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Analysing the Joint Distribution of Income, Consumption and Wealth in the UK Over Time

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Article

Household income, spending and wealth, Great Britain: April 2016 to March 2018

Examining income, spending and wealth to better understand the financial well-being of households.

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1 . Main points

- Using new experimental data, we consider income, spending and wealth together, providing greater insight into economic well-being; for example, the new data allows us to compare spending and income against the value of liquid assets (for example, cash, savings and shares) that might be used to sustain a period of “overspend”.

- Just under 40% of households in Great Britain had levels of spending greater than their income in April 2016 to March 2018, while 17% of households did not have sufficient levels of liquid assets to sustain their level of overspend for more than a year.

- The length of time that households could potentially sustain levels of overspend with liquid assets was shortest for households headed by younger people (less than a year); the age-group with the highest proportion of people who spent more than their income was the 18 to 24 years age-group (71.5%), followed by the 25 to 34 years age-group (49.6%).

- These data also show how income, wealth and spending is distributed across households – the difference when comparing those who were in the top fifth of the distribution for all three measures against those in the bottom fifth of the distribution for all three measures was over eight times higher for income (£86,000 compared with £10,500), over 145 times higher for wealth (£2,135,600 compared with £14,700) and over four times higher for spending (£58,700 compared with £12,300).

- Younger households were more likely to be in the bottom fifth in each of the spending, income and wealth distributions; just over a quarter of households with a head aged 18 to 24 years were in the bottom 20% of the distributions for all three measures, compared with 4.0% for those aged 65 to 74 years.

2 . Overview of household income, spending and wealth

Statistics on household finances tend to focus on either income, spending or wealth. While each of these individual measures provides important insight, they can provide greater depth to our understanding of economic well-being when assessed together. For instance, while income provides a reasonable proxy for resources available to households, people are also able to draw on the wealth they have accumulated over time or they can acquire new debt to fund their spending. In addition, as it is ultimately the consumption of goods and services that satisfies needs, it is important that spending measures are considered together with income and wealth when assessing living standards and poverty (this is discussed further in An expenditure-based approach to poverty in the UK: financial year ending 2017).

Another reason for considering the three measures together is to better understand the financial position of groups such as retired people, who may have lower than average levels of disposable income but can maintain reasonable levels of spending (and standards of living) by drawing upon the wealth that they have accrued over their lifetime.

