

THE EFFECTS OF TAXES AND BENEFITS ON HOUSEHOLD INCOME, 1991

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 20% of households is increased from 2.0% of original income to 6.6% of post-tax income by taxes and benefits.
- The average original income of the top fifth of households is 24 times the average of the bottom fifth, the average final income of the top fifth of households is 4 times the average of the bottom fifth.
- Cash benefits contribute most to reducing income inequality.
- The impact of taxes and benefits is greatest for retired households and non-retired households with no economically active members.
- 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 1991, the government raised and spent £228 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 two thirds of government revenue and half of government spending in 1991 can be allocated to households (see Table 1, 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 income. 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. 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 2).

The article aims to present the most meaningful figures for 1991. The figures cannot be easily compared with earlier articles in this series because the FES changes in some details each year.

For example, the benefit of company cars has been included as part of original income in the 1990 and 1991 articles. This means that the analysis treats company car benefits consistently across income and taxation. Previous years' results cannot easily be reworked on a similar basis as the data were not collected in the FES.

Review

The effects of taxes and benefits on household income

The CSO is reviewing all aspects of this article. As a result, changes may be made to the format and content of the article and to the underlying methodology. The aim of the review is to produce an article which is more informative, more accessible and better meets the readers' needs.

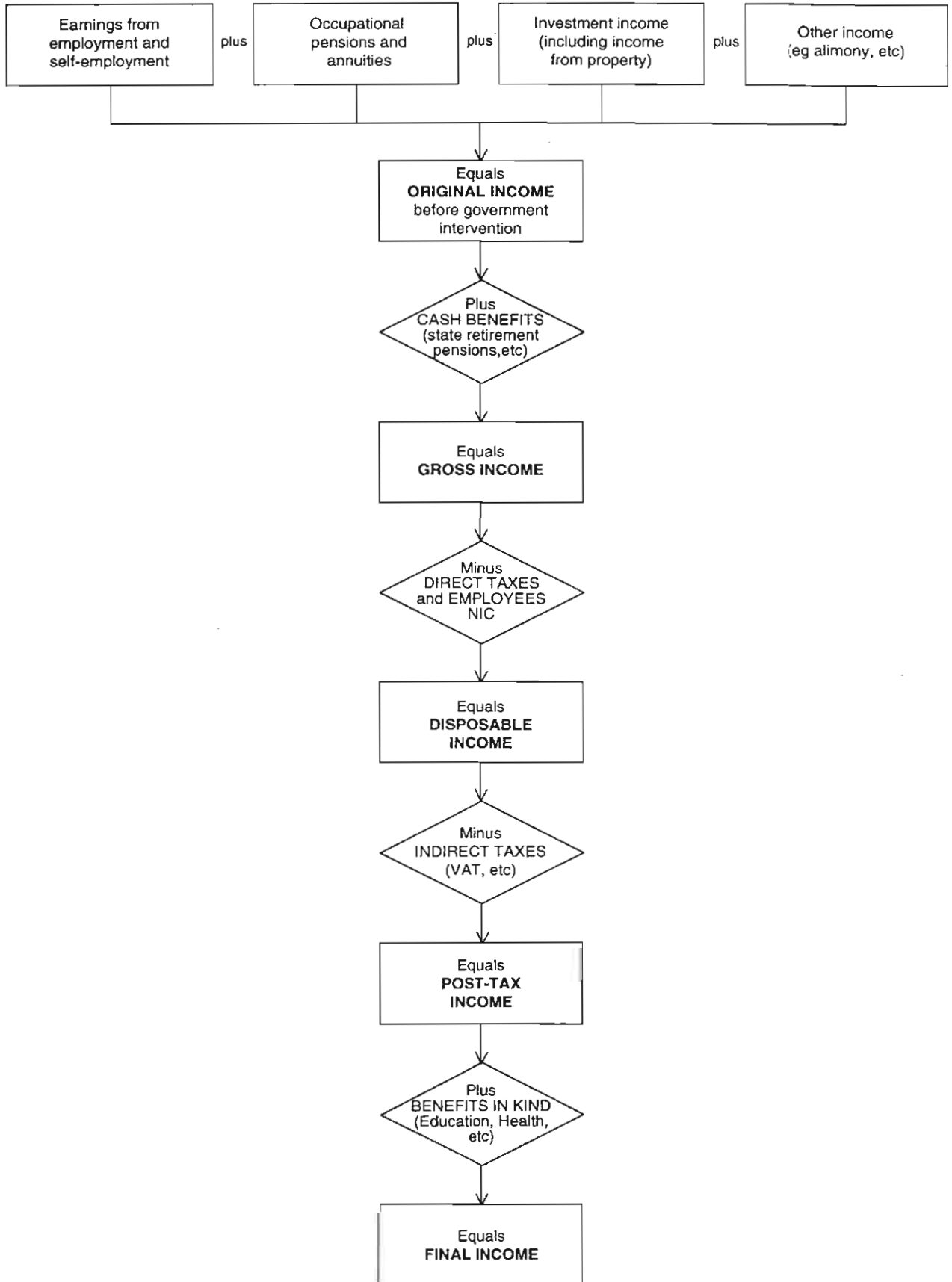
It would be most helpful if we could identify readers of the article and assess the uses made of the analysis. Please contact us at the address below. We would welcome your views on the current article and on any changes you would like to see.

Please contact:

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CHART 1

Stages of redistribution



Summary of the effects of taxes and benefits by quintile groups of unadjusted disposable income, 1991

TABLE A

	Quintile groups of households ranked by UNADJUSTED disposable income					All households
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)¹						
Original income	1 040	4 620	12 270	20 480	40 450	15 770
plus cash benefits	3 290	3 880	2 260	1 510	1 040	2 400
Gross income	4 330	8 490	14 530	22 000	41 490	18 170
less direct taxes ² and employees' NIC	550	1 220	2 670	4 350	8 940	3 540
Disposable income	3 780	7 270	11 870	17 650	32 550	14 620
less indirect taxes	940	1 790	2 700	3 610	5 240	2 860
Post-tax income	2 850	5 480	9 170	14 040	27 310	11 770
plus benefits in kind	1 730	2 340	2 400	2 580	2 580	2 330
Final income	4 570	7 820	11 560	16 620	29 890	14 090
Average per household (number)						
Children ³	0.2	0.5	0.7	0.8	0.7	0.6
Adults	1.2	1.6	1.9	2.2	2.4	1.9
Persons	1.4	2.1	2.6	3.0	3.1	2.4
People in full-time education	0.1	0.4	0.5	0.6	0.6	0.5
Economically active people	0.2	0.6	1.2	1.7	2.1	1.2
Retired people	0.7	0.7	0.4	0.2	0.2	0.4
Composition (Percentages)						
Household type						
Retired	64	43	17	7	4	27
Non-retired						
1 adult	20	15	17	8	3	13
2 adults	5	15	26	29	32	21
1 adult with children ⁴	7	9	3	1	-	4
2 adults with children	4	14	28	36	31	23
3 or more adults ⁵	1	3	10	19	29	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.

RESULTS FOR ALL HOUSEHOLDS

Unequalised Results

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 3.1 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 Appendix 3.

Equivalisation

Using household income for comparing the welfare among households does not allow for differences in household composition and thus need. 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. 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). Equivalisation results in larger households moving down the income distribution and smaller ones moving up. Fuller details of the derivation of equivalised scales are given in Appendix 2. Equivalisation has been used in the ranking process in this series of articles since 1987.

Summary of the effects of taxes and benefits by quintile groups of equivalised disposable income, 1991

TABLE B

	Quintile groups of households ranked by EQUIVALISED disposable income					All households
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)¹						
Original income	1 570	5 650	13 310	21 100	37 220	15 770
plus cash benefits	3 890	3 520	2 320	1 370	890	2 400
Gross income	5 460	9 170	15 630	22 470	38 110	18 170
less direct taxes ² and employees' NIC	740	1 350	2 800	4 510	8 320	3 540
Disposable income	4 730	7 820	12 830	17 960	29 790	14 620
less indirect taxes	1 320	1 870	2 920	3 690	4 470	2 860
Post-tax income	3 410	5 940	9 900	14 270	25 320	11 770
plus benefits in kind	2 820	2 500	2 600	2 110	1 600	2 330
Final income	6 230	8 450	12 500	16 380	26 910	14 090
Average per household (number)						
Children ³	0.6	0.6	0.7	0.5	0.4	0.6
Adults	1.6	1.7	2.0	2.1	1.9	1.9
Persons	2.2	2.3	2.7	2.6	2.3	2.4
People in full-time education	0.5	0.5	0.6	0.4	0.3	0.5
Economically active people	0.4	0.7	1.4	1.7	1.6	1.2
Retired people	0.7	0.7	0.4	0.3	0.2	0.4
Composition (Percentages)						
Household type						
Retired	51	43	21	13	8	27
Non-retired						
1 adult	11	10	9	14	20	13
2 adults	7	11	20	27	41	21
1 adult with children ⁴	10	6	3	1	1	4
2 adults with children	15	21	31	26	20	23
3 or more adults ⁵	6	10	16	19	11	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.

Equivalised results

The level of original income varies widely between households. Table B shows this and other income measures for quintile groups ranked by equivalised disposable income. In the lowest quintile group the average number of economically active people is 0.4 and hence the average original income is low (£1,570 per annum). In the highest quintile group, there are an average of 1.6 economically active people and average original income is £37,220. In the lowest quintile group, half 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 2 illustrates the declining importance of cash benefits in gross income as income rises.

Chart 3 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 £6,230 to £26,910, a ratio of about 1:4 compared with the ratio for original incomes of about 1:24.

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 equivalised disposable income) receive 50 per cent of all original income. After taking into account cash benefits, this same group's share falls to 44 per cent. At the other end of the scale, the share of the lowest quintile group rises from 2.0 per cent to 6.7 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. This table is calculated using equivalised incomes, and hence 'final income' has not been included. The McClements equivalence scales, which were estimated using household spending patterns, are arguably inappropriate for equivalising non-spendable amounts of income eg benefits from education.

CHART 2

Sources of gross income, by quintile groups of equivalised disposable income, 1991

