



Department
for Work &
Pensions

Households Below Average Income (HBAI) Quality and Methodology Information Report

2014/15

Contents

Introduction	3
Using and Interpreting HBAI Results	6
Survey Data	12
Reporting Uncertainty	14
Population	15
Grossing	16
Adjustment for individuals with very high incomes	20
Equivalisation	21
Income Definition	23
Interpreting low income measures	26
Low income and material deprivation for children	28
Material deprivation for pensioners	30
Material deprivation weighting methodology	32
Ethnic categories	33
Disability definition	34
Comparison with EU low-income statistics	37
Glossary	39
A1. Benefit and tax reform in 2014/15	52
A2. Other relevant statistics	54
A3. Uses and users of HBAI statistics	58
A4. Alternative inflation measures	60
A5. Communicating uncertainty	77

Introduction

The Households Below Average Income (HBAI) report presents information on living standards in the United Kingdom and is the foremost source for data and information about household income, and inequality in the UK. It provides annual estimates on the number and percentage of people living in low-income households. Figures are also provided for children, pensioners, working-age adults and individuals living in a family where someone is disabled.

HBAI statistics incorporate widely-used, international standard measures of low income and inequality. They provide a range of measures of low income, income inequality, and material deprivation to capture different aspects of changes to living standards. The current series started in 1994/95 and so allows for comparisons over time, as well as between different groups of the population.

The statistics are based on the Family Resources Survey (FRS), whose focus is capturing information on incomes, and as such captures more detail on different income sources compared to other household surveys. The FRS captures a lot of contextual information on the household and individual circumstances, such as employment, education level and disability. This is therefore a very comprehensive data source allowing for a lot of different analysis.

This report provides detailed information on key quality and methodological issues relating to HBAI data. Information on the FRS methodology is available in the FRS Background Note.

Comparing official statistics across the UK

All official statistics from the HBAI for the UK and constituent countries in this publication are considered by the Department for Work and Pensions (DWP) as “Fully Comparable at level A*” of the UK Countries Comparability Scale¹.

National Statistics

The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs;
- are well explained and readily accessible;
- are produced according to sound methods; and
- are managed impartially and objectively in the public interest.

¹ <https://gss.civilservice.gov.uk/wp-content/uploads/2014/02/Comparability-Report-Final.pdf>

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

Acknowledgements

As in previous years, the DWP would like to thank the Institute for Fiscal Studies (IFS) for the substantial assistance that they have provided in checking and verifying the income data and grossing factors underlying the main results in this edition.

We are also grateful to HM Revenue and Customs (HMRC) for the provision of aggregated data from the Survey of Personal Incomes.

Users and uses

HBAI is a key source for data and information about household income and inequality, and is used for the analysis of low income by researchers and the Government. Users include: policy and analytical teams within the DWP, the Devolved Administrations, other government departments, local authorities, Parliament, academics, journalists, and the voluntary sector.

The key uses of the published statistics and datasets² are:

- to provide detail on the overall household income distribution and low income indicators for different groups in the population;
- for international comparisons, both within the EU and for OECD countries;
- for parliamentary, academic, voluntary sector and lobby group analysis. Examples include using the HBAI data to examine income inequality, the distributional impacts of fiscal policies and understanding the income profile of vulnerable groups.

Box 1a describes how HBAI statistics are included in the Welfare Reform and Work Act 2016.

Box 1a: Welfare Reform and Work Act 2016

The first three of the four income-related measures included in the Welfare Reform and Work Act 2016 are reported in HBAI.

The four measures cover the percentage of children in the United Kingdom:

- a) who live in households whose equivalised net income for the relevant financial year is less than 60% of median equivalised net household income for that financial year;
- b) who live in households whose equivalised net income for the relevant financial year is less than 70% of median equivalised net household income for that financial year, and who experience material deprivation;

² The UK Data Service website provides information on access to HBAI datasets <https://discover.ukdataservice.ac.uk/series/?sn=2000022>

c) who live in households whose equivalised net income for the relevant financial year is less than 60% of median equivalised net household income for the financial year beginning 1 April 2010, adjusted to take account of changes in the value of money since that financial year;

d) who live in households whose equivalised net income has been less than 60% of median equivalised net household income in at least 3 of the last 4 survey periods.

Data for reporting against the fourth measure will be released via the new Income Dynamics publication³.

Further details of the uses of HBAI statistics are given in Annex 3.

What do you think?

We are constantly aiming to improve this report and its associated commentary. We would welcome any feedback you might have, and would also be particularly interested in knowing how you make use of these data to inform your work. Please contact us via email: team.hbai@dwp.gsi.gov.uk.

³ <https://www.gov.uk/government/statistics/announcements/income-dynamics-experimental>

Using and Interpreting HBAI Results

Guide to published tables

All the publication tables previously available within the report are available as Excel and ODS spreadsheets, along with some CSV files, on the HBAI GOV.UK web-page.

In the summary tables, estimates of the **percentage** and **number** in low income that are statistically significant from the previous year are shown with an asterisk. Changes marked by an asterisk are unlikely to have occurred as a result of chance.

The series started in 1994/95 and so allows for comparisons over time, as well as between different groups of the population.

What do we mean by average?

In HBAI, the term 'average' is used to describe the [median](#). This divides the population of individuals, when ranked by income, into two equal-sized groups, and unlike the mean is not affected by extreme values.

HBAI measures

There are a range of measures of low income, income inequality, and material deprivation to capture different aspects of changes to living standards:

- **Relative low income** measures the number and proportion of individuals who have household incomes below a certain proportion of the average in that year - and is used to look at how changes in income for the lowest income households compare to changes in incomes near the 'average'. In the HBAI report we concentrate on those with household incomes below 60 per cent of the average. Information on those with household incomes below 50 and 70 per cent of the average is available in the detailed tables published on the HBAI web-pages.
- **Absolute low income** measures the proportion of individuals who have household incomes a certain proportion below the average in 2010/11, adjusted for inflation. It is used to look at how changes in income for the lowest income households compare to changes in the cost of living. In the HBAI report we concentrate on those with household incomes below 60 per cent of the average 2010/11 income. Information on those with household incomes below 50 and 70 per cent of the average is available in the detailed tables published on the HBAI web-pages.

Due to rounding, the estimates of change in percentages or numbers of individuals in low income or material deprivation may not equal the difference between the total percentage or number of individuals for any pair of years.

The publication and tables follow the following conventions.

- .. not available due to small sample sizes (less than 100)
- the estimate is less than 50,000 or the percentage is less than 0.5 per cent

Population estimates are rounded to the nearest 100,000.

Percentages are rounded to the nearest 1 per cent.

Key terminology

Income

This is measured as total weekly household income from all sources after tax (including child income), national insurance and other deductions. An adjustment called 'equivalisation' is made to income to make it comparable across households of different size and composition.

Median

Median household income divides the population, when ranked by equivalised household income, into two equal-sized groups.

Deciles and Quintiles

These are income values which divide the whole population, when ranked by household income, into equal-sized groups. This helps to compare different groups of the population.

Decile and quintile are often used as a standard shorthand term for decile/quintile group.

Decile groups are ten equal-sized groups - the lowest decile describes individuals with incomes in the bottom 10 per cent of the income distribution.

Quintile groups are five equal-sized groups - the lowest quintile describes individuals with incomes in the bottom 20 per cent of the income distribution.

Income distribution

The spread of incomes across the population.

Equivalisation

Equivalisation adjusts incomes for household size and composition, taking an adult couple with no children as the reference point. For example, the process of equivalisation would adjust the income of a single person upwards, so their income can be compared directly to the standard of living for a couple.

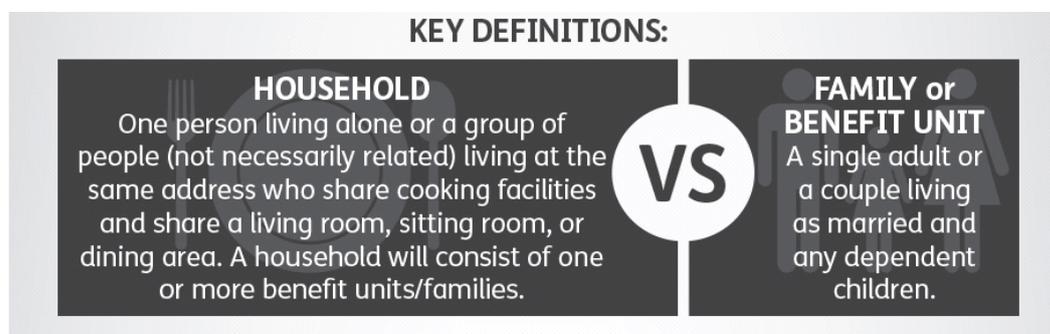
Housing costs

Housing costs include rent, water rates, mortgage interest payments, buildings insurance payments and ground rent and service charges. A full list can be found in the glossary at the end of this document.

Benefit unit and households

HBAI presents information on an individual's household income by various household and benefit unit (family) characteristics. There are important differences between households and benefit units.

Infographic on household versus benefit unit



For example, a group of students with a shared living room would be counted as a single household even if they did not eat together, but a group of bed-sits at the same address would not be counted as a single household because they do not share living space or eat together.

A husband and wife living with their young children and an elderly parent would be one household but two benefit units. The husband, wife and children would constitute one benefit unit and the elderly parent would constitute another. It should be noted that the term 'benefit unit' is used as a description of groups of individuals regardless of whether they are in receipt of any benefits or tax credits.

A household will consist of one or more benefit units, which in turn will consist of one or more individuals (adults and children).

Other terms

For more information on these and other terms used throughout the report, see the glossary at the end of this document, and the infographics explaining key terms.

Issues to consider

The following issues need to be considered when using the HBAI:

- **Lowest incomes.** Comparisons of household income and expenditure suggest that those households reporting the lowest incomes may not have the lowest living standards. The bottom 10 per cent of the income distribution should not, therefore, be interpreted as having the bottom 10 per cent of living standards. Results for the bottom 10 per cent are also particularly vulnerable to sampling errors and income measurement problems. For HBAI tables, this will have a relatively greater effect on results where incomes are compared against low thresholds of median income. For this reason, compositional and percentage tables using the 50 per cent of median thresholds have been italicised to highlight the greater uncertainty. We have also

presented money value quintile medians in Table 2.3ts on three-year averages to reflect this uncertainty.

- **Adjustment for inflation.** As advised in a Statistical Notice⁴ published in May 2016, from 2014/15 HBAI has made a methodological change to use variants of CPI when adjusting for inflation. Prior to the 2014/15 HBAI publication variants of RPI were used to adjust for inflation.
- This change follows advice from the UK National Statistician that use of RPI should be discontinued in statistical publications.
- Full details on the likely impact on this methodological change, together with estimates for trends in income and absolute low income under both the old and new methodologies, are presented in Annex 4.
- **Benefit receipt.** Relative to administrative records, the FRS is known to under-report benefit receipt. However, the FRS is considered to be the best source for looking at benefit and tax credit receipt by characteristics not captured on administrative sources, and for looking at total benefit receipt on a benefit unit or household basis. It is often inappropriate to look at benefit receipt on an individual basis because means-tested benefits are paid on behalf of the benefit unit. DWP published research ([Working Paper 115](#)) which explores the reasons for benefit under-reporting with the aim of improving the benefits questions included within the FRS. Table M.6 of the FRS publication presents a comparison of receipt of state support between FRS and administrative data.
- **Self-employed.** All analyses in the HBAI publication include the self-employed. A proportion of this group are believed to report incomes that do not reflect their living standards and there are also recognised difficulties in obtaining timely and accurate income information from this group. This may lead to an understatement of total income for some groups for whom this is a major income component, although this is likely to be more important for those at the top of the income distribution. There is little difference in the overall picture of proportions in low-income households when analysis is performed either including or excluding the self-employed.
- **Savings and investment.** The data relating to investments and savings should be treated with caution. Questions relating to investments are a sensitive section of the questionnaire and have a low response rate. A high proportion of respondents do not know the interest received on their investments. It is likely that there is some under-reporting of capital by respondents, in terms of both the actual values of the savings and the investment income. This may lead to an understatement of total income for some groups for whom this is a major income component, such as pensioners, although this is likely to be more important for those at the top of the income distribution.

⁴ <https://www.gov.uk/government/statistics/changes-to-dwp-family-and-household-income-statistics-201415-statistical-notice>

- **Comparisons with National Accounts.** Table 2.1tr shows comparisons between growth in Real Household Disposable Income and real growth in HBAI mean BHC unequivalised income. For some years, income growth in the HBAI-based series appears lower than the National Accounts estimates. The implication of this is that absolute real income growth could be understated in the HBAI series. Comparisons over a longer time period are believed to be more robust.
- **High incomes.** Comparisons with Her Majesty's Revenue and Customs' Survey of Personal Incomes (SPI), which is drawn from tax records, suggest that the FRS under-reports the number of individuals with very high incomes and also understates the level of their incomes. There is also some volatility in the number of high income households surveyed. Since any estimate of mean income is very sensitive to fluctuations in incomes at the top of the distribution, an adjustment to correct for this is made to 'very rich' households in FRS-based results using SPI data. The median-based low-income statistics are not affected.
- **Working status.** DWP and ONS have jointly investigated the reasons for the FRS consistently giving higher estimates than the Labour Force Survey (LFS) of the percentage of children in workless households. A [report](#) on this investigation found that the main reasons for the divergence were:
 - FRS unweighted data identifying a higher proportion of children in lone parent families, who have a much higher worklessness rate, than does LFS;
 - FRS unweighted data showing a higher worklessness rate, in both lone parent and couple with-children families, than LFS;
 - LFS employing a grossing regime which substantially reduces the proportion of children in lone parent households, and thereby in workless households; whereas the FRS grossing regime has less of an effect in reducing these proportions;
 - The LFS grossing regime also reduces the worklessness rate in lone parent families; whereas the FRS grossing regime has less clear-cut effects.
- **Gender analysis.** The HBAI assumes that both partners in a couple benefit equally from the household's income, and will therefore appear at the same position in the income distribution. Research⁵ has suggested that, particularly in low income households, the assumption with regard to income sharing is not always valid as men sometimes benefit at the expense of women from shared household income. This means that it is possible that HBAI results broken down by gender could understate differences between the two groups.

⁵ See, for instance, Goode, J., Callender, C. and Lister, R. (1998) Purse or Wallet? Gender Inequalities and the Distribution of Income in Families on Benefits. JRF/Policy Studies Institute.

- **Students.** Information for students should be treated with some caution because they are often dependent on irregular flows of income. Only student loans are counted as income in HBAI, any other loans taken out are not. The figures are also not necessarily representative of all students because HBAI only covers private households and this excludes halls of residence.
- **Elderly.** The effect of the exclusion of the elderly who live in residential homes is likely to be small overall except for results specific to those aged 80 and above.
- **Ethnicity analysis.** Smaller ethnic minority groups exhibit year-on-year variation which limits comparisons over time. For this reason, analysis by ethnicity is presented as three-year averages.
- **Disability analysis.** No adjustment is made to disposable household income to take into account any additional costs that may be incurred due to the illness or disability in question. This means that using income as a proxy for living standards for these groups, as shown here, may be somewhat upwardly biased. Analysis excluding Disability Living Allowance and Attendance Allowance from the calculation of income has been published as part of the suite of online HBAI Excel tables.
- **Regional analysis.** Disaggregation by geographical regions⁶ is presented as three-year averages. This presentation has been used as single-year regional estimates are considered too volatile. This issue was discussed in **Appendix 5** of the **2004/05 HBAI publication**, where regional time series using three-year averages were presented. Although the FRS sample is large enough to allow some analysis to be performed at a regional level, it should be noted that no adjustment has been made for regional cost of living differences. It is therefore assumed that there is no difference in the cost of living between regions, although the AHC measure will partly take into account differences in housing costs.

⁶ Regional information is at [NUTS1](#) level.

Survey Data

Most of the figures in the HBAI report come from the Family Resources Survey (FRS), a representative survey of around 20,000 households in the United Kingdom. The focus of the FRS is on capturing information on incomes and, as such, is the foremost source of income data and provides more detail on different income sources than other household surveys. It also captures a lot of contextual information on the household and individual circumstances, such as employment, education level and disability. This is therefore a very comprehensive data source allowing for a lot of different analysis.

Surveys gather information from a sample rather than from the whole population. The sample is designed carefully to allow for this, and to be as accurate as possible given practical limitations such as time and cost constraints. Results from sample surveys are always estimates, not precise figures. This means that they are subject to a margin of error which can affect how changes in the numbers should be interpreted, especially in the short-term. The latest estimates should be considered alongside medium and long-term patterns.

In addition to sampling errors, consideration should also be given to non-sampling errors. Non-sampling errors arise from the introduction of some systematic bias in the sample as compared to the population it is supposed to represent. As well as response bias, such biases include inappropriate definition of the population, misleading questions, data input errors or data handling problems – in fact any factor that might lead to the survey results systematically misrepresenting the population. There is no simple control or measurement for such non-sampling errors, although the risk can be minimised through careful application of the appropriate survey techniques from the questionnaire and sample design stages through to analysis of results.

HBAI is based on data from a household survey and so subject to the nuances of using a survey, including:

- **Sampling error.** Results from surveys are estimates and not precise figures. Confidence intervals help to interpret the certainty of these estimates, by showing the range of values around the estimate that the true result is likely to be within. In general terms the smaller the sample size, the larger the uncertainty. Statistical significance is an attempt to indicate whether a reported change within the population of interest is due to chance. It is important to bear in mind that confidence intervals are only a guide for the size of sampling error.
- **Non-response error.** The FRS response rate each year is around 60 per cent. In an attempt to correct for differential non-response, estimates are weighted using population totals.
- **Survey coverage.** The FRS covers private households in the United Kingdom. Therefore individuals in nursing or retirement homes, for example, will not be included. This means that figures relating to the

most elderly individuals may not be representative of the United Kingdom population, as many of those at this age will have moved into homes where they can receive more frequent help.

- **Survey design.** The FRS uses a clustered sample designed to produce robust estimates at former government office region (GOR) level. The FRS is therefore not suitable for analysis below this level.
- **Sample size.** Although the FRS has a relatively large sample size for a household survey, small sample sizes for some more detailed analyses may require several years of data to be combined in order to generate reliable estimates. From April 2011, the target achieved GB sample size for the FRS was reduced by 5,000 households, resulting in an overall achieved sample size for the UK of around 20,000 households for 2011/12. We previously published an [assessment](#) concluding that this still allows core outputs from the FRS to be produced, though with slightly wider confidence intervals or ranges.
- **Measurement error.** The FRS is known to under-report certain income streams, especially benefit receipt. More detail can be found in Table M.6 of the [FRS report](#).

Further methodological details relating to the FRS are given in the FRS Background Note.

Reporting Uncertainty

As above, survey results are always estimates, not precise figures and so subject to a level of uncertainty. Two different random samples from one population, for example the UK, are unlikely to give exactly the same survey results, which are likely to differ again from the results that would be obtained if the whole population was surveyed. The level of uncertainty around a survey estimate can be calculated and is commonly referred to as sampling error.

