

## Summary

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

- The income share of the bottom fifth of households is increased from 2% of original income to 7% of post-tax income by taxes and benefits.
- The average original income of the top fifth of households is 19 times the average of the bottom fifth, the average final income of the top fifth of households is less than 4 times the average of the bottom fifth.
- Income inequality rose rapidly during the 1980s. There are signs that the small reduction in inequality during the first half of the 1990s may not be continuing.
- The top fifth of non-retired households pay more than twice as much of their gross income (24%) in direct taxes than those in the bottom fifth (11%).
- Cash benefits make up half of the gross income of retired households. The state retirement pension accounts for 72% of these benefits.
- There are more children in households at the lower end of the income distribution.
- Disposable income is more evenly distributed among retired households than among non-retired households.

## Introduction

This article presents the results of an analysis of the effects of taxes and benefits on the distribution of income among private households in 1996-97.

In general, government benefits and taxes reduce the differences in incomes between households. Household income is reduced by direct taxes such as income tax and by indirect taxes that are passed on to households in the prices they pay for goods and services. On the other hand, household income is increased by cash benefits, such as the state retirement pension, child benefit and income support. Other government expenditure also provides indirect benefits to households. Some of this expenditure provides a general benefit to the whole community, for example spending on defence, public order and transport. Some, such as expenditure on health and education, provides benefit to particular types of household.

This study estimates the impact on households of a range of taxes and benefits. It adds the value of government benefits to the private income of households and subtracts the value of taxes. This gives a comprehensive measure of household income that takes into account the effects of selected taxes and benefits.

The analysis includes only those taxes and benefits which are directly related to households. It does not allocate the whole of government revenue and expenditure. For example, revenue from corporation tax and most spending which benefits the whole community are not included. There are three main reasons for non-allocation. Some taxes and benefits fall on people who do not live in private households. For some taxes and benefits, there

is no clear conceptual basis for allocation to households. In other cases, there is a lack of data to enable allocation. Of the £309 billion, raised and spent by the government in 1996-97, the study allocates about 60 per cent of revenue and 57 per cent of spending to households (see Appendix 1, Table 1).

The estimated values of the benefits and taxes reflect the study methodology. They are based on the assumptions about which taxes and benefits should be covered and to whom they should apply. Different approaches could have been used and they might lead to different results. Where practicable, the methodology used is similar to that used in previous studies. However, the reader should not make direct comparisons with earlier studies because of changes in the underlying survey and improvements in the methodology. For example, the survey introduced new questions for the self-employed in 1996-97 and this analysis is based on data grossed up to the UK household population. The study includes some comparisons over time that are sufficiently robust to these changes.

### Concepts and sources

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

The unit of analysis used in this study is the household. The households are ranked by their equivalised disposable income. Equivalisation takes into account the size and composition of households in order to recognise differing demands on resources. For example, a household of five would need a higher income than a single person to achieve the same standard of living (see Appendix 3, paragraph 41).

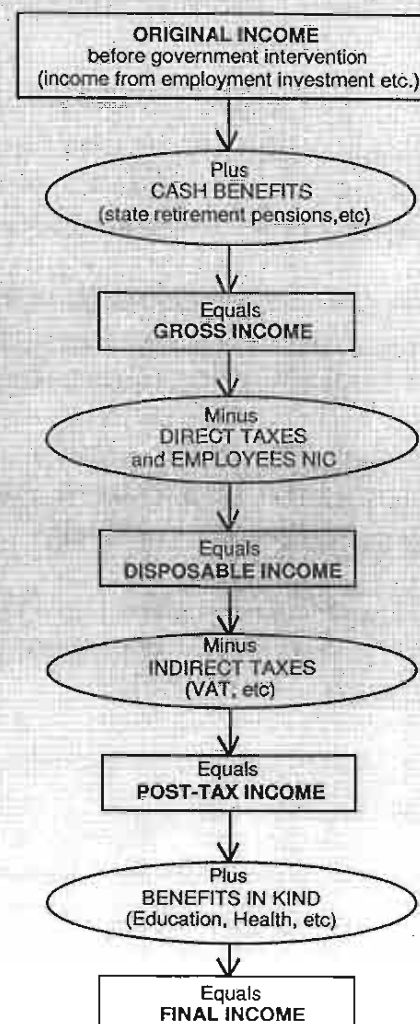
Equivalised income is used only to rank the households. Most monetary values shown in the article are not equivalised. Where equivalised amounts are given, they are shown in *italics*.

The main data source for this analysis is the Family Expenditure Survey (FES) which covers about 6,500 households each year. People living in hotels, lodging houses and in institutions such as old peoples' homes are excluded.

The survey results are grossed up so that the population totals reflect the whole household population in terms of age, sex and region. Different grossing factors are applied to different types of household in order to correct for over- and under representation of these groups in the responding sample of the FES. Studies have indicated that the FES suffers from under-representation at the very top of the income distribution. This under-representation is not directly corrected by the grossing methodology and may lead to some under-estimation of income.

Fuller details of the concepts and methodology used are given in Appendix 3.

Chart 1  
Stages of redistribution



## RESULTS FOR ALL HOUSEHOLDS

### Overall effect

The overall effect of the various stages of the tax-benefit system on households is summarised in Table A. The top fifth of households (those in the top quintile) receive 51 per cent of all original income. After taking into account cash benefits, this group's share falls to 44 per cent. At the other end of the scale, the share of the lowest quintile group rises from 2.3 per cent to 6.8 per cent. A further, but comparatively smaller, compression of the income distribution occurs when direct taxes are deducted, but this is reversed after indirect taxes are taken into account.

**TABLE A: Percentage shares of household income and Gini coefficients<sup>1</sup>, 1996-97**

|                         | Percentage shares of equivalised income for households ranked by equivalised disposable income |              |                   |                 |
|-------------------------|--|--------------|-------------------|-----------------|
|                         | Original income  | Gross income | Disposable income | Post-tax income |
| <b>Quintile group</b>   |  |              |                   |                 |
| Bottom                  | 2  | 7            | 8                 | 7               |
| 2nd                     | 7  | 11           | 12                | 11              |
| 3rd                     | 15   | 16           | 16                | 16              |
| 4th                     | 25   | 23           | 23                | 22              |
| Top                     | 51   | 44           | 42                | 44              |
| <b>All households</b>   |  |              |                   |                 |
|                         | 100  | 100          | 100               | 100             |
| <b>Decile group</b>     |  |              |                   |                 |
| Bottom                  | 1  | 3            | 3                 | 2               |
| Top                     | 33   | 28           | 26                | 28              |
| <b>Gini coefficient</b> |  |              |                   |                 |
| (percent)               | 53   | 37           | 34                | 38              |

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

The Gini coefficient is the most widely used summary measure of the inequality of the distribution of income (see Appendix 3, paragraph 44). It takes values between 0 and 100 per cent - the higher values indicating greater inequality. The fall in the Gini coefficient from 53 per cent for original income to 37 per cent for gross income (see Table A) shows that cash benefits contribute the most to the reduction in income inequality.

## Characteristics of households

Average household size does not vary much across the quintile groups but there are more children in the households at the lower end of the distribution (Table B and Appendix 1, Table 2b). Households in the bottom quintile group have far fewer economically active members (average 0.6 per household) than households in the top quintiles (average 1.7 per household).

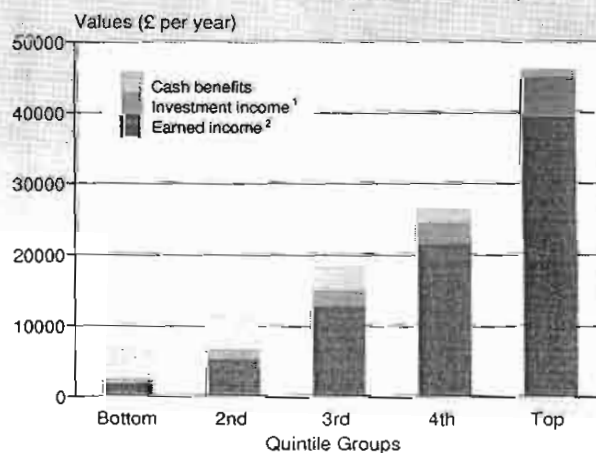
Over three quarters of one adult households with children are in the bottom two quintile groups. Retired households are also over-represented at the bottom of the distribution with over 60 percent of them in the lowest two quintiles. Non-retired households with two adults and no children are over represented at the top of the distribution with 60 percent in the top 40 per cent of the distribution.

### Stages of redistribution

The level of original income varies widely between households. Table B shows this and other income measures for quintile groups. The average original income for households in the top quintile group is £44,780 compared with an average of £2,310 for the lowest quintile group. Nearly 90 percent of the adults in the top quintile group are economically active. This group has nearly three times as many economically active members as the lowest quintile group. In addition, five out of six households in the top quintile have a chief economic supporter in full-time employment or self-employed compared with one out of eight for the lowest quintile

**Chart 2**

Sources of income by quintile groups of equivalised disposable income, 1996-97



<sup>1</sup> Investment income includes occupational pensions and annuities.  
<sup>2</sup> Earned income includes wages and salaries, income from self-employment and income from "fringe benefits".

Earnings from employment or self-employment are by far the most important source of income overall, making up over 70 per cent of gross income. However, as Chart 2 illustrates, cash benefits are an important component, particularly for households in the bottom half of the distribution.

**TABLE B: Summary of the effects of taxes and benefits by quintile groups of equivalised disposable income, 1996-97**

|   | Quintile groups of households ranked by EQUIVALISED disposable income |        |        |        |        | All households |
|---|---|--------|--------|--------|--------|----------------|
|   | Bottom  | 2nd    | 3rd    | 4th    | Top    |                |
| <b>Average per household (£ per year)<sup>1</sup></b> |   |        |        |        |        |                |
| Original income                                       | 2 310   | 6 450  | 14 710 | 24 220 | 44 780 | 18 490         |
| plus cash benefits                                    | 4 770   | 4 800  | 3 370  | 1 960  | 1 090  | 3 200          |
| Gross income  | 7 080   | 11 250 | 18 070 | 26 180 | 45 870 | 21 690         |
| less direct taxes <sup>2</sup> and employees' NIC     | 720   | 1 450  | 3 180  | 5 400  | 10 710 | 4 290          |
| Disposable income                                     | 6 360   | 9 810  | 14 890 | 20 770 | 35 150 | 17 400         |
| less indirect taxes                                   | 1 930   | 2 470  | 3 420  | 4 280  | 5 390  | 3 500          |
| Post-tax income                                       | 4 430   | 7 340  | 11 470 | 16 490 | 29 760 | 13 900         |
| plus benefits in kind                                 | 3 880   | 3 260  | 3 020  | 2 550  | 2 030  | 2 950          |
| Final income  | 8 310   | 10 600 | 14 490 | 19 040 | 31 790 | 16 850         |
| <b>Average per household (number)</b>                 |   |        |        |        |        |                |
| Children <sup>3</sup>                                 | 0.8   | 0.6    | 0.6    | 0.5    | 0.4    | 0.6            |
| Adults  | 1.6   | 1.7    | 1.9    | 2.0    | 1.9    | 1.8            |
| Persons   | 2.4   | 2.3    | 2.5    | 2.5    | 2.3    | 2.4            |
| People in full-time education                         | 0.7   | 0.5    | 0.5    | 0.4    | 0.3    | 0.5            |
| Economically active people                            | 0.6   | 0.8    | 1.3    | 1.6    | 1.7    | 1.2            |
| Retired people  | 0.6   | 0.6    | 0.5    | 0.3    | 0.2    | 0.4            |
| <b>Composition (Percentages)</b>                      |   |        |        |        |        |                |
| <b>Household type</b>                                 |   |        |        |        |        |                |
| Retired   | 39  | 43     | 25     | 14     | 9      | 26             |
| Non-retired   |   |        |        |        |        |                |
| 1 adult   | 14  | 10     | 12     | 16     | 20     | 14             |
| 2 adults  | 10  | 11     | 21     | 26     | 39     | 21             |
| 1 adult with children <sup>4</sup>                    | 12  | 8      | 3      | 1      | 1      | 5              |
| 2 adults with children                                | 20  | 18     | 24     | 24     | 19     | 21             |
| 3 or more adults <sup>5</sup>                         | 6   | 9      | 15     | 19     | 12     | 12             |
| Total   | 100   | 100    | 100    | 100    | 100    | 100            |

<sup>1</sup> 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).

<sup>2</sup> These are income tax (which is after tax relief at source on mortgage interest and life assurance premiums) and Council tax, domestic rates and water charges after deducting discounts, Council tax benefits and rate rebates.

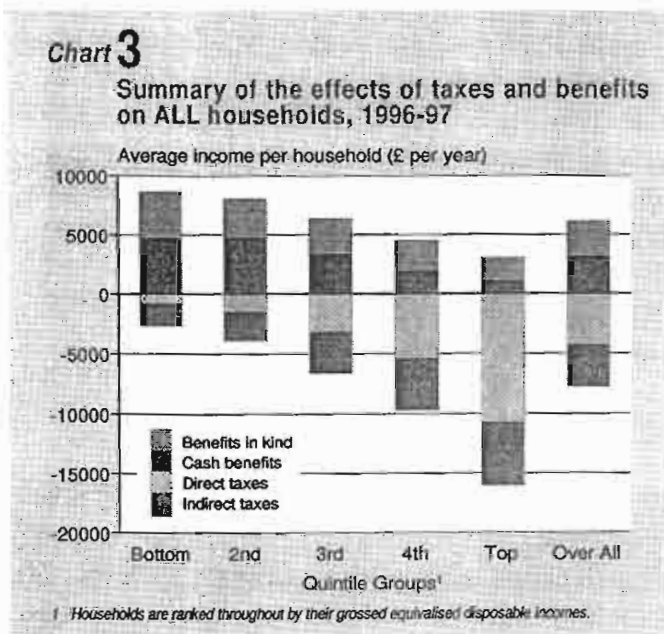
<sup>3</sup> Children are defined as persons aged under 16 or aged between 16 and 18, unmarried and receiving non-advanced further education.

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

<sup>5</sup> With or without children.

Redistribution of income through the tax-benefit system reduces the dispersion of incomes, so that the average final income for each quintile group ranges from £8,310 to £31,790, a ratio of about 1:3.8 compared with the ratio for original incomes of about 1:19.

Chart 3 illustrates the different impact that the tax-benefit system has on households in different quintile groups.