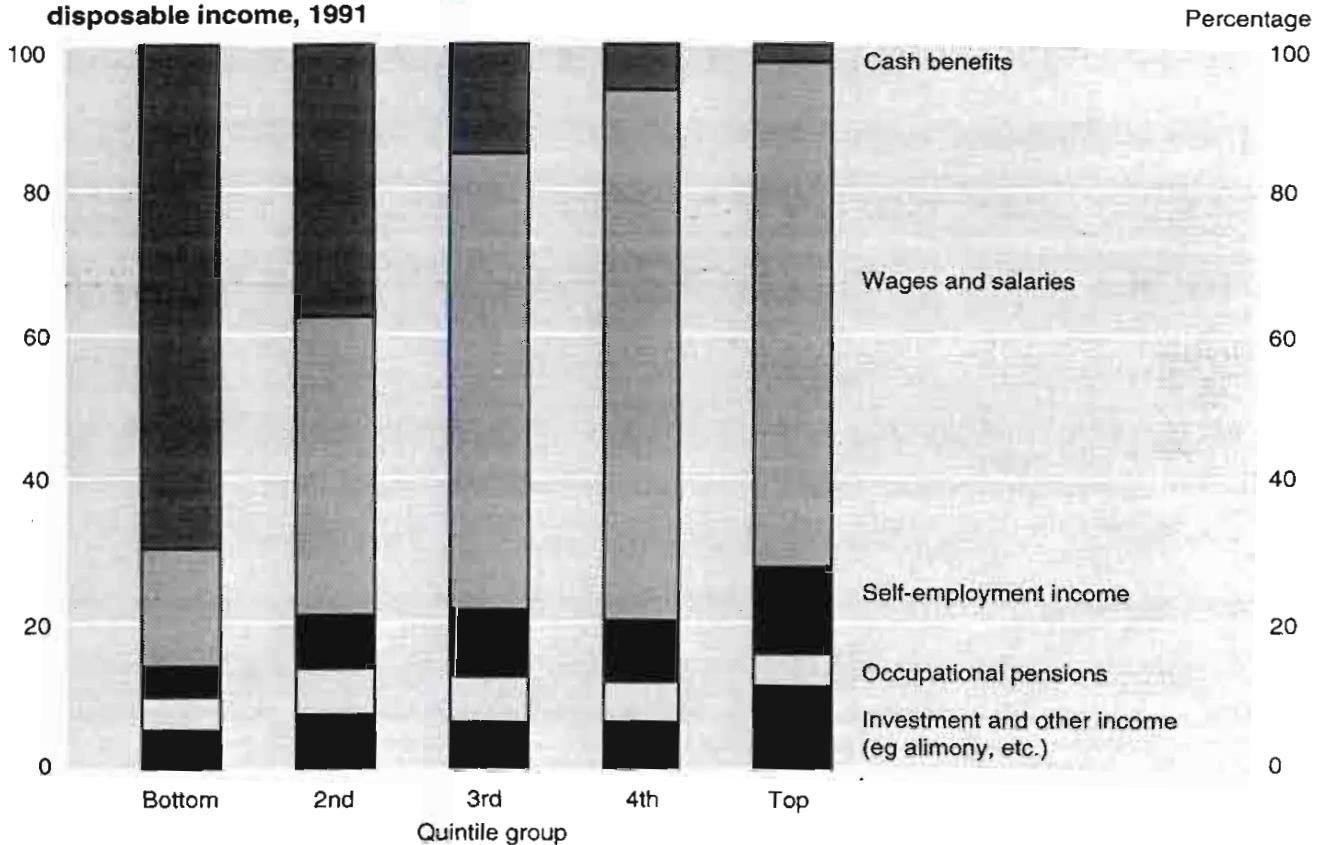
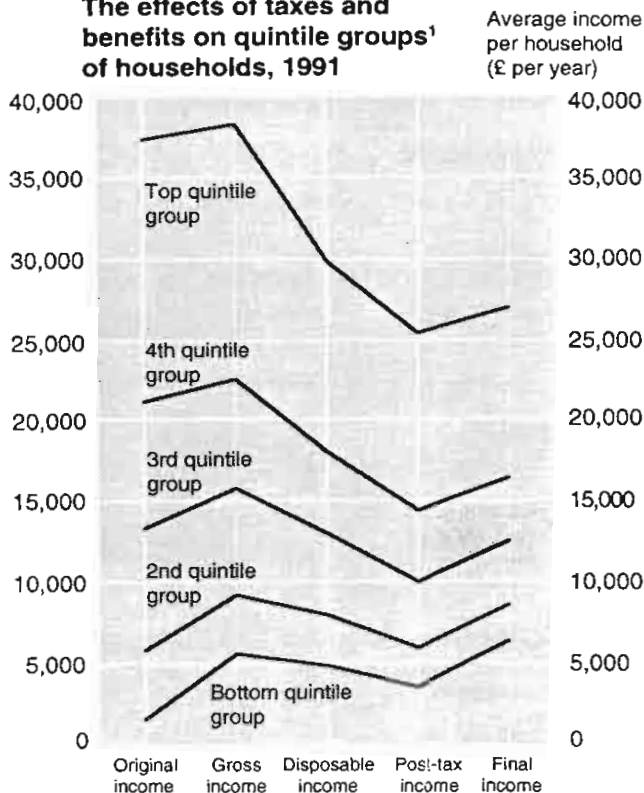


CHART 3

The effects of taxes and benefits on quintile groups of households, 1991



Percentage shares of total household income and Gini coefficients¹, 1991

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	2.0	6.7	7.2	6.6
2nd	7	10	11	11
3rd	16	16	16	16
4th	26	23	23	23
Top	50	44	42	44
All households	100	100	100	100
Decile group				
Bottom	0.7	2.8	3.0	2.5
Top	32	27	26	28
Gini coefficient (percent)	51	37	35	39

¹ 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 equalising the original income of all the households, then this distribution is ranked and this ranked distribution is used to calculate the coefficient.

¹ Households are ranked throughout by their equivalised disposable incomes

Summary of the effects of taxes and benefits on NON-RETIRED households, 1991

TABLE D

	Quintile groups of NON-RETIRED households ranked by equivalised disposable income					All non- retired house- holds
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
Original income	3 590	12 060	18 330	24 800	40 930	19 940
plus cash benefits	3 730	2 140	1 400	870	610	1 750
Gross income	7 320	14 200	19 730	25 670	41 530	21 690
less direct taxes ¹ & employees' NIC	1 070	2 520	3 870	5 300	9 130	4 380
Disposable income	6 250	11 680	15 860	20 380	32 400	17 310
less indirect taxes	1 830	2 860	3 480	4 060	4 640	3 370
Post-tax income	4 430	8 830	12 370	16 320	27 760	13 940
plus benefits in kind	3 450	3 030	2 460	2 010	1 500	2 490
Final income	7 880	11 860	14 830	18 320	29 260	16 430
Average per household (number)						
Children ²	1.2	1.0	0.8	0.6	0.4	0.8
Adults	1.8	2.1	2.1	2.1	1.9	2.0
Persons	2.9	3.1	2.9	2.6	2.3	2.8
People in full-time education	0.9	0.8	0.6	0.4	0.3	0.6
Economically active people	0.9	1.5	1.8	1.9	1.7	1.6
Retired people	0.1	0.2	0.1	0.1	0.0	0.1

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

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

The Gini coefficient is the most widely used summary measure of the inequality of the distribution of income (see Appendix 2, paragraph 41). It takes values between 0 and 100 per cent - the higher values indicating greater inequality. Gini coefficients are calculated using equivalised incomes (using the same equivalence scale that is applied to equalise disposable income). The fall from 51 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 half 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 £3,590 per annum in the lowest quintile group to £40,930 in the highest (Table D), a ratio of 1:11 compared to the ratio of 1:24 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 and Table K (at the end of this section) gives a breakdown by the number of economically active people per household.

Cash benefits

Cash benefits are of two types: contributory (paid from the National

Average value of cash benefits for each quintile group of NON-RETIRED households, 1991

TABLE E

	Quintile groups of NON-RETIRED households ranked by equivalised disposable income					All non- retired house- holds
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
Contributory						
Retirement pension	130	400	330	200	170	250
Sickness/injury related	370	290	190	110	60	200
Unemployment benefit	70	60	50	10	20	40
Other	70	90	80	70	80	80
Total contributory	650	830	660	400	320	570
Non-contributory						
Income support	1 360	280	120	70	40	370
Child benefit	500	410	320	230	160	320
Housing benefit	780	210	80	30	20	220
Sickness/ disablement related	190	240	130	70	30	130
Other	270	180	110	60	30	130
Total non-contributory	3 090	1 310	740	470	280	1 180
Total cash benefits	3 730	2 140	1 400	870	610	1 750
Cash benefits as a percentage of gross income						
	51	15	7	3	1	8

**Income tax, employees' NIC and domestic rates/
Community charge as percentages of gross
income for each quintile group of NON-RETIRED
households, 1991**

TABLE F

	Quintile groups of NON-RETIRED households ranked by equivalised disposable income					All non-retired households
	Bottom	2nd	3rd	4th	Top	
Percentages						
Income tax ¹	4.5	8.7	11.5	13.2	16.7	13.1
Employees NIC	2.3	4.2	4.7	4.8	3.7	4.1
Gross domestic rates/ Community charge	7.8	4.8	3.5	2.7	1.6	3.0
Total	14.6	17.7	19.6	20.6	22.0	20.2

¹ After tax relief at source on mortgage interest and life assurance premiums.

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 8 per cent of the gross income of non-retired households: their payment resulted in a significant reduction in income inequality.

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 £390 of weekly earnings (the ceiling in operation during most of 1991), 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).

Indirect taxes as a percentage of (a) disposable income and (b) expenditure on goods and services for each quintile group of NON-RETIRED households, 1991

TABLE G

	Quintile groups of NON-RETIRED households ranked by equivalised disposable income					All non-retired households
	Bottom	2nd	3rd	4th	Top	
(a) Percentages of disposable income						
VAT	10.2	9.3	9.0	8.5	6.5	8.1
Duty on beer and cider	1.0	1.0	0.9	0.7	0.4	0.7
Duty on wines and spirits	0.5	0.7	0.6	0.7	0.6	0.6
Duty on tobacco	5.6	3.0	2.0	1.5	0.6	1.8
Duty on hydrocarbon oils.	1.9	1.9	1.7	1.6	1.0	1.5
Car tax and vehicle excise duty	1.0	1.1	1.1	1.1	0.7	0.9
Other taxes on final goods and services	2.0	1.6	1.3	1.1	0.8	1.2
Intermediate taxes	7.1	5.8	5.2	4.7	3.7	4.7
Total indirect taxes	29.2	24.5	22.0	19.9	14.3	19.5
(b) Percentages of expenditure on goods and services¹						
VAT	7.6	8.3	8.7	9.1	8.9	8.7
Duty on beer and cider	0.7	0.9	0.8	0.7	0.6	0.7
Duty on wines and spirits	0.4	0.6	0.6	0.7	0.8	0.7
Duty on tobacco	4.2	2.6	2.0	1.6	0.8	1.9
Duty on hydrocarbon oils	1.4	1.7	1.7	1.7	1.4	1.6
Car tax and vehicle excise duty	0.7	1.0	1.1	1.2	0.9	1.0
Other taxes on final goods and services	1.5	1.5	1.3	1.2	1.1	1.3
Intermediate taxes	5.3	5.2	5.1	5.0	5.0	5.1
Total indirect taxes	21.9	21.7	21.3	21.3	19.6	20.9

¹ Excludes savings, investments, superannuation contributions, and mortgage payments but includes imputed rent of owner occupiers (see paragraph 28 of Appendix 2 for the full definition of expenditure).

In 1991 over one-third of working age individuals had insufficient income to pay income tax, and marginal tax rates for taxpayers were 25 per cent or 40 per cent. The analysis shows average rates were 4.5 per cent in the lowest quintile, rising steadily to 16.7 per cent in the top quintile. As the quintile groups are based on (after tax) equivalised disposable income, even the lowest quintile contains individuals who are liable for income tax.

Community charge and 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 treated as cash benefits. Thus, Table F may overstate the regressive impact of local taxation at the lower end of the income distribution.

Indirect taxes

The estimates of households' payments of indirect taxes are derived from figures for their expenditure recorded in the FES. Because the data on expenditure and incomes in the FES are compiled in different ways, they may not be fully compatible (see Appendix 2, paragraph 5).

In total, indirect taxes expressed as a proportion of disposable income fall as disposable income rises (upper part of Table G), ranging from 29 per cent in the bottom quintile group to 14 per cent in the highest, though the highest quintile pay most in indirect taxes in absolute terms. However, individual taxes have different effects.

VAT, tobacco duty, beer duty and intermediate taxes (see box below) 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. For expenditure items relating to motoring (ie vehicle excise duty, car tax and duty on hydrocarbon oils), the tax as a proportion of income is similar for the bottom four quintile groups but much lower for the top group.

INTERMEDIATE TAXES

Some indirect taxes, such as VAT and excise duties on petrol, alcohol, tobacco, etc have a direct effect on the final price of goods and services. However, the producers of these goods and services also incur costs such as employers' National Insurance contributions, non-domestic rates, and duty on hydrocarbon oils, part of which they may pass on to households in the price of their products. These are called intermediate taxes.

The incidence assumptions used for these taxes are more difficult and contentious than those used for other taxes, so the figures must be regarded as very rough estimates.

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.

Table G also shows estimates of indirect tax payments expressed as a percentage of expenditure (in the lower part of the table). Indirect taxes in total form a virtually constant proportion of expenditure on goods and services over all income groups. However, VAT payments actually rise as a proportion of expenditure as income goes up. This is largely due to the effects of zero-rating some items such as food and domestic fuel and power, which make up a higher proportion of the spending of the lower income groups. The apparent paradox of indirect taxes being regressive against disposable income

but neutral against expenditure can be explained, at least in part, as follows: as income rises, there is a tendency for an increasing proportion of disposable income not to be spent on goods and services but to be channelled 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 1991. Other items for which imputations are made are school meals and welfare milk, the housing subsidy and travel subsidies, together accounting for a further 1.6 per cent of general government expenditure.

Average value of benefits in kind for each quintile group of NON-RETIRED households, 1991

TABLE H

	Quintile groups of NON-RETIRED households ranked by equivalised disposable income					All non-retired households
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
Education	1 980	1 650	1 190	910	540	1 250
National health service	1 150	1 230	1 160	1 000	850	1 080
Housing subsidy ¹	170	70	40	20	10	60
Travel subsidies	30	40	50	60	90	60
School meals and welfare milk	110	30	20	10	10	40
Total	3 450	3 030	2 460	2 010	1 500	2 490
Benefits in kind as a percentage of post-tax income						
	78	34	20	12	5	18

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

Education benefit is attributed to individual households on the basis of the number of people in the household receiving each kind of state education and the cost of providing it (see Appendix 2, paragraph 31). 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 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 to each individual from the state health service is estimated according to the average use made of various types of health service by people of the same age and sex and according to the

Percentage shares of total household income and Gini coefficients¹ for NON-RETIRED households, 1991

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	3.2	6.6	7.1	6.2
2nd	11	12	12	11
3rd	17	17	17	16
4th	24	23	23	23
Top	45	42	41	43
All non-retired households	100	100	100	100
Decile group				
Bottom	0.9	2.6	2.8	2.3
Top	28	26	25	28
Gini coefficient (percent)	43	35	34	38

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.

cost of providing the service. The benefit to a household is the aggregate of the benefits to the individuals within it (see Appendix 2, paragraph 33). 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 total housing subsidy is the sum of the contributions from central and local government to the housing revenue account (see Appendix 2, paragraph 34). The housing subsidy 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 subsidy is highest. In these articles, tax relief on mortgage interest is treated as an adjustment to income tax, not as part of the housing subsidy analysed in Table H.

