Appendix 2

Quality and Methodology

Chapter 1 summarises issues to be born in mind when using the HBAI data and statistics. This Appendix provides more detail on key quality and methodology issues.

Sampling error

As the HBAI is derived from the sample provided by the Family Resources Survey (FRS) all the figures are subject to sampling error. Sampling error is the uncertainty in estimates that arises because the results are derived from a random sample of the household population. No two randomly chosen samples would give exactly the same picture of the income distribution and the particular sample chosen in any year could yield results that, by chance, are either high or low. However the likely size of such variation can be identified, at least approximately, by taking account of the size and design of the samples.

Sampling error is thus quite distinct from any systematic errors or biases that may be present in the survey and analysis processes, such as a tendency for respondents to under-report a particular item of income. An estimate of sampling error is a measure of only one particular type of uncertainty in the estimate, and therefore cannot be taken as a guarantee that the figure is 'accurate' within certain limits.

Different figures in HBAI are subject to widely differing levels of sampling error. However, two general observations may usefully be made: firstly, other things being equal, the smaller the sample (or part of sample) from which the estimate is derived, the larger the sampling error; and secondly, estimates of changes, as shown in the **Trend** and **Time Series Tables**, are invariably subject to greater sampling error than point-in-time estimates.

Sampling errors for income growth and numbers below income thresholds

The figures in HBAI most susceptible to sampling error are the estimates of the median incomes of particular groups, and especially the estimates of the real changes in these incomes.

- The 95 per cent confidence interval of those individuals below 60 per cent of 2011/12 median income on a Before Housing Costs basis is of the order of around +/- 410,000 individuals or 0.7 percentage points.
- Figures for the number of individuals below 50, 60 and 70 per cent of contemporary median income are shown in Table A2.5, with figures for the number of individuals below 60 per cent of 2010/11 median income held constant in real terms shown in Table A2.6. These are expressed in the form of estimated 95 per cent confidence intervals. The confidence interval would contain the true value on average 19 out of 20 times, if sampling error were the sole source of errors.

For changes in the different groups below 60 per cent of median income between two points in time to be statistically significant, they need to be around the following order of magnitude:

- For the whole population, around 0.8 percentage points or 440-570,000 individuals.
- For children, around 1.5 percentage points or 180-220,000 children.
- For working-age adults, around 0.9 percentage points, or 270-380,000 working-age adults.
- For pensioners, around 1.3 percentage points or around 130-140,000 pensioners.

Sampling errors for compositional figures

The compositional figures in the time series tables for all individuals, for example the proportion of a particular income group who are pensioners, tend to have relatively small sampling errors; in general the uncertainty in these figures from the choice of equivalence scale will be much greater than the sampling error. Bunching of a population type close to a particular income threshold could magnify the relevant sampling error, since a small difference in that threshold would cause a relatively large difference in the percentage of the group below the threshold. However, the uncertainty from equivalisation would also be magnified, and the latter would remain the more important source of uncertainty.

Methodology

Population

The analyses in this publication 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**.

For some tables, estimates for NI have been imputed for the years 1998/99 to 2001/02. This allows for changes since 1998/99 to be measured at the UK level. For further details, see **Appendix 4 of the HBAI 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.

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

'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.

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

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 income distribution is more accurately reflected, which is particularly important for estimates of mean income (see section below).

DWP statisticians, in consultation with other departments and external experts, reviewed the previous grossing methodology for the FRS, and the latest changes were taken on board for the 2003/04 edition of HBAI, with estimates for historic years revised accordingly. The current publication continues to use the regime adopted for 2003/04.

The 2003/04 publication included more detail of the factors underlying any changes to low-income estimates resulting from the adoption of these new methods.

The control variables and their sources are listed in Table A2.4. The HBAI grossing system controls for variables at both household level and benefit unit level. A grossed count of the number of owner occupying households would thus tie in with the Department for Communities and Local Government (CLG) figure, whilst the grossed number of men aged 80 and over, or men living in the North East, would be consistent with Office for National Statistics estimates. 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, software (CALMAR) 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 GB and NI grossing factors.