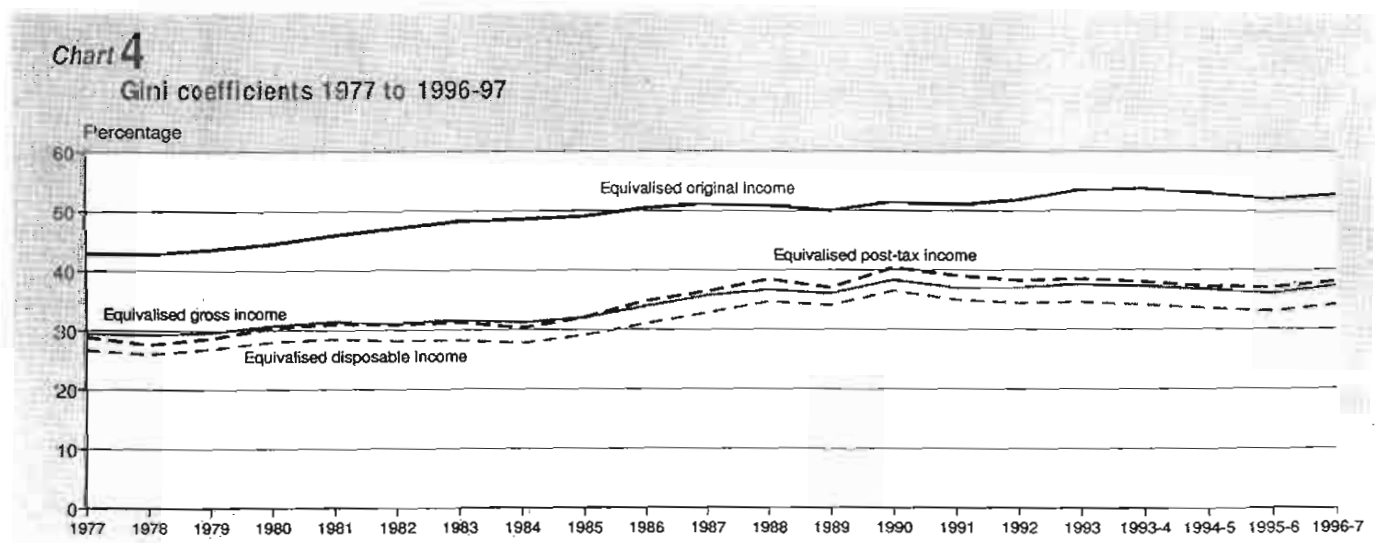
The income pattern of the retired is very different from that of households whose head is of working age; for example they receive a higher proportion of their income from contributory benefits, particularly the retirement pension. Their expenditure pattern (which is reflected in their indirect tax payments) is also different. For these reasons, in the detailed examination of each stage of the tax-benefit system which follows, retired and non-retired households are analysed separately.

### Changes over time

Inequality in original income has been rising rapidly since the late 1970s. Chart 4 shows that the Gini coefficient rose from 43 in 1977 to a high of 54 in 1993-94. This growth seems to have stopped since then although there is a slight increase in the Gini coefficient this year.

The Gini coefficient for disposable income also rose slightly in 1996-97 after falling slowly for several years. It is too early to say whether this is a reversal of the trend that began in the early nineties of disposable income becoming more equally distributed following a period of increase in inequality in the second half of the eighties (see Chart 4).

In recent years the trends in gross income and post-tax income have been very similar to the trend in disposable income.



## RESULTS FOR NON-RETIRED HOUSEHOLDS

### Overall effect

Original income is more evenly spread across non-retired households than across all households, the Gini coefficient is 45 as against 53. However, adding in cash benefits has less of an equalising effect for non-retired households. The Gini coefficients and shares of income for non-retired households are very similar to those for all households for gross, disposable and post-tax income (see Table C). The taxes and benefits system is more redistributive across all households than across non-retired households.

**TABLE C: Percentage shares of household income and Gini coefficients<sup>1</sup> for NON-RETIRED households, 1996-97**

| Percentage shares of equivalised income for NON-RETIRED households ranked by equivalised disposable income |                 |              |                   |                 |
|--|-----------------|--------------|-------------------|-----------------|
|  | Original income | Gross income | Disposable income | Post-tax income |
| Quintile group   |                 |              |                   |                 |
| Bottom   | 3               | 6            | 7                 | 6               |
| 2nd  | 9               | 12           | 12                | 11              |
| 3rd  | 17              | 17           | 17                | 16              |
| 4th  | 24              | 23           | 23                | 23              |
| Top  | 46              | 43           | 41                | 44              |
| All non-retired households   | 100             | 100          | 100               | 100             |
| Decile group   |                 |              |                   |                 |
| Bottom   | 1               | 3            | 3                 | 2               |
| Top  | 29              | 27           | 26                | 28              |
| Gini coefficient (percent)   | 45              | 36           | 34                | 38              |

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

### Characteristics of households

Average household size falls as disposable income rises. The fall is more than accounted for by the children. Households in the bottom quintile group have three times as many children as those in the top quintile group (Table D and Appendix 1, Table 3b). Nearly 30 per cent of households with children are in the bottom quintile.

By contrast over 30 per cent of two adult households without children are in the top quintile group. Nearly 80 per cent of the members of households in the top quintile group are economically active by comparison with just over 30 per cent for the bottom quintile group.

### Original income

The distribution of original income among non-retired households is more equal than among all households, ranging from an average of £3,900 per annum in the lowest quintile group to £49,690 in the highest (Table D), a ratio of 1:13 compared with the ratio of 1:19 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. On average, households in the top quintile group have twice as many economically active members as households in the bottom quintile group.

### Cash benefits

Cash benefits are of two types: contributory (paid from the National Insurance Fund to which individuals and their employers make contributions while working), and non-contributory (Table E). For non-retired households, non-contributory benefits make up 70 per cent of all cash benefit income. Most non-contributory benefits, in particular Income Support and Housing Benefit, are 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. About 60 per cent of Income Support and Housing Benefit paid to non-retired households goes to households in the bottom fifth of the distribution. Child benefit payments are based on the number of children in the household, with a supplement for lone parents. The payments are higher at the lower end of the distribution because these households have more children (see table D). Contributory benefits, for which the individual's contribution record rather than income is the criterion for payment, are highest for the second quintile group. Cash benefits formed 55 per cent of the gross income of households in the bottom quintile group on average and 9 per cent of the gross income for all non-retired households: their payment resulted in a significant reduction in income inequality.

**TABLE D: Summary of the effects of taxes and benefits on NON-RETIRED households, 1996-97**

|   | Quintile groups of NON-RETIRED households ranked by equivalised disposable income |        |        |        |        | All non-retired households |
|---|---|--------|--------|--------|--------|----------------------------|
|   | Bottom  | 2nd    | 3rd    | 4th    | Top    |                            |
| <b>Average per household (£ per year)</b>       |   |        |        |        |        |                            |
| Original income                                 | 3 880   | 11 970 | 20 960 | 29 060 | 49 420 | 23 060                     |
| plus cash benefits                              | 4 740   | 3 600  | 1 810  | 1 210  | 640    | 2 400                      |
| Gross income                                    | 8 620   | 15 560 | 22 770 | 30 270 | 50 060 | 25 460                     |
| less direct taxes <sup>1</sup> & employees' NIC | 960   | 2 560  | 4 540  | 6 580  | 11 880 | 5 300                      |
| Disposable income                               | 7 660   | 13 000 | 18 230 | 23 690 | 38 190 | 20 150                     |
| less indirect taxes                             | 2 450   | 3 270  | 4 210  | 4 690  | 5 700  | 4 070                      |
| Post-tax income                                 | 5 210   | 9 730  | 14 020 | 19 000 | 32 490 | 16 090                     |
| plus benefits in kind                           | 4 460   | 3 490  | 2 880  | 2 510  | 1 920  | 3 050                      |
| Final income                                    | 9 670   | 13 210 | 16 900 | 21 510 | 34 400 | 19 140                     |
| <b>Average per household (number)</b>           |   |        |        |        |        |                            |
| Children <sup>2</sup>                           | 1.3   | 0.9    | 0.7    | 0.5    | 0.4    | 0.7                        |
| Adults  | 1.7   | 1.9    | 2.1    | 2.1    | 1.9    | 2.0                        |
| Persons   | 3.0   | 2.8    | 2.8    | 2.6    | 2.3    | 2.7                        |
| People in full-time education                   | 1.1   | 0.8    | 0.6    | 0.5    | 0.3    | 0.6                        |
| Economically active people                      | 0.9   | 1.4    | 1.8    | 1.9    | 1.8    | 1.6                        |
| Retired people                                  | 0.0   | 0.1    | 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 Council tax, domestic rates and water charges after deducting discounts, Council tax benefit and rate rebates.  
2 Children are defined as persons aged under 16 or aged between 16 and 18, unmarried and receiving non-advanced further education.

**TABLE E: Average value of cash benefits for each quintile group of NON-RETIRED households, 1996-97**

|  | Quintile groups of NON-RETIRED households ranked by equivalised disposable income |      |      |      |     | All non-retired households |
|--|---|------|------|------|-----|----------------------------|
|  | Bottom  | 2nd  | 3rd  | 4th  | Top |                            |
| <b>Average per household (£ per year)</b>                    |   |      |      |      |     |                            |
| <b>Contributory</b>  |   |      |      |      |     |                            |
| Retirement pension   | 90  | 350  | 410  | 250  | 200 | 260                        |
| Incapacity benefit   | 430   | 580  | 300  | 170  | 50  | 310                        |
| Unemployment benefit/<br>Job seeker's allowance <sup>1</sup> | 170   | 100  | 40   | 40   | 20  | 70                         |
| Other  | 50  | 70   | 60   | 100  | 70  | 70                         |
| Total contributory   | 740   | 1100 | 800  | 560  | 340 | 710                        |
| <b>Non-contributory</b>                                      |   |      |      |      |     |                            |
| Income support   | 1700  | 700  | 170  | 70   | 20  | 530                        |
| Child benefit  | 670   | 470  | 350  | 270  | 180 | 390                        |
| Housing benefit  | 1030  | 600  | 110  | 20   | 10  | 350                        |
| Sickness/disablement<br>related                              | 180   | 420  | 290  | 200  | 40  | 230                        |
| Other  | 420   | 310  | 100  | 80   | 40  | 190                        |
| Total non-contributory                                       | 3990  | 2500 | 1000 | 650  | 300 | 1690                       |
| Total cash benefits  | 4740  | 3600 | 1810 | 1210 | 640 | 2400                       |
| Cash benefits as a percentage<br>of gross income             | 55  | 23   | 8    | 4    | 1   | 9                          |

1. Job Seekers Allowance replaced Unemployment Benefit from October 1996. In some cases part of Job Seekers Allowance replaces Income Support and is therefore non-contributory (see Appendix 3, paragraph 20).

### Income tax, NI contributions and local taxes

The impact of direct taxation is progressive, that is households at the lower end of the income distribution pay a smaller proportion of their income in direct taxes than households at the higher end of the distribution (see Table F).

**TABLE F: Income tax, employees' NIC and local taxes as percentages of gross income for each quintile group of NON-RETIRED households, 1996-97**

|                          | Quintile groups of NON-RETIRED households ranked by equivalised disposable income |      |      |      |      | All non-retired households |
|--------------------------|---|------|------|------|------|----------------------------|
|                          | Bottom  | 2nd  | 3rd  | 4th  | Top  |                            |
| <b>Percentages</b>       |   |      |      |      |      |                            |
| Income tax <sup>1</sup>  | 4.6   | 8.7  | 11.7 | 13.8 | 17.8 | 13.7                       |
| Employees' NIC           | 2.2   | 4.3  | 5.3  | 5.5  | 4.3  | 4.6                        |
| Local taxes <sup>2</sup> | 4.3   | 3.4  | 2.9  | 2.4  | 1.7  | 2.5                        |
| Total                    | 11.1  | 16.5 | 19.9 | 21.7 | 23.7 | 20.8                       |

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

2 Council tax, domestic rates and water charges after deducting discounts, Council tax benefit and rate rebates.

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 vary with the number of persons in employment and with their earnings. However, since National Insurance contributions are only levied on the first £455 of weekly earnings during 1996-97, households in the top quintile group pay rather less in contributions as a percentage of gross income than the 3rd and 4th quintile groups of households.

Income tax was, on average, 4.6 per cent of gross income in the lowest quintile, rising steadily to 17.8 per cent in the top quintile. As the quintile groups are based on equivalised disposable income, i.e. after direct tax, even the lowest quintile contains individuals who are liable for income tax.

Local taxes, mainly Council tax in Great Britain and domestic rates in Northern Ireland, are shown net of Council Tax Benefit and rates rebates. This is a change from previous analyses in which rebates on local taxation have been shown as cash benefits and the taxes themselves have been shown gross of the rebates. The change moves the analysis more in line with the National Accounts' treatment of these rebates and gives a more accurate picture of the burden of local taxation. Although the average payment of households in the lowest quintile group was about 40 per cent of the average payment of households in the top quintile group, the

payment represents a higher proportion of their gross income.

### Indirect taxes

Households' payments of indirect taxes are estimated from their expenditure recorded in the FES. Because the data on expenditure and incomes in the FES are compiled in different ways, they are not fully compatible (see Appendix 3, paragraph 29). Indeed, measured expenditure exceeds measured income in the lower half of the income distribution. There are a number of possible explanations for this. Some households with low incomes may draw on their savings or borrow in order to finance their expenditure. In which case, expenditure taxes are not being met from current income. For a minority of households we may be measuring income inaccurately. To give a more complete picture of the impact of indirect taxes, they are shown as a proportion of both disposable income and expenditure.

In total, indirect taxes expressed as a proportion of disposable income fall as disposable income rises (upper part of Table G), though the highest quintile pay most in indirect taxes in cash terms. The impact of indirect taxes declines for the top quintile groups partly because higher income households channel an increased proportion of their disposable income into savings, investments and mortgage payments.

**TABLE G: Indirect taxes as a percentage of (a) disposable income and (b) total household expenditure for each quintile group of NON-RETIRED households, 1996-97**

|   | Quintile groups of NON-RETIRED households ranked by equivalised disposable income |             |             |             |             | All non-retired households |
|---|---|-------------|-------------|-------------|-------------|----------------------------|
|   | Bottom  | 2nd         | 3rd         | 4th         | Top         |                            |
| <b>(a) Percentages of disposable income</b>       |   |             |             |             |             |                            |
| VAT   | 12.0  | 9.8         | 9.5         | 8.4         | 7.0         | 8.6                        |
| Duty on alcohol                                   | 1.5   | 1.5         | 1.4         | 1.3         | 0.8         | 1.2                        |
| Duty on tobacco                                   | 5.5   | 3.1         | 2.1         | 1.4         | 0.6         | 1.7                        |
| Duty on hydrocarbon oils and Vehicle excise duty  | 3.4   | 3.2         | 3.0         | 2.7         | 1.8         | 2.5                        |
| Other indirect taxes                              | 9.6   | 7.6         | 7.0         | 6.0         | 4.7         | 6.2                        |
| <b>Total indirect taxes</b>                       | <b>32.0</b>   | <b>25.2</b> | <b>23.1</b> | <b>19.8</b> | <b>14.9</b> | <b>20.2</b>                |
| <b>(b) Percentages of expenditure<sup>1</sup></b> |   |             |             |             |             |                            |
| VAT   | 8.0   | 8.0         | 7.9         | 7.7         | 7.2         | 7.7                        |
| Duty on alcohol                                   | 1.0   | 1.2         | 1.2         | 1.2         | 0.9         | 1.1                        |
| Duty on tobacco                                   | 3.6   | 2.5         | 1.8         | 1.3         | 0.6         | 1.6                        |
| Duty on hydrocarbon oils and Vehicle excise duty  | 2.3   | 2.6         | 2.5         | 2.5         | 1.8         | 2.3                        |
| Other indirect taxes                              | 6.4   | 6.2         | 5.8         | 5.5         | 4.8         | 5.5                        |
| <b>Total indirect taxes</b>                       | <b>21.3</b>   | <b>20.6</b> | <b>19.2</b> | <b>18.1</b> | <b>15.2</b> | <b>18.1</b>                |

<sup>1</sup> Calculated to be consistent with disposable income. See paragraph 32 of Appendix 3 for the definition of expenditure.



