

Households Below Average Income Northern Ireland (HBAI)

Quality and Methodology Information Report

2017/18



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What do you think?

We are continually trying to improve our report for our users. We welcome any feedback you may have regarding this, and we are also interested in how you use these data in your work. Please contact us at asu@communities-ni.gov.uk.

More information is available on the DfC website at:

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

Contents

Introduction	3
Low Income Poverty Indicators	4
Income Inequality	5
Inflation	5
Units and Presentation	6
Strengths and Weaknesses	6
Reliability of Results	7
Equivalisation and Housing Costs	12
Data Sources Used	14
Uses of HBAI data	18
Comparison with EU Low-Income statistics	19
Acknowledgements	20
Appendix 1: Glossary and Definitions of Concepts and Technical Terms	21
Appendix 2: Equivalence, Deprivation and Grossing Tables	32
Appendix 3: Major Benefit and Tax reforms	34

1.0 Introduction

The Northern Ireland Households Below Average Income (HBAI) report provides information on potential living standards, as determined by disposable income and is the primary source for measuring poverty, household income and inequality in Northern Ireland. It is an annual National Statistics publication and follows on from the Northern Ireland Poverty Bulletin, providing more detailed analysis of the data.

The main source of data used in the report is the Family Resources Survey (FRS) Northern Ireland. The FRS collects information on the incomes and circumstances of around 2,000 private households in Northern Ireland. It has been running in Great Britain since October 1992, but was introduced to Northern Ireland for the first time in 2002-03. 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.

Although the NI HBAI is specifically of interest to the Department for Communities (DfC), other government departments and outside researchers and analysts from a wide range of disciplines in both the public and private sectors, will benefit from the availability of such a data source.

The databases from which the NI HBAI and the NI Family Resources Survey are created will be deposited online at the UK Data Service.

This report provides detail on key quality and methodological issues relating to the HBAI data.

The following infographic explains some of the technical terms used in the HBAI publication:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/432843/hbai-low-income-how-is-it-measured-infographic.pdf

2.0 National Statistics

In April 2012, The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Services Act 2007 and signifying compliance with the [Code of Practice for Official Statistics](#). National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value and comply with all aspects of the Code. The Office for Statistics Regulation has undertaken this assessment to consider whether the statistics meet the required standard.

It is DfC's responsibility to maintain compliance with the standards expected of National Statistics. If DfC becomes concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Office for Statistics Regulation. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

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

More information on National Statistics can be found here: <https://www.statisticsauthority.gov.uk/about-the-authority/uk-statistical-system/types-of-official-statistics/>

3.0 Low-Income Poverty Indicators

The Northern Ireland Executive uses two main indicators of low-income poverty, as reflected in the Northern Ireland Child Poverty Strategy. These indicators are *relative* and *absolute* poverty. Please see the link below for the NI Executive Child Poverty Strategy:

<https://www.executiveoffice-ni.gov.uk/publications/child-poverty-strategy>

3.1 Relative Poverty

An individual is considered to be in relative poverty if they are living in a household with an equivalised income below 60% of UK median¹ income in the year in question. This is a measure of whether those in the lowest income households are keeping pace with the growth of incomes in the population as a whole. While the HBAI report concentrates on those living in households below the 60% median income, some of the online tables on the HBAI NI web pages provide information on those with household incomes below 50% and 70% of the UK median

3.2 Absolute Poverty

An individual is considered to be in absolute poverty if they are living in a household with an equivalised income below 60% of the (inflation adjusted) UK median income in 2010/11. This is a measure of whether those in the lowest income households are seeing their incomes rise in real terms.

3.2 Combined Low Income and Material Deprivation:

A further poverty measure related to child poverty and included in the Northern Ireland Child Poverty Strategy is the Combined Low Income and Material Deprivation measure. A child is defined as poor on this measure if the household in which they live has an income below 70% of the contemporary UK median household income and has a material deprivation score of 25 or more reflected by enforced lack of adult and child goods and services.

3.3 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:

¹ The median is an average; this divides the population of individuals, when ranked by household income, into two equal-sized groups. It is used in preference to the 'Mean' as it is not affected by extreme values.

- 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 and then adjusts it each year with inflation as measured by variants of the Consumer Price Index. 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.

4.0 Income Inequality

Income inequality as measured by the Gini Coefficient shows how incomes are distributed across all individuals and provides an indication of how high and low-income individuals compare to one another. It ranges from zero (when everybody has identical incomes) to 100% (when all income goes to one person)

Income inequality as measured by the 90/10 ratio is the average (median) income of the top 20% divided by the average income of the bottom 20%. The higher the number is the greater the gap between high-income and low-income individuals.

