2 381</b>	<b>1 724</b>	<b>1 663</b>	<b>1 337</b>	<b>1 204</b>	<b>1 112</b>	<b>2 721</b>
Gross income	6 890	8 699	11 193	14 592	17 809	21 066	24 410	27 935	33 781	57 985	22 432
Direct taxes and Employees' NIC											
Income tax	442	216	672	1 352	1 980	2 611	3 278	4 061	5 250	11 654	3 151
Less: Tax relief at source <sup>1</sup>	133	84	161	291	364	483	505	575	685	705	399
Employees' NI contributions	97	136	350	617	850	1 031	1 190	1 324	1 478	1 693	877
Community charge/Domestic rates(gross)	599	551	581	665	668	695	728	705	723	756	667
<b>Total</b>	<b>1 005</b>	<b>820</b>	<b>1 442</b>	<b>2 343</b>	<b>3 134</b>	<b>3 854</b>	<b>4 690</b>	<b>5 515</b>	<b>6 767</b>	<b>13 398</b>	<b>4 296</b>
Disposable income	5 884	7 879	9 751	12 249	14 675	17 212	19 720	22 420	27 014	44 587	18 137
<i>Equivalised disposable income</i>	<i>4 007</i>	<i>5 765</i>	<i>7 140</i>	<i>8 641</i>	<i>10 137</i>	<i>11 726</i>	<i>13 518</i>	<i>15 859</i>	<i>19 232</i>	<i>32 772</i>	<i>12 878</i>
<i>(Standard error)</i>	<i>156</i>	<i>119</i>	<i>163</i>	<i>189</i>	<i>194</i>	<i>227</i>	<i>241</i>	<i>300</i>	<i>411</i>	<i>1 671</i>	<i>259</i>
Indirect taxes											
Taxes on final goods and services											
VAT	813	778	884	1 145	1 352	1 632	1 799	1 838	2 093	3 007	1 534
Duty on tobacco	410	438	413	345	375	371	320	221	179	168	324
Duty on beer and cider	61	56	72	93	107	111	144	133	133	123	103
Duty on wines	14	7	12	17	20	28	29	42	60	104	33
Duty on spirits	31	17	20	45	47	56	70	69	91	94	54
Duty on hydrocarbon oils	135	154	194	222	288	339	374	354	364	412	284
Car tax	12	7	11	-1	18	42	42	52	47	73	30
Vehicle excise duty	54	40	56	78	97	110	116	119	133	137	94
Television licences	55	57	60	71	70	73	74	76	75	76	69
Stamp duty on house purchase	10	3	5	12	16	19	19	27	24	49	18
Customs duties	35	34	37	44	48	61	64	57	69	88	54
Betting taxes	23	11	45	44	47	51	53	30	53	46	40
Other	13	10	13	15	12	11	15	12	15	20	14
Intermediate taxes											
Commercial and industrial rates	171	153	178	229	264	304	332	350	402	570	295
Employers' NI contributions	186	167	195	252	291	337	368	388	450	639	327
Duty on hydrocarbon oils	83	78	87	108	122	140	153	165	189	254	138
Vehicle excise duty	16	15	17	22	24	29	31	34	39	52	28
Other	82	72	85	109	127	147	161	168	192	273	142
<b>Total indirect taxes</b>	<b>2 205</b>	<b>2 097</b>	<b>2 385</b>	<b>2 850</b>	<b>3 327</b>	<b>3 960</b>	<b>4 165</b>	<b>4 136</b>	<b>4 608</b>	<b>6 183</b>	<b>3 581</b>
Post-tax income	3 679	5 782	7 366	9 398	11 348	13 252	15 555	18 284	22 406	38 404	14 555
Benefits in kind											
Education	3 590	3 343	3 197	2 703	2 975	2 919	2 546	2 551	2 404	2 141	2 847
National health service	1 766	1 665	1 573	1 646	1 600	1 532	1 565	1 533	1 753	1 700	1 640
Housing subsidy	166	187	149	100	76	24	34	3	-	7	75
Rail travel subsidy	15	27	5	18	23	43	37	38	55	92	35
Bus travel subsidy	20	18	20	21	19	19	18	14	13	12	17
School meals and welfare milk	315	225	125	66	31	31	39	25	19	2	88
<b>Total</b>	<b>5 873</b>	<b>5 465</b>	<b>5 069</b>	<b>4 554</b>	<b>4 725</b>	<b>4 628</b>	<b>4 239</b>	<b>4 274</b>	<b>4 245</b>	<b>3 956</b>	<b>4 703</b>
<b>Final income</b>	<b>9 552</b>	<b>11 247</b>	<b>12 435</b>	<b>13 952</b>	<b>16 072</b>	<b>17 980</b>	<b>19 795</b>	<b>22 558</b>	<b>26 651</b>	<b>42 359</b>	<b>19 258</b>

1. On mortgage interest and life assurance premiums.

**Distribution of households<sup>1</sup> co-operating in the Family Expenditure Survey and Summary of the effects of taxes and benefits, by household type, 1992**

TABLE 8 (Appendix 1)

	Retired households		Non-Retired households								All households
	1 adult	2 or more adults	1 adult	2 adults	3 or more adults	1 adult with children	2 adults with 1 child	2 adults with 2 children	2 adults with 3 or more children	3 or more adults with children	
<b>Decile groups of households ranked by equivalised disposable income</b>											
<b>Number of households</b>											
Bottom	166	103	100	61	21	87	43	73	59	29	742
2nd	173	190	61	61	29	101	27	35	41	24	742
3rd	265	126	66	66	28	59	27	47	32	25	741
4th	137	147	63	91	56	42	43	87	39	37	742
5th	87	90	86	125	72	28	53	116	43	42	742
6th	61	91	74	159	85	21	65	112	32	42	742
7th	38	66	80	209	91	14	78	101	33	32	742
8th	37	51	118	199	91	14	76	92	31	32	741
9th	37	43	138	273	71	9	70	68	17	16	742
Top	32	25	172	297	46	8	73	67	14	8	742
All households	1 033	932	958	1 541	590	383	555	798	341	287	7 418
<b>Summary of the effects of taxes and benefits, by household type</b>											
<b>Average per household (£ per year)</b>											
Original income	2 991	6 672	11 855	22 246	25 940	4 558	22 559	23 325	20 267	23 716	15 752
Cash benefits	3 672	5 530	1 266	1 395	2 693	4 571	1 793	1 941	3 192	3 658	2 741
Gross income	6 663	12 202	13 121	23 641	28 633	9 129	24 352	25 226	23 459	27 374	18 493
Direct taxes and employees' NIC	941	1 718	2 756	5 033	5 817	881	4 905	5 190	4 339	5 137	3 580
Disposable income	5 722	10 484	10 365	18 608	22 816	8 248	19 447	20 076	19 121	22 237	14 913
<i>Equivalised disposable income</i>	<i>9 375</i>	<i>10 079</i>	<i>16 993</i>	<i>18 239</i>	<i>14 691</i>	<i>8 451</i>	<i>16 246</i>	<i>13 899</i>	<i>11 072</i>	<i>11 576</i>	<i>13 828</i>
Indirect taxes	975	2 222	2 085	3 415	5 254	1 631	3 617	3 861	3 656	5 248	2 953
Post-tax income	4 748	8 262	8 280	15 193	17 562	6 617	15 830	16 215	15 465	16 988	11 960
Benefits in kind	1 718	2 575	728	1 173	2 646	4 189	2 842	4 514	7 498	6 188	2 610
Final income	6 466	10 837	9 009	16 366	20 208	10 807	18 672	20 729	22 963	23 176	14 570

<sup>1</sup> See Appendix 3 for definitions of retired households, adults and children.

