Office for National Statistics

Statistical bulletin

Household income inequality, UK: Financial year ending 2019 (provisional)

Provisional estimates of income inequality in the UK for the financial year ending 2019.

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1 . Main points

- Income inequality in the UK remained stable at 32.5% in the financial year ending (FYE) 2019.
- Despite a small increase in income inequality over the last couple of years, levels remain slightly lower than those reached 12 years ago.
- Looking separately at people living in retired households, and those in non-retired households, levels of inequality for both groups were unchanged in FYE 2019.

2 . Information about this release

This release presents provisional estimates of income inequality of people in the UK for the financial year ending (FYE) 2019.

These provisional figures are “nowcasts” produced using a microsimulation model based on Living Costs and Food Survey (LCF) data, up-to-date information on tax and benefit policy, and the latest economic data in FYE 2019. More information about this process can be found at the end of the release.

Alongside this release, estimates of changes in average household income in FYE 2019 are presented in Average household income, UK: Financial year ending 2019 (provisional).

Income inequality is now estimated by focusing on the distribution of household income of individuals, consistent with statistics published earlier this year in Household income inequality, UK: Financial year ending 2018. This marks a change from the analysis presented in provisional estimates for FYE 2018 and earlier, where average incomes are measured on the distribution of households.

Therefore, provisional estimates presented for FYE 2019 in the remainder of this bulletin are not comparable with historical bulletins presenting provisional estimates, such as Effects of taxes and benefits on UK household income – flash estimate: financial year ending 2018. The associated datasets within this release present estimates on an individual for the full time series.

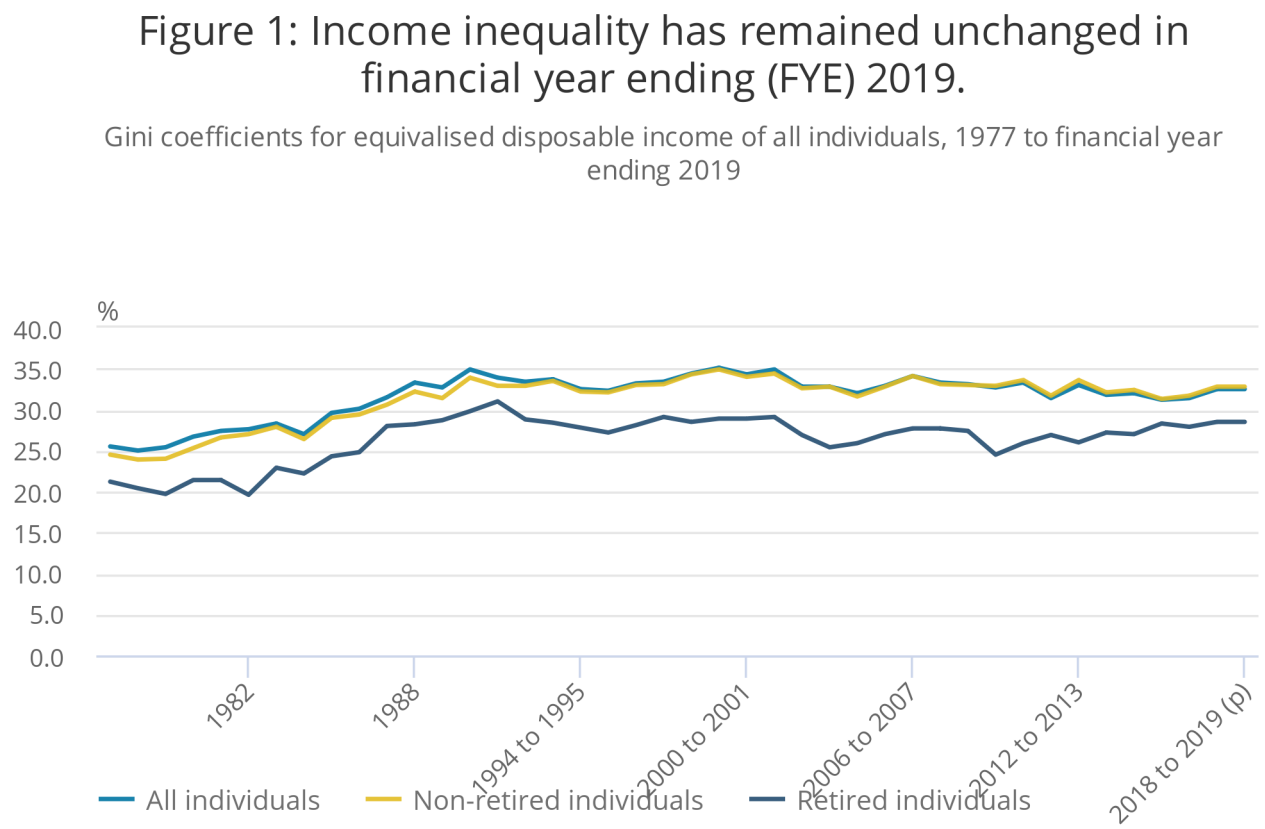
The financial years used in this release are the 12 months from April to March.