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 78 per cent in the lowest quintile group to 5 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) original income, compared with 3.2 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 7.1 per

Average incomes, taxes and benefits by the number of economically active people per NON-RETIRED household, 1991

TABLE K

	Number of economically active people ¹ per household				All non-retired households
	None	One	Two	Three or more	
<i>Number of households in the sample</i>	<i>466</i>	<i>1 983</i>	<i>2 158</i>	<i>541</i>	<i>5 148</i>
Average per household (£ per year)					
Original income	1 770	14 860	25 210	33 190	19 940
plus cash benefits	5 130	1 940	1 020	1 050	1 750
Gross income	6 910	16 810	26 230	34 240	21 690
less direct taxes ² & employees' NIC	530	3 390	5 430	7 120	4 380
Disposable income	6 380	13 420	20 800	27 120	17 310
less indirect taxes	1 510	2 630	3 850	5 800	3 370
Post-tax income	4 870	10 790	16 950	21 320	13 940
plus benefits in kind	3 280	2 140	2 490	3 090	2 490
Final income	8 160	12 920	19 440	24 400	16 430
Gini coefficients (percent)					
Equivalised original income	87	45	34	24	43
Equivalised gross income	27	37	32	23	35
Equivalised disposable income	27	35	30	22	34
Equivalised post-tax income	33	40	35	26	38

¹ Economically active people comprise employees, the self employed and others not in employment but who are seeking or intending, when able, to seek work.

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.

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 43 per cent based on original income to 35 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.

Economic activity

As already mentioned, the size of original income is largely determined by the number of economically active people in the household - even though someone may be defined as economically active if they have been out of work for up to a year as long as they are seeking work. This relationship between income and economic activity amongst non-retired households is explored further in Table K, in which households are classified according to the number of economically active people they contain.

Original income ranges from an average of £1,770 per annum in households where there are no economically active people to an average of £33,190 for households where there are three or more. Cash benefits are concentrated in households where no-one is economically active and here they form 74 per cent of gross income; but they remain important, at 12 per cent of gross income, for those where one household member is economically active. This latter group will contain a number of households where no-one is currently in work.

Not only does average original income differ widely between the four households groups in Table K, but there is also a considerable difference in the degree of variation of income within the groups. As measured by the Gini coefficient, variability in original income is

very high amongst households where no-one is economically active but where two or more persons are economically active the variability is considerably less. Equally, the tax-benefit system has the effect of substantially reducing inequality between the different types of households within the economically inactive group. This results largely from the diverse nature of the economically inactive group, which ranges from single parents with young children, single full-time students, the disabled, and households where no member has been able to find work during the 12 months prior to interview, to a small number of households where income from other sources such as investments means that they have no need to work.

RESULTS FOR RETIRED HOUSEHOLDS

Retired households have quite distinct income and expenditure patterns and so the tax-benefit system affects them in a different way from non-retired households (Table L). 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 are paid from the National Insurance Fund into which the recipients will have made contributions throughout their working lives.

People over pensionable age do not pay National Insurance contributions so the small payments recorded are made by non-retired people living in households defined as retired (see Appendix 2

Summary of the effects of taxes and benefits on RETIRED households, 1991

TABLE L

	Quintile groups of RETIRED households ranked by equalised disposable income					All retired households
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
Original income	600	780	1 630	4 110	15 440	4 510
plus cash benefits	3 480	4 390	4 380	4 610	3 830	4 140
Gross income	4 090	5 170	6 010	8 730	19 270	8 660
less direct taxes ¹ & employees' NIC	590	540	630	1 020	3 690	1 290
Disposable income	3 500	4 630	5 380	7 710	15 580	7 360
less indirect taxes	960	920	1 050	1 630	2 710	1 460
Post-tax income	2 540	3 710	4 330	6 080	12 870	5 910
plus benefits in kind	1 940	2 010	1 920	1 800	1 740	1 880
Final income	4 480	5 710	6 250	7 880	14 620	7 790
Average per household (number)						
Children ²	-	-	-	-	-	-
Adults	1.4	1.4	1.4	1.5	1.6	1.5
Persons	1.4	1.4	1.4	1.5	1.6	1.5
People in full-time education	-	-	-	-	-	-
Economically active people	-	-	-	0.1	0.1	0.1
Retired people	1.4	1.4	1.3	1.4	1.4	1.4

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

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

Percentage shares of total household income and Gini coefficients¹ for RETIRED households, 1991

TABLE M

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	2.7	9.9	10.0	9.1
2nd	4	12	13	13
3rd	8	15	16	16
4th	19	20	21	21
Top	67	43	40	42
All retired households	100	100	100	100
Decile group				
Bottom	1.1	4.5	4.4	3.7
Top	47	28	26	27
Gini coefficient (percent)	68	32	30	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.

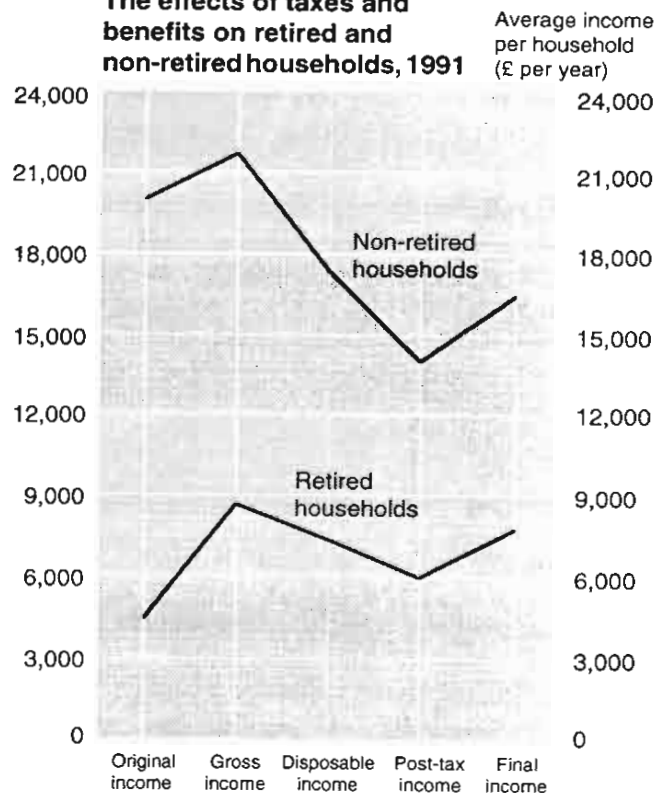
paragraph 8 for details of definition). All households except those in the highest quintile group of retired households pay very little income tax, because their income is unlikely to exceed their tax allowances unless they have significant income from investments or occupational pensions in addition 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, as a result primarily of the attribution method used, 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 M 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.

CHART 4

The effects of taxes and benefits on retired and non-retired households, 1991



A comparison of Table M 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 4 illustrates the different impact which the tax-benefits system has on retired and non-retired households.

General government expenditure in 1991

TABLE 1 (Appendix 1)

	£ million	Percentage of total expenditure
Allocated expenditure¹		
Allocated cash benefits		
Contributory (National Insurance, etc)		
Retirement	25 390	11.2
Widows and guardians	850	0.4
Unemployment	1 450	0.6
Sickness/ Statutory sick pay	1 060	0.5
Invalidity	5 070	2.2
Maternity/ Statutory maternity pay	390	0.2
Disablement	130	0.1
Other	370	0.2
Non-contributory		
Family benefits	6 030	2.7
Income Support	11 160	4.9
War pensions	790	0.3
Other	4 890	2.1
Student maintenance grants ²	950	0.4
Rent rebates and allowances	5 510	2.4
Allocated benefits in kind		
Health services	29 080	12.8
Education	26 330	11.6
School meals and welfare milk	670	0.3
Housing subsidy	1 670	0.7
Travel subsidies ³	1 400	0.6
	<u>123 180</u>	<u>54.1</u>
Unallocated expenditure		
Other current expenditure	73 520	32.3
Capital expenditure	9 840	4.3
Debt interest	17 100	7.5
Non-trading capital consumption	3 890	1.7
Total expenditure	<u>227 530</u>	<u>100.0</u>

¹ Including benefits to people not living in private households. It is not possible (for the reasons given in Appendix 2, paragraph 1) to allocate all of Government expenditure to households.

² Estimated.

³ Including concessionary fares expenditure.

Source: United Kingdom National Accounts, 1992 edition, Table 9.4

Financing of general government expenditure in 1991

TABLE 2 (Appendix 1)

	£ million	Percentage of total financing
Allocated financing¹		
Income tax ²	56 320	24.8
Employees' and self-employed NI contributions	15 280	6.7
Community charge	8 160	3.6
Domestic rates (net of rebates)	750	0.3
Taxes on final goods and services		
VAT	26 230	11.5
Duty on beer and cider	2 250	1.0
Duty on wines and spirits	2 330	1.0
Duty on tobacco	5 910	2.6
Duty on hydrocarbon oils	4 930	2.2
Car tax and vehicle excise duty	2 630	1.2
Other	2 840	1.2
Taxes and NI contributions on intermediate goods and services		
Employers' NI contributions	7 010	3.1
Commercial and industrial rates	6 240	2.7
Duty on hydrocarbon oils	2 850	1.3
VAT	2 060	0.9
Vehicle excise duty	590	0.3
Other	620	0.3
	<u>147 010</u>	<u>64.6</u>
Unallocated financing		
Employers' NI contributions not allocated	14 350	6.3
Taxes on expenditure not allocated	22 800	10.0
Other taxes		
Corporation tax	18 770	8.2
Petroleum revenue tax	-110	0.0
Taxes on capital	3 300	1.5
Other receipts ³	18 980	8.3
Non-trading capital consumption	3 890	1.7
General government borrowing requirement	<u>-1 460</u>	<u>-0.6</u>
Total financing	<u>227 530</u>	<u>100.0</u>