When indirect tax payments are expressed as a percentage of expenditure then the taxes rise broadly in line with expenditure, although the households in the top quintile group pay a smaller proportion of their expenditure in taxation. The burden of tobacco duty is much heavier on households in the lower half of the distribution. The bottom quintile group of households pay 24 per cent of total tobacco duty.

### 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 the estimated costs of providing them. The largest two items for which such imputations are made are health and education services, the allocated part of which together accounted for 24.9 per cent of total general government expenditure in 1996. Other items for which imputations are made are school meals and welfare milk, housing subsidy and travel subsidies, together accounting for a further 1.3 per cent of general government expenditure.

Education benefit is attributed to households according to the members' usage of state education (see Appendix 3, paragraph 34). The bottom quintile group contains the highest number of children in full time education: it contains four and a half times as many children in state schools as the highest quintile group ( see Table 3b, Appendix 1). 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 from the health service is estimated according to the age and sex of the household members (see Appendix 3, paragraph 36). The imputed benefit is relatively high for young children, low in later childhood and through the adult years until it begins to rise from late middle age onwards. Table H shows that this benefit falls gradually as income increases. This pattern is a reflection of the demographic composition of the households.

The housing subsidy (see Appendix 3, paragraph 37) has been spread between public sector tenants, and since such households tend to be concentrated in the lower half of the income distribution this is where the imputed benefit is highest.

Travel subsidies cover the support payments made to bus and train operating companies. 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. The ratio of benefits in kind to post-tax income decreases from 86 per cent in the lowest quintile group to 6 per cent in the highest quintile group, indicating that this expenditure contributes to the reduction in income inequality.

**TABLE H: Average value of benefits in kind for each quintile group of NON-RETIRED households, 1996-97**

|  | Quintile groups of NON-RETIRED households ranked by equivalised disposable income |              |              |              |              | All non-retired households |
|--|---|--------------|--------------|--------------|--------------|----------------------------|
|  | Bottom  | 2nd          | 3rd          | 4th          | Top          |                            |
| <b>Average per household (£ per year)</b>                  |   |              |              |              |              |                            |
| Education  | 2 660   | 1 870        | 1 360        | 1 120        | 610          | 1 520                      |
| National health service                                    | 1 530   | 1 470        | 1 420        | 1 290        | 1 150        | 1 370                      |
| Housing subsidy <sup>1</sup>                               | 110   | 60           | 20           | 10           | 0            | 40                         |
| Travel subsidies   | 40  | 60           | 70           | 90           | 160          | 80                         |
| School meals and welfare milk                              | 120   | 30           | 10           | 0            | 0            | 30                         |
| <b>Total</b>   | <b>4 460</b>  | <b>3 490</b> | <b>2 880</b> | <b>2 510</b> | <b>1 920</b> | <b>3 050</b>               |
| <b>Benefits in kind as a percentage of post-tax income</b> |   |              |              |              |              |                            |
|  | 86  | 36           | 21           | 13           | 6            | 19                         |

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

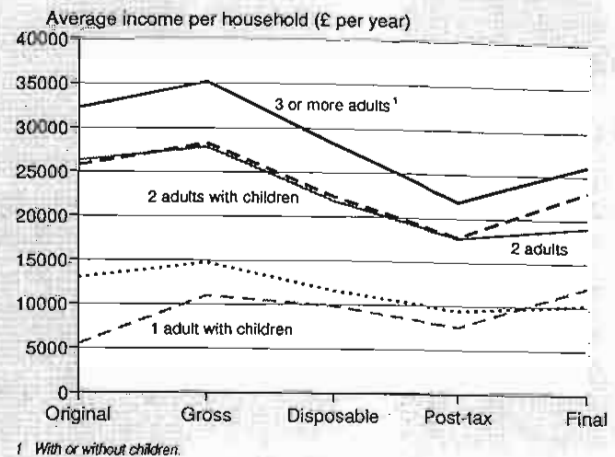
## The effects of taxes and benefits by household type

Chart 5 shows how the tax and benefit system affects different types of non-retired households. Original income is strongly related to the number of adults in the household. For two-adult households, the number of economically active members is little affected by the number of children and the average original income is the same for these households with and without children. The same is true for three-adult households. However, among one-adult households, original income is much lower for those with children as the adult is less likely to be economically active.

One in five three-adult households includes a retired person and one in eight of the households with two adults and no children have one retired and one non-retired member. As a result these household groups receive more in cash benefits. In addition, cash benefits are higher for those households with children. Benefits in kind are considerably higher for households with children because of the imputed benefit from education. Overall, among the non-retired households, only one-adult-with-children households and

households with two adults and three or more children are net beneficiaries of the tax-benefit system and have a higher final income than original income (see Appendix 1, Table 7).

**Chart 5**  
Income stages by non-retired household types, 1996-97



**TABLE J: Summary of the effects of taxes and benefits on RETIRED households, 1996-97**

|   | Quintile groups of RETIRED households ranked by equivalised disposable income |       |       |        |        | All retired households |
|---|---|-------|-------|--------|--------|------------------------|
|   | Bottom  | 2nd   | 3rd   | 4th    | Top    |                        |
| <b>Average per household (£ per year)</b> |   |       |       |        |        |                        |
| Original income                           |   |       |       |        |        |                        |
| Earnings                                  | 30  | 80    | 140   | 370    | 830    | 290                    |
| Occupational pensions                     | 390   | 1 000 | 1 730 | 3 720  | 10 890 | 3 550                  |
| Investment income                         | 350   | 350   | 520   | 1 240  | 5 440  | 1 580                  |
| Other income                              | 20  | 40    | 40    | 70     | 70     | 50                     |
| Total original income                     | 780   | 1 480 | 2 420 | 5 400  | 17 230 | 5 460                  |
| plus Contributory benefits                | 3 770   | 4 280 | 4 130 | 4 400  | 4 210  | 4 160                  |
| Non-contributory benefits                 | 620   | 1 190 | 1 630 | 1 890  | 1 250  | 1 320                  |
| Gross income                              | 5 170   | 6 950 | 8 190 | 11 690 | 22 690 | 10 940                 |
| less Income tax <sup>1</sup>              | 50  | 100   | 210   | 690    | 3 180  | 850                    |
| Employees'NIC                             | 0   | 0     | 0     | 20     | 50     | 20                     |
| Local taxes <sup>2</sup>                  | 460   | 440   | 480   | 600    | 780    | 550                    |
| Disposable income                         | 4 650   | 6 410 | 7 490 | 10 390 | 18 680 | 9 530                  |
| less Indirect taxes                       | 1 250   | 1 400 | 1 630 | 2 050  | 3 090  | 1 880                  |
| Post-tax income                           | 3 400   | 5 010 | 5 860 | 8 350  | 15 600 | 7 640                  |
| plus National health service              | 2 660   | 2 540 | 2 410 | 2 520  | 2 230  | 2 470                  |
| Housing subsidy <sup>3</sup>              | 30  | 80    | 90    | 60     | 20     | 60                     |
| Other benefits in kind                    | 130   | 120   | 90    | 130    | 150    | 120                    |
| Final income                              | 6 220   | 7 750 | 8 450 | 11 060 | 17 990 | 10 300                 |

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

<sup>2</sup> Council tax, domestic rates and water charges after deducting discounts, Council tax benefit and rate rebates.

<sup>3</sup> Does not include tax relief at source on mortgage payments, which is included in the income tax payments shown above

## RESULTS FOR RETIRED HOUSEHOLDS

Retired households (see Appendix 3, paragraph 8 for definition) have quite distinct income and expenditure patterns and so the tax-benefit system affects them in a different way from non-retired households (Table J). Over all retired households, the amount received through original income is the same as the amount from cash benefits. However, the lower four quintile groups are more dependent on benefits whereas for the top quintile group benefit income accounts for less than one quarter of gross income. The most important sources of original income are occupational pensions and investment income.

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 (76 per cent) are paid from the National Insurance Fund into which the recipients will have made contributions throughout their working lives. Non-contributory benefits are lowest for the bottom quintile group where two-thirds of the households own their house outright (Table 4b, Appendix 1) and consequently receive much less in housing benefits. In addition, disability benefits can constitute a significant proportion of the income of a retired household and its receipt may push a household up the income distribution.

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 top quintile group also pays nearly one third of the indirect taxes paid by retired households.

Retired households derive significant benefits from health services and, to a lesser extent, the housing subsidy and travel subsidies, though of course virtually none from the education service. Health benefit is spread fairly evenly within the group of retired households, but housing subsidy is substantially higher for the middle three quintile groups since they have the highest concentration of public sector tenants. The benefits received by retired households from travel subsidies are mainly for bus travel,

particularly in the form of concessionary fares, passes, etc, for senior citizens, and since these are not usually means-tested, there is no particular relationship with income.

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

A comparison of Table K with Table C 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.

**TABLE K: Percentage shares of household income and Gini coefficients<sup>1</sup> for RETIRED households, 1996-97**

|                            | Percentage shares of equivalised income for RETIRED households ranked by equivalised disposable income |              |                   |                 |
|----------------------------|--|--------------|-------------------|-----------------|
|                            | Original income  | Gross income | Disposable income | Post-tax income |
| Quintile group             |  |              |                   |                 |
| Bottom                     | 3  | 10           | 10                | 9               |
| 2nd                        | 5  | 13           | 14                | 13              |
| 3rd                        | 9  | 16           | 17                | 16              |
| 4th                        | 20   | 21           | 22                | 22              |
| Top                        | 63   | 40           | 38                | 39              |
| All retired households     | 100  | 100          | 100               | 100             |
| Decile group               |  |              |                   |                 |
| Bottom                     | 1  | 4            | 4                 | 4               |
| Top                        | 45   | 26           | 24                | 25              |
| Gini coefficient (percent) | 67   | 30           | 28                | 32              |

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

# Appendix 1: Detailed tables for 1996-97

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**TABLE 1 (Appendix 1): Guide to the allocation of general government expenditure and financing to households in 1996**

| Expenditure                              |                |              | Financing   |                |              |
|--|----------------|--------------|---|----------------|--------------|
|  | £ million      | % of total   |   | £ million      | % of total   |
| <b>Allocated expenditure<sup>1</sup></b> |                |              | <b>Allocated financing<sup>1</sup></b>                    |                |              |
| Allocated cash benefits                  |                |              | Income tax <sup>4</sup>                                   | 66 780         | 21.8         |
| Contributory (National Insurance, etc)   |                |              | Employees' & self-employed NI contributions               | 21 010         | 6.9          |
| Retirement                               | 31 730         | 10.4         | Council tax   | 9 910          | 3.2          |
| Widows and guardians                     | 1 050          | 0.3          | Taxes on final goods and services                         |                |              |
| Unemployment/ Job seekers allowance      | 1 040          | 0.3          | VAT   | 33 630         | 11.0         |
| Incapacity benefit                       | 7 690          | 2.5          | Duty on beer  | 2 500          | 0.8          |
| Maternity/Statutory maternity pay        | 520            | 0.2          | Duty on wines, cider, perry                               | 920            | 0.3          |
| Other                                    | 380            | 0.1          | Duty on spirits   | 1 910          | 0.6          |
| Non-contributory                         |                |              | Customs duties  | 1 200          | 0.4          |
| Family benefits                          | 8 880          | 2.9          | Betting duties  | 1 390          | 0.5          |
| Income support                           | 15 710         | 5.1          | Duty on tobacco   | 7 300          | 2.4          |
| War pensions                             | 1 360          | 0.4          | Duty on hydrocarbon oils                                  | 7 850          | 2.6          |
| Other                                    | 11 680         | 3.8          | Vehicle excise duty                                       | 2 850          | 0.9          |
| Student maintenance grants <sup>2</sup>  | 2 100          | 0.7          | Camelot: payments to NLDF                                 | 1 280          | 0.4          |
| Rent rebates and allowances              | 10 810         | 3.5          | Other   | 2 440          | 0.8          |
| Allocated benefits in kind               |                |              | Taxes & NI contributions on intermediate goods & services |                |              |
| Health services                          | 42 270         | 13.8         | Employers' NI contributions                               | 8 290          | 2.7          |
| Education                                | 33 940         | 11.1         | Commercial & Industrial rates                             | 6 280          | 2.1          |
| School meals and welfare milk            | 760            | 0.2          | Duty on hydrocarbon oils                                  | 4 550          | 1.5          |
| Housing subsidy                          | 1 190          | 0.4          | VAT   | 2 730          | 0.9          |
| Travel subsidies <sup>3</sup>            | 2 000          | 0.7          | Vehicle excise duty                                       | 730            | 0.2          |
|  |                |              | Other   | 1 040          | 0.3          |
|  | 173 090        | 56.5         |   | 184 590        | 60.3         |
| <b>Unallocated expenditure</b>           |                |              | <b>Unallocated financing</b>                              |                |              |
| Other current expenditure                | 91 630         | 29.9         | Employers' NI contributions not allocated                 | 16 970         | 5.5          |
| Capital expenditure                      | 10 680         | 3.5          | Taxes on expenditure not allocated                        | 29 880         | 9.8          |
| Debt interest                            | 27 160         | 8.9          | Other taxes   |                |              |
| Non-trading capital consumption          | 3 650          | 1.2          | Corporation tax   | 26 540         | 8.7          |
|  |                |              | Petroleum revenue tax                                     | 1 360          | 0.4          |
|  |                |              | Taxes on capital  | 2 950          | 1.0          |
|  |                |              | Other receipts <sup>5</sup>                               | 14 920         | 4.9          |
|  |                |              | Non-trading capital consumption                           | 3 650          | 1.2          |
|  |                |              | General government borrowing requirement                  | 25 360         | 8.3          |
| <b>Total expenditure</b>                 | <b>306 220</b> | <b>100.0</b> | <b>Total financing</b>                                    | <b>306 220</b> | <b>100.0</b> |

<sup>1</sup> Including benefits to and taxes paid by, people not living in private households. It is not possible (for the reasons given in Appendix 3, paragraph 1) to allocate all Government expenditure and revenue to households.

<sup>2</sup> Estimated.

<sup>3</sup> Including concessionary fares expenditure.

<sup>4</sup> Net of tax relief at source on mortgage interest and life assurance premiums.

<sup>5</sup> 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, 1997 Edition, Tables 9.4 & 9.1.