We can calculate the level of uncertainty around a survey estimate by exploring how that estimate would change if we were to draw many survey samples for the same time period instead of just one. This allows us to define a range around the estimate (known as a “confidence interval”) and to state how likely it is that the real value that the survey is trying to measure lies within that range. Confidence intervals are typically set up so that we can be 95% sure that the true value lies within the range – in which case this range is referred to as a “95% confidence interval”. **Annex 5** of this publication provides further details on the Bootstrapping methodology used to estimate confidence intervals in HBAI, alongside estimates of the sampling error.

Population

The analyses in the HBAI report are primarily based on the FRS. Households in Northern Ireland (NI) were surveyed for the first time in the 2002/03 survey year. A detailed analysis of observed trends, together with results for NI and the UK for the first three years of NI data can be found in Appendix 3 of the 2004/05 publication.

The FRS time series in this publication are presented with discontinuities in the years where there is a change from GB to UK. Prior to 2014/15, for some tables, estimates for NI were imputed for the years 1998/99 to 2001/02. This allowed for changes since 1998/99 to be measured at the UK level. For further details, see Appendix 4 of the HBAI 2004/05 publication. This imputation is no longer carried out from the 2014/15 publication.

The survey covers the private household sector. All the results therefore exclude people living in institutions, e.g. nursing homes, halls of residence, barracks or prisons, and homeless people living rough or in bed and breakfast accommodation. The area of Scotland north of the Caledonian Canal was included in the FRS for the first time in the 2001/02 survey year and, from the 2002/03 survey year, the FRS was extended to include a 100 per cent boost of the Scottish sample. This has increased the sample size available for analysis at the Scottish level.

A further adjustment is that households containing a married adult whose spouse is temporarily absent, whilst within the scope of the FRS, are excluded from HBAI. Similarly, prior to the 1996/97 data, households containing a self-employed adult who had been full-time self-employed for less than two months were excluded. This exclusion is no longer made because of the improvements in the self-employment questions in the FRS.

Grossing

The published HBAI analysis presents tabulations where the percentages refer to sample estimates grossed-up to apply to the whole population.

Grossing-up is the term usually given to the process of applying factors to sample data so that they yield estimates for the overall population. The simplest grossing system would be a single factor e.g. the number of households in the population divided by the number in the achieved sample. However, surveys are normally grossed by a more complex set of grossing factors that attempt to correct for differential non-response at the same time as they scale up sample estimates.

The system used to calculate grossing factors for HBAI mirrors that of FRS grossing with two differences.

The system used to calculate grossing factors for the FRS divides the sample into different groups. The groups are designed to reflect differences in response rates among different types of households⁷. They have also been chosen with the aims of DWP analyses in mind. The population estimates for these groups, obtained from official data sources, provide control variables. The grossing factors are then calculated by a process which ensures the FRS produces population estimates that are the same as the control variables.

A grossed FRS count of the number of owner-occupied households would thus tie in with the Department for Communities and Local Government (DCLG) official figure; whilst the grossed number of men aged 35-39 would be consistent with the Office for National Statistics (ONS) estimate (see Table 1). Some adjustments are made to the original control total data sources so that definitions match those in the FRS, e.g. an adjustment is made to the demographic data to exclude people not resident in private households. It is also the case that some totals have to be adjusted to correspond to the FRS survey year.

A software package called CALMAR, provided by the French National Statistics Institute, is used to reconcile control variables at different levels and estimate their joint population. This software makes the final weighted sample distributions match the population distributions through a process known as calibration weighting. It should be noted that if a few cases are associated with very small or very large grossing factors, grossed estimates will have relatively wide confidence intervals.

As stated above, the system used to calculate grossing factors for HBAI mirrors that of FRS grossing with two differences. The first difference with FRS grossing is that the sample of households is smaller for HBAI purposes because households with spouses living away from home are excluded (see Population section above). The second difference is that separate control totals are introduced for 'very rich' households so that the top end of the

⁷ The FRS stratified sample structure is designed to minimise differential non-response in the achieved sample. Grossing is then designed to account for residual differential non-response.

income distribution is more accurately reflected, which is particularly important for estimates of mean income.

As with the FRS, the grossing regime for HBAI currently uses population and household estimates based on the results of the 2011 Census. Prior to 2012/13, 2001 census based estimates were used. In addition, a review of FRS grossing was carried out on behalf of DWP by the ONS Methodological Advisory Service. In implementing the review recommendations, a number of relatively minor methodological improvements were implemented from 2012/13.

The main changes implemented were as follows:

- improvements to the categorisation of tenure control totals
- a full breakdown of the total number of households into each of the English regions (in addition breakdowns for Scotland, Wales and Northern Ireland)
- a new adjustment to account for the different rates of sampling in England and Wales, Scotland, and Northern Ireland

A back-series of grossing factors calculated using the new methodology was created for each year back to 2002/03, and are used in the HBAI publication tables from 2012/13 onwards. Further details and analysis of the impact of these methodological changes are published in a [separate document](#).

In developing the grossing regime careful consideration has been given to the combination of control totals and the way age ranges, Council Tax bands and so on, have been grouped together. The aim has been to strike a balance so that the grossing system will provide, where possible, accurate estimates in different dimensions without significantly increasing variances.

There are some differences between the methods used to gross the Northern Ireland sample as compared with the Great Britain sample:

- Local taxes in Northern Ireland are collected through the rates system, so Council Tax Band as a control variable is not applicable.
- Northern Ireland housing data are based largely on small sample surveys. It is not desirable to introduce the variance of one survey into another by using it to compute control totals; therefore tenure type has not been used as a control variable.

Details of the grossing regime for Northern Ireland are shown in Table 2.

HBAI Quality and Methodology Information Report

Table 1: HBAI grossing regime for Great Britain

Control totals for Great Britain	Groupings	Original Source	Adjustments made by DWP
Private household population by region, age, and sex	Regions: North East, North West, Yorkshire and Humber, East Midland, West Midlands, East of England, London, South East, South West, Wales, Scotland. Sex and Age: Males aged 0-9, 10-19 dependents, 16-24 non-dependents, 25-29, 30-34, 35-39, 40-44, 45-49, 50-59, 60-64, 65-74, 75-79, 80+; Females aged 0-9, 10-19 dependents, 15-24 non-dependents, 25-29, 30-34, 35-39, 40-44, 45-49, 50-59, 60-69, 70-74, 75-79, 80+	Mid-year population estimates. Office of National Statistics	ONS total population figures are adjusted for private household estimates using data supplied by ONS directly to DWP. 16-19-year-old dependents and non-dependents are split using data supplied by HMRC directly to DWP.
Benefit Units with children	Region: England and Wales, Scotland	Families in receipt of child benefit. HM Revenue and Customs	
Lone parents	Sex: Males, Females	Lone parent estimates. Labour Force Survey	Adjusted for FRS survey year (April-March)
Households by region	Region: North East, North West, Yorkshire and Humber, East Midlands, West Midlands, East of England, London, South East, South West, Wales, Scotland	Households by region. Department for Communities and Local Government (England) / Welsh Government (Wales) / Scottish Government (Scotland)	Adjusted for FRS survey year (April-March)
Households by tenure type	Tenure (Social Renters, Private Renters, Owner Occupied)	Dwellings by tenure type. Department of Communities and Local Government	Household control totals are calculated using dwellings data published by DCLG, Welsh Government, Scottish Government. Adjusted for FRS survey year (April-March)
Households by council tax band	Council Tax Band (NVS and A, B, C and D, E to H)	Dwellings by council tax band published by Valuations Office Agency. Dwellings by council tax band. Published by the Scottish Government	Household control totals are calculated using dwellings data published by VOA / Scottish Government, adjusted for FRS survey year (April-March). Estimates for properties not-valued-separately (NVS) based on FRS sample proportions.
Households containing 'Very Rich' people	Pensioners, Non-pensioners	HMRC Survey of Personal Incomes (SPI)	

Table 2: HBAI grossing regime for Northern Ireland

Control totals for Northern Ireland	Groupings	Original Source	Adjustments made by DWP
Private household population by age and sex	Sex and Age: Males 0-19 dependents, 16-24 independents, 25-29, 30-34, 35-39, 40-44, 45-49, 50-59, 60-65, 65-74, 75-79, 80+; Females aged 0-19 dependents, 16-24 non-dependents, 25-29, 30-34, 35-39, 40-44, 45-49, 50-59, 60-69, 70-74, 75-79, 80+	Private household estimates. Department for Social Development in Northern Ireland.	
Households		Household estimates. Department for Social Development in Northern Ireland	
Lone parents		Lone parent estimates. Department for Social Development in Northern Ireland	
Households containing 'Very Rich' people	Pensioners, Non-pensioners	HMRC Survey of Personal Incomes (SPI)	

Adjustment for individuals with very high incomes

An adjustment is made to sample cases at the top of the income distribution to correct for volatility in the highest incomes captured in the survey. This adjustment uses data from [HM Revenue and Customs' Survey of Personal Incomes \(SPI\)](#) to control the numbers and income levels of the 'very rich' while retaining the FRS data on the characteristics of their households. The methodology defines a household as 'very rich' if it contains a 'very rich' individual and it adjusts pensioners and non-pensioners separately. Thresholds have been set at the level above which, for each group, the FRS data is considered to be volatile due to small numbers of cases.

From the 2009/10 publication, the SPI adjustment methodology was changed to be based on adjusting a fixed fraction of the population rather than on adjusting the incomes of all those individuals with incomes above a fixed cash terms level. This is intended to prevent an increasing fraction of the dataset being adjusted. The adjustment fraction was set at the same level as the fraction adjusted in 2008/09. There was also a movement to basing all SPI adjustment decisions on gross rather than a mixture of gross and net incomes. These changes only have a very small effect on the results as presented.

The numbers of 'very rich' pensioners and non-pensioners in survey estimates are matched to SPI estimates by the introduction of two extra control totals into the grossing regime. One is for the total number of pensioners above the pensioner threshold and the other for the number of non-pensioners above the non-pensioner threshold. The grossing factors for individual cases are only marginally changed as a result of this adjustment. In addition, each 'very rich' individual in the FRS is assigned an income level derived from the SPI, as the latter gives a more accurate indication of the level of high incomes than the FRS. Again this adjustment is carried out separately for pensioners and non-pensioners.

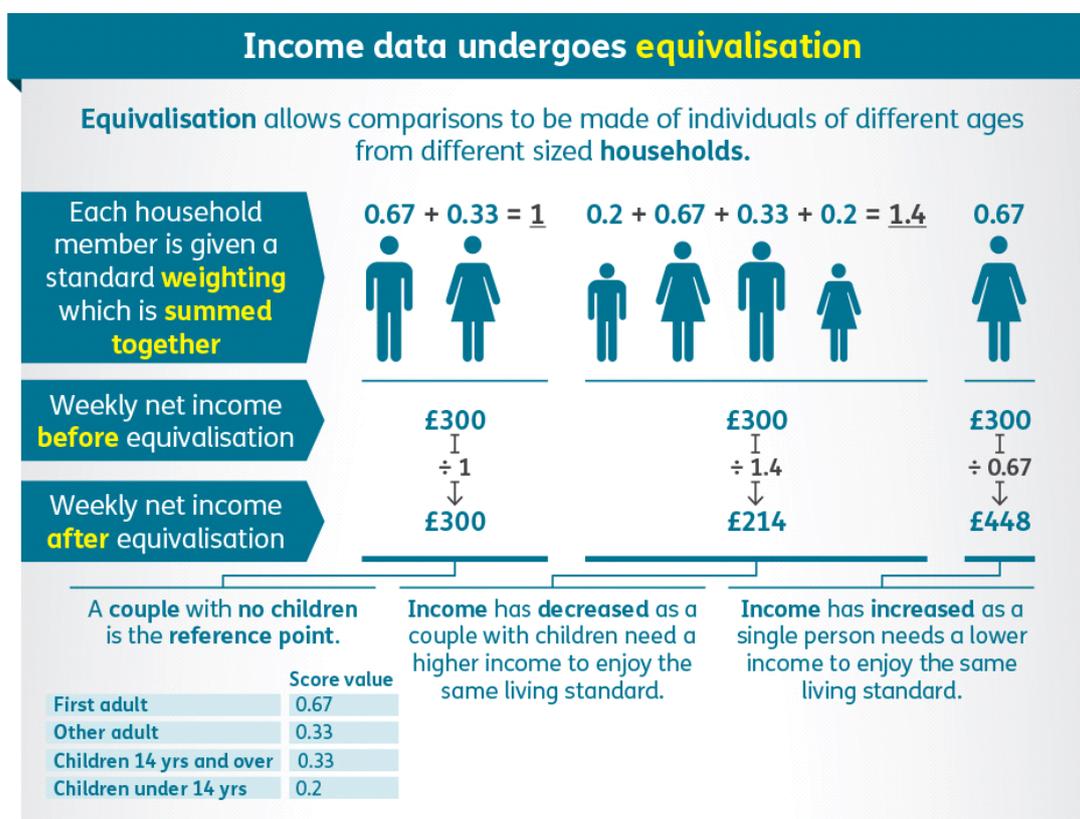
The estimates using SPI data were provided by HM Revenue and Customs' statisticians.

Equivalisation

HBAI uses net disposable weekly household income, after adjusting for the household size and composition, as an assessment for material living standards - the level of consumption of goods and services that people could attain given the net income of the household in which they live. In order to allow comparisons of the living standards of different types of households, income is adjusted to take into account variations in the size and composition of the households in a process known as equivalisation. HBAI assumes that all individuals in the household benefit equally from the combined income of the household. Thus, all members of any one household will appear at the same point in the income distribution.

The unit of analysis is the individual, so the populations and percentages in the tables are numbers and percentages of individuals – both adults and children.

Equivalence scales conventionally take an adult couple without children as the reference point, with an equivalence value of one. The process then increases relatively the income of single person households (since their incomes are divided by a value of less than one) and reduces relatively the incomes of households with three or more persons, which have an equivalence value of greater than one.



HBAI Quality and Methodology Information Report

Consider a single person, a couple with no children, and a couple with two children aged twelve and ten, all having unadjusted weekly household incomes of £300 (BHC). The process of equivalisation, as conducted in HBAI, gives an equivalised income of £448 to the single person, £300 to the couple with no children, but only £214 to the couple with children.

The main equivalence scales now used in HBAI are the modified OECD scales, which take the values shown in Table 3. The equivalent values used by the McClements equivalence scales are also shown for comparison alongside modified OECD values. The McClements scales were used by HBAI to adjust income up to the 2004/05 HBAI publication.

In the modified OECD and McClements versions two separate scales are used, one for income BHC and one for income AHC. The construction of household equivalence values from these scales is quite straightforward. For example, the BHC equivalence value for a household containing a couple with a fourteen year old and a ten year old child together with one other adult would be 1.86 from the sum of the scale values:

$$0.67 + 0.33 + 0.33 + 0.33 + 0.20 = 1.86$$

This is made up of 0.67 for the first adult, 0.33 for their spouse, the other adult and the fourteen year old child and 0.20 for the ten year old child. The total income for the household would then be divided by 1.86 in order to arrive at the measure of equivalised household income used in HBAI analysis.

Table 3: Comparison of modified OECD and McClements equivalence scales

Equivalence scales	OECD rescaled to couple without children=1 ¹	OECD 'Companion' Scale to equivalise AHC results	McClements BHC	McClements AHC
First Adult	0.67	0.58	0.61	0.55
Spouse	0.33	0.42	0.39	0.45
Other Second Adult ²	0.33	0.42	0.46	0.45
Third Adult	0.33	0.42	0.42	0.45
Subsequent Adults	0.33	0.42	0.36	0.40
Children aged under 14yrs ³	0.20	0.20	0.20	0.20
Children aged 14yrs and over ³	0.33	0.42	0.32	0.34

Notes:

1. Presented here to two decimal places.

2. For the McClements scale, the weight for 'Other second adult' is used in place of the weight for 'Spouse' when two adults living in a household are sharing accommodation, but are not living as a couple. 'Third adult' and 'Subsequent adult' weights are used for the remaining adults in the household as appropriate. In contrast to the McClements scales, apart from for the first adult, the OECD scales do not differentiate for subsequent adults.

3. The McClements scale varies by age within these groups; appropriate average values are shown in the table.

Income Definition

The income measure used in HBAI is weekly net (disposable) equivalised household income. This comprises total income from all sources of all household members including dependants.

Income is adjusted for household size and composition by means of **equivalence scales**, which reflect the extent to which households of different size and composition require a different level of income to achieve the same standard of living. This adjusted income is referred to as **equivalised income**.

In detail, income includes:

- usual net earnings from employment;
- profit or loss from self-employment (losses are treated as a negative income);
- state support - all benefits and tax credits;
- income from occupational and private pensions;
- investment income;
- maintenance payments, if a person receives them directly;
- income from educational grants and scholarships (including, for students, student loans and parental contributions);
- the cash value of certain forms of income in kind (free school meals, free school breakfast, free school milk, free school fruit and vegetables, Healthy Start vouchers and free TV licence for those aged 75 and over).

Income is net of the following items:

- income tax payments;
- National Insurance contributions;
- domestic rates / council tax;
- contributions to occupational pension schemes (including all additional voluntary contributions (AVCs) to occupational pension schemes, and any contributions to stakeholder and personal pensions);
- all maintenance and child support payments, which are deducted from the income of the person making the payment;
- parental contributions to students living away from home;
- student loan repayments.

Income After Housing Costs (AHC) is derived by deducting a measure of **housing costs** from the above income measure.

Housing costs

These include the following:

- rent (gross of housing benefit);
- water rates, community water charges and council water charges;
- mortgage interest payments;
- structural insurance premiums (for owner occupiers);
- ground rent and service charges.

HBAI Quality and Methodology Information Report

For Northern Ireland households, water provision is funded from taxation and there are no direct water charges. Therefore, it is already taken into account in the Before Housing Costs measure.

In the 1995/96 and subsequent datasets, a refinement was made to the calculation of mortgage interest payments to disregard additional loans which had been taken out for purposes other than house purchase.

Negative incomes

Negative incomes BHC are reset to zero, but negative AHC incomes calculated from the adjusted BHC incomes are possible. Where incomes have been adjusted to zero BHC, income AHC is derived from the adjusted BHC income.

State support

The Government pays money to individuals in order to support them financially under various circumstances. Most of these benefits are administered by DWP. The exceptions are Housing Benefit and Council Tax Reduction, which are administered by local authorities. Tax Credits are not treated as benefits, but both Tax Credits and benefits are included in the term State Support.

Income-related benefits	Non-income-related benefits
Jobseeker's Allowance (income-based element)	Disability Living Allowance (both mobility and care components)
Income Support	Personal Independence Payment (both mobility and daily living components)
Employment and Support Allowance (income-related element)	Attendance Allowance
Pension Credit	Employment and Support Allowance (contributory based element)
Housing Benefit	Widow's/Bereavement Payment
Council Tax Reduction	Child Benefit
Rates Rebate	Retirement Pension
In Work Credit	Widowed Mother's/Parent's Allowance
Social Fund – Funeral Grant	Armed Forces Compensation Scheme
Social Fund – Sure Start Maternity Grant	Incapacity Benefit
Social Fund – Community Care Grant	Severe Disablement Allowance
Return to Work Credit	Jobseeker's Allowance (contributory based element)
Northern Ireland Rate Relief for full-time students, trainees, under 18s and those leaving care	Widow's Pension/Bereavement Allowance
Northern Ireland Rate Rebate through energy efficient homes	Carer's Allowance
Northern Ireland Other Rate Rebate	Industrial Injuries Disablement Benefit
Job Grant	Statutory Maternity/Paternity/Adoption Pay
Extended Payments (Council Tax Reduction and Housing Benefit)	Statutory Sick Pay

HBAI Quality and Methodology Information Report

Income-related benefits	Non-income-related benefits
Universal Credit	Maternity Allowance
	Guardian's Allowance
	Winter Fuel Payments
	Other state benefits
	Northern Ireland Disability Rate Rebate
	Northern Ireland Lone Pensioner Rate Rebate

Interpreting low income measures

Relative low income sets the threshold as a proportion of the average income, and moves each year as average income moves. It is used to measure the number and proportion of individuals who have incomes a certain proportion below the average.