3 . Analysis of income inequality

Income inequality was unchanged in financial year ending (FYE) 2019 at 32.5% (Figure 1), based on the Gini coefficient for disposable income.

Figure 1: Income inequality has remained unchanged in financial year ending (FYE) 2019.

Gini coefficients for equivalised disposable income of all individuals, 1977 to financial year ending 2019



Source: Office for National Statistics – Living Costs and Food Survey

Notes:

1. 2018 to 2019, which represents the financial year ending 2019, (April to March), and similarly for all other years expressed in this format.

2. Data for 2018/19 are provisional.

Income inequality has increased by 1.3 percentage points over the past three years. However, despite this small rise, it remains lower than the 34.1% it reached just prior to the economic downturn in FYE 2007.

Income inequality of people living in retired households remained stable at 28.5%. People living in non-retired households had slightly higher levels of income inequality than retired people (32.8%), but was unchanged in FYE 2019. Over the past decade there has been little change in inequality for non-retired households, while inequality has increased for retired households.

There are several different indicators to summarise inequality of household income (Table 1). Perhaps the most commonly used internationally is the Gini coefficient. The Gini coefficient ranges between 0% and 100%, where 0% indicates that income is shared equally among all households and 100% indicates the extreme situation where one household accounts for all income. Therefore, the lower the value of the Gini coefficient, the more equally household income is distributed. This is measured before accounting for housing costs.

The characteristics of the Gini coefficient make it particularly useful for making comparisons over time, between countries and before and after taxes and benefits. However, no indicator is without limitations. One drawback of the Gini is that, as a single summary indicator, it cannot distinguish between differently shaped income distributions. For that reason, it is useful to look at this index alongside other measures of inequality.

One such measure is the S80/S20 ratio – the ratio of the total income received by the richest and poorest 20% of people. Another related measure is the P90/P10 ratio, which is calculated as the ratio of incomes of the person at the 90th percentile and the person at the 10th percentile.

A more recently developed measure is the Palma ratio. The Palma ratio is the ratio of the income share of the richest 10% of individuals to that of the poorest 40% of individuals.

