SCOTTISH GOVERNMENT
POLICY PAPER

ANNUAL UPRATING OF DEVOLVED SOCIAL SECURITY ASSISTANCE

Purpose

This paper outlines the options available to the Scottish Government for uprating devolved social security assistance and sets out the Scottish Government's proposed approach.

It has been prepared to allow the Social Security Committee and the Scottish Commission on Social Security (SCoSS) to engage and offer their views on the Scottish Government's proposals prior to a decision on the uprating measure to be used and regulations being laid in the Scottish Parliament.

Background

The Scottish Government is committed to uprating certain types of devolved assistance each year to ensure that the assistance individuals receive maintains its value over time when prices are changing.

The Social Security (Scotland) Act 2018[1] ('the 2018 Act') places a duty on Scottish Ministers to publish a report each year that sets out the impact of inflation on all types of assistance and what they intend to do for the next financial year. There is also a duty on Scottish Ministers to bring forward legislation to uprate carer's, disability, employment-injury and funeral expense assistance by inflation, which is the rate of change in the level of prices. There are various measures of price inflation that could be used to uprate social security assistance and the Scottish Ministers are to make a decision on what the most appropriate measure would be.

Legislation

The 2018 Act provides a duty under section 77 to review annually the value of devolved social security assistance, and under sections 78 and 81 to uprate all carer's, disability, employment-injury and funeral expense assistance, in line with inflation.

Scottish Ministers have a duty under section 77 to consider the effects of price inflation on all forms of assistance delivered under Part 2 Chapter 2 of the 2018 Act and to lay a report in the Scottish Parliament, before the end of each financial year, on what they have done or intend to do as a result of the changes to prices.

Section 78 of the 2018 Act, requires Scottish Ministers to bring forward legislation before the end of each financial year to uprate all forms of Carer's Assistance (including Young Carer Grant), Disability Assistance, Employment-Injury Assistance,

[1] http://www.legislation.gov.uk/asp/2018/9/enacted

and Funeral Expense Assistance (now referred to as Funeral Support Payment) that are set out in devolved legislation.

This means that for financial year 2019-20 there is a duty to report on the three types of assistance that will be delivered in that year, namely Best Start Grant, Funeral Support Payment and Young Carer Grant. There is a separate duty to uprate Funeral Support Payment and Young Carer Grant for the 2020-21 financial year.

Uprating of devolved assistance will require regulations to be approved by the Scottish Parliament under the super-affirmative procedure. This procedure involves scrutiny of the draft regulations by the SCoSS and affirmative procedure in the Scottish Parliament.

As Carer's Allowance Supplement is a temporary measure until the Scottish Government implements its own Carer's assistance regulations, section 81 of the Act provides a formula that uprates the Carer's Allowance Supplement so that, together with Carer's Allowance, the rate matches the rate at which Jobseeker's Allowance would be paid if it were to be adjusted for inflation.

No Scottish Statutory Instrument is required to effect this uprate. Instead, Scottish Ministers are to publish a Carer's Allowance Supplement statement explaining how inflation has been calculated for this purpose.

As more of the devolved assistance regulations are made, uprating under the 2018 Act will apply to those types of assistance in the next financial year. For example, if a devolved assistance comes into effect in January 2021 then Scottish Ministers will be responsible for the uprating to be applied in 1 April 2021.

Measures of Inflation

The 2018 Act specifically commits to uprating by inflation, which is the rate of change in the level of prices. Therefore there are potentially three measures of inflation that could be used: the Consumer Price Index (CPI), the Consumer Price Index including owner-occupiers' housing costs (CPIH), and the Retail Price Index (RPI).

An analytical report, which provides a detailed review and comparison of these inflation measures, is included as an annex to this paper. It draws on recommendations from the UK Statistics Authority, the Office of National Statistics (ONS), an independent review led by the director of the Institute of Fiscal Studies and the House of Lords Economic Affairs Committee's recent publication 'Measuring Inflation'.

A brief description of each of these measures is provided below:

Consumer Price Index (CPI) is the current measure that is used by the Bank of England to set the inflation target (2% a year). The CPI captures spending of private and institutional households and foreign visitors to the UK. It excludes owner occupiers' housing costs, which are the costs associated with owning, maintaining and living in one's own home. The CPI complies with the EU standard Harmonised Index of Consumer Prices. In July 2019 (the latest available rate) the 12-month CPI was 2.1%.

Consumer Price Index Owner Occupiers' Housing Costs (CPIH) became ONS's headline measure of inflation in March 2017. The CPIH includes the same spending data and households as the CPI, and includes a measure of owner occupiers' housing costs which also reflects the costs an owner occupier would incur if they alternatively rented their home. In July 2019 (the latest available rate) the 12-month CPIH was 2.0%.