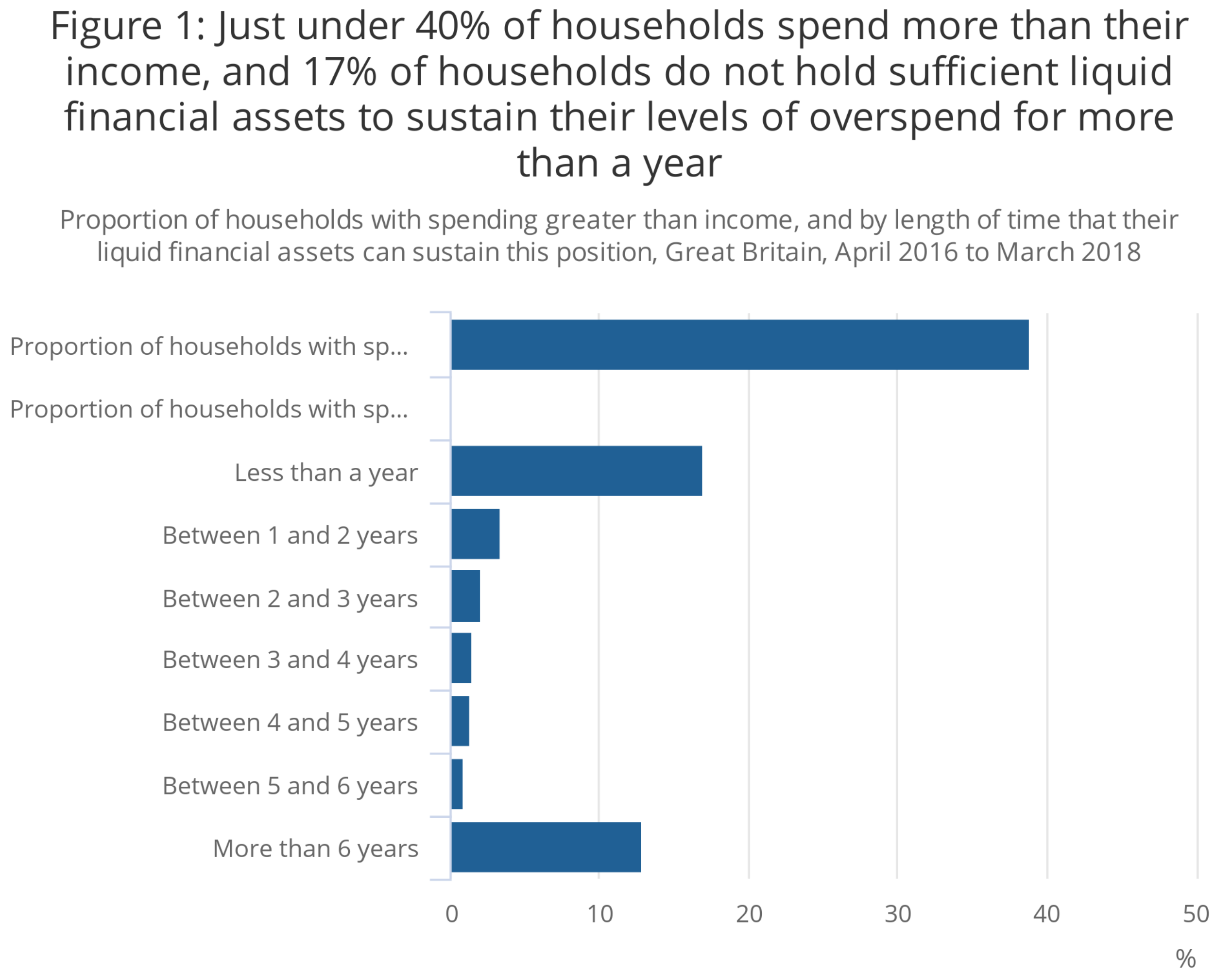
Unfortunately, there is no household survey in the UK that provides detailed information on income, spending and wealth for the same individuals. This mainly reflects the considerable burden to respondents, as measuring each of these dimensions typically requires in-depth questionnaires. Therefore, to provide new insight into the joint distribution of income, spending and wealth, this article presents findings from experimental data that are created by statistically matching expenditure (and some minor income components) from the Living Costs and Food Survey (LFS) onto the Wealth and Assets Survey (WAS). See Section 7: Data sources and quality for more information.

3 . Managing an overspend with wealth

These new experimental results allow us to better understand how households are able to sustain their spending. For example, Figure 1 examines the proportion of households that have levels of spending greater than their income, and it compares this to their liquid financial assets (for example, cash, savings and shares).

Figure 1: Just under 40% of households spend more than their income, and 17% of households do not hold sufficient liquid financial assets to sustain their levels of overspend for more than a year

Proportion of households with spending greater than income, and by length of time that their liquid financial assets can sustain this position, Great Britain, April 2016 to March 2018



Source: Office for National Statistics – Household income, spending and wealth, Great Britain