**TABLE 2A (Appendix 1): Average incomes, taxes and benefits by decile groups of ALL households, 1996-97**

|   | Decile groups of households ranked by equivalised disposable income |              |              |               |               |               |               |               |               |               | All households |
|---|---|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
|   | Bottom  | 2nd          | 3rd          | 4th           | 5th           | 6th           | 7th           | 8th           | 9th           | Top           |                |
| <b>Average per household (£ per year)</b>                 |   |              |              |               |               |               |               |               |               |               |                |
| <i>Decile points (equivalised £)</i>                      | 6 443   | 8 031        | 9 504        | 11 344        | 13 384        | 15 519        | 18 139        | 21 964        | 28 524        |               |                |
| Number of households in the population ('000s)            | 2 425   | 2 425        | 2 425        | 2 425         | 2 425         | 2 425         | 2 425         | 2 425         | 2 425         | 2 425         | 24 253         |
| <b>Original income</b>                                    |   |              |              |               |               |               |               |               |               |               |                |
| Wages and salaries  | 1 026   | 1 569        | 2 807        | 6 091         | 8 701         | 13 502        | 16 519        | 21 851        | 26 967        | 36 599        | 13 563         |
| Imputed income from benefits in kind                      | 3   | 3            | 8            | 10            | 49            | 158           | 230           | 297           | 551           | 1 283         | 259            |
| Self-employment income                                    | 409   | 433          | 461          | 885           | 1 095         | 1 579         | 1 750         | 1 909         | 2 695         | 10 229        | 2 145          |
| Occupational pensions, annuities                          | 153   | 402          | 740          | 953           | 1 292         | 1 475         | 1 821         | 1 722         | 2 367         | 2 837         | 1 376          |
| Investment income   | 183   | 199          | 270          | 352           | 569           | 668           | 988           | 931           | 1 452         | 4 123         | 974            |
| Other income  | 75  | 173          | 152          | 170           | 131           | 188           | 128           | 285           | 171           | 290           | 177            |
| <b>Total</b>  | <b>1 848</b>  | <b>2 779</b> | <b>4 439</b> | <b>8 462</b>  | <b>11 837</b> | <b>17 579</b> | <b>21 436</b> | <b>26 995</b> | <b>34 202</b> | <b>55 361</b> | <b>18 494</b>  |
| <b>Direct benefits in cash</b>                            |   |              |              |               |               |               |               |               |               |               |                |
| <b>Contributory</b>                                       |   |              |              |               |               |               |               |               |               |               |                |
| Retirement pension  | 1 227   | 1 885        | 2 087        | 1 529         | 1 584         | 1 178         | 961           | 672           | 568           | 506           | 1 220          |
| Unemployment benefit/ Job seeker's allowance <sup>1</sup> | 136   | 103          | 52           | 53            | 59            | 42            | 27            | 30            | 36            | 13            | 55             |
| Incapacity benefit  | 140   | 386          | 370          | 458           | 413           | 281           | 213           | 190           | 96            | 59            | 261            |
| Widows' benefits  | 66  | 28           | 50           | 69            | 57            | 42            | 54            | 59            | 35            | 18            | 48             |
| Statutory Maternity Pay/ Allowance                        | 4   | 1            | 6            | 16            | 16            | 15            | 17            | 34            | 41            | 61            | 21             |
| <b>Non-contributory</b>                                   |   |              |              |               |               |               |               |               |               |               |                |
| Income support  | 1 205   | 1 158        | 827          | 567           | 368           | 228           | 187           | 72            | 59            | 6             | 468            |
| Child benefit   | 434   | 392          | 298          | 322           | 295           | 299           | 257           | 243           | 219           | 141           | 290            |
| Housing benefit   | 536   | 922          | 871          | 668           | 435           | 161           | 126           | 40            | 14            | 8             | 378            |
| Invalid care allowance                                    | 15  | 37           | 34           | 79            | 46            | 64            | 15            | 4             | 17            | 0             | 31             |
| Attendance allowance                                      | 0   | 60           | 97           | 130           | 165           | 129           | 74            | 22            | 24            | 8             | 71             |
| Disability living allowance                               | 50  | 87           | 159          | 208           | 216           | 186           | 181           | 131           | 53            | 31            | 130            |
| War pensions  | 5   | 14           | 11           | 25            | 41            | 31            | 15            | 30            | 17            | 5             | 19             |
| Severe disablement allowance                              | 34  | 14           | 24           | 35            | 37            | 22            | 27            | 28            | 14            | 4             | 24             |
| Industrial injury disablement benefit                     | 11  | 10           | 21           | 29            | 49            | 32            | 27            | 34            | 5             | 13            | 23             |
| Student maintenance awards                                | 118   | 41           | 63           | 84            | 65            | 30            | 51            | 28            | 52            | 21            | 55             |
| Government training schemes                               | 32  | 57           | 16           | 42            | 17            | 20            | 12            | 14            | 5             | 2             | 22             |
| Family credit   | 124   | 135          | 126          | 110           | 50            | 20            | 3             | 3             | 0             | -             | 57             |
| Other non-contributory benefits                           | 30  | 37           | 29           | 45            | 21            | 15            | 35            | 7             | 12            | 9             | 24             |
| <b>Total cash benefits</b>                                | <b>4 168</b>  | <b>5 365</b> | <b>5 140</b> | <b>4 465</b>  | <b>3 934</b>  | <b>2 796</b>  | <b>2 284</b>  | <b>1 640</b>  | <b>1 267</b>  | <b>906</b>    | <b>3 197</b>   |
| <b>Gross income</b>                                       | <b>6 017</b>  | <b>8 144</b> | <b>9 580</b> | <b>12 927</b> | <b>15 771</b> | <b>20 375</b> | <b>23 720</b> | <b>28 635</b> | <b>35 469</b> | <b>56 267</b> | <b>21 690</b>  |
| <b>Direct taxes and Employees' NIC</b>                    |   |              |              |               |               |               |               |               |               |               |                |
| Income tax  | 288   | 247          | 445          | 986           | 1 520         | 2 323         | 3 041         | 4 046         | 5 876         | 10 507        | 2 928          |
| less: Tax relief at source <sup>2</sup>                   | 43  | 33           | 39           | 69            | 87            | 134           | 146           | 190           | 212           | 246           | 120            |
| Employers' NI contributions                               | 85  | 105          | 187          | 414           | 592           | 924           | 1 151         | 1 478         | 1 814         | 2 012         | 876            |
| Local taxes <sup>3</sup>                                  | 615   | 613          | 621          | 636           | 664           | 696           | 731           | 755           | 803           | 907           | 704            |
| less: Council tax benefit / Rate rebates                  | 225   | 209          | 173          | 111           | 89            | 42            | 40            | 19            | 18            | 14            | 94             |
| <b>Total</b>  | <b>719</b>  | <b>722</b>   | <b>1 040</b> | <b>1 855</b>  | <b>2 599</b>  | <b>3 768</b>  | <b>4 737</b>  | <b>6 069</b>  | <b>8 264</b>  | <b>13 166</b> | <b>4 294</b>   |
| <b>Disposable income</b>                                  | <b>5 297</b>  | <b>7 422</b> | <b>8 539</b> | <b>11 072</b> | <b>13 172</b> | <b>16 607</b> | <b>18 983</b> | <b>22 566</b> | <b>27 206</b> | <b>43 101</b> | <b>17 397</b>  |
| <b>Equivalised disposable income</b>                      | <b>5 040</b>  | <b>7 268</b> | <b>8 748</b> | <b>10 426</b> | <b>12 344</b> | <b>14 399</b> | <b>16 730</b> | <b>19 917</b> | <b>24 904</b> | <b>42 797</b> | <b>16 257</b>  |
| <b>Indirect taxes</b>                                     |   |              |              |               |               |               |               |               |               |               |                |
| <b>Taxes on final goods and services</b>                  |   |              |              |               |               |               |               |               |               |               |                |
| VAT   | 735   | 704          | 818          | 1 077         | 1 202         | 1 571         | 1 717         | 1 932         | 2 212         | 2 819         | 1 479          |
| Duty on tobacco   | 261   | 323          | 328          | 328           | 310           | 350           | 305           | 337           | 235           | 192           | 297            |
| Duty on beer and cider                                    | 52  | 50           | 55           | 88            | 89            | 125           | 124           | 157           | 137           | 134           | 101            |
| Duty on wines   | 10  | 10           | 14           | 19            | 21            | 24            | 34            | 41            | 57            | 85            | 32             |
| Duty on spirits   | 26  | 41           | 50           | 63            | 66            | 85            | 88            | 93            | 97            | 108           | 72             |
| Duty on hydrocarbon oils                                  | 149   | 136          | 165          | 234           | 283           | 365           | 388           | 446           | 483           | 514           | 316            |
| Vehicle excise duty                                       | 53  | 48           | 61           | 81            | 105           | 126           | 139           | 157           | 167           | 167           | 111            |
| Television licences                                       | 74  | 76           | 76           | 79            | 82            | 83            | 84            | 84            | 85            | 85            | 81             |
| Stamp duty on house purchase                              | 6   | 4            | 5            | 6             | 9             | 14            | 17            | 21            | 30            | 65            | 18             |
| Customs duties  | 24  | 24           | 26           | 34            | 39            | 50            | 52            | 58            | 65            | 81            | 45             |
| Betting taxes   | 29  | 41           | 43           | 53            | 54            | 81            | 62            | 88            | 56            | 61            | 57             |
| Fossil fuel levy  | 10  | 10           | 10           | 10            | 11            | 11            | 11            | 12            | 12            | 14            | 11             |
| Camelot National Lottery Fund                             | 29  | 33           | 41           | 50            | 50            | 63            | 66            | 69            | 53            | 55            | 51             |
| Other   | 23  | 13           | 14           | 28            | 30            | 31            | 39            | 41            | 44            | 62            | 32             |
| <b>Intermediate taxes</b>                                 |   |              |              |               |               |               |               |               |               |               |                |
| Commercial and industrial rates                           | 118   | 109          | 125          | 160           | 177           | 226           | 242           | 269           | 303           | 394           | 212            |
| Employers' NI contributions                               | 151   | 141          | 161          | 206           | 229           | 289           | 311           | 346           | 392           | 513           | 274            |
| Duty on hydrocarbon oils                                  | 87  | 82           | 93           | 119           | 129           | 158           | 170           | 187           | 212           | 271           | 151            |
| Vehicle excise duty                                       | 13  | 12           | 14           | 18            | 19            | 24            | 26            | 29            | 32            | 42            | 23             |
| Other   | 77  | 72           | 81           | 104           | 115           | 144           | 156           | 174           | 196           | 252           | 137            |
| <b>Total indirect taxes</b>                               | <b>1 926</b>  | <b>1 929</b> | <b>2 182</b> | <b>2 757</b>  | <b>3 021</b>  | <b>3 820</b>  | <b>4 028</b>  | <b>4 542</b>  | <b>4 870</b>  | <b>5 916</b>  | <b>3 499</b>   |
| <b>Post-tax income</b>                                    | <b>3 371</b>  | <b>5 493</b> | <b>6 358</b> | <b>8 315</b>  | <b>10 151</b> | <b>12 787</b> | <b>14 955</b> | <b>18 024</b> | <b>22 335</b> | <b>37 184</b> | <b>13 897</b>  |
| <b>Benefits in kind</b>                                   |   |              |              |               |               |               |               |               |               |               |                |
| Education   | 1 959   | 1 432        | 1 078        | 1 347         | 1 107         | 1 247         | 1 007         | 1 009         | 850           | 385           | 1 142          |
| National health service                                   | 1 894   | 2 039        | 1 950        | 1 821         | 1 800         | 1 652         | 1 528         | 1 367         | 1 283         | 1 240         | 1 657          |
| Housing subsidy   | 69  | 104          | 92           | 71            | 49            | 25            | 24            | 10            | 5             | 3             | 45             |
| Rail travel subsidy                                       | 20  | 15           | 16           | 31            | 35            | 55            | 53            | 60            | 115           | 150           | 55             |
| Bus travel subsidy  | 27  | 33           | 38           | 33            | 26            | 24            | 22            | 17            | 16            | 10            | 25             |
| School meals and welfare milk                             | 93  | 72           | 33           | 15            | 10            | 8             | 5             | 3             | 1             | 3             | 24             |
| <b>Total</b>  | <b>4 063</b>  | <b>3 695</b> | <b>3 207</b> | <b>3 319</b>  | <b>3 028</b>  | <b>3 010</b>  | <b>2 639</b>  | <b>2 466</b>  | <b>2 269</b>  | <b>1 790</b>  | <b>2 949</b>   |
| <b>Final income</b>                                       | <b>7 433</b>  | <b>9 188</b> | <b>9 565</b> | <b>11 634</b> | <b>13 179</b> | <b>15 798</b> | <b>17 594</b> | <b>20 491</b> | <b>24 605</b> | <b>38 974</b> | <b>16 846</b>  |

<sup>1</sup> Job Seekers Allowance replaced Unemployment Benefit from October 1996. In some cases part of Job seeker's allowance may replace Income Support and is therefore non-contributory (see Appendix 3, paragraph 20).

<sup>2</sup> On mortgage interest and life assurance premiums.

<sup>3</sup> Council tax, domestic rates and water charges after deducting discounts.