The percentage of individuals in relative low income will **increase** if:

- the average income stays the same, or rises, and individuals with the lowest incomes see their income fall, or rise less, than average income; or
- the average income falls and individuals with the lowest incomes see their income fall more than the average income.

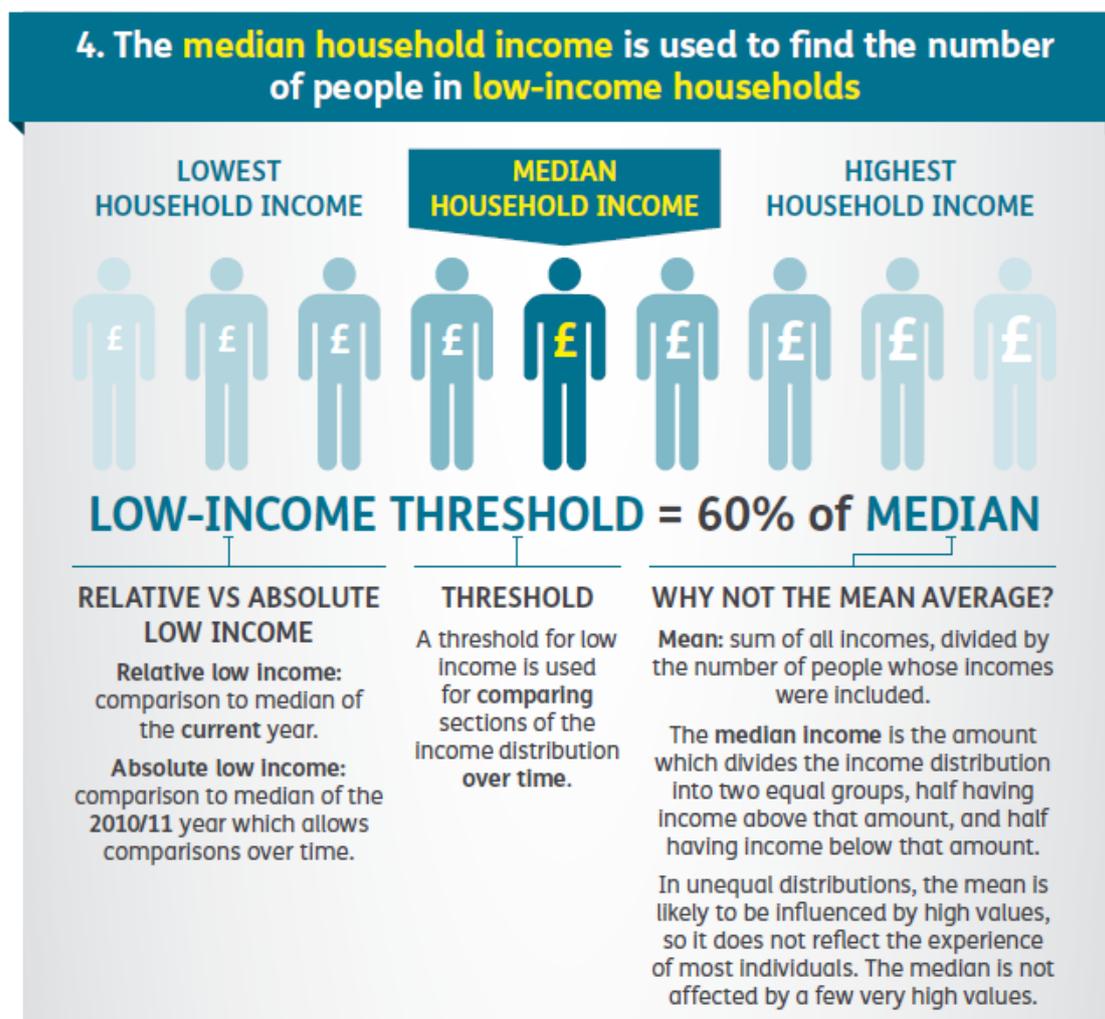
The percentage of individuals in relative low income will **decrease** if:

- the average income stays the same, or rises, and individuals with the lowest incomes see their income rise more than average income; or
- the average income falls and individuals with the lowest incomes see their income rise, or fall less, than average income, or see no change in their income.

Absolute low income sets the low income line in a given year, then adjusts it each year with inflation as measured by variants of the CPI. This measures the proportion of individuals who are below a certain standard of living in the UK (as measured by income).

- The percentage of individuals in absolute low income will **increase** if individuals with the lowest incomes see their income fall or rise less than inflation.
- The percentage of individuals in absolute low income will **decrease** if individuals with the lowest incomes see their incomes rise more than inflation.

Income inequality, measured by the Gini Coefficient, shows how incomes are distributed across all individuals, and provides an indicator of how high and low-income individuals compare to one another. It ranges from zero (when everybody has identical incomes) to 100 per cent (when all income goes to only one person). The 90/10 ratio is the average (median) income of the top 20 per cent (quintile 5) divided by the average income of the bottom 20 per cent (quintile 1). The higher the number, the greater the gap between those with the highest incomes and those with the lowest incomes.



Before Housing Costs (BHC) measures allow an assessment of the relative standard of living of those individuals who were actually benefiting from a better quality of housing by paying more for better accommodation, and income growth over time incorporates improvements in living standards where higher costs reflected improvements in the quality of housing.

After Housing Costs (AHC) measures allow an assessment of living standards of individuals whose housing costs are high relative to the quality of their accommodation. Income growth over time may also overstate improvements in living standards for low-income groups, as a rise in Housing Benefit to offset higher rents (for a given quality of accommodation) would be counted as an income rise.

Therefore, HBAI presents analyses of disposable income on both a BHC and AHC basis. This is principally to take into account variations in housing costs that themselves do not correspond to comparable variations in the quality of housing.

Low income and material deprivation for children

Material deprivation is an additional way of measuring living standards and refers to the self-reported inability of individuals or households to afford particular goods and activities that are typical in society at a given point in time, irrespective of whether they would choose to have these items, even if they could afford them

A suite of questions designed to capture the material deprivation experienced by families with children has been included in the FRS since 2004/05. Respondents are asked whether they have 21 goods and services, including child, adult and household items. Together, these questions form the best discriminator between those families that are deprived and those that are not. If they do not have a good or service, they are asked whether this is because they do not want them or because they cannot afford them.

The original list of items was identified by independent academic analysis. See McKay, S. and Collard, S. (2004). [Developing deprivation questions for the Family Resources Survey](#), Department for Work and Pensions Working Paper Number 13. The questions are kept under review and for the 2010/11 Family Resources Survey, information on four additional material deprivation goods and services was collected and from 2011/12 four questions from the original suite were removed.

Table 4.5tr shows figures using the original suite of questions up to and including 2010/11, and the new suite of questions from 2010/11 onwards. 2010/11 data is presented on both bases as figures from the old and new suite of questions are not comparable.

See [Appendix 3 of the 2010/11 HBAI publication](#) for a discussion of the implications of changing the items.

A prevalence weighted approach has been used, in combination with a relative low-income or severe relative low-income threshold. Prevalence weighting is a technique of scoring deprivation in which more weight in the deprivation measure is given to families lacking those items that most families already have. This means a greater importance, when an item is lacked, is assigned to those items that are more commonly owned in the population.

For each question a score of 1 indicates where an item is lacked because it cannot be afforded. If the family has the item, the item is not needed or wanted, or the question does not apply then a score of 0 is given. This score is multiplied by the relevant prevalence weight. The scores on each item are summed and then divided by the total maximum score; this results in a continuous distribution of scores ranging from 0 to 1. The scores are multiplied by 100 to make them easier to interpret. The final scores, therefore, range from 0 to 100, with any families lacking all items which other families had access to scoring 100.

A child is considered to be in low income and material deprivation if they live in a family that has a final score of 25 or more and an equivalised household income below 70 per cent of contemporary median income, Before Housing Costs.

HBAI Quality and Methodology Information Report

A child is considered to be in severe low income and material deprivation if they live in a family that has a final score of 25 or more and an equivalised household income below 50 per cent of contemporary median income, Before Housing Costs. A [technical note](#) giving further background to this measure is available.

From the 2008/09 edition of the HBAI publication, we moved to using the prevalence weights relative to the survey year in question, rather than fixed 2004/05 weights, which were used in previous publications.

Material deprivation for pensioners

A suite of questions designed to capture the material deprivation experienced by pensioner families has been included in the Family Resources Survey since May 2008. Respondents are asked whether they have access to 15 goods and services. The list of items was identified by independent academic analysis. See Legard, R., Gray, M. and Blake, M. (2008), [Cognitive testing: older people and the FRS material deprivation questions](#), Department for Work and Pensions Working Paper Number 55 and McKay, S. (2008), [Measuring material deprivation among older people: Methodological study to revise the Family Resources Survey questions](#), Department for Work and Pensions Working Paper Number 54. Together, these questions form the best discriminator between those pensioner families that are deprived and those that are not.

Where they do not have a good or service, they are asked whether this is because:

- they do not have the money for this;
- it is not a priority on their current income;
- their health / disability prevents them;
- it is too much trouble or tiring;
- they have no one to do this with or help them;
- it is not something they want; it is not relevant to them;
- other.

A pensioner is counted as being deprived of an item where they lack it for one of the following reasons:

- they do not have the money for this;
- it is not a priority on their current income;
- their health / disability prevents them;
- it is too much trouble or tiring;
- they have no one to do this with or help them;
- other.

The exception to this is for the unexpected expense question, where the follow up question was asked to explore how those who responded 'yes' would pay. Options were:

- use own income but cut back on essentials;
- use own income but not need to cut back on essentials;
- use savings;
- use a form of credit;
- get money from friends or family;
- other.

Pensioners are counted as materially deprived for this item if and only if they responded 'no' to the initial question.

The same prevalence weighted approach has been used to that for children, in determining a deprivation score. Prevalence weighting is a technique of

scoring deprivation in which more weight in the deprivation measure is given to families lacking those items that most pensioner families already have. This means a greater importance, when an item is lacked, is assigned to those items that are more commonly owned in the pensioner population.

For each question a score of 1 indicates where an item is lacked because for the reasons outlined on the previous page. If the pensioner family has the item, the item is not needed or wanted, or the question does not apply then a score of 0 is given. This score is then multiplied by the relevant prevalence weight. The scores on each item are summed and divided by the total maximum score; this results in a continuous distribution of scores ranging from 0 to 1. The scores are multiplied by 100 to make them easier to interpret. The final scores, therefore, range from 0 to 100, with any families lacking all items which other families had access to scoring 100.

A pensioner is considered to be in material deprivation if they live in a family that has a final score of 20 or more. For children, material deprivation is presented as an indicator in combination with a low-income threshold. However, for pensioners, the concept of material deprivation is broad and very different from low income, therefore it is appropriate to present it as a separate measure.

A [technical note](#) giving a full explanation of the pensioner material deprivation measure is available.

Material deprivation weighting methodology

We currently recalculate the prevalence weights each year based on the question responses from that year. The maximum possible material deprivation score for each year is then rescaled to 100 for ease of interpretation, and children in a family with a score of at least 25, or pensioners with a score of 20 or more, are classed as being materially deprived. If over time more families can afford a certain item, then a family lacking such a good will see an increasing overall deprivation score, and will be considered as becoming more materially deprived.

A concern which has been raised with the current method is that if there is a general increase in access to items, this should imply that a family lacking a particular number of items is now suffering from greater relative deprivation than before. However, because of the rescaling of scores to 100, each item lacked still counts the same amount towards the overall material deprivation score and a family is still required to lack the same number of items to reach a score of 25 and be declared materially deprived.

The HBAI Technical Advisory Group considered this issue. The Group agreed that this is a complex issue and recommended that any changes made should be implemented following a considered and evidence based exploration of options. As a result, the Group agreed that the recommendation should be to continue to use the current methodology for material deprivation until such time as a thorough exploration of this issue can be conducted.

Ethnic categories

The ethnicity questions used in the FRS adopt the UK harmonised standards for use in major Government social surveys; that is they adopt the standard way of collecting information on the ways in which people describe their ethnic identity. The latest harmonised standards were published in August 2011 and cover the ethnic group question in England, Wales, Scotland and Northern Ireland. They also cover harmonised data presentation for ethnic group outputs. The standards were updated in February 2013 detailing how Gypsy, Traveller and Irish Traveller should be recorded in the outputs, due to differences across the UK.

The FRS adopted these latest harmonised standards for England, Wales and Northern Ireland for the 2011/12 survey questionnaire, and the standards for Scotland were adopted for the 2012/13 survey questionnaire. The 2011/12 publication therefore adopted the latest harmonised output standards for ethnic group for the UK. The most significant changes to previous publications are that the 'Chinese' category has moved from the 'Chinese or other ethnic group' section to the 'Asian/Asian British' section; an 'Arab' category has been included under 'Other ethnic group' section in the questionnaire, but not shown separately due to only being available for two years; and 'Irish Traveller' is included under 'Other ethnic group' for respondents in Northern Ireland and 'Gypsy or Irish Traveller' is included under the 'White' section for respondents in Great Britain, therefore UK figures have been allocated accordingly.

Disability definition

The means of identifying people with a disability has changed over time. Data are not available for 1994/95. Up until 2001/02 all those who reported having a long-standing limiting illness were identified as having a disability. From 2002/03, statistics are based on responses to questions about difficulties across a number of areas of life. Figures for 2002/03 and 2003/04 are based on those reporting substantial difficulties across eight areas of life and figures from 2004/05 to 2011/12 are based on those reporting substantial difficulties across nine areas of life. From 2012/13 the FRS disability questions were revised to reflect new [harmonised standards](#). Disabled people are identified as those who report any physical or mental health condition(s) or illness(es) that last or are expected to last 12 months or more, and which limit their ability to carry out day-to-day activities a little, or a lot.

FRS questions 2004/05 to 2011/12

The FRS/HBAI definition for an adult with a disability is if they answered **yes** to the 'Health' question and **yes** to any of the difficulties listed in 'DisDif'.

? Health

Health

Do you have any long-standing illness, disability or infirmity? By 'long-standing' I mean anything that has troubled you over a period of at least 12 months or that is likely to affect you over a period of at least 12 months.

If 'yes' to Health.

? Health Problem Limit Activities

HProb

Does this physical or mental illness or disability (Do any of these physical or mental illnesses or disabilities) limit your activities in any way?

If 'yes' to Health.

? Health Problems cause Difficulties

DisDif

SHOW CARD E1

Does this/Do these health problem(s) or disability(ies) mean that you have substantial difficulties with any of these areas of your life? Please read out the numbers from the card next to the ones which apply to you.

PROBE: Which others?

1. Mobility (moving about)
2. Lifting, carrying or moving objects
3. Manual dexterity (using your hands to carry out everyday tasks)
4. Continence (bladder and bowel control)
5. Communication (speech, hearing or eyesight)
6. Memory or ability to concentrate, learn or understand
7. Recognising when you are in physical danger
8. Your physical co-ordination (e.g.: balance)
9. Other health problem or disability
10. None of these

FRS questions 2012/13 onwards

The FRS/HBAI definition for an adult with a disability is if they answered **yes** to the 'Health1' and **yes, a lot** or **yes, a little** to the 'Condition' question.

<p>🕒 Longstanding illness or disability</p> <p>📄 Health1</p> <p>Do you have any physical or mental health conditions or illnesses lasting or expected to last for 12 months or more?</p> <ol style="list-style-type: none">1. Yes2. No3. Don't know (spontaneous)4. Refusal (spontaneous) <p>If 'yes' to Health1.</p> <p>🕒 Health Problems cause Difficulties</p> <p>📄 Dis1</p> <p>SHOW CARD E1</p> <p>Do any of these conditions or illnesses affect you in any of the following areas?</p> <ol style="list-style-type: none">1. Vision (for example blindness or partial sight)2. Hearing (for example deafness or partial hearing)3. Mobility (for example walking short distances or climbing stairs)4. Dexterity (for example lifting and carrying objects, using a keyboard)5. Learning or understanding or concentrating6. Memory7. Mental Health8. Stamina or breathing or fatigue9. Socially or behaviourally (for example associated with autism, attention deficit disorder or Asperger's syndrome)10. Other11. Refusal (spontaneous) <p><i>Ask if Health1=Yes</i></p> <p>🕒 Limiting longstanding illness</p> <p>📄 Condition</p> <p>Does your condition or illness/do any of your conditions or illnesses reduce your ability to carry-out day-to-day activities?</p> <ol style="list-style-type: none">1. Yes, a lot2. Yes, a little3. Not at all <p>INTERVIEWER: Day to day activities include washing and dressing, household cleaning, cooking, shopping for essentials, using public or private transport, remembering to pay bills, lifting objects from the ground or lifting objects from a work surface in the kitchen.</p>

Comparisons over time

Compared to 2011/12 the number of individuals in disabled families went up by 0.2m in 2012/13 (similar to those in non-disabled families).

However, while the number of pensioners in non-disabled families increased by 0.4m, the number in disabled families decreased by 0.3m.

The reverse was true for the number of children in disabled families, which increased by 0.3m, while those in non-disabled families fell by 0.2m.

These figures could be affected by the change in the disability questions. Individuals might have different interpretations of particular health conditions or question wording meaning that changes to the disability question may have

HBAI Quality and Methodology Information Report

had a different effect on certain groups. Therefore, comparisons over time should be made with caution, as they may be affected by the change in the definition of disability.

Comparison with EU low-income statistics

For the 2012 statistics onwards, the production of the UK's European comparable low-income figures were brought into the Department for Work and Pensions from the Office for National Statistics.

Despite the UK's cross European comparable low-income statistics now being derived from the Family Resources Survey, the same source as the HBAI, the figures will differ for a number of reasons:

- **Time period:** The figures are presented on different timescales, the HBAI figures are presented for the financial year, while the EU comparable figures are presented for the calendar year and are based on 6-month FRS datasets.
- **Population groups:** The European low-income statistics are presented in different age groups than the HBAI figures:
 - **children:** the EU figures relate to those under 18 – HBAI figures are based on individuals aged under 16, in addition a person will also be defined as a child if they are 16 to 19-years old and they are not married nor in a Civil Partnership nor living with a partner; are living with parents; and are in full-time non-advanced education or in unwaged government training;
 - **pensioners:** EU figures relate to the 65+ population – HBAI figures include women aged 60 to 64 who are above State Pension age;
- **Preferred measures:** All the European low-income estimates are presented on a Before Housing Costs Basis, while this is consistent with the most commonly used measure for working age adults and children, we choose to look at pensioners' incomes after deducting housing costs as this better reflects pensioner living standards compared to others and over time.
- **Income derivation:** The definition of income in the European figures differs from the official UK figures:
 - Pension contributions are not deducted from income in the European comparable methodology.
 - The European definition of income includes the value of non-cash employee income from company cars as employee income, which will raise the average income of people in work.
- **High income adjustment:** For the HBAI figures an adjustment is made to sample cases at the top of the income distribution to correct for volatility in the highest incomes captured in the survey. This adjustment is not applied to the European figures.
- **In year deflation:** The HBAI estimates make an in year adjustment to individuals incomes to ensure that respondents income collected

across the financial year are comparable. This adjustment is not applied to the European figures.