Careful consideration was given to the combination of control totals and the way in which age ranges, Council Tax bands 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.

Grossing data for Northern Ireland

Apart from the comparable grossing of Northern Ireland data for males, females, children, lone parents, and households as indicated in Table A2.4, there are some differences between the methods used to gross the Northern Ireland sample as compared with the GB 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.

Household incomes as an indicator of individuals' living standards

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.

Equivalisation using the modified OECD scales

Equivalisation is a process that makes adjustments to incomes, so that the standard of living of households with different compositions can be compared.

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 (BHC). 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 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.

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, we changed the SPI adjustment methodology 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 should prevent an increasing fraction of the dataset being adjusted. The adjustment fraction was set at the same level as the fraction adjusted using in 2008/09. We have also moved 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. This means for 2011/12, non-pensioners in Great Britain are subject to the SPI adjustment if their gross income exceeded £237,136 per year (£131,732 per year in Northern Ireland) and pensioners in Great Britain are subject to the SPI adjustment if their gross income exceeded £68,601 per year (£59,731 per year in Northern Ireland).

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. The 2011/12 estimates were projections based on 2010/11 data.

Ethnic categories

The ethnicity questions used in the Family Resources Survey 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. This publication therefore adopts 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 one year; 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.

Low income and material deprivation for children including severe poverty

A suite of questions designed to capture the material deprivation experienced by families with children has been included in the Family Resources Survey 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. Due to the break in the series it is not possible to calculate results for ethnicity or geographical breakdowns for this publication as these require three consecutive years' data.

See **Appendix 3 of the 2010/11 HBAI publicatio**n for a discussion of the implications of changing the items.

These questions are used as an additional way of measuring living standards for children and their families, as outlined in the conclusions of the 2003 Measuring Child Poverty Consultation.

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.

The child poverty strategy announced the introduction of a new severe poverty measure based on severe low income and material deprivation. A child is considered to be in severe poverty 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 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. The full list of questions, prevalence weights for the latest survey year and final scores are shown in Table A2.2.

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 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. 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. In 2011/12, 13 per cent of pensioners aged 65 or over were in households with equivalised incomes below 60 per cent of the median, After Housing Costs. This compares to 8 per cent of pensioners aged 65 or over in material deprivation. Just 2 per cent of pensioners were in material deprivation and in low income, based on a threshold of 60 per cent of median, After Housing Costs.

The full list of questions, prevalence weights for the latest survey year and final scores are shown in Table A2.3. A technical note giving a full explanation of the pensioner material deprivation measure is available.

Comparison with EU low-income statistics

The latest available European low-income statistics were produced by the Office for National Statistics (ONS) using the General Lifestyle Survey as part of the EU Survey of Income and Living Conditions (EU SILC). The methodology differs from that used in HBAI in the following ways. The statistics:

- Are derived from a different survey. We use the DWP-run FRS for our HBAI publication, while these Eurostat figures use the ONS-run General Lifestyle Survey;
- Are on different timescales: HBAI data are financial year, EU SILC is calendar year;
- Use different definitions of income. Pension contributions are not deducted from income in the EU SILC methodology. A small number of income sources are excluded (income from a pension as a member of a Trade Union or friendly society, regular income from an insurance company or equity release, or a trust or covenant), as are the value of free TV licences;

- Include the value of some non cash employee income (mainly company cars) as employee income, which will raise the average income of people in work. This may have an upward pressure on relative poverty rates compared with HBAI;
- Are based on incomes before housing costs (BHC). While this is consistent with the most commonly used measure for working-age people 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;
- Relate to the population aged 65 and over. HBAI presents some series for just the those aged 65 or over for international comparability, but most figures include women aged from State Pension age to 64;
- For children relate to those under 18 – HBAI figures are based on individuals 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; are living with parents; and are in full-time non-advanced education or in unwaged government training.

From the 2012 statistics UK EU EILC figures will be derived from the FRS.