## Average incomes, taxes and benefits by decile groups of households (ranked by UNADJUSTED disposable income), 1992

TABLE 9 (Appendix 1)

	Decile groups of households ranked by UNADJUSTED disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
<b>Average per household (£ per year)</b>											
Decile points (£)	4 305	5 889	7 605	9 777	12 234	14 714	17 822	21 855	28 351		
Number of households in the sample	742	742	741	742	742	742	742	741	742	742	7 418
<b>Original income</b>											
Wages and salaries	177	490	1 496	3 630	6 987	9 911	14 117	18 358	23 538	36 483	11 519
Imputed income from benefits in kind	11	2	8	15	44	114	221	340	563	1 321	264
Self-employment income	124	197	182	478	883	1 240	1 432	1 861	2 701	7 343	1 644
Occupational pensions, annuities	201	485	809	1 005	1 204	1 327	1 117	1 175	1 308	1 551	1 018
Investment income	242	275	413	683	803	1 230	967	1 107	1 335	3 757	1 081
Other income	76	134	162	184	209	191	283	270	280	464	225
<b>Total</b>	<b>831</b>	<b>1 583</b>	<b>3 069</b>	<b>5 994</b>	<b>10 132</b>	<b>14 014</b>	<b>18 136</b>	<b>23 111</b>	<b>29 725</b>	<b>50 918</b>	<b>15 752</b>
<b>Direct benefits in cash</b>											
<b>Contributory</b>											
Retirement pension	1 735	1 866	1 911	1 340	1 129	912	540	470	393	309	1 060
Unemployment benefit	45	64	37	65	51	75	42	48	42	25	50
Invalidity pension and allowance	77	253	363	442	328	331	295	149	97	30	236
Statutory sick pay	1	2	3	11	26	23	28	37	34	24	19
Industrial injury disablement benefit	1	16	14	30	20	12	14	22	13	23	16
Sickness, industrial injury benefit	15	12	27	16	18	18	15	10	10	2	14
Widows' benefits	36	56	39	71	38	37	42	35	10	20	38
Statutory maternity pay/ Allowance	4	4	2	9	11	16	19	36	39	42	18
Christmas bonus for pensioners	6	8	8	6	5	4	3	2	1	1	5
<b>Non-contributory</b>											
Income support	370	689	907	826	445	261	175	104	102	46	392
Child benefit	61	154	246	300	272	314	356	348	377	369	280
Housing benefit	543	837	707	543	327	204	120	81	65	88	352
Invalid care allowance	-	-	4	15	26	9	13	11	10	4	9
Attendance allowance	-	22	53	101	79	39	22	13	15	19	36
Mobility allowance	2	31	36	57	43	48	38	37	20	12	32
Disability living allowance	5	14	18	54	50	32	29	27	12	56	30
War pensions	4	10	9	8	46	36	21	5	12	3	15
Severe disablement allowance	23	28	20	34	43	35	12	27	25	7	25
Student maintenance awards	60	32	6	53	32	46	18	51	51	77	43
Government training schemes	15	11	9	19	44	33	19	48	25	18	24
Family credit	2	14	33	61	56	32	16	6	7	-	23
Other non-contributory benefits	18	16	47	34	28	31	6	3	2	34	22
<b>Total cash benefits</b>	<b>3 023</b>	<b>4 137</b>	<b>4 500</b>	<b>4 095</b>	<b>3 119</b>	<b>2 549</b>	<b>1 842</b>	<b>1 569</b>	<b>1 364</b>	<b>1 211</b>	<b>2 741</b>
<b>Gross income</b>	<b>3 855</b>	<b>5 720</b>	<b>7 569</b>	<b>10 089</b>	<b>13 250</b>	<b>16 563</b>	<b>19 978</b>	<b>24 680</b>	<b>31 088</b>	<b>52 129</b>	<b>18 493</b>
<b>Direct taxes and Employees' NIC</b>											
Income tax	202	215	333	728	1 368	2 057	2 605	3 555	4 726	9 704	2 549
less: Tax relief at source <sup>1</sup>	35	32	64	120	190	260	385	431	502	574	259
Employees' NI contributions	25	36	87	228	454	636	895	1 144	1 389	1 803	670
Community charge/Domestic rates (gross)	398	450	530	592	602	852	671	713	774	820	620
<b>Total</b>	<b>589</b>	<b>669</b>	<b>886</b>	<b>1 428</b>	<b>2 233</b>	<b>3 084</b>	<b>3 787</b>	<b>4 981</b>	<b>6 387</b>	<b>11 753</b>	<b>3 580</b>
<b>Disposable income</b>	<b>3 265</b>	<b>5 051</b>	<b>6 683</b>	<b>8 661</b>	<b>11 017</b>	<b>13 479</b>	<b>16 191</b>	<b>19 699</b>	<b>24 701</b>	<b>40 377</b>	<b>14 913</b>
<b>Indirect taxes</b>											
<b>Taxes on final goods and services</b>											
VAT	394	444	570	835	1 052	1 202	1 489	1 685	1 976	2 955	1 260
Duty on tobacco	125	175	226	286	300	296	308	265	281	198	246
Duty on beer and cider	29	34	46	72	95	103	123	132	169	189	99
Duty on wines	6	8	9	18	22	25	33	42	49	99	31
Duty on spirits	22	25	37	53	59	64	68	82	107	125	64
Duty on hydrocarbon oils	52	64	101	149	191	252	289	346	391	448	228
Car tax	2	4	7	11	17	19	42	37	35	68	24
Vehicle excise duty	23	27	45	61	77	94	111	116	137	153	84
Television licences	58	57	64	65	68	70	72	75	75	76	68
Stamp duty on house purchase	4	3	4	6	7	12	14	18	21	36	13
Customs duties	15	17	23	31	36	41	51	57	62	91	42
Betting taxes	14	17	34	30	53	55	56	51	67	58	44
Other	7	8	9	10	10	12	10	13	17	21	12
<b>Intermediate taxes</b>											
Commercial and industrial rates	88	100	123	164	199	226	266	309	357	516	235
Employers' NI contributions	96	109	135	181	220	249	294	343	397	577	260
Duty on hydrocarbon oils	42	48	60	80	94	104	121	141	166	234	109
Vehicle excise duty	8	9	12	16	19	21	24	29	34	48	22
Other	41	46	58	78	95	107	128	147	169	243	111
<b>Total indirect taxes</b>	<b>1 025</b>	<b>1 195</b>	<b>1 563</b>	<b>2 147</b>	<b>2 614</b>	<b>2 950</b>	<b>3 499</b>	<b>3 888</b>	<b>4 513</b>	<b>6 134</b>	<b>2 953</b>
<b>Post-tax income</b>	<b>2 240</b>	<b>3 856</b>	<b>5 121</b>	<b>6 514</b>	<b>8 403</b>	<b>10 529</b>	<b>12 692</b>	<b>15 811</b>	<b>20 189</b>	<b>34 243</b>	<b>11 960</b>
<b>Benefits in kind</b>											
Education	411	445	847	1 086	977	1 200	1 238	1 322	1 497	1 534	1 056
National health service	1 343	1 463	1 549	1 500	1 437	1 374	1 310	1 315	1 324	1 381	1 400
Housing subsidy	79	113	115	96	88	52	36	26	13	5	60
Rail travel subsidy	13	8	14	22	28	22	30	43	64	124	37
Bus travel subsidy	32	43	45	32	30	28	20	24	16	20	29
School meals and welfare milk	12	36	77	65	24	21	16	13	13	5	28
<b>Total</b>	<b>1 890</b>	<b>2 108</b>	<b>2 648</b>	<b>2 800</b>	<b>2 585</b>	<b>2 696</b>	<b>2 649</b>	<b>2 742</b>	<b>2 927</b>	<b>3 070</b>	<b>2 610</b>
<b>Final income</b>	<b>4 130</b>	<b>5 964</b>	<b>7 769</b>	<b>9 315</b>	<b>10 969</b>	<b>13 225</b>	<b>15 341</b>	<b>18 553</b>	<b>23 116</b>	<b>37 312</b>	<b>14 570</b>