Retail Price Index (RPI) covers different spending and households data than CPI and CPIH. It excludes spending of the top 4% of households by income and pensioner households who receive most of their income from benefits. It also excludes institutional households and foreign visitors to the UK. It includes owner occupiers' housing costs in the form of house prices (as a proxy for housing depreciation) and mortgage interest payments. Whilst it is the longest-running inflation measure in the UK, it has ceased to meet the required standards for designation as a National Statistic and has therefore lost its status as a National Statistic. The RPI is a legacy measure of UK inflation that continues to be published because of its use in long-term contracts and index-linked gilts. In July 2019 (the latest available rate) the 12-month RPI was 2.8%.

Consideration of RPI

The analytical report sets out a number of issues associated with RPI, in particular, in relation to the methodology. The aggregation method used tends to overstate inflation. Since 2010, an error in the clothing prices has exacerbated this and in 2013, the RPI lost its status as a National Statistic. This issue has not yet been fixed.

RPI has a more limited approach to estimating goods and services (using only one data source) which can result in more volatile prices. It takes a more limited view of expenditure across households. It excludes the top 4% of households by income and some of the poorest pensioner households, namely those that are mainly dependent on state benefits. This means that the spending patterns of around 12% of households are excluded from the calculation of the index in total.

The inclusion of both house prices and mortgage interest payments can make it more susceptible to economic conditions e.g. in 2009 during the financial crisis, the RPI rate fell below zero as the owner occupiers' housing costs measure within it reflected the reduced interest rates and falling house prices.
Paul Johnston, Director of the Institute for Fiscal Studies, led an independent review of consumer price statistics and the report was published in 2015[2]. The report recommended that RPI should only be used as a 'legacy measure'.

[2] https://www.statisticsauthority.gov.uk/wp-content/uploads/2015/12/images-ukconsumerpricestatisticsarevie_tcm97-44345.pdf

There are several areas across public and private sector where RPI is still used as a 'legacy measure'. For example the Scottish Government caps regulated ScotRail peak fare increases at the level of RPI and regulated off-peak fare increases at one percent lower than inflation.

The House of Lords Economic Affairs Committee 'Measuring Inflation[3]' report presented a range of recommendations in relation to inflation measures and advised that there should be a single general measure of inflation used by the Government. The Committee agreed that RPI as it currently stands should not be used for uprating purposes and recommended that with improvements, and a better method of capturing owner occupiers' housing costs, the RPI could be a viable candidate for the single general measure of inflation.

Consideration of CPI and CPIH

CPI and CPIH are broadly similar measures, the only difference being that CPIH includes owner occupiers' housing costs.

CPI is the measure used by the Bank of England for their target level of inflation and by the press to mean inflation; and has a methodology that meets international standards. It is used widely across the UK and Scottish Government e.g. it is also the measure that the DWP currently uses to uprate social security benefits.

The ONS made CPIH the headline measure of inflation in March 2017 but it only regained National Statistic status in July 2017. There are no official forecasts of CPIH and, since historically CPIH has tended to be slightly lower than CPI, the switch to this uprating measure for devolved social security assistance may result in lower awards than in the rest of the UK.

The Scottish Government would want to see CPIH establish a reliable track record as a National Statistic before it could consider using it as an uprating measure. In addition, as CPIH includes owner occupiers' housing costs, this may not best reflect how some benefit recipients on low incomes experience inflation as these households may also be supported through Housing Benefit and Council Tax Reduction.

In addition, the recent House of Lords Economic Affairs Select Committee report recommended that the government should switch to CPI, and not CPIH, for uprating in all areas where it is not contractually bound to use RPI.

Other Considerations

Alongside the choice of uprating measure there are a range of other uprating decisions that the Scottish Ministers have to make, including the choice of the inflation reference period and the rounding rule.

Inflation Reference Period

[3] https://publications.parliament.uk/pa/ld201719/ldselect/ldeconaf/246/246.pdf

Today in the UK and in most Organisation for Economic Co-operation and Development (OECD) countries a 'backward looking' approach based on past price changes is used.

The UK Government uses the September CPI rate published in October as this is the latest rate that could be used to provide sufficient time for the legislative process for the uprate to come into effect the following April.

