Income Dynamics: Income movements and the persistence of low incomes

Data for 2010-2017

● **Annual**

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United Kingdom

Official Experimental

The Income Dynamics (ID) report presents information on changes in income over time. The main findings relate to the persistence of relative low incomes. Individuals are described as being in persistent low income if they are in relative low income in at least three out of four consecutive annual interviews.

Before Housing Costs, Working-age adults had the lowest rate of persistent low income with Children and Pensioners higher. After Housing Costs, Working-age adults and Pensioners had the lowest rates of persistent low income with Children higher.

- This is broadly in line with single-year relative low income estimates reported in Households Below Average Income.
- Overall, nine per cent of individuals Before Housing Costs (BHC) and 13 per cent of individuals After Housing Costs (AHC) were in persistent low income in 2013-2017.
- 11 per cent of children BHC and 20 per cent of children AHC were in persistent low income in 2013-2017.
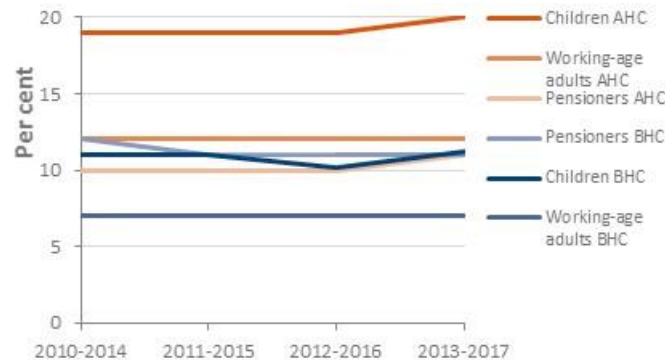
Persistence
Unchanged considering the population as a whole
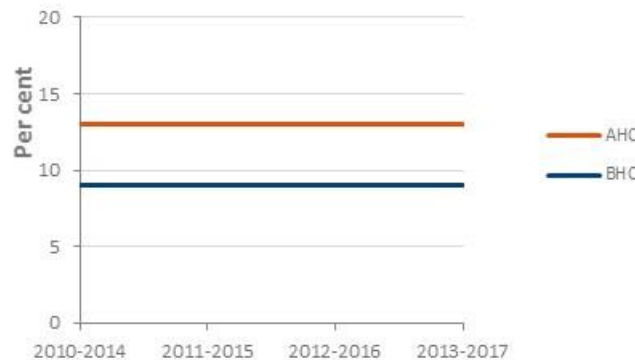
Similarly to single-year low income estimates, rates of persistent low income were generally higher AHC…
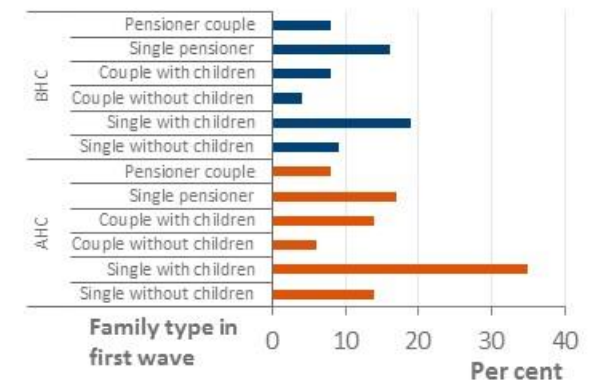
By population group
Varies by population group but each group's rate varies little over time

…but again like single year low income estimates, rates AHC were lower for pensioners (those above State Pension age).

By family type
Large variations by family type, 2013-2017

Single people with children had high rates of persistent low income, while couples without children had low rates.

At a glance

What you need to know

This is the third annual experimental statistics publication on income dynamics. It provides data on changes in household incomes in the UK including a measure of the extent to which people experience persistent low income. This meets DWP's statutory obligation to publish a measure of persistent low income for children under section 4 of the Welfare Reform and Work Act 2016.

Income measures

ID uses disposable household income adjusted for household size and composition as a proxy for living standards, estimated on both a before and after housing costs basis (BHC and AHC). A household is said to be in relative low income if their equivalised income is below 60 per cent of median income.

In line with international best practice, the income measures used in ID are subject to several statistical adjustments and, as such, are not always directly relatable to income amounts as they might be understood by individuals on a day-to-day basis. These adjustments are necessary, however, to allow us to make comparisons over time and across household compositions on a consistent basis. They are also similar to those used in Households Below Average Income (HBAI), which provides estimates of the prevalence of low incomes for a single year. See page 12 and the ID Background information and methodology report for further details.

Survey data

ID estimates are based on Understanding Society, a longitudinal survey which follows the sampled individuals over time. It has a two-year survey period ("wave") with individuals interviewed once a year e.g. an individual interviewed in 2016 for the 2016-2017 wave will be interviewed again in 2017 for the 2017-2018 wave. In 2016-2017 (Wave 8) it consisted of a longitudinal sample of over 35,000 individuals in the UK.

Use of survey data means that estimates in this report are subject to a margin of error which can affect how changes should be interpreted, especially in the short term. Figures are rounded to the nearest percentage point independently and as a result may not sum due to rounding. Classifications are based on the relevant characteristics **in the first period** e.g. where analysis covers 2013-2014 to 2016-2017, working-age adults are adults below State Pension age at their point of interview in the 2013-2014 wave.

Additional tables and data

A number of additional reference tables are also available online, breaking down the headline figures presented in this report for different characteristics and time periods. See https://www.gov.uk/government/statistics/income-dynamics-2016-to-2017.

Revisions to the statistics

DWP have worked with the University of Essex to improve the quality of the derivation of incomes, therefore these statistics have been subject to revisions beyond those that occur routinely in longitudinal data analysis. In particular, the derivation of housing costs has been improved to bring the AHC analysis into line with HBAI e.g. only mortgage interest payments (not capital repayments) are included when deriving owner-occupier housing costs.