**TABLE 2B (Appendix 1): Household characteristics of decile groups of ALL households, 1996-97**

|  | Decile groups of ALL households ranked by equivalised disposable income |      |      |      |      |      |      |      |      |      | All households |
|--|---|------|------|------|------|------|------|------|------|------|----------------|
|  | Bottom  | 2nd  | 3rd  | 4th  | 5th  | 6th  | 7th  | 8th  | 9th  | Top  |                |
| <b>Average per household (number)</b>                |   |      |      |      |      |      |      |      |      |      |                |
| People   | 2.5   | 2.4  | 2.2  | 2.4  | 2.4  | 2.6  | 2.5  | 2.5  | 2.4  | 2.2  | 2.4            |
| Adults   | 1.6   | 1.6  | 1.6  | 1.8  | 1.8  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.8            |
| Children   | 0.9   | 0.7  | 0.5  | 0.6  | 0.5  | 0.6  | 0.5  | 0.5  | 0.4  | 0.3  | 0.6            |
| Economically active people                           | 0.6   | 0.5  | 0.6  | 1.0  | 1.1  | 1.5  | 1.6  | 1.7  | 1.7  | 1.7  | 1.2            |
| Retired people                                       | 0.5   | 0.7  | 0.7  | 0.5  | 0.5  | 0.4  | 0.3  | 0.2  | 0.2  | 0.1  | 0.4            |
| People in full-time education                        | 0.79  | 0.62 | 0.45 | 0.52 | 0.46 | 0.50 | 0.43 | 0.41 | 0.37 | 0.22 | 0.48           |
| In state primary schools                             | 0.38  | 0.34 | 0.26 | 0.24 | 0.23 | 0.22 | 0.20 | 0.17 | 0.17 | 0.07 | 0.23           |
| In state secondary schools                           | 0.25  | 0.20 | 0.12 | 0.18 | 0.15 | 0.18 | 0.14 | 0.15 | 0.11 | 0.05 | 0.15           |
| In further and higher education                      | 0.09  | 0.04 | 0.04 | 0.06 | 0.03 | 0.04 | 0.04 | 0.04 | 0.03 | 0.02 | 0.04           |
| In other educational establishments                  | 0.06  | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.06 | 0.06 | 0.06 | 0.08 | 0.05           |
| <b>Composition (percentages)</b>                     |   |      |      |      |      |      |      |      |      |      |                |
| <b>Household type</b>                                |   |      |      |      |      |      |      |      |      |      |                |
| Retired  |   |      |      |      |      |      |      |      |      |      |                |
| 1 adult  | 23  | 21   | 32   | 20   | 16   | 10   | 9    | 5    | 3    | 4    | 14             |
| 2 or more adults                                     | 12  | 23   | 18   | 16   | 14   | 10   | 9    | 6    | 7    | 4    | 12             |
| Non-retired  |   |      |      |      |      |      |      |      |      |      |                |
| 1 adult  | 15  | 12   | 10   | 11   | 12   | 12   | 15   | 16   | 19   | 21   | 14             |
| 2 adults   | 11  | 9    | 8    | 15   | 18   | 23   | 22   | 30   | 34   | 43   | 21             |
| 3 or more adults                                     | 3   | 2    | 4    | 6    | 8    | 12   | 16   | 14   | 11   | 10   | 9              |
| 1 adult with children                                | 11  | 13   | 10   | 7    | 4    | 3    | 1    | 1    | 1    | 1    | 5              |
| 2 adults with 1 child                                | 5   | 5    | 4    | 6    | 9    | 8    | 10   | 10   | 9    | 9    | 8              |
| 2 adults with 2 children                             | 9   | 6    | 7    | 9    | 12   | 12   | 11   | 11   | 10   | 5    | 9              |
| 2 adults with 3 or more children                     | 9   | 6    | 5    | 5    | 4    | 4    | 4    | 3    | 2    | 2    | 4              |
| 3 or more adults with children                       | 3   | 3    | 3    | 5    | 4    | 6    | 3    | 5    | 3    | 1    | 4              |
| <b>Household tenure</b>                              |   |      |      |      |      |      |      |      |      |      |                |
| Rented   | 46  | 63   | 59   | 48   | 38   | 25   | 21   | 16   | 13   | 8    | 34             |
| Local authority rented                               | 29  | 45   | 39   | 30   | 20   | 12   | 10   | 4    | 2    | 1    | 19             |
| Housing association                                  | 6   | 10   | 10   | 7    | 6    | 3    | 2    | 1    | 1    | 0    | 5              |
| Other rented unfurnished                             | 5   | 3    | 4    | 4    | 4    | 3    | 3    | 3    | 3    | 3    | 3              |
| Rented furnished                                     | 5   | 4    | 5    | 5    | 6    | 4    | 5    | 6    | 5    | 3    | 5              |
| Rent free  | 1   | 2    | 2    | 2    | 2    | 3    | 2    | 1    | 2    | 1    | 2              |
| Owner occupied                                       | 54  | 37   | 41   | 52   | 62   | 75   | 79   | 84   | 87   | 92   | 66             |
| With mortgage  | 20  | 13   | 16   | 28   | 36   | 51   | 54   | 63   | 67   | 73   | 42             |
| Rental purchase                                      | -   | -    | 1    | 1    | 0    | 1    | 0    | 0    | 1    | 0    | 0              |
| Owned outright                                       | 34  | 24   | 24   | 23   | 25   | 24   | 25   | 20   | 19   | 19   | 24             |
| <b>Age of chief economic supporter</b>               |   |      |      |      |      |      |      |      |      |      |                |
| Under 25   | 9   | 6    | 5    | 4    | 5    | 4    | 3    | 5    | 3    | 1    | 4              |
| Over 24 and under 35                                 | 17  | 17   | 13   | 15   | 18   | 18   | 19   | 25   | 28   | 25   | 20             |
| Over 34 and under 45                                 | 18  | 15   | 12   | 17   | 15   | 21   | 20   | 20   | 22   | 23   | 18             |
| Over 44 and under 55                                 | 13  | 10   | 11   | 16   | 14   | 19   | 23   | 25   | 25   | 27   | 18             |
| Over 54 and under 65                                 | 11  | 11   | 11   | 14   | 16   | 16   | 16   | 14   | 11   | 16   | 14             |
| Over 64 and under 75                                 | 13  | 19   | 25   | 20   | 16   | 13   | 10   | 7    | 7    | 5    | 14             |
| Over 74  | 18  | 22   | 23   | 15   | 15   | 8    | 8    | 3    | 3    | 3    | 12             |
| <b>Employment status of chief economic supporter</b> |   |      |      |      |      |      |      |      |      |      |                |
| Self-employed  | 6   | 5    | 5    | 6    | 7    | 9    | 9    | 7    | 9    | 17   | 8              |
| Full-time employee at work                           | 6   | 8    | 14   | 29   | 38   | 54   | 59   | 70   | 71   | 69   | 42             |
| Part-time employee at work                           | 8   | 6    | 8    | 9    | 7    | 5    | 6    | 5    | 4    | 4    | 6              |
| Unemployed   | 17  | 11   | 7    | 6    | 6    | 6    | 3    | 3    | 4    | 1    | 6              |
| Unoccupied and under minimum NI age                  | 29  | 27   | 18   | 13   | 11   | 5    | 6    | 5    | 3    | 2    | 12             |
| Retired/unoccupied over minimum NI age               | 33  | 42   | 49   | 36   | 31   | 21   | 18   | 10   | 9    | 6    | 25             |
| Other  | 1   | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0              |

**TABLE 3A (Appendix 1): Average incomes, taxes and benefits by decile groups of NON-RETIRED households, 1996-97**

|   | Decile groups of NON-RETIRED households ranked by equivalised disposable income |               |               |               |               |               |               |               |               |               | All non-retired households |
|---|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------------------|
|   | Bottom  | 2nd           | 3rd           | 4th           | 5th           | 6th           | 7th           | 8th           | 9th           | Top           |                            |
| <b>Average per household (£ per year)</b>                 |   |               |               |               |               |               |               |               |               |               |                            |
| <i>Decile points (equivalised £)</i>                      | 6 705   | 8 830         | 10 979        | 13 077        | 15 065        | 17 238        | 20 030        | 24 056        | 30 982        |               |                            |
| Number of households in the population ('000s)            | 1 796   | 1 796         | 1 796         | 1 796         | 1 796         | 1 796         | 1 796         | 1 796         | 1 796         | 1 796         | 17 961                     |
| <b>Original income</b>                                    |   |               |               |               |               |               |               |               |               |               |                            |
| Wages and salaries  | 1 764   | 3 679         | 7 847         | 11 752        | 16 292        | 18 913        | 22 961        | 26 237        | 32 210        | 40 591        | 18 224                     |
| Imputed income from benefits in kind                      | 4   | 11            | 13            | 50            | 182           | 294           | 257           | 417           | 710           | 1 543         | 348                        |
| Self-employment income                                    | 613   | 822           | 1 076         | 1 717         | 1 713         | 2 005         | 1 961         | 2 766         | 3 288         | 12 901        | 2 886                      |
| Occupational pensions, annuities                          | 77  | 197           | 223           | 402           | 520           | 668           | 770           | 864           | 890           | 1 547         | 616                        |
| Investment income   | 121   | 56            | 143           | 321           | 444           | 518           | 548           | 818           | 1 029         | 3 609         | 761                        |
| Other income  | 108   | 316           | 194           | 192           | 225           | 155           | 341           | 176           | 185           | 337           | 223                        |
| <b>Total</b>  | <b>2 687</b>  | <b>5 080</b>  | <b>9 497</b>  | <b>14 434</b> | <b>19 375</b> | <b>22 552</b> | <b>26 838</b> | <b>31 278</b> | <b>38 912</b> | <b>60 528</b> | <b>23 058</b>              |
| <b>Direct benefits in cash</b>                            |   |               |               |               |               |               |               |               |               |               |                            |
| <b>Contributory</b>                                       |   |               |               |               |               |               |               |               |               |               |                            |
| Retirement pension  | 24  | 149           | 270           | 429           | 386           | 433           | 304           | 195           | 143           | 263           | 260                        |
| Unemployment benefit/ Job seeker's allowance <sup>1</sup> | 190   | 146           | 100           | 91            | 51            | 33            | 29            | 45            | 30            | 12            | 73                         |
| Incapacity benefit  | 218   | 649           | 609           | 554           | 331           | 264           | 216           | 133           | 35            | 60            | 307                        |
| Widows' benefits  | 67  | 25            | 55            | 43            | 35            | 40            | 61            | 69            | 17            | 12            | 42                         |
| Statutory maternity pay / Allowance                       | 7   | 7             | 16            | 26            | 16            | 20            | 29            | 47            | 51            | 65            | 28                         |
| <b>Non-contributory</b>                                   |   |               |               |               |               |               |               |               |               |               |                            |
| Income support  | 1 817   | 1 581         | 942           | 450           | 172           | 158           | 81            | 67            | 31            | 7             | 531                        |
| Child benefit   | 688   | 654           | 493           | 452           | 391           | 300           | 295           | 252           | 219           | 144           | 389                        |
| Housing benefit   | 858   | 1 205         | 749           | 449           | 119           | 91            | 34            | 5             | 7             | 11            | 353                        |
| Invalid care allowance                                    | 31  | 25            | 83            | 63            | 33            | 55            | 9             | 4             | 3             | 0             | 31                         |
| Attendance allowance                                      | 0   | 5             | 4             | 10            | 18            | 22            | 0             | 7             | 12            | 0             | 8                          |
| Disability living allowance                               | 71  | 127           | 277           | 256           | 155           | 180           | 145           | 79            | 17            | 29            | 133                        |
| War pensions  | 4   | 6             | 6             | 7             | 8             | 4             | 10            | 12            | 5             | 5             | 7                          |
| Severe disablement allowance                              | 34  | 28            | 33            | 46            | 13            | 37            | 13            | 38            | -             | -             | 24                         |
| Industrial injury disablement benefit                     | 15  | 6             | 16            | 41            | 34            | 21            | 70            | 10            | 0             | 17            | 23                         |
| Student maintenance awards                                | 162   | 82            | 135           | 90            | 55            | 23            | 65            | 51            | 48            | 22            | 73                         |
| Government training schemes                               | 53  | 65            | 49            | 33            | 37            | 16            | 12            | 14            | 1             | 3             | 28                         |
| Family credit   | 205   | 243           | 186           | 77            | 40            | 5             | 5             | 1             | 0             | -             | 76                         |
| Other non-contributory benefits                           | 10  | 15            | 28            | 28            | 11            | 11            | 7             | 8             | 4             | 11            | 13                         |
| <b>Total cash benefits</b>                                | <b>4 455</b>  | <b>5 017</b>  | <b>4 051</b>  | <b>3 143</b>  | <b>1 903</b>  | <b>1 715</b>  | <b>1 384</b>  | <b>1 037</b>  | <b>622</b>    | <b>662</b>    | <b>2 399</b>               |
| <b>Gross income</b>                                       | <b>7 142</b>  | <b>10 097</b> | <b>13 548</b> | <b>17 577</b> | <b>21 278</b> | <b>24 266</b> | <b>28 222</b> | <b>32 315</b> | <b>38 934</b> | <b>61 190</b> | <b>25 457</b>              |
| <b>Direct taxes and Employees' NIC</b>                    |   |               |               |               |               |               |               |               |               |               |                            |
| Income tax  | 419   | 488           | 1 084         | 1 844         | 2 526         | 3 110         | 3 889         | 4 871         | 6 750         | 11 538        | 3 652                      |
| less: Tax relief at source <sup>2</sup>                   | 58  | 58            | 87            | 120           | 162           | 168           | 192           | 212           | 251           | 260           | 157                        |
| Employers' NI contributions                               | 137   | 244           | 529           | 806           | 1 113         | 1 320         | 1 559         | 1 791         | 2 115         | 2 163         | 1 178                      |
| Local taxes <sup>3</sup>                                  | 609   | 609           | 629           | 648           | 681           | 729           | 734           | 760           | 816           | 908           | 712                        |
| less: Council tax benefit / Rate rebates                  | 253   | 222           | 138           | 68            | 33            | 36            | 19            | 21            | 16            | 9             | 82                         |
| <b>Total</b>  | <b>853</b>  | <b>1 062</b>  | <b>2 017</b>  | <b>3 109</b>  | <b>4 126</b>  | <b>4 956</b>  | <b>5 971</b>  | <b>7 188</b>  | <b>9 414</b>  | <b>14 339</b> | <b>5 303</b>               |
| <b>Disposable income</b>                                  | <b>6 289</b>  | <b>9 035</b>  | <b>11 531</b> | <b>14 468</b> | <b>17 152</b> | <b>19 310</b> | <b>22 252</b> | <b>25 127</b> | <b>29 520</b> | <b>46 850</b> | <b>20 153</b>              |
| <b>Equivalised disposable income</b>                      | <b>5 100</b>  | <b>7 753</b>  | <b>9 897</b>  | <b>12 023</b> | <b>14 087</b> | <b>16 160</b> | <b>18 598</b> | <b>21 924</b> | <b>26 994</b> | <b>46 277</b> | <b>17 881</b>              |
| <b>Indirect taxes</b>                                     |   |               |               |               |               |               |               |               |               |               |                            |
| Taxes on final goods and services                         |   |               |               |               |               |               |               |               |               |               |                            |
| VAT   | 885   | 952           | 1 154         | 1 396         | 1 674         | 1 798         | 1 915         | 2 083         | 2 501         | 2 881         | 1 724                      |
| Duty on tobacco   | 358   | 479           | 427           | 369           | 393           | 388           | 362           | 308           | 216           | 209           | 351                        |
| Duty on beer and cider                                    | 64  | 75            | 101           | 111           | 142           | 148           | 158           | 169           | 146           | 140           | 125                        |
| Duty on wines   | 11  | 12            | 20            | 22            | 25            | 35            | 37            | 46            | 62            | 90            | 36                         |
| Duty on spirits   | 30  | 42            | 66            | 61            | 84            | 83            | 115           | 75            | 98            | 111           | 77                         |
| Duty on hydrocarbon oils                                  | 196   | 207           | 278           | 351           | 400           | 430           | 458           | 507           | 494           | 522           | 384                        |
| Vehicle excise duty                                       | 58  | 64            | 86            | 117           | 132           | 146           | 157           | 166           | 172           | 161           | 126                        |
| Television licences                                       | 70  | 75            | 79            | 82            | 84            | 84            | 85            | 84            | 86            | 85            | 81                         |
| Stamp duty on house purchase                              | 8   | 5             | 6             | 10            | 13            | 17            | 18            | 26            | 37            | 71            | 21                         |
| Customs duties  | 30  | 31            | 36            | 45            | 55            | 53            | 58            | 64            | 76            | 80            | 53                         |
| Betting taxes   | 29  | 48            | 50            | 63            | 92            | 76            | 74            | 88            | 58            | 62            | 64                         |
| Fossil fuel levy  | 11  | 11            | 11            | 11            | 11            | 12            | 11            | 12            | 12            | 14            | 12                         |
| Camelot National lottery fund                             | 32  | 40            | 54            | 56            | 65            | 78            | 74            | 65            | 55            | 58            | 58                         |
| Other   | 15  | 16            | 24            | 37            | 34            | 40            | 38            | 40            | 56            | 58            | 36                         |
| <b>Intermediate taxes</b>                                 |   |               |               |               |               |               |               |               |               |               |                            |
| Commercial and industrial rates                           | 136   | 140           | 169           | 203           | 240           | 252           | 267           | 293           | 338           | 405           | 244                        |
| Employers' NI contributions                               | 175   | 180           | 219           | 263           | 308           | 323           | 343           | 380           | 440           | 525           | 316                        |
| Duty on hydrocarbon oils                                  | 101   | 106           | 127           | 151           | 170           | 176           | 185           | 206           | 243           | 273           | 174                        |
| Vehicle excise duty                                       | 15  | 16            | 20            | 23            | 26            | 27            | 28            | 32            | 37            | 42            | 27                         |
| Other   | 89  | 91            | 110           | 132           | 155           | 162           | 173           | 189           | 219           | 259           | 158                        |
| <b>Total indirect taxes</b>                               | <b>2 312</b>  | <b>2 587</b>  | <b>3 038</b>  | <b>3 505</b>  | <b>4 102</b>  | <b>4 328</b>  | <b>4 557</b>  | <b>4 832</b>  | <b>5 346</b>  | <b>6 046</b>  | <b>4 065</b>               |
| <b>Post-tax income</b>                                    | <b>3 977</b>  | <b>6 448</b>  | <b>8 493</b>  | <b>10 963</b> | <b>13 051</b> | <b>14 982</b> | <b>17 695</b> | <b>20 295</b> | <b>24 174</b> | <b>40 805</b> | <b>16 088</b>              |
| <b>Benefits in kind</b>                                   |   |               |               |               |               |               |               |               |               |               |                            |
| Education   | 2 985   | 2 332         | 1 966         | 1 772         | 1 628         | 1 094         | 1 310         | 930           | 827           | 383           | 1 523                      |
| National health service                                   | 1 571   | 1 483         | 1 426         | 1 521         | 1 437         | 1 408         | 1 318         | 1 261         | 1 134         | 1 157         | 1 372                      |
| Housing subsidy   | 100   | 121           | 74            | 47            | 23            | 20            | 13            | 9             | 3             | 3             | 41                         |
| Rail travel subsidy                                       | 26  | 26            | 36            | 49            | 59            | 50            | 71            | 86            | 152           | 152           | 71                         |
| Bus travel subsidy  | 11  | 15            | 16            | 15            | 14            | 18            | 13            | 11            | 9             | 7             | 13                         |
| School meals and welfare milk                             | 151   | 97            | 36            | 15            | 11            | 7             | 3             | 3             | 2             | 2             | 33                         |
| <b>Total</b>  | <b>4 844</b>  | <b>4 073</b>  | <b>3 554</b>  | <b>3 418</b>  | <b>3 173</b>  | <b>2 597</b>  | <b>2 729</b>  | <b>2 300</b>  | <b>2 128</b>  | <b>1 704</b>  | <b>3 052</b>               |
| <b>Final income</b>                                       | <b>8 821</b>  | <b>10 521</b> | <b>12 047</b> | <b>14 381</b> | <b>16 223</b> | <b>17 579</b> | <b>20 424</b> | <b>22 595</b> | <b>26 302</b> | <b>42 508</b> | <b>19 140</b>              |