Potentially the Scottish Ministers could use a later reference period of October CPI published in November as the Scottish Budget statement is normally made within 3 weeks of the UK Autumn budget. The October rate may be a better predictor of the actual inflation experienced by households when inflation grows or falls over a long period of time. However, when this is not the case and monthly inflation is more volatile, the month closest to the financial year where uprating takes place may not necessarily be a good predictor. September is proposed as the reference period as this allows sufficient time to feed into the Scottish budgetary process.

Rounding Rule

The Act leaves it for the Scottish Ministers to decide whether to award the exact amount when uprating is applied or to round the rate up or down. Last year Carer's Allowance Supplement was rounded to the nearest multiple of 5p and it is proposed that this rule is applied across all devolved benefits.

Safe and Secure Transition

From April 2020, the Scottish Ministers will have funding and policy responsibility for all the devolved disability and carer benefits and Social Security Scotland will progressively take over administering these benefits from the DWP.

The priority for Scottish Ministers is the 'safe and secure' transfer of benefits to ensure individuals receive the correct payment at the correct time. Through our ongoing engagement and co-design work with people with lived experience of the current benefits system we have learned that their top priority as powers transfer is that people who depend upon this assistance continue to get the right payments at the right time.

This requires striking a balance between transferring cases quickly, making sure there are no mistakes and that payments continue with minimal disruption. For disability and carer benefits, new claims will be launched first and then existing claims will transfer on a phased basis. Agency Agreements with DWP will be required until transfer is complete for each of the remaining devolved benefits.

In addition, where there is an Agency Agreement with DWP to administer existing claims, DWP will require the Scottish Ministers to commit to annually uprate the benefit at the same rate as applied by DWP.

Therefore for Carer's Allowance, uprates to existing claims will be similar to the process used in 2019-20 where a Carer's Allowance Uprating Order subject to the affirmative procedure and regulations subject to the negative procedure were laid in the Scottish Parliament through powers under UK legislation. A similar procedure will be required for any other benefit that is subject to Agency Agreement.

If a different uprating measure was agreed in the Scottish Parliament for existing claims that are administered by DWP then this would be in breach of the Agency Agreement and would put in jeopardy the safe and secure transfer of benefits. The Agreement states that the Scottish Ministers cannot request changes to the DWP business as usual procedures and processes.

Carer's Allowance and Carer's Allowance Supplement were uprated in 2019-20 by the annual rise in prices, as reflected in the September CPI, which was in this case 2.4%.

Financial Considerations

Funding for existing benefits will be transferred through the Fiscal Framework but increases in demand-led spending and new policy choices which give rise to additional spending will require new budget cover, funded from the existing Scottish budget. The Scottish Government will continue to take a responsible and capable approach to Scotland's finances as new budget pressures emerge. This includes monitoring all areas of expenditure, prioritising spend and maximising efficiencies.

The Block Grant Adjustment (BGA) is based on changes in UK Government spending on benefits in England and Wales, therefore choosing an uprating mechanism that results in a more generous payment in Scotland or awarding a non-mandatory uprate would mean that additional resources would have to be found within the Scottish budget.

Currently the UK Government uprates the benefits that are to be devolved by the September CPI published in October, with the benefit rounded to the nearest five pence.

Future measures of inflation

There are a number of emerging inflation measures that are household and region specific that could prove more suitable in a Scottish context. The former may better reflect how price changes have affected households with lower incomes and expenditure and the latter may provide regional price variations more relevant to Scotland. However, these measures are in the very early stages of development and it may be some time before they become National Statistics. They are therefore considered not to be suitable measures for uprating purposes at this stage. More detail on these measures is provided in the annex.

The House of Lords Economic Affairs Committee advised in their recent report that there should be a single general measure of inflation for uprating purposes. The Committee suggested that with improvements the RPI could be a viable candidate for the single general measure of inflation. The UK Government was due to provide a response to the House of Lords Economic Affairs Committee by the end of April 2019 but has indicated it will now take longer due to the complexity of the issue.

The Scottish Government will monitor these developments with a close interest.

Recommendation of inflation measure

The Scottish Government is proposing to use CPI as the measure of inflation to uprate devolved social security assistance for the foreseeable future for the following reasons:

As RPI is no longer recognised as a National Statistic due to a number of problems identified in the methodology which make it a poor measure of inflation, it is not recommended that this method is used.

There are no official forecasts of CPIH and since historically CPIH has tended to be slightly lower than CPI, choosing this uprating measure may result in lower awards in Scotland than in the rest of the UK if this trend continues. An additional consideration is that, as CPIH includes owner occupiers' housing costs, this measure may not best reflect how some benefit recipients on low incomes experience inflation as these households may also be supported through Housing Benefit and Council Tax Reduction.