British Household Panel Survey

Estimates of persistence of low incomes derived in **Chapter 7** are based on data from the British Household Panel Survey (BHPS), a longitudinal dataset developed at the University of Essex's Institute for Social and Economic Research, with core funding from the UK Economic and Social Research Council. The first wave was designed as a nationally representative sample of the population of Great Britain living in private households in 1991 and the sample have been re-interviewed every year since then. Each survey is based on a target sample of approximately 5,000 households.

Like the FRS, BHPS does not include people in residential institutions, or the homeless. Interviewing started in September 1991 for the first wave and the September of each subsequent year. In the text wave one is referred to as 1991, wave two as 1992 and so on.

The measure of income used here is the sum, across all household members, of income from employment and self-employment, investments and savings, private and occupational pensions, Social Security benefits, Child and Working Tax Credits, and miscellaneous income, less income tax and National Insurance contributions. The components refer to receipts and payments made in the month prior to the interview or the most recent relevant period. Income here, unlike the main HBAI estimates, does not deduct local taxation (including Council Tax). This is something that has to be borne in mind given the variation in Council Tax rates between local councils and the reduction that operates for single householders.

In the BHPS, some self-employment incomes and income from second jobs are reported gross rather than net. Income tax and National Insurance contributions have been imputed for these cases to ensure consistency.

Estimates are equivalised using the McClements scale. Estimates are presented on a BHC basis and AHC basis.

More information on the survey and methods used is available on the ISER web-site at https://www.iser.essex.ac.uk/survey/bhps.

Whilst some analysis is based on the full 18 years of data (i.e. individuals present in each of the 18 waves), analysis of different 'rolling' four-year periods is presented as a variation on this. The period 1991 to 1994 uses individuals present in all of the first four waves. Other periods use individuals present in each wave up to and including the end of that four-year period, except that children born to permanent panel members must be present in each wave from birth to the end of the four-year period.

The same individuals are re-interviewed in successive waves. Account is also taken of the inevitable changes of location that some interviewees experience. The survey follows members of the original household if they move to a new household, which ensures that the household/family history is not lost, and that there is no significant fall-off in interview numbers.

Estimates have been weighted using the longitudinal weights which are constructed by the University of Essex. Although the weights attempt to correct for biases arising from sample attrition that are related to factors observed within the data, such as non-response, unequal selection and accommodation type, it is possible that some biases are related to factors which are uncontrolled.

The BHPS has been subsumed into the larger Understanding Society survey from the start of 2009. A technical note is available setting out details of the move to using Understanding Society for persistent low-income statistics.

Table A2.1: 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.

Appendix 2

Table A2.2: Material deprivation scores used for children in 2011/12[1]

Material deprivation questions	Weights	Final Scores
For children		
Outdoor space or facilities nearby to play safely	0.910	5.81
Enough bedrooms for every child of 10 or over of a different sex to have their own bedroom	0.903	5.76
Celebrations on special occasions such as birthdays, Christmas or other religious festivals	0.949	6.06
Leisure equipment such as sports equipment or a bicycle	0.859	5.48
A family holiday away from home for at least one week a year	0.583	3.72
A hobby or leisure activity	0.711	4.54
Friends around for tea or a snack once a fortnight	0.666	4.25
Go on school trips	0.878	5.61
Toddler group/nursery/playgroup at least once a week	0.651	4.15
Attends organised activity outside school each week	0.644	4.11
Fresh fruit and vegetables eaten by children every day	0.887	5.66
Warm winter coat for each child	0.960	6.13
For adults		
Enough money to keep home in a decent state of decoration	0.743	4.74
A holiday away from home for at least one week a year, whilst not staying with relatives at their home	0.518	3.31
Household contents insurance	0.714	4.56
Regular savings of £10 a month or more for rainy days or retirement	0.539	3.44
Replace any worn out furniture	0.521	3.32
Replace or repair major electrical goods such as a refrigerator or a washing machine, when broken	0.643	4.11
A small amount of money to spend each week on yourself, not on your family	0.602	3.84
In winter, able to keep accommodation warm enough	0.880	5.62
Keep up with bills and regular debt payments	0.907	5.79
Sum of all weights	**15.669**	**100**

Notes:

1. Material deprivation weights are calculated based on responses in the survey year in question.
2. This includes the new items and services first asked about in the 2010/11 FRS.