Table 1: Measures of income inequality remain unchanged in financial year ending (FYE) 2019
S80/S20, P90/P10, Palma Ratio, and Gini coefficient in (FYE) 2018 and (FYE) 2019

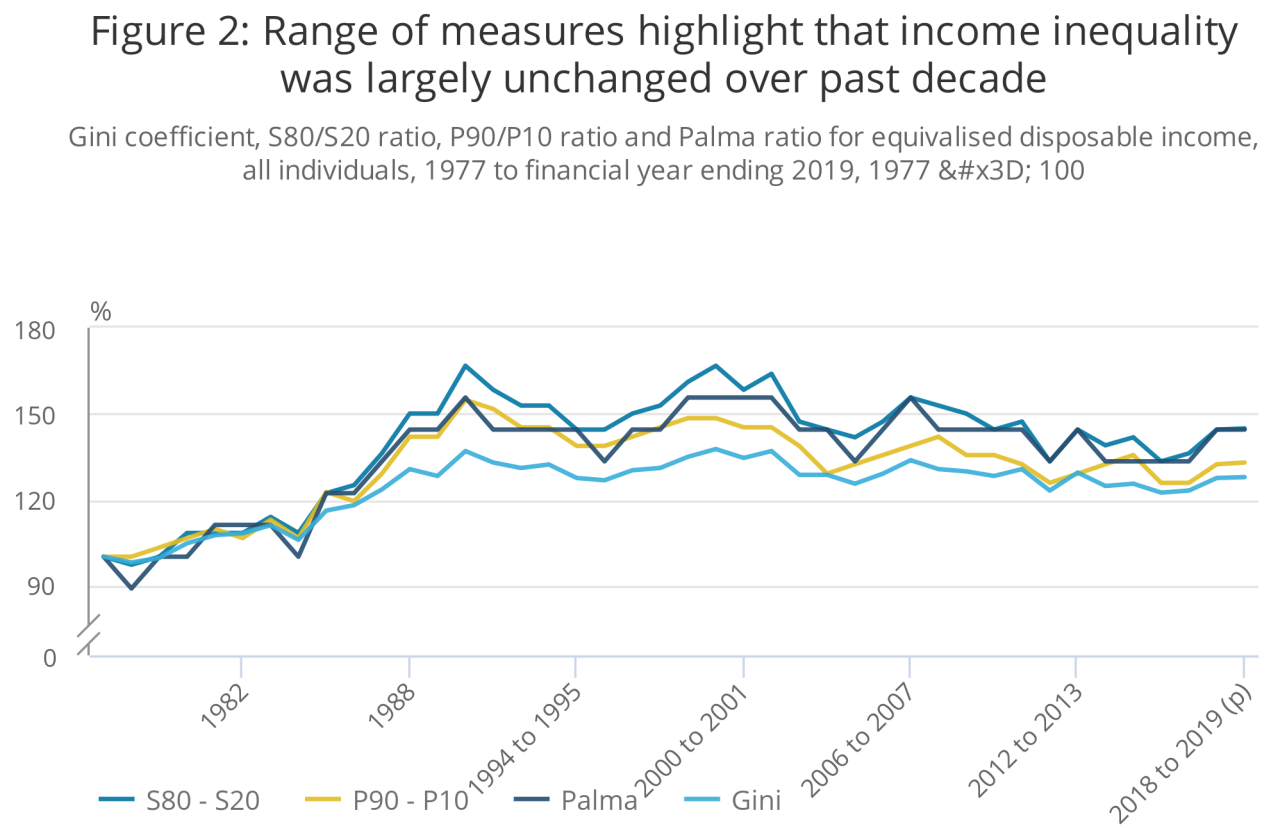
	S80 - S20	P90 - P10	Palma	Gini
2017 to 2018	5.2	4.1	1.3	32.5
2018 to 2019 (p)	5.2	4.1	1.3	32.5

Source: Office for National Statistics – Living Costs and Food Survey

The S80/S20 ratio highlights that the richest fifth of people had a share of income that was over five times that for the poorest fifth in both FYE 2018 and FYE 2019. The income of the person in the 90th percentile was over four times the income of the person at the 10th percentile, while the Palma ratio highlights that the richest 10% of people accounted for a greater share of income than the poorest 40%. These measures of inequality remain unchanged from the previous year (Table 1).