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, 1992 edition, Table 9.1

Average incomes, taxes and benefits by decile groups of ALL households, 1991

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	
Average per household (£ per year)											
Decile points (<i>equivalised</i> £)	5 121	6 276	7 492	9 109	10 966	12 966	15 413	18 814	24 338		
Number of households in the sample	706	705	706	705	706	706	705	706	705	706	7 056
Original income											
Earnings of main earner	739	1 259	2 345	5 396	7 537	10 228	11 970	14 829	17 720	30 259	10 229
Other earnings	58	126	283	938	1 984	2 902	4 366	5 748	6 641	8 644	3 169
Occupational pensions, annuities	121	270	467	680	927	1 051	1 159	1 217	1 393	1 715	900
Investment income	174	195	315	533	657	833	1 070	1 264	1 921	5 333	1 230
Other income	70	130	124	228	284	211	267	316	274	525	243
Total	1 163	1 980	3 535	7 776	11 388	15 224	18 832	23 373	27 949	46 475	15 770
Direct benefits in cash											
Contributory											
Retirement pension	1 274	1 966	1 717	1 389	1 076	812	729	467	404	383	1 022
Unemployment benefit	68	25	25	46	38	51	27	11	21	10	32
Invalidity pension and allowance	146	192	300	236	201	175	116	98	50	13	153
Statutory sick pay	2	3	14	15	41	28	33	29	37	17	22
Industrial injury disablement benefit	3	5	12	44	25	36	15	4	0	1	14
Sickness, industrial injury benefit	31	14	15	15	17	6	18	5	24	8	15
Widows' benefits	38	56	75	46	81	63	51	29	34	42	51
Statutory Maternity Pay/ Allowance	1	4	6	6	18	24	20	26	25	57	19
Miscellaneous contributory benefits	6	9	8	6	5	4	3	2	2	2	5
Non-contributory											
Income support	988	669	515	287	178	137	71	68	83	17	301
Child benefit	298	229	201	290	294	288	228	208	161	154	235
Housing benefit	534	727	681	296	157	85	59	31	29	20	262
Invalid care allowance	2	7	11	27	36	24	4	13	-	-	13
Attendance allowance	14	31	74	97	101	61	35	27	18	4	46
Mobility allowance	10	19	32	72	83	53	31	8	20	2	33
War pensions	-	3	9	18	9	35	14	13	24	2	13
Severe disablement allowance	43	68	110	78	112	39	33	36	29	-	55
Student maintenance awards	44	54	63	38	84	60	64	21	20	19	47
Government training schemes	48	33	30	35	33	22	21	15	3	0	24
Family credit	38	48	22	31	13	4	6	2	1	-	16
Other non-contributory benefits	16	15	16	25	30	1	30	18	34	12	20
Total cash benefits	3 606	4 176	3 938	3 098	2 631	2 009	1 608	1 131	1 018	763	2 398
Gross income	4 770	6 156	7 472	10 874	14 020	17 233	20 440	24 504	28 967	47 238	18 168
Direct taxes and Employees' NIC											
Income tax	163	209	377	928	1 440	2 170	2 862	3 723	4 873	9 094	2 584
less: Tax relief at source ¹	50	44	69	161	235	319	408	496	619	749	315
Employees' NI contributions	43	72	142	335	512	709	877	1 107	1 265	1 449	651
Domestic rates/Community charge(gross)	543	533	535	619	659	664	673	683	660	669	624
Total	700	771	985	1 722	2 376	3 224	4 005	5 018	6 180	10 463	3 545
Disposable income	4 070	5 385	6 487	9 152	11 643	14 009	16 435	19 486	22 787	36 775	14 624
Equivalised disposable income	4 044	5 710	6 853	8 280	10 015	11 975	14 118	17 027	21 245	35 689	13 496
(Standard error)	70	59	77	113	136	147	171	213	275	1 394	188
Indirect taxes											
Taxes on final goods and services											
VAT	468	432	535	837	1 063	1 242	1 474	1 625	1 807	2 257	1 174
Duty on tobacco	213	211	235	272	293	293	279	293	229	170	249
Duty on beer and cider	38	43	49	74	100	106	131	140	126	139	95
Duty on wines	6	5	8	14	18	25	30	40	49	109	31
Duty on spirits	21	26	32	55	62	72	85	95	94	109	65
Duty on hydrocarbon oils	90	75	85	163	208	248	274	301	316	316	207
Car tax	8	5	9	28	28	50	71	96	89	91	48
Vehicle excise duty	41	32	40	79	97	112	117	136	128	125	91
Television licences	54	56	55	63	65	66	67	68	68	68	63
Stamp duty on house purchase	8	6	7	16	21	26	30	37	50	69	27
Customs duties	21	18	21	32	38	44	50	54	61	64	40
Betting taxes	25	23	41	43	56	57	44	48	40	41	42
Other	7	8	9	12	12	14	13	15	14	17	12
Intermediate taxes											
Commercial and industrial rates	118	109	123	179	219	247	277	301	336	417	233
Employers' NI contributions	128	118	135	194	240	270	303	327	368	457	254
Duty on hydrocarbon oils	55	51	59	79	96	107	120	127	142	177	101
Vehicle excise duty	10	9	11	15	19	21	24	25	28	36	20
Other	56	50	58	83	100	112	125	135	149	180	105
Total indirect taxes	1 366	1 276	1 513	2 237	2 735	3 112	3 514	3 862	4 095	4 843	2 855
Post-tax income	2 704	4 109	4 975	6 914	8 909	10 897	12 920	15 624	18 692	31 931	11 768
Benefits in kind											
Education	1 245	935	754	1 037	1 317	1 061	931	853	639	475	925
National health service	1 405	1 553	1 444	1 379	1 325	1 241	1 173	1 069	941	933	1 247
Housing subsidy	116	156	153	80	68	42	40	16	14	5	69
Rail travel subsidy	8	11	16	13	20	23	35	44	55	79	30
Bus travel subsidy	31	44	40	31	29	25	22	19	20	16	28
School meals and welfare milk	90	49	29	26	22	19	11	10	10	7	27
Total	2 896	2 748	2 436	2 567	2 781	2 411	2 212	2 012	1 680	1 516	2 326
Final income	5 600	6 857	7 410	9 482	11 690	13 308	15 132	17 636	20 372	33 447	14 094

¹ On mortgage interest and life assurance premiums.

Average incomes, taxes and benefits by decile groups of NON-RETIRED households, 1991

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	
Average per household (£ per year)											
Decile points (<i>equivalised £</i>)	5 515	7 459	9 255	11 041	12 823	14 748	17 364	20 705	26 348		
Number of households in the sample	515	515	514	515	515	515	515	514	515	515	5 148
Original income											
Earnings of main earner	1 454	4 330	8 149	10 040	12 217	13 928	15 438	17 905	21 210	34 806	13 948
Other earnings	140	496	1 434	2 685	3 442	4 814	6 340	6 585	7 631	9 842	4 341
Occupational pensions, annuities	55	87	169	329	356	370	402	509	621	656	355
Investment income	97	164	300	400	427	575	706	1 080	1 503	4 708	996
Other income	146	217	308	296	248	281	316	325	206	667	301
Total	1 892	5 293	10 361	13 749	16 690	19 969	23 203	26 406	31 171	50 680	19 942
Direct benefits in cash											
Contributory											
Retirement pension	44	220	395	400	332	337	198	212	179	162	248
Unemployment benefit	101	47	60	52	61	40	14	15	22	9	42
Incapacity pension and allowance	243	390	219	187	138	101	79	55	19	18	145
Statutory sick pay	4	20	24	54	36	39	33	37	38	14	30
Industrial injury disablement benefit	3	5	31	16	31	16	3	5	0	2	11
Sickness, industrial injury benefit	42	35	21	19	7	18	5	9	13	11	18
Widows' benefits	49	69	67	77	60	44	35	40	27	42	51
Maternity/ Statutory maternity pay	4	11	8	25	26	30	20	42	22	69	26
Miscellaneous contributory benefits	1	3	2	2	2	2	1	1	1	1	2
Non-contributory											
Income support	1 666	1 044	377	179	141	91	51	92	72	10	372
Child benefit	527	465	442	376	355	278	247	211	160	156	322
Housing benefit	840	711	274	139	92	58	36	30	25	22	223
Invalid care allowance	-	12	22	27	34	3	15	3	-	-	12
Attendance allowance	21	41	52	54	42	28	17	25	15	3	30
Mobility allowance	14	42	45	68	43	26	9	14	14	3	28
War pensions	-	2	-	-	9	6	5	2	6	-	3
Severe disablement allowance	67	187	102	107	22	43	23	32	24	-	61
Student maintenance awards	91	125	56	114	63	80	40	21	17	24	63
Government training schemes	93	58	53	39	31	28	11	16	-	0	33
Family credit	87	61	44	17	5	3	8	1	-	-	23
Other non-contributory benefits	9	6	31	11	1	5	13	16	14	3	11
Total cash benefits	3 908	3 556	2 325	1 963	1 531	1 275	863	880	670	547	1 752
Gross income	5 801	8 849	12 687	15 712	18 222	21 244	24 066	27 286	31 841	51 227	21 694
Direct taxes and Employees' NIC											
Income tax	236	612	1 249	1 754	2 326	3 027	3 563	4 318	5 581	9 848	3 252
less: Tax relief at source ¹	83	108	240	292	369	456	538	578	755	787	421
Employees' NI contributions	83	261	506	691	845	1 005	1 180	1 278	1 454	1 587	889
Domestic rates/Community charge(gross)	564	579	666	701	676	695	697	674	667	673	659
Total	801	1 344	2 181	2 854	3 479	4 271	4 902	5 692	6 948	11 320	4 379
Disposable income	5 000	7 505	10 506	12 858	14 743	16 973	19 164	21 594	24 893	39 907	17 315
<i>Equivalised disposable income</i>	<i>4 185</i>	<i>6 543</i>	<i>8 362</i>	<i>10 146</i>	<i>11 955</i>	<i>13 765</i>	<i>16 047</i>	<i>18 903</i>	<i>23 134</i>	<i>38 611</i>	<i>15 166</i>
<i>(Standard error)</i>	<i>84</i>	<i>72</i>	<i>109</i>	<i>157</i>	<i>186</i>	<i>199</i>	<i>234</i>	<i>286</i>	<i>366</i>	<i>1 884</i>	<i>242</i>
Indirect taxes											
Taxes on final goods and services											
VAT	565	709	998	1 179	1 333	1 517	1 569	1 879	1 857	2 387	1 399
Duty on tobacco	330	369	330	362	333	311	315	309	206	173	304
Duty on beer and cider	52	70	98	127	120	151	140	145	141	148	119
Duty on wines	7	10	17	19	25	32	34	48	78	105	37
Duty on spirits	18	30	56	63	72	78	105	98	91	115	73
Duty on hydrocarbon oils	117	122	215	237	269	282	318	324	335	319	254
Car tax	9	14	32	32	59	66	62	122	71	99	57
Vehicle excise duty	47	51	94	109	119	117	143	130	130	123	106
Television licences	48	53	62	65	66	68	67	69	68	69	63
Stamp duty on house purchase	8	8	21	23	27	32	37	44	59	74	33
Customs duties	25	28	38	42	47	52	53	61	62	67	48
Betting taxes	30	32	44	61	58	46	51	50	43	36	45
Other	8	10	13	14	15	14	14	17	13	16	13
Intermediate taxes											
Commercial and industrial rates	132	151	204	239	258	283	296	335	350	437	269
Employers' NI contributions	143	165	223	260	281	310	323	366	385	477	293
Duty on hydrocarbon oils	63	73	92	105	112	124	126	141	150	184	117
Vehicle excise duty	12	14	18	20	22	24	25	28	30	37	23
Other	61	70	94	108	117	128	132	150	154	188	120
Total indirect taxes	1 676	1 979	2 649	3 064	3 330	3 635	3 811	4 315	4 224	5 054	3 374
Post-tax income	3 324	5 526	7 857	9 794	11 412	13 337	15 354	17 278	20 669	34 853	13 941
Benefits in kind											
Education	2 175	1 785	1 588	1 713	1 299	1 086	1 002	825	616	460	1 255
National health service	1 112	1 190	1 240	1 224	1 161	1 156	1 001	1 003	851	853	1 079
Housing subsidy	176	167	72	72	47	31	23	15	13	7	62
Rail travel subsidy	16	20	22	22	28	32	41	43	78	78	38
Bus travel subsidy	15	18	19	22	21	19	16	20	13	15	18
School meals and welfare milk	152	77	39	29	24	15	10	12	9	6	37
Total	3 647	3 258	2 980	3 082	2 580	2 339	2 094	1 919	1 580	1 419	2 490
Final income	6 971	8 784	10 837	12 876	13 993	15 676	17 447	19 197	22 249	36 271	16 431

¹ On mortgage interest and life assurance premiums.