Overall persistent low incomes

Persistent low income varies a lot by region / country and is highest in the social rented sector

UK, 2013-2017
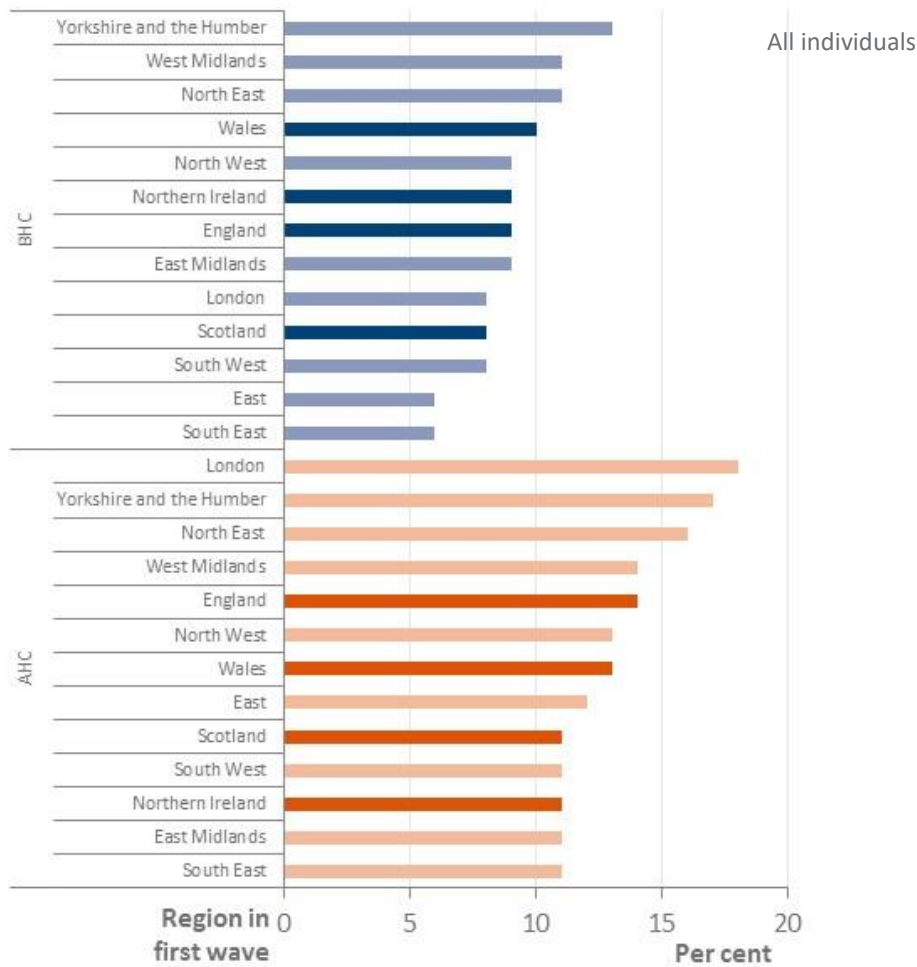
In 2013-2017, Yorkshire and the Humber had the highest percentage of the population in persistent low income BHC (13 per cent). The lowest rate of persistent low income was in the South East and East regions (six per cent).

The highest rate of persistent low income AHC was in London (18 per cent), reflecting high housing costs. The lowest rates were in Scotland, Northern Ireland and three English regions (11 per cent).

Regarding tenure, the highest rates of both BHC and AHC persistent low income were in the social rented sector, with the lowest rates both BHC and AHC for those buying with a mortgage.
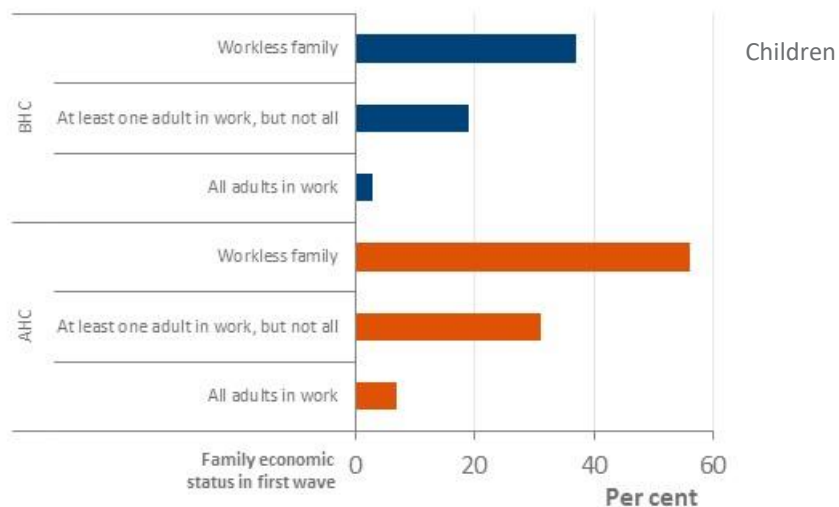
See **Tables 2.1p** to **2.12p** for full data.

Child persistent low incomes by economic status and family type

## Lower rates of persistent low income for children in working families and in couple families

UK, 2013-2017

Reporting on the percentage of children in the United Kingdom who live in households whose income has been less than 60 per cent of median equivalised net household income in at least three of the last four survey periods is required under section 4 of the Welfare Reform and Work Act 2016. Eleven per cent of children BHC and 20 per cent AHC were in households with persistent low income in 2013-2017 as shown on page 1.

Children were more likely to be in persistent low income where they were in a workless family. In 2013-2017, 37 per cent of children in workless families (in the first wave) were in persistent low income BHC. For AHC the figure was higher at 56 per cent.

