ARTICLE

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The effects of taxes and benefits on household income, 2008/09

SUMMARY

This article looks at how taxes and benefits affect the income of households in the UK. It provides estimates of household incomes, including the average amount of taxes that households paid, and also the value of benefits that they received in 2008/09, a period when the UK economy was in recession. The analysis highlights that the level of inequality, as measured by the Gini coefficient, fell slightly between 2007/08 and 2008/09 for retired households, but for non-retired households it was almost unchanged. This analysis is published annually and has been undertaken each year for over 30 years.

Appendix 1 (additional tables) and Appendix 2 (Methodology and Definitions) are available on the web version of this article at:

www.statistics.gov.uk/cci/article.asp?ID=2440

Additional ONS analysis of the effect of the recession on households' incomes will be published in August 2010, as part of a wider investigation of the recession.

Taxes and benefits affect the incomes of households. Generally speaking, households with the highest incomes pay more in taxes than they receive in benefits. The reverse is true for those with lower incomes – these households tend to receive more in benefits than they pay in taxes. Taxes and benefits therefore tend to decrease the inequality of income.

The effect of taxes and benefits on income inequality can be seen by their effect on the Gini coefficient, which can take values from 0 to 100 per cent where higher values indicate greater inequality. In 2008/09, before taxes and benefits, the level of inequality as measured by the Gini coefficient was 52 per cent. The addition of cash benefits decreased the level of inequality to 38 per cent, a fall of 14 percentage points. After direct taxes are taken into account the level of inequality fell a further 4 percentage points to 34 per cent. However, when indirect taxes are then subtracted from households' incomes the level rose back to 38 per cent. Therefore, in 2008/09 the overall effect of taxes and benefits is that they reduced inequality by 14 percentage points. Of this decrease, cash benefits played the largest part. For details of how the Gini coefficient is calculated see Appendix 2, paragraph 53.

When the entire household population is considered, inequality of disposable income was almost unchanged between 2007/08 and 2008/09, as shown in **Figure 1**. For non-retired households (who make up almost three-quarters of all households), the situation was similar – inequality was

almost unchanged. However, the inequality of retired households fell slightly, from 27 to 26 per cent. This estimate will be subject to a degree of sampling variability. The fall was primarily driven by changes to the household characteristics of retired households. In particular, there were proportionally more one-adult retired households in 2008/09, and these households were located toward the bottom of the income distribution (but crucially not at the extreme bottom of the distribution). Due to the effect of equivalisation, this had the effect of increasing the average retired equivalised household income, especially for households at the bottom of the income distribution (for more details about equivalisation, see Appendix 2, paragraph 48). This has an equalising effect on the level of income inequality.

In 2008/09, the average *original* income (before taxes and benefits) received by households was £30,500 per year. This income came from sources such as earnings, occupational pensions and investments. The bottom fifth of households received an average income of £5,000 per year. On the other hand, the top fifth of households received an average of £73,800 per year from these sources, approximately 15 times as much. After taking account of all taxes and benefits, the average *final* income of household was £29,100. The top fifth had an average final income of £53,900 per year, now only four times the size of the income for the bottom fifth of households (£13,600 per year). The difference between original income and final income, broken

Figure 1
Gini coefficients 1983 to 2008/09

Source: Office for National Statistics

Figure 2
Original income and Final income by quintile groups for ALL households, 2008/09

Note:

Source: Office for National Statistics

1 Households are ranked throughout by their grossed equivalised disposable incomes.

Figure 3
Gross Income by quintile groups for ALL households, 2008/09

Note:

Source: Office for National Statistics

1 Households are ranked throughout by their grossed equivalised disposable incomes.

down by quintiles, is also shown graphically in **Figure 2**.

As already mentioned, cash benefits (such as Jobseeker's Allowance and the retirement pension) play the largest part in reducing inequality. **Figure 3** shows the extent to which cash benefits increased incomes, from the bottom fifth to the top fifth of households. It can be seen that the majority of cash benefits go to households with incomes below average. When cash benefits are added to a household's original income it forms their *gross income*. In

2008/09 the average cash benefits received by households was £5,000 per year, or 14 per cent of the average gross income. This proportion was almost unchanged on the estimate for 2007/08.

Disposable income is defined as gross income minus direct taxes. All direct taxes (income tax, employees' National Insurance contributions and council tax and Northern Ireland rates), except for council tax and Northern Ireland rates, take a larger proportion of income from those with higher incomes. This means that direct

taxes are said to be *progressive*. Therefore, direct taxes also contribute to reducing the level of inequality, although not to the same extent as cash benefits.

Indirect taxes (taxes on final goods and services, such as Value Added Tax (VAT), and intermediate taxes, such as employers' National Insurance contributions) have the opposite effect to direct taxes, as they take a higher proportion of income from those with lower incomes, that is, they are *regressive*. While households higher up the income distribution pay more indirect tax in absolute terms, they pay a lower proportion of their income in indirect tax. However, recent analysis by Carrera (2010) found that there are a number of additional issues that should be considered when analysing indirect taxes. For example, the analysis demonstrates that indirect taxes can be progressive if expenditure is used to rank households (rather than income).

In 2008/09, households paid an average of £4,700 per year in indirect taxes, or 13 per cent of their gross income, down from 14 per cent in 2007/08. The fall in the proportion of indirect taxes paid was primarily driven by a decrease in stamp duty payments. This was caused by the downturn in the housing market over the period and the introduction in September 2008 of an exemption from stamp duty for house purchases of less than £175,000. Secondly, there was a fall in the amount of VAT paid, caused in part by the reduction in the rate of VAT from 17.5 per cent to 15 per cent which came into effect in December 2008.

Households also receive benefits in kind from services provided free or at subsidised prices by government, such as health and education services. The amount of benefits in kind which households receive falls gradually as income increases, indicating that they also lead to a reduction in inequality. Changes to the methodology implemented for this analysis mean that comparisons of benefits in kind received in 2008/09 with previous years are not possible. However, all other estimates remain comparable.