Average incomes, taxes and benefits by decile groups of RETIRED households, 1991

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	
Average per household (£ per year)											
Decile points (<i>equivalised £</i>)	4 617	5 378	5 904	6 393	6 981	7 847	9 244	11 438	15 317		
Number of households in the sample	191	191	190	191	191	191	191	190	191	191	1 908
Original income											
Earnings of main earner	12	60	41	12	70	150	176	181	573	663	194
Other earnings	0	-	-	1	-	0	-	8	22	34	6
Occupational pensions, annuities	210	335	312	573	755	1 107	1 766	3 125	4 992	10 507	2 369
Investment income	265	280	272	266	390	658	1 110	1 620	3 311	10 414	1 860
Other income	25	15	49	33	59	63	116	132	148	220	86
Total	512	690	675	886	1 273	1 978	3 168	5 067	9 045	21 837	4 515
Direct benefits in cash											
Contributory											
Retirement pension	2 626	3 266	3 346	3 204	3 080	3 231	3 382	3 096	2 983	2 883	3 110
Unemployment benefit	13	1	-	9	7	0	16	-	5	-	5
Invalidity pension and allowance	51	62	206	82	95	249	188	293	279	234	174
Statutory sick pay	-	-	-	-	5	0	0	-	-	-	1
Industrial injury disablement benefit	-	9	-	10	8	56	50	46	49	-	23
Sickness, industrial injury benefit	5	-	-	6	-	7	-	4	16	41	8
Widows' benefits	57	16	56	61	75	25	43	87	81	28	53
Statutory maternity pay/ Allowance	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous contributory benefits	12	14	14	13	12	13	13	13	12	12	13
Non-contributory											
Income support	94	83	137	162	107	92	128	169	102	21	109
Child benefit	2	-	2	6	-	-	-	2	-	6	2
Housing benefit	166	362	598	675	661	626	321	182	67	8	367
Invalid care allowance	9	-	9	9	8	25	33	50	-	8	15
Attendance allowance	7	14	36	31	69	148	211	232	129	30	91
Mobility allowance	8	7	-	14	14	39	147	152	82	10	47
War pensions	-	-	-	33	4	18	53	41	122	119	39
Severe disablement allowance	9	21	18	21	39	-	36	134	67	40	38
Student maintenance awards	-	-	-	-	-	-	12	-	12	2	3
Government training schemes	-	-	-	-	-	3	-	2	-	-	0
Family credit	-	-	-	-	-	-	-	-	-	-	-
Other non-contributory benefits	33	23	25	8	13	34	9	82	97	111	43
Total cash benefits	3 090	3 878	4 447	4 342	4 198	4 567	4 641	4 585	4 102	3 556	4 140
Gross income	3 602	4 568	5 122	5 228	5 471	6 545	7 809	9 652	13 147	25 393	8 655
Direct taxes and Employees' NIC											
Income tax	77	54	57	50	105	201	395	650	1 534	4 705	783
less: Tax relief at source ¹	8	9	18	14	20	19	30	61	47	70	30
Employees' NI contributions	3	3	2	-	5	5	9	5	29	41	10
Domestic rates/Community charge(gross)	523	527	532	474	464	510	520	550	572	612	529
Total	595	576	573	510	555	697	894	1 144	2 088	5 287	1 292
Disposable income	3 007	3 993	4 549	4 717	4 917	5 849	6 915	8 509	11 059	20 105	7 363
<i>Equivalised disposable income</i>	<i>3 934</i>	<i>5 017</i>	<i>5 641</i>	<i>6 150</i>	<i>6 679</i>	<i>7 369</i>	<i>8 517</i>	<i>10 245</i>	<i>13 216</i>	<i>23 142</i>	<i>8 992</i>
<i>(Standard error)</i>	<i>128</i>	<i>143</i>	<i>199</i>	<i>300</i>	<i>398</i>	<i>482</i>	<i>564</i>	<i>656</i>	<i>736</i>	<i>964</i>	<i>185</i>
Indirect taxes											
Taxes on final goods and services											
VAT	354	301	300	321	334	401	595	661	922	1 474	567
Duty on tobacco	78	91	93	95	91	119	152	117	86	80	100
Duty on beer and cider	20	25	28	26	23	29	36	21	31	43	28
Duty on wines	4	3	3	5	5	5	8	18	20	47	12
Duty on spirits	29	22	24	33	18	59	49	55	74	89	45
Duty on hydrocarbon oils	64	48	49	45	39	51	72	115	159	179	82
Car tax	4	5	1	5	0	3	31	9	46	124	23
Vehicle excise duty	36	30	26	27	22	33	54	53	84	118	48
Television licences	62	61	60	55	56	58	66	65	67	69	62
Stamp duty on house purchase	9	6	4	3	4	5	9	13	16	23	9
Customs duties	16	12	12	15	14	16	23	24	32	46	21
Betting taxes	14	24	15	24	31	66	35	39	51	22	32
Other	6	7	6	12	7	8	8	8	9	17	9
Intermediate taxes											
Commercial and industrial rates	102	92	94	87	91	106	143	158	198	290	136
Employers' NI contributions	109	99	102	95	99	114	154	175	219	318	148
Duty on hydrocarbon oils	45	42	42	40	41	49	61	71	86	120	59
Vehicle excise duty	8	8	8	7	8	9	11	14	16	23	11
Other	50	44	44	41	43	49	67	74	92	131	64
Total indirect taxes	1 012	918	911	938	924	1 180	1 574	1 691	2 207	3 212	1 457
Post-tax income	1 996	3 075	3 638	3 779	3 992	4 669	5 341	6 818	8 852	16 893	5 906
Benefits in kind											
Education	15	-	41	11	-	-	64	11	41	157	34
National health service	1 787	1 865	1 848	1 713	1 603	1 805	1 624	1 642	1 517	1 577	1 698
Housing subsidy	23	80	126	139	159	141	92	54	49	3	87
Rail travel subsidy	0	0	3	3	4	12	5	9	34	26	10
Bus travel subsidy	49	63	65	60	58	59	52	56	41	44	55
School meals and welfare milk	-	-	-	2	-	-	-	-	-	0	0
Total	1 875	2 009	2 083	1 929	1 824	2 018	1 837	1 772	1 682	1 807	1 883
Final income	3 871	5 083	5 721	5 708	5 816	6 687	7 178	8 589	10 534	18 700	7 789

¹ On mortgage interest and life assurance premiums.

Average incomes, taxes and benefits, 1991
By quintile groups within household type

TABLE 6 (Appendix 1)

	Quintile groups of households ranked by equivalised disposable income					All groups
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
(i) 1 adult retired						
Quintile points (<i>equivalised</i> £)		5 302	6 270	7 303	10 419	
Number of households in the sample	213	213	214	213	213	1 066
Original income	313	502	754	2 465	6 805	2 566
Direct benefits in cash						
Contributory						
Retirement pension	2 466	2 561	2 662	2 683	2 411	2 557
Sickness/ injury related	2	28	15	32	147	45
Unemployment benefit	-	-	-	-	-	-
Other	62	101	102	113	119	99
Total contributory	2 529	2 690	2 779	2 828	2 678	2 701
Non-contributory						
Income support	67	118	95	89	143	102
Child benefit	-	-	-	-	-	-
Housing benefit	196	653	879	433	98	452
Sickness/ disablement related	7	6	33	138	256	88
Other	0	-	2	29	194	45
Total non-contributory	270	777	1 008	689	692	687
Gross income	3 112	3 969	4 542	5 981	12 175	5 954
Income tax ¹ and Employees' NIC	36	26	56	348	1 758	444
Domestic rates/Community charge (gross)	393	389	368	394	411	391
Disposable income	2 683	3 554	4 118	5 239	10 005	5 119
<i>Equivalised disposable income</i>	4 399	5 826	6 750	8 589	16 402	8 392
Taxes on final goods and services	408	388	442	637	1 099	595
Intermediate taxes	234	203	208	303	484	286
Post-tax income	2 041	2 963	3 467	4 299	8 422	4 238
Benefits in kind						
Education	-	-	-	-	-	-
National health service	1 472	1 430	1 442	1 331	1 268	1 389
Housing subsidy	43	116	188	91	51	98
Travel subsidies	41	48	52	51	47	48
School meals and welfare milk	-	-	-	-	-	-
Final income	3 597	4 557	5 149	5 772	9 787	5 772
(ii) 2 or more adults retired						
Quintile points (<i>equivalised</i> £)		5 443	6 630	8 722	12 472	
Number of households in the sample	168	169	168	169	168	842
Original income	951	1 402	3 158	6 773	22 661	6 982
Direct benefits in cash						
Contributory						
Retirement pension	3 660	4 276	4 041	3 811	3 258	3 810
Sickness/ injury related	143	366	534	648	349	408
Unemployment benefit	17	10	23	4	5	12
Other	33	19	30	17	14	23
Total contributory	3 853	4 671	4 628	4 481	3 627	4 253
Non-contributory						
Income support	146	184	126	83	52	118
Child benefit	2	9	-	3	7	4
Housing benefit	376	496	292	110	17	258
Sickness/ disablement related	83	264	581	808	313	410
Other	72	41	42	46	42	49
Total non-contributory	680	994	1 041	1 049	432	840
Gross income	5 484	7 068	8 826	12 303	28 720	12 074
Income tax ¹ and Employees' NIC	91	72	278	815	4 593	1 168
Domestic rates/Community charge (gross)	712	688	676	689	748	703
Disposable income	4 681	6 307	7 873	10 799	21 378	10 204
<i>Equivalised disposable income</i>	4 574	6 003	7 581	10 393	29 230	9 752
Taxes on final goods and services	1 012	1 077	1 368	1 758	2 784	1 599
Intermediate taxes	388	415	469	652	1 508	586
Post-tax income	3 281	4 815	6 036	8 389	17 587	8 018
Benefits in kind						
Education	17	59	47	38	225	77
National health service	2 349	2 280	2 097	1 902	1 822	2 090
Housing subsidy	70	142	100	48	3	73
Travel subsidies	79	89	90	69	101	86
School meals and welfare milk	-	2	-	-	1	0
Final income	5 796	7 387	8 370	10 446	19 738	10 344

¹ After tax relief at source on mortgage interest and life assurance premiums.

Average incomes, taxes and benefits, 1991

By quintile groups within household type

TABLE 6 (Appendix 1) (continued)

	Quintile groups of households ranked by equivalised disposable income					All groups
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
(iii) 1 adult non-retired						
Quintile points (<i>equivalised</i> £)		6 565	11 088	16 299	22 569	
Number of households in the sample	178	177	178	177	178	888
Original income	947	3 917	9 857	14 668	26 525	11 187
Direct benefits in cash						
Contributory						
Retirement pension	48	356	204	211	120	188
Sickness/ injury related	226	273	166	30	25	144
Unemployment benefit	87	39	2	11	11	30
Other	112	225	154	66	72	126
Total contributory	473	892	526	320	227	487
Non-contributory						
Income support	689	294	53	133	7	235
Child benefit	-	4	-	-	3	1
Housing benefit	703	545	70	11	14	269
Sickness/ disablement related	228	318	72	78	-	139
Other	238	117	71	-	-	85
Total non-contributory	1 859	1 278	265	222	24	729
Gross income	3 280	6 088	10 647	15 209	26 776	12 404
Income tax ¹ and Employees' NIC	116	510	1 856	2 992	5 663	2 228
Domestic rates/Community charge (gross)	374	378	389	382	388	382
Disposable income	2 790	5 200	8 403	11 835	20 724	9 793
<i>Equivalised disposable income</i>	4 574	8 525	13 775	19 402	33 974	16 055
Taxes on final goods and services	666	1 028	1 462	1 784	2 179	1 424
Intermediate taxes	228	319	454	550	732	457
Post-tax income	1 897	3 853	6 486	9 502	17 813	7 913
Benefits in kind						
Education	747	326	165	44	44	266
National health service	360	430	365	332	333	364
Housing subsidy	118	85	52	52	7	63
Travel subsidies	26	30	52	55	74	47
School meals and welfare milk	1	-	-	-	-	0
Final income	3 147	4 724	7 121	9 985	18 271	8 653
(iv) 2 adults non-retired						
Quintile points (<i>equivalised</i> £)		9 538	13 653	18 229	24 338	
Number of households in the sample	300	300	299	300	300	1 499
Original income	5 761	13 278	19 605	26 596	47 593	22 569
Direct benefits in cash						
Contributory						
Retirement pension	577	733	368	246	236	432
Sickness/ injury related	663	342	218	127	63	283
Unemployment benefit	67	57	24	28	12	38
Other	63	62	24	35	25	42
Total contributory	1 371	1 193	635	436	336	794
Non-contributory						
Income support	584	49	79	32	11	151
Child benefit	7	-	3	-	7	3
Housing benefit	406	61	52	22	23	113
Sickness/ disablement related	317	139	55	49	5	113
Other	116	52	35	47	59	62
Total non-contributory	1 430	301	224	150	104	442
Gross income	8 561	14 772	20 463	27 182	48 033	23 804
Income tax ¹ and Employees' NIC	906	2 191	3 546	5 078	9 415	4 227
Domestic rates/Community charge (gross)	658	662	663	673	699	671
Disposable income	6 997	11 920	16 255	21 431	37 919	18 906
<i>Equivalised disposable income</i>	6 821	11 658	15 882	21 054	37 419	18 569
Taxes on final goods and services	1 598	2 275	2 502	2 962	3 776	2 623
Intermediate taxes	487	691	752	915	1 289	827
Post-tax income	4 912	8 954	13 001	17 553	32 854	15 456
Benefits in kind						
Education	274	162	70	55	124	137
National health service	934	936	772	731	709	817
Housing subsidy	111	67	24	2	7	42
Travel subsidies	42	53	53	51	102	60
School meals and welfare milk	-	-	-	-	-	-
Final income	6 273	10 172	13 920	18 392	33 796	16 512

¹ After tax relief at source on mortgage interest and life assurance premiums.