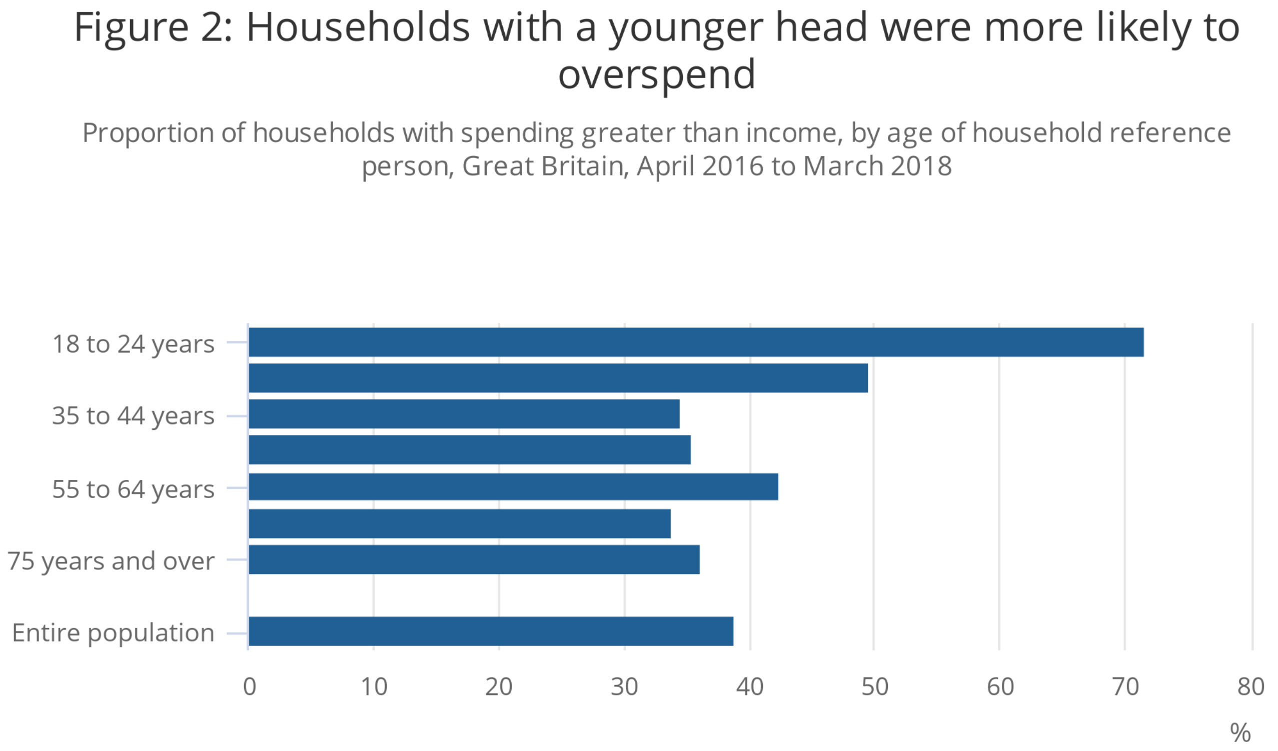
Almost 40% of households had a level of spending that was larger than their current income in April 2016 to March 2018, and 17% of households did not hold sufficient liquid financial assets to sustain their levels of overspend for more than a year.

There are a combination of factors that might explain why households might have spending greater than their disposable income. One factor may be that income is more likely than expenditure to be underreported at the bottom of the distribution, as discussed by Brewer and O'Dea (2017) and in [An expenditure-based approach to poverty in the UK: financial year ending 2017]().

Another possibility is that these households may have experienced a temporary and foreseeable spell of low income that could be managed by supporting their expenditure through other means, such as relying on family or friends, or drawing down on savings.

Figure 2: Households with a younger head were more likely to overspend

Proportion of households with spending greater than income, by age of household reference person, Great Britain, April 2016 to March 2018



Source: Office for National Statistics – Household income, spending and wealth, Great Britain

Figure 2 presents the proportion of households within each age group (based on age of household reference person) who had a greater level of spending than income in April 2016 to March 2018. Overall, there was evidence to suggest that the incidence of this was higher for younger age groups – the age group with the highest proportion of people with spending greater than income was the 18 to 24 years age-group (71.5%), followed by the 25 to 34 years age-group (49.6%).

Table 1 looks at only those who spent more than their income during the period and presents the median level of overspend against the median level of financial assets, broken down by the age of the household head. It shows the average amount of overspending (among households that overspent) tended to decrease with age of the household head (£6,500 for households with head aged 18 to 24 years compared with £2,600 for those with a head aged 75 years and over). By contrast, the average level of liquid financial assets increased with age – the average amount of liquid financial assets (among household who overspent) was £1,100 for those aged 18 to 24 years compared with £18,700 for those aged 75 years and over.