CPI is the measure used by the Bank of England to target the level of inflation, and the House of Lords Economic Affairs Select Committee recommended that, while a single general measure of inflation is being determined, the UK Government should switch to CPI for uprating in all areas where it is not contractually bound to use RPI.

The safe and secure transfer of devolved benefits will require new claims to be delivered first and existing claims to be transferred on a phased basis.
While there is an agency agreement in place for DWP to administer existing claims, the Scottish Ministers are committed to annually uprate the benefit at the same rate as applied by the DWP.

If a different uprating measure was agreed in the Scottish Parliament for existing clients administered by DWP then this would be in breach of the Agency Agreement and would put in jeopardy the safe and secure transfer of benefits.

Therefore, for these reasons it is recommended that **the September CPI rate, published in October, is used for uprating, with the benefit payment rounded to the nearest five pence.**

The Scottish Government is committed to keeping its policy on uprating under review and will consider alternative approaches if there is a material change to inflation measures.

Next Steps

The Social Security Committee and the SCoSS have been asked to provide their views on the Scottish Government's proposals for uprating by end October 2019. These views will inform the decision on the uprating measure to be applied, in time for the Scottish budget, which should be around December 2019.

A review of inflation-based approaches to benefit uprating

Introduction

A review of relevant inflation measures has been undertaken to inform the uprating decision of devolved social security assistance. This reflects the recommendations from the UK Statistics Authority, the Office of National Statistics (ONS), an independent review led by the director of the Institute of Fiscal Studies and the House of Lords Economic Affairs Committee's recent publication 'Measuring Inflation'.

Three inflation measures that could be used by the Scottish Government for uprating are considered: the Consumer Price Index (CPI), the Consumer Price Index including owner occupiers' housing costs (CPIH), and the Retail Price Index (RPI). The report also discusses emerging inflation measures such as household-specific and regional inflation indices, although neither of these measures is yet developed enough to be used as an uprating method.

The report also explores various other considerations related to uprating decisions such as the time period the inflation measure should refer to, as well as issues around rounding and zero or negative values.

Uprating Choices

When deciding how to uprate social security benefits there are several aspects to consider, such as:

- What is the purpose of uprating?
- Which specific measure should be used?
- What time period should the measure refer to?
- Technical detail such as rounding, cases of zero and negative values

Purpose of uprating

Uprating of benefits can seek to meet different policy objectives. For example, to maintain a certain standard of living, uprating can aim to protect the value of the benefit from eroding when prices are rising. In that case, uprating would reflect the cost of purchasing goods and services which is what consumer price indices aim to capture.[4] This approach maintains the purchasing power of the benefit and is the most common approach to uprating.

[4] Institute for Fiscal Studies (2016), Falling sterling, rising prices and the benefits freeze

For benefits designed to replace income from employment when the recipient is unemployed or inactive, due to disability, ill health, caring commitments or retirement, uprating may aim to keep up with earnings growth.

GDP growth rate may be considered to uprate benefits. The rationale behind this is that when the economy grows, the country's increasing prosperity is shared with benefit recipients.[5]

As set out in section 77 of the Social Security (Scotland) Act[6], the Scottish Ministers will have to consider the change in the general level of relevant prices. The change in the general level of relevant prices is defined as inflation.[7] While it is for Ministers to decide what the relevant prices are, this requires that uprating should reflect inflation (change in price level) rather than other changes such as earnings growth. Therefore this report is limited to discussing relevant measures of inflation.

Measures of consumer price inflation

The rate of inflation is the change in prices for goods and services over time. Measures of inflation and prices include consumer price inflation, producer price inflation and the House Price Index.

One way to understand a price index is to think of a basket of goods and services. Movements in price indices represent the changing cost of this basket. Consumer price inflation refers specifically to the prices of goods and services bought by households and is estimated using consumer price indices. [8, 9]

There is not one single measure of inflation and the ONS produce a number of different price indices.

The three main estimates of inflation produced by the ONS are the Consumer Price Index (CPI), Consumer Price Index including owner occupiers' housing costs (CPIH) and the Retail Prices Index (RPI).

Consumer Price Index (CPI) was the headline measure of inflation, until the ONS switched to CPIH in March 2017. CPI remains the measure that is used by the Bank of England to set the inflation target (2% a year). The CPI excludes some goods and services included in the RPI, mainly relating to housing costs, such as council tax, and in particular to owner occupiers' housing costs, including mortgage interest payments, house depreciation and buildings insurance. The CPI complies with the

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[5] Joseph Rowntree Foundation (2008), The impact of benefit and tax uprating on incomes and poverty

[6] Social Security (Scotland) Act 2018, Section 77

[7] Strictly speaking, inflation is a positive change in the general level of prices, while deflation is a negative change.