Average incomes, taxes and benefits, 1991

By quintile groups within household type

TABLE 6 (Appendix 1) (continued)

	Quintile groups of households ranked by equivalised disposable income					All groups
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
(v) 3 or more adults non-retired						
Quintile points (<i>equivalised £</i>)		9 383	12 043	14 918	18 738	
Number of households in the sample	117	117	116	117	117	584
Original income	9 454	17 867	24 582	32 901	52 512	27 468
Direct benefits in cash						
Contributory						
Retirement pension	784	832	583	384	299	577
Sickness/ injury related	759	631	349	191	146	415
Unemployment benefit	92	70	92	31	4	58
Other	47	73	113	75	22	66
Total contributory	1 684	1 607	1 138	680	471	1 116
Non-contributory						
Income support	921	148	157	52	80	272
Child benefit	32	18	21	15	66	30
Housing benefit	434	114	62	52	63	145
Sickness/ disablement related	563	469	263	166	118	316
Other	470	492	271	84	73	278
Total non-contributory	2 418	1 242	774	369	399	1 041
Gross income	13 556	20 715	26 494	33 950	53 382	29 625
Income tax ¹ and Employees' NIC	1 547	3 152	4 192	6 270	10 584	5 151
Domestic rates/Community charge (gross)	965	968	977	1 044	1 034	998
Disposable income	11 044	16 595	21 325	26 636	41 764	23 476
<i>Equivalised disposable income</i>	<i>7 088</i>	<i>10 808</i>	<i>13 558</i>	<i>16 873</i>	<i>27 030</i>	<i>15 074</i>
Taxes on final goods and services	2 441	3 096	4 067	5 014	5 126	3 949
Intermediate taxes	692	912	1 103	1 286	1 630	1 125
Post-tax income	7 910	12 587	16 154	20 336	35 008	18 403
Benefits in kind						
Education	1 476	1 081	602	362	845	874
National health service	1 481	1 364	1 374	1 236	1 274	1 346
Housing subsidy	111	75	43	34	14	55
Travel subsidies	86	65	66	77	150	89
School meals and welfare milk	-	-	-	-	-	-
Final income	11 065	15 172	18 239	22 045	37 290	20 767
(vi) 1 adult with children²						
Quintile points (<i>equivalised £</i>)		5 120	5 971	7 061	9 986	
Number of households in the sample	59	59	58	59	59	294
Original income	469	1 123	1 472	3 951	12 353	3 882
Direct benefits in cash						
Contributory						
Retirement pension	-	-	-	-	-	-
Sickness/ injury related	-	77	95	133	11	63
Unemployment benefit	-	4	-	16	21	8
Other	0	21	102	110	394	126
Total contributory	0	102	198	260	426	197
Non-contributory						
Income support	2 404	2 395	2 196	1 838	908	1 947
Child benefit	1 008	865	788	764	738	833
Housing benefit	1 119	1 321	1 265	1 183	430	1 063
Sickness/ disablement related	37	7	71	-	264	76
Other	108	142	354	447	295	269
Total non-contributory	4 675	4 730	4 675	4 231	2 635	4 187
Gross income	5 144	5 955	6 344	8 442	15 413	8 266
Income tax ¹ and Employees' NIC	-27	30	-4	195	1 299	300
Domestic rates/Community charge (gross)	380	388	391	381	400	388
Disposable income	4 791	5 536	5 957	7 865	13 713	7 578
<i>Equivalised disposable income</i>	<i>4 359</i>	<i>5 508</i>	<i>6 488</i>	<i>8 369</i>	<i>14 586</i>	<i>7 867</i>
Taxes on final goods and services	923	811	872	1 422	1 573	1 121
Intermediate taxes	377	280	356	462	686	432
Post-tax income	3 491	4 446	4 729	5 981	11 454	6 024
Benefits in kind						
Education	2 888	2 410	1 880	1 932	2 230	2 269
National health service	1 000	1 234	1 110	968	851	1 032
Housing subsidy	301	287	196	164	63	202
Travel subsidies	17	14	26	45	73	35
School meals and welfare milk	379	239	168	165	62	203
Final income	8 077	8 629	8 108	9 255	14 733	9 766

¹ After tax relief at source on mortgage interest and life assurance premiums.

² This group is smaller than the category of "one parent families" because some of these families will be contained in larger household types.

Average incomes, taxes and benefits, 1991

By quintile groups within household type

TABLE 6 (Appendix 1) (continued)

	Quintile groups of households ranked by equivalised disposable income					All groups
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
(vii) 2 adults with 1 child						
Quintile points (<i>equivalised</i> £)		8 065	11 740	14 836	19 939	
Number of households in the sample	111	111	110	111	111	554
Original income	5 099	13 688	18 925	25 010	42 818	21 112
Direct benefits in cash						
Contributory						
Retirement pension	52	44	-	-	-	19
Sickness/ injury related	394	115	90	35	53	137
Unemployment benefit	90	74	62	18	12	51
Other	54	91	193	173	369	176
Total contributory	589	323	345	225	433	383
Non-contributory						
Income support	968	72	20	67	53	236
Child benefit	428	408	402	409	388	407
Housing benefit	649	69	72	8	13	162
Sickness/ disablement related	267	117	14	104	15	104
Other	179	60	36	22	13	62
Total non-contributory	2 491	726	544	611	482	971
Gross income	8 179	14 737	19 813	25 846	43 734	22 467
Income tax ¹ and Employees' NIC	636	2 179	3 204	4 408	9 295	3 946
Domestic rates/Community charge (gross)	653	689	692	672	702	681
Disposable income	6 890	11 869	15 917	20 767	33 737	17 840
<i>Equivalised disposable income</i>	5 709	9 788	13 256	17 286	28 408	14 892
Taxes on final goods and services	1 620	2 371	2 671	3 145	3 340	2 629
Intermediate taxes	526	719	838	1 016	1 250	870
Post-tax income	4 745	8 779	12 408	16 605	29 147	14 340
Benefits in kind						
Education	1 237	1 354	1 097	1 159	821	1 134
National health service	1 385	1 215	1 369	1 322	1 353	1 329
Housing subsidy	156	52	39	7	1	51
Travel subsidies	34	24	29	33	93	43
School meals and welfare milk	54	23	20	13	20	26
Final income	7 610	11 448	14 963	19 138	31 435	16 922
(viii) 2 adults with 2 children						
Quintile points (<i>equivalised</i> £)		7 728	10 435	12 747	16 664	
Number of households in the sample	148	149	148	149	148	742
Original income	6 408	14 576	18 857	25 247	42 987	21 611
Direct benefits in cash						
Contributory						
Retirement pension	37	29	35	-	-	20
Sickness/ injury related	260	82	45	24	17	86
Unemployment benefit	80	36	43	17	26	40
Other	87	30	17	44	32	42
Total contributory	464	177	141	86	76	189
Non-contributory						
Income support	1 102	167	185	8	74	307
Child benefit	779	795	779	773	782	782
Housing benefit	603	36	71	11	5	145
Sickness/ disablement related	94	21	117	-	39	54
Other	238	98	61	31	17	89
Total non-contributory	2 817	1 116	1 213	824	916	1 376
Gross income	9 689	15 869	20 211	26 157	43 979	23 175
Income tax ¹ and Employees' NIC	848	2 268	3 004	4 644	8 796	3 911
Domestic rates/Community charge (gross)	659	666	698	679	725	685
Disposable income	8 183	12 935	16 508	20 833	34 457	18 579
<i>Equivalised disposable income</i>	5 756	9 155	11 550	14 496	24 000	12 988
Taxes on final goods and services	1 815	2 154	2 555	2 858	3 344	2 545
Intermediate taxes	566	742	859	1 028	1 342	907
Post-tax income	5 802	10 039	13 094	16 947	29 772	15 126
Benefits in kind						
Education	2 361	2 386	2 601	2 562	2 409	2 464
National health service	1 577	1 442	1 438	1 527	1 465	1 490
Housing subsidy	213	36	29	8	-	57
Travel subsidies	30	25	26	34	63	35
School meals and welfare milk	147	50	46	39	46	65
Final income	10 129	13 978	17 234	21 116	33 754	19 238

¹ After tax relief at source on mortgage interest and life assurance premiums.

Average incomes, taxes and benefits, 1991

By quintile groups within household type

TABLE 6 (Appendix 1) (continued)

	Quintile groups of households ranked by equivalised disposable income					All groups
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
(ix) 2 adults with 3 or more children						
Quintile points (<i>equivalised £</i>)		5 718	8 249	10 603	14 234	
Number of households in the sample	60	60	59	60	60	299
Original income	3 476	12 486	17 481	24 290	46 249	20 807
Direct benefits in cash						
Contributory						
Retirement pension	-	-	-	-	-	-
Sickness/ injury related	230	37	134	56	9	93
Unemployment benefit	99	107	36	37	-	56
Other	0	11	34	17	47	22
Total contributory	329	155	205	109	56	171
Non-contributory						
Income support	2 598	297	48	1	-	591
Child benefit	1 390	1 246	1 286	1 231	1 190	1 269
Housing benefit	928	183	69	20	7	242
Sickness/ disablement related	92	43	149	74	22	76
Other	364	103	90	32	15	121
Total non-contributory	5 371	1 871	1 642	1 359	1 234	2 298
Gross income	9 176	14 512	19 328	25 758	47 538	23 276
Income tax ¹ and Employees' NIC	694	1 848	2 636	4 265	8 970	3 686
Domestic rates/Community charge (gross)	655	697	675	669	730	685
Disposable income	7 827	11 967	16 017	20 824	37 838	18 904
<i>Equivalised disposable income</i>	4 306	7 143	9 353	12 416	22 867	11 223
Taxes on final goods and services	1 687	2 103	2 690	2 710	4 423	2 723
Intermediate taxes	518	684	858	944	1 773	956
Post-tax income	5 623	9 180	12 470	17 170	31 642	15 226
Benefits in kind						
Education	5 318	4 007	5 447	4 342	3 512	4 522
National health service	1 995	1 955	1 862	1 631	1 965	1 882
Housing subsidy	159	120	43	12	2	67
Travel subsidies	33	23	29	47	64	39
School meals and welfare milk	402	73	140	86	61	152
Final income	13 531	15 358	19 991	23 288	37 247	21 889
(x) 3 or more adults with children						
Quintile points (<i>equivalised £</i>)		6 779	9 633	12 708	16 743	
Number of households in the sample	58	57	58	57	58	288
Original income	6 181	14 675	23 259	32 889	57 643	26 951
Direct benefits in cash						
Contributory						
Retirement pension	195	480	407	418	235	346
Sickness/ injury related	597	342	93	154	31	243
Unemployment benefit	237	49	100	7	4	80
Other	62	60	105	14	66	62
Total contributory	1 090	932	705	593	337	731
Non-contributory						
Income support	2 297	960	258	135	84	748
Child benefit	1 049	667	618	579	613	706
Housing benefit	760	290	77	49	85	252
Sickness/ disablement related	334	333	274	92	90	225
Other	756	539	163	343	304	421
Total non-contributory	5 195	2 789	1 390	1 197	1 176	2 352
Gross income	12 466	18 396	25 354	34 678	59 156	30 034
Income tax ¹ and Employees' NIC	969	2 076	3 800	6 331	13 675	5 378
Domestic rates/Community charge (gross)	883	886	865	922	977	907
Disposable income	10 614	15 434	20 688	27 425	44 503	23 749
<i>Equivalised disposable income</i>	5 022	8 250	11 098	14 600	23 871	12 576
Taxes on final goods and services	2 570	3 191	3 797	4 568	5 783	3 983
Intermediate taxes	778	982	1 115	1 386	1 987	1 250
Post-tax income	7 265	11 261	15 776	21 472	36 733	18 516
Benefits in kind						
Education	5 366	3 298	2 882	2 762	3 614	3 588
National health service	2 045	1 822	1 777	1 586	1 696	1 786
Housing subsidy	146	116	50	13	19	69
Travel subsidies	66	97	72	111	211	111
School meals and welfare milk	251	73	32	23	40	84
Final income	15 140	16 666	20 588	25 967	42 313	24 154

¹ After tax relief at source on mortgage interest and life assurance premiums.

Distribution of households¹ co-operating in the Family Expenditure Survey, 1991

By decile groups of households ranked by equivalised disposable income

TABLE 7 (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	
Decile groups of households ranked by equivalised disposable income											
Bottom	188	118	98	62	16	60	43	46	46	29	706
2nd	238	173	58	43	14	78	18	38	25	20	705
3rd	235	126	78	59	27	50	33	51	25	22	706
4th	126	115	58	100	53	36	49	85	49	34	705
5th	88	85	56	127	72	23	62	114	40	39	706
6th	52	70	67	162	81	17	62	124	37	34	706
7th	55	51	84	167	106	9	81	96	20	36	705
8th	38	36	108	207	98	12	72	84	19	32	706
9th	27	35	132	272	65	6	71	53	18	26	705
Top	19	33	149	300	52	3	63	51	20	16	706
All households	1 066	842	888	1 499	584	294	554	742	299	288	7 056

¹ See Appendix 2 for definitions of retired households, adults and children.