5.0 Inflation

Inflation is the speed at which the prices of goods and services bought by households rise or fall. HBAI analysis uses inflation rates to adjust income over time, so the particular inflation rate we use is important and any change to this can have an impact. Up to 2013-14, HBAI used variants of the Retail Prices Index (RPI) to adjust incomes for inflation.

However, in 2013, the National Statistician announced that, in accordance with the Statistics and Registration Service Act 2007, the RPI and its derivatives had been assessed against the Code of Practice for Official Statistics and found not to meet the required standard for designation as National Statistics. Following a subsequent review and consultation the National Statistician, wrote to the Chair of the UKSA, expressing the view that future usage is strongly discouraged in favour of superior alternatives.

The only UK inflation index currently designated as a National Statistic is the Consumer Price Index (CPI). 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 ONS to allow for both 'Before Housing Costs' (BHC) and 'After Housing Costs' (AHC) analysis. More details on the rationale for moving to CPI is available here -

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

6.0 Units and Presentation

Throughout the HBAI report, tables refer to numbers or proportions of individuals as determined by their lifecycle group (e.g. children, working-age, and pensioners) and household income. The definition of a household used in the HBAI is 'a single person or group of people living at the same address as their only or main residence, who either share one meal a day together or share the living accommodation, i.e. a living room'. So, 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 bedsits at the same address would not.

A household will consist of one or more benefit units, which in turn consists of a number of individuals (adults and children). 'Benefit unit' is defined as 'a single adult or couple living as married and any dependent children'. A dependent child is aged under 16 or an unmarried 16 to 19-year-old in full time non-advanced education. So, for example, a man and wife living with their young children and an elderly parent would be one household but two benefit units.

Information on the variables and data items tabulated in the report is provided in the Glossary. It should be stressed that definitions of items such as income and its components might differ from those used in other publications.

6.1 Symbols, Rounding and Accuracy

The following symbols are used throughout the publication:

- 0 nil (none recorded in the sample)
- Negligible (less than 0.5 per cent)
- .. Sample size is too small to allow sufficient analysis of the category.

Within the report and accompanying tables, figures for Northern Ireland have been rounded to the nearest 1000 or percentage point. Individual figures have been rounded independently. Therefore, the sum of component items will not necessarily equal the totals shown. Care must be taken when referring to figures based on an individual cell.

Owing to the volatility of single year results, due to small sample sizes, Local Government District tables are presented as a three-year average (see the geographical disaggregation section under the heading of 'Reliability of results' for further detail); and for all individuals only.

7.0 Strengths and Weaknesses

All figures presented in the NI HBAI report are based on estimates taken from a sample survey (FRS) and, as such, there are a number of points to note when interpreting the results.

7.1 Specific strengths

The focus of the FRS is capturing information on incomes and it continues to exist as the primary method of assessing income in Northern Ireland, as such it 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, educational level and disability. This is therefore a very comprehensive data source allowing for a range of different analyses.

The Northern Ireland FRS is an annual survey which began in 2002-03 and so allows for comparisons over time.

7.2 Specific weaknesses

Benefit under-reporting – the Methodology notes for the FRS NI details that there is known under-reporting of benefit receipt. This is partly due to the FRS only interviewing members of private households and not those residing in institutions. Also not all respondents refer to documents when stating which benefits they are in receipt of and may therefore respond in error. See Section 8.12 for more details.

Income under-reporting – the survey relies upon the respondents to recall very detailed financial information across a comprehensive range of income sources. Some of these are hard for respondents to recall.

Self-employed – there are particular problems with the collection and quality of data relating to the incomes of 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. See Section 8.11 for more details.

Investment – the FRS also records a shortfall in investment income when compared with National Accounts totals. 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. See Section 8.13 for more details.

8.0 Reliability of results

8.1 Sampling error

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 NI, 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.

8.2 Confidence Intervals

The confidence intervals in the HBAI analysis are calculated using a technique known as bootstrapping. Bootstrapping takes into account the design of the sample. It replicates the sampling design of the survey and re-samples with replacements multiple times from the original dataset. By using sampling with replacement the new samples will contain randomly duplicated records whilst omitting some original records in each new sample.

Exploring how an estimate changes when we draw many survey samples for the same time period instead of just one sample, allows us to generate confidence intervals around the estimate.

For a detailed bootstrapping methodology, see UK Quality and Methodology Information report.

<https://www.gov.uk/government/collections/households-below-average-income-hbai--2>

8.3 Non-response error

The lower the response rate to a survey, the greater the likelihood that those who responded are significantly unlike those who did not, and so the greater the risk of systematic bias in the survey results. This bias introduces non-response error into the estimates. In an attempt to correct for differential non-response, estimates are weighted using population totals.