1 On mortgage interest and life assurance premiums.

**Cross-tabulation of households ranked by disposable income, unadjusted and equivalised, 1992**

TABLE 10 (Appendix 1)

(i) Quintile groups	Quintile groups of <b>equivalised</b> disposable income					All house- holds
	Bottom	2nd	3rd	4th	Top	
Number of households						
Quintile groups of <b>unadjusted</b> disposable income						
Bottom	915	549	20	-	-	1 484
2nd	496	522	330	135	-	1 483
3rd	71	342	610	294	167	1 484
4th	2	67	454	649	311	1 483
Top	-	3	70	405	1 006	1 484
All households	1 484	1 483	1 484	1 483	1 484	7 418

(ii) Decile groups	Decile groups of <b>equivalised</b> disposable income										All house- holds
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
Number of households											
Decile groups of <b>unadjusted</b> disposable income											
Bottom	375	239	128	-	-	-	-	-	-	-	742
2nd	184	117	222	199	20	-	-	-	-	-	742
3rd	105	223	158	19	154	82	-	-	-	-	741
4th	64	104	100	245	40	54	118	17	-	-	742
5th	11	39	77	103	225	109	5	138	35	-	742
6th	2	19	44	118	98	178	149	2	132	-	742
7th	-	1	9	46	137	133	185	144	12	75	742
8th	1	-	3	9	60	124	150	170	164	60	741
9th	-	-	-	3	8	58	121	188	235	129	742
Top	-	-	-	-	-	4	14	82	164	478	742
All households	742	742	741	742	742	742	742	741	742	742	7 418

### Trends in income distribution, 1977-1992

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This section gives Gini coefficients and shares of income for 1977 to 1992. As was noted in the Introduction, it is not possible to produce a fully consistent time series because of changes in methodology and definition. Many of these changes, like the inclusion of the income from company cars since 1990, improve the quality of the results but previous data cannot be reproduced on the same consistent basis. However, Gini coefficients and shares of income are relatively robust and can be used to shed light on broad trends in income distribution. The Department of Social Security publication, *Households Below Average Income 1979 - 1990/91* (HMSO), contains more detailed data for comparison of incomes over time.

**Percentage shares of total original, gross, disposable and post-tax incomes by quintile groups of households<sup>1</sup>, 1977-1992**

TABLE 1 (Appendix 2)

	1977	1978	1979	1980	1981	1982	1983	1984
<b>Equivalised original income</b>								
Quintile group								
Bottom	3.6	2.8	2.4	2.4	2.9	2.9	3.0	2.9
2nd	10	10	10	9	9	8	8	7
3rd	18	18	18	18	17	17	17	17
4th	26	26	27	26	26	26	26	26
Top	43	43	43	44	46	46	47	47
All households	100	100	100	100	100	100	100	100
<b>Equivalised gross income</b>								
Quintile group								
Bottom	8.9	8.7	8.5	8.3	8.4	8.5	8.5	8.6
2nd	13	13	13	12	12	12	12	12
3rd	18	18	18	18	17	17	17	17
4th	24	23	24	23	23	23	23	23
Top	37	37	37	38	39	39	39	39
All households	100	100	100	100	100	100	100	100
<b>Equivalised disposable income</b>								
Quintile group								
Bottom	9.7	9.8	9.4	9.2	9.3	9.5	9.5	9.6
2nd	14	14	13	13	13	13	13	13
3rd	18	18	18	18	17	17	17	17
4th	23	23	23	23	23	23	23	23
Top	36	35	36	37	38	37	38	37
All households	100	100	100	100	100	100	100	100
<b>Equivalised post-tax income</b>								
Quintile group								
Bottom	9.4	9.7	9.5	9.0	9.0	9.0	8.9	9.1
2nd	14	14	13	13	13	13	13	13
3rd	17	18	18	17	17	17	17	17
4th	23	23	23	23	22	22	22	22
Top	37	36	37	38	39	39	39	38
All households	100	100	100	100	100	100	100	100

<sup>1</sup> Ranked by equivalised disposable income.

**Gini coefficients for the distribution of income at each stage of the tax-benefit system, 1977-1992**

TABLE 2 (Appendix 2)

	1977	1978	1979	1980	1981	1982	1983	1984
<b>Gini coefficients (per cent)</b>								
Equivalised original income	43	43	44	44	46	47	48	49
Equivalised gross income	29	29	30	31	31	31	32	31
Equivalised disposable income	27	26	27	28	28	28	28	28
Equivalised post-tax income	29	28	29	30	31	31	31	30

**Percentage shares of total original, gross, disposable and post-tax incomes by quintile groups of households<sup>1</sup>, 1977-1992**

TABLE 1 (continued) (Appendix 2)

	1985	1986	1987	1988	1989	1990 <sup>2</sup>	1991 <sup>2</sup>	1992 <sup>3</sup>
<b>Equivalised original income</b>								
Quintile group								
Bottom	2.5	2.5	2.1	2.0	2.0	2.0	2.0	2.1
2nd	7	7	7	7	7	7	7	6
3rd	17	16	16	16	16	15	16	15
4th	27	26	25	26	26	25	26	26
Top	47	49	50	50	49	51	50	50
All households	100	100	100	100	100	100	100	100
<b>Equivalised gross income</b>								
Quintile group								
Bottom	8.3	8.0	7.5	7.1	7.1	6.7	6.7	6.9
2nd	12	11	11	11	11	10	10	11
3rd	17	16	16	16	16	16	16	16
4th	24	23	23	23	23	23	23	23
Top	40	41	43	43	42	44	44	43
All households	100	100	100	100	100	100	100	100
<b>Equivalised disposable income</b>								
Quintile group								
Bottom	9.2	8.8	8.2	7.6	7.6	7.0	7.2	7.4
2nd	13	12	12	11	12	11	11	11
3rd	17	17	16	16	17	16	16	16
4th	23	23	23	23	23	23	23	23
Top	38	40	41	42	41	43	42	42
All households	100	100	100	100	100	100	100	100
<b>Equivalised post-tax income</b>								
Quintile group								
Bottom	8.6	8.2	7.6	6.9	6.9	6.3	6.6	6.5
2nd	13	12	12	11	11	10	11	11
3rd	17	16	16	16	16	15	16	16
4th	23	22	22	22	23	23	23	23
Top	39	41	43	44	43	45	44	44
All households	100	100	100	100	100	100	100	100