Where all resident parents work, the rates were lower, at three per cent BHC and seven per cent AHC.
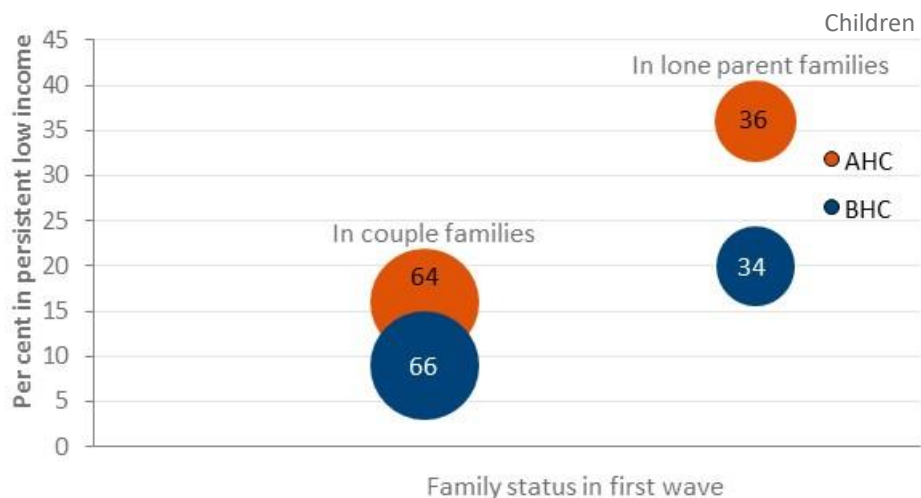

This chart shows the percentage of each group in persistent low income (y-axis), with the size of the bubble the share of those in low income in each group. For instance, looking at the lowest BHC bubble shows that nine per cent of children in couple families were in persistent low income BHC (shown by the level of the centre of the bubble), however of all children in persistent low income 66 per cent were in a couple family (shown by the size of the bubble).

The bubbles corresponding to children in lone parent families are higher than those for children in couple families, showing that a higher percentage of children in lone parent families were in persistent low income. However, the bubbles are bigger for children in couple families, illustrating that two thirds of children in persistent low income lived in couple families, despite their lower likelihood of being in persistent low income. This is because the population of children in couple families is larger.

Child persistent low incomes by region / country and size of family

Persistent low income for children also varies a lot by region / country and is highest in larger families

UK, 2013-2017
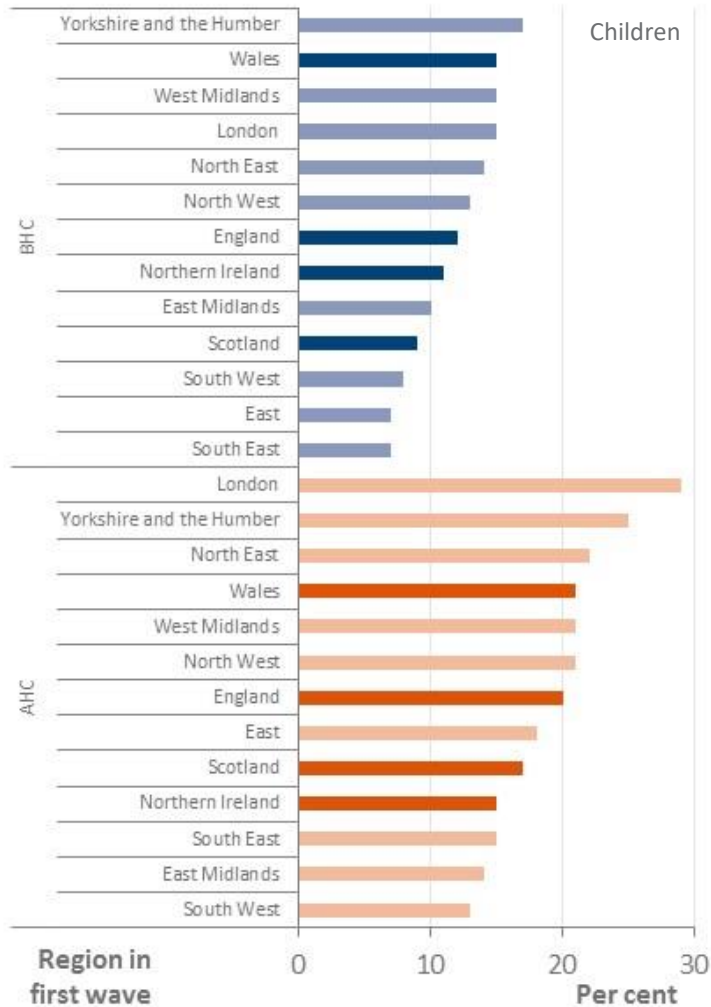
Children in Yorkshire and the Humber were most likely to be in households with a persistent low income BHC, while London then Yorkshire and the Humber had the highest rates AHC.

Children in the South East and East were least likely to be in households with a persistent low income BHC, while the South West had the lowest rate AHC.

Children in large families with three or more children were more likely to be in persistent low income than smaller families, both BHC and AHC. There was less variation in persistent low income rates for children in smaller families.

See **Tables 3.1p** to **3.12p** for full data.
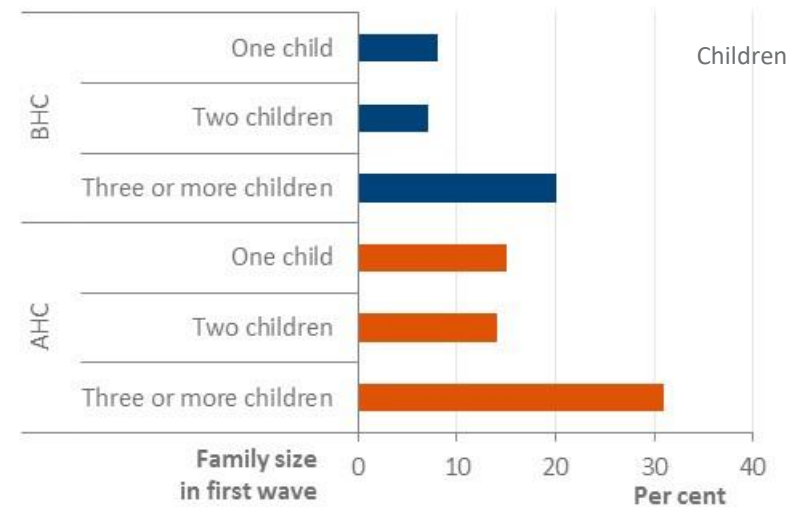
Working-age persistent low incomes by economic status, qualifications and ethnicity