8.4 Survey coverage

The FRS covers private households in Northern Ireland. Therefore individuals in communal establishments such as barracks, prisons, university halls of residence, nursing or retirement homes, or those who are homeless will not be included. This means, for example, that figures relating to the most elderly individuals may not be representative of the Northern Ireland population, as many of those at this age will have moved into homes where they can receive more frequent help. Results from the 2011 Census in Northern Ireland shows that approximately 1.2% of the Northern Ireland usual resident population live in a communal establishment census results for people and households are available here:

http://www.ninis2.nisra.gov.uk/public/Theme.aspx?themeNumber=136&themeName=Census_2011

A further adjustment specifically for HBAI 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.

8.5 Survey design

The FRS Northern Ireland uses a systematic stratified sample design based on the POINTER address database for household selection which is stratified into three regions: Belfast, East of Northern Ireland and West of Northern Ireland. As the number of households within each region is not uniform, the number of households selected from each region is proportional to the number of addresses in each region.

8.6 Sample size

For the FRS in NI some 3,600 addresses are selected meaning each address in the POINTER database has approximately a 1-in-210 chance of being selected for the survey. Although the FRS Northern Ireland has completed surveys for around 2,000 households each year, areas of analysis where there are small sample sizes may require several years of data to be combined e.g. Local Government District data.

8.7 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. Further detail is available under the 'Survey of Personal Incomes' heading.

8.8 Incomes as a guide to living standards

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. For HBAI tables, this will have a relatively greater effect on results where incomes are compared against low thresholds of median income. The user should note the greater uncertainty for presented compositional and percentage analysis using the 50 per cent of median threshold.

8.9 Back payments

It is possible that at the time of an FRS interview, a person will not be in receipt of a benefit, but will be subsequently awarded the benefit which is backdated to the time of interview. In this situation, HBAI methodology does not adjust for the 'retrospectively' increased income. This is relevant for benefits where there are significant backlogs in processing claims or where it is possible for families to submit backdated claims. The size of this effect will be larger in years with a relatively large volume of back payments, such as in 2003-04, when Child and Working Tax Credits and Pension Credit were introduced.

8.10 Geographical disaggregation

The sample size of the NI FRS allows for some analysis at Local Government District (LGD) level within Northern Ireland. In general, estimates of changes over time at LGD level are unlikely to yield a reliable picture of how different districts have experienced different changes. To mitigate this to some extent results for LGD are presented as three-year averages. However, **caution** should still be applied when interpreting results due to the small sample sizes related to LGD geographies.

8.11 Self-employed

All analyses in this volume include the self-employed. However, it should be noted that 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. Previous analysis of the level of material deprivation reported by those self-employed and reporting incomes amongst the lowest 20 per cent of incomes suggests that the link between lower incomes and higher levels of material deprivation is much weaker than it is for the population as a whole.

There are few differences in the overall picture of proportions in low-income households when analysis is performed either including or excluding the self-employed. However, this is an area that will be kept under review.

8.12 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.

8.13 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.

8.14 Comparisons with National Accounts

Comparisons between growth in Real Household Disposable Income and real growth in HBAI mean BHC unequivalised income has shown that 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.

8.15 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.

8.16 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. Research² 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.

² 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.

8.17 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 (with both the maintenance and tuition parts of the loan included), 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.

8.18 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.

8.19 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. DWP publish a suite of online HBAI ODS tables showing analysis excluding Disability Living Allowance and Attendance Allowance from the calculation of income.

8.20 Validation

The tables in the HBAI publication show the results after validation and imputation for item non-response (e.g. when a respondent did not answer a question within the survey), and after adjustment for unit non-response (i.e. when a household did not participate in the survey) using weights that control for a number of factors. However, validation can only be effective where it is possible to correct the response, for example by referring to interviewers' notes. Weighting can only correct for known non-response biases and results are sensitive to the values of control variables used to generate the weights.

Although work has been undertaken to try to ensure that the figures that have been collected are valid and that adjustments are made for non-response, survey bias may remain. For example, comparisons of benefit recipients in the survey with administrative data still show a mismatch following weighting. This may be partly due to misreporting of certain data items and sampling error, but also may reflect non-response biases not controlled for in the weighting factors. Efforts are continually being made to minimise these problems, for example through greater reliance on documentary evidence at the interview and maintaining response rates.

9.0 *Equivalisation and Housing Costs*

9.1 *Equivalisation*

The income measures used in HBAI take into account variations in the size and composition of the households in which individuals live. This reflects the common sense notion that, in order to enjoy a comparable standard of living. For example, a household with three adults will need a higher income than a single person living alone. The process of adjusting income in this way is known as equivalisation and is needed in order to make sensible income comparisons between households.