Figure 2: Range of measures highlight that income inequality was largely unchanged over past decade

Gini coefficient, S80/S20 ratio, P90/P10 ratio and Palma ratio for equivalised disposable income, all individuals, 1977 to financial year ending 2019, 1977 = 100



Source: Office for National Statistics – Living Costs and Food Survey

Notes:

1. Indices are calculated relative to 1977 values.
2. 1994/95 represents the financial year ending 1995, and similarly through to 2018/19, that represents the financial year ending 2019.
3. 2018/19 results are provisional.

As shown in Figure 2, all other measurements of inequality are broadly similar in their FYE 2019 values compared with the previous year. After a period of increasing income inequality in the 1980s, and varying change in the 1990s and early 2000s, income inequality has been largely unchanged over the past 10 years from FYE 2009. More recently, other measures of income inequality are showing similar trends to the Gini coefficient, increasing slightly over the past three years.

4 . Comparisons of provisional and final estimates

This is the fifth release of provisional estimates of income inequality using nowcasting techniques. Figure 3 compares provisional and final estimates of the Gini coefficient with their 95% confidence interval.

This is the first year in which the provisional estimates of income inequality are estimated by considering the distribution of people, rather than households. As such, estimates of the Gini coefficient for years financial year ending (FYE) 2015 to FYE 2018 in Figure 3 are based on the distribution of households and not people, and are therefore not comparable with estimates presented for FYE 2019 in the remainder of this article.

Figure 3 highlights that the provisional estimate of the income inequality provides a good indication of the final estimate over time. For the four years in which they can be compared, the provisional estimate always lies within the 95% confidence intervals of the final estimate.

Figure 3: Provisional estimates of income inequality are broadly in line with final estimates

Final estimates of the Gini coefficient and their 95% confidence intervals and the provisional estimates final year ending (FYE) 2015 to (FYE) 2018

Source: Office for National Statistics – Living Costs and Food Survey

5 . Glossary

Disposable income

Disposable income is the amount of money that households have available for spending and saving after direct taxes (such as Income Tax and Council Tax) have been accounted for. It includes earnings from employment, private pensions and investments, as well as cash benefits provided by the state. More information on the different stages of income can be found in the Things you need to know about this release section of Effects of taxes and benefits on UK household income: financial year ending 2017.

Equivalisation

Comparisons across different types of individuals and households (such as retired and non-retired, or rich and poor) or over time is done after income has been equivalised. Equivalisation is the process of accounting for the fact that households with many members are likely to need a higher income to achieve the same standard of living as households with fewer members. Equivalisation considers the number of people living in the household and their ages, acknowledging that while a household with two people in it will need more money to sustain the same living standards as one with a single person, the two-person household is unlikely to need double the income.

This analysis uses the modified Organisation for Economic Co-operation and Development (OECD) equivalisation scale (PDF, 165KB).

Gini coefficient

The Gini coefficient ranges between 0 and 100, where 0 indicates that income is shared equally among all people and 100 indicates the extreme situation where one person accounts for all income. Therefore, the lower the value of the Gini coefficient, the more equally household income is distributed.

P90/P10

The ratio of incomes of the person at the 90th percentile and the person at the 10th percentile.

The Palma Ratio

The Palma ratio is the ratio of the income share of the richest 10% of people to that of the poorest 40% of people The strength of the Palma ratio is that it recognises that the middle 50% of people are likely to have a relatively stable share of income over time (PDF, 982KB) , and so isolating them should not lead to a substantial loss of information (Cobham and Sumner, 2013).

S80/S20

The ratio of the total income received by the richest and poorest 20% of households.

6 . Measuring these data

Statistics that reflect the experience of a typical person such as median income reported here, are important to properly understand changes in material living conditions. However, the complexities involved in collecting, processing and analysing household and individual financial survey data mean indicators concerning the distribution of income are typically only available with a sizeable time lag.