Persistent low income higher in workless families, for adults with no qualifications and in non-white households

UK, 2013-2017
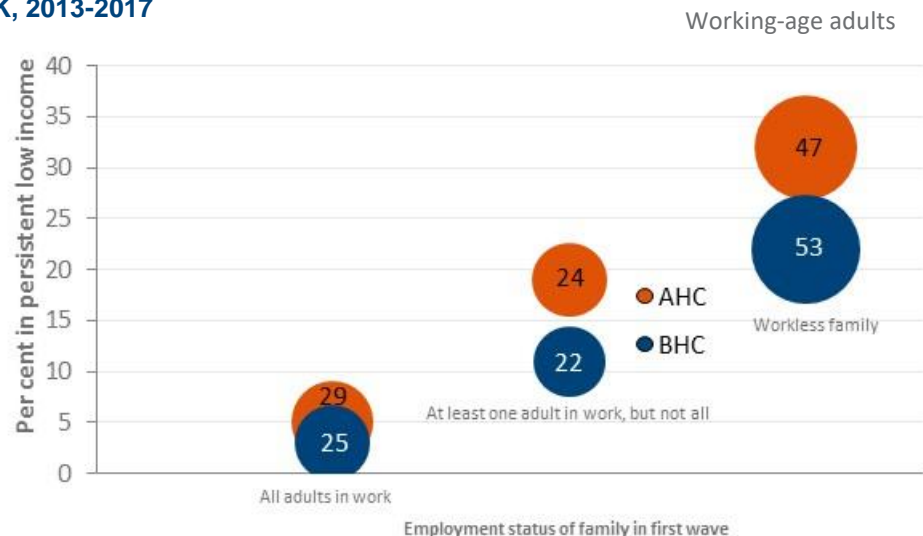
Working-age adults

Families with more household members in work had lower rates of persistent low income. A working-age adult in a workless family in the first wave was eight times (BHC) and around six times (AHC) more likely to be in persistent low income than a family where all members were in work. However, because of the larger overall population of working-age adults in families with someone in work, approximately half of working-age adults in persistent low income (both BHC and AHC) were in families where someone was working.

The higher the level of qualifications, the lower the rate of persistent low income, with persistent low income being more common amongst groups with lower formal qualifications, rising to 19 per cent BHC amongst those with no formal qualifications (30 per cent AHC).

Looking at the ethnicity of the household reference person, working-age adults in households headed by someone of white ethnicity had lower rates of persistent low incomes than working-age adults in households headed by someone of non-white ethnicity.

See **Tables 4.1p** to **4.12p** for full data.

Working-age adults

Working-age adults
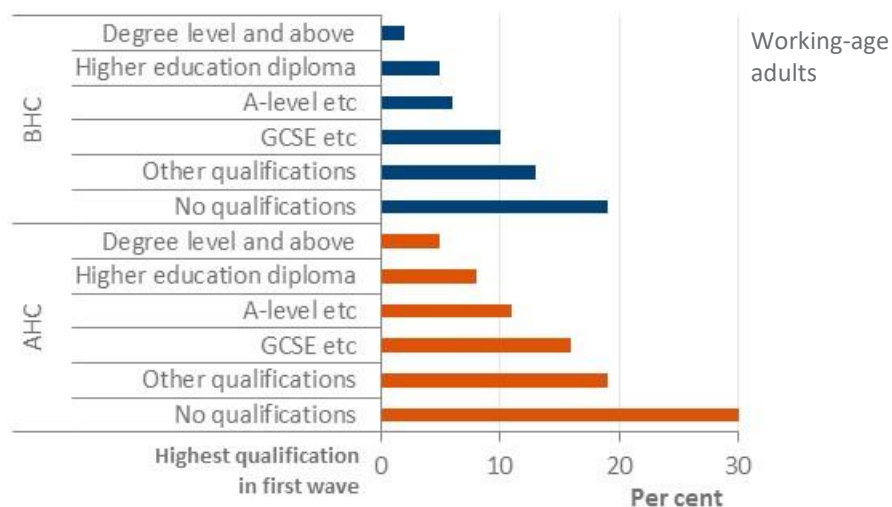
Pensioner persistent low incomes by region and tenure