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.

Consider a single person, a couple with no children, and a couple with two children aged fourteen and ten, all having unadjusted weekly household incomes of £200 (Before Housing Costs). The process of equivalisation, as conducted in HBAI, gives an equivalised income of £299 to the single person, £200 to the couple with no children, but only £131 to the couple with children.

In line with international best practice, the main equivalence scales now used in HBAI are the modified OECD scales, which take the values shown in **Table A2.1**. 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 both the modified OECD and McClements versions two separate scales are used, one for income Before Housing Costs (BHC) and one for income After Housing Costs (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.

9.2 Housing Costs

HBAI presents analysis of disposable income on two bases: Before Housing Costs (BHC) and After Housing Costs (AHC).

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.

Income BHC includes the following main components:

- usual net earnings from employment;
- profit or loss from self-employment (losses are treated as a negative income);
- all Social Security benefits (including Housing Benefit, Social Fund, maternity, funeral and community care grants but excluding Social Fund loans) 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, top up loans and parental contributions);
- the cash value of certain forms of income in kind (free school meals, Healthy Start vouchers and free school milk, and free TV licence for those aged 75 and over).

Income BHC excludes (is net of) the following items:

- income tax payments;
- National Insurance contributions;
- domestic rates / council tax (including water and sewerage charges for Northern Ireland);
- 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.

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.

Income after Housing Costs **AHC** is derived by deducting a measure of housing costs from the above income measure. These housing costs include the following:

- rent (including housing benefit);
- water rates, community water charges and council water charges (These charges apply only to GB)
- mortgage interest payments;
- structural insurance premiums (for owner occupiers);
- ground rent and service charges.

Further housing costs points to note:

- In Northern Ireland water charges are included in domestic rates and there are no direct water charges. Therefore, it is already taken into account in the BHC measure. As a result the AHC measure is recommended for drawing comparisons between Northern Ireland and the rest of the UK.
- 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.

10.0 Data Sources Used

Analyses from the FRS were first presented in HBAI UK in the 1979 to 1993-94 volume and in the HBAI NI report for 2002-03. Prior to that, the Family Expenditure Survey (FES) was used exclusively at the UK level. The FRS UK was launched in October 1992 to meet the information requirements of the then Department of Social Security.

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, with approximately 2,000 of these surveys taking place in Northern Ireland. 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.

10.1 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. Together, these questions form the best discriminator between those pensioner families that are deprived and those that are not.

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 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.

A prevalence weighted approach is used 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 it cannot be afforded. 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 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 pensioner is considered to be in material deprivation if they live in a family that has a final score of 20 or more.

10.2 Grossing

'Grossing up' is the term usually given to the process of applying factors to sample data so that they yield estimates which represent the overall population. The simplest grossing system would be a single factor, the uniform grossing factor, which could be calculated as 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 factors, which attempt to correct for differential non-response (i.e. that certain groups are less likely to respond than others) at the same time as they scale up sample estimates.

FRS grossing uses population estimates as control totals for sample categories which exhibit non-response bias. The population estimates are based on control variables, with values derived from external data sources. The system used to calculate grossing factors for HBAI mirrors that of FRS grossing with two differences.

- The first difference is that the sample of households is smaller for HBAI purposes because households with spouses living away from home are excluded.
- The second difference is that separate control totals are introduced for 'very rich' households so that the top end of the income distribution is more accurately reflected, which is particularly important for estimates of mean income (see *Survey of Personal Incomes* section below).

The control variables and their sources are listed in **Tables A2.2 and A2.3**. The HBAI grossing system controls for variables at both household level and benefit unit level. Some adjustments have been made to the original control total data sources so that definitions match those in the FRS, for example an adjustment has been made to the demographic data to exclude people not resident in private households.

In order to reconcile control variables at different levels and estimate their joint population, CALMAR software provided by the French National Statistics Institute (INSEE), has been used. This software works by iterating towards an optimal solution that, given the particular control totals, minimises the range (maximum to minimum values) of the grossing factors chosen. This should maximise the potential precision of the grossed estimates. CALMAR is used for producing both Great Britain (GB) and Northern Ireland (NI) grossing factors.

Careful consideration was given to the combination of control totals and the way in which age ranges and so on, were grouped together. The aim was to strike a balance so that the grossing system will provide, where possible, accurate estimates in different dimensions without significantly increasing variances.