<sup>1</sup> Job Seekers Allowance replaced Unemployment Benefit from October 1996. In some cases part of Job seeker's allowance may replace Income Support and is therefore non-contributory (see Appendix 3, paragraph 20).

<sup>2</sup> On mortgage interest and life assurance premiums.

<sup>3</sup> Council tax, domestic rates and water charges after deducting discounts



**TABLE 3B (Appendix 1): Household characteristics of decile groups of NON-RETIRED households, 1996-97**

|  | Decile groups of ALL NON-RETIRED households ranked by equivalised disposable income |      |      |      |      |      |      |      |      |      | All non-retired households |
|--|---|------|------|------|------|------|------|------|------|------|----------------------------|
|  | Bottom  | 2nd  | 3rd  | 4th  | 5th  | 6th  | 7th  | 8th  | 9th  | Top  |                            |
| <b>Average per household (number)</b>                |   |      |      |      |      |      |      |      |      |      |                            |
| People   | 3.1   | 2.9  | 2.8  | 2.8  | 2.8  | 2.7  | 2.7  | 2.5  | 2.4  | 2.2  | 2.7                        |
| Adults   | 1.7   | 1.7  | 1.9  | 2.0  | 2.1  | 2.1  | 2.1  | 2.0  | 2.0  | 1.9  | 2.0                        |
| Children   | 1.3   | 1.2  | 0.9  | 0.8  | 0.7  | 0.6  | 0.6  | 0.5  | 0.4  | 0.3  | 0.7                        |
| Economically active people                           | 0.9   | 1.0  | 1.3  | 1.6  | 1.8  | 1.8  | 2.0  | 1.9  | 1.9  | 1.8  | 1.6                        |
| Retired people                                       | 0.0   | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.0  | 0.0  | 0.1                        |
| People in full-time education                        | 1.23  | 0.98 | 0.80 | 0.71 | 0.65 | 0.49 | 0.52 | 0.40 | 0.37 | 0.22 | 0.64                       |
| In state primary schools                             | 0.63  | 0.53 | 0.40 | 0.34 | 0.29 | 0.23 | 0.24 | 0.16 | 0.17 | 0.06 | 0.30                       |
| In state secondary schools                           | 0.37  | 0.32 | 0.25 | 0.23 | 0.23 | 0.18 | 0.17 | 0.13 | 0.11 | 0.05 | 0.20                       |
| In further and higher education                      | 0.13  | 0.07 | 0.08 | 0.06 | 0.06 | 0.02 | 0.06 | 0.04 | 0.03 | 0.02 | 0.06                       |
| In other educational establishments                  | 0.10  | 0.05 | 0.08 | 0.08 | 0.07 | 0.06 | 0.04 | 0.08 | 0.06 | 0.09 | 0.07                       |
| <b>Composition (percentages)</b>                     |   |      |      |      |      |      |      |      |      |      |                            |
| <b>Household type</b>                                |   |      |      |      |      |      |      |      |      |      |                            |
| Non-retired  |   |      |      |      |      |      |      |      |      |      |                            |
| 1 adult  | 21  | 22   | 19   | 16   | 15   | 18   | 18   | 20   | 22   | 23   | 19                         |
| 2 adults   | 16  | 14   | 24   | 23   | 30   | 29   | 27   | 36   | 40   | 49   | 29                         |
| 3 or more adults                                     | 5   | 6    | 8    | 12   | 12   | 20   | 18   | 15   | 12   | 9    | 12                         |
| 1 adult with children                                | 18  | 23   | 13   | 6    | 4    | 2    | 2    | 1    | 2    | 2    | 7                          |
| 2 adults with 1 child                                | 8   | 8    | 8    | 14   | 10   | 9    | 14   | 11   | 9    | 10   | 10                         |
| 2 adults with 2 children                             | 13  | 12   | 13   | 17   | 16   | 13   | 12   | 11   | 11   | 6    | 12                         |
| 2 adults with 3 or more children                     | 14  | 11   | 7    | 6    | 5    | 5    | 3    | 3    | 2    | 1    | 6                          |
| 3 or more adults with children                       | 5   | 4    | 8    | 6    | 8    | 4    | 6    | 5    | 2    | 1    | 5                          |
| <b>Household tenure</b>                              |   |      |      |      |      |      |      |      |      |      |                            |
| Rented   | 61  | 70   | 51   | 37   | 25   | 23   | 19   | 14   | 11   | 10   | 32                         |
| Local authority rented                               | 42  | 47   | 31   | 18   | 10   | 10   | 7    | 2    | 1    | 1    | 17                         |
| Housing association                                  | 8   | 11   | 6    | 5    | 3    | 2    | 1    | 2    | 1    | 0    | 4                          |
| Other rented unfurnished                             | 4   | 4    | 5    | 4    | 4    | 3    | 3    | 3    | 3    | 3    | 3                          |
| Rented furnished                                     | 7   | 6    | 8    | 8    | 6    | 5    | 7    | 6    | 4    | 4    | 6                          |
| Rent free  | 1   | 2    | 1    | 1    | 3    | 3    | 1    | 1    | 2    | 1    | 2                          |
| Owner occupied                                       | 39  | 30   | 49   | 63   | 75   | 77   | 81   | 86   | 89   | 90   | 68                         |
| With mortgage  | 26  | 23   | 35   | 47   | 60   | 62   | 67   | 71   | 78   | 77   | 55                         |
| Rental purchase                                      | -   | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0                          |
| Owned outright                                       | 12  | 7    | 13   | 16   | 14   | 15   | 14   | 15   | 10   | 14   | 13                         |
| <b>Age of chief economic supporter</b>               |   |      |      |      |      |      |      |      |      |      |                            |
| Under 25   | 14  | 10   | 8    | 6    | 5    | 5    | 4    | 4    | 3    | 1    | 6                          |
| Over 24 and under 35                                 | 27  | 28   | 23   | 26   | 25   | 21   | 27   | 30   | 30   | 26   | 26                         |
| Over 34 and under 45                                 | 28  | 26   | 24   | 23   | 27   | 25   | 21   | 23   | 27   | 24   | 25                         |
| Over 44 and under 55                                 | 20  | 18   | 24   | 21   | 21   | 27   | 30   | 28   | 28   | 29   | 25                         |
| Over 54 and under 65                                 | 11  | 14   | 17   | 19   | 16   | 18   | 15   | 12   | 10   | 17   | 15                         |
| Over 64 and under 75                                 | 0   | 3    | 3    | 5    | 4    | 5    | 3    | 2    | 1    | 3    | 3                          |
| Over 74  | 0   | 1    | 1    | 1    | 2    | 1    | 0    | 1    | 0    | 0    | 1                          |
| <b>Employment status of chief economic supporter</b> |   |      |      |      |      |      |      |      |      |      |                            |
| Self-employed  | 9   | 8    | 9    | 11   | 10   | 9    | 8    | 10   | 10   | 20   | 11                         |
| Full-time employee at work                           | 10  | 18   | 39   | 52   | 67   | 70   | 76   | 78   | 81   | 73   | 57                         |
| Part-time employee at work                           | 13  | 12   | 15   | 11   | 7    | 7    | 7    | 5    | 3    | 4    | 8                          |
| Unemployed   | 25  | 18   | 10   | 9    | 7    | 4    | 4    | 3    | 4    | 1    | 9                          |
| Unoccupied and under minimum NI age                  | 41  | 40   | 24   | 13   | 5    | 5    | 4    | 3    | 0    | 1    | 14                         |
| Retired/unoccupied over minimum NI age               | 0   | 2    | 2    | 3    | 4    | 5    | 1    | 2    | 0    | 0    | 2                          |
| Other  | 1   | 1    | 1    | -    | -    | -    | -    | -    | -    | -    | 0                          |



**TABLE 4B (Appendix 1): Household characteristics of decile groups of RETIRED households, 1996-97**

|  | Decile groups of RETIRED households ranked by equivalised disposable income |      |      |      |      |      |      |      |      |      | All retired households |
|--|---|------|------|------|------|------|------|------|------|------|------------------------|
|  | Bottom  | 2nd  | 3rd  | 4th  | 5th  | 6th  | 7th  | 8th  | 9th  | Top  |                        |
| <b>Average per household (number)</b>                |   |      |      |      |      |      |      |      |      |      |                        |
| People   | 1.4   | 1.5  | 1.5  | 1.5  | 1.3  | 1.5  | 1.6  | 1.5  | 1.6  | 1.6  | 1.5                    |
| <i>Adults</i>  | 1.35  | 1.53 | 1.52 | 1.45 | 1.35 | 1.46 | 1.53 | 1.54 | 1.56 | 1.62 | 1.49                   |
| <i>Children</i>                                      | 0.03  | 0.02 | 0.01 | 0.01 | 0.00 | 0.01 | 0.03 | 0.00 | 0.05 | 0.01 | 0.02                   |
| Economically active people                           | 0.0   | 0.1  | 0.0  | 0.1  | 0.0  | 0.1  | 0.1  | 0.0  | 0.1  | 0.1  | 0.1                    |
| Retired people                                       | 1.3   | 1.4  | 1.4  | 1.3  | 1.3  | 1.3  | 1.4  | 1.5  | 1.4  | 1.5  | 1.4                    |
| People in full-time education                        | 0.03  | 0.02 | 0.00 | 0.03 | 0.00 | 0.01 | 0.03 | 0.00 | 0.06 | 0.02 | 0.02                   |
| <b>Composition (percentages)</b>                     |   |      |      |      |      |      |      |      |      |      |                        |
| <b>Household type</b>                                |   |      |      |      |      |      |      |      |      |      |                        |
| Retired  |   |      |      |      |      |      |      |      |      |      |                        |
| 1 adult  | 67  | 49   | 52   | 59   | 67   | 56   | 54   | 49   | 48   | 41   | 54                     |
| 2 or more adults                                     | 33  | 51   | 48   | 41   | 33   | 44   | 46   | 51   | 52   | 59   | 46                     |
| <b>Household tenure</b>                              |   |      |      |      |      |      |      |      |      |      |                        |
| Rented   |   |      |      |      |      |      |      |      |      |      |                        |
| Local authority rented                               | 12  | 21   | 34   | 45   | 41   | 38   | 26   | 23   | 14   | 2    | 26                     |
| Housing association                                  | 2   | 6    | 7    | 8    | 14   | 11   | 8    | 4    | 4    | 1    | 6                      |
| Other rented unfurnished                             | 4   | 6    | 3    | 5    | 3    | 4    | 2    | 2    | 4    | 2    | 3                      |
| Rented furnished                                     | 1   | 1    | 3    | 1    | 0    | 1    | 2    | 1    | 1    | 1    | 1                      |
| Rent free  | 0   | 2    | 3    | 2    | 2    | 3    | 5    | 2    | 3    | 0    | 2                      |
| Owner occupied                                       |   |      |      |      |      |      |      |      |      |      |                        |
| With mortgage  | 6   | 6    | 2    | 6    | 2    | 10   | 9    | 7    | 7    | 10   | 7                      |
| Rental purchase                                      | 0   | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0                      |
| Owned outright                                       | 74  | 59   | 48   | 33   | 40   | 32   | 48   | 61   | 68   | 84   | 55                     |
| <b>Age of chief economic supporter</b>               |   |      |      |      |      |      |      |      |      |      |                        |
| Under 25   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    | 0                      |
| Over 24 and under 35                                 | 1   | -    | -    | -    | -    | -    | -    | -    | -    | -    | 0                      |
| Over 34 and under 45                                 | -   | -    | -    | 1    | -    | -    | -    | -    | -    | -    | 0                      |
| Over 44 and under 55                                 | -   | 1    | -    | 1    | -    | -    | 2    | 2    | 3    | -    | 1                      |
| Over 54 and under 65                                 | 12  | 8    | 6    | 9    | 5    | 10   | 10   | 13   | 15   | 21   | 11                     |
| Over 64 and under 75                                 | 33  | 44   | 44   | 48   | 46   | 51   | 39   | 47   | 42   | 47   | 44                     |
| Over 74  | 54  | 47   | 50   | 41   | 49   | 39   | 49   | 37   | 40   | 33   | 44                     |
| <b>Employment status of chief economic supporter</b> |   |      |      |      |      |      |      |      |      |      |                        |
| Self-employed  | 1   | 1    | -    | -    | -    | -    | -    | -    | -    | -    | 0                      |
| Full-time employee at work                           | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    | -                      |
| Part-time employee at work                           | -   | -    | -    | 0    | 1    | -    | -    | -    | 1    | -    | 0                      |
| Unemployed   | -   | -    | -    | 1    | -    | -    | -    | -    | -    | -    | 0                      |
| Unoccupied and under minimum NI age                  | 6   | 6    | 3    | 5    | 2    | 2    | 7    | 6    | 15   | 16   | 7                      |
| Retired/unoccupied over minimum NI age               | 93  | 93   | 97   | 94   | 98   | 98   | 93   | 94   | 84   | 84   | 93                     |