- **Sample cases:** The HBAI figures exclude cases containing a married adult whose spouse is temporarily absent whereas these are included in the European figures, however this has a minimal effect on the figures.
- **Income tax and national insurance:** The European income tax and national insurance figures are calculated using a model of taxation, whilst the HBAI estimates are mostly calculated on the amount of tax and national insurance reported as being paid.

A description of how levels of low income in the UK compare with other EU countries is available at:

<http://ec.europa.eu/eurostat/web/income-and-living-conditions/data/main-tables>

Glossary

Adult

All those individuals who are aged 16 and over, unless defined as a dependent child (see Child); all adults in the household are interviewed as part of the Family Resources Survey (FRS).

Benefit units or Family

A single adult or a married or cohabiting couple and any dependent children; since January 2006 same-sex partners (civil partners and cohabittees) have been included in the same benefit unit. Where a total value for a benefit unit is presented, such as total benefit unit income, this includes both income from adults and income from children.

Bills in arrears

The number of bills in arrears is presented at a benefit unit level. Bills considered are: electricity, gas, other fuel, Council Tax, insurance, telephone, television / video rental, hire purchase, water rates, rent, mortgage payments and other loans. From 2012/13 onwards the analysis of income by whether people are behind with household bills has been extended to include rent, mortgage payments and other loans, so the figures are not comparable with those presented in previous reports.

Child

A dependent child is defined as an individual aged under 16. A person will also be defined as a child if they are 16 to 19-years old and they are:

- not married nor in a civil partnership nor living with a partner; and
- living with parents/a responsible adult; and
- in full-time non-advanced education or in unwaged government training.

Confidence interval

A measure of *sampling error*. A confidence interval is a range around an estimate which states how likely it is that the real value that the survey is trying to measure lies within that range. A wider confidence interval indicates a greater uncertainty around the estimate. Generally, a smaller sample size will lead to estimates that have a wider confidence interval than estimates from larger sample sizes. This is because a smaller sample is less likely than a larger sample to reflect the characteristics of the total population and therefore there will be more uncertainty around the estimate derived from the sample. Note that a confidence interval ignores any systematic errors which may be present in the survey and analysis processes.

Contemporary median income

The average income for the period covered by the survey. Household incomes are adjusted from the date of interview to an average of survey-year prices.

Deciles and Quintiles

These are income values which divide the whole population, when ranked by household income, into equal-sized groups. This helps to compare different groups of the population.

Decile and quintile are often used as a standard shorthand term for **decile/quintile group**.

Deciles groups are ten equal-sized groups - the lowest decile describes individuals with incomes in the bottom 10 per cent of the income distribution.

Quintiles groups are five equal-sized groups - the lowest quintile describes individuals with incomes in the bottom 20 per cent of the income distribution.

Disability

From 2012/13 onwards, the definition of disability used in this publication is consistent with the core definition of disability under the Equality Act 2010. A person is considered to have a disability if they have a long-standing illness, disability or impairment which causes substantial difficulty with day-to-day activities. However, some individuals classified as disabled and having rights under the Equality Act 2010 are not captured by this definition:

- People with a long-standing illness or disability who would experience substantial difficulties without medication or treatment
- People who have been diagnosed with cancer, HIV infection or multiple sclerosis and who are not currently experiencing difficulties with their day to day activities
- People with progressive conditions, where the effect of the impairment does not yet impede their lives
- People who were disabled in the past and are no longer limited in their daily lives are still covered by the Act.

Direct payment accounts

For the purposes of this analysis, direct payment accounts are accounts that accept Automatic Credit Transfers (ACT) such as Basic Bank accounts, current accounts, Post Office accounts, or savings accounts with any other bank or building society.

Economic status of the family

The economic status of the family classification is in line with the International Labour Organisation economic status classification. This means that no economic status data is available for 1994/95 and 1995/96 as the relevant information was not collected in the Family Resources Survey for these years. This also means the economic status of the family and economic status of the household classifications are aligned.

The 'Workless, other inactive' group consists of families in which all adults are economically inactive (i.e. where no adult is in work or unemployed). This

includes working-age adults in receipt of sickness and disability benefits, who may have living standards lower than those implied by the results presented because of additional costs associated with their disability (for which no adjustment has been made here).

Families are allocated to the first applicable category:

- **One or more full-time self-employed** - Benefit units where at least one adult usually works as self-employed in their main job where the respondent regards themselves as working full-time. Those respondents not working in the last seven days but doing unpaid work in their own business are considered as full-time self-employed.
- **Single or couple, all in full-time work** - Benefit units where all adults regard themselves as working full-time. Those respondents not working in the last seven days doing unpaid work in a business that a relative owns are considered as in full-time work, as are those in training.
- **Couple, one in full-time work, one in part-time work** - Benefit units headed by a couple where one partner considers themselves to be working full-time and the other partner considers themselves to be working part-time. Those respondents not working in the last seven days but doing an odd job are considered as working part-time.
- **Couple, one in full-time work, one not working** - Benefit units headed by a couple, where one partner considers themselves to be working full-time and the other partner does not work.
- **No-one in full-time work, one or more in part-time work** - Benefit units where at least one adult works, but considers themselves to be working part-time.
- **Workless, one or more aged 60 or over** - Benefit units where at least one adult is aged 60 or over.
- **Workless, one or more unemployed** - Benefit units where at least one adult is unemployed.
- **Workless, other inactive** - Benefit units not classified above (this group includes the long-term sick, disabled people and non-working single parents).

Economic status groups for children

The tables that show estimates for dependent children use an amended economic status classification closely related to the definitions used above. Children are grouped according to family type and the economic status of their parent(s) as defined in the previous section. As with the main economic status groups, individuals are allocated to the first category that applies in the following order:

Lone parent

- In full-time work (includes full-time self-employed);
- In part-time work; and
- Not working (unemployed or inactive);

Couple with children

- One or more full-time self-employed;
- Both in full-time work;
- One in full-time work, one in part-time work;
- One in full-time work, one not working;
- Neither in full-time work, one or more in part-time work; and
- Both workless (unemployed or inactive).

Economic status of household

For the analysis of working and workless households, households are classified according to whether they contain a working-age adult or pensioner who works, but the status of non-working pensioners is not considered, except in the case of those households where children live only with pensioners, in which case the status of all adults is included.

Individuals are assigned to one of three categories:

- **All adults in work** - A household where all working-age adults are in employment or are self-employed, or if there are no working-age adults in the household, at least one working pensioner.
- **At least one, but not all adults in work** - A household where at least one working-age adult is in employment or is self-employed, or where a pensioner is in work if none of the working-age adults in the household are in work.
- **Workless household** - A household where no adult members are in employment or are self-employed. Within households, pensioners are excluded from the classifications if they are not working, and are included if they are working. So for example, a household with a pensioner in work, but a working-age person not in work, would be in the 'At least one adult in work, but not all' category. A household with all working-age adults in work and a pensioner not in work would be categorised as 'All adults in work'.

Educational Attainment

This looks at the highest level of educational attainment for each working-age adult. Information for students should be treated with some caution because they are often dependent on irregular flows of income. Only student loans are counted as income in HBAI, any other loans taken out are not. The figures are also not necessarily representative of all students because HBAI only covers private households and this excludes halls of residence.

Comparisons between the numbers with no qualifications in the FRS, LFS and the Census indicate that the FRS figures overstate the numbers of working-age adults with no qualifications.

Equivalisation

Income measures used in HBAI take into account variations in the size and composition of the households in which people live. This process is called equivalisation.

Equivalisation reflects the fact that a family of several people needs a higher income than a single individual in order for them to enjoy a comparable standard of living.

Equivalence scales conventionally take a couple with no children as the reference point. Consider a single person, a couple with no children, and a couple with two children aged twelve and ten, all having unadjusted weekly household incomes of £300 (BHC). The process of equivalisation, as conducted in HBAI, gives an equivalised income of £448 to the single person, £200 to the couple with no children, but only £214 to the couple with children.

Ethnicity

The ethnicity figures in the HBAI publication reflect the [harmonised standards](#) included from the 2011/12 publication onwards. The harmonised standards for Scotland were adopted in the 2012/13 FRS questionnaire; however, there has been no change to the HBAI outputs as the harmonised output standards were previously adopted.

Individuals have been classified according to the ethnic group of the household reference person (see Household reference person) which means that information about households of multiple ethnicities is lost.

Smaller ethnic minority groups exhibit year-on-year variation which limits comparisons over time. For this reason, analysis by ethnicity is presented as three-year averages.

Families/ family unit

The terms 'families' and 'family units' are used interchangeably with benefit units. See Benefit unit definition.

Family type

For some analyses, individuals are classified into family type or economic status groups. Individuals are classified according to the status of the benefit unit in which they live. All individuals in a benefit unit (adults and children) will therefore be given the same classification. The classifications are defined below.

- **Pensioner couple** - a couple where one or more of the adults are State Pension age or over. However, in the HBAI tables relating specifically to pensioners (those previously included in Chapter 6 of the main HBAI report) results for individuals who are in pensioner couples do not count anyone who is not a pensioner.
- **Single male pensioner** - single male adult of State Pension age or over.
- **Single female pensioner** - single female adult of State Pension age or over.
- **Couple with children** - a non-pensioner couple with dependent children.

- **Single with children** - a non-pensioner single adult with dependent children.
- **Couple without children** - a non-pensioner couple with no dependent children.
- **Single male without children** - a non-pensioner single adult male with no dependent children.
- **Single female without children** - a non-pensioner single adult female with no dependent children.

Full-time work

The respondent regards themselves as working full-time, either as an employee or self-employed.

Gender

In any analysis of gender, it must be remembered that HBAI attempts to measure the living standards of an individual as determined by household income. This assumes that both partners in a couple benefit equally from the household's income, and will therefore appear at the same position in the income distribution. Any difference in figures can only be driven by gender differences for single adults, which will themselves be diluted by the figures for couples. The lower level gender disaggregation in the family type classification is therefore likely to be more informative.

Research⁸ has suggested that, particularly in low-income households, the above assumption with regard to income sharing is not always valid as men sometimes benefit at the expense of women from shared household income. This means that it is possible that HBAI results broken down by gender could understate differences between the two groups.

Gini coefficient

A widely-used, international standard summary measure of inequality. It can take values from zero to 100, where a value of zero would indicate total equality, with each household having an equal share of income, while higher values indicate greater inequality.

Head of benefit unit

The head of the first benefit unit will be the same as the household reference person. For second and subsequent benefit units the head will be the first adult to be interviewed.

High Income

Results for the top 10 per cent are particularly susceptible to sampling errors and income measurement problems.

⁸ See, for instance, Goode, J., Callender, C. and Lister, R. (1998) *Purse or Wallet? Gender Inequalities and the Distribution of Income in Families on Benefits*. JRF/Policy Studies Institute.

Household

One person living alone or a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area. A household will consist of one or more benefit units. Where a total value for a household is presented, such as total household income, this includes both income from adults and income from children.

Household reference person (used from 2001/02 onwards)

This is classified as the Highest Income Householder (HIH); without regard to gender.

In a single adult household

- The HIH is the sole householder (i.e. the person in whose name the accommodation is owned or rented).

If there are two or more householders

- The HIH is the householder with the highest personal income from all sources.

If there are two or more householders who have the same income

- The HIH is the eldest householder

Housing costs

Housing costs are made up of: rent (gross of housing benefit); water rates, community water charges and council water charges; mortgage interest payments (net of tax relief); structural insurance premiums (for owner occupiers); and ground rent and service charges.

Income

The income measure used in HBAI is weekly net (disposable) equivalised household income. This comprises total income from all sources of all household members including dependants. For *BHC*, housing costs are not deducted from income, while for *AHC* they are.

Households receive income from a variety of sources. The main ones are earnings, self-employment, state support (i.e. benefits and tax credits), interest on investments and occupational pensions.

In detail, income includes:

- usual net earnings from employment;
- profit or loss from self-employment (losses are treated as a negative income);
- state support - all benefits and tax credits;
- income from occupational and private pensions;
- investment income;
- maintenance payments, if a person receives them directly;
- income from educational grants and scholarships (including, for students, student loans and parental contributions);

- the cash value of certain forms of income in kind (free school meals, free school breakfast, free school milk, free school fruit and vegetables, Healthy Start vouchers and free TV licence for those aged 75 and over).

Income is net of the following items:

- income tax payments;
- National Insurance contributions;
- domestic rates / council tax;
- contributions to occupational pension schemes (including all additional voluntary contributions (AVCs) to occupational pension schemes, and any contributions to stakeholder and personal pensions);
- all maintenance and child support payments, which are deducted from the income of the person making the payment;
- parental contributions to students living away from home;
- student loan repayments.

Income distribution

The spread of incomes across the population.

Income growth in real terms

For some years, income growth in the HBAI-based series appears slightly lower than the National Accounts estimates. The implication of this is that absolute real income growth could be understated in the HBAI series. Comparisons over a longer time period are believed to be more robust.

Income inequality

The extent of disparity between high income and low-income households, commonly measured using either the *Gini coefficient* or *90/10 ratio*. The *Gini coefficient* is a widely-used, international standard summary measure of inequality. It can take values from zero to 100, where a value of zero would indicate total equality, with each household having an equal share of income, while higher values indicate greater inequality. The *90/10 ratio* is the average (median) income of the top 20 per cent (quintile 5) divided by the average income of the bottom 20 per cent (quintile 1). The higher the number, the greater the gap between those with the highest incomes and those with the lowest incomes.

Low income

'Low income' is defined using thresholds derived from percentages of median income for the whole population. Households reporting the lowest incomes may not have the lowest living standards. The bottom 10 per cent of the income distribution should not, therefore, be interpreted as having the bottom 10 per cent of living standards. Results for the bottom 10 per cent are also particularly vulnerable to sampling errors and income measurement problems.

- Individuals are said to be in *relative low income* if they live in a household with an equivalised income below a percentage of contemporary median income BHC or AHC. Relative low-income

statistics fall if income growth at the lower end of the income distribution is greater than overall income growth.

- Individuals are said to be in *absolute low income* if they live in a household with an equivalised income below a threshold of median income (for example 60 per cent of median income) in a specific year adjusted for inflation BHC or AHC. The 2010/11 median is used in this report, in order to measure absolute low income as referenced in the Welfare Reform and Work Act 2016, and to keep the absolute measure more in line with contemporary living standards. Absolute low-income statistics fall if low-income households are seeing their incomes rise faster than inflation.

Material deprivation for children

A suite of questions designed to capture the material deprivation experienced by families with children has been included in the FRS since 2004/05. Respondents are asked whether they have 21 goods and services, including child, adult and household items. If they do not have them, they are asked whether this is because they do not want them or because they cannot afford them. These questions are used as an additional way of measuring living standards for children and their families. A prevalence weighted approach has been used in combination with a relative low-income or severe relative low-income threshold.

Combined low income and material deprivation

A child is considered to be in low income and material deprivation if they live in a family that has a final material deprivation score of 25 or more and an equivalised household income below 70 per cent of median income BHC.

Severe low income and material deprivation

A child is considered to be in severe low income and material deprivation if they live in a family that has a final material deprivation score of 25 or more and an equivalised household income below 50 per cent of median income BHC.

Material deprivation for pensioners

A suite of questions designed to capture the material deprivation experienced by pensioners aged 65 or over has been included in the Family Resources Survey since May 2008. These questions are used as an additional way of measuring living standards for pensioners. Respondents are asked whether they have access to 15 goods, services and experiences. Where a pensioner lacks one of the material deprivation items for one of the following reasons they are counted as being deprived for that item:

- they do not have the money for this;
- it is not a priority on their current income;
- their health / disability prevents them;
- it is too much trouble or tiring;
- they have no one to do this with or help them;

- other.

The exception to this is for the unexpected expense question, where pensioners are counted as materially deprived for this item if and only if they responded 'no' to the initial question.

A prevalence weighted approach has been used.

Mean

Mean equivalised household income of individuals is found by adding up *equivalised household incomes* for each individual in a population and dividing the result by the number of people.

Median

Median household income divides the population, when ranked by equivalised household income, into two equal-sized groups. *Contemporary median income* refers to the median income in the survey year being considered.

Part-time work

The respondent regards themselves as working part-time, either as an employee or self-employed.

Pensioner

Pensioners are defined as all those adults above State Pension age (SPa).

For women born on or before 5th April 1950, SPa is 60. From 6th April 2010, the SPa for women born on or after 6th April 1950 will increase gradually between April 2010 and November 2018.

Therefore the age groups have changed over time. The changes do not affect the State Pension age for men, currently 65, for the HBAI statistics.

Other changes are planned and have been announced. From December 2018 the SPa for both men and women will start to increase to reach 66 in October 2020. Further increases to bring the SPa to 67 are proposed to be phased in between 2026 and 2028. These changes are published at: <https://www.gov.uk/changes-state-pension>

Pensioner classifications

In HBAI tables relating to 'all individuals' (formerly included in Chapter 3 on the HBAI report), the classification *pensioner couple* includes individuals in a family unit where one member is above State Pension age, and one is below. This differs from results in HBAI tables relating specifically to 'pensioners' (formerly included in Chapter 6), where only individuals above State Pension age are included. Thus, if a pensioner above State Pension age has a working-age partner, they will both be included under results for *pensioner couple* in 'all individuals' tables, but in 'pensioner' tables the working-age partner will be excluded as they will appear in the 'working-age population' tables (formerly included in Chapter 5).

Prior to 6th April 2010, women reached the State Pension age at 60. From 6th April 2010, the qualifying age for women has been gradually increasing. The changes do not affect the State Pension age for men, currently 65.

Prevalence weighted

Prevalence weighting is a technique of scoring deprivation, in which more weight in the deprivation measure is given to families lacking those items that most families already have. This means a greater importance, when an item is lacked, is assigned to those items that are more commonly owned in the population.

Region and country

Regional⁹ classifications are based on the standard statistical geography of the former Government Office Regions: nine in England, and a single region for each of Scotland, Wales and Northern Ireland. These regions are built up of complete counties or unitary authorities. Tables also include statistics for England as a whole, and detailed breakdown tables split London into Inner and Outer London to aid comparison with other Family Resources Survey-based publications. For more information on National Statistics geography see <http://www.ons.gov.uk/guide-method/geography/ons-geography/index.html>.

Disaggregation by geographical regions is presented as three-year averages. This presentation has been used as single-year regional estimates are considered too volatile. Estimates for the UK, however, are shown as single-year estimates for the latest available year.

Although the FRS sample is large enough to allow some analysis to be performed at a regional level, it should be noted that no adjustment has been made for regional cost of living differences, as the necessary data are not available. In the analysis here it is therefore assumed that there is no difference in the cost of living between regions, although the AHC measure will partly take into account differences in housing costs.