Table 1: As the age of the household head and the financial assets available to support an overspend increased, levels of overspend tended to decrease

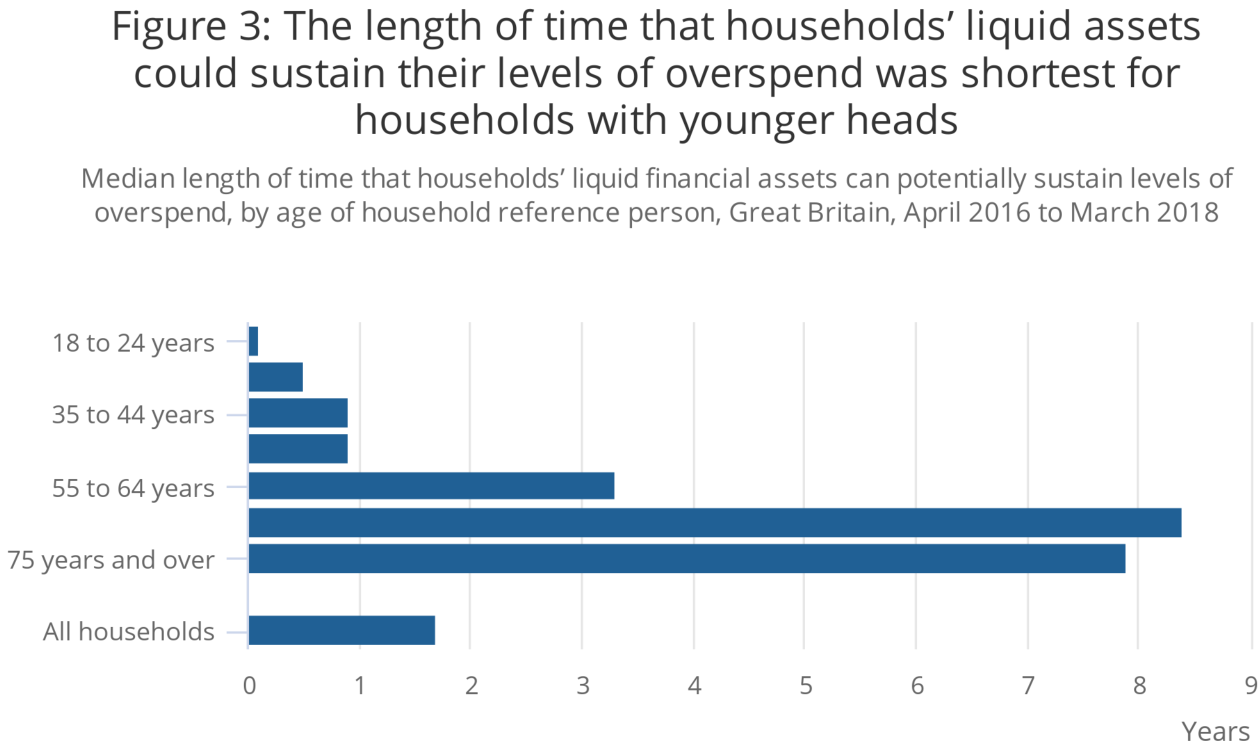
Age of head of household	Median level of overspend (of households with spending greater than disposable income only)	Median level of liquid financial wealth (of households with spending greater than disposable income only)
18 to 24 years	£6,500	£1,100
25 to 35 years	£4,600	£2,200
35 to 45 years	£4,100	£2,700
45 to 55 years	£3,700	£2,400
55 to 65 years	£4,500	£13,000
65 to 75 years	£2,900	£20,600
75 years and over	£2,600	£18,700
All	£3,800	£5,300

Source: Office for National Statistics – Household income, spending and wealth, Great Britain

Taking these findings together suggests a correlation between the duration that a household could sustain their levels of overspend with liquid financial assets and the age of the household head. Figure 3 considers those who had overspent over the period and groups these households into age groups, to show the median number of years that each age-group's liquid financial assets could potentially sustain their given level of overspend.

Figure 3: The length of time that households’ liquid assets could sustain their levels of overspend was shortest for households with younger heads

Median length of time that households’ liquid financial assets can potentially sustain levels of overspend, by age of household reference person, Great Britain, April 2016 to March 2018



Source: Office for National Statistics – Household income, spending and wealth, Great Britain

It shows that those who had overspent over the period and had a household head aged between 18 and 54 years on average did not hold enough liquid financial assets to sustain their overspending for more than a year. The duration of time increased sharply to 3.3 years for those with a household head aged 55 to 64 years and to 8.4 and 7.9 years for those with a household head aged 65 to 74 years and 75 years and over respectively.

4 . Inequalities in income, spending and wealth

These data also show how income, wealth and spending is distributed across households. Around 7% of households in Great Britain were in the bottom fifth of all three of the income, spending and wealth distributions in April 2016 to March 2018. This compares with just under 9% of households that were in the top fifth of all three measures.