Persistent low income for pensioners varies a lot by region / country and tenure

UK, 2013-2017

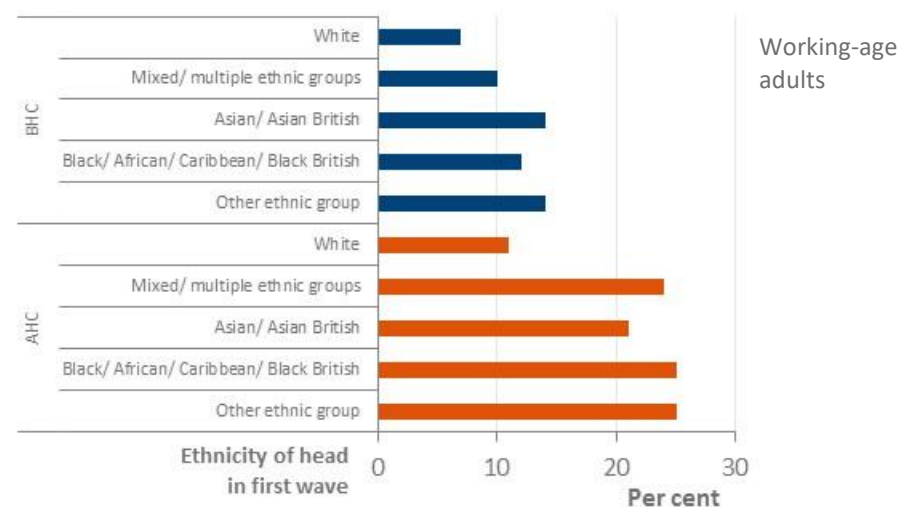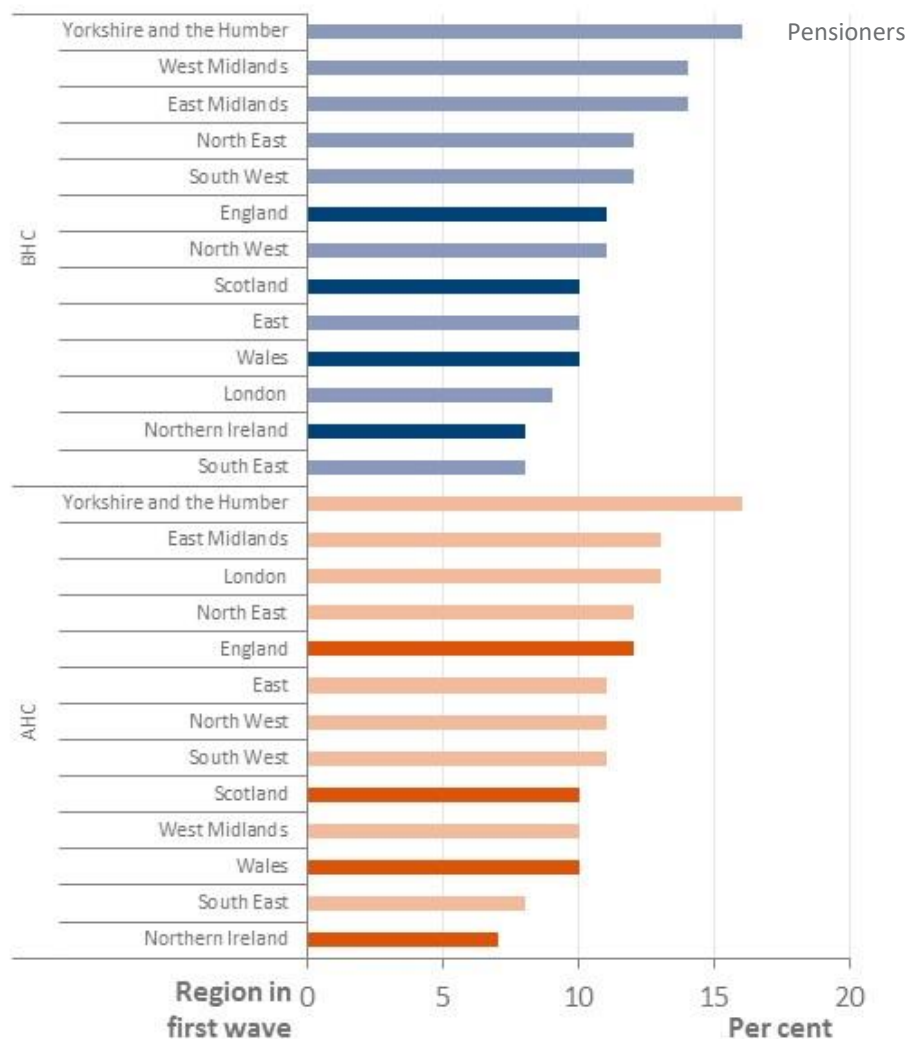Yorkshire and the Humber had the highest rate of pensioner persistent low income BHC. Northern Ireland and the South East had the lowest rates. Yorkshire and the Humber also had the highest rate AHC with Northern Ireland the lowest.

Pensioners are more likely to own their own home outright and have low housing costs (over 70 per cent of pensioners in Understanding Society owned outright in 2013-2017). This means that typically a pensioner's household income is reduced by a smaller amount than other households when housing costs are deducted. They are therefore less likely to be in persistent low income After Housing Costs (as shown by the middle chart on page 1).

Pensioners who own outright were more likely to be in persistent low income BHC (12 per cent) than social rented tenants (nine per cent), but less likely to be in persistent low income AHC because of low housing costs. Pensioners who rent privately had the highest rates of persistent low income both BHC (14 per cent) and AHC (37 per cent).
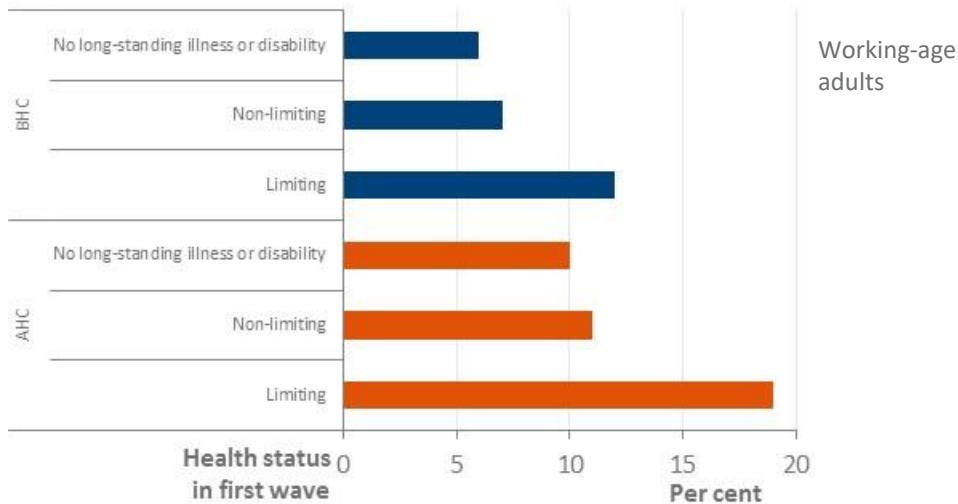
See **Tables 5.1p** to **5.12p** for full data.