A grossing review was carried in 2014 to all HBAI and FRS datasets, incorporating the 2011 census information that became available. As a result this has impacted the HBAI back series data and therefore some back series figures may not match what was published prior to June 2014. For more information please see the Statistical Note available at:

<https://www.communities-ni.gov.uk/publications/family-resources-survey-grossing-review-2014>

10.3 Northern Ireland Specific Grossing

Apart from the comparable grossing of Northern Ireland data for males, females, children, lone parents, and households as indicated in **Table A2.2** 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.
- In addition, Northern Ireland housing data are based largely on small sample surveys. Since it is not desirable to introduce the variance of one survey into another by using it to compute control totals, tenure type has not been used as a control variable.

10.4 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 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.

10.5 Central Postcode Directory

The Northern Ireland Central Postcode Directory supplied by the Northern Ireland Statistics & Research Agency (NISRA) allows us to get urban and rural markers assigned to the FRS data by NISRA's Central Survey Unit. Respondents are assigned to categories in the following order:

- Those who live in the Belfast City area;
- Those who live in Other Urban areas; and then
- Those who live in Rural areas.

Full details of NISRA's settlement classifications are available here:

<http://www.nisra.gov.uk/geography/UrbanRural.htm>

11.0 Uses of the Households Below Average Income Data

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

- Monitor progress of the Northern Ireland Child Poverty Strategy.
<https://www.communities-ni.gov.uk/articles/poverty#toc-2>
- Monitor progress against indicators in the Northern Ireland Executive's Draft Programme for Government 2016-21.
<https://www.executiveoffice-ni.gov.uk/topics/making-government-work/programme-government-and-budget>

The HBAI data is used as the data source for the Department for Communities' Northern Ireland Poverty Bulletin

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

The Department of Work and Pensions produce a Households Below Average Income report for the whole of the UK, available at:

<https://www.gov.uk/government/collections/households-below-average-income-hbai--2>

The dataset is available to other government departments on request, subject to access control arrangements. Researchers and analysts outside government can also access the data through the UK Data Service.

<http://ukdataservice.ac.uk/>

The FRS and HBAI datasets are used as the data source for the Pensioners' Income Series - Northern Ireland.

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

The HBAI is used as a data source in measuring well being in Northern Ireland.
www.nisra.gov.uk/publications/default.asp14.htm

The HBAI UK dataset is also used to produce Scottish poverty and income inequality statistics:
<http://www.gov.scot/Topics/Statistics/Browse/Social-Welfare/IncomePoverty>

The HBAI is used as a data source on 'The Poverty Site':
<http://www.poverty.org.uk/index.htm>

12.0 Comparison with EU low-income statistics

The UK's 2017 cross European comparable low-income statistics are now being derived from the Survey of Living Conditions, a different survey source than the HBAI, meaning that there will be some differences due to the different data source. In addition to this, the figures will differ for a number of further 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.
- 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 nonadvanced 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: The European low-income estimates are usually 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:
 - o Pension contributions are not deducted from income in the European comparable methodology.
 - o The European definition of income includes the value of noncash 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/maintables>

13.0 Acknowledgements

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Appendix 1 Glossary and Definitions of Concepts and Technical Terms

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 unit

This is a single adult or a couple living as married, together with any dependent children. An adult living in the same household as his or her parents, for example, is a separate benefit unit from the parents. From January 2006 same-sex partners (Civil partners and cohabittees) are also included in the same benefit unit.

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; and
- In full time non-advanced education or in unwaged government training.

Contemporary median income

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

Couple

Two adults, of same or different sex, who are married (spouse), or from January 2006 in a civil partnership (partner), or are assumed to be living together as such (cohabitee).

Confidence interval

A confidence interval is a measure of *sampling error*. It 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.

Deciles / decile points

Deciles (or decile points) are income values which divide the population, when ranked by income, into ten equal sized groups. The lowest decile is the same as the 10th **percentile**. Decile is also often used as a shorthand term for **decile group**; for example “the bottom decile” is used to describe the bottom 10% of the income distribution.

Decile groups

These are groups of the population defined by the **decile points**. The lowest decile group is the 10% of the population with the lowest incomes. The second decile group contains individuals with incomes above the lowest decile point but below the second decile point. The two lowest decile groups together make up the lowest **quintile group**.

Decile group medians / quintile group medians

These are median income values for a particular **decile** or **quintile group**, i.e. the income value which divides the group into two equal sized parts. The median of the lowest decile is thus the same as the 5th **percentile**; the median of the lowest quintile is the same as the 10th **percentile**.

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 is 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 from the following list:

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);

- Couples 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.

Equivalisation

The process by which household income is adjusted, to account for variation in household size and composition as a proxy for material living standards. Household incomes are divided by household equivalence factors which vary according to the number of adults and the number and age of dependants in the household.

Equivalised Income

Income which has undergone **equivalisation**.