**TABLE 7 (Appendix 1): Distribution of households<sup>1</sup> co-operating in the Family Expenditure Survey and Summary of the effects of taxes and benefits, by household type, 1996-97**

|  | Retired households |                  |               |               | Non-Retired households |                       |                       |                          |                                  |                                | All households |
|--|--------------------|------------------|---------------|---------------|------------------------|-----------------------|-----------------------|--------------------------|----------------------------------|--------------------------------|----------------|
|  | 1 adult            | 2 or more adults | 1 adult       | 2 adults      | 3 or more adults       | 1 adult with children | 2 adults with 1 child | 2 adults with 2 children | 2 adults with 3 or more children | 3 or more adults with children |                |
| <b>Decile groups of households ranked by equivalised disposable income</b> |                    |                  |               |               |                        |                       |                       |                          |                                  |                                |                |
| <b>Number of households ('000s)</b>  |                    |                  |               |               |                        |                       |                       |                          |                                  |                                |                |
| Bottom   | 568                | 286              | 359           | 259           | 70                     | 263                   | 125                   | 207                      | 206                              | 80                             | 2 424          |
| 2nd  | 500                | 547              | 296           | 216           | 59                     | 327                   | 119                   | 145                      | 152                              | 64                             | 2 424          |
| rd   | 765                | 434              | 246           | 200           | 87                     | 231                   | 100                   | 160                      | 120                              | 83                             | 2 425          |
| 4th  | 479                | 387              | 263           | 356           | 151                    | 171                   | 157                   | 226                      | 121                              | 116                            | 2 427          |
| 5th  | 381                | 350              | 296           | 432           | 185                    | 101                   | 208                   | 289                      | 87                               | 96                             | 2 426          |
| 6th  | 237                | 243              | 282           | 567           | 301                    | 68                    | 185                   | 294                      | 91                               | 156                            | 2 423          |
| 7th  | 213                | 218              | 361           | 544           | 389                    | 31                    | 245                   | 266                      | 85                               | 74                             | 2 426          |
| 8th  | 117                | 135              | 400           | 720           | 344                    | 29                    | 232                   | 256                      | 67                               | 126                            | 2 425          |
| 9th  | 73                 | 177              | 472           | 823           | 261                    | 26                    | 224                   | 252                      | 50                               | 70                             | 2 427          |
| Top  | 90                 | 92               | 505           | 1 050         | 245                    | 34                    | 227                   | 125                      | 38                               | 19                             | 2 425          |
| All households in population ('000s)                                       | 3 422              | 2 869            | 3 481         | 5 165         | 2 091                  | 1 281                 | 1 822                 | 2 221                    | 1 018                            | 883                            | 24 253         |
| <b>Summary of the effects of taxes and benefits, by household type</b>     |                    |                  |               |               |                        |                       |                       |                          |                                  |                                |                |
| <b>Average per household (£ per year)</b>                                  |                    |                  |               |               |                        |                       |                       |                          |                                  |                                |                |
| Original income  | 3 029              | 8 369            | 13 030        | 26 248        | 33 383                 | 5 479                 | 25 268                | 27 627                   | 22 552                           | 29 504                         | 18 494         |
| plus Cash benefits   | 4 654              | 6 452            | 1 736         | 1 590         | 2 656                  | 5 501                 | 1 944                 | 2 214                    | 4 332                            | 3 807                          | 3 197          |
| Gross income   | 7 683              | 14 821           | 14 767        | 27 838        | 36 040                 | 10 980                | 27 212                | 29 841                   | 26 884                           | 33 311                         | 21 690         |
| less Direct taxes&employees'NIC  | 916                | 2 004            | 3 170         | 6 060         | 7 164                  | 1 152                 | 5 896                 | 6 603                    | 5 173                            | 6 562                          | 4 294          |
| Disposable income  | 6 767              | 12 817           | 11 596        | 21 778        | 28 876                 | 9 828                 | 21 316                | 23 238                   | 21 712                           | 26 749                         | 17 397         |
| <i>Equivalised disposable income</i>                                       | <i>11 091</i>      | <i>12 254</i>    | <i>19 010</i> | <i>21 350</i> | <i>18 616</i>          | <i>10 105</i>         | <i>17 755</i>         | <i>16 000</i>            | <i>12 535</i>                    | <i>13 835</i>                  | <i>16 257</i>  |
| less Indirect taxes  | 1 118              | 2 796            | 2 188         | 4 096         | 6 405                  | 2 307                 | 4 202                 | 4 506                    | 4 525                            | 6 375                          | 3 499          |
| Post-tax income  | 5 649              | 10 022           | 9 408         | 17 682        | 22 470                 | 7 521                 | 17 114                | 18 733                   | 17 187                           | 20 375                         | 13 897         |
| plus Benefits in kind  | 2 154              | 3 250            | 742           | 1 339         | 3 127                  | 4 652                 | 3 273                 | 5 425                    | 8 612                            | 6 845                          | 2 949          |
| Final income   | 7 803              | 13 272           | 10 150        | 19 021        | 25 597                 | 12 173                | 20 387                | 24 158                   | 25 799                           | 27 220                         | 16 846         |

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



**TABLE 9 (Appendix 1): Cross-tabulation of households ranked by disposable income, unadjusted and equivalised, 1996-97**

**(i) Quintile groups**

|  | Quintile groups of <b>equivalised</b> disposable income |       |       |       |       | All<br>house-<br>holds |
|--|---|-------|-------|-------|-------|------------------------|
|  | Bottom  | 2nd   | 3rd   | 4th   | Top   |                        |
| <b>Number of households in the population ('000s)</b>  |   |       |       |       |       |                        |
| Quintile groups of <b>unadjusted</b> disposable income |   |       |       |       |       |                        |
| Bottom   | 2 986   | 1 815 | 49    | -     | -     | 4 849                  |
| 2nd  | 1 475   | 1 561 | 1 212 | 603   | -     | 4 851                  |
| 3rd  | 357   | 1 158 | 2 002 | 847   | 487   | 4 850                  |
| 4th  | 30  | 293   | 1 365 | 2 181 | 985   | 4 854                  |
| Top  | -   | 27    | 221   | 1 221 | 3 380 | 4 848                  |
| All households   | 4 848   | 4 853 | 4 849 | 4 852 | 4 852 | 24 253                 |

**(ii) Decile groups**

|   | Decile groups of <b>equivalised</b> disposable income |       |       |       |       |       |       |       |       |       | All<br>house-<br>holds |        |
|---|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------------------|--------|
|   | Bottom  | 2nd   | 3rd   | 4th   | 5th   | 6th   | 7th   | 8th   | 9th   | Top   |                        |        |
| <b>Number of households in the population ('000s)</b> |   |       |       |       |       |       |       |       |       |       |                        |        |
| Decile groups of <b>unadjusted</b> disposable income  |   |       |       |       |       |       |       |       |       |       |                        |        |
| Bottom  | 1 317   | 811   | 297   | -     | -     | -     | -     | -     | -     | -     | -                      | 2 425  |
| 2nd   | 534   | 324   | 777   | 741   | 49    | -     | -     | -     | -     | -     | -                      | 2 425  |
| 3rd   | 294   | 736   | 386   | 62    | 628   | 319   | -     | -     | -     | -     | -                      | 2 424  |
| 4th   | 179   | 267   | 440   | 674   | 54    | 211   | 574   | 29    | -     | -     | -                      | 2 427  |
| 5th   | 74  | 196   | 291   | 319   | 790   | 199   | 3     | 491   | 63    | -     | -                      | 2 425  |
| 6th   | 23  | 64    | 175   | 373   | 304   | 709   | 349   | 4     | 424   | -     | -                      | 2 425  |
| 7th   | 3   | 27    | 39    | 203   | 430   | 356   | 567   | 535   | 64    | 204   | -                      | 2 428  |
| 8th   | -   | -     | 16    | 34    | 156   | 423   | 523   | 556   | 510   | 207   | -                      | 2 426  |
| 9th   | -   | -     | 5     | 22    | 14    | 177   | 371   | 559   | 812   | 465   | -                      | 2 426  |
| Top   | -   | -     | -     | -     | -     | 29    | 40    | 251   | 554   | 1 549 | -                      | 2 422  |
| All households  | 2 424   | 2 424 | 2 425 | 2 427 | 2 426 | 2 423 | 2 426 | 2 425 | 2 427 | 2 425 | -                      | 24 253 |



## Appendix 2: Trends in income distribution, 1977 to 1996-97

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This section gives Gini coefficients and shares of income for 1977 to 1996-97. As was noted in the Introduction, it is not possible to produce a fully consistent time series because of changes in methodology and definition. Many of these changes, like the inclusion of the income from company cars since 1990, improve the quality of the results but previous data cannot be reproduced on the same consistent basis. However, Gini coefficients and shares of income are relatively robust and can be used to shed light on broad trends in income distribution. The Department of Social Security publication, *Households Below Average Income 1979 - 1994/95* (HMSO), contains more detailed data for comparison of incomes over time.

**TABLE 1 (Appendix 2): Percentage shares of total original, gross, disposable and post-tax incomes by quintile groups of households<sup>1</sup>, 1977 to 1996-97**

|                                      | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 <sup>2</sup> | 1993-94 <sup>3</sup> | 1994-95 <sup>3</sup> | 1995-96 <sup>3</sup> | 1996-97 <sup>2,4</sup> |
|--------------------------------------|------|------|------|------|------|------|------|-------------------|----------------------|----------------------|----------------------|------------------------|
| <b>Equivalised original income</b>   |      |      |      |      |      |      |      |                   |                      |                      |                      |                        |
| Quintile group                       |      |      |      |      |      |      |      |                   |                      |                      |                      |                        |
| Bottom                               | 4    | 2    | 3    | 3    | 3    | 2    | 2    | 2                 | 2                    | 2                    | 3                    | 2                      |
| 2nd                                  | 10   | 10   | 9    | 8    | 7    | 7    | 7    | 7                 | 6                    | 6                    | 7                    | 7                      |
| 3rd                                  | 18   | 18   | 17   | 17   | 17   | 16   | 16   | 16                | 14                   | 15                   | 15                   | 15                     |
| 4th                                  | 26   | 27   | 26   | 26   | 27   | 25   | 26   | 26                | 25                   | 25                   | 25                   | 25                     |
| Top                                  | 43   | 43   | 46   | 47   | 47   | 50   | 49   | 50                | 52                   | 51                   | 50                   | 51                     |
| All households                       | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100               | 100                  | 100                  | 100                  | 100                    |
| <b>Equivalised gross income</b>      |      |      |      |      |      |      |      |                   |                      |                      |                      |                        |
| Quintile group                       |      |      |      |      |      |      |      |                   |                      |                      |                      |                        |
| Bottom                               | 9    | 8    | 8    | 9    | 8    | 7    | 7    | 7                 | 7                    | 7                    | 7                    | 7                      |
| 2nd                                  | 13   | 13   | 12   | 12   | 12   | 11   | 11   | 10                | 11                   | 11                   | 11                   | 11                     |
| 3rd                                  | 18   | 18   | 17   | 17   | 17   | 16   | 16   | 16                | 16                   | 16                   | 16                   | 16                     |
| 4th                                  | 24   | 24   | 23   | 23   | 24   | 23   | 23   | 23                | 23                   | 23                   | 23                   | 23                     |
| Top                                  | 37   | 37   | 39   | 39   | 40   | 43   | 42   | 44                | 44                   | 43                   | 43                   | 44                     |
| All households                       | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100               | 100                  | 100                  | 100                  | 100                    |
| <b>Equivalised disposable income</b> |      |      |      |      |      |      |      |                   |                      |                      |                      |                        |
| Quintile group                       |      |      |      |      |      |      |      |                   |                      |                      |                      |                        |
| Bottom                               | 10   | 9    | 9    | 9    | 9    | 8    | 8    | 7                 | 8                    | 8                    | 8                    | 8                      |
| 2nd                                  | 14   | 13   | 13   | 13   | 13   | 12   | 12   | 11                | 12                   | 12                   | 12                   | 12                     |
| 3rd                                  | 18   | 18   | 17   | 17   | 17   | 16   | 17   | 16                | 16                   | 16                   | 17                   | 16                     |
| 4th                                  | 23   | 23   | 23   | 23   | 23   | 23   | 23   | 23                | 23                   | 23                   | 23                   | 23                     |
| Top                                  | 36   | 36   | 38   | 38   | 38   | 41   | 41   | 42                | 42                   | 41                   | 40                   | 42                     |
| All households                       | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100               | 100                  | 100                  | 100                  | 100                    |
| <b>Equivalised post-tax income</b>   |      |      |      |      |      |      |      |                   |                      |                      |                      |                        |
| Quintile group                       |      |      |      |      |      |      |      |                   |                      |                      |                      |                        |
| Bottom                               | 9    | 9    | 9    | 9    | 9    | 8    | 7    | 7                 | 7                    | 7                    | 7                    | 7                      |
| 2nd                                  | 14   | 13   | 13   | 13   | 13   | 12   | 11   | 11                | 11                   | 11                   | 12                   | 11                     |
| 3rd                                  | 17   | 18   | 17   | 17   | 17   | 16   | 16   | 16                | 16                   | 16                   | 16                   | 16                     |
| 4th                                  | 23   | 23   | 22   | 22   | 23   | 22   | 23   | 23                | 22                   | 22                   | 23                   | 22                     |
| Top                                  | 37   | 37   | 39   | 39   | 39   | 43   | 43   | 44                | 44                   | 43                   | 43                   | 44                     |
| All households                       | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100               | 100                  | 100                  | 100                  | 100                    |

1 Ranked by equivalised disposable income.  
2 Includes Company car benefit.  
3 Includes Company car benefit and beneficial house purchase loans from employers.  
4 Based on estimates for the sample grossed up to population totals.

**TABLE 2 (Appendix 2): Gini coefficients for the distribution of income at each stage of the tax-benefit system, 1977 to 1996-97**

|                               | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 <sup>1</sup> | 1993-94 <sup>2</sup> | 1994-95 <sup>2</sup> | 1995-96 <sup>2</sup> | 1996-97 <sup>2,3</sup> |
|-------------------------------|------|------|------|------|------|------|------|-------------------|----------------------|----------------------|----------------------|------------------------|
| Gini coefficients (per cent)  |      |      |      |      |      |      |      |                   |                      |                      |                      |                        |
| Equivalised original income   | 43   | 44   | 46   | 48   | 49   | 51   | 50   | 51                | 54                   | 53                   | 52                   | 53                     |
| Equivalised gross income      | 29   | 30   | 31   | 32   | 32   | 36   | 36   | 37                | 37                   | 37                   | 36                   | 37                     |
| Equivalised disposable income | 27   | 27   | 28   | 28   | 29   | 33   | 34   | 35                | 34                   | 33                   | 33                   | 34                     |
| Equivalised post-tax income   | 29   | 29   | 31   | 31   | 32   | 36   | 37   | 39                | 38                   | 37                   | 37                   | 38                     |

1 Includes Company car benefit.  
2 Includes Company car benefit and beneficial house purchase loans from employers.  
3 Based on estimates for the sample grossed up to population totals.