Table 2 shows the difference in the levels of consumption (or spending), income and wealth for those who were in the top and bottom fifth of the distribution across all three measures, which collectively accounted for 16% of households. The difference in income, wealth and spending when comparing those in the top fifth of the distribution across all three measures against those in the bottom fifth across all three measures was:

- over eight times higher for income (£86,000 compared with £10,500)
- over 145 times higher for wealth (£2,135,600 compared with £14,700)
- just under five times higher for spending (£58,700 compared with £12,300)

Further information relating to Table 2, but for different quintiles and combinations of measures, is available in the accompanying dataset.

Table 2: Average income, spending and wealth for those in the top fifth and bottom fifth of the income, spending and wealth distribution

	Income	Wealth	Spending	Proportion of households in this category
Bottom 20% in all three of income, spending and wealth distributions	£10,500	£14,700	£12,300	7.0%
Top 20% in all three of income, spending and wealth distributions	£86,000	£2,135,600	£58,700	8.6%

Source: Office for National Statistics – Household income, spending and wealth, Great Britain

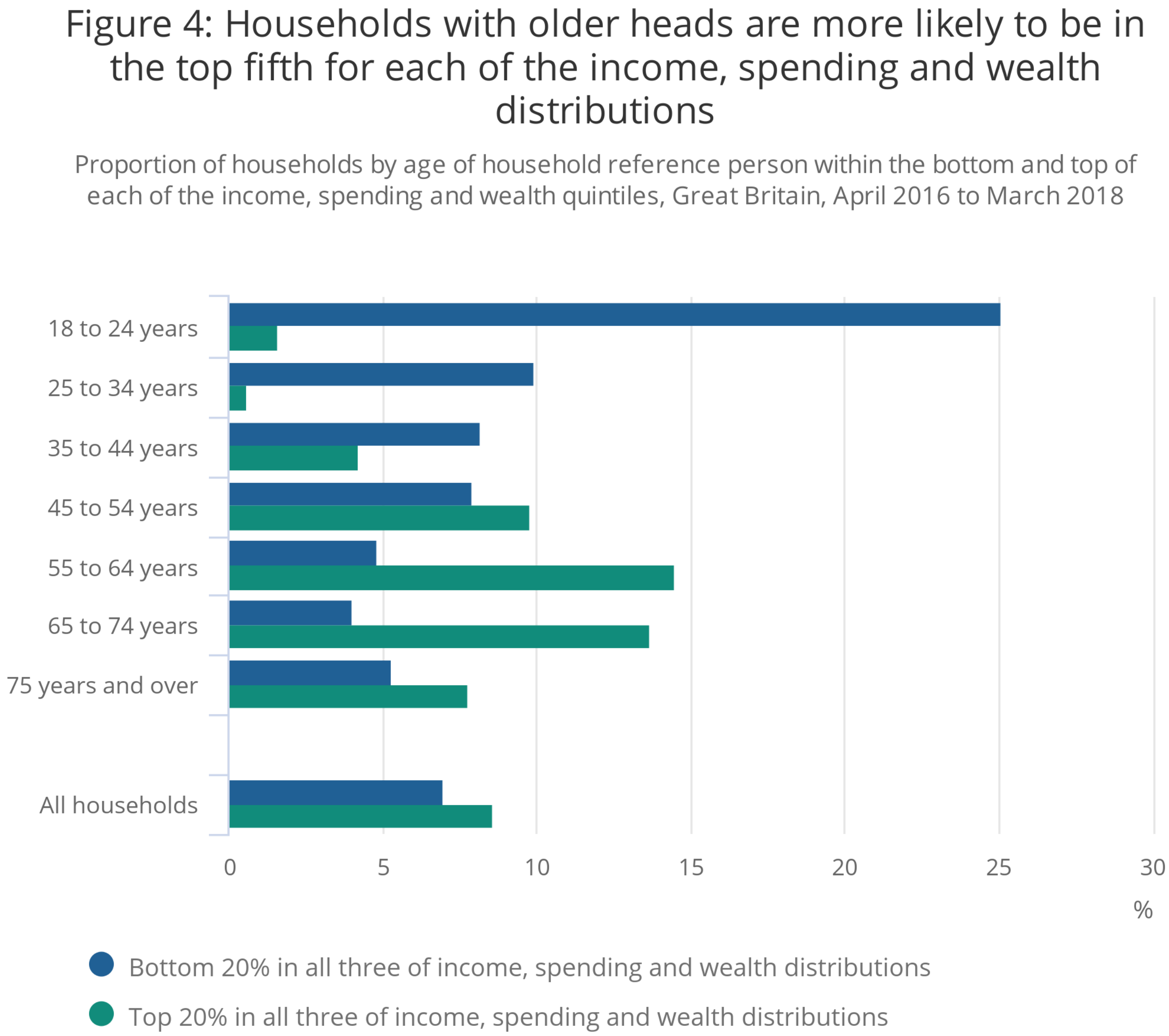
There were high levels of correlation across all three measures, with people more likely to be at the very top of the distribution in one category if they were also in the top of another (the same was true for those at the bottom of the distribution).