[8] Office for National Statistics, Inflation and price indices

[9] Office for National Statistics, Users and uses of consumer price inflation statistics: October 2016

EU standard Harmonised Index of Consumer Prices and is therefore internationally comparable. In July 2019 (the latest available rate) the 12-month CPI was 2.1%.[10]

Consumer Price Index Owner Occupiers' Housing Costs (CPIH). As of 21 March 2017, the CPIH became ONS's headline measure of inflation. The CPIH includes, along with Council Tax, a measure of owner occupiers' housing costs (OOH) which are the costs associated with owning, maintaining and living in one's own home.[11] This is distinct from the cost of purchasing a house, which is partly for the accumulation of wealth and partly for housing services.[12] The rental equivalence approach used to measure CPIH reflects the cost an owner occupier' would incur if they alternatively rented their home. ONS recognises these costs as an important component that is not included in the CPI which is why it now publishes it as the headline measure. CPIH is otherwise identical to CPI. In July 2019 (the latest available rate) the 12-month CPIH was 2.0%.**Error! Bookmark not defined.**

Retail Price Index (RPI) includes some components not included in CPI such as mortgage interest payments of owner occupiers' housing costs, and council tax. However, according to the Code of Practice for official statistics it does not meet the required standards for designation as National Statistics and in 2013, it lost its status as a National Statistic.[13] ONS has deemed it a very poor measure of general inflation, at times greatly overestimating and at other times underestimating changes in prices and how these changes are experienced.[14] The RPI is a legacy measure of UK inflation that continues to be published because of its use in long-term contracts and index-linked gilts.[15] RPI is unique to the UK and is not internationally comparable. In July 2019 (the latest available rate) the 12-month RPI was 2.8%.**Error! Bookmark not defined.**

Box A1: UK uprating policy for social security

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[10] Office for National Statistics (2019), Consumer price inflation tables

[11] Office for National Statistics (December 2017), Consumer Price Inflation (includes all 3 indices – CPIH, CPI and RPI) QMI

[12] Office for National Statistics (September 2018), Measures of owner occupiers's' housing costs, UK: April to June 2018

[13] UK Statistics Authority (2013), Assessment of compliance with the Code of Practice for Official Statistics: The Retail Prices Index

[14] Office for National Statistics (March 2018), Shortcomings of the Retail Price Index as a measure of inflation

[15] Office for National Statistics (April 2019), Consumer price inflation detailed briefing note: April 2019

Since April 2011, benefits, tax credits and public service pensions have been uprated with the CPI.[16]

Before this change, non-means-tested benefits, such as carers and disability benefits, and public service pensions were uprated with the Retail Price Index (RPI). Means-tested benefits such as Jobseeker's Allowance (JSA) or Working Tax Credit (WTC)[17] were uprated with the Rossi Index.[18]

The UK Government did not uprate most working-age benefits between 2016/17 and 2019/20. The benefits subject to the four-year benefit freeze policy are Jobseekers' Allowance; Employment and Support Allowance; Income Support; Child Benefit; applicable amounts for Housing Benefit; and Local Housing Allowance rates, with provision for high rent areas.[19]

Carer's Allowance, disability and employment-injury benefits are currently uprated by the 12 months to September change in CPI. This figure is published in October and is the latest figure that can be used to make the necessary changes to the legislation and benefit systems in time for the uprating to apply in the following April.

Finally, one-off payments such as the Sure Start Maternity Grant, the Funeral Expense Assistance, the Cold Weather Payment and the Winter Fuel Payment are not uprated by the UK Government.

Comparing inflation measures

All three measures presented above capture the average monthly change in the prices of a representative basket of goods and services. The CPI/CPIH and RPI indices differ in several respects in terms of which goods and services should be included in a representative basket, how price data collected from shops and outlets across the country should be aggregated to capture the average change in prices of different items and how price changes of different items should be adjusted to reflect the different amounts households spend on each of the items in the representative basket and ultimately the overall price change in the economy. The only difference between CPI and CPIH is the inclusion of owner-occupiers' housing costs in the latter. Table 1 summarises the differences.

[16] House of Commons Library (November 2017), 2018 Benefits Uprating

[17] Please note that the WTC childcare element has not been linked to inflation on the grounds that childcare costs do not necessarily follow trends in the overall price level.