APPENDIX 2

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, 65 per cent of government financing (including the Borrowing Requirement) and 54 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 1991, containing detailed data on household characteristics, income, and expenditure, was published in November 1992. 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 1991 was 7,056 (about 1 in every 3,000 households). The response rate in Great Britain was 69 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 to 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 (29 in 1991) 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 employees, the self-employed and others not in employment but who are seeking or intending, when able, to seek work. In 1982 there were changes in the FES in the definition relating to economic activity. The effect of these changes is to exclude all those out of employment for more than a year rather than five years. This exclusion applies regardless of the fact that they may still describe themselves as seeking work. Also excluded are those who have not been in paid employment since leaving full-time education unless they have worked within the previous year; certain of the part-time self-employed with very small incomes: and those whose only economic activity is working as mail-order agents or baby-sitters.

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 based on the rateable value of the dwelling. 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 1992 (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 allocation 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. The next stage of the analysis is to add cash benefits to original income to obtain **gross income**. This is slightly different from the 'gross normal weekly income' used in the FES Report, mainly because it excludes the imputed rent of owner-occupiers. Cash benefits are:

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, severe disablement allowance, family credit, old persons pension, government training scheme allowances (YTS etc), student maintenance awards, maternity grant.

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

18. 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.

19. 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.

20. 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.]

21. 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 1991 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.

22. 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
- Motor vehicle duties
- Driving licenses
- Stamp duties
- Gas levy

23. 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.

24. 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.

25. 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 rateable values) and the probability of a household of that type moving in a given year (estimated from the General Household Survey).

26. Indirect taxes on intermediate goods and services are:

- 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

27. 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.

28. 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.

29. 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. Imputed rent 'payments' for owner occupiers are included because rent payments are included for households renting their accommodation. We have included payments for house repairs and improvements because VAT is charged on these items. The expenditures on alcohol, tobacco and confectionery have been grossed up to correspond to the grossed-up indirect tax amounts described in paragraph 24 above.

30. 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**. Benefits in kind are:

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

31. 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.

32. 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.

33. 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.

34. 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 rate funds and 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 gross rateable value of this dwelling. Housing subsidy does not include mortgage interest tax relief, rent rebates and allowances or community charge/rate rebates included in housing benefit.

35. 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.

36. 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.

37. 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

38. 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.

39. The equivalence values are given below

Type of household member	Equivalence value
a. married head of household	
(ie a married couple of 2 adults)	1.00
1st additional adult	0.42
2nd (or more) additional adult	0.36 (per adult)
b. single head of household	
(ie 1 adult)	0.61
1st additional adult	0.46
2nd additional adult	0.42
3rd (or more) additional adult	0.36 (per adult)
c. Child aged:	
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

Diagram A

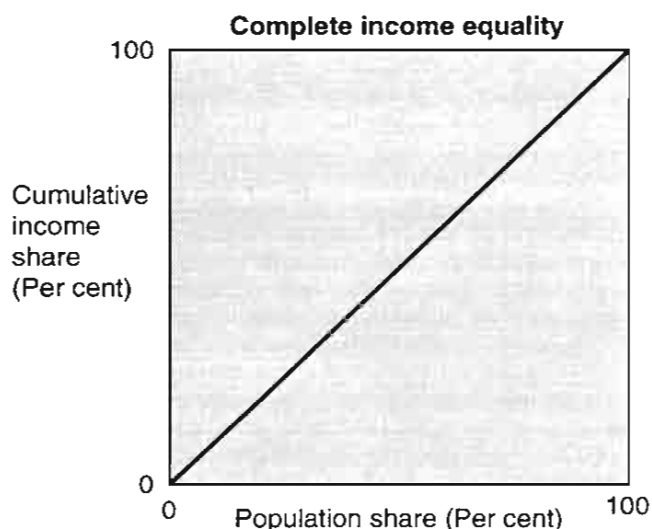
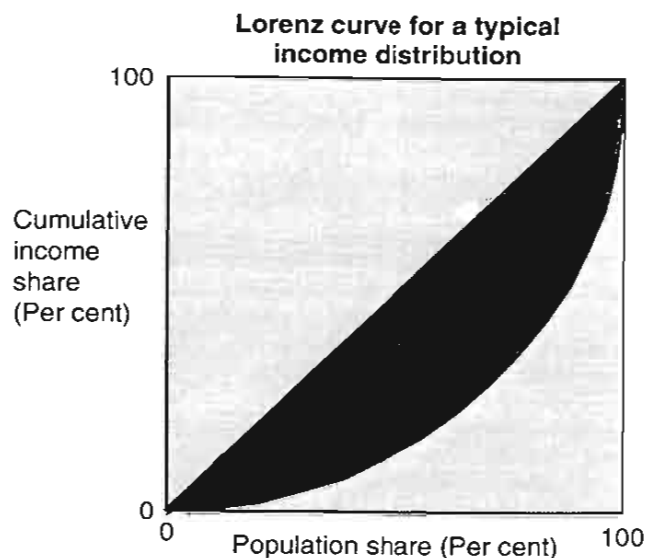


Diagram B



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*.

Gini coefficient

41. 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).

42. 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 equivalised 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 equivalisation was used.]

43. 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 equivalise 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 equivalise 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

44. 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.

45. 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 1.28 for 1991, 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 47).

46. 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 £14,624 (see Table 3 in Appendix 1), and its standard error is £210 (from Table 1 below). So the confidence interval for the population value is £14,624 ± £412 ie about (£14,210 to £15,040). It is very likely that the mean disposable income for the whole population (ie all UK private households) will lie in this range.

47. The standard errors for the household types are larger than for the whole sample, mainly because the sample sizes concerned are smaller. For quintile 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 quintile groups are complicated to produce. As well as the variability of the observations between the quintile points, we should also take account of the randomness which exists because the sample quintile 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_1 and Q_2 , corresponding to proportions p_1 and p_2 is:

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

where S^2 = variance calculated from observations between Q_1 and Q_2 , and n = total sample size.

The square root of this quantity is then multiplied by the design factor (as described in paragraph 45) to give the standard errors shown in the tables for quintile and decile groups.

48. 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, 1991

Decile group

Bottom	1.79
2nd	4.56
3rd	5.78
4th	6.29
5th	6.74
6th	6.57
7th	6.61
8th	5.87
9th	4.67
Top	1.38
All	1.28

For the 'all households' group the ratio merely reflects the fact that the simple random sample figure is multiplied by the design factor (1.28 in 1991) to produce the 'complex' standard error. The quoted standard errors for the middle decile groups are about six times higher than the simple random sample estimates.

49. Table 2 gives standard errors for quintile groups of households within household type. The standard errors of the top quintile group are often much larger than for the other quintile groups. This is not surprising as, in general, any distribution of incomes has a long positive tail. The standard errors for the top quintile groups of some household types are so large that it is doubtful whether the averages for these groups are reliable enough to be worth quoting in the tables in Appendix 1.

50. Another aspect of sampling errors and reliability is the variation from year to year. Table 3 gives the standard error of the mean (expressed as a percentage of the mean) for disposable income for the years from 1977 to 1991. 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 4). These standard errors have been calculated using the formula for the variance of a ratio, and the results are given in Table 4 below.

For example, the top quintile group accounted for 42 per cent of total equivalised disposable income; the standard error of this estimate is 0.46 per cent, and the 95% confidence interval for the true value is (41.3, 43.1) per cent.

As the formula involves an approximation, the figures shown in Table 4 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, and the 1990 results in the January 1993 edition. The latest five 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 1977-1991. 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, 1991

TABLE 1 (Appendix 2)

	Number in sample	Standard error of the mean of the five income measures (£ per year)					
		Original income	Gross income	Disposable income		Post-tax income	Final income
				Unadjusted	Equalised		
Household type/ Quantile group							
All households	7 056	283	269	210	188	192	198
Non-retired	5 148	349	336	265	242	246	252
Retired	1 908	242	239	182	185	163	170
Decile groups¹ of all households							
Bottom	706	143	163	143	70	139	302
2nd	705	543	486	385	59	291	719
3rd	706	938	760	592	77	459	813
4th	705	1 294	1 043	805	113	683	1 111
5th	706	1 619	1 348	1 042	136	863	1 388
6th	706	1 675	1 451	1 092	147	953	1 307
7th	705	1 941	1 815	1 374	171	1 182	1 560
8th	706	1 965	1 925	1 485	213	1 274	1 615
9th	705	1 789	1 757	1 328	275	1 172	1 415
Top	706	1 841	1 840	1 489	1 394	1 428	1 445
Decile groups¹ of non-retired households							
Bottom	515	200	209	182	84	172	384
2nd	515	646	508	386	72	311	667
3rd	514	1 064	906	701	109	629	1 068
4th	515	1 739	1 552	1 206	157	1 045	1 742
5th	515	2 148	1 986	1 515	186	1 369	1 927
6th	515	2 530	2 491	1 874	199	1 633	2 233
7th	515	2 518	2 545	1 977	234	1 705	2 183
8th	514	2 712	2 709	2 051	286	1 823	2 315
9th	515	2 396	2 416	1 823	366	1 639	1 921
Top	515	2 455	2 456	2 000	1 884	1 918	1 939
Decile groups¹ of retired households							
Bottom	191	159	197	167	128	211	307
2nd	191	612	808	687	143	624	1 135
3rd	190	1 066	2 203	1 862	199	1 598	2 718
4th	191	2 490	3 270	2 928	300	2 363	3 866
5th	191	3 366	3 968	3 324	398	2 491	3 749
6th	191	3 654	3 657	3 183	482	3 015	4 242
7th	191	2 765	3 008	2 666	564	2 305	3 157
8th	190	3 014	2 977	2 612	656	2 162	2 859
9th	191	3 049	2 620	2 041	736	1 870	2 218
Top	191	1 442	1 436	1 036	964	998	1 046
Household type							
1 adult retired	1 066	172	163	126	206	116	119
2 or more adults retired	842	482	458	341	325	314	321
1 adult non-retired	888	497	467	345	566	324	321
2 adults non-retired	1 499	799	781	654	653	626	625
3 or more adults non-retired	584	967	905	709	437	646	666
1 adult with children	294	446	372	321	312	300	386
2 adults and 1 child	554	822	790	588	496	545	550
2 adults and 2 children	742	737	707	527	361	502	504
2 adults with 3 or more children	299	1 243	1 167	883	546	798	809
3 or more adults with children	288	1 860	1 768	1 109	587	986	1 007

¹ Households ranked by equivalised disposable income.

Standard errors for disposable income for quintile groups¹ within household type, 1991

TABLE 2 (Appendix 2)

	Numbers in sample	Standard error for mean unadjusted disposable income for quintile groups of households ranked by equivalised disposable income (£ per year)					All groups
		Bottom	2nd	3rd	4th	Top	
Household type							
All households	7 056	115	372	536	699	819	210
Non-retired	5 148	194	501	717	898	1 063	265
Retired	1 908	110	291	394	512	739	182
1 adult retired	1 066	59	48	57	154	468	134
2 or more adults retired	842	125	299	404	565	1 279	341
1 adult non-retired	888	143	255	317	346	1 220	345
2 adults non-retired	1 499	242	302	380	450	2 879	654
3 or more adults non-retired	584	589	838	1 498	1 561	2 547	709
1 adult with children	294	342	784	741	1 011	1 243	321
2 adults with 1 child	554	413	606	690	860	1 846	588
2 adults with 2 children	742	365	481	532	802	1 850	527
2 adults with 3 or more children	299	609	867	1 021	1 278	2 828	883
3 or more adults with children	288	920	1 238	1 944	2 313	3 743	1 109

¹ Ranked by equivalised disposable income.