Sampling error

The uncertainty in the estimates which arises from taking a random sample of the household population. The likely size of this error for a particular statistic can be identified and expressed as a confidence interval.

Savings and investments

The total value of all liquid assets, including fixed term investments. Figures are taken from responses to questions on the value of assets or estimated from the interest on the savings when these questions are not asked. Note that banded savings do not include assets held by children in the benefit unit/household. The derivation of total savings used in the tables means that “no savings” specifically relates to cases where the respondent said that they had no accounts/investments, refused to answer, didn’t know, or some accounts/investments were recorded but none of them yielded any interest/dividends.

The data relating to investments and savings should be treated with caution. Questions relating to investments are a sensitive section of the questionnaire and have a low response rate. A high proportion of respondents do not know the interest received on their investments. It is likely that there is some under-

⁹ Regional information is at [NUTS1](#) level.

reporting of capital by respondents, in terms of both the actual values of the savings and the investment income.

Skewness

Skewness measures the degree to which a statistical distribution is asymmetrical or lopsided. A perfectly symmetrical distribution is not skewed. A distribution with a long tail to the right, such as the UK income distribution, is positively skewed.

Sources of income

Households receive income from a variety of sources. The main ones are earnings, self-employment, state support (i.e. benefits and tax credits), interest on investments and occupational pensions.

It should be noted that comparisons with National Accounts data would suggest that surveys such as the FRS understate investment income. It is also the case that the FRS underestimates receipt of most types of State Support.

State support

The Government pays money to individuals in order to support them financially under various circumstances. Most of these benefits are administered by DWP. The exceptions are Housing Benefit and Council Tax Reduction, which are administered by local authorities. Tax Credits are not treated as benefits, but both Tax Credits and benefits are included in the term State Support.

HBAI Quality and Methodology Information Report

Income-related benefits	Non-income-related benefits
Council Tax Reduction	Armed Forces Compensation Scheme
Employment and Support Allowance (income-related element)	Attendance Allowance
Extended Payments (Council Tax Benefit and Housing Benefit)	Carer's Allowance
Housing Benefit	Child Benefit
In Work Credit	Disability Living Allowance (both mobility and care components)
Income Support	Employment and Support Allowance (contributory based element)
Job Grant	Guardian's Allowance
Jobseeker's Allowance (income-based element)	Incapacity Benefit
Northern Ireland Rate Relief for full-time students, trainees, under 18s and those leaving care	Industrial Injuries Disablement Benefit
Northern Ireland Rate Rebate through energy efficient homes	Jobseeker's Allowance (contributory based element)
Northern Ireland Other Rate Rebate	Maternity Allowance
Pension Credit	Northern Ireland Disability Rate Rebate
Rates Rebate	Northern Ireland Lone Pensioner Rate Rebate
Return to Work Credit	Personal Independence Payment (both mobility and daily living components)
Social Fund – Community Care Grant	Severe Disablement Allowance
Social Fund – Funeral Grant	State Pension
Social Fund – Sure Start Maternity Grant	Statutory Maternity/Paternity/Adoption Pay
Universal Credit	Statutory Sick Pay
	Widow's Pension/Bereavement Allowance
	Widow's/Bereavement Payment
	Widowed Mother's/Parent's Allowance
	Winter Fuel Payments
	Other state benefits

Threshold

An **equivalised income** value used for comparing sections of an income distribution over time or for comparing proportions of groups over time, for example: fractions of 2010/11 *median income* or fractions of *contemporary medians*. A relative threshold is relative to the contemporary median for each year's survey. A fixed threshold uses the median from an 'anchor' year which is then up-rated for inflation as appropriate. For example, the absolute threshold '60 per cent of the 2010/11 median income' in 2010/11 is the same as the relative threshold, but the corresponding value in the latest survey year has been up-rated by inflation from the 2010/11 level over the intervening period.

Working-age

Working-age adults are defined as all adults below State Pension age.

Annex 1

A1. Benefit and tax reform in 2014/15

This Annex summarises some of the major benefit and tax reforms which came into effect in 2014/15. It is not intended to represent an exhaustive list.

Up-rating¹⁰

- In April 2014:
 - The Basic State Pension was up-rated by 2.7 per cent in line with the triple lock (CPI was used).
 - The Guarantee element of Pension Credit for singles and couples was increased by 2%.
 - Changes to the threshold for Savings Credit meant the maximum amount available fell by around 7% for a single pensioner and around 9.6% for a couple.
 - Working-age benefits such as Jobseeker's Allowance, Income Support, and Employment Support Allowance (work-related activity group) were up-rated by 1 per cent.
 - Child benefit, along with some elements of tax credits, was uprated by 1-1.1 per cent. Family and childcare elements of tax credit were frozen in cash terms. Tax Credit elements for disabled adults and children were up-rated by 2.8-2.9 per cent.
 - Disability benefits (Personal Independence Payment, Disability Living Allowance and Attendance Allowance) were up-rated by 2.6-2.7 per cent.

Housing Benefit (HB)

- From April 2014 increases in most Local Housing Allowance (LHA) rates were capped at 1%.

Council Tax

- In 2014/15, local authorities in England continued to benefit from the Council Tax freeze grant. This was the offer from central government of a

¹⁰ See <http://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN06774> for details of the 2014/15 uprating rules.

grant to those authorities that set their basic amount of council tax either at or below the level for 2013/14.

- The Department for Communities and Local Government [estimate](#) that the average Band D council tax set by local authorities in England in 2014/15 represented an increase of 0.9 per cent on 2013/14 levels.

Personal Independence Payment

- The roll-out of personal independence payment gathered pace. By the end of the period, in March 2015, 400,000 Personal Independence Payment claims were in payment.

Income Tax

- In 2014/15 the income tax personal allowance increased by £560 to £10,000 for those aged under 65, and was frozen at £10,500 for those aged 65-74 and at £10,660 for those aged 75 or older.
- The threshold for the 40 per cent higher rate of income tax increased to £41,865 from £41,450.

Annex 2

A2. Other relevant statistics

The HBAI report and statistics are released alongside a number of other statistics focused on income and low-income statistics across Government.

In February 2015 the United Kingdom Statistics Authority (UKSA) published a report on the outcome of a monitoring review into the [Coherence and Accessibility of Official Statistics on Income and Earnings](#). A [progress report](#) was published in January 2016.

This review considers the way in which official statistics about income and earnings across Government are presented and includes summary details of the official statistics with the Review's scope; discussion of the conceptual issues faced by users and advice needed when attempting to analyse official statistics; and makes recommendations around potential solutions to concerns identified and for the longer term development of income and earnings statistics.

The statistics highlighted below represent a number of statistical releases which might be considered alongside results from HBAI in order to give a more complete picture. This is not intended to be an exhaustive list and should be considered alongside details from the UKSA review highlighted, as well as recent ONS guidance on [sources of data on earnings and income](#).

Poverty and income inequality in Scotland

<http://www.scotland.gov.uk/Topics/Statistics/Browse/Social-Welfare/incomepoverty>

Households Below Average Income Report for Northern Ireland

<https://www.communities-ni.gov.uk/topics/dsd-statistics-and-research/family-resources-survey>

EU comparisons

A description of how levels of low income in the UK compare with other EU countries is available at:

<http://ec.europa.eu/eurostat/web/income-and-living-conditions/data/main-tables>

Details of the differences between the EU and HBAI methodology are given in the main body of this report.

OECD international comparisons

The OECD income distribution database provides international comparisons on trends and levels in Gini coefficients before and after taxes and transfers, average household disposable incomes, relative poverty rates and poverty gaps, before and after taxes and transfers.

<http://www.oecd.org/social/inequality.htm>

The effects of taxes and benefits on household income.

The article provides estimates of income, taxes and benefits (in cash and in kind) in decile groups ranked by equivalised disposable income.

<http://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth>

Pensioners' Incomes series. This gives more a more detailed analysis of pensioners' incomes.

<https://www.gov.uk/government/collections/pensioners-incomes-series-statistics--3>

Family Resources Survey

<https://www.gov.uk/government/collections/family-resources-survey--2>

Income Dynamics

<https://www.gov.uk/government/publications/income-dynamics-statistics-background-information-and-request-for-feedback>

Low-Income Dynamics

<https://www.gov.uk/government/publications/low-income-dynamics-1991-to-1998>

Personal Incomes statistics

<https://www.gov.uk/government/collections/personal-incomes-statistics>

Wealth in Great Britain

The Wealth & Assets Survey (WAS) is a key source of information on how households in Great Britain are managing economically. The survey focuses on household assets and debts, borrowing and saving, and plans for retirement. This publication presents headline results from WAS incorporating results from the survey's fourth wave (2012/14).

<http://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/compendium/wealthingreatbritainwave4/2012to2014>

Measuring National Well-being

Drawing on social and economic data (including household income and expenditure) from government and other organisations; painting a picture of UK society and how it changes.

<http://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing>

Estimates of income and low-income levels for small areas

HBAI data cannot be broken down below the level of region, due to sample size and coverage issues. However there are some data sources that present information at smaller geographies:

Children in Low-Income Families Local Measure

Administrative data sources on benefits and tax credits from the Department for Work and Pensions (DWP) and Her Majesty's Revenue and Customs (HMRC) are used in the calculation of the Children in Low-Income Families Local Measure. These statistics are published on an annual basis by HMRC and are available at regional, county, local authority, ward, parliamentary constituency, or Lower Layer Super Output Area (LSOA) level.

Previously known as the Revised Local Child Poverty Measure or National Indicator 116, this publication has been renamed Children in Low-Income Families Local Measure to help distinguish these statistics from the Households Below Average Income (HBAI) publication,.

The Children in Low-Income Families Local Measure is based on administrative tax credits and benefit data sources and includes children who are living in families either in receipt of out-of-work benefits or in receipt of tax credits with reported income less than 60 per cent of median income.

The Children in Low-Income Families Local Measure provides local-level analysis which can help explore the considerable variation in low-income rates that exists between and within regions and local authorities.

In anticipation of the continued rollout of Universal Credit, which will replace tax credits for families with children, government statisticians will be engaging with local areas and users to review the Children in Low-Income Families Local Measure.

Data are available here:

<https://www.gov.uk/government/statistics/personal-tax-credits-children-in-low-income-families-local-measure-2013-snapshot-as-at-31-august-2013>

Small area model-based income estimates for England and Wales

ONS produce model-based estimates of income at Middle Layer Super Output Area (MSOA) level for 2011/12. This is available at:

<http://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/smallareamodelbasedincomeestimates/2015-10-20>

English Indices of Deprivation

The English Indices of Deprivation, produced by the Department for Communities and Local Government is a measure of relative levels of deprivation in small areas of England called Lower Layer Super Output Areas and is available at:

<https://www.gov.uk/government/collections/english-indices-of-deprivation>

The Department for Communities and Local Government is updating the indices of deprivation. Before producing updated indices, they intend to review existing deprivation indicators and statistical methods, and consider potential new data sources. The review will focus on refining, rather than making major changes to, the existing indices.

Welsh Index of Multiple Deprivation

This is the official 2014 measure of deprivation in small areas in Wales. It is a relative measure of concentrations of deprivation at the small area level.

<http://gov.wales/statistics-and-research/welsh-index-multiple-deprivation/?lang=en>

Scottish Index of Multiple Deprivation

The Scottish Index of Multiple Deprivation (SIMD) is the Scottish Government's official tool for identifying those places in Scotland suffering from deprivation.

<http://www.gov.scot/simd>

Northern Ireland Multiple Deprivation Measure

The Northern Ireland Multiple Deprivation Measure (NIMDM) is the official measure of spatial deprivation in Northern Ireland.

http://www.nisra.gov.uk/deprivation/nimdm_2010.htm

Annex 3

A3. Uses and users of HBAI statistics

HBAI is a key source for data and information about household income. Users include: policy and analytical teams within the DWP, the Devolved Administrations and other government departments, local authorities, parliament, academics, journalists, and the voluntary sector.

Researchers and analysts outside government use the statistics and data¹¹ to examine topics such as income inequality, the distributional impacts of fiscal policies and understanding the income profile of vulnerable groups. Examples of published reports using HBAI data include:

- “[Living standards, poverty and inequality in the UK](#)”: Belfield, Cribb, Hood and Joyce, Institute for Fiscal Studies, 2015;
- “[Monitoring poverty and social exclusion 2015](#)”: MacInnes, Aldridge, Bushe, Tinson, Hughes, Barry Born, and Aldridge Joseph Rowntree Foundation and New Policy Institute, 2015;
- “[Falling Behind, Getting Ahead: The Changing Structure of Inequality in the UK, 2007-2013](#)”: Hills, Cunliffe, Obolenskaya and Karagiannaki, Centre for Analysis of Social Exclusion, 2015.

Within government the statistics and data are used:

- to inform policy development and monitoring, and for international comparisons;
- for three of the four income-related measures in the [Welfare Reform and Work Act 2016](#)¹²;
- to inform on progress against the DWP single departmental plan indicator related to [the percentage of pensioners with a low income](#).
- in the DWP’s Policy Simulation Model (PSM)¹³ and HM Treasury’s Inter-Governmental Tax Benefit Model (IGOTM)¹⁴; and
- to provide further equality information in compliance with the specific duties under the Equality Act 2010.

¹¹ The UK Data Service web-site provides information on access to HBAI data <https://discover.ukdataservice.ac.uk/series/?sn=2000022>

¹² The HBAI report presents data for the income-related measures related to relative low income, combined low income and material deprivation, and absolute low income.

¹³ PSM is used extensively by analysts in DWP and the Department for Social Development, Northern Ireland, for policy evaluation and costing of policy options.

¹⁴ IGOTM is used to model possible tax and benefit changes before policy changes are decided and announced.

HBAI Quality and Methodology Information Report

The Scottish Government uses the HBAI data:

- to support users to understand the issues and inequalities of concern in Scotland;
- to help to inform policy action, and to measure and evaluate the impact of changes or interventions;
- supporting the [Independent Advisor on Poverty and Inequality](#);
- as evidence for the Scottish Government's National Performance Framework, specifically for the [Scottish Government's Solidarity Purpose Target](#);
- to inform two of the [Scottish Government's Scotland Performs National Indicators](#);
- to monitor progress of the [Scottish Government Child Poverty Strategy](#). The Scottish Government Child Poverty Strategy focuses on policy matters that are devolved to the Scottish Parliament and Scottish Ministers, the most recent annual report on progress can be found at [Annual Report for the Child Poverty Strategy for Scotland 2015](#); and
- to inform the [Scottish Government's Equality Evidence Strategy](#);

The Welsh Government uses the HBAI data:

- to support users to understand issues relating to poverty in Wales, and to help inform policy in this area;
- to measure progress on the [National Indicators for Wales](#); and
- to monitor progress of the [Welsh Government's Tackling Poverty Action Plan 2012-2016](#).

The Department for Communities in Northern Ireland uses HBAI data to:

- to monitor progress of the [Northern Ireland Child Poverty Strategy](#); and
- to monitor progress against indicators in the Northern Ireland Executive's [Programme for Government 2016-21](#).

Annex 4

A4. Alternative inflation measures

This Annex presents analysis on the changes in income and absolute low income Before and After Housing Costs (BHC and AHC) over time due to a methodological change in use of deflators in HBAI from 2014/15.

Relative low income figures under different inflation measures are not presented as the use of different inflation measures as an in-year deflator (to adjust household incomes from the date of interview to an average of survey-year prices) have only a minimal effect on the figures.

Background

Consumer price inflation is the speed at which the prices of goods and services bought by households rise or fall, and is estimated by using price indices. One way to understand a price index is to think of a very large shopping basket containing all the goods and services bought by households. The price index estimates changes to the total cost of this basket.

There are a range of indices which seek to measure inflation, but there are differences in their coverage, calculation and population base. HBAI has historically used variants of the Retail Prices Index (RPI) to adjust for inflation, primarily to present income in the latest year's prices, and to adjust the absolute low income threshold to the year in question.

From 2014/15, there have been methodological changes to HBAI when adjusting for inflation with a move from use of RPI to CPI (Consumer Price Index) variants.

The differences between these indices are detailed in Box A4a with a rationale for this methodological change detailed in a Statistical Notice published in May 2016¹⁵.

In brief, RPI has been assessed against the Code of Practice for Official Statistics and found not to meet the required standard for designation as a National Statistic. The 2015 Johnson Review of UK Consumer Price Statistics made a series of recommendations to the board of the UK Statistics Authority (UKSA) including the discontinuation of use of RPI, and adoption of CPIH as the UK's main price index.

Following a UKSA publication consultation on the Johnson Review recommendations the National Statistician, John Pullinger, wrote to the Chair of the UKSA, Sir Andrew Dilnot, setting out the view that RPI is not a good measure of inflation and that future usage should be strongly discouraged in favour of superior alternatives.

¹⁵ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/519332/dwp-family-household-income-stats-adjusting-for-inflation-statistical-notice.pdf

Whilst a final response from the UKSA decision is still forthcoming, there is a strong expectation based on information currently publicly available that recommendations will be clearly against ongoing use of RPI and in favour of CPI/CPIH-based indices.

Methodological changes

As such, following receipt of technical advice from independent experts at the Institute for Fiscal Studies (IFS), DWP commissioned the production of bespoke variants of CPI from ONS¹⁶. These are:

- An 'experimental' CPI series including mortgage interest payments, ground rent and dwelling insurance – for use with incomes Before Housing Costs (BHC)
- A CPI series excluding rents, maintenance repairs and water charges – for use with incomes After Housing Costs (AHC).

These series are available back to January 2000 and 1996 respectively. Where we need to make adjustments to incomes for earlier periods we use the following approximations:

- BHC: the RPI-based BHC series currently used in our publications, less 0.5%
- AHC: the RPIX series currently used in our publications less 0.5%¹⁷

This approach, whilst only intended as a broad approximation, has been agreed with IFS and is line with analysis previously provided by the Office for Budget Responsibility on the long term difference between RPI and CPI attributable to the formula effect¹⁸.

Coverage and population base of different indices

Differences in inflation measures arise due to coverage, the population base of the indices and the way in which individual price quotes are combined at the first stage of aggregation. A main difference in construction between the CPI and RPI inflation indices is their inclusion of 'housing costs'. Both indices include bills associated with housing, i.e. gas and electricity, and the price of renting a property. However, their treatment of owner occupier costs and mortgage interest payments are different.

¹⁶ <https://www.ons.gov.uk/economy/inflationandpriceindices/adhocs/005567dwpdeflatorsrequest>

¹⁷ RPIX is equivalent to RPI excluding Mortgage Interest Payments.

¹⁸ http://budgetresponsibility.org.uk/docs/dlm_uploads/Working-paper-No2-The-long-run-difference-between-RPI-and-CPI-inflation.pdf

To note, whilst all analysis in HBAI is based around the concept of one measure of inflation which tells us how costs are changing for all household types, in reality households with different characteristics have different spending patterns and these spending patterns affect each household's experience of inflation. As such, it is likely that households in different parts of the UK, or at different positions on the overall income distribution, may face differential inflation rates.