Adults in persistent low income by health status and age

Persistent low income higher for working-age adults with long-standing limiting illness

UK, 2013-2017

On Understanding Society, questions on health status are only asked of adults. There is an initial question to determine whether a respondent has any long-standing physical or mental impairment, illness or disability which has lasted for a year or is likely to last a year. If a respondent answers yes to this, they are then asked if the health problems or disabilities mean that they have substantial difficulties with any of 12 areas of their life. If they answer yes in this respect, we consider the disability to be limiting. This is broadly in line with the Equality Act 2010 definition.

Having a long-standing illness or disability that limits your activities is associated with a higher likelihood of being in persistent low income for working-age adults.

In contrast with working-age adults, pensioners who report a limiting long-standing illness or disability have similar rates of persistent low income to those with no long-standing illness or disability. This may reflect the onset of age-related ill-health or disability after making provision for retirement during their working life. Fifty-five per cent of pensioners on Understanding Society report a limiting illness or disability compared to 28 per cent of working-age adults.

See **Tables 4.1p, 4.7p, 5.1p** and **5.7p** for full data.
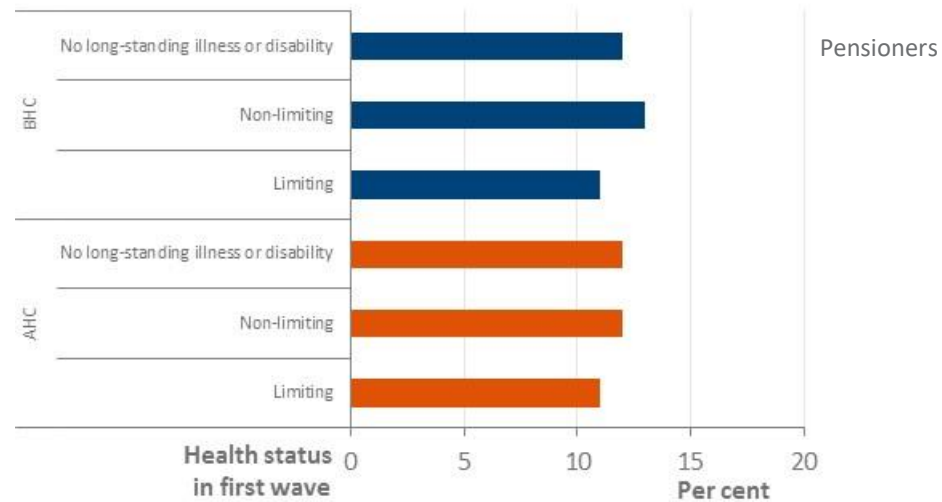
Movement between income quintiles over six years

Most movements between quintiles are short range

UK, 2010-2017

BHC table (blue)

	BHC Quintile (per cent)	2010-2011 position in income distribution				
		Q1 (lowest fifth)	Q2	Q3	Q4	Q5 (highest fifth)
2016-2017 position in income distribution	Q1 (lowest fifth)	45	27	15	8	5
	Q2	27	33	22	11	6
	Q3	15	23	29	22	10
	Q4	8	12	23	35	22
	Q5 (highest fifth)	4	4	10	24	57
	Total	100	100	100	100	100

Key: 50+ | 30-49 | 20-29 | 10-19 | 0-9

AHC table (orange)

	AHC Quintile (per cent)	2010-2011 position in income distribution				
		Q1 (lowest fifth)	Q2	Q3	Q4	Q5 (highest fifth)
2016-2017 position in income distribution	Q1 (lowest fifth)	46	27	14	7	5
	Q2	28	32	22	11	5
	Q3	14	23	31	23	10
	Q4	8	13	22	35	23
	Q5 (highest fifth)	4	5	11	24	56
	Total	100	100	100	100	100

Key: 50+ | 30-49 | 20-29 | 10-19 | 0-9

The information underlying these statistics allows us to follow individuals over time. This table shows where an individual was in the first wave (2010-2011) compared to where they were in the last wave (2016-2017) by quintile. Quintiles divide the population, when ranked by household income, into five equal sized groups. Quintile 1, for example, is the fifth of the population with the lowest household incomes.

The percentage of individuals in 2010-2011 who were in the same quintile in 2016-2017 is lowest in the middle of the distribution, at 29 per cent in quintile 3 (BHC), rising to 45 per cent in the lowest and 57 per cent in the top quintiles. Across all quintiles, at most, around a quarter of individuals in each quintile in 2010-2011 had moved up or down by more than one quintile. A similar picture is seen AHC. This shows that there are mostly short-range movements in income over this period.

See **Tables 6.1** to **6.4** for full data.

Where in the income distribution individuals spent the majority of their time

While most individuals move between quintiles to some extent, those in the top quintile were least likely to move to a different quintile

UK, 2010-2017

BHC Quintile (per cent)	Original 2010-2011 position in income distribution					
	Q1 (lowest fifth)	Q2	Q3	Q4	Q5 (highest fifth)	All Individuals
All years in the same quintile as 2010-2011	18	4	3	7	32	13
Majority of years in same quintile as 2010-2011	29	21	17	23	27	23
Majority of years above 2010-2011 quintile	41	26	23	13	.	20
Majority of years below 2010-2011 quintile	.	16	26	28	30	20
None of the above	12	33	31	29	11	23
Total	100	100	100	100	100	100

AHC Quintile (per cent)	Original 2010-2011 position in income distribution					
	Q1 (lowest fifth)	Q2	Q3	Q4	Q5 (highest fifth)	All Individuals
All years in the same quintile as 2010-2011	17	4	3	6	31	12
Majority of years in same quintile as 2010-2011	31	20	18	25	27	24
Majority of years above 2010-2011 quintile	39	26	22	14	.	20
Majority of years below 2010-2011 quintile	.	16	25	27	30	20
None of the above	13	33	31	29	12	24
Total	100	100	100	100	100	100

Key: . not applicable | 50+ | 30-49 | 20-29 | 10-19 | 0-9

Similar to the previous table, the information here allows us to see where in the income distribution individuals spent the majority of their time relative to the first wave (2010-2011) over the period 2010-2017.