The age of the household had a substantial effect on the position along the joint distribution of spending, income and wealth. As the age of the head of the household increased, the likelihood of being in the top fifth of all three of the income, spending and wealth measures also increased, as shown in Figure 4. For example, 14.5% and 13.7% of households with heads aged 55 to 64 years and 65 to 74 years respectively were in the top fifth of all three of the income, spending and wealth distributions, although the rate dropped to 7.8% for those aged 75 years and over. This compared with households where the head is aged between 25 and 34 years, where only 0.6% were in the top fifth of all three of income, spending and wealth distributions.

Similarly, households with younger heads were more likely to be in the bottom fifth of all three of the income, spending and wealth distributions. Just over a quarter of households with a head aged 18 to 24 years were in the bottom fifth of income, spending and wealth quintiles. However, the rate dropped to just under 10% for those aged 25 to 34 years and then tended to fall more gradually as the age of the household head increased.

Figure 4: Households with older heads are more likely to be in the top fifth for each of the income, spending and wealth distributions

Proportion of households by age of household reference person within the bottom and top of each of the income, spending and wealth quintiles, Great Britain, April 2016 to March 2018



Source: Office for National Statistics – Household income, spending and wealth, Great Britain

Notes:

1. Income and spending are equivalised using a ‘companion’ scale of the modified Organisation for Economic Co-operation and Development (OECD) equivalisation scale.

2. Wealth is equivalised using the modified Organisation for Economic Co-operation and Development (OECD) equivalisation scale.

3. Housing costs have been subtracted from income and spending.

5 . Household income, spending and wealth data

[Household income, spending and wealth in Great Britain](#)
Dataset | Released 22 October 2020
Examining income, spending, and wealth to better understand the financial well-being of households.

6 . 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, National Insurance 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. Costs of rent and mortgage interest are removed.

Spending

The main measure of spending in this article is total consumption expenditure from the Living Costs and Food Survey (LCF), with costs of rent and mortgage interest removed.

Household wealth

The measure of wealth used within this analysis is net wealth. Net wealth is an estimate of the value of wealth held by all private households in Great Britain, including net property, net financial, private pension and physical wealth.

Liquid financial assets

Liquid financial assets is a measure of financial wealth, and it includes current accounts in credit, savings accounts, shares and bonds.

Equivalisation

Equivalisation is the process of accounting for the fact that households with many members are likely to need a higher income, spending and wealth 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 twice as much money.

7 . Data sources and quality

Data sources

The dataset used for this analysis is created by imputing spending and direct taxes from the Living Costs and Food Survey (LCF) onto the Wealth and Assets Survey (WAS).

The primary source of data for the Office for National Statistics' (ONS') official statistics on household income and spending is the LCF, a sample survey of private households in the UK, which is collected annually and currently covers approximately 5,000 households.

The ONS' primary source of data for household wealth is WAS, a sample of private households in Great Britain, which collects data on household income and wealth. WAS is collected once every two years, with each wave of the survey covering approximately 10,000 households.

Methodology

The analysis presented here on income, spending and wealth uses households as observation units, rather than individuals. Measures of income and spending have housing costs removed and are then equivalised using the adjusted Organisation for Economic Co-operation and Development (OECD) modified "companion" scale developed for after housing costs (AHC) measures in the Department for Work and Pension's (DWP's) Households Below Average Income (HBAI) series.