For instance, estimated median income (estimated using survey data) for the financial year ending (FYE) 2018 was published more than 11 months after the end of the reference period. Meeting the considerable user demand for more timely data on the distribution of household income, we have developed these Experimental Statistics, which are produced using so-called “nowcasting” techniques.

Nowcasting is an increasingly popular approach for providing initial estimates of economic indicators, such as median income. In contrast to forecasting, which relies heavily on projections and assumptions about future economic circumstances, nowcasting uses data that are more timely and already available for the period of study.

Although, at the time of producing these statistics, detailed survey data on household incomes are not yet available for FYE 2019, a lot is known about its individual components and the factors that affect them. This includes data on earnings, employment and inflation, as well as details of how changes to the tax and benefits system affect different types of households and individuals. This information is used to adjust income survey data for recent years to reflect the current period and measures such as median income are published earlier than was previously possible.

While nowcast estimates do not perfectly reflect changes in the distribution of income, particularly when examining smaller subgroups of the population, they provide an early indication of what the full survey-based data may show when published later this year, or early next.

The methodology used in this bulletin has undergone significant testing and benefitted from having a range of external experts to ensure it is as robust as possible. As Experimental Statistics, the content of this bulletin and the associated dataset will continue to be evaluated to ensure that user needs are met.

How are these estimates adjusted?

All measures of income for the UK given in this article are calculated without adjusting for expenses relating to housing costs. The measures have been deflated to FYE 2019 prices using the Consumer Prices Index including owner occupiers’ housing costs (CPIH), excluding Council Tax, to give a better comparison of households’ standards of living. These deflated measures are referred to as “real” in this publication. This contrasts with “nominal” measures, which have not been deflated.

The provisional estimate income publication requires a deflator dating back to 1977. The CPIH, excluding Council Tax, is currently available from January 2005. The Consumer Prices Index (CPI) is available from 1996, with a modelled historical series available from 1950. For this analysis, the owner occupiers' housing costs (OOH) component is estimated using the actual rental series available from the Retail Prices Index (RPI). The OOH component is factored into the CPI (and modelled CPI prior to 1996) using the average OOH weight. Prior to 2005 this series is classed as experimental."

Methodology

The input data for this analysis come from the Living Costs and Food Survey (LCF) and the Effects of taxes and benefits on household income (ETB) dataset, which is derived from the LCF. Together, these provide information on income, expenditure and important family characteristics.

There are four main steps involved to produce nowcast estimates of disposable income. These are:

- compile base data – this involves joining three years of historic LCF data
- uprate base data – adjust the base data to reflect changes in the macro-economic conditions that have affected households at different points of the income distribution; for instance, taking into account wage growth from more timely earnings growth data
- model tax and benefit changes – apply rules of the current tax and benefit system to the uprated base data
- recalibrate weights – account for changes in labour market participation and the socio-demographic characteristics of the population between base data and reference period

For this analysis, historical LCF data covering the financial years ending (FYE) 2013, 2014, and 2015 were combined to produce nowcast estimates of disposable income for different household types and measures of inequality for FYE 2018 and FYE 2019. The growth rate between the various nowcasts are applied to the published FYE 2018 estimates presented within Average household income, UK: Financial year ending 2018. A more detailed description of the methodology is provided in the accompanying article, Nowcasting household income in the UK: Methodology, 2016.

The historical data in this article are based on the Effects of Taxes and Benefits (ETB) series, produced by the Office for National Statistics, which itself is derived from the LCF. This series has been chosen for this article due to its long time series and its use as the primary input for the Intra-Governmental Tax and Benefit Model (IGOTM) used for producing the FYE 2019 provisional estimates.

More information about the accuracy and reliability of these statistics is contained in the Quality and methodology section of Effects of taxes and benefits on UK household income – flash estimate: financial year ending 2018.

How do these estimates fit in with other official statistics on household incomes?

These experimental estimates have been developed to serve as early or provisional estimates of figures that are currently published in Average household income, UK: Financial year ending 2018. When the survey-based estimates for FYE 2019 are available, they will supersede these estimates. We will also use these survey-based figures to evaluate the accuracy of these nowcasts.