Table A2.3: Material deprivation scores used for pensioners in 2011/12[1]

Material deprivation questions	Weights	Final Scores
For pensioners aged 65 and over		
At least one filling meal a day	0.989	7.27
Go out socially at least once a month	0.763	5.61
See friends or family at least once a month	0.951	6.99
Take a holiday away from home	0.569	4.18
Able to replace cooker if it broke down	0.894	6.57
Home kept in a good state of repair	0.969	7.12
Heating, electrics, plumbing and drains working	0.983	7.22
Have a damp-free home	0.950	6.98
Home kept adequately warm	0.963	7.07
Able to pay regular bills	0.969	7.12
Have a telephone to use, whenever needed	0.971	7.13
Have access to a car or taxi, whenever needed	0.898	6.60
Have hair done or cut regularly	0.890	6.54
Have a warm waterproof coat	0.981	7.21
Able to pay an unexpected expense of £200	0.872	6.40
Sum of all weights	**13.610**	**100**

Notes:

1. Material deprivation weights are calculated based on responses in the survey year in question.

Appendix 2

Table A2.4: Grossing factor control totals

Control variables used to generate grossing factors for private households		
Variable	**Groupings**	**Source of data**
Males by: Region/age/sex (England); and Country/age/sex (Scotland, Wales, and Northern Ireland)	For each region/country: males in the following age groups; 0-9, 10-19* dependents, 0-19 dependents (NI only), 16-24* non-dependents, 25-29, 30-34, 35-39, 40-44, 45-49, 50-59, 60-64, 65-74, 75-79, 80 plus	Office for National Statistics (ONS), Northern Ireland Statistics and Research Agency (NISRA)
Females by: Region/age/sex (England); and Country/age/sex (Scotland, Wales, and Northern Ireland)	For each region/country: females in the following age groups; 0-9, 10-19* dependents, 0-19 dependents (NI only), 16-24* non-dependents, 25-29, 30-34, 35-39, 40-44, 45-49, 50-59, 60-69, 70-74, 75-79, 80 plus	ONS, NISRA
*16-19 year old dependents	Dependents aged 16-19 in Scotland, England and Wales	DWP estimates using data derived from ONS and HMRC
Lone parents (Great Britain)	Male, Female	Labour Force Survey estimates
Lone parents (Northern Ireland)	All	Northern Ireland Department for Social Development (DSD) estimates
Families (England and Wales, Scotland)	Number of families with children	HMRC estimates
Tenure type (England and Wales, Scotland)	Number of households of types: Local Authority renters, private renters, owner occupiers	Communities and Local Government (CLG)
Council Tax Band (England and Wales, Scotland)	Number of households of types: A, B, C-D, E-H (as well as band I for Wales)	Valuation Office, Scottish Government
Region	Number of households in London, Scotland, ”rest of England and Wales”, Northern Ireland	CLG estimates, DSD estimates
Households Containing ‘Very Rich’ People (Great Britain, and Northern Ireland)	Pensioners, Non-pensioners	HMRC Survey of Personal Incomes (SPI)

Note:
1. Some totals have to be adjusted to correspond to the FRS survey year.

Table A2.5: Ninety-five per cent confidence intervals for numbers and percentages of individuals below various thresholds of contemporary median income, United Kingdom[1]