Of all the quintiles, the top quintile had the largest percentage of individuals who spent all seven waves in the same quintile. This was true on both BHC and AHC bases.

Those in the middle of the income distribution (quintiles 2, 3 and 4) were least likely to stay in the same quintile or to spend the majority of the time in their 2010-2011 starting quintile. Most commonly, individuals in quintiles 2, 3 and 4 neither remained in the same quintile as the original, nor were in a higher or lower quintile for four or more of the following six waves. This means that they fall into the 'none of the above' group in the table. Individuals in this group would have spent a maximum of three years in either their original, higher or lower quintile. There are a few different ways this situation can happen. For example, a possible combination matching this criterion for respondents over the seven waves is three waves in a lower quintile, two waves in the original quintile and two waves in a higher quintile.

See **Table 7.1** for full data.

Low income entry and exit percentages and rates

Percentage of each population group entering low income very similar to percentage exiting low income. However, entry and exit *rates* very different (since entry / exit rates are expressed as a percentage of only those not previously in low income / previously in low income respectively)

UK, 2015-2016 to 2016-2017
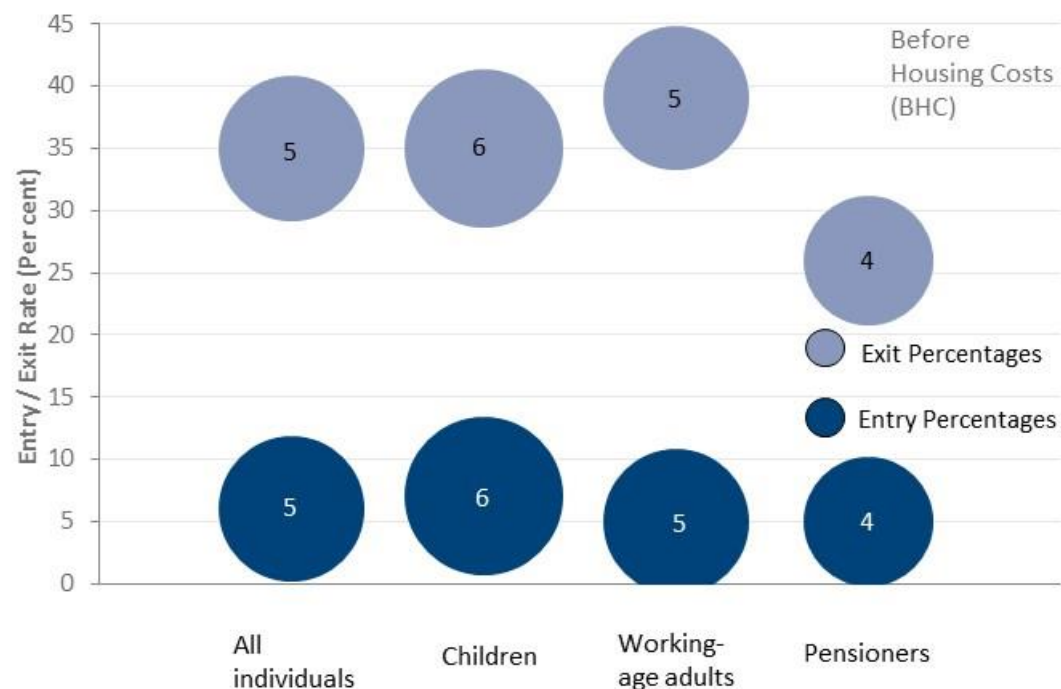
Of all individuals in 2015-2016, five per cent had entered low income by 2016-2017 whilst a further five per cent had exited low income. These are the *percentages of the overall population group entering and exiting low income*, shown by the bubble sizes and numbers inside them on the chart.

These enterer / exiter figures are then the numerators for the entry and exit *rate* calculations. 86 per cent of individuals were not in low income in 2015-2016 and 14 per cent were in low income (table M.9): the calculation denominators. The 2015-2016 to 2016-2017 entry rate for all individuals was therefore 5/86 (six per cent) and exit rate 5/14 (35 per cent from unrounded data), shown by the y-axis on the chart.

This analysis looks at individuals entering and exiting low income. However, as individuals live in households and we assume that all members of the household benefit equally from the household's income, they will be affected by changes at the household level. This could come about either through changes in income levels, or by changes in the household composition which affects incomes through the equivalisation process. The threshold used is the standard 60 per cent of median equivalised household income Before Housing Costs (BHC). Since household incomes are subject to measurement error, and in turn that threshold is subject to sampling and measurement error, the analysis only includes 'clear' transitions. For an entry/exit to count, household incomes must cross the 60 per cent of median income threshold and be at least 10 per cent higher / lower than the threshold in the following wave.

For each population group roughly equal *percentages of the overall population group* enter and exit low income from one wave to the next. This is shown by the bubble sizes and numbers inside them on the chart and keeps the overall rate of low income quite stable. The entry *rate* is the percentage of *only those not in low income* in one wave who are in low income the next. The exit *rate* is the percentage of *only those in low income* one wave who are not in low income the next. Entry and exit *rates* are shown by the y-axis on the chart.

The entry rate into low income for all individuals not in low income the previous wave has remained at five or six per cent since 2010-2011. Entry rates tend to be a little higher for children and lower for pensioners.

Exit rates have generally been highest for working-age adults and lowest for pensioners. Around 35 per cent of all individuals in low income in one wave had exited from low income the following wave.

Lower exit and entry rates for pensioners suggest they have relatively stable incomes compared with other population groups.

See **Tables 8.1** to **8.8** for full data.

Measuring incomes and persistence in Income Dynamics

ID uses data from Understanding Society to derive a measure of disposable household income. Adjustments are made to take into account the size and composition of households to make figures comparable.