[18] House of Commons Library (November 2017), 2018 Benefits Uprating

[19] HM Treasury (July 2015), Summer Budget 2015, p.89

The list excludes Maternity Allowance; Statutory Sick Pay; Statutory Maternity Pay; Statutory Paternity Pay; Statutory Shared Parental Pay; and Statutory Adoption Pay; disability, carers and pensioners' premia in the frozen benefits; the Employment and Support Allowance Support Group component; and other disability, carer and pensioner benefits, which have continued to be uprated in relation to prices or earnings as applicable.

Table 1: Comparing RPI, CPI and CPIH

	RPI	CPI	CPIH
Which households are covered?	All households other than the top 4% of households by income and pensioner households who receive at least three-quarters of their income from benefits	Private and institutional households across the income distribution. Includes foreign visitors	
Where do the consumer expenditure data come from?	Survey data	Survey and administrative[20] data	
How are the prices of different goods and services aggregated? (See Box A2 for more detail)	Arithmetic mean	Combination of geometric and arithmetic mean[21]	
How are the owner occupiers' housing costs treated?	Housing depreciation and mortgage interest payments included	Not included	Rental equivalence method

With regards to **data sources of the pattern of consumer expenditure** and **population coverage**, the RPI uses expenditure data from the Living Costs and Food Survey (LCF) whilst the CPI and CPIH use the Household Final Consumption Expenditure estimates which draw on both survey data (including the LCF), and administrative sources. These data are used to determine which goods and services should be included and their relative importance in a representative basket.

The data source can also determine the population that is covered in each measure. Because the LCF only collects data on private households, expenditure of people living in institutions, such as student residencies and care homes, is excluded from the RPI. In contrast, the CPI and CPIH include expenditure from private households, institutional households and visitors to the UK. RPI also excludes the top 4% richest households and pensioner households who receive most of their income from benefits.

The data source can also impact the adjustment in the price changes required to reflect the relevant importance that different households place on the various items

[20] Administrative data collected by other central and local government departments, for example, HMRC data on alcoholic beverages and tobacco that can be used to estimate total expenditure on these goods at the UK level.

[21] An arithmetic mean derives an average from the sum of values whereas a geometric mean calculates an average from the product of values.

in the representative basket. Because the RPI relies on only one data source, the level of detail in the coverage of goods and services is more limited which can result in weights for some goods and services being volatile. On the other hand, the estimated weights for CPI and CPIH are based on a broader range of data and therefore provide more complete coverage of goods and services.

In addition, all three indices are expenditure-weighted indices, meaning that the more a household spends, the higher is its relative contribution to the index. While with this approach high-spending households are implicitly given more weight than low-spending households, it ensures that CPI/CPIH is a measure of average change in price across all consumed goods and services purchased by households. RPI is also an expenditure-weighted index but it excludes some of the richest households thus limiting this effect to some degree.[22] However, this also means that the spending patterns of around 12% of households are excluded from the calculation of the RPI in total.[23]

The indices also differ in terms of the **method they use to aggregate** the price of each item included in the representative basket into a single number. The CPI/CPIH mostly use the geometric mean where an average is calculated from the product of the values whereas the RPI uses an arithmetic mean where the average is derived from the sum of the values (the implications for the final inflation figure are presented in Box A2). Many have argued that the aggregation method used by RPI tends to overstate inflation relative to CPI/CPIH. This is known as the 'formula effect' and is believed to have added on average 0.7 percentage points to the annual RPI measure of inflation when compared with CPIH. [24]

Box A2: The formula effect

RPI uses two methods to calculate the average price, the Carli and Dutot formulas, whereas CPI/CPIH use a third method known as the Jevons formula. The

[22] Alternatives to the expenditure-weighted index are currently being considered by ONS.

[23] Office for National Statistics (March 2018), Shortcomings of the Retail Prices Index as a measure of inflation

[24] House of Lords Economic Affairs Committee (2019), Measuring Inflation

difference in the measures attributed to the different formulae used is also known as the 'formula effect'.

The example presented below is illustrative and shows how the calculated inflation rate may depend on the choice of formula.[25] Note that price ratio measures the percentage increase/decrease in price between two periods.

- *Carli formula (the arithmetic mean):* calculates the average of price ratios between two periods across different types of the same product;
- *Dutot formula (the arithmetic mean):* calculates the ratio of price averages between two different periods;
- *Jevons formula (the geometric mean):* the ratios of prices in two periods are multiplied together and the n^{th} root is taken (where n is the number of product types).