Source: FRS 2011/12

	Percentage of individuals				Number of individuals			
	lower bound	HBAI estimate	upper bound	+/-	lower bound	HBAI estimate	upper bound	+/-
50 per cent of median income								
Before Housing Costs								
All individuals	8.4	9.0	9.5	0.5	5,190,000	5,530,000	5,860,000	330,000
Children	8.2	9.1	10.1	0.9	1,070,000	1,190,000	1,320,000	130,000
Working-age adults	8.6	9.2	9.9	0.6	3,170,000	3,400,000	3,640,000	240,000
Pensioners	7.2	8.0	8.7	0.8	840,000	930,000	1,020,000	90,000
After Housing Costs								
All individuals	13.7	14.3	14.9	0.6	8,460,000	8,820,000	9,190,000	370,000
Children	15.7	16.7	17.7	1.0	2,060,000	2,190,000	2,330,000	140,000
Working-age adults	14.9	15.6	16.3	0.7	5,480,000	5,740,000	6,000,000	260,000
Pensioners	7.0	7.6	8.3	0.6	820,000	890,000	970,000	80,000
60 per cent of median income								
Before Housing Costs								
All individuals	15.3	15.9	16.6	0.7	9,400,000	9,810,000	10,220,000	410,000
Children	16.3	17.4	18.6	1.2	2,130,000	2,280,000	2,440,000	160,000
Working-age adults	14.5	15.2	16.0	0.8	5,340,000	5,620,000	5,900,000	280,000
Pensioners	15.4	16.4	17.4	1.0	1,790,000	1,910,000	2,020,000	110,000
After Housing Costs								
All individuals	20.5	21.1	21.8	0.7	12,610,000	13,020,000	13,440,000	420,000
Children	25.9	27.0	28.2	1.2	3,390,000	3,540,000	3,700,000	160,000
Working-age adults	20.7	21.4	22.2	0.8	7,620,000	7,910,000	8,190,000	280,000
Pensioners	12.7	13.5	14.3	0.8	1,480,000	1,570,000	1,670,000	100,000
70 per cent of median income								
Before Housing Costs								
All individuals	23.9	24.7	25.4	0.7	14,750,000	15,200,000	15,650,000	450,000
Children	28.1	29.4	30.7	1.3	3,680,000	3,850,000	4,020,000	170,000
Working-age adults	21.4	22.2	23.0	0.8	7,870,000	8,170,000	8,470,000	300,000
Pensioners	26.2	27.3	28.4	1.1	3,050,000	3,180,000	3,310,000	130,000
After Housing Costs								
All individuals	28.0	28.7	29.4	0.7	17,260,000	17,680,000	18,090,000	410,000
Children	35.8	36.9	38.1	1.2	4,690,000	4,840,000	4,990,000	150,000
Working-age adults	26.7	27.5	28.3	0.8	9,850,000	10,130,000	10,420,000	290,000
Pensioners	22.3	23.2	24.1	0.9	2,600,000	2,700,000	2,810,000	110,000

Note:

1. Levels of change needed between two years for a significant movement based on 60 per cent of median are shown in the 'Sampling errors for income growth and numbers below income thresholds' section above.

Appendix 2

Table A2.6: Ninety-five per cent confidence intervals for numbers and percentages of individuals below 60 per cent of 2010/11 median income held constant in real terms, United Kingdom

Source: FRS 2011/12

	Percentage of individuals				Number of individuals			
	lower bound	HBAI estimate	upper bound	+/-	lower bound	HBAI estimate	upper bound	+/-
60 per cent of 2011/11 median income held in real terms								
Before Housing Costs								
All individuals	16.8	17.5	18.2	0.7	10,330,000	10,770,000	11,200,000	430,000
Children	18.3	19.5	20.8	1.2	2,400,000	2,560,000	2,730,000	170,000
Working-age adults	15.8	16.6	17.4	0.8	5,820,000	6,110,000	6,410,000	300,000
Pensioners	16.9	17.9	19.0	1.1	1,970,000	2,090,000	2,210,000	120,000
After Housing Costs								
All individuals	21.9	22.6	23.2	0.7	13,470,000	13,900,000	14,320,000	420,000
Children	27.9	29.2	30.4	1.2	3,660,000	3,820,000	3,980,000	160,000
Working-age adults	21.7	22.5	23.2	0.8	7,980,000	8,280,000	8,570,000	290,000
Pensioners	14.6	15.4	16.3	0.9	1,700,000	1,800,000	1,900,000	100,000