Equivalence scales

Scales used in **equivalisation** (see Table A2.1)

Families / family units

The terms “families” and “family units” are used interchangeably with benefit units. See definition above.

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 differences 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.

Head of benefit unit

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

Household

A single person or group of people living at the same address as their only or main residence, who, either share one meal a day together or share the living accommodation (i.e. living room). A household will consist of one or more benefit units.

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

Income distribution

This is 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.

Local Government District (LGD)

In 2014-15 Northern Ireland was divided into 11 Local Government Districts. The Local Government Districts do not carry out the same range of functions as those in the rest of the United Kingdom, e.g. they have no responsibility for education, for road building or for housing. Their functions do include waste and recycling services, leisure and community services, building control and local economic and cultural development.

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. This includes income from employment, self-employment, investments, occupational pensions, benefits and other sources, and is measured net of taxes and National Insurance. For Before Housing Costs, housing costs are not deducted from income, while for After Housing Costs they are.

Material Deprivation (Children)

The original material deprivation suite of questions was introduced from 2004/05, to investigate deprivation amongst families with children. Questions were asked on whether families were able to afford to buy essential items or services, or to participate in leisure or social activities. The questions are kept under review and in 2010-11 information on four additional material deprivation goods and services was collected and from 2011-12 four questions from the original suite were removed.

Low income and material deprivation is a combined measure for children using a prevalence weighted score from the material deprivation questions in combination with a 70 per cent of median relative low-income threshold, Before Housing Costs. A child is considered to be in low income and material deprivation if they live in a family that has a score of 25 or more and a household income below this threshold.

Material Deprivation (Pensioners)

The material deprivation suite of questions for pensioners was introduced from 2008-09, to investigate deprivation amongst pensioners. Questions were asked on whether families were able to afford to buy essential items or services, or to participate in leisure or social activities. Material deprivation for pensioners uses a prevalence weighted score from the material deprivation questions. A pensioner is considered to be materially deprived if they live in a family that has a score of 20 or more. This is wider measure than that used for children. It is therefore inappropriate to combine pensioner material deprivation with low income.

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.

Part time work

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

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.

Mean

Mean equivalised household income of individuals is the "**average**", found by adding up equivalised household incomes for each individual in a population and dividing the result by the number of people. For example if one household with a total weekly equivalised income of £1,000 contains three persons and a second household with income of £2,000 contains four persons, mean weekly household income would be £1,571 as computed as $((3 \times £1,000) + (4 \times £2,000)) / 7$.

Median

The median household income divides the population of individuals, when ranked by equivalised household income, into two equal-sized groups. The median of the whole population is the same as the 50th **percentile**. The term is also used for the midpoint of subsets of the income distribution; see **decile / quintile group medians**.

Percentiles

These are income values which divide the population, when ranked by income, into 100 equal-sized groups. 10% of the population have incomes below the 10th percentile, 20% have incomes below the 20th percentile and so on.

Quantiles

A quantile group is any sub-group of the population extracted from the population when ranked by income. **Quintile groups** and **decile groups** are examples of quantile groups – or quantiles for short.

Quintiles

Quintiles are income values which divide the population, when ranked by income, into five equal-sized groups. The lowest quintile is the same as the 20th **percentile**. Quintile is also often used as a shorthand term for **quintile group**; for example “the bottom quintile” to describe the bottom 20% of the income distribution.

Quintile groups

These are groups of the population defined by the **quintiles**. The lowest quintile group is the 20% of the population with the lowest incomes. The second quintile group is the population with incomes above the lowest quintile but below the second quintile.

Religion

Religion is based on all adult respondents. Protestants are classified from 'Presbyterian', 'Church of Ireland', 'Methodist', 'Baptist', 'Free Presbyterian', 'Brethren', 'Protestant - not specified'. Other includes 'Other Christian' and other non-Christian beliefs e.g. Jewish, Hindu, Muslim etc. Mixed is classified as being at least one Protestant respondent and at least one Catholic respondent.

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-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.

Sampling error

The uncertainty in the estimates 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**. For more information see Appendix 2.