1 Ranked by equivalised disposable income.

2 Includes Company car benefit.

3 Includes Company car benefit and beneficial house purchase loans from employers.

**Gini coefficients for the distribution of income at each stage of the tax-benefit system, 1977-1992**

TABLE 2 (continued) (Appendix 2)

	1985	1986	1987	1988	1989	1990 <sup>1</sup>	1991 <sup>1</sup>	1992 <sup>2</sup>
<b>Gini coefficients (per cent)</b>								
Equivalised original income	49	50	51	51	50	52	51	52
Equivalised gross income	32	34	36	37	35	38	37	37
Equivalised disposable income	29	31	33	35	34	36	35	34
Equivalised post-tax income	32	35	36	38	37	40	39	38

1 Includes Company car benefit.

2 Includes Company car benefit and beneficial loans for house purchase from employers.



## METHODOLOGY AND DEFINITIONS

### The allocation of government expenditure and its financing

1. There are considerable difficulties in moving from the aggregates of government expenditure and financing published in the United Kingdom National Accounts - the CSO Blue Book - to apportioning taxes and benefits to individual households. We can obtain information about the types of household that receive cash benefits and pay direct taxes through surveys such as the Family Expenditure Survey (FES). From the replies respondents give to questions on their expenditure we can impute their payments of indirect taxes, and from information they supply about such factors as their ages and number of children in the household we can estimate the average costs of providing them with social services, such as health and education. But there are other kinds of financing, such as corporation tax and government receipts from public corporations: no attempt is made in this analysis to apportion them to households because it would be too difficult. Similarly, there are other items of government expenditure, such as capital expenditure and expenditure on defence and on the maintenance of law and order, for which there is no clear conceptual basis for allocation, or for which we do not in any event have sufficient information to make an allocation. In all, 60 per cent of government financing (including the Borrowing Requirement) and 55 per cent of expenditure are allocated to households in this analysis.

### Family Expenditure Survey (FES)

2. The estimates in this article are based mainly on data derived from the FES. The FES is an annual survey of the expenditure and income of private households. People living in hotels, lodging houses, and in institutions such as old peoples' homes are excluded. Each person aged 16 and over keeps a full record of payments made during 14 consecutive days and answers questions about hire purchase and other payments. The respondents also give detailed information, where appropriate, about income (including cash benefits received from the state) and payments of income tax. Information on age, occupation, education received, family composition and housing tenure is also obtained. The survey covers the whole 12 month period.

3. One of the main purposes of the FES is to produce information on household expenditure patterns which is used to derive the weights for the index of retail prices. The survey is conducted by the Office of Population Censuses and Surveys on behalf of the Central Statistical Office who analyse and report on it (prior to July 1989, the FES was the responsibility of the Department of Employment). The Family Expenditure Survey Report for 1992, containing detailed data on household characteristics, income, and expenditure, was published in September 1993. Details of the survey method are set out in 'The Family Expenditure Survey Handbook' by W F F Kemsley, R U Redpath and M Holmes. Both are published by Her Majesty's Stationery Office.

4. The number of households in the United Kingdom responding to the FES in 1992 was 7.418 (about 1 in every 3,000 households). The response rate in Great Britain was 72 per cent; the FES in Northern Ireland is done as a separate exercise to the rest of UK, with a larger sampling fraction, and only a proportion of these cases go into the UK analysis. To count as a co-operating household, all members

aged 16 and over must fill in the diaries for both weeks and give full details of income etc. The available evidence suggest that older households, households where the head is self-employed, those without children and higher income households, are less likely to co-operate than others (see 'Family Expenditure Survey: a second study of differential response, comparing Census characteristics of FES respondents and non-respondents' by Bob Redpath, Statistical News No 72 February 1986 HMSO). In addition response in Greater London is noticeably lower than in other areas. However, at present, the results in this article are based on the responses of those households which actually co-operated in the survey and they are not reweighted. This means that some of the figures differ from those produced by other surveys such as the Survey of Personal Incomes from the Inland Revenue.

5. The FES is designed primarily as a survey of expenditure on goods and services by households. It has been developed to gather information about the income of household members, and is an important and detailed source of income data. However, no information is collected that would enable a balance sheet of income and expenditure be drawn up for a household over any particular period. Much expenditure relates to the two-week period after the interview, whereas many income components refer to a much longer period (eg investment income over the previous 12 months). FES income does not include proceeds from the sale of assets (eg a car) or windfalls such as legacies. But recorded expenditure might reflect these items, as well as the effects of living off savings, using capital or borrowing money. Hence, there is no reason why income and expenditure should balance either for an individual household or even averaged over a group of households. Indeed, measured expenditure substantially exceeds measured income for the bottom decile groups of households. Moreover, the difference between income and expenditure is not necessarily a measure of savings or dis-savings.

### Unit of analysis

6. The basic unit of analysis in the article is the household, and not the family, individual or benefit unit. A household is defined in the FES as comprising people who live at the same address and who share common catering for at least one meal a day. Spending on many items, particularly on food, housing, fuel and light, is largely joint spending by the members of the household. Without further information or assumptions it is difficult to apportion indirect taxes between individuals or other sub-divisions of households.

7. In classifying the households into various types, a **child** (ie a dependant) is defined as:

either aged under 16

or aged 16, 17 or 18 not married, and receiving full-time non-advanced further education.

{The definition used in the pre-1987 articles was a person aged under 16}.

Most of the 'extra' adults in households with at least three adults are sons or daughters of the head of household rather than retired people.

8. A **retired household** is defined as one where the combined income of retired members amounts to at least half the total gross

income of the household, where a retired person is defined as anyone who describes themselves as 'retired' or anyone over minimum NI pension age describing themselves as 'unoccupied' or 'sick or injured but not intending to seek work'.

9. By no means all retired people are in retired households: about one in five households comprising three or more adults contain retired people, for example, and households comprising one retired and one non-retired adult are often classified as non-retired.

10. The sample households have been classified according to their compositions at the time of the interview. This classification is sensible for the vast majority of households, but it can be misleading for the very small number of cases (35 in 1992) where a spouse is absent from the household at the time of interview. The absent spouse may well be working away from home (eg on an oil rig), or living separately - but contributing financially to the household's upkeep. These contributions would be picked up as part of the household's original income. Also, it is likely that some households will have changed their composition during the year.

11. Economically active people comprise persons aged 16 or over who, at the time of interview, were:

- (a) employees at work,
- (b) employees temporarily away from work through illness, temporary lay-off, industrial action etc.
- (c) on government training schemes.
- (d) self-employed,
- (e) not in employment but who had sought work within the last four weeks, or were waiting to start a job already obtained.

### Income: redistributive stages

12. Stage one:

Original income plus cash benefits = Gross income.

Stage two:

Gross income minus income tax, employees' National Insurance contributions and community charge / domestic rates = Disposable income.

Stage three:

Disposable income minus indirect taxes = Post-tax income.

Stage four:

Post-tax income plus 'benefits in kind' = Final income.