Bread Type	*Price last year*	*Price this year*	*% increase/decrease in price between two periods*
Wholegrain	£1.50	£1.10	0.73
Multiseeded	£1.05	£1.10	1.05
White	£0.80	£1.15	1.44

The three formulas discussed above produce different average price change:

- Carli formula: $(0.73 + 1.05 + 1.44) / 3 = 1.07$
- Dutot formula: $((£1.10 + £1.10 + £1.15)/3) / ((£1.50 + £1.05 + £0.80)/3) = 1.00$
- Jevons formula: $\sqrt[3]{0.73 \times 1.05 \times 1.44} = 1.03$

In this example, the Dutot formula would produce zero inflation 1.00 – 1.00 = 0 whereas the Jevons and Carli formulas suggest that the price of bread has increased by 3% (1.03 – 1.00) and 7% (1.07 – 1.00) respectively.

Another important reason for the difference across the indices is the treatment of owner occupiers' housing costs (OOH). The RPI includes OOH that are calculated primarily based on a measure of housing depreciation and mortgage interest payments. Due to the absence of data that capture the concept of housing depreciation, house prices are used as approximation. This falsely assumes however that land, which is also included in the house prices, depreciates. As house prices, through the measure of depreciation, are now included in the OOH, they

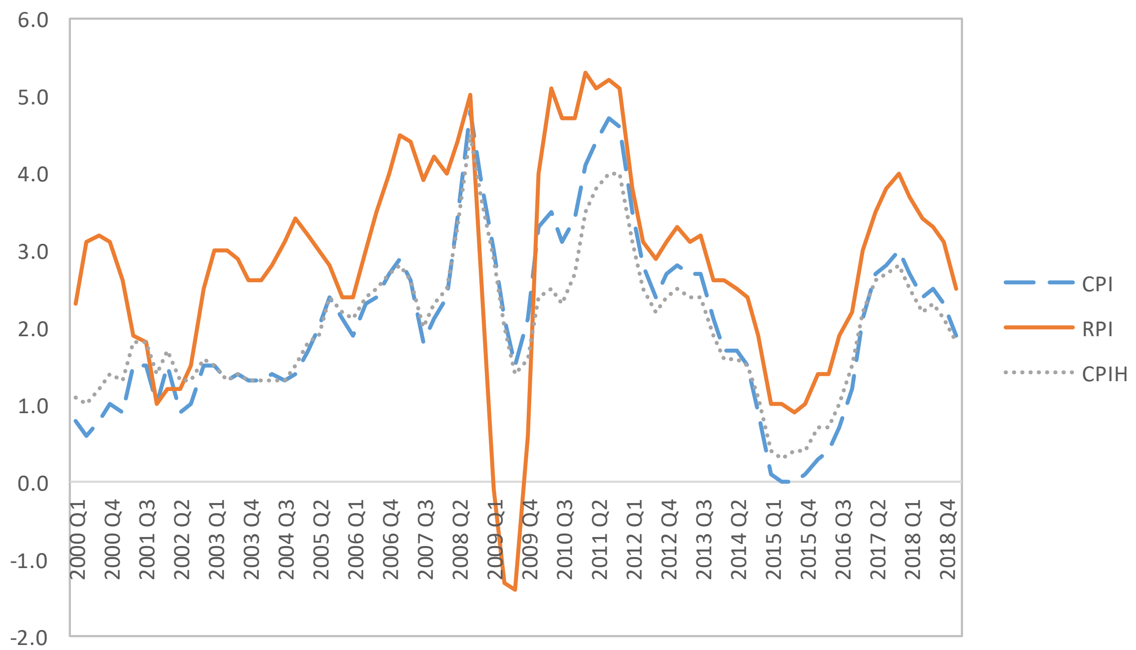
[25] This example is adapted from Box 4 of the 'Measuring Inflation' report by the House of Lords Economic Affairs Committee.

represent around 8% of the RPI basket which can have a large impact on the inflation rate.

With regards to mortgage interest payments, it can be argued that they do not necessarily capture the cost of consumption of housing services but rather cost of borrowing money. While some households who hold mortgages would be worse-off when interest rates rise, other households would benefit from increased savings.

The inclusion of both house prices and mortgage interest payments can make the RPI more volatile. Figure 1 shows that in 2009 during the financial crisis the RPI rate fell below zero as the OOH measure within it reflected the reduced interest rates and falling house prices. As the CPI does not include any measure of housing costs, ONS have developed CPIH to include an improved measure of OOH. This measure is based on the rental equivalence approach, which removes the asset price element from the calculation and instead it uses the rent paid for an equivalent property as an estimate of OOH costs.