## Appendix 3: 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 ONS Blue Book - to apportioning taxes and benefits to individual households. We can obtain information about the types of household that receive cash benefits and pay direct taxes through surveys such as the Family Expenditure Survey (FES). From the replies respondents give to questions on their expenditure we can impute their payments of indirect taxes, and from information they supply about such factors as their ages and number of children in the household we can estimate the average costs of providing them with social services, such as health and education. But there are other kinds of financing, such as corporation tax and government receipts from public corporations: no attempt is made in this analysis to apportion them to households because it would be too difficult. Similarly, there are other items of government expenditure, such as capital expenditure and expenditure on defence and on the maintenance of law and order, for which there is no clear conceptual basis for allocation, or for which we do not in any event have sufficient information to make an allocation. In all, 60 per cent of government financing (including the Borrowing Requirement) and 57 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 fieldwork is undertaken by the Social Survey Division of ONS and by the Northern Ireland Statistics and Research Agency. The Family Expenditure Survey Report for 1996-97, containing detailed data on household characteristics, income, and expenditure, was published in October 1997. Details of the survey method are set out in 'The Family Expenditure Survey Handbook' by W F F Kemsley, RU Redpath and M Holmes. Both are published by The Stationery Office.

4. The number of households in the United Kingdom responding to the FES in 1996-97 was 6,415 (about 1 in every 3,000 households). The response rate in Great Britain was 62 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 suggests that households containing a couple with non-dependent children, those where the head is self-employed, and those where the head was born outside the United Kingdom, are less likely to co-operate than others (see "A comparison of the Census characteristics of respondents and non-respondents to the 1991 Family Expenditure Survey" by Kate Foster, *Survey Methodology Bulletin*, ONS, No 38, Jan 1996). In addition response in Greater London is noticeably lower than in other areas.

5. This year, for the first time, the results in the article are based on the survey grossed up so that population totals reflect the whole population of the UK. Households were assigned different initial weights based on the non-response in the 1991 FES. These weights were derived from Census-linked data (see 'Weighting the FES in Great Britain to compensate for non-response: an investigation using census-linked data' by Kate Foster). The final household weights were produced using specialised software developed by INSEE, the French national statistics institute. The control variables used in the grossing system were the number of individuals by age (in five year bands) and sex; and the number of individuals by region.

6. 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**

7. 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.

8. In classifying the households into various types, a **child** (i.e. 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.

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.

9. 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'.

10. 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.

11. 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 (15 in 1996-97) 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.

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

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

**Income: redistributive stages**

- 13. Stage one:  
Original income plus cash benefits = Gross income.
- Stage two:  
Gross income minus income tax, employees' National Insurance contributions and local taxes (see paragraph 21 below) = Disposable income.
- Stage three:  
Disposable income minus indirect taxes = Post-tax income.
- Stage four:  
Post-tax income plus 'benefits in kind' = Final income.

14. The starting point of the analysis is **original income**. This is the annualised 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. The term

“annualised” rather than “annual” is used advisedly. For instance, annualised income from a respondent’s “main job” is not current wage or salary multiplied up to an annual value; nor is it the sum of income from this source in the twelve month period prior to interview. Rather it is an estimate of such income expressed at an annual rate based on the respondent’s assessment of his “normal” wage or salary subject to his current employment status. Furthermore, to avoid double counting and to make it consistent with the estimate of income from cash benefits (see paragraph 19), this annualised estimate has to be “abated” for the number of weeks likely to be lost due to unemployment, sickness, etc. This figure is taken as the number of weeks so lost in the twelve months prior to interview. It should be noted that regardless of whether the respondent is currently working or unemployed the treatment is essentially the same, i.e. normal gross wage or salary expressed at an annual rate abated as required. In all of this the crucial determining role of current employment status should also be noted. Thus no employment income would be assigned to a respondent whose employment status had recently become retired or unoccupied even though he or she may have worked for most of the twelve months prior to interview.

15. About 98 per cent of original income comes from earnings, occupational pensions (including annuities) and investment income. The tiny bit remaining comes from a variety of sources: trade union benefits, income of children under 16, private scholarships, earnings as a mail order agent or baby-sitter, regular allowance from a non-spouse, allowance from an absent spouse and the imputed value of rent-free accommodation. Households living in rent-free dwellings are each assigned an imputed income. This is counted as employment income if the tenancy depends on the job.

16. 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, together with the benefit from fuel for personal use, 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 1997 (HMSO) contains more detailed information on taxable fringe benefits and their impact on individuals. Although for those earning below £8,500 per year the benefit is not taxable, benefit has been allocated to all those with a company car regardless of the level of earnings. The calculation of this benefit is based primarily on the car price 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 prices of vehicles in the FES.

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

18. 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. Cash benefits include:

#### **Contributory:**

Retirement pension, unemployment benefits (including Job Seekers Allowance), incapacity benefit, widows’ benefits, and statutory maternity pay.

#### **Non-contributory:**

Income support, child benefit, Housing Benefit (Council Tax Benefit and rates rebates are treated as deductions from local taxes), invalid care allowance, attendance allowance, disability living allowance, disability working allowance, war pensions, severe disablement allowance, industrial injury disablement benefits, family credit, old persons pension, Christmas bonus for pensioners, government training scheme allowances (YTS etc), student maintenance awards.

19. Statutory Maternity Pay is classified as a cash benefit even though it is paid through the employer.

20. Job Seekers Allowance, which was introduced in October 1996, replaced unemployment benefit and income support for those who are unemployed. The new benefit is part contributory and part non-contributory. It is not possible from the FES to separate out the two components, so for the purposes of this analysis, all of JSA has been treated as non-contributory. The FES questionnaire has been adapted so that it will be possible to distinguish between the contributory and non-contributory parts of JSA from 1997-98 onwards.

21. 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 benefits, is based on current rates.

22. Income tax, local taxes 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.

23. The figures for local taxes include:

council tax (for households in Great Britain),  
domestic rates (for households in Northern Ireland),  
and charges made by water authorities for water,  
environmental and sewerage services.

24. Council tax is shown after deduction of discounts to reduce or remove the personal element of the tax (eg the discount of 25% for single person households). From this year onwards, all local taxes are shown after the deduction of Council Tax Benefit and rate rebates. This brings the treatment in line with that of National Accounts which treats such rebates as revenue foregone. In previous years, these rebates have been included as part of housing benefits.

25. 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 1996-97 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.

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

Duties on alcoholic drinks, tobacco, petrol, oil, betting, etc  
Value Added Tax (VAT)  
Customs (import) duties  
Motor vehicle duties  
Air passenger duty  
Insurance premium tax

Driving licenses  
Television licenses  
Stamp duties  
Gas levy  
Fossil fuel levy  
Camelot : payments to National Lottery Distribution Fund

27. 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.

28. VAT affects the prices of second-hand cars and is 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 under-represented in the FES.

29. The incidence of stamp duty on house purchase on an owner-occupying household has been taken as the product of the hypothetical duty payable on buying their current dwelling (estimated from valuations given in the FES) and the probability of a household of that type moving in a given year (estimated from the General Household Survey).

30. Indirect taxes on intermediate goods and services include:

Rates on commercial and industrial property  
Motor vehicle duties  
Duties on hydrocarbon oils  
Employers' contributions to National Insurance, the National Health Service, the industrial injuries fund and the redundancy payments scheme  
Customs (import) duties  
Stamp duties  
VAT

31. 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.

32. For Table G of the main article, we have constructed a measure of expenditure on goods and services from data from the FES. Indirect taxes are shown as a proportion both of disposable income and of expenditure. For one drawback of comparing the incidence of indirect taxes on households at different levels of income is that, by whatever measure used, on average, recorded expenditure exceeds income apparently available for it by significant amounts at the bottom of the distribution. Thus, it has been argued that for many households, where, for instance, income fluctuates widely or where it is difficult to measure accurately, a measure based on regular household outgoings would be a far better indicator of resources available to the household and therefore give a better picture of the incidence of indirect taxes.

This measure of expenditure has been customised to be analogous to the definition of disposable income used in the analysis in order to facilitate these comparisons. For instance, because the imputed benefit of company cars and beneficial loans will have boosted the figure for disposable income these items have had to be added to this expenditure measure. Expenditure on alcohol, tobacco and confectionery have been grossed up for under-recording in line with the treatment of the indirect taxes on these items. Payments deemed to be made out of income such as superannuation, regular savings, mortgage repayments etc have been included and adjusted where necessary but not items such as lumpsum capital payments in line with the exclusion of capital gains and windfalls from income.

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

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

34. Education benefit is estimated by the Department of Education and Employment 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.

35. 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.

36. 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.

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

38. The rail travel subsidies allocated are the support payments made to the train operating companies including 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.

39. 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.

40. 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

41. 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 an analysis by Banks and Johnson ('Children and Household Living Standards', IFS, 1993) 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.

42. The equivalence values are given below:

| <u>Type of household member</u>       | <u>Equivalence value</u> |
|---------------------------------------|--------------------------|
| <u>married head of household</u>      |                          |
| (i.e. a married or cohabiting couple) | 1.00                     |
| 1st additional adult                  | 0.42                     |
| 2nd (or more) additional adult        | 0.36 (per adult)         |
| <u>single head of household</u>       |                          |
| adult                                 | 0.61                     |
| 1st additional adult                  | 0.46                     |
| 2nd additional adult                  | 0.42                     |
| 3rd (or more) additional adult        | 0.36 (per adult)         |
| <u>Child aged:</u>                    |                          |
| 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                     |

43. 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).



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).

It is important to note that most monetary values shown in the article are ordinary (i.e. 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

44. 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) i.e. 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).

45. 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.

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

### Impact of grossing

47. The survey results have been grossed up so that the population totals reflect the whole household population. Different grossing factors are applied to different types of households in order to correct for over- and under-representation of these groups in the responding sample of the FES. Grossing raises the quality of the estimates by making the population more representative and by improving the allocation of national accounts aggregates to individual households. Estimates based on the grossed up data set are different from estimates based on the sample. Indeed, if they were not, there would be little point in grossing. We set out below the effect of grossing on some of the major variables used in the analysis. More detail about the effect of grossing can be obtained from the ONS on request.

Diagram A

Complete income equality

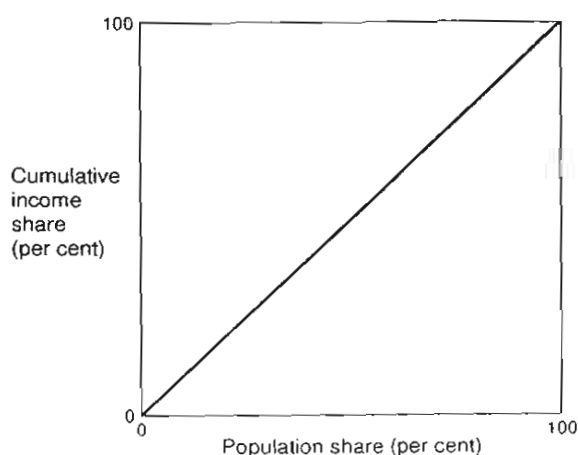
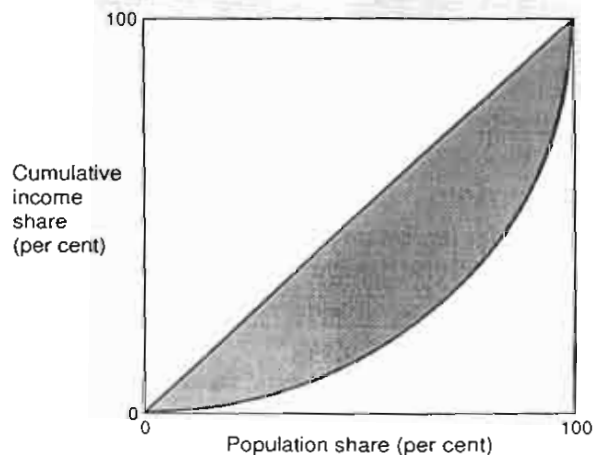


Diagram B

Lorenz curve for a typical income distribution



48. Grossing effects the proportion of the different household types in the population. Households with three or more adults are under-represented in the sample and households with children are over-represented. Grossing increases the proportion of non-retired households without children from 40% of the sample to 44% of the population and reduces the proportion with children from 34% of the sample to 30% of the population. The change for other household types is less marked.

49. These changes in the population feed through into the income measures - original income is increased by 3% because there is an increase in the proportion of adults, particularly of working adults; cash benefits decrease by 2% because of the fall in child-related benefits. Gross income, disposable income and post-tax income are all increased by just over 2%.

50. In correcting for the excess number of children in the FES sample, reweighting has lowered the average allocation of education benefit per household by about 6% and has also produced a small reduction in the NHS benefit figure. This is also related to the "excess children" factor, in particular to the excess number of very young children in the sample, correcting for which has reduced significantly the allocation of maternity related NHS benefit. Similarly, reweighting has reduced the average allocation for school meals, milk and welfare foods.

51. Since the analysis is concerned with the differential impact of taxes and benefits across the income distribution, the most important question to consider is the effect of grossing on different parts of the distribution. This is measured most conveniently by considering the Gini coefficients and shares of income before and after grossing. As the table below shows, grossing has little impact on the distribution of income.

Gini coefficient

| Income measure    | Sample | Population |
|-------------------|--------|------------|
| Original income   | 52.9   | 52.7       |
| Gross income      | 37.2   | 37.3       |
| Disposable income | 33.9   | 34.1       |
| Post-tax income   | 37.9   | 38.0       |

52. The largest changes in the shares of income is in the share of original income for the highest quintile group which rises from 50.8% to 51.3% with grossing. All of the changes for the lowest two quintile groups are less than 0.2 percentage points.

**Sampling errors and reliability**

53. 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 large groups of households and measures that do not vary greatly between households. Conversely, it is largest for small groups of households, and for measures that vary considerably between households. A broad numerical measure of the amount of variability is provided by the quantity known as the standard error.

54. 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 is given by:

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

where the design factor is 1.31 for 1996-97, and S<sup>2</sup> is the estimate of the population variance.

55. The standard error for disposable income of all households is less than 2 per cent of the mean but, for the less frequent household types, eg 1 adult with children and 3 or more adults with children, it is about 5 per cent of the mean.

56. 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.

57. The standard errors for the household types are larger than for the whole sample, mainly because the sample sizes concerned are smaller. For quantile groups of given household types, the sample sizes are of course smaller still, which would tend to increase sampling variability. On the other hand, the income values

are by definition in a narrower range which would tend to reduce the sampling error. Precise estimates of standard errors for averages for quantile groups are complicated to produce. As well as the variability of the observations between the quantile points, we should also take account of the randomness which exists because the sample quantile points are themselves subject to random variation. We have used a formula for the asymptotic variance of a 'randomly trimmed' mean. This formula gives a good approximation where the total sample size is around 1,000 (when the variance is under-estimated by about 2 per cent on average), and a reasonable approximation for samples of 100-500 (when the variance is under-estimated by about 5 per cent on average). The formula for the variance of a mean ( $x$ ) calculated between two sample percentiles,  $Q_1$  and  $Q_2$ , corresponding to proportions  $p_1$  and  $p_2$  is:

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

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 54) to give the standard errors.

58. The 'complex' standard errors for quintile and decile groups are quite a bit larger than the simple random sample estimates. For the 'all households' group, the standard errors for disposable income for the middle decile groups are about 10 per cent of the mean for the group.

59. Detailed tables containing the standard errors for all of the income measures for the different household types and quantile groups are available on request.

### Previous articles

60. This article is the latest in an annual series covering the years from 1957 onwards. From 1987 onwards, the articles have used a very different methodology, in particular households are ranked by their equivalised disposable income. Hence the results are completely incompatible with earlier years. Last year's article was published in the March 1997 edition of *Economic Trends*. This article contains a complete list of the previous articles.

61. 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 to 1996-97.