State support

Tax credits or Social Security benefits included in this category are:

Armed Forces Compensation Scheme (formerly War Disablement Pension or Widow's pension);

Attendance Allowance;

Carer's Allowance (formerly Invalid Care Allowance);

Child Benefit;

Child Tax Credit and Working Tax Credit, including disabled elements;

Disability Living Allowance (both care and mobility components);

Employment and Support Allowance (Contributions- and Income-based);

Extended Payment of Housing Benefit;

Guardian's Allowance;

Health in Pregnancy Grant;

Housing Benefit;

In Work Credit;

Incapacity Benefit;

Income Support;

Industrial Injuries Disablement Benefit;

Job Grant (formerly Lone parent benefit run-on);

Jobseeker's Allowance (both contribution and income-based);

Maternity Allowance;

Northern Ireland Disability Rate Rebate;

Northern Ireland Lone Pensioner Rate Rebate;

Northern Ireland Rate Relief for full-time students, trainees, under 18s and those leaving care;

Northern Ireland Rate Rebate through energy efficient homes;

Northern Ireland Other Rate Rebate;

Other State Benefits;

Pension Credit;

Personal Independence Payment;

Retirement Pension;
Return to Work Credit (only available in a few remaining pilot areas)
Severe Disablement Allowance (ceased to be available to new claimants as of 6th April 2001);
Social Fund Grant Community Care Grant;
Social Fund Grant for Funeral or Maternity Expenses;
Statutory Adoption Pay;
Statutory Maternity Pay;
Statutory Paternity Pay;
Statutory Sick Pay;
Universal Credit;
Widow's Payment / Bereavement Payment;
Widow's Pension / Bereavement Allowance;
Widowed Mother's Allowance / Widowed Parents Allowance;
Winter Fuel Payments;

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 for change 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.

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 uprated for inflation as appropriate. For example, the absolute threshold '60 per cent of the 2010/11 median income' in 2010/11 was the same as the relative threshold, but the corresponding values in subsequent years have been uprated by CPI inflation.

Working-age

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

Appendix 2 Equivalence, Deprivation and Grossing Tables

Table A2.1: Comparison of modified OECD and McClements equivalence scales

Equivalence scales				
	OECD rescaled to couple without children=1 ²	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 ³	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 14 yrs ¹	0.20	0.20	0.20	0.20
Children aged 14 yrs and over ¹	0.33	0.42	0.32	0.34

Notes

1. The McClements scale varies by age within these groups: appropriate average values are shown in the table
2. Presented here to two decimal places
3. 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.

Table A2.2: NI grossing factor control totals

Control totals for Northern Ireland	Groupings	Original Source
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 Communities in Northern Ireland
Households		Household estimates. Department for Communities in Northern Ireland
Lone Parents		Lone parent estimates. Department for Communities in Northern Ireland
Households containing 'Very Rich' people	Pensioners, Non-pensioners	HMRC Survey of personal Incomes (SPI)

Table A2.3: GB grossing factor control totals

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 Midlands, East of England, London, South East, South West, Wales, Scotland. 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+	Mid-Year population estimates. Office for National Statistics	ONS total population figures adjusted for private household estimates using data supplied by ONS directly to DWP. 16-19 year old dependents are split using data supplied by HMRC directly by DWP.
Benefit Units and Children	Region: England, Wales and Scotland	Families in receipt of child benefit. HM Revenue and Customs.	
Lone Parents	Sex: Females, Males	Lone parent estimates. Labour Force Survey	Adjusted for FRS year (April-March)
Households by region	Region: North East, North West, Yorkshire and Humber, East Midlands, East of England, London, South East, South West, Wales, Scotland	HMRC Survey of personal Incomes (SPI)	Adjusted for FRS year (April-March)
Households by tenure type	Tenure (Social renters, Private renters, Owner occupied)	Dwellings by Tenure type Department for Communities and Local Government.	Household Control Totals are calculated using dwellings data published by DC LG, Welsh Government, Scottish Government adjusted for FRS survey year (April-March)
Households by council tax band	Council tax bands (NVS and A,BC,D,E to H)	Dwellings by Council Tax band published by Valuations Office Agency. Dwellings by Council Tax band. Published by 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)	

Appendix 3 Major UK wide Benefit and Tax reforms

This Appendix summarises some of the major benefit and tax reforms which came into effect in 2017/18. It is not intended to represent an exhaustive list.

Up-rating³

From 2016/17 to 2019/20, certain working-age benefits were frozen at 2015/16 cash values. Benefits excluded from the freeze are:

- Disability Living Allowance
- Personal Independence Payment
- Employment and Support Allowance Support Group component
- UC Limited Capability for Work and Work-Related Activity Element
- Premiums paid to disabled people receiving working-age benefits, where they, their partner and/or their children are disabled
- Carer benefits
- Pension benefits
- Maternity Allowance
- Statutory Sick Pay
- Statutory Maternity Pay
- Statutory Paternity Pay
- Statutory Shared Parental Pay
- Statutory Adoption Pay In April 2017:
- The Basic State Pension was up-rated by 2.5 per cent in line with the triple lock.
- The new State Pension was up-rated by 2.5 per cent in line with the triple lock.
- In 2017/18, the Standard Minimum Guarantee in Pension Credit was increased by earnings resulting in an increase for a single person from £155.60 a week to £159.35, a cash increase of £3.75.
- Working-age benefits such as Jobseeker's Allowance, Income Support, Universal Credit and Employment Support Allowance (work-related activity group) were frozen at 2015/16 cash values.
- Child benefit, along with some elements of tax credits, was frozen at 2015/16 cash values. Family and childcare elements of tax credit were frozen in cash terms.