Figure 1: CPI, CPIH and RPI quarterly rate



Source: ONS (2019) Inflation and price indices

Problems with RPI

Historically, RPI has tended to be higher than CPI and CPIH. Between September 2010 and September 2018 RPI has been on average around 0.8 percentage points higher than CPI and 1 percentage point higher than CPIH. In 2010, an error in the clothing price collection (which is yet to be fixed) has exacerbated the already known 'formula effect' (see Box A2), affecting the RPI rate much more than CPI and CPIH.[26]

[26] House of Lords Economic Affairs Committee (2019), Measuring Inflation

This change prompted a series of reviews by the UK Statistics Authority. In 2013, after this issue was identified, the RPI lost its status as a National Statistic. An independent review of UK consumer price statistics led by Paul Johnson strongly support this recommendation.[27]

In addition, the Paul Johnson review recommended that RPI should only be used as a 'legacy measure' and that no further methodological improvements should be made to it.[28] There are several areas across public and private sector where RPI is still used as a 'legacy measure'. For example, the UK government still uses RPI to calculate increases in some of the funds it collects (e.g. such as the interest on student loans). The Scottish Government also caps regulated ScotRail peak fares increases at the level of RPI and regulated off-peak fares increases at one percent lower than inflation.[29] The RPI is also used to uprate private sector pensions and in corporate bonds.

In January 2019, following a series of evidence sessions, the House of Lords Economic Affairs Committee published a report entitled 'Measuring Inflation' which presented a range of recommendations in relation to inflation measures held by the Committee. [30]

One of the key recommendations is that the UK Statistics Authority should fix the 2010 error in the clothing price collection, which has resulted in RPI being 0.3 percentage points higher, making the index more likely to overstate inflation. The Committee has also advised that there should be a single general measure of inflation for uprating purposes and while that single measure is being determined, the Government should switch to CPI for uprating purposes in all areas where it is not bound by contract to use RPI.

At the same time, the Committee disagrees with the conclusion of the UK Statistics Authority that RPI does not have potential to become a good measure. The Committee suggested that with improvements, and a better method of capturing owner-occupiers' housing costs, the RPI could be a viable candidate for the single general measure of inflation. [31] The UK Government was due to provide a response to the House of Lords Economic Affairs Committee by the end of April 2019 but will now take longer due to complexity of the issue[32].

Others have also challenged the criticisms of RPI. For example, the Royal Statistical Society have challenged the position of the UK Statistics Authority in treating RPI as a legacy measure. They have also stressed that claims that a formula used by RPI

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[27] The UK Statistics Authority (2015), UK Consumer Price Statistics: A Review

[28] House of Lords Economic Affairs Committee (2019), Measuring Inflation

[29] Ministerial statement on rail fare increases (2018)

[30] House of Lords Economic Affairs Committee (2019), Measuring Inflation

[31] House of Lords Economic Affairs Committee (2019), Measuring Inflation

[32] HM Treasury Response

may be problematic are rather unfounded since substantial upward bias in RPI was observed only when the change in clothing price collection took place. [33]

Inflation reference period

Price level indices discussed above are published on a monthly basis by the ONS and the 12 month inflation rate from any of the months or the average 12-month rate over a specific period could be used to uprate benefits. However, there are legislative and practical considerations that will govern the choice of the reference period.

Uprating could, in theory, be based on future expectations of inflation. During the late 1970s and early 1980s the UK adopted a 'forward-looking' approach to indexation, namely the benefits were uprated based on expected changes. Whilst this approach might enable the uprating policy to better meet the intended objective, if the forecasts turned out to be wrong a subsequent adjustment may be required.[34]

Today, in the UK and in most OECD countries[35], a 'backward-looking' approach is adopted based on past price changes. Even though there is a risk that the benefit level may vary from the intended value as prices may increase faster or slower than their level in the reference period, this approach is deemed to be more robust. While the 12-month inflation rate closest to the financial year where the uprating will take place may be a better predictor of price direction when inflation grows or falls over a period of time, averaging of this rate over 12 or 6 months means that the rate would be capturing price changes experienced by households further away from the financial year in question. It is difficult to conclude definitively which specific month may be a better predictor of the change in the upcoming financial year.

The UK Government uses the 12-month inflation rate from September each year in order to inform the Autumn Statement (previously Budget). While using a later month's figure has been suggested, the UK Government asserts that the September measure is the latest that could be used in light of the time required to make the necessary changes to legislation and benefit systems.[36]

Cases of zero and negative values

It could be that in the reference date the rate of the chosen method is zero or negative. In that event, the rate of benefit could be kept unchanged from the previous year. Another more sophisticated solution could be the combination of a 'backward-looking' and a 'forward-looking' approach. For example, as the