Changes to the analysis

The following changes have been introduced to this year's publication:

- Additional analysis, based on household tenure type and Government Office Region have been provided
- Tables based on the modified-OECD equivalisation scale have been added (Tables 3, 14, 14A, 16 and 18). These tables are prefixed by 'OECD'

- The methodology used for the calculation of the in kind benefit from education and the National Health Service (NHS) have been updated. These estimates are now based on more up-to-date data on the per-unit cost of these services to the Government. In particular, the NHS method is now more closely based on that presented in Cardarelli et al (1999)

Concepts and Sources

This analysis looks at how taxes and benefits affect the distribution of income. **Diagram 1** shows the five stages in the redistribution of income used in this analysis:

1. Household members receive income from employment, occupational pensions, investments and from other non-government sources
2. Households receive income from cash benefits
3. Households pay direct taxes
4. Indirect taxes are paid via expenditure
5. Households receive a benefit from services (benefits in kind).

The analysis allocates taxes and benefits that can reasonably be attributed to households. Therefore, some government revenue and expenditure is not allocated, such as revenue from corporation tax and expenditure on defence and public order. There are three main criteria for including taxes and benefits in the analysis:

1. The tax or benefit should clearly affect people who live in private households
2. There should be a clear conceptual basis for allocation to particular households
3. Finally, there must be data available to enable allocation.

In this study, some £365 billion of taxes and compulsory social contributions have been allocated to households. This is equivalent to 55 per cent of general government expenditure, which totalled £658 billion in 2008. Similarly, £342 billion of cash benefits and benefits in kind have been allocated to households, making up 52 per cent of general government expenditure. These proportions are broadly the same to those in recent years' analyses.

The estimated values of taxes and benefits reflect the methodology used in this study. They are based on assumptions about which taxes and benefits should be covered and to whom they should apply. Where it is practical, the methodology used is similar to that used in previous years.

Diagram 1
Stages of redistribution

Source: Office for National Statistics

However, there have been some changes in the underlying surveys and improvements made to the methodology. For this reason, one should be cautious about making direct comparisons with earlier years. Comparisons with previous years are also affected by sampling error (for more details see Appendix 2, paragraph 57). This is especially true for estimates which are based on sub-samples such as the results for decile or quintile groups, or particular types of household. Time series are presented for some of the more robust measures, and these include Gini coefficients and other measures of inequality.

Unit of analysis

The unit of analysis used in this study is the household. The households are ranked by their equivalised disposable income, which the analysis uses as a proxy for standard of living. Equivalisation is a process that adjusts households' incomes to take account of their size and composition, to recognise that this affects the demand on resources. For example, a couple with a child would need a higher income than a childless couple for the two households to achieve the same standard of living. The equivalence scale used in this

analysis is the *McClements scale* (before housing costs are deducted). In the earlier example, a childless couple's (unequalised) income of £10,000 is treated as equivalent to an (unequalised) income of £12,300 for a couple with a ten year old child. Households with the same equivalised income do not necessarily have the same standard of living where other characteristics are different. For example, households which own their homes outright would be in a better position than identical households with the same income which had to pay rent or mortgage payments. Equivalisation does not adjust for these differences. Additionally, following consultation from users, tables based on the modified-OECD equivalisation scale have been produced. These can be found in Appendix 1, and are prefixed by 'OECD'. Further details of how this publication is planning to move from using the McClements to OECD equivalisation scales can be found in Anyaegbu (2010).

Equivalised income is used only to rank the households and most monetary values shown in the analysis are not equivalised. Once the households have been ranked, the distribution is split into five or ten equally sized groups – that is quintile groups

Table 1

Summary of the effects of taxes and benefits by quintile groups on ALL households,¹ 2008/09

	Quintile groups of ALL households ¹						Ratio All top/bottom quintile
	Bottom	2nd	3rd	4th	Top	households	
Income, taxes and benefits per household (£ per year) ²							
Original income	4 970	12 020	23 305	38 321	73 810	30 485	15
plus cash benefits	6 431	7 602	5 787	3 609	1 805	5 047	0
Gross income	11 401	19 622	29 092	41 930	75 615	35 532	7
less direct taxes ³ and employees' NIC	1 270	2 523	5 046	8 798	18 255	7 178	14
Disposable income	10 130	17 099	24 047	33 133	57 360	28 354	6
less indirect taxes	2 862	3 592	4 316	5 579	7 354	4 741	3
Post-tax income	7 269	13 507	19 731	27 553	50 006	23 613	7
plus benefits in kind	6 315	6 411	5 969	5 000	3 870	5 513	1
Final income	13 584	19 918	25 699	32 553	53 876	29 126	4

Notes:

Source: Office for National Statistics

- 1 Households are ranked by equivalised disposable income.
- 2 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).
- 3 These are income tax (which is after deducting tax credits and tax relief at source on life assurance premiums), council tax and Northern Ireland rates but after deducting discounts, council tax benefits and rates rebates.

Table 2

Percentage shares of household income and Gini coefficients,¹ 2008/09

	Percentage shares of equivalised income for ALL households ²			
	Original income	Gross income	Disposable income	Post-tax income
Quintile group ²				
Bottom	3	7	7	6
2nd	7	11	12	12
3rd	14	16	16	16
4th	24	23	22	22
Top	51	44	42	44
All households	100	100	100	100
Decile group ²				
Bottom	1	3	3	2
Top	33	28	27	28
Gini coefficient (per cent)	52	38	34	38

Notes:

Source: Office for National Statistics

- 1 This is a measure of the dispersion of each definition of income (see Appendix 2, paragraph 51).
- 2 Households are ranked by equivalised disposable income.

or decile groups. The bottom quintile (or decile) group is that with the lowest equivalised disposable incomes, while the top quintile (or decile) is that with the highest.

Data sources

The main data source for this analysis is the Living Costs and Food Survey (LCF), formally known as the Expenditure and Food Survey. The LCF covers about 5,800 households in the UK each year. It only covers private households – people living in hotels, lodging houses and in institutions, such as old people's homes, are excluded. The LCF is used for this analysis because as well as collecting data on household income, it also collects expenditure data which are used here to estimate payment

of indirect taxes. The LCF data is weighted using 2001 Census data, for further details please refer to Appendix 2, paragraph 5.