13. The starting point of the analysis is **original income**. This is the annual income in cash of all members of the household before the deduction of taxes or the addition of any state benefits. It includes income from employment, self-employment, investment income, occupational pensions and annuities. Employment income is based on the last payment received before the interview or, where different, the amount usually received. Allowance is made for any periods of absence from work through sickness and unemployment in the preceding 12 months, and for bonuses. Income from self-employment is recorded in the FES for a past period. This is brought up to current levels using the average earnings index. Income from interest, dividends and rent is taken as the amount received in the 12 months before the interview. Income from occupational pensions is based on the last payment received.

14. About 99 per cent of original income comes from earnings, occupational pensions (including annuities) and investment income. The tiny bit remaining comes from a variety of sources: trade union benefits, income of children under 16, private scholarships, earnings as a mail order agent or baby-sitter, regular allowance from a non-

spouse, allowance from an absent spouse and the imputed value of rent-free accommodation. Households living in rent-free dwellings are each assigned an imputed income. This is counted as employment income if the tenancy depends on the job.

15. In addition to salary, many employees receive as part of their income fringe benefits such as company cars, private medical insurance and beneficial loans. Until recently, these benefits were not allocated to individual households as the information was not available in the FES. However, the company car benefit has been included in the analysis since 1990. This is by far the most important fringe benefit accounting for over two thirds of all taxable fringe benefits according to Inland Revenue statistics. The benefit is taken to be the taxable income in accordance with Inland Revenue scale charges. Inland Revenue Statistics 1993 (HMSO) contains more detailed information on taxable fringe benefits and their impact on individuals. Although for those earning below £8,500 per year the benefit is not taxable, benefit has been allocated to all those with a company car regardless of the level of earnings. The calculation of this benefit is based primarily on the engine size as reported in the FES. In any given year the total amount of benefit will depend on the level of scale charges for tax purposes as well as the numbers and engine sizes of vehicles in the FES.

16. In the 1992 analysis, the benefit of subsidised loans from employers for house purchase has been allocated. The benefit is taken to be the difference between the interest payments on such loans as reported in the FES and the interest payments that would have been payable at the ruling market rate of interest.

17. The next stage of the analysis is to add cash benefits to original income to obtain gross income. Cash benefits include:

Contributory:

Retirement pension and Christmas bonus, unemployment benefits, sickness and industrial injury benefit, statutory sick pay, invalidity pension and allowance, industrial injury disablement benefits, widows' benefits, and statutory maternity pay.

Non-contributory:

Income support, child benefit, housing benefit, attendance allowance, mobility allowance, war pensions, disability living allowance, disability working allowance, severe disablement allowance, family credit, old persons pension, government training scheme allowances (YTS etc), student maintenance awards, maternity grant.

18. Statutory Sick Pay and Statutory Maternity Pay are classified as cash benefits even though they are paid through the employer.

19. Income from short-term benefits is taken as the product of the last weekly payment and the number of weeks the benefit was received in the 12 months prior to interview. Income from long-term benefits, and from housing benefit, is based on current rates.

20. Income tax, community charge/domestic rates and employees' and self-employed contributions to National Insurance and National Health services are then deducted to give **disposable income**. Taxes on capital, such as capital gains tax and inheritance tax, are not included in these deductions because there is no clear conceptual basis for doing so, and the relevant data is not available from the FES.

21. The figures for community charge/domestic rates include charges made by water authorities for water, environmental and

sewerage services. Local taxes are shown in full with any rebates given in housing benefit.

[In pre-1987 articles, domestic rates were included in the 'indirect' tax category. Since then, they have been deducted in the derivation of disposable income in anticipation of their replacement by the community charge. The National Accounts system, which strongly influences this article, shows the community charge as a deduction before disposable income is produced.]

22. The tax estimates are based on the amount deducted from the last payments of employment income and pensions, and on the amount paid in the last 12 months in respect of income from self-employment, interest, dividends and rent. The income tax payments recorded will therefore take account of a household's tax allowances, with the exception of tax relief obtained in this way 'at source'. In 1992 there were two types of tax relief obtained in this way: mortgage interest relief and life assurance premium relief. Where households are eligible for these reliefs imputations are made and deducted from recorded income tax payments. In the case of mortgage interest relief obtained through the MIRAS scheme, which was introduced in April 1983, these imputations are based on the interest component of the latest mortgage repayment.

23. The next step is to deduct indirect taxes to give **post-tax income**. Indirect tax on final consumer goods and services include:

- Duties on beer, wines, spirits, tobacco, oil, betting, etc
- Value Added Tax (VAT)
- Customs (import) duties
- Car tax (abolished in November 1992)
- Motor vehicle duties
- Driving licenses
- Stamp duties
- Gas levy

24. Taxes levied on final goods and services are assumed to be fully incident on the consumer, and can be imputed from a household's FES expenditure record. For example, the amount of VAT which is paid by the household is calculated from the household's total expenditure on goods and services subject to VAT.

25. VAT and car tax affect the prices of secondhand cars and are therefore assumed to be incident on the purchasers of such cars as well as on the purchasers of new cars. In allocating taxes, expenditures recorded in the FES on alcoholic drink, tobacco, ice cream, soft drinks and confectionery are grossed up to allow for the known under-recording of these items in the sample. The true expenditure in each case is assumed to be proportional to the recorded expenditure. This approach has its drawbacks because there is some evidence to suggest that heavy drinkers, for example, are not picked up by the FES.

26. The incidence of stamp duty on house purchase on an owner-occupying household has been taken as the product of the hypothetical duty payable on buying their current dwelling (estimated from valuations given in the FES) and the probability of a household of that type moving in a given year (estimated from the General Household Survey). For most of 1992 stamp duty was levied only on house purchases above £250,000.

27. Indirect taxes on intermediate goods and services include:

- Rates on commercial and industrial property
- Motor vehicle duties
- Duties on hydrocarbon oils

- Employers' contributions to National Insurance, the National Health Service, the industrial injuries fund and the redundancy payments scheme
- Customs (import) duties
- Stamp duties
- VAT

28. These are taxes that fall on goods and services purchased by industry. Only the elements attributable to the production of subsequent goods and services for final consumption by the UK personal sector are allocated in the article, being assumed to be fully shifted to the consumer. Their allocations between different categories of consumers' expenditure are based on the relation between intermediate production and final consumption using estimated input-output techniques. This process is not an exact science, and many assumptions have to be made. Some analyses, eg that by Dilnot, Kay and Keen 'Allocating Taxes to Households: A Methodology', suggest that the taxes could be progressive rather than regressive if one were to use different incidence assumptions.

29. In discussing the incidence of indirect taxes, we have used the terms 'progressive' and 'regressive' to mean taking an increasing or decreasing proportion of income as income rises. The degree to which a tax is progressive or regressive is strongly affected by the definition of income which the tax is compared with. For example, if indirect taxes were to be compared with gross income (rather than disposable income as in this article), they would appear much more regressive than shown in Table G of this article.

30. For Table G of the main article, we have constructed a measure of expenditure on goods and services which is similar to that used in the Consumers' Expenditure part of the National Accounts. Savings, investments, superannuation contributions and mortgage payments are excluded as well as rates/community charge payments. The expenditures on alcohol, tobacco and confectionery have been grossed up to correspond to the grossed-up indirect tax amounts described in paragraph 25 above.