Box A4a: Summary of the Indices

	RPI	CPI
<i>Population Base</i>	The RPI covers the majority of private UK households, but excludes the highest earners and pensioner households dependent mainly on state benefits. Excludes foreign visitors to the UK, but includes UK residents' spending abroad.	The CPI is representative of all private UK households and includes the expenditure of institutional households and foreign visitors to the UK, but does not include UK residents' spending abroad.
<i>Coverage</i>	The RPI covers a range of costs, including: <ul style="list-style-type: none"> • Mortgage interest payments • Council tax • House depreciation • Buildings insurance • House purchase costs • TV licence • Road fund licence • Trades union subscriptions 	Certain charges and fees excluded from RPI are covered by CPI, including: <ul style="list-style-type: none"> • Stockbroker fees; • University accommodation fees; • Foreign student tuition fees; • Unit trust fees. CPI coverage excludes owner occupier housing (OOH) costs that are included in the RPI.
<i>Housing Costs</i>	Includes both Owner Occupiers' housing costs and mortgage interest payments.	Does not include either OOH or mortgage interest payments.
<i>Weights</i>	Expenditure data used to represent this population are derived from a number of sources but mainly from ONS's Living Costs and Food Survey.	Expenditure data used to represent this population are derived from National Accounts data.
<i>Index Construction Formulae</i>	The RPI is constructed using an arithmetic mean (AM) and uses the Carli formula.	The CPI uses a geometric mean (GM).

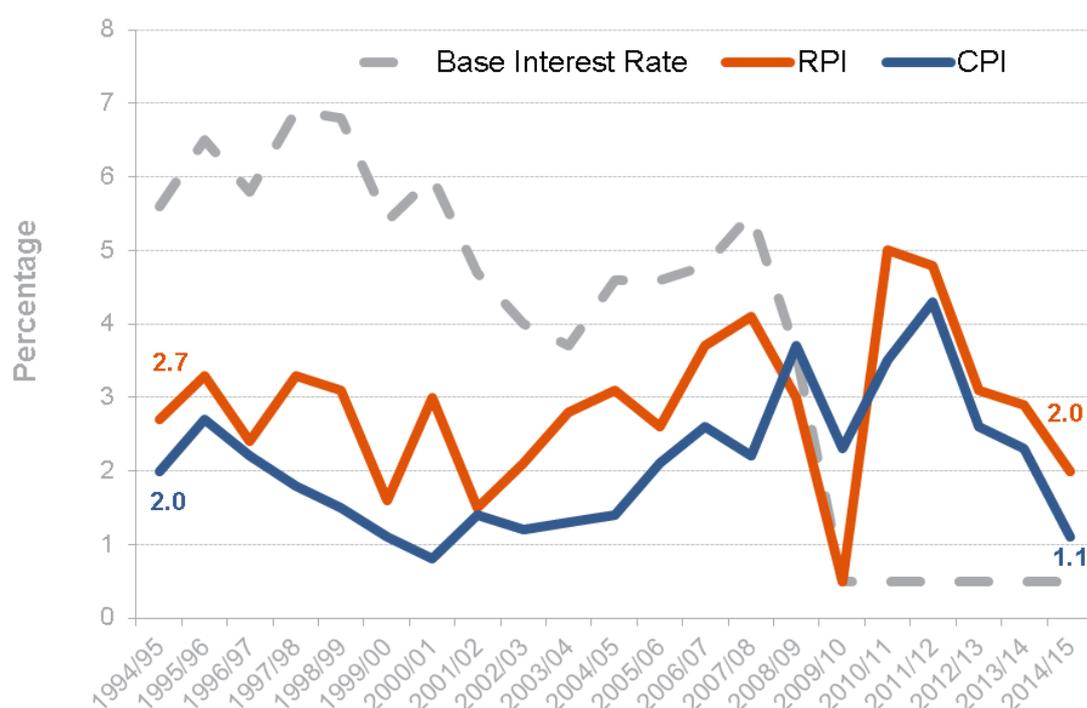
Note: CPIH has the same population base, coverage and weights as the CPI; however, it also includes estimates of Owner Occupiers' Housing costs (OOH). CPIH uses a rental equivalence approach to measure OOH costs. This uses the rent paid for an equivalent house in the private sector as a proxy for the costs faced by an owner occupier, so does not reflect changes to mortgage interest rates. As indicated above, when adjusting incomes BHC we have opted instead to use an experimental CPI series, adapted to include mortgage interest payments, ground rent and dwelling insurance.

What the figures show

Changes in inflation (Chart A4.1)

RPI and CPI follow broadly similar trends over time with RPI generally higher on average, with the exception of the period from 2008/09 to 2009/10. Following the financial crisis, base interest rates fell to 0.5 per cent causing growth to slow for RPI compared to CPI. This reflects the fact that the RPI measure includes mortgage interest payments, whilst CPI does not.

Chart A4.1: RPI, CPI inflation rate, and Bank of England base rate, 1994/95 to 2014/15



Income Trends

As CPI is lower on average than RPI, average (median) income in 2014/15 prices for past years is lower following this methodological change than it would be if we had continued with use of RPI deflators, with the largest differences seen in the earliest year (Tables A4.2a-A4.2d).

Overall trends are largely consistent, however, with average household income values deflated by both RPI and CPI variants increasing BHC and AHC between 2013/14 and 2014/15 – changes under both inflation measures were statistically significant.

The change in long-term trajectories does affect peak values however – under the new methodology average income deflated by CPI peaks at historical highs in 2014/15 both BHC and AHC. When deflating by RPI variants, however, average incomes peak instead in 2009/10 and 2007/08 for BHC and AHC series respectively.

Chart A4.2: Average (median) household income in average 2014/15 prices, deflated by different inflation measures, BHC, 1994/95 to 2014/15, GB/UK

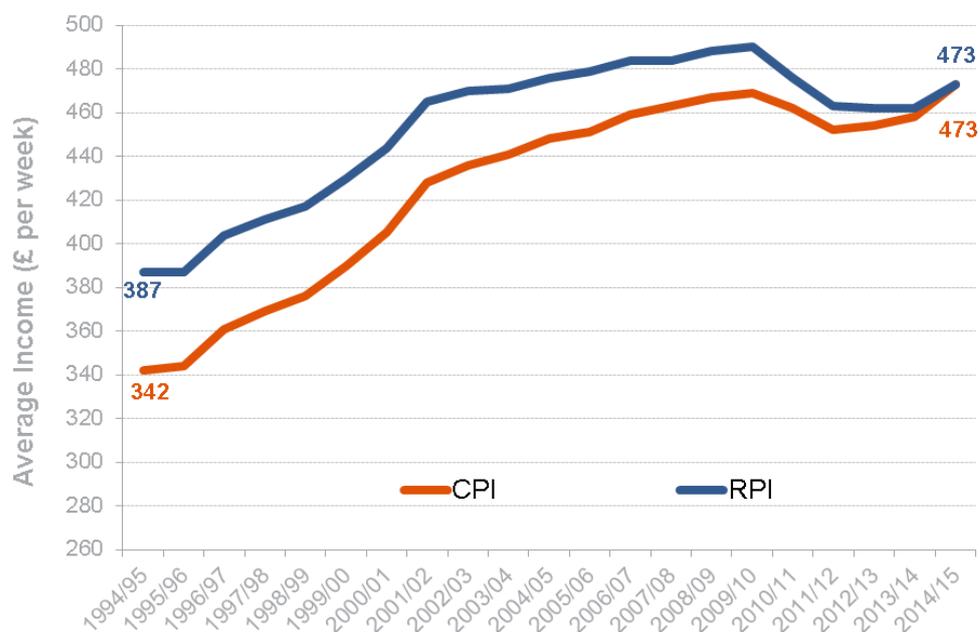
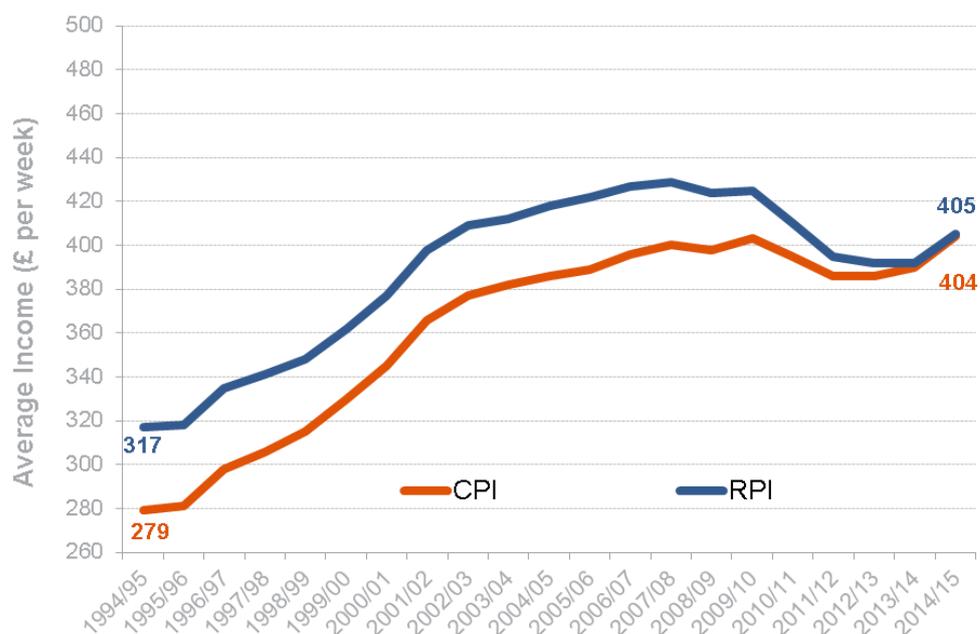


Chart A4.3: Average (median) household income in average 2014/15 prices, deflated by different inflation measures, AHC, 1994/95 to 2014/15, GB/UK¹⁹



¹⁹ The small difference in incomes across the two series in 2014/15 is due to use of RPI and CPI as in-year deflators, to adjust household incomes from the date of interview to an average of survey-year prices.

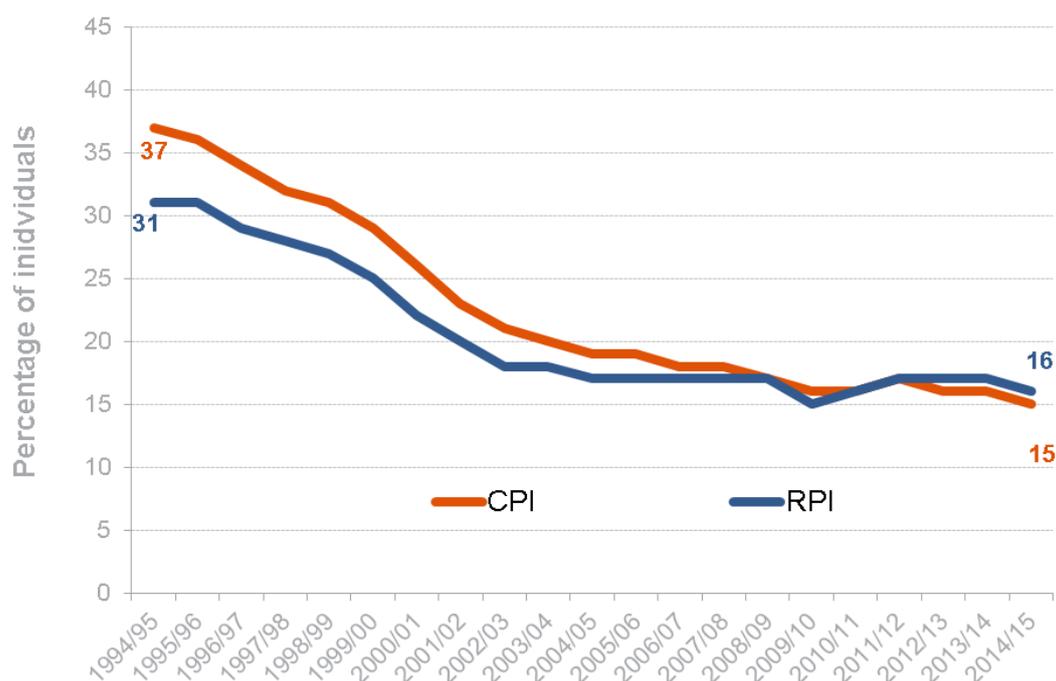
Trends in absolute low income

For years before the base year, 2010/11, the number and percentage of individuals in absolute low income BHC is generally higher under the new methodology than under RPI inflation. For years after 2010/11 the opposite is true. This is because RPI is higher than CPI on average and so gives a lower threshold based on 60% of the 2010/11 median in contemporary prices in earlier years and a higher threshold in later years.

In 2014/15, the number and percentage of individuals in absolute low income under the new methodology is lower than under RPI inflation.

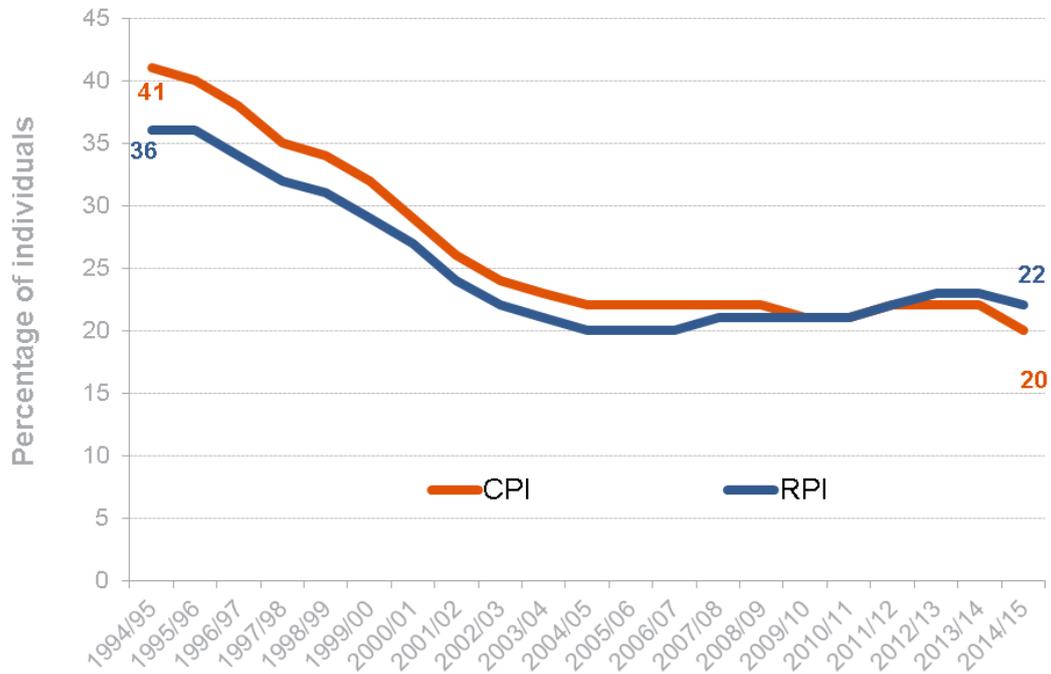
The percentage of individuals in absolute low income BHC has fallen slightly (not statistically significant) between 2013/14 and 2014/15 under the new methodology but is unchanged under RPI inflation²⁰. Under both inflation measures, the percentage of individuals in absolute low income AHC has decreased statistically significantly between 2013/14 and 2014/15.

Chart A4.4: The percentage of individuals in absolute low income, BHC, 1994/95 to 2014/15, GB/UK



²⁰ Due to rounding, the estimates of change in percentages or numbers of individuals in low income or material deprivation may not equal the difference between the total percentage or number of individuals for any pair of years.

Chart A4.5: The percentage of individuals in absolute low income, AHC, 1994/95 to 2014/15, GB/UK



A4 Summary Tables

Table A4.2a: Money values of quintile medians and overall population mean BHC in average 2014/15 prices, RPI inflation, United Kingdom¹

£pw equivalised 2014/15 prices		Quintile group medians					RPI
		Quintile 1	Quintile 2	Quintile 3 (median)	Quintile 4	Quintile 5	Source: FRS Population mean
Income Before Housing Costs							
FRS (GB)	1994/95	195	280	387	527	794	466
	1995/96	197	282	387	522	800	468
	1996/97	199	292	404	543	823	485
	1997/98	201	297	411	554	837	497
	1998/99	205	303	417	569	868	514
	1999/00	212	312	430	581	881	525
	2000/01	219	325	444	599	914	548
FRS (UK)	2001/02	232	344	465	620	957	572
	2002/03	235	348	470	622	949	573
	2003/04	237	351	471	626	943	571
	2004/05	242	356	476	631	958	579
	2005/06	241	357	479	639	969	587
	2006/07	237	358	484	641	981	593
	2007/08	236	359	484	644	990	600
	2008/09	241	365	488	652	1008	606
	2009/10	249	368	490	653	1011	615
	2010/11	246	362	476	627	958	580
	2011/12	241	352	463	615	935	571
	2012/13	239	353	462	607	928	562
	2013/14	243	349	462	616	928	573
	2014/15	244	359	473	626	946	580
	Percentage change and significance						
	2013/14-2014/15 ²	0	3 *	2 *	2	2	1

Notes:

1. FRS figures are for Great Britain up to 2001/02, and for the United Kingdom from 2002/03.

2. Estimates that are statistically significant from the previous year are shown with an asterisk. This means that the changes are unlikely to have occurred as a result of chance.

HBAI Quality and Methodology Information Report

Table A4.2b: Money values of quintile medians and overall population mean BHC in average 2014/15 prices, CPI inflation, United Kingdom¹

£pw equivalised 2014/15 prices		CPI Source: FRS						
		Quintile group medians						
		Quintile 1	Quintile 2	Quintile 3 (median)	Quintile 4	Quintile 5	Population mean	
Income Before Housing Costs								
FRS (GB)	1994/95	172	248	342	466	702	413	
	1995/96	175	251	344	464	710	416	
	1996/97	178	260	361	485	735	433	
	1997/98	181	267	369	497	751	446	
	1998/99	185	273	376	514	783	464	
	1999/00	192	283	390	527	799	476	
	2000/01	200	297	405	547	835	501	
	2001/02	214	316	428	570	880	526	
	FRS (UK)	2002/03	218	323	436	577	880	531
		2003/04	221	329	441	585	882	535
2004/05		227	335	448	594	901	545	
2005/06		227	337	451	602	913	553	
2006/07		225	340	459	608	931	563	
2007/08		226	344	463	617	950	575	
2008/09		231	349	467	624	965	580	
2009/10		238	353	469	626	967	588	
2010/11		240	352	462	609	930	564	
2011/12		236	344	452	601	914	558	
2012/13		234	347	454	597	913	553	
2013/14		241	346	458	610	921	567	
2014/15		244	359	473	627	947	581	
Percentage change and significance								
2013/14-2014/15 ²		1	4 *	3 *	3 *	3 *	2	

Notes:

1. FRS figures are for Great Britain up to 2001/02, and for the United Kingdom from 2002/03.

2. Estimates that are statistically significant from the previous year are shown with an asterisk. This means that the changes are unlikely to have occurred as a result of chance.