Standard errors for unadjusted disposable income expressed as a percentage of the mean, 1977 to 1991

TABLE 3 (Appendix 2)

	Number in sample (1991)	Standard error for mean unadjusted disposable income expressed as a percentage of the mean (%)							
		1977	1979	1981	1983	1985	1987	1989	1991
Household type									
All households	7 056	1.0	1.0	1.2	1.1	1.2	1.2	1.2	1.4
Non-retired	5 148	1.0	1.0	1.2	1.1	1.2	1.2	1.2	1.5
Retired	1 908	2.0	1.9	2.0	2.0	2.2	2.7	2.2	2.5
1 adult retired	1 066	2.0	2.0	2.1	2.1	2.0	4.0	2.8	2.5
2 or more adults retired	842	2.5	2.3	2.4	2.6	2.9	3.3	2.7	3.3
1 adult non-retired	888	3.1	3.2	3.9	3.4	3.3	4.0	3.0	3.5
2 adults non-retired	1 499	2.0	1.6	2.9	2.4	2.0	2.0	2.1	3.5
3 or more adults non-retired	584	2.0	2.3	2.1	2.4	2.5	3.1	2.3	3.0
1 adult with children	294	5.3	5.9	13.0	4.9	4.6	4.4	5.8	4.2
2 adults with 1 child	554	2.4	2.4	2.7	2.6	3.0	3.0	3.2	3.3
2 adults with 2 children	742	2.0	2.2	1.9	2.3	2.6	3.1	3.2	2.8
2 adults with 3 or more children	299	3.2	3.1	3.9	3.7	5.7	5.0	4.9	4.7
3 or more adults with children	288	2.2	2.3	2.8	2.5	3.1	3.2	3.0	4.7

Standard errors for shares of total income, 1991

TABLE 4 (Appendix 2)

	Share of total income, r (as %)	Standard error of r (as %)	95 % confidence interval for r (as %)
Equivalised original income			
Quintile group ¹			
Bottom	2.0	0.04	(1.88 , 2.02)
2nd	7	0.16	(6.5 , 7.1)
3rd	16	0.32	(14.9 , 16.1)
4th	26	0.47	(24.7 , 26.5)
Top	50	0.39	(49.4 , 50.9)
All households	100		
Equivalised gross income			
Quintile group ¹			
Bottom	6.7	0.06	(6.61 , 6.83)
2nd	10	0.11	(10.3 , 10.7)
3rd	16	0.23	(15.5 , 16.4)
4th	23	0.34	(22.6 , 24.0)
Top	44	0.41	(42.7 , 44.4)
All households	100		
Equivalised disposable income			
Quintile group ¹			
Bottom	7.2	0.06	(7.11 , 7.34)
2nd	11	0.12	(11.0 , 11.4)
3rd	16	0.23	(15.9 , 16.7)
4th	23	0.32	(22.4 , 23.7)
Top	42	0.46	(41.3 , 43.1)
All households	100		
Equivalised post-tax income			
Quintile group ¹			
Bottom	6.6	0.05	(6.46 , 6.67)
2nd	11	0.15	(10.4 , 11.0)
3rd	16	0.26	(15.1 , 16.1)
4th	23	0.38	(22.0 , 23.5)
Top	44	0.55	(43.4 , 45.5)
All households	100		

¹ Ranked by equivalised disposable income.

Average incomes, taxes and benefits by decile groups of households (ranked by UNADJUSTED disposable income), 1991

TABLE 1 (Appendix 3)

	Decile groups of households ranked by UNADJUSTED disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
Average per household (£ per year)											
Decile points	3 901	5 303	7 255	9 402	11 818	14 461	17 422	21 381	28 158		
Number of households in the sample	706	705	706	705	706	706	705	706	705	706	7 056
Original income											
Earnings of main earner	242	623	1 439	4 099	7 234	10 442	12 800	14 720	18 535	32 149	10 229
Other earnings	13	15	46	250	842	1 731	3 325	5 242	7 921	12 303	3 169
Occupational pensions, annuities	160	408	794	1 020	1 125	1 014	854	1 139	1 107	1 377	900
Investment income	181	304	493	745	839	918	968	1 308	1 680	4 858	1 230
Other income	62	77	142	210	220	169	295	306	362	586	243
Total	658	1 426	2 914	6 324	10 260	14 274	18 243	22 716	29 605	51 273	15 770
Direct benefits in cash											
Contributory											
Retirement pension	1 682	1 899	1 984	1 364	1 017	706	452	469	332	313	1 022
Unemployment benefit	22	29	27	40	56	36	39	34	24	13	32
Incapacity pension and allowance	59	125	278	327	230	197	101	96	83	32	153
Statutory sick pay	1	2	9	17	34	27	36	39	35	22	22
Industrial injury disablement benefit	0	4	12	35	26	28	21	13	4	-	14
Sickness, industrial injury benefit	12	14	15	22	22	6	12	16	10	23	15
Widows' benefits	77	78	67	71	56	45	18	58	17	29	51
Statutory maternity pay/ Allowance	1	2	3	9	9	24	27	34	24	55	19
Miscellaneous contributory benefits	7	8	9	7	5	3	2	2	2	2	5
Non-contributory											
Income support	312	577	680	547	328	185	174	93	70	47	301
Child benefit	35	117	180	227	259	292	340	302	279	322	235
Housing benefit	513	731	578	364	166	85	72	52	22	34	262
Invalid care allowance	2	-	5	20	28	16	30	13	7	5	13
Attendance allowance	7	11	78	121	64	46	55	33	26	22	46
Mobility allowance	4	16	53	75	58	43	32	28	10	10	33
War pensions	2	7	9	13	36	18	11	23	8	-	13
Severe disablement allowance	49	54	91	90	94	45	51	23	28	22	55
Student maintenance awards	38	22	58	57	49	42	76	47	35	44	47
Government training schemes	14	11	19	28	23	37	37	32	24	16	24
Family credit	8	10	36	42	30	17	14	5	1	1	16
Other non-contributory benefits	6	15	39	46	15	26	4	13	18	14	20
Total cash benefits	2 852	3 732	4 230	3 522	2 604	1 925	1 605	1 424	1 059	1 026	2 398
Gross income	3 510	5 158	7 143	9 846	12 864	16 200	19 848	24 140	30 664	52 299	18 168
Direct taxes and Employees' NIC											
Income tax	86	152	359	815	1 402	2 110	2 735	3 558	4 912	9 709	2 584
less: Tax relief at source ¹	19	36	64	109	213	342	456	541	657	711	315
Employees' NI contributions	13	28	79	231	443	680	894	1 100	1 357	1 688	651
Domestic rates/Community charge (gross)	415	457	545	588	610	643	689	716	751	824	624
Total	495	601	920	1 525	2 242	3 092	3 862	4 833	6 364	11 510	3 545
Disposable income	3 014	4 557	6 224	8 321	10 622	13 108	15 986	19 307	24 300	40 789	14 624
Indirect taxes											
Taxes on final goods and services											
VAT	274	360	518	780	962	1 150	1 366	1 613	2 014	2 704	1 174
Duty on tobacco	100	160	205	280	298	264	311	313	299	258	249
Duty on beer and cider	25	29	39	70	83	106	123	132	156	182	95
Duty on wines	5	5	9	13	19	21	27	40	64	103	31
Duty on spirits	17	23	31	53	64	58	71	100	105	130	65
Duty on hydrocarbon oils	42	50	98	140	191	217	255	300	375	406	207
Car tax	-1	9	10	26	25	49	56	81	107	113	48
Vehicle excise duty	20	28	47	67	86	103	119	131	149	157	91
Television licences	50	52	58	60	65	67	68	69	69	71	63
Stamp duty on house purchase	5	5	7	12	21	30	32	42	50	63	27
Customs duties	12	15	21	29	34	41	48	57	67	80	40
Betting taxes	18	23	33	49	48	54	43	52	49	48	42
Other	6	7	10	9	10	12	15	17	14	22	12
Intermediate taxes											
Commercial and industrial rates	81	94	127	166	197	232	263	304	367	497	233
Employers' NI contributions	87	101	138	182	216	253	287	332	400	543	254
Duty on hydrocarbon oils	37	43	58	76	88	101	114	130	155	210	101
Vehicle excise duty	7	8	11	15	17	20	22	25	30	42	20
Other	38	44	59	77	90	106	120	137	163	215	105
Total indirect taxes	821	1 058	1 481	2 104	2 513	2 884	3 338	3 876	4 635	5 844	2 855
Post-tax income	2 194	3 498	4 743	6 217	8 109	10 225	12 648	15 431	19 665	34 945	11 768
Benefits in kind											
Education	277	285	672	813	1 021	1 072	1 374	1 172	1 252	1 309	925
National health service	1 172	1 351	1 452	1 318	1 224	1 186	1 198	1 191	1 131	1 242	1 247
Housing subsidy	96	155	123	109	74	54	41	18	9	10	69
Rail travel subsidy	6	6	8	25	24	27	38	30	50	90	30
Bus travel subsidy	33	41	42	31	27	25	17	22	19	21	28
School meals and welfare milk	9	28	51	45	34	24	32	19	14	18	27
Total	1 592	1 866	2 348	2 341	2 404	2 388	2 701	2 452	2 476	2 691	2 326
Final income	3 786	5 364	7 090	8 558	10 514	12 613	15 350	17 883	22 141	37 635	14 094

¹ On mortgage interest and life assurance premiums.

Cross-tabulation of households ranked by disposable income, unadjusted and equivalised, 1991

TABLE 2 (Appendix 3)

(i) Quintile groups

	Quintile groups of equivalised disposable income					All households
	Bottom	2nd	3rd	4th	Top	
Number of households						
Quintile groups of unadjusted disposable income						
Bottom	934	477	-	-	-	1 411
2nd	418	541	311	141	-	1 411
3rd	54	332	609	267	150	1 412
4th	5	61	449	615	281	1 411
Top	-	-	43	388	980	1 411
All households	1 411	1 411	1 412	1 411	1 411	7 056

(ii) Decile groups

	Decile groups of equivalised disposable income										All households
	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	
Number of households											
Decile groups of unadjusted disposable income											
Bottom	367	300	39	-	-	-	-	-	-	-	706
2nd	198	69	290	148	-	-	-	-	-	-	705
3rd	85	219	151	48	145	58	-	-	-	-	706
4th	38	76	116	226	43	65	140	1	-	-	705
5th	14	27	77	123	209	85	4	145	22	-	706
6th	3	10	23	109	124	191	114	4	128	-	706
7th	1	4	9	39	132	145	164	129	13	69	705
8th	-	-	1	12	44	128	150	172	151	48	706
9th	-	-	-	-	8	32	119	180	232	134	705
Top	-	-	-	-	1	2	14	75	159	455	706
All households	706	705	706	705	706	706	705	706	705	706	7 056

APPENDIX 4

Trends in income distribution, 1977-1991

CONTENTS

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Gini coefficients for the distribution of income at each stage of the tax-benefit system, 1977-1991	2

This section gives Gini coefficients and shares of income for 1977 to 1991. 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 in the 1990 and 1991 analyses, 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 - 1988/89* (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 households¹, 1977-1991

TABLE 1 (Appendix 4)

	1977	1979	1981	1983	1985	1987	1989	1991 ²
Equivalised original income								
Quintile group								
Bottom	3.6	2.4	2.9	3.0	2.5	2.1	2.0	2.0
2nd	10	10	9	8	7	7	7	7
3rd	18	18	17	17	17	16	16	16
4th	26	27	26	26	27	25	26	26
Top	43	43	46	47	47	50	49	50
All households	100	100	100	100	100	100	100	100
Equivalised gross income								
Quintile group								
Bottom	8.9	8.5	8.4	8.5	8.3	7.5	7.1	6.7
2nd	13	13	12	12	12	11	11	10
3rd	18	18	17	17	17	16	16	16
4th	24	24	23	23	24	23	23	23
Top	37	37	39	39	40	43	42	44
All households	100	100	100	100	100	100	100	100
Equivalised disposable income								
Quintile group								
Bottom	9.7	9.4	9.3	9.5	9.2	8.2	7.6	7.2
2nd	14	13	13	13	13	12	12	11
3rd	18	18	17	17	17	16	17	16
4th	23	23	23	23	23	23	23	23
Top	36	36	38	38	38	41	41	42
All households	100	100	100	100	100	100	100	100
Equivalised post-tax income								
Quintile group								
Bottom	9.4	9.5	9.0	8.9	8.6	7.6	6.9	6.6
2nd	14	13	13	13	13	12	11	11
3rd	17	18	17	17	17	16	16	16
4th	23	23	22	22	23	22	23	23
Top	37	37	39	39	39	43	43	44
All households	100	100	100	100	100	100	100	100

¹ Ranked by equivalised disposable income.

² Includes Company car benefit.

Gini coefficients for the distribution of income at each stage of the tax-benefit system, 1977-91

TABLE 2 (Appendix 4)

	1977	1979	1981	1983	1985	1987	1989	1991 ¹
Gini coefficients (per cent)								
Equivalised original income	43	44	46	48	49	51	50	51
Equivalised gross income	29	30	31	32	32	36	36	37
Equivalised disposable income	27	27	28	28	29	33	34	35
Equivalised post-tax income	29	29	31	31	32	36	37	39

¹ Includes Company car benefit.