31. Finally, we add those notional benefits in kind provided to households by government for which there is a reasonable basis for allocation to households, to obtain final income. The benefits in kind allocated are:

- State education
- School meals and welfare milk
- National Health service
- Housing subsidy
- Railway travel subsidy
- Bus travel subsidy (including concessionary fares schemes)

32. Education benefit is estimated by the Department of Education and Science as the cost per pupil or student in special schools, primary and secondary schools, universities, and other further education establishments. The value of the benefits attributed to a household depends on the number of people in the household recorded in the FES as receiving each kind of state education (students away from the household are excluded). No benefit is allocated for pupils attending private schools.

33. The value of school meals and other welfare foods is based on their costs to the public authorities. Any payment by the individual household is subtracted to arrive at a net contribution.

34. Data are available on the average cost to the Exchequer of providing the various types of health care - hospital inpatient/outpatient care, GP consultations, dental services, etc. Each individual

in the FES is allocated a benefit from the National Health Service according to the estimated average use made of these various types of health service by people of the same age and sex, and according to the total cost of providing those services. The benefit from maternity services is assigned separately to those households containing children under the age of 12 months. No allowance is made for the use of private health care services.

35. In this article public sector tenants are defined to include the tenants of local authorities, New Town Corporations, the Scottish Special Housing Association (SSHA), Northern Ireland Housing Executive (NIHE) and housing associations. The total housing subsidy includes the contribution from central government to the housing revenue accounts of local authorities and grants paid to the New Town Corporations, the SSHA, the NIHE and housing associations. Within Greater London, the rest of England, Wales, Scotland and Northern Ireland each public sector tenant has been allocated a share of the region's total relevant subsidy based on the size of the dwelling. Housing subsidy does not include mortgage interest tax relief, rent rebates and allowances or community charge/rate rebates included in housing benefit.

36. The rail travel subsidies allocated are those to British Rail passenger operations and the London Underground. The subsidy to London and South East services is allocated to households living in the area and subsidies to provincial services to households living outside the South East, in proportion to households' expenditure on rail fares as recorded in the FES. In making these allocations allowances are made for the use of rail travel by the business sector, tourists and the institutional part of the personal sector.

37. In this article, bus travel subsidy covers both the cost of concessionary travel schemes for senior citizens and others, and subsidies to operators. Separate allocations are made for Greater London, the other metropolitan areas and the rest of the United Kingdom. The subsidy is divided between households according to recorded expenditure on bus travel and the types of concessionary passes held.

38. We must emphasise that the analysis in this article provides only a very rough guide to the kinds of household which benefit from government expenditure, and by how much, and to those which finance it. Apart from the fact that large parts of expenditure and receipts are not allocated, the criteria used both to allocate taxes and to value and apportion benefits to individual households could be regarded as too simplistic. For example, the lack of data forces us to assume that the incidence of direct taxes falls on the individual from whose income the tax is deducted. This implies that the benefit of tax relief for mortgage interest, for example, accrues directly to the taxpayer rather than to some other party, for instance, the vendor of the land. It also implies that the working population is not able to pass the cost of the direct tax back to employers through lower profits, or to consumers through higher prices. And, in allocating indirect taxes we assume that the part of the tax falling on consumers' expenditure is borne by the households which buy the item or the service taxed, whereas in reality the incidence of the tax is spread by pricing policies and probably falls in varying proportions on the producers of a good or service, on their employees, on the buyer, and on the producers and consumers of other goods and services. Another example is that we know only an estimate of the total financial cost of providing benefits such as education, and so we have to treat that cost as if it measured the benefit which accrues to recipients of the service. In fact, the value the recipients themselves place on the service may be very different to the cost of providing it: moreover, there may be households in the community, other than the immediate beneficiaries, who receive a benefit indirectly from the general provision of the service.

## Equivalence scale

39. The equivalence scale used in this analysis is the McClements scale (before housing costs are deducted). The scales (separate ones for before and after housing costs) were developed by Dr L D McClements at the Department of Health and Social Security (DHSS) in the mid-seventies, based on expenditure data from the 1971 and 1972 FES. They are based on the assumption that it is possible to estimate equivalence scales from people's spending behaviour as recorded in the FES without making any specific assumption about the criteria for equivalence. These scales are in regular use and recent analysis by Banks and Johnson ('Children and Household Living Standards') suggests that the scales are as valid now as when they were developed. The scales are regarded as plausible and they are well within the range of equivalence scales developed at different times in a number of countries. Hence their use is fully justified for broad statistical standardisation.

40. The equivalence values are given below:

Type of household member	Equivalence value
<b>a. married head of household</b>	
(ie a married couple of 2 adults)	1.00
1st additional adult	0.42
2nd (or more) additional adult	0.36 (per adult)
<b>b. single head of household</b>	
(ie 1 adult)	0.61
1st additional adult	0.46
2nd additional adult	0.42
3rd (or more) additional adult	0.36 (per adult)
<b>c. Child aged:</b>	
16-18	0.36
13-15	0.27
11-12	0.25
8-10	0.23
5-7	0.21
2-4	0.18
Under 2	0.09

The values for each household member are added together to give the total equivalence number for that household. This number is then divided into the disposable income for that household to give **equivalised disposable income**. For example, a household has a married couple with 2 children (aged 6 and 9) plus one adult lodger. The household's equivalence number is  $1.0 + 0.21 + 0.23 + 0.42 = 1.86$ . The household's disposable income is £20,000, and so its equivalised disposable income is £10,753 ( $=£20,000/1.86$ ).

40. This quantity is used to produce the single ranking used in all the tables in this article (apart from the Gini coefficients which have to be ranked afresh for each different definition of income). [In pre-1987 articles, three types of ranking were used: the main one was using original income but gross income and disposable income were also used. In addition, the tables showing income shares were re-ranked for each separate income measure]. It is important to note that most monetary values shown in the article are ordinary (ie un-equivalised) £ a year, not equivalised £ a year. Where equivalised £ a year do appear (eg the quintile points in Table 3 of Appendix 1), they are shown in italics.

Diagram A

**Complete income equality**

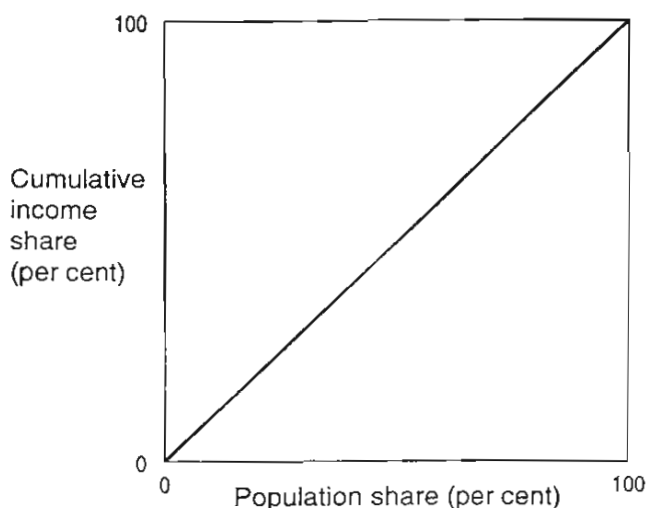
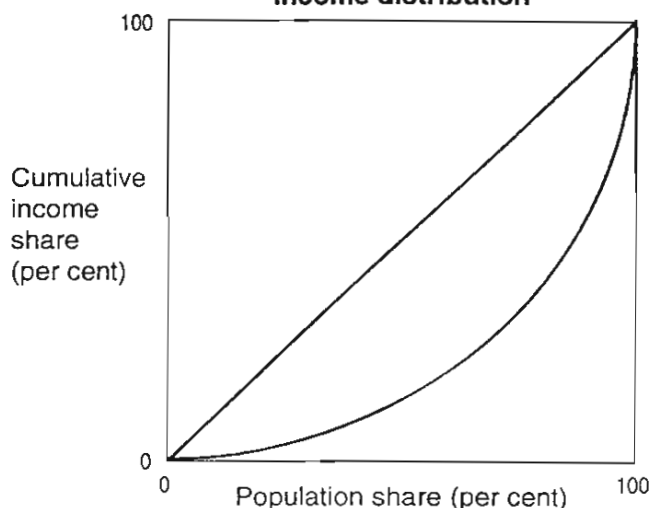