Table A4.2c: Money values of quintile medians and overall population mean AHC in average 2014/15 prices, RPI inflation, United Kingdom¹

£pw equivalised 2014/15 prices		RPI Source: FRS						
		Quintile group medians						
		Quintile 1	Quintile 2	Quintile 3 (median)	Quintile 4	Quintile 5	Population mean	
Income After Housing Costs								
FRS (GB)	1994/95	136	216	317	442	675	384	
	1995/96	140	217	318	438	683	386	
	1996/97	140	224	335	460	710	403	
	1997/98	143	234	341	469	725	416	
	1998/99	149	239	348	483	755	433	
	1999/00	154	250	362	498	770	446	
	2000/01	161	263	377	516	808	470	
	2001/02	174	281	398	539	842	492	
	FRS (UK)	2002/03	179	288	409	551	847	499
		2003/04	177	294	412	556	856	501
2004/05		184	301	418	563	875	514	
2005/06		181	301	422	573	891	521	
2006/07		176	301	427	575	904	528	
2007/08		175	302	429	584	914	537	
2008/09		172	301	424	586	922	536	
2009/10		173	300	425	585	927	540	
2010/11		173	294	410	556	873	506	
2011/12		167	284	395	542	845	494	
2012/13		164	279	392	536	841	484	
2013/14		165	280	392	544	840	494	
2014/15		168	289	405	555	859	504	
Percentage change and significance								
2013/14-2014/15 ²		2	3 *	3 *	2 *	2	2	

Notes:

1. FRS figures are for Great Britain up to 2001/02, and for the United Kingdom from 2002/03.

2. Estimates that are statistically significant from the previous year are shown with an asterisk. This means that the changes are unlikely to have occurred as a result of chance.

HBAI Quality and Methodology Information Report

Table A4.2d: Money values of quintile medians and overall population mean AHC in average 2014/15 prices, CPI inflation, United Kingdom¹

£pw equivalised 2014/15 prices		CPI Source: FRS					
		Quintile group medians					
		Quintile 1	Quintile 2	Quintile 3 (median)	Quintile 4	Quintile 5	Population mean
Income After Housing Costs							
FRS (GB)	1994/95	120	190	279	389	595	338
	1995/96	124	192	281	388	604	342
	1996/97	125	200	298	409	633	359
	1997/98	129	210	306	421	651	373
	1998/99	135	216	315	437	683	391
	1999/00	140	227	330	453	702	406
FRS (UK)	2000/01	148	241	345	473	741	431
	2001/02	160	259	366	495	774	453
	2002/03	165	266	377	508	782	460
	2003/04	164	272	382	515	792	464
	2004/05	170	279	386	520	809	475
	2005/06	167	278	389	528	822	481
	2006/07	163	279	396	533	837	489
	2007/08	163	281	400	545	854	501
	2008/09	161	283	398	550	865	503
	2009/10	164	284	403	554	879	512
	2010/11	167	284	395	537	841	488
	2011/12	163	278	386	530	826	484
	2012/13	161	275	386	529	828	477
	2013/14	164	278	390	541	836	491
	2014/15	168	289	404	555	858	504
Percentage change and significance							
2013/14-2014/15 ²		3	4 *	4 *	3 *	3	3

Notes:

1. FRS figures are for Great Britain up to 2001/02, and for the United Kingdom from 2002/03.

2. Estimates that are statistically significant from the previous year are shown with an asterisk. This means that the changes are unlikely to have occurred as a result of chance.

HBAI Quality and Methodology Information Report

Table A4.3: Percentage and number of individuals falling below 60% of 2010/11 median held constant in real terms, United Kingdom^{1, 2}

Percentage and Number of individuals											Source: FRS	
		Percentage				Number (millions)				All individuals (millions)		
		Before Housing Costs		After Housing Costs		Before Housing Costs		After Housing Costs				
		RPI	CPI	RPI	CPI	RPI	CPI	RPI	CPI			
FRS (GB)	1994/95	31	37	36	41	17.2	20.3	19.9	22.4	55.3		
	1995/96	31	36	36	40	17.0	20.0	19.9	22.4	55.5		
	1996/97	29	34	34	38	16.0	18.7	18.8	20.9	55.6		
	1997/98	28	32	32	35	15.5	17.9	17.9	19.7	55.7		
	1998/99	27	31	31	34	14.9	17.3	17.4	19.1	55.9		
	1999/00	25	29	29	32	14.0	16.2	16.5	17.9	56.1		
	2000/01	22	26	27	29	12.6	14.6	15.1	16.4	56.2		
	2001/02	20	23	24	26	11.2	12.9	13.6	14.7	56.4		
	FRS (UK)	2002/03	18	21	22	24	10.8	12.2	13.0	14.3	58.3	
		2003/04	18	20	21	23	10.6	11.7	12.3	13.4	58.6	
2004/05		17	19	20	22	10.0	11.0	11.6	12.7	58.9		
2005/06		17	19	20	22	10.1	11.1	11.9	13.2	59.3		
2006/07		17	18	20	22	10.2	10.9	12.2	13.3	59.7		
2007/08		17	18	21	22	10.5	10.9	12.6	13.3	60.2		
2008/09		17	17	21	22	10.2	10.6	12.5	13.3	60.7		
2009/10		15	16	21	21	9.4	9.9	12.6	13.1	61.2		
2010/11		16	16	21	21	9.8	9.8	13.0	13.0	61.6		
2011/12		17	17	22	22	10.8	10.6	14.0	13.6	62.5		
2012/13		17	16	23	22	10.6	10.2	14.6	13.9	62.9		
2013/14		17	16	23	22	10.4	9.9	14.5	13.6	63.0		
2014/15		16	15	22	20	10.3	9.4	13.8	12.9	63.5		
Percentage point/numerical change and significance		2013/14-2014/15 ^{3,4}	0	-1	-1	*	-0.2	-0.5	-0.7	*	-0.7	0.5

Notes:

- FRS figures are for Great Britain up to 2001/02, and for the United Kingdom from 2002/03. The reference period for FRS figures is single financial years.
- This report and tables use grossing factors based on 2011 Census data. Figures have been revised back to 2002/03 using these new grossing factors.
- Small changes in estimates from year to year, particularly at the bottom of the income distribution, may not be significant in view of data uncertainties. Estimates that are statistically significant are shown with an asterisk. This means that the changes are unlikely to have occurred as a result of chance.
- Due to rounding, the estimates of change in percentages of individuals below low-income thresholds may not equal the difference between the total percentage of individuals below thresholds for any pair of years shown.

HBAI Quality and Methodology Information Report

Table A4.4: Percentage and number of children falling below 60% of 2010/11 median held constant in real terms, United Kingdom^{1, 2}

Percentage and Number of children		Source: FRS									
		Percentage				Number (millions)					
		Before Housing Costs		After Housing Costs		Before Housing Costs		After Housing Costs		All children (millions)	
		RPI	CPI	RPI	CPI	RPI	CPI	RPI	CPI		
FRS (GB)	1994/95	39	45	46	51	4.9	5.7	5.8	6.5	12.6	
	1995/96	39	45	46	51	4.9	5.7	5.8	6.5	12.7	
	1996/97	37	42	44	48	4.7	5.4	5.6	6.1	12.7	
	1997/98	36	41	42	46	4.6	5.2	5.4	5.9	12.7	
	1998/99	35	40	42	45	4.4	5.1	5.3	5.7	12.7	
	1999/00	33	37	39	42	4.1	4.8	5.0	5.4	12.7	
	2000/01	28	33	35	38	3.6	4.1	4.5	4.9	12.7	
	2001/02	25	29	32	35	3.2	3.7	4.1	4.4	12.6	
	FRS (UK)	2002/03	23	26	30	32	3.0	3.4	3.8	4.1	12.9
		2003/04	22	25	28	30	2.9	3.2	3.6	3.9	12.9
2004/05		21	24	27	30	2.8	3.0	3.5	3.8	12.9	
2005/06		21	24	28	30	2.7	3.1	3.6	3.9	12.9	
2006/07		21	23	28	31	2.7	3.0	3.6	4.0	13.0	
2007/08		22	22	29	31	2.8	2.9	3.8	4.0	13.0	
2008/09		20	21	28	30	2.7	2.8	3.6	3.9	13.0	
2009/10		18	19	27	28	2.4	2.5	3.6	3.8	13.2	
2010/11		18	18	27	27	2.3	2.3	3.6	3.6	13.2	
2011/12		20	19	29	28	2.6	2.6	3.9	3.8	13.3	
2012/13		19	19	31	29	2.6	2.5	4.1	3.9	13.4	
2013/14		19	18	31	29	2.6	2.4	4.1	3.8	13.4	
2014/15		19	17	30	27	2.6	2.3	4.0	3.7	13.5	
Percentage point/numerical change and significance		2013/14-2014/15 ^{3,4}	0	0	-1	-1	0.0	0.0	-0.1	-0.1	0.1

Notes:

1. FRS figures are for Great Britain up to 2001/02, and for the United Kingdom from 2002/03. The reference period for FRS figures is single financial years.
2. This report and tables use grossing factors based on 2011 Census data. Figures have been revised back to 2002/03 using these new grossing factors.
3. Small changes in estimates from year to year, particularly at the bottom of the income distribution, may not be significant in view of data uncertainties. Estimates that are statistically significant are shown with an asterisk. This means that the changes are unlikely to have occurred as a result of chance.
4. Due to rounding, the estimates of change in percentages of individuals below low-income thresholds may not equal the difference between the total percentage of individuals below thresholds for any pair of years shown.

HBAI Quality and Methodology Information Report

Table A4.5: Percentage and number of working-age adults falling below 60% of 2010/11 median held constant in real terms, United Kingdom^{1, 2}

Percentage and Number of working-age adults											Source: FRS	
		Percentage				Number (millions)				All working-age adults (millions)		
		Before Housing Costs		After Housing Costs		Before Housing Costs		After Housing Costs				
		RPI	CPI	RPI	CPI	RPI	CPI	RPI	CPI			
FRS (GB)	1994/95	24	28	29	33	7.7	9.3	9.5	10.8	32.8		
	1995/96	23	28	29	33	7.6	9.1	9.5	10.8	32.8		
	1996/97	22	26	27	31	7.3	8.5	9.0	10.1	32.9		
	1997/98	21	24	26	28	6.9	8.0	8.4	9.4	33.1		
	1998/99	20	23	25	27	6.6	7.7	8.2	9.1	33.2		
	1999/00	19	22	24	26	6.4	7.3	7.9	8.6	33.3		
	2000/01	17	20	22	24	5.8	6.7	7.4	8.0	33.5		
	2001/02	16	18	20	21	5.2	5.9	6.6	7.1	33.7		
FRS (UK)	2002/03	15	17	19	21	5.2	5.8	6.7	7.2	34.9		
	2003/04	15	16	19	20	5.2	5.7	6.6	7.1	35.1		
	2004/05	14	15	18	19	5.0	5.5	6.4	6.8	35.3		
	2005/06	15	16	19	21	5.2	5.7	6.8	7.3	35.6		
	2006/07	14	15	19	20	5.1	5.4	6.8	7.3	35.9		
	2007/08	15	15	20	20	5.3	5.6	7.1	7.4	36.1		
	2008/09	15	15	20	21	5.5	5.6	7.3	7.7	36.4		
	2009/10	14	15	20	21	5.2	5.5	7.4	7.7	36.4		
	2010/11	15	15	21	21	5.5	5.5	7.7	7.8	36.7		
	2011/12	16	16	22	22	6.1	6.0	8.3	8.2	37.5		
	2012/13	16	15	23	22	5.9	5.8	8.7	8.3	37.7		
	2013/14	15	15	23	21	5.8	5.5	8.5	8.1	37.6		
	2014/15	15	14	21	20	5.7	5.3	8.1	7.6	38.0		
	Percentage point/numerical change and significance	2013/14-2014/15 ^{3,4}	0	-1	-1	*	-1	*	-0.1	-0.2	-0.4	-0.4	0.3

Notes:

- FRS figures are for Great Britain up to 2001/02, and for the United Kingdom from 2002/03. The reference period for FRS figures is single financial years.
- This report and tables use grossing factors based on 2011 Census data. Figures have been revised back to 2002/03 using these new grossing factors.
- Small changes in estimates from year to year, particularly at the bottom of the income distribution, may not be significant in view of data uncertainties. Estimates that are statistically significant are shown with an asterisk. This means that the changes are unlikely to have occurred as a result of chance.
- Due to rounding, the estimates of change in percentages of individuals below low-income thresholds may not equal the difference between the total percentage of individuals below thresholds for any pair of years shown.

HBAI Quality and Methodology Information Report

Table A4.6: Percentage and number of pensioners falling below 60% of 2010/11 median held constant in real terms, United Kingdom^{1, 2}

Percentage and Number of pensioners											Source: FRS			
		Percentage				Number (millions)				All pensioners (millions)				
		Before Housing Costs		After Housing Costs		Before Housing Costs		After Housing Costs						
		RPI	CPI	RPI	CPI	RPI	CPI	RPI	CPI					
FRS (GB)	1994/95	46	54	47	53	4.5	5.3	4.7	5.2	9.9				
	1995/96	45	53	46	52	4.5	5.2	4.6	5.1	9.9				
	1996/97	41	48	42	48	4.1	4.8	4.2	4.7	9.9				
	1997/98	39	46	41	45	3.9	4.6	4.0	4.5	10.0				
	1998/99	39	45	39	43	3.9	4.5	3.9	4.3	10.0				
	1999/00	35	41	36	39	3.5	4.1	3.6	3.9	10.0				
	2000/01	31	37	32	35	3.1	3.7	3.2	3.5	10.1				
	2001/02	27	32	28	31	2.8	3.2	2.9	3.2	10.1				
	FRS (UK)	2002/03	25	29	24	29	2.6	3.0	2.5	3.0	10.5			
		2003/04	23	26	20	24	2.5	2.7	2.1	2.5	10.6			
2004/05		21	23	16	19	2.2	2.5	1.7	2.0	10.7				
2005/06		20	22	15	18	2.1	2.3	1.6	1.9	10.8				
2006/07		22	23	16	19	2.3	2.5	1.8	2.0	10.9				
2007/08		21	22	15	17	2.3	2.4	1.7	1.9	11.1				
2008/09		18	19	14	15	2.1	2.2	1.6	1.7	11.3				
2009/10		16	17	13	14	1.8	1.9	1.5	1.7	11.6				
2010/11		17	17	14	14	2.0	2.0	1.6	1.6	11.7				
2011/12		17	17	15	14	2.0	2.0	1.8	1.7	11.7				
2012/13		17	17	15	14	2.0	2.0	1.8	1.7	11.8				
2013/14		18	17	16	14	2.1	2.0	1.9	1.7	11.9				
2014/15		17	15	14	13	2.0	1.8	1.7	1.5	12.0				
Percentage point/numerical change and significance		2013/14-2014/15 ^{3,4}	-1	-2	*	-1	*	-2	*	-0.1	-0.2	*	-0.2	*	0.1

Notes:

- FRS figures are for Great Britain up to 2001/02, and for the United Kingdom from 2002/03. The reference period for FRS figures is single financial years.
- This report and tables use grossing factors based on 2011 Census data. Figures have been revised back to 2002/03 using these new grossing factors.
- Small changes in estimates from year to year, particularly at the bottom of the income distribution, may not be significant in view of data uncertainties. Estimates that are statistically significant are shown with an asterisk. This means that the changes are unlikely to have occurred as a result of chance.
- Due to rounding, the estimates of change in percentages of individuals below low-income thresholds may not equal the difference between the total percentage of individuals below thresholds for any pair of years shown.

HBAI Quality and Methodology Information Report

Table A4.7: Percentage and number of individuals, living in a family with a disabled member, falling below 60% of 2010/11 median held constant in real terms, United Kingdom^{1,2,5}

Percentage and Number of individuals living in a family with a disabled member											Source: FRS			
		Percentage				Number (millions)				All individuals (millions)				
		Before Housing Costs		After Housing Costs		Before Housing Costs		After Housing Costs						
		RPI	CPI	RPI	CPI	RPI	CPI	RPI	CPI					
FRS (GB)	1994/95	..	..	..	..	..	..	..	..	..
	1995/96	40	48	46	51	6.3	7.5	7.1	8.0	15.6				
	1996/97	38	45	43	49	5.5	6.6	6.4	7.1	14.7				
	1997/98	37	43	42	46	6.0	7.0	6.8	7.5	16.3				
	1998/99	36	42	40	44	6.0	7.0	6.7	7.4	16.6				
	1999/00	33	39	38	42	5.3	6.2	6.0	6.6	15.8				
	2000/01	30	35	35	38	5.0	5.9	5.8	6.3	16.6				
	2001/02	27	31	32	35	4.3	5.0	5.1	5.5	15.8				
	FRS (UK)	2002/03	24	27	28	30	4.1	4.7	4.8	5.2	17.2			
		2003/04	23	26	25	28	3.8	4.3	4.3	4.7	16.9			
2004/05		22	25	24	27	3.7	4.1	4.0	4.5	16.7				
2005/06		21	23	23	26	3.8	4.2	4.1	4.6	17.8				
2006/07		23	24	24	27	3.9	4.1	4.1	4.5	16.9				
2007/08		23	24	25	27	4.0	4.2	4.3	4.6	17.1				
2008/09		21	22	23	25	3.6	3.8	4.1	4.3	17.5				
2009/10		18	19	23	24	3.3	3.5	4.1	4.4	18.1				
2010/11		20	20	24	24	3.6	3.6	4.4	4.3	18.2				
2011/12		20	20	25	25	3.8	3.7	4.8	4.7	19.0				
2012/13		22	21	27	26	4.2	4.0	5.3	5.0	19.2				
2013/14		22	20	30	27	4.1	3.8	5.6	5.2	18.9				
2014/15		20	18	26	24	4.1	3.8	5.4	5.0	20.6				
Percentage point/numerical change and significance		2013/14-2014/15 ^{3,4}	-2	*	-2	*	-3	*	-3	*	0.0	-0.1	-0.2	-0.1	1.7

Notes:

- FRS figures are for Great Britain up to 2001/02, and for the United Kingdom from 2002/03. The reference period for FRS figures is single financial years.
- This report and tables use grossing factors based on 2011 Census data. Figures have been revised back to 2002/03 using these new grossing factors.
- Small changes in estimates from year to year, particularly at the bottom of the income distribution, may not be significant in view of data uncertainties. Estimates that are statistically significant are shown with an asterisk. This means that the changes are unlikely to have occurred as a result of chance.
- Due to rounding, the estimates of change in percentages of individuals below low-income thresholds may not equal the difference between the total percentage of individuals below thresholds for any pair of years shown.
- From 2012/13, disabled people are identified as those who report any physical or mental health condition(s) or illness(es) that last or are expected to last 12 months or more, or which limit their ability to carry out day-to-day activities a little, or a lot. Caution should be exercised when making comparisons with reports prior to 2012/13.