Measures of wealth are net of liabilities (or debt) and are equivalised using the OECD-modified scale. This introduces a deviation from analysis of wealth presented in Total wealth in Great Britain: April 2016 to March 2018 , which are unequivalised. Here, we follow the OECD Guidelines for Micro Statistics on Household Wealth that, while recognising there is not a consensus on the appropriate equivalisation scale for wealth, encourage consistency in approach with income and expenditure when conducting multidimensional analysis.

Statistical matching

The process for statistically matching information from the LCF onto the WAS dataset follows statistical matching methodologies that are described in more detail in previous ONS work (see, for example, Webber and Tonkin, 2013 and Serafino and Tonkin, 2017).

Step-by-step statistical matching methodology

Broadly, the methodology is as follows.

Step one: prepare an LCF dataset that covers both the same reference period and geography as WAS; this involves combining two years of the LCF (financial year ending (FYE) 2017 and FYE 2018) and then removing households residing in Northern Ireland.

Step two: variables common to both datasets were harmonized to be used for the matching; this generally involves recoding variables so that they have the same degree of detail.

Step three: matching variables were then selected on the basis that their distributions were similarly aligned and were significant in explaining variations in the target variables (spending and minor income components).

Step four: the independent matching variables used were:

- employment income
- self-employment income
- investment income
- pension income
- benefits income
- property income
- total income
- Council Tax payments
- geographic region
- age of head of household
- ethnicity of head of household
- marital status of head of household
- age at which the head of household completed their education
- gender of head of household
- whether or not the head of household has a university degree

Step five: a multiple imputation was performed, where 100 imputations for each target variable and household were derived. The mean of those 100 imputations was then selected as the value for that household.

Quality

Findings based on the data that are statistically matched should be interpreted with caution as they are based on the assumption that the link between spending and wealth is entirely explained by the variables that were used in the matching exercise (more detail can be found in the Statistical matching subsection).

In addition, there are likely to be measurement errors across the distribution for all three measures. For instance, income is known to suffer from reporting errors at both ends of the distribution (see An expenditure-based approach to poverty in the UK: financial year ending 2017 and Using tax data to better capture top earners in household income inequality statistics). While the ONS' headline statistics have recently introduced a top income adjustment to address underreporting of top earners (see, for instance, Top income adjustment in effects of taxes and benefits data: methodology), this has not been applied to these data.

Finally, all three measures of income, spending and wealth presented here use private household residents as the reference population. As such, they do not include those who live in institutionalised households, such as care homes and hostels, or the homeless. It is likely, then, that many of the poorest in society are not captured, which users should bear in mind when interpreting these statistics.

8 . Future developments

The production of the accompanying dataset allows unique insight into household income, spending and wealth not previously available for statistics relating to Great Britain. We are planning on releasing further analyses using these data that will look at specific themes and subgroups of the population. While the exact nature of forthcoming analysis is still to be determined, we welcome your views regarding these data by email at hie@ons.gov.uk.

9 . Related links

Family spending in the UK: April 2018 to March 2019
Bulletin | Released 19 March 2020
Average weekly household expenditure on goods and services in the UK, by age, income, economic status, socio-economic class, household composition and region.

Average household income, UK: financial year ending 2019
Bulletin | Released 5 March 2020
Estimates of median and mean disposable income for people in the UK for the financial year ending (FYE) 2019.

Total wealth in Great Britain: April 2016 to March 2018
Bulletin | Released 26 February 2020
Main results from the sixth round of the Wealth and Assets Survey (WAS) covering the period April 2016 to March 2018.

A guide to sources of data on income and earnings
Methodology page | Released 6 April 2020
Outlines the different data sources and outputs that feed into the analysis of income and earnings within the UK.

Income estimates for small areas, England and Wales: financial year ending 2018
Bulletin | Released 5 March 2020
Small area model-based income estimates covering local areas called Middle layer Super Output Areas (MSOAs) in England and Wales.

Households below average income: between 1994 to 1995 and 2018 to 2019
Report | Released 26 March 2020
Statistics on the number and percentage of people living in low income households for the financial years between 1994 to 1995 and 2018 to 2019.