The figures published in this bulletin use the same definition of disposable income used in these other releases, which in turn is consistent with the concepts set out in the second edition of the United Nations Economic Commission for Europe Canberra Handbook (UNECE, 2011); this sets out the main international standards in this area.

Future plans

In February 2019, the Office for National Statistics published Using tax data to better capture top earners in household income inequality statistics. This investigates the adjustments made to deal with the issues of under-reporting of UK top incomes. This will be fully incorporated in the survey-based estimates for FYE 2019 release.

7 . What are Experimental Statistics?

The UK Statistics Authority Code of Practice for Statistics defines Experimental Statistics as: “new official statistics undergoing evaluation, which are published in order to involve users and stakeholders in their development and as a means to build in quality at an early stage”. The data contained within this release have undergone the same high levels of quality assurance as other official statistics. However, as Experimental Statistics, the methodology used to create them remains under development and may be revised following further evaluation. It is therefore recommended that this is considered when using the findings.

As with any other nowcast, the accuracy of these indicators will inevitably depend on many factors. Throughout the development work feeding into this bulletin, a variety of approaches have been tested to develop a robust methodology and the experience of external experts has been used to make use of international best practice. Despite this, it is unrealistic to expect nowcast estimates to perfectly reflect changes in the distribution of income, particularly when examining smaller sub-groups of the population. This means that the final survey data may show different patterns of change for some groups. This is taken into account in the level of detail presented in this bulletin.

In line with the UK Statistics Authority’s statement on Assessment and Designation of Experimental Statistics (PDF, 44KB), we will be carefully evaluating these new estimates against the Code of Practice for Statistics. . This will include assessments of both the quality of the estimates themselves and the extent to which they meet user needs.

8 . More about household income

Households below average income (HBAI)

Released 28 March 2019

The Department for Work and Pensions produce statistics on the number and percentage of people living in low-income households in the UK.

Average household income and Household income inequality

Bulletins | Released on 26 February 2019

Two separate bulletins providing first survey-based statistics on average household income, and income inequality for the financial year ending 2018.

Effects of taxes and benefits on UK household income: financial year ending 2018

Released 30 May 2019

The redistribution effects on individuals and households of direct and indirect taxation and benefits received in cash or kind analysed by household type, and the changing levels of income inequality over time.

9 . You may also be interested in

A guide to sources of data on earnings and income

Article | Updated 20 May 2019

Further information on other sources of income and earnings data, including the appropriate uses of and limitations of each data source.

Employee earnings in the UK

Statistical bulletins | Updated 25 October 2018

Important measures of employee earnings, using data from the Annual Survey of Hours and Earnings (ASHE). Figures are presented mainly for full-time employees, although some detail for part-time workers is also included.

Centre for Equalities and Inclusion

Article | Released on 12 December 2018

The Centre for Equalities and Inclusion aims to improve the evidence base for understanding equity and fairness in the UK today, enabling new insights into important policy questions. We are a multi-disciplinary convening centre based at the Office for National Statistics, bringing together people interested in equalities data and analysis from across central and local government, academia, business and the third sector.

Personal and economic well-being in the UK: April 2019

Statistical bulletins | Updated 11 April 2019

Estimates of the combined findings for personal well-being (January to December 2018) and economic well-being (October to December 2018) in the UK. This is part of a new series on people and prosperity.

Wealth in Great Britain Wave 5: 2014 to 2016:

Statistical bulletins | Updated 1 February 2018

Main results from the fifth wave of the Wealth and Assets Survey covering the period July 2014 to June 2016.

Family spending in the UK: April 2017 to March 2018

Statistical bulletins | Updated 24 January 2019

Average weekly household expenditure on goods and services in the UK, by region, age, income, economic status, socio-economic class and household composition.