Understanding Society Understanding Society, led by the University of Essex, is a longitudinal sample of over 35,000 individuals in the United Kingdom in 2016-2017. Those not in private households at the start of the survey will not be included.

Sampling Error Results from surveys are estimates and not precise figures - in general terms the smaller the sample size, the larger the uncertainty. We are unable to calculate sampling uncertainties for these statistics, but please note that small changes are unlikely to be statistically significant.

Non-sampling Error Survey data represents the best data from respondents to the survey. If people give inaccurate responses or certain groups of people are less likely to respond this can introduce biases and errors. This non-sampling error can be minimised through effective and accurate sample and questionnaire design and extensive quality assurance of the data. However, it is not possible to eliminate it completely, nor can it be quantified.

Income This includes:
- Labour income – usual pay and self-employment earnings. Includes income from second jobs
- Miscellaneous income – educational grants, payments from family members and any other regular payments
- Private benefit income – includes trade union/friendly society payments, maintenance or alimony and sickness or accident insurance
- Investment income – private pensions/annuities, rents received, income from savings and investments
- Pension income – occupational pensions income
- State support – tax credits and all state benefits including State Pension

BHC income is often used for non-pensioner analysis and is net of the following:
- income tax payments and National Insurance contributions
- council tax

AHC income is derived by deducting housing costs (mortgage interest and rent payments) from the BHC income measure. It is often used for pensioner analysis.

A household income measure implicitly assumes that all members of the household benefit equally from the household's income and so appear at the same position in the income distribution.

Equivalisation An adjustment is made to income to make it comparable across households of different size and composition. For example, this process of equivalisation would adjust the income of a single person upwards, so their income can be compared directly to that of a couple.
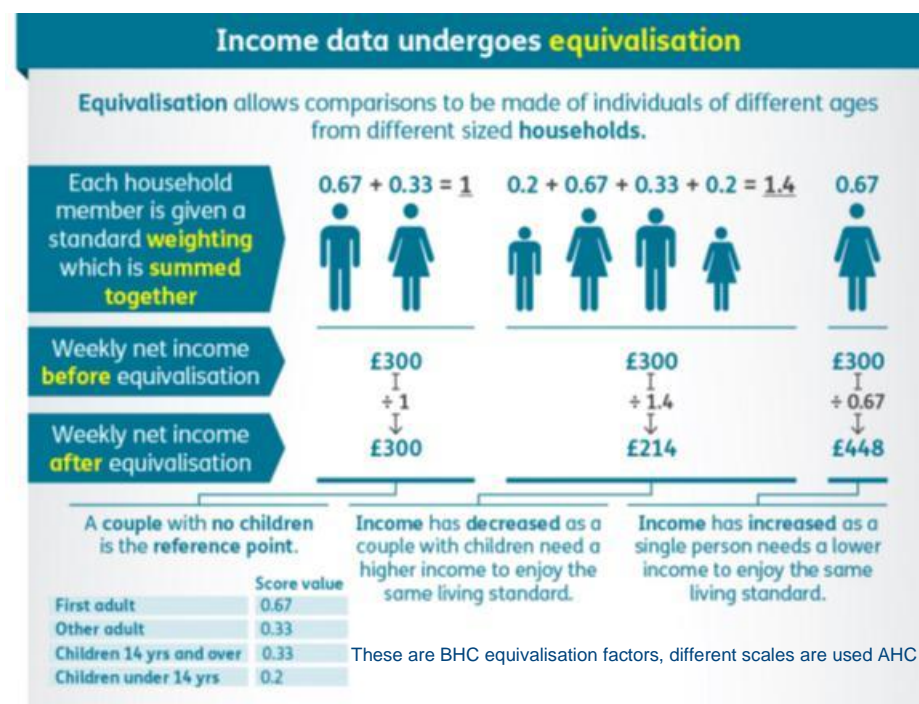
Low income This is defined for this publication as an individual in a household with an equivalised household income of less than 60 per cent of median income. A household in is **persistent low income** if they are in low income for at least three of the last four survey periods.

Inflation concerns how goods and services increase in price (generally) over time. ID uses an adjustment based on the Consumer Prices Index (CPI), also used in HBAI, to compensate for the effects of inflation over time.

About these statistics

NATIONAL STATISTICS STATUS

National, Official and Experimental Statistics are produced in accordance with Statistics and Registration Service Act 2007 and the Code of Practice for Statistics (the Code). National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value, signifying compliance with all aspects of the Code.

Official and Experimental Statistics may be awarded National Statistics status following an assessment by the Office for Statistics Regulation, the regulatory arm of the UK Statistics Authority. Further information about National, Official and Experimental Statistics status can be found in the Code glossary.

Income Dynamics is currently an experimental statistical series, which means it is not currently assessed as a National Statistic, as it is in the testing phase and not yet fully developed.

Where to find out more

Further outputs and reference tables from Income Dynamics analysis, alongside our ID Background information and methodology, giving further detail on how we estimate the measures reported here are available via the following link:

https://www.gov.uk/government/statistics/income-dynamics-2016-to-2017

Estimates of numbers in low income in a single year from Households Below Average Income can be found at:

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

ONS produce a National Statistics series on persistent low income based on EU-SILC data. This is based on a different data source (the Survey of Living Conditions) and has a different definition of persistent low income. See Background information and methodology for further details:

https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/articles/persistentpovertyintheukandeu/2015

Guidance on alternative sources of data on earnings and income is available at the following link and provides useful information to contextualise the ID statistics:

https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/methodologies/aguidetosourcesofdataonearningsandincome

Other National and Official Statistics

Details of other National and Official Statistics produced by the Department for Work and Pensions can be found on the DWP website with a schedule of statistical releases over the next 12 months and a list of the most recent releases at: https://www.gov.uk/government/organisations/department-for-work-pensions/about/statistics

In accordance with the Code of Practice for Statistics, all DWP National Statistics are also announced at: https://www.gov.uk/government/statistics/announcements