Diagram B

**Lorenz curve for a typical income distribution**



**Gini coefficient**

42. The Gini coefficient is the most widely used summary measure of the degree of inequality in an income distribution. It can more easily be understood by considering a Lorenz curve of the income distribution, (see Diagram B) ie a graph of the cumulative income share against the cumulative share of households. The curve representing complete equality of income is thus a diagonal line while complete inequality (with only one recipient of income) is represented by a curve comprising the horizontal axis and the right-hand vertical axis (see Diagram A). The area between the Lorenz curve and the diagonal line of complete equality, as a proportion of the triangular area between the curves of complete equality and inequality, gives the value of the Gini coefficient. Thus a distribution of perfectly equal incomes has a Gini coefficient of zero; as inequality increases (and the Lorenz curve bellies out), so does the Gini coefficient until, with complete inequality, it reaches its maximum value of 1 (or 100 per cent).

43. To calculate the Gini coefficient for an income distribution, the first step is to rank that distribution in ascending order. All the Gini coefficients shown in this article are based on distributions of equalised income eg the coefficient for original income is calculated after dividing the original income for all the households by their appropriate equivalence values.  
[In pre-1987 articles, no such equalisation was used.]

44. Strictly speaking, one could argue that the equivalence scales used here are only applicable to disposable income because this is the only income measure relating directly to spending power. Since the scales are often applied, in practice, to other income measures, we are content to use them to equalise original, gross and post-tax income for the purpose of producing Gini coefficients (and in the tables giving percentage shares of total income). However, we do not think it is appropriate to equalise the final income measure because this contains notional income from benefits in kind (eg state education): the equivalence scales used in this article are based on actual household spending and do not, therefore, apply to such items as notional income.

**Sampling errors and reliability**

45. As the FES is a sample survey, data from it will differ in varying degrees from those of all households in the UK. The degree of difference will depend on how widely particular categories of income and expenditure vary between households. This 'sampling error' is smallest in relation to, say, the average expenditure of large groups of households on items purchased frequently (when spending does not vary greatly between households). Conversely, it is largest for small groups of households, and for items or services purchased infrequently (for which expenditure varies considerably between households). A broad numerical measure of the amount of variability is provided by the quantity known as the standard error.

46. It is difficult to calculate these standard errors exactly because of the multi-stage design of the FES, but we have made a good approximation by combining the simple random formula with the appropriate design factor from the FES analysis. [The design factor is the ratio of the standard error using the detailed formula that takes account of the full complexity of the sample design to the standard error using the simple random sample formula.] The most appropriate design factor from the FES work is for 'gross normal weekly household income'. The standard error of the mean for N households in Table 1 is given by:

$$(\text{design factor}) * S/\sqrt{N}$$

where the design factor is 1.31 for 1992, and  $S^2$  is the estimate of the population variance.

This simple formula is applicable to a complete group of households, but for quintile or decile groups a more complex formula is required (see paragraph 48).

47. The standard errors can be used to give an idea of the reliability of a mean by quoting a confidence interval of the form:

$$\text{estimate of mean} \pm (1.96 * \text{standard error})$$

where the factor 1.96 corresponds to the 95% confidence interval.

For example: the mean disposable income for all households is £14,913 (see Table 3 in Appendix 1), and its standard error is £182 (from Table 1 below). So the confidence interval for the population value is £14,624 ± £357 ie about (£14,560 to £15,270). It is very likely that the mean disposable income for the whole population (ie all UK private households) will lie in this range.

48. The standard errors for the household types are larger than for the whole sample, mainly because the sample sizes concerned are smaller. For quantile groups of given household types, the sample sizes are of course smaller still, which would tend to increase sampling variability. On the other hand, the income values are by definition in a narrower range which would tend to reduce the sampling error. Precise estimates of standard errors for averages for quantile groups are complicated to produce. As well as the variability of the observations between the quantile points, we should also take account of the randomness which exists because the sample quantile points are themselves subject to random variation. We have used a formula for the asymptotic variance of a 'randomly trimmed' mean. This formula gives a good approximation where the total sample size is around 1,000 (when the variance is under-estimated by about 2 per cent on average), and a reasonable approximation for samples of 100-500 (when the variance is under-estimated by about 5 per cent on average). The formula for the variance of a mean (x) calculated between two sample percentiles, Q<sub>1</sub> and Q<sub>2</sub>, corresponding to proportions p<sub>1</sub> and p<sub>2</sub> is:

$$\frac{S^2 + p_1(x - Q_1)^2 + (1 - p_1)(Q_2 - x)^2 + \frac{p_1(1 - p_1)}{(p_2 - p_1)}(Q_2 - Q_1)^2}{n(p_2 - p_1)}$$

where S<sup>2</sup>= variance calculated from observations between Q<sub>1</sub> and Q<sub>2</sub>, and n = total sample size.

The square root of this quantity is then multiplied by the design factor (as described in paragraph 46) to give the standard errors shown in the tables for quintile and decile groups.

49. The 'complex' standard errors for quintile and decile groups are quite a bit larger than the simple random sample estimates, as shown below:

Ratio of 'complex' standard error to simple random sample estimate for equivalised disposable income, 1992

Decile group	
Bottom	1.77
2nd	4.81
3rd	5.94
4th	6.63
5th	6.92
6th	6.97
7th	6.49
8th	6.00
9th	4.79
Top	1.55
All	1.31

For the 'all households' group the ratio merely reflects the fact that the simple random sample figure is multiplied by the design factor (1.31 in 1992) to produce the 'complex' standard error. The quoted standard errors for the middle decile groups are about seven times higher than the simple random sample estimates.

50. Another aspect of sampling errors and reliability is the variation from year to year. Table 2 gives the standard error of the mean (expressed as a percentage of the mean) for disposable income for the years from 1977 to 1992. The two groups with consistently high proportionate standard errors are one adult with children, and two adults with 3 or more children. Relatively small groups like these are more likely to be strongly influenced by unusually large income and expenditure values.

If the change between years were to be considered, then it is the standard error of the *difference* between years that is relevant. This is about 1.4 times the size of the standard error for a particular year (assuming the two standard errors are about the same) - because the variance of a difference between years equals the sum of the variances for those individual years.

51. We have produced estimates for the standard errors of **shares of total income** (shown in Table 1, Appendix 2). These standard errors have been calculated using the formula for the variance of a ratio, and the results are given in Table 3 below.

For example, the top quintile group accounted for 42 per cent of total equivalised disposable income; the standard error of this estimate is 0.15 per cent, and the 95% confidence interval for the true value is (41.4, 42.0) per cent.

As the formula involves an approximation, the figures shown in Table 3 are likely to be under-estimates of the true position.

### Previous articles

52. This article is the latest in an annual series. Earlier articles covering the years 1957 to 1986 (using the old methodology) were published in the following issues of *Economic Trends*:

November 1962, February 1964, August 1966, February 1968, 1969, 1970, 1971, 1972, November 1972 and 1973, December 1974, February 1976, December 1976, February 1978, January 1979, 1980, 1981 and 1982, December 1982, November 1983, December 1984, December 1985, July 1986, November 1986, July 1987 and December 1988.

53. The results for 1987 (the first year of using the new methodology) were published in the May 1991 edition of *Economic Trends*, the 1988 results appeared in the March 1991 edition, the 1989 results in the January 1992 edition, the 1990 results in the January 1993 edition and the 1991 results in the May 1993 edition. The latest six articles use a very different methodology from the earlier years, and hence are completely incompatible.

54. The results in all articles are intended to be free standing: they were not designed for direct comparison with other years except where some limited comparisons were made in the articles. Such comparisons are fraught with difficulty because of changes in definitions eg housing benefit in 1983. However, some broader measures like the Gini coefficients are relatively robust and will stand comparison with other years: this year's article gives such a comparison for the years 1977-1992. Enquiries should be addressed to Dave Westcott, Social Regional Statistics and Household Expenditure Branch, Central Statistical Office, Room 1941, Millbank Tower, Millbank, London SW1P 4QQ.

## Standard errors of the mean, 1992

TABLE 1 (Appendix 3)

	Standard error of the mean of the five income measures (£ per year)						
	Number in sample	Original income	Gross income	Disposable income		Post-tax income	Final income
				Unadjusted	Equivalised		
<b>Household type/ Quantile group</b>							
All households	7 418	258	240	182	158	161	169
Non-retired	5 453	313	297	224	199	201	210
Retired	1 965	219	215	166	181	147	154
Non-retired without children	3 089	386	370	280	282	250	256
Non-retired with children	2 364	516	484	362	259	329	339
<b>Decile groups<sup>1</sup> of all households</b>							
Bottom	742	197	201	154	80	158	318
2nd	742	539	480	411	63	322	753
3rd	741	1 015	856	661	75	505	994
4th	742	1 421	1 107	863	111	701	1 134
5th	742	1 630	1 369	1 069	132	867	1 356
6th	742	2 041	1 877	1 267	147	1 071	1 511
7th	742	1 836	1 699	1 303	174	1 102	1 466
8th	741	2 014	1 939	1 489	213	1 268	1 629
9th	742	1 777	1 747	1 341	282	1 201	1 470
Top	742	1 480	1 478	1 111	946	1 021	1 069
<b>Household type</b>							
1 adult retired	1 033	224	215	158	259	150	151
2 or more adults retired	932	373	344	264	251	238	244
1 adult non-retired	958	527	498	367	601	308	305
2 adults non-retired	1 541	553	526	393	387	364	364
3 or more adults non-retired	590	906	830	652	414	603	627
1 adult with children	383	556	478	362	391	307	350
2 adults and 1 child	555	1 187	1 144	865	718	817	818
2 adults and 2 children	798	896	858	632	437	579	581
2 adults with 3 or more children	341	1 269	1 170	876	506	794	827
3 or more adults with children	287	1 241	1 119	864	431	777	840

1 Households ranked by equivalised disposable income.



**Standard errors for unadjusted disposable income expressed as a percentage of the mean, 1977 to 1992**

TABLE 2 (Appendix 3)

	Number in sample (1992)	Standard error for mean unadjusted disposable income expressed as a percentage of the mean (%)								
		1977	1979	1981	1983	1985	1987	1989	1991	1992
<b>Household type</b>										
All households	7 418	1.0	1.0	1.2	1.1	1.2	1.2	1.2	1.4	1.2
Non-retired	5 453	1.0	1.0	1.2	1.1	1.2	1.2	1.2	1.5	1.3
Retired	1 965	2.0	1.9	2.0	2.0	2.2	2.7	2.2	2.5	2.1
1 adult retired	1 033	2.0	2.0	2.1	2.1	2.0	4.0	2.8	2.5	2.8
2 or more adults retired	932	2.5	2.3	2.4	2.6	2.9	3.3	2.7	3.3	2.5
1 adult non-retired	958	3.1	3.2	3.9	3.4	3.3	4.0	3.0	3.5	3.5
2 adults non-retired	1 541	2.0	1.6	2.9	2.4	2.0	2.0	2.1	3.5	2.1
3 or more adults non-retired	590	2.0	2.3	2.1	2.4	2.5	3.1	2.3	3.0	2.9
1 adult with children	383	5.3	5.9	13.0	4.9	4.6	4.4	5.8	4.2	4.4
2 adults with 1 child	555	2.4	2.4	2.7	2.6	3.0	3.0	3.2	3.3	4.4
2 adults with 2 children	798	2.0	2.2	1.9	2.3	2.6	3.1	3.2	2.8	3.1
2 adults with 3 or more children	341	3.2	3.1	3.9	3.7	5.7	5.0	4.9	4.7	4.6
3 or more adults with children	287	2.2	2.3	2.8	2.5	3.1	3.2	3.0	4.7	3.9



## Standard errors for shares of total income, 1992

TABLE 3 (Appendix 3)

	Share of total income, r ( as % )	Standard error of r ( as % )	95 % confidence interval for ( as % )
<b>Equivalised original income</b>			
Quintile group <sup>1</sup>			
Bottom	2.1	0.04	(2.01,2.18)
2nd	6	0.15	( 6.0, 6.6 )
3rd	15	0.31	(14.8,16.0)
4th	26	0.43	(24.9,26.5)
Top	50	0.90	(48.7,52.2)
All households	100		
<b>Equivalised gross income</b>			
Quintile group <sup>1</sup>			
Bottom	6.9	0.06	(6.76,7.00)
2nd	11	0.08	(10.5,10.8)
3rd	16	0.22	(15.6,16.4)
4th	23	0.29	(22.6,23.8)
Top	43	0.16	(43.0,43.6)
All households	100		
<b>Equivalised disposable income</b>			
Quintile group <sup>1</sup>			
Bottom	7.4	0.06	(7.32,7.57)
2nd	11	0.08	(11.3,11.6)
3rd	16	0.18	(16.0,16.7)
4th	23	0.27	(22.5,23.6)
Top	42	0.15	(41.4,42.0)
All households	100		
<b>Equivalised post-tax income</b>			
Quintile group <sup>1</sup>			
Bottom	6.5	0.03	(6.48,6.58)
2nd	11	0.11	(10.9,11.3)
3rd	16	0.21	(15.3,16.2)
4th	23	0.31	(22.3,23.5)
Top	44	0.17	(43.4,44.1)
All households	100		

1 Ranked by equivalised disposable income.