HBAI Quality and Methodology Information Report

Table A4.8: Percentage and number of individuals, living in a family where no-one is disabled, falling below 60% of 2010/11 median held constant in real terms, United Kingdom^{1,2,5}

Percentage and Number of individuals living in a family where no-one is disabled											Source: FRS
		Percentage				Number (millions)				All individuals (millions)	
		Before Housing Costs		After Housing Costs		Before Housing Costs		After Housing Costs			
		RPI	CPI	RPI	CPI	RPI	CPI	RPI	CPI		
FRS (GB)	1994/95	..	..	..	..	..	..	..	..	..
	1995/96	27	31	32	36	10.7	12.5	12.8	14.4	39.9	
	1996/97	26	30	31	34	10.5	12.1	12.5	13.8	40.9	
	1997/98	24	28	28	31	9.5	10.9	11.1	12.2	39.4	
	1998/99	23	26	27	30	8.9	10.3	10.7	11.7	39.3	
	1999/00	22	25	26	28	8.7	10.0	10.5	11.3	40.2	
	2000/01	19	22	23	26	7.6	8.7	9.3	10.1	39.6	
	2001/02	17	19	21	23	6.8	7.9	8.5	9.2	40.6	
	FRS (UK)	2002/03	16	18	20	22	6.6	7.5	8.3	9.0	41.1
		2003/04	16	18	19	21	6.7	7.3	8.1	8.7	41.7
2004/05		15	16	18	19	6.3	6.8	7.5	8.2	42.1	
2005/06		15	17	19	21	6.4	6.9	7.8	8.6	41.6	
2006/07		15	16	19	21	6.3	6.8	8.1	8.8	42.8	
2007/08		15	16	19	20	6.5	6.7	8.3	8.7	43.1	
2008/09		15	16	20	21	6.6	6.8	8.4	8.9	43.2	
2009/10		14	15	20	20	6.1	6.4	8.4	8.7	43.1	
2010/11		14	14	20	20	6.3	6.2	8.7	8.7	43.5	
2011/12		16	16	21	21	7.0	6.9	9.2	9.0	43.5	
2012/13		15	14	21	20	6.4	6.3	9.3	8.9	43.7	
2013/14		14	14	20	19	6.4	6.0	8.9	8.4	44.0	
2014/15		14	13	20	18	6.2	5.6	8.4	7.8	42.9	
Percentage point/numerical change and significance		2013/14-2014/15 ^{3,4}	0	-1	-1	-1	-0.2	-0.4	-0.5	-0.6	*	-1.2

Notes:

- FRS figures are for Great Britain up to 2001/02, and for the United Kingdom from 2002/03. The reference period for FRS figures is single financial years.
- This report and tables use grossing factors based on 2011 Census data. Figures have been revised back to 2002/03 using these new grossing factors.
- Small changes in estimates from year to year, particularly at the bottom of the income distribution, may not be significant in view of data uncertainties. Estimates that are statistically significant are shown with an asterisk. This means that the changes are unlikely to have occurred as a result of chance.
- Due to rounding, the estimates of change in percentages of individuals below low-income thresholds may not equal the difference between the total percentage of individuals below thresholds for any pair of years shown.
- From 2012/13, disabled people are identified as those who report any physical or mental health condition(s) or illness(es) that last or are expected to last 12 months or more, or which limit their ability to carry out day-to-day activities a little, or a lot. Caution should be exercised when making comparisons with reports prior to 2012/13.

A5. Communicating uncertainty

Introduction

The figures in this publication come from the Family Resources Survey. This is a survey of around 20,000 households across the UK. Like all surveys, it gathers information from a sample rather than from the whole population. The size of the sample and the way in which the sample is selected is carefully designed to ensure that it is representative of the UK as whole, whilst bearing in mind practical considerations like time and cost constraints. Survey results are always estimates, not precise figures. This means that they are subject to a level of uncertainty which can affect how changes, especially over the short term, should be interpreted.

Estimating and reporting uncertainty

Two different random samples from one population, for example the UK, are unlikely to give exactly the same survey results, which are likely to differ again from the results that would be obtained if the whole population was surveyed. The level of uncertainty around a survey estimate can be calculated and is commonly referred to as sampling error. In addition to sampling error the HBAI estimates can also be affected by non-sampling error such as non-response and a tendency to under-report benefit receipt.

We can calculate the level of uncertainty around a survey estimate by exploring how that estimate would change if we were to draw many survey samples for the same time period instead of just one. This allows us to define a range around the estimate (known as a “confidence interval”) and to state how likely it is that the real value that the survey is trying to measure lies within that range. Confidence intervals are typically set up so that we can be 95% sure that the true value lies within the range – in which case this range is referred to as a “95% confidence interval”.

Measuring the size of sampling error

Accuracy of the statistics: Confidence intervals can be used as a guide to the size of sampling error. A confidence interval is a range around an estimate which states how likely it is that the real value that the survey is trying to measure lies within that range. A wider confidence interval indicates a greater uncertainty around the estimate. Generally, a smaller sample size will lead to estimates that have a wider confidence interval than estimates from larger sample sizes. This is because a smaller sample is less likely than a larger sample to reflect the characteristics of the total population and therefore there will be more uncertainty around the estimate derived from the sample.

Statistical significance: Some changes in estimates from one year to the next will be the result of different samples being chosen, whilst other changes will reflect underlying changes in income across the population. Confidence intervals can be used to identify changes in the data that are statistically significant; that is, they are unlikely to have occurred by chance due to a particular sample being chosen.

Confidence intervals can give a range around the difference in a result from one year to the next. If the range does not include zero it indicates this change is unlikely to be the result of chance. Box 8a gives more detail on how confidence intervals can be interpreted. In the summary tables presented in this report, estimates of the **percentage** in low income that are statistically significant from the previous year are shown with an asterisk. Estimates of the **number** in low income that are statistically significant from the previous year are also shown with an asterisk. Changes marked by an asterisk are unlikely to have occurred as a result of chance. The HBAI estimates that are presented are the best estimate of the real value that the survey is trying to measure.

Non-sampling error: In addition to sampling error, non-sampling error is another area of uncertainty that is present in all surveys as well as in censuses. Non-sampling error encompasses all error excluding sampling error. Types of non-sampling error include: coverage error, non-response error, measurement error and processing error. This error is minimised; however, it is not possible to eliminate it completely and it cannot be quantified. It is important to bear in mind that confidence intervals are only a guide for the size of sampling error and cannot tell us anything about non-sampling error.

Working with uncertain estimates: Some changes between years will be small in relation to sampling variation and other sources of error and may not be statistically significant. This is relevant for particular sub-groups, as these will have smaller sample sizes than the overall survey sample size. For these sub-groups it is important to look at long-term trends.

Calculating uncertainty in the HBAI report

Prior to the 2012/13 publication confidence intervals in HBAI were calculated using an estimating function approach. From 2012/13 onwards a bootstrapping approach using the statistical package SAS has been used. This has streamlined processes to allow confidence intervals to be calculated for a wider range of estimates.

Bootstrapping takes into account the design of the sample. It replicates the sampling design of the survey and takes re-samples with replacement from the dataset. Multiple new samples of the dataset are created, with some samples containing multiple copies of one case with none of another. Exploring how an estimate would change if we were to draw many survey samples for the same time period instead of just one sample allows us to generate confidence intervals around the estimate.

For next year's publication we will be seeking to refine the methodology further to fully take account of the complex design of the sample. The current methodology may underestimate the confidence intervals due to using a simpler design for the sampling methodology. For a more technical guide to the approach used to generate confidence intervals in this report, please see the report [Uncertainty in Family Resources Survey-based analysis](#).

Box A.5a: 95 per cent confidence intervals

Confidence intervals are typically set up so that we can be 95 per cent sure that the true value lies within a certain range – in which case this range is referred to as a “95 per cent confidence interval”.

Example 1

Interpreting confidence intervals

15.9 per cent of individuals are estimated to be living in relative low income. This figure has a stated confidence interval of 15.3 to 16.6 per cent (Table 8b). This means that we can be 95 per cent sure that between 15.3 and 16.6 per cent of individuals are in relative low income. Our best estimate is 15.9 per cent of individuals.

As well as calculating confidence intervals around the results obtained from one year of the survey, confidence intervals can also be calculated for the changes in results across survey years.

Example 2

Change that is not statistically significant

The estimated change in the percentage of individuals living in relative low income BHC from 2013/14 to 2014/15 is an increase of 0.6 percentage points (Table 8b). The confidence interval around this figure is -0.2 to 1.6 percentage points. This means that we can be 95 per cent sure that the actual change in the percentage of people living in relative low income is between a decrease of 0.2 percentage points and an increase of 1.6 percentage points, with the best estimate being an increase of 0.6 percentage points. As the confidence interval includes zero this change is not statistically significant, which indicates that there is at least a 5 per cent probability that the change in the percentage of individuals in relative low income is the result of chance.

Example 3

Change that is statistically significant

The estimated change in the percentage of individuals living in absolute low income AHC from 2013/14 to 2014/15 is a decrease of 1.3 percentage points (Table 8b). The confidence interval around this figure is -2.4 to -0.2 percentage points. This means that we can be 95 per cent sure that the actual change in the percentage of individuals living in absolute low income is between a decrease of 2.4 percentage points and a decrease of 0.2 percentage points, with the best estimate being a decrease of 1.3 percentage points. As the confidence interval does not include zero this change is statistically significant, which indicates that the decrease in the percentage of individuals in absolute low income is unlikely to be the result of chance.

Summary tables

Table A.5a: Confidence intervals for the Gini coefficient, quintile medians and overall population mean in average 2014/15 prices, United Kingdom

	Estimate	95% confidence limits
Income Before Housing Costs		
Quintile 1	244	(240 , 249)
Quintile 2	359	(355 , 364)
Quintile 3	473	(468 , 480)
Quintile 4	627	(620 , 636)
Quintile 5	947	(929 , 967)
Mean	581	(568 , 593)
Gini coefficient (per cent)	33.9	(32.8 , 35.0)
Income After Housing Costs		
Quintile 1	168	(164 , 173)
Quintile 2	289	(285 , 294)
Quintile 3	404	(399 , 412)
Quintile 4	555	(547 , 564)
Quintile 5	858	(843 , 876)
Mean	504	(492 , 516)
Gini coefficient (per cent)	38.6	(37.5 , 39.7)

Table A.5b: Confidence intervals for the percentage of individuals in relative/absolute low income, UK

		Percentage of individuals							
		All individuals		Children		Working-age adults		Pensioners	
		Estimate	95% Confidence limits	Estimate	95% Confidence limits	Estimate	95% Confidence limits	Estimate	95% Confidence limits
Before Housing Costs									
Relative low income	percentage below 60% of contemporary median income	15.9	(15.3 , 16.6)	18.8	(17.5 , 19.9)	14.8	(14.1 , 15.5)	16.3	(15.2 , 17.5)
Percentage point change and significance¹	2013/14-2014/15	0.6	(-0.2 , 1.6)	1.6	(-0.2 , 3.3)	0.5	(-0.4 , 1.5)	0.1	(-1.4 , 1.7)
Absolute low income	percentage below 60% of 2010/11 median income held constant in real terms	14.8	(14.1 , 15.4)	17.3	(16.1 , 18.4)	13.9	(13.2 , 14.6)	14.8	(13.9 , 15.6)
Percentage point change and significance¹	2013/14-2014/15	-0.9	(-1.8 , 0.0)	-0.4	(-2.1 , 1.1)	-0.7	(-1.7 , 0.3)	-1.9	(-3.2 , -0.6) *
After Housing Costs									
Relative low income	percentage below 60% of contemporary median income	21.3	(20.6 , 21.9)	29.0	(27.6 , 30.2)	20.9	(20.2 , 21.6)	13.7	(12.8 , 15.0)
Percentage point change and significance¹	2013/14-2014/15	0.2	(-0.8 , 1.2)	1.2	(-0.7 , 3.2)	-0.1	(-1.2 , 1.0)	0.0	(-1.3 , 1.6)
Absolute low income	percentage below 60% of 2010/11 median income held constant in real terms	20.3	(19.6 , 21.0)	27.5	(26.2 , 28.8)	20.1	(19.3 , 20.9)	12.8	(11.9 , 13.7)
Percentage point change and significance¹	2013/14-2014/15	-1.3	(-2.4 , -0.2) *	-1.1	(-2.9 , 0.8)	-1.3	(-2.6 , -0.1)	-1.6	(-2.8 , -0.4) *

Notes:

1.Small changes in estimates from year to year, particularly at the bottom of the income distribution, may not be significant in view of data uncertainties. Estimates that are statistically significant are shown with an asterisk. This means that the changes are unlikely to have occurred as a result of chance.

Table A.5c: Confidence intervals for the number of individuals in relative/absolute low income, UK

		Number of individuals (millions)							
		All individuals		Children		Working-age adults		Pensioners	
		Estimate	95% Confidence limits	Estimate	95% Confidence limits	Estimate	95% Confidence limits	Estimate	95% Confidence limits
Before Housing Costs									
Relative low income	number below 60% of contemporary median income	10.10	(9.68 , 10.52)	2.53	(2.34 , 2.70)	5.61	(5.36 , 5.88)	1.95	(1.82 , 2.10)
Numerical change and significance¹	2013/14-2014/15	0.49	(-0.07 , 1.12)	0.24	(-0.02 , 0.48)	0.23	(-0.14 , 0.62)	0.02	(-0.15 , 0.22)
Absolute low income	number below 60% of 2010/11 median income held constant in real terms	9.38	(8.96 , 9.82)	2.33	(2.16 , 2.50)	5.28	(4.99 , 5.56)	1.77	(1.66 , 1.88)
Numerical change and significance¹	2013/14-2014/15	-0.47	(-1.06 , 0.12)	-0.03	(-0.28 , 0.20)	-0.22	(-0.63 , 0.19)	-0.22	(-0.38 , -0.05)
After Housing Costs									
Relative low income	number below 60% of contemporary median income	13.50	(13.06 , 13.94)	3.91	(3.69 , 4.09)	7.94	(7.63 , 8.24)	1.65	(1.53 , 1.81)
Numerical change and significance¹	2013/14-2014/15	0.25	(-0.35 , 0.91)	0.20	(-0.08 , 0.47)	0.05	(-0.40 , 0.46)	0.01	(-0.15 , 0.21)
Absolute low income	number below 60% of 2010/11 median income held constant in real terms	12.87	(12.39 , 13.38)	3.71	(3.50 , 3.92)	7.63	(7.29 , 7.98)	1.53	(1.43 , 1.65)
Numerical change and significance¹	2013/14-2014/15	-0.72	(-1.44 , 0.00)	-0.11	(-0.40 , 0.18)	-0.42	(-0.91 , 0.08)	-0.18	(-0.33 , -0.04)

Notes:

1. Small changes in estimates from year to year, particularly at the bottom of the income distribution, may not be significant in view of data uncertainties. Estimates that are statistically significant are shown with an asterisk. This means that the changes are unlikely to have occurred as a result of chance.

Table A.5d: Confidence intervals for the percentage of individuals in families where someone is disabled² in relative/absolute low income, UK

Percentage of individuals		All individuals		Children		Working-age adults		Pensioners	
		Estimate	95% Confidence limits	Estimate	95% Confidence limits	Estimate	95% Confidence limits	Estimate	95% Confidence limits
Before Housing Costs									
Relative low income	percentage below 60% of contemporary median income	19.7	(18.6 , 20.8)	22.9	(20.4 , 25.3)	21.0	(19.5 , 22.3)	15.9	(14.5 , 17.3)
Percentage point change and significance¹	2013/14-2014/15	0.1	(-1.5 , 1.7)	0.3	(-3.2 , 3.6)	-0.6	(-2.6 , 1.5)	0.8	(-1.2 , 2.6)
Absolute low income	percentage below 60% of 2010/11 median income held constant in real terms	18.3	(17.3 , 19.4)	21.5	(19.2 , 23.9)	19.9	(18.5 , 21.2)	14.2	(12.9 , 15.4)
Percentage point change and significance¹	2013/14-2014/15	-1.9	(-3.6 , -0.3) *	-1.7	(-5.2 , 1.6)	-2.3	(-4.4 , -0.2) *	-1.6	(-3.3 , 0.1)
After Housing Costs									
Relative low income	percentage below 60% of contemporary median income	25.7	(24.4 , 26.9)	35.6	(32.8 , 38.3)	29.8	(28.1 , 31.2)	13.6	(12.3 , 15.3)
Percentage point change and significance¹	2013/14-2014/15	-1.1	(-2.9 , 0.7)	-1.1	(-5.0 , 3.1)	-1.8	(-4.2 , 0.4)	-0.3	(-2.2 , 1.7)
Absolute low income	percentage below 60% of 2010/11 median income held constant in real terms	24.4	(23.2 , 25.6)	33.5	(30.8 , 36.1)	28.7	(27.2 , 30.2)	12.7	(11.6 , 13.9)
Percentage point change and significance¹	2013/14-2014/15	-2.9	(-4.7 , -1.1) *	-3.8	(-7.7 , 0.2)	-3.3	(-5.7 , -1.0) *	-1.9	(-3.7 , -0.3) *

Notes:

1. Small changes in estimates from year to year, particularly at the bottom of the income distribution, may not be significant in view of data uncertainties. Estimates that are statistically significant are shown with an asterisk.

2. From 2012/13, disabled people are identified as those who report any physical or mental health condition(s) or illness(es) that last or are expected to last 12 months or more, and which limit their ability to carry out day-to-day activities a little, or a lot. Caution should be exercised when making comparisons with earlier reports.

Table A.5e: Confidence intervals for the number of individuals in families where someone is disabled² in relative/absolute low income, UK

		Number of individuals (millions)							
		All individuals		Children		Working-age adults		Pensioners	
		Estimate	95% Confidence limits	Estimate	95% Confidence limits	Estimate	95% Confidence limits	Estimate	95% Confidence limits
Before Housing Costs									
Relative low income	number below 60% of contemporary median income	4.06	(3.80 , 4.30)	0.92	(0.80 , 1.02)	2.07	(1.92 , 2.23)	1.07	(0.96 , 1.17)
Numerical change and significance¹	2013/14-2014/15	0.35	(0.01 , 0.67) *	0.09	(-0.06 , 0.24)	0.13	(-0.09 , 0.33)	0.13	(-0.01 , 0.26)
Absolute low income	number below 60% of 2010/11 median income held constant in real terms	3.78	(3.54 , 4.02)	0.86	(0.75 , 0.97)	1.96	(1.81 , 2.11)	0.95	(0.86 , 1.04)
Numerical change and significance¹	2013/14-2014/15	-0.05	(-0.40 , 0.29)	0.01	(-0.15 , 0.16)	-0.04	(-0.26 , 0.16)	-0.03	(-0.15 , 0.09)
After Housing Costs									
Relative low income	number below 60% of contemporary median income	5.29	(4.99 , 5.56)	1.42	(1.29 , 1.55)	2.95	(2.77 , 3.11)	0.91	(0.82 , 1.03)
Numerical change and significance¹	2013/14-2014/15	0.22	(-0.17 , 0.62)	0.08	(-0.10 , 0.26)	0.09	(-0.16 , 0.31)	0.05	(-0.08 , 0.19)
Absolute low income	number below 60% of 2010/11 median income held constant in real terms	5.04	(4.75 , 5.31)	1.34	(1.21 , 1.46)	2.84	(2.66 , 3.01)	0.85	(0.77 , 0.94)
Numerical change and significance¹	2013/14-2014/15	-0.14	(-0.54 , 0.24)	-0.03	(-0.22 , 0.15)	-0.06	(-0.30 , 0.18)	-0.06	(-0.17 , 0.06)

Notes:

1. Small changes in estimates from year to year, particularly at the bottom of the income distribution, may not be significant in view of data uncertainties. Estimates that are statistically significant are shown with an asterisk.

2. From 2012/13, disabled people are identified as those who report any physical or mental health condition(s) or illness(es) that last or are expected to last 12 months or more, and which limit their ability to carry out day-to-day activities a little, or a lot. Caution should be exercised when making comparisons with earlier reports.