There is known to be a degree of under-reporting in the LCF for some benefits. For example, when compared to administrative data from HM Revenue and Customs (HMRC), the LCF estimate of total tax credit payments is only around two-thirds of the HMRC figure. Further details of the concepts and methodology used are given in Appendix 2.

The results of the analysis are reported in three sections; for all households, non-retired households and retired households. Retired households have distinct income and expenditure patterns, compared with their non-retired counterparts, and therefore taxes and benefits affect the two

groups in different ways. By presenting the results separately for non-retired and retired households it is then possible to investigate how the tax and benefit system redistributes income both between, and within, the two groups.

Results for all households**Overall effect**

Taken as a whole, the tax and benefit system leads to income being shared more equally between households. Original income (income from earnings, occupational pensions and investments) varies considerably between households. Those in the top quintile group have an average original income of £73,800 per year compared with £5,000 for the bottom group (Table 1).

The extent of inequality in this measure of income can be seen by looking at the proportion of total original income received by groups of households in different parts of the income distribution. At this stage, the richest fifth of households (those in the top quintile group) receive 51 per cent of all original income (Table 2). This compares with only 3 per cent for households in the bottom fifth.

Adding cash benefits to original income gives gross income. In contrast to original income, the amount received from cash benefits is higher for households lower down the income distribution than for those at the top. However, the largest cash benefits were received by households in the second quintile group, £7,600 per year compared with £6,400 for households in the bottom group. This is largely because more retired households are located in the second quintile group, compared with the bottom group, and therefore the average amount received in retirement pension is higher in the second group. Nevertheless, the overall effect of cash benefits is that they reduce the inequality of income.

Direct taxes

Direct taxes include income tax, National Insurance contributions (NICs) and council tax or Northern Ireland rates. Households with higher incomes pay both higher amounts of direct tax and higher proportions of their income in direct tax with the top quintile group paying an average of £18,300 per household per year in direct taxes. In contrast, the direct tax bill for households in the bottom quintile group is around £1,300 per year. As a result, direct taxes also reduce inequality of income, that is, they are progressive. For all direct taxes, the top two quintile groups pay 75 per cent

Table 3
Taxes as a percentage of gross income, disposable income and expenditure for ALL households by quintile groups,¹ 2008/09

	Quintile groups of ALL households ¹					All households
	Bottom	2nd	3rd	4th	Top	
(a) Direct and indirect taxes as a percentage of gross income						
Direct taxes						
Income tax ²	3.4	5.6	9.4	12.6	17.2	12.7
Employees' NIC	1.6	3.0	4.4	5.5	5.0	4.6
Council tax & Northern Ireland rates ³	6.2	4.2	3.6	2.9	1.9	2.9
<i>All direct taxes</i>	<i>11.1</i>	<i>12.9</i>	<i>17.3</i>	<i>21.0</i>	<i>24.1</i>	<i>20.2</i>
Indirect taxes						
VAT	9.6	7.3	6.1	5.7	4.4	5.6
Duty on alcohol	1.4	1.1	0.8	0.8	0.6	0.8
Duty on tobacco	2.6	1.6	1.1	0.7	0.3	0.8
Duty on hydrocarbon oils & vehicle excise duty	2.8	2.2	2.0	1.9	1.2	1.7
Other indirect taxes	8.7	6.1	4.9	4.2	3.2	4.4
<i>All indirect taxes</i>	<i>25.1</i>	<i>18.3</i>	<i>14.8</i>	<i>13.3</i>	<i>9.7</i>	<i>13.3</i>
<i>All taxes</i>	<i>36.2</i>	<i>31.2</i>	<i>32.2</i>	<i>34.3</i>	<i>33.9</i>	<i>33.5</i>
(b) Indirect taxes as a percentage of disposable income						
VAT	10.8	8.4	7.4	7.2	5.8	7.0
Duty on alcohol	1.6	1.2	1.0	1.1	0.9	1.0
Duty on tobacco	2.9	1.9	1.3	0.9	0.4	1.0
Duty on hydrocarbon oils & vehicle excise duty	3.2	2.6	2.4	2.4	1.6	2.2
Other indirect taxes	9.8	7.0	5.9	5.3	4.2	5.5
<i>All indirect taxes</i>	<i>28.2</i>	<i>21.0</i>	<i>17.9</i>	<i>16.8</i>	<i>12.8</i>	<i>16.7</i>
(c) Indirect taxes as a percentage of expenditure⁴						
VAT	7.3	7.7	7.1	7.2	6.8	7.2
Duty on alcohol	1.1	1.1	1.0	1.1	1.0	1.0
Duty on tobacco	2.0	1.7	1.3	0.9	0.5	1.1
Duty on hydrocarbon oils & vehicle excise duty	2.1	2.4	2.3	2.4	1.9	2.2
Other indirect taxes	6.7	6.4	5.7	5.3	4.9	5.5
<i>All indirect taxes</i>	<i>19.2</i>	<i>19.3</i>	<i>17.5</i>	<i>16.9</i>	<i>15.2</i>	<i>17.0</i>

Notes:

Source: Office for National Statistics

- Households are ranked by equivalised disposable income.
- After deducting tax credits and tax relief at source on life assurance premiums.
- After deducting discounts, council tax benefits and rates rebates.
- Calculated to be consistent with disposable income. See paragraph 34 of Appendix 2 for the definition of expenditure.

of the total, while the bottom two quintile groups together pay 11 per cent.

However, while direct taxes are progressive when taken as a whole, some direct taxes are progressive, whereas others are regressive. Households at the lower end of the income distribution pay smaller amounts of income tax and employees' National Insurance Contributions (NICs) compared with higher income households. This is because these taxes are not paid at all on the first part of income and higher rates of income tax are paid on higher incomes. Therefore, income tax is progressive. On the other hand, although the proportion of gross income paid in NICs rises with income, it does so only until the fourth quintile group. In 2008/09, employees' NICs were levied at 11 per cent on weekly earnings from £105 to £770 and at 1 per cent above this. Many people in households in the top quintile group will

have a significant part of their earnings taxed at this lower rate and hence they will contribute less, as a proportion of their income. As a result, NICs are progressive only up until the fourth quintile group. **Table 3** shows the size of the direct and indirect taxes paid by each quintile group.

In contrast, council tax (and domestic rates in Northern Ireland) is regressive, even after taking into account council tax benefits and rates rebates. Although households in the lower part of the income distribution pay smaller absolute amounts - average net payments by the bottom fifth of households are half those of the top fifth - when expressed as a proportion of gross income, the burden decreases as income rises. Council tax in Great Britain and domestic rates in Northern Ireland represent 6 per cent of gross income for those in the bottom fifth but only 2 per cent for those in the top fifth.

Indirect taxes

Indirect taxes are taxes that are paid on items of expenditure, such as VAT, duties on alcohol and tobacco and duties on fuels. Therefore, the amount of indirect tax each household pays is determined by their expenditure rather than their income. While the payment of indirect taxes can be expressed as a percentage of gross income in the same way as for direct taxes, this can be potentially misleading. This is because some households have an annual expenditure that exceeds their annual income, particularly those towards the bottom of the income distribution. For these households, their expenditure is not being funded entirely from income. It is possible that, for these households, expenditure is a better indicator of standard of living than income. Therefore, payment of indirect taxes is also presented as a percentage of expenditure.

Carrera (2010) presented some of the most common alternative methods that were used to fund expenditure in households where their expenditure was at least twice the level of their disposable income. For these households the most common source of funds was savings, followed by credit/store cards and then loans. This may be due to a number of reasons. For example, the bottom decile in particular includes some groups who have, or report, very little income (for example people not currently in employment and some self-employed people). For some people this spell of very low income may only be temporary and, during this period, they may continue with previous patterns of spending. Secondly, some types of one-off receipts are not included as income in this analysis, for example, inheritance and severance payments. Finally, the income and expenditure data are measured in different ways in the LCF, and either could be affected by measurement errors of different kinds (see Appendix 2, paragraph 6).

In cash terms (see **Table 14A**) the top fifth of households pay three times as much indirect tax as the bottom fifth. This simply reflects higher expenditure by higher income households. The only indirect taxes where average payments do not vary much across the income distribution are duties on tobacco, television licences and the tax element of the National Lottery.

To give a more complete picture of the impact of indirect taxes, they are shown in **Table 3** separately as a proportion of gross income, disposable income and expenditure. Direct taxes are also shown as a proportion of gross income so that the

Figure 4

Summary of the effects of taxes and benefits on ALL households, 2008/09

Average income per household, £ thousands per year

Note:

Source: Office for National Statistics

1 Households are ranked throughout by their grossed equivalised disposable incomes.

Table 4

Summary of household characteristics of quintile groups of ALL households,¹ 2008/09

	Quintile groups of ALL households ¹					All households
	Bottom	2nd	3rd	4th	Top	
Number of individuals per household						
Children ²	0.6	0.6	0.5	0.5	0.3	0.5
Adults	1.7	1.8	1.9	2.0	1.9	1.8
Men	0.7	0.8	0.9	1.0	1.0	0.9
Women	0.9	1.0	1.0	1.0	0.9	0.9
People	2.3	2.4	2.4	2.4	2.2	2.3
People in full-time education	0.6	0.5	0.5	0.4	0.3	0.5
Economically active people	0.7	0.8	1.3	1.5	1.7	1.2
Retired people	0.5	0.6	0.5	0.3	0.2	0.4
Household type (percentages)						
Retired	38	41	29	16	7	26
Non-retired						
1 adult without children	16	10	13	16	22	15
2 adults without children	9	12	17	27	40	21
1 adult with children ³	11	7	5	3	1	5
2 adults with children	15	17	22	22	19	19
3 or more adults ⁴	10	13	14	17	11	13
All household types	100	100	100	100	100	100

Notes:

Source: Office for National Statistics

1 Households are ranked by equivalised disposable income.

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

3 This group is smaller than the category of 'one parent families' (sometimes used in publications) because some of these families will be contained in the larger household types.

4 With or without children.

impact of direct and indirect taxes can be compared.

When expressed as a percentage of expenditure, the proportion paid in indirect tax tends to be lower for households at the top of the distribution compared with those lower down (15 per cent for the top quintile compared with 19 per cent for the bottom quintile). The higher percentage of expenditure by low income groups on tobacco (2.0 per cent of total expenditure

for the bottom quintile group compared with 0.5 per cent for the top quintile group) and on the 'other indirect taxes' which include television licences, stamp duty on house purchases and the Camelot National Lottery Fund (6.7 per cent compared with 4.9 per cent, respectively) accounts for part of this difference.

On the other hand, the impact of indirect taxes, as a proportion of gross or disposable income, declines much more sharply as

income rises. This is because those in higher income groups tend to channel a larger proportion of their income into places which do not attract indirect taxes, such as savings and mortgage payments. For this reason, and those already mentioned regarding high expenditure households, indirect taxes expressed as a proportion of income appear more regressive than when expressed as a proportion of expenditure.

The final stage in the redistribution process is the addition of benefits received in kind (as opposed to those received in cash), such as those from state education and the health service. Households in the bottom quintile group receive the equivalent of around £6,300 per year from all benefits in kind, compared with £3,900 received by the top fifth (see Figure 4). These are described in more detail later in the analysis. Estimates of final income therefore include receipt of all benefits and payment of all taxes. After redistribution through taxes and benefits, the share of income received by the bottom quintile group increased from 3 per cent for original income to 6 per cent for post-tax income. The share of income received by the top quintile group fell from 51 per cent to 44 per cent.

Characteristics of households

Some types of household are more likely to be located in one part of the income distribution than another and hence it is possible to provide analysis of how different household characteristics may affect households' incomes. Information about the characteristics of households in the different income groups is shown in Table 4. Household size does not vary much across the income distribution, with an average of between 2.2 and 2.4 people per household in each quintile group in 2008/09. There are fewer children in the upper part of the income distribution. Men are slightly more likely to be in the upper part of the distribution while women are spread more evenly across the distribution. Higher income groups also contain more economically active people, the top fifth of households have two and a half times as many economically active people as the bottom fifth.

Of those households in the top quintile group, 62 per cent are one or two adult non-retired households without children. In fact, childless two adult non-retired households make up 40 per cent of the total households in the top quintile group. For two adult households with children, the position in the income distribution

Figure 5
Gini coefficients¹ 1983 to 2008/09

Figure 6
Gini coefficients¹ from the Effects of Taxes and Benefits (ETB) analysis (disposable income) and Households Below Average Income (HBAI) (BHC² income)

Notes (Figures 5 and 6): Source: Office for National Statistics and Department for Work and Pensions

1 See technical note 5 for an explanation of the Gini coefficient.

2 Before housing costs.

tends to vary according to the number of children. Households with more children, unless there is a corresponding increase in income, will have lower equivalised incomes to reflect the additional demand on resources. Non-retired households with one adult and one or more children are concentrated in the lower groups. Whereas these households make up 5 per cent of all households, they constitute 11 per cent of the bottom group and only 1 per cent of the top group.

Retired households are over-represented at the lower end of the income distribution. Although 26 per cent of all households are retired, these households make up 38 and 41 per cent of the bottom and second from bottom quintile groups, respectively, but only 7 per cent of the top group.

Changes in inequality over time

Figure 5 shows how the Gini coefficients for the various measures of income have changed since 1983. As with other estimates presented here, they are subject to sampling error and some caution is needed particularly in the interpretation of year-to-year changes. However, by looking at data

over several years it is possible to see some underlying trends.

As shown in Figure 5, the Gini coefficient for disposable income was unchanged between 2007/08 and 2008/09, at 34 per cent, having fallen only slightly between 2006/07 and 2007/08. In fact, the level of inequality in 2008/09 was approximately the same as 10 (1998/99–2008/09) and 15 year (1993/94–2008/09) averages.

Inequality was almost unchanged between 2006/07 and 2008/09 because there was very little change in average disposable incomes, especially at the top and bottom of the income distribution, over this period. Incomes were unchanged at the top of the distribution because of the lower than average growth in income from wages and salaries, and self-employment for these households. For households at the bottom of the distribution, who get the majority of their income from cash benefits, these benefits also remained almost unchanged on average.

This followed a period between 2004/05 and 2006/07 when there was a slight increase in inequality, due to increased inequality of original income. It was due in

part to the faster rate of growth of wages and salaries and investment income in the upper part of the distribution compared with the low.

The growth in inequality between 2004/05 and 2006/07 followed a period between 2001/02 and 2004/05 when income inequality was falling. Over this period there was a slight fall in inequality of original income due to faster growth in income from earnings and self-employment income at the bottom end of the income distribution. Policy changes such as the increases in the national minimum wage, increases in tax credit payments, and the increase in National Insurance contributions in 2003/04 would also have resulted in small reductions in inequality of disposable and post-tax income during this period.

Inequality of disposable income increased in the late 1980s and late 1990s during periods of faster growth in income from employment, and fell in the early 1990s during a period of slower growth in employment income. Households which typically benefit the most during periods of growth in employment income are those in the middle and upper part of the income distribution. This is due to the much higher proportion of economically active adults in higher quintile households compared with households in the lower part of the income distribution.

The Department for Work and Pensions (DWP) publishes analysis each year of the income distribution in their publication *Households Below Average Income (HBAI)*, based on data from the Family Resources Survey. Due to HBAI being based on a different survey, and some conceptual differences (for example, the use of the OECD equivalisation scale), HBAI estimates will differ slightly. However, the underlying trends are similar, as shown in Figure 6.

Additional analysis

Analyses of two additional household groups have been provided in this publication for the first time, based on:

1. Housing tenure type (Tables 28 and 29)
2. Government Office Region (Tables 30 and 31)

The results by housing tenure show the very large differences in the levels of income that exist between these groups. For example, households that own their residence with a mortgage (or rental purchase) had an average disposable income of £39,000 per year, almost one and a half times the all

household average. This income was mainly derived from wages and salaries, and self-employment income as these households had many more economically active people than the average for all households (1.8 economically active people per household compared with 1.2). This is in contrast with households that own their residence outright, who on average had a disposable income of £24,800 per year, slightly less than the all household average. In contrast to the households with a mortgage, households that owned their residence outright also had substantial income from occupational pensions, and the retirement pension, owing to the large number of retired people in this group.

Table 30 presents the average incomes, taxes and benefits by Government Office Region. The differences between regions are less pronounced than for those between the different housing tenure groups. However, households in the South East and London, received an average of £38,100 and £37,300 per year, respectively, in original income, approximately £8,000 per year more than the all household average. Also, these households received a larger than average amount in cash benefits, mainly due to much larger than average housing benefit.

Results for non-retired households

This section looks at the effect of taxes and benefits on the income of non-retired households. It examines how the characteristics of non-retired households affect the receipt of benefits and payment of taxes (for a definition of retired and non-retired households refer to Appendix 2, paragraph 9).

Overall effect

As for all households, the tax and benefit systems lead to income being shared more equally between non-retired households. Before taxes and benefits, there is less inequality of non-retired households' income, as shown in **Table 5**, than for all households, as shown in Table 2. However, after the process of redistribution, inequality of post-tax income (as measured, for example, by the Gini coefficient) is very similar to that for all households. The effect of taxes and benefits is therefore smaller for non-retired households than for all households, and a summary is shown in **Table 6**.

Characteristics of non-retired households

There is more variation in the size of non-retired households, compared with

households in total. The average non-retired household size tends to decrease as income increases. This fall is largely accounted for by the decrease in the average number of children in each household from 1.0 in the bottom quintile group to 0.3 in the top.

Original income

The average original income for non-retired households is £38,200 per year. As mentioned above, inequality of original income is lower for non-retired households than for all households. For example, the ratio of the average original incomes for the top and bottom quintiles is 11 to one, compared with 15 to one for all households.

The original income of non-retired households shows a relatively strong relationship to the number of economically active people they contain. On average, households in the top three quintile groups contain almost twice as many economically active people as those in the lowest group.

Cash benefits

Table 7 gives a summary of the cash benefits that each non-retired quintile group receives. There are two types of cash benefits: contributory benefits which are paid from the National Insurance Fund (to which individuals and their employers make contributions while working) and non-contributory benefits. For non-retired households, non-contributory benefits make up nearly three-quarters of all cash benefits on average.

Most non-contributory benefits, particularly income support, tax credits and housing benefit, are income related and so payments are concentrated in the

two lowest quintile groups. The presence of some individuals with low incomes in high income households means that some payments are recorded further up the income distribution. Of the total amount of income support, tax credits and housing benefit paid to non-retired households, just over half goes to households in the bottom quintile.

Child benefit is based on the number of children in the household. Levels of child benefit received are also higher at the lower end of the distribution, as these households tend to have more children.

In contrast to non-contributory benefits, a criterion for receipt of contributory benefits is the amount of National Insurance contributions that have been paid by, or on behalf of, the individual. The amounts received from these benefits are also higher in the lower half of the distribution, but to a lesser extent than for non-contributory benefits.

Cash benefits provide 45 per cent of gross income for households in the bottom quintile group, falling to just 2 per cent for households in the top quintile. Their payment results in a significant reduction in income inequality.

Direct and indirect taxes

Tables 8 and 9 show estimates of how much direct and indirect taxes are paid by non-retired households. The patterns are similar to those described for all households.

As noted for all households, National Insurance contributions as a proportion of gross income increase from the bottom to the fourth quintile group, but are then lower for the top quintile group of households.

Table 5

Percentage shares of household income and Gini coefficients¹ for NON-RETIRED households, 2008/09

	Percentage shares of equivalised income for NON-RETIRED households ²			
	Original income	Gross income	Disposable income	Post-tax income
Quintile group ²				
Bottom	4	6	7	6
2nd	9	11	12	11
3rd	16	16	17	16
4th	24	23	23	23
Top	47	43	42	44
All non-retired households	100	100	100	100
Decile group ²				
Bottom	1	2	3	2
Top	30	28	26	28
Gini coefficient (per cent)	45	37	34	38

Notes:

- 1 This is a measure of the dispersion of each definition of income (see Appendix 2, paragraph 51).
- 2 Households are ranked by equivalised disposable income.

Source: Office for National Statistics

Table 6
Summary of the effects of taxes and benefits by quintile groups on
NON-RETIRED households,¹ 2008/09

	Quintile groups of NON-RETIRED households¹						Ratio
	Bottom	2nd	3rd	4th	Top	All non-retired households	top/bottom quintile
Income, taxes and benefits per household (£ per year)							
Original income	7 599	20 258	33 678	47 435	81 878	38 170	11
<i>plus</i> cash benefits	6 184	5 446	3 319	1 874	1 256	3 616	0.2
Gross income	13 784	25 704	36 997	49 310	83 134	41 786	6
<i>less</i> direct taxes² and employees' NIC	1 561	4 133	7 359	11 262	20 538	8 971	13
Disposable income	12 223	21 571	29 638	38 048	62 596	32 815	5
<i>less</i> indirect taxes	3 496	4 517	5 202	6 327	7 589	5 426	2
Post-tax income	8 727	17 054	24 436	31 720	55 006	27 389	6
<i>plus</i> benefits in kind	7 836	6 912	6 082	4 795	3 744	5 874	0.5
Final income	16 563	23 966	30 518	36 515	58 751	33 263	4
Number of individuals per household							
<i>Children³</i>	<i>1.0</i>	<i>0.8</i>	<i>0.7</i>	<i>0.5</i>	<i>0.3</i>	<i>0.7</i>	
<i>Adults</i>	<i>1.8</i>	<i>2.0</i>	<i>2.1</i>	<i>2.0</i>	<i>1.9</i>	<i>2.0</i>	
<i>Men</i>	<i>0.8</i>	<i>1.0</i>	<i>1.1</i>	<i>1.1</i>	<i>1.0</i>	<i>1.0</i>	
<i>Women</i>	<i>1.0</i>	<i>1.0</i>	<i>1.0</i>	<i>1.0</i>	<i>0.9</i>	<i>1.0</i>	
People	2.9	2.8	2.8	2.5	2.2	2.6	
People in full-time education	1.0	0.8	0.6	0.5	0.3	0.6	
Economically active people	1.1	1.5	1.8	1.9	1.8	1.6	
Retired people	0.0	0.1	0.1	0.1	0.1	0.1	

Notes:

Source: Office for National Statistics

- Households are ranked by equivalised disposable income.
- These are income tax (which is after deducting tax credits and tax relief at source on life assurance premiums), council tax and Northern Ireland rates but after deducting discounts, council tax benefit and rates rebates.
- Children are defined as people aged under 16 or aged between 16 and 18, unmarried and receiving non-advanced further education.

Table 7
Cash benefits for NON-RETIRED households by quintile groups,¹
2008/09

	Quintile groups of NON-RETIRED households ¹					All non-retired households
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
Contributory						
Retirement pension	175	895	881	688	507	629
Incapacity benefit	599	424	209	126	23	276
Jobseeker's allowance ²	106	16	9	-	0	26
Other	60	99	148	154	233	139
Total contributory	941	1 433	1 248	968	764	1 071
Non-contributory						
Income support ³	972	633	278	41	10	387
Tax credits ⁴	1 254	786	234	92	33	480
Child benefit	824	693	576	424	288	561
Housing benefit	1 269	805	250	23	20	473
Jobseeker's allowance ⁵	159	31	18	10	-	43
Sickness/disablement related	459	837	600	235	82	443
Other	306	226	117	85	59	159
Total non-contributory	5 243	4 012	2 072	907	492	2 545
Total cash benefits	6 184	5 446	3 319	1 874	1 256	3 616
Cash benefits as a percentage of gross income	45	21	9	4	2	9

Notes:

Source: Office for National Statistics

- Households are ranked by equivalised disposable income.
- Contribution based.
- Including pension credit.
- Child tax credit and working tax credit.
- Income based.

Benefits in kind

The Government provides a number of goods and services to households that are either free at the time of use or at subsidised prices. These goods and services can be assigned a monetary value and this analysis allocates this value to individual households. The addition of benefits in kind to disposable income results in an estimate of households' final income. The largest two categories for which a value is assigned are health and education services and, in total, six categories are assigned values (in some tables only five categories are presented as transport subsidies are shown as a combination of rail and bus travel subsidies). The value given to these benefits is based on the estimated cost of providing them, which for all households is detailed in **Table 13**. However, the actual value to households may be greater, or smaller, than the cost to the Government of provision. This analysis includes a number of improvements to these estimates, particularly for the value of the NHS and education.

Table 10 gives a summary of the value of benefits in kind for each quintile group for non-retired households. The benefit in kind from education is allocated to a household according to its members' use of state education (Appendix 2, paragraph 38). Households in the lower quintiles receive the highest benefit from education, as shown in Table 10. This is due to the concentration of children in this part of the distribution. In addition, children in households in the higher quintiles are more likely to be attending private schools and an allocation is not made in these cases. Free school meals and welfare milk go predominantly to 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 rather than their actual use of the service, as the LCF does not contain this information (Appendix 2, paragraph 40). The assigned 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. This benefit is similar in the first four quintiles and lower in the top group, as shown in Table 10. This pattern is a reflection of the demographic composition of households. Studies by Sefton (2002 and 1997) have attempted to allow for variations in use of the health service according to socio-economic characteristics. Due to data limitations this analysis does not take

Table 8

Taxes as a percentage of gross income for NON-RETIRED households by quintile groups,¹ 2008/09

	Quintile groups of NON-RETIRED households ¹					All non-retired households
	Bottom	2nd	3rd	4th	Top	
Percentages						
Direct taxes						
Income tax ²	4.0	7.8	11.1	14.0	17.9	13.6
Employees' NIC	2.5	4.6	5.8	6.3	5.1	5.3
Council tax & NI rates ³	4.8	3.7	3.1	2.6	1.8	2.6
All direct taxes	11.3	16.1	19.9	22.8	24.7	21.5
All indirect taxes	25.4	17.6	14.1	12.8	9.1	13.0
All taxes	36.7	33.7	34.0	35.7	33.8	34.5

Notes:

Source: Office for National Statistics

- 1 Households are ranked by equivalised disposable income.
- 2 After deducting tax credits and tax relief at source on life assurance premiums.
- 3 Council tax and Northern Ireland rates after deducting discounts, council tax benefit and rates rebates.

Table 9

Indirect taxes as a percentage of (a) disposable income and (b) household expenditure¹ for NON-RETIRED households by quintile groups,² 2008/09

	Quintile groups of NON-RETIRED households ²					All non-retired households
	Bottom	2nd	3rd	4th	Top	
(a) Percentages of disposable income						
VAT	10.7	8.3	7.2	7.1	5.5	7.0
Duty on alcohol	1.5	1.2	1.0	1.1	0.8	1.0
Duty on tobacco	3.4	1.8	1.3	0.8	0.4	1.1
Duty on hydrocarbon oils & vehicle excise duty	3.2	2.8	2.5	2.4	1.5	2.2
Other indirect taxes	9.8	6.7	5.5	5.2	3.9	5.3
All indirect taxes	28.6	20.9	17.6	16.6	12.1	16.5
(b) Percentages of expenditure¹						
VAT	7.2	7.4	7.1	7.1	6.7	7.0
Duty on alcohol	1.0	1.1	1.0	1.1	1.0	1.0
Duty on tobacco	2.3	1.6	1.3	0.8	0.5	1.1
Duty on hydrocarbon oils & vehicle excise duty	2.1	2.5	2.5	2.4	1.8	2.2
Other indirect taxes	6.6	6.0	5.4	5.2	4.7	5.3
All indirect taxes	19.1	18.7	17.2	16.6	14.7	16.7

Notes:

Source: Office for National Statistics

- 1 Calculated to be consistent with disposable income (see Appendix 2, paragraph 35, for the definition of expenditure).
- 2 Households are ranked by equivalised disposable income.

Table 10

Benefits in kind for NON-RETIRED households by quintile groups,¹ 2008/09

	Quintile groups of NON-RETIRED households ¹					All non-retired households
	Bottom	2nd	3rd	4th	Top	
Average per household (£ per year)						
Education	5 145	4 073	3 344	2 322	1 497	3 276
National health service	2 438	2 649	2 595	2 320	2 037	2 408
Housing subsidy	47	31	14	7	3	20
Travel subsidies	96	95	113	139	207	130
School meals and welfare milk ²	110	64	17	6	1	40
All benefits in kind	7 836	6 912	6 082	4 795	3 744	5 874
Benefits in kind as a percentage of post-tax income	90	41	25	15	7	21

Notes:

Source: Office for National Statistics

- 1 Households are ranked by equivalised disposable income.
- 2 Welfare Milk scheme has been replaced by Healthy Start vouchers. For 2008/09 Healthy Start data have been imputed based on responses to Welfare Milk question, as it was unchanged in LCF interviews.

account of these variations in the use of the health service.

The benefit given to households for the NHS is estimated to be equivalent to 9 per cent of the average post-tax income for non-retired households, or an average of £2,400 per year.

The housing subsidy, which excludes housing benefit (Appendix 2, paragraph 41), fell in the years leading to 2006/07, as the proportion of households in public sector, housing association and Registered Social Landlord housing has declined. The average value attributed to housing subsidy remained almost unchanged between 2007/08 and 2008/09.

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 therefore to the number of economically active people in a household. This results in estimates of these subsidies being higher for households in higher income quintiles. This pattern is also due to London and the South East having higher levels of commuting by public transport together with higher than average household incomes.

Taken together, the absolute value of these benefits in kind declines as household income increases. The ratio of benefits in kind to post-tax income decreases from 90 per cent for the lowest quintile group to 7 per cent for the highest. This indicates that these benefits contribute to the reduction of inequality.

The effects of taxes and benefits by household type

The tax and benefit systems affect different types of household in different ways reflecting, in part, the number and ages of people within each household type. Of the types of non-retired households shown in Figure 7, only those containing one adult and children make significant net gains when comparing original to final income, with average incomes of £23,500 and £10,100 per year, respectively. Households with two adults and three or more children, and households with three or more adults with children are also net beneficiaries, but to a smaller extent.

Original income is strongly related to the number of adults in the household. For two adult households, those with children have broadly similar levels of original income to those without, but they receive more cash benefits such as tax credits and child benefit than those without children. Final incomes are also higher for those with children due

Figure 7
Income stages by non-retired household types, 2008/09

Average income per household, £ thousands per year

Note:

1 With or without children.

Source: Office for National Statistics

Table 11
Percentage shares of household income and Gini coefficients¹ for RETIRED households, 2008/09

	Percentage shares of equivalised income for RETIRED households ²			
	Original income	Gross income	Disposable income	Post-tax income
Quintile group ²				
Bottom	4	10	10	9
2nd	8	14	14	14
3rd	11	17	17	18
4th	20	22	22	22
Top	57	38	36	37
All households	100	100	100	100
Decile group ²				
Bottom	2	4	4	3
Top	40	24	22	23
Gini coefficient (per cent)	62	28	26	29

Notes:

1 This is a measure of the dispersion of each definition of income (see Appendix 2, paragraph 53).

2 Households are ranked by equivalised disposable income.

Source: Office for National Statistics

to the value assigned to education services.

For one adult households, original income is much lower for those with children as the adult is less likely to be economically active. Benefits, both in cash and in kind, are significantly higher for those with children.

Results for retired households

In this analysis retired households are those where the income of retired household members accounts for more than half of the household gross income (see Appendix 2, paragraph 9 for the definition of a retired person). These households have quite distinct income and expenditure patterns. The tax and benefit systems affect them in different ways from non-retired households.

Retired households are much more likely to be towards the bottom of the income distribution. Whereas 38 and 41 per cent of the bottom and second quintile groups, respectively, are made up of retired households, these households only make up 7 per cent of the top group.

Among retired households, there is a high degree of inequality in income before taxes and benefits. **Table 11** shows that, before government intervention, the richest fifth of retired households receive 57 per cent of total original income, while the Gini coefficient for this measure of income is 62 per cent. Both these measures are higher (showing more inequality) than equivalent figures for non-retired households. After the impact of taxes and benefits there is a large reduction in inequality. Cash benefits play by far the largest part in bringing about this reduction. Payment of direct taxes makes a further, though much smaller, contribution. Payments of indirect taxes result in an increase in inequality.

Overall, retired households receive an average of £8,800 per year in original income with most of this coming from occupational pensions and investments (**Table 12**). Original income ranges from £1,600 for the bottom quintile group to £25,200 per year for the top. On the other hand, amounts received from cash

benefits vary less across the distribution. On average, households in the bottom fifth receive around £7,000 per year from this source, while those in the other quintile groups receive between £8,600 and £10,400 per year. These cash benefits make up large proportions of the gross incomes for the bottom four quintiles ranging from 82 per cent for the bottom quintile group to 54 per cent for the fourth quintile group. The top fifth are much less dependent on cash benefits – these account for only 28 per cent of their gross incomes.

Most retired people will have made contributions to the National Insurance Fund throughout their working lives. Many of the benefits which retired households receive are paid out of this fund in the form of contributory benefits. The most significant of these is the state retirement pension, which on average accounts for just over three-quarters of retired households' cash benefits.

Non-contributory benefits are lowest in the bottom two quintile groups. Housing benefit and disability benefits can sometimes make up a significant proportion of the income of retired households, who as a result will appear higher up the income distribution. However, this does not necessarily mean that they have a higher standard of living. Households receiving housing benefit are likely to have higher housing costs than owner occupiers (who may own their property outright), and similarly the income from disability benefits may be offset by additional costs incurred by the individual due to their illness or disability.

Retired households derive significant benefits from health services. Health benefit is spread fairly evenly between retired households and in 2008/09 was worth an average of £4,300 per year per household. This is almost twice the figure for non-retired households, and increases their post-tax income by 33 per cent. The benefits received by retired households from travel subsidies are mainly for bus travel, particularly in the form of concessionary fares and passes for senior citizens and, since these are not usually means-tested, there is no particular relationship with income.

Overall, retired households are major beneficiaries from redistribution through the tax and benefit system. Retired households with two or more adults have an average original income of £14,000, but a final income of £23,000. The corresponding figures for one adult retired households are £4,700 and £13,100. Among one adult

Table 12

Summary of the effects of taxes and benefits on RETIRED households by quintile groups,¹ 2008/09

	Quintile groups of RETIRED households ¹					All retired households
	Bottom	2nd	3rd	4th	Top	
Income, taxes and benefits per household (£ per year)						
Original income						
Earnings	28	149	311	774	1 238	500
Occupational pensions	1 219	2 869	3 992	6 860	19 276	6 843
Investment income	291	428	521	1 207	4 314	1 352
Other income	34	56	62	180	365	139
Total original income	1 572	3 502	4 886	9 020	25 192	8 835
<i>plus</i> Contributory benefits	5 780	7 063	7 196	7 560	7 472	7 014
Non-contributory benefits	1 175	1 539	2 645	2 862	2 097	2 064
Total cash benefits	6 955	8 602	9 842	10 422	9 569	9 078
Gross income	8 527	12 104	14 728	19 442	34 761	17 912
<i>less</i> Income tax ²	139	346	530	1 168	3 826	1 202
Employees' NIC	1	5	13	37	66	24
Council tax & Northern Ireland rates ³	806	769	746	907	1 285	903
Disposable income	7 582	10 985	13 438	17 330	29 584	15 784
<i>less</i> Indirect taxes	1 923	2 244	2 361	2 961	4 554	2 809
Post-tax income	5 659	8 741	11 077	14 369	25 030	12 975
<i>plus</i> National health service	4 281	4 257	4 318	4 375	4 174	4 281
Housing subsidy	11	18	40	25	18	22
Other benefits in kind	205	140	232	203	182	193
Final income	10 155	13 157	15 667	18 972	29 404	17 471
Cash benefits as a percentage of gross income	82	71	67	54	28	51
Retirement pension as a percentage of cash benefits	81	81	72	72	77	76

Notes:

Source: Office for National Statistics

- 1 Households are ranked by equivalised disposable income.
- 2 After deducting tax credits and tax relief at source on life assurance premiums.
- 3 Council tax and Northern Ireland rates after deducting discounts, council tax benefit and rates rebates.

households, women have a lower original income than men, but after the addition of benefits and the deduction of taxes, the differences are greatly reduced.

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