³ See <https://www.gov.uk/government/publications/proposed-benefit-and-pension-rates2017-to-2018> for further details.

Benefit cap

The benefit cap limits the amount of state benefits a non-working household can receive and is applied through Housing Benefit and Universal Credit. Several exemptions apply. From November 2016 the cap was reduced and tiered. In addition, new exemptions were introduced for claimants receiving Carer's Allowance, the carer's element within Universal Credit or Guardian's Allowance. Child Tax Credit For children born from April 2017, a further child element was no longer payable where two or more children were already included in the CTC award (though some exemptions apply). Also, children born from April 2017, would not automatically determine eligibility for the family element.

Household Rates

In Northern Ireland, the Regional Rate for the 2017/18 tax year increased by 1.6 per cent on 2016/17 levels.

Employment and Support Allowance

The work-related activity component was abolished for new claimants of ESA from 3 April 2017.

Housing Benefit

From April 2017, most Local Housing Allowance (LHA) rates in the UK were frozen at 2015/16 cash values.

Income Tax

In 2017/18, the income tax personal allowance increased by £500 to £11,500. The threshold for the 40 per cent rate of income tax increased from £43,000 to £45,000.

National Living Wage

In April 2017, the National Living Wage was increased to £7.50 per hour for employees aged 25 years and over. Employees under the age of 25 continue to get the National Minimum Wage, which increased from April 2017 to £7.05 for those aged 21 to 24 years and £5.60 for those aged 18 to 20 years.

Pension Participation

Automatic enrolment (AE) has been implemented using a staged approach, starting with the largest employers (250+ employees) in October 2012. Staging entered its final period in 2017/18, with employers who have come into existence since October 2012 beginning their AE duties. As of March 2018, over one million employers had automatically enrolled over 9 million eligible workers into an automatic enrolment pension scheme.

Personal Independence Payment

The roll-out of the final phase of PIP was brought forward from October to July 2015. In March 2016, there were just over 750,000 PIP claims in payment. This rose to just over 1.3 million PIP claims in payment by March 2017 and about 1.8 million by March 2018. State Pension The new single-tier State Pension launched on 6 April 2016 for people who reach State Pension age on or after April 2016, to replace the basic State Pension and second State Pension. This consolidated the basic State Pension and additional State Pension into one single amount. The amount paid to individuals may be less, depending on recipients' National Insurance contributions. In April 2017, the basic State Pension increased by 2.5 per cent from £119.30 to £122.30 per week. The new State Pension increased by 2.5 per cent from £155.60 to £159.55 per week.

State Pension Age

Since 6 April 2010, the State Pension age for women has been gradually increasing. Under the Pensions Act 2011, women's State Pension age increased to 65 between April 2016 and November 2018. FRS data contained in this report were collected throughout the financial year 2017/18, during which the State Pension age for women increased from 63 years and 9 months to 64 years and 6 months. The changes do not affect the State Pension age for men, which was 65 years throughout the survey year. From December 2018 the State Pension age for both men and women started increasing, reaching 66 by October 2020.

Universal Credit

During the 2017/18 survey year, the rollout of UC for all claimant groups – including those in work, and with childcare responsibilities – continued to take place on an area-by-area basis. From April 2017, the Universal Credit “taper” was cut from 65 per cent to 63 per cent, meaning workers were able to keep 37 pence in every pound rather than 35 pence (of amounts in excess of the Work Allowance). The limited capability for work element was abolished for new claimants. From 1 April 2017, the earnings threshold that applies to the benefit cap exemption for Universal Credit claimants was changed. The change means that for example, after April 2017 a working Universal Credit claimant aged over 25 years in receipt of the Housing element (who is not otherwise exempt from the benefit cap) would have to earn £520 instead of £430 per month to be exempt from the cap. During the survey year 2017-18, Universal Credit was progressively rolling out across the UK (this was completed in December 2018, with all new claims in the country now being to Universal Credit). This means that, during the 2017/18 survey year, some areas of the country were yet to have Universal Credit rolled out to them in full, with claims continuing to be accepted for the benefits it now replaces. Given the low number of respondents who stated that they were claimants of this benefit, information on Universal Credit recipients has not been presented in this year's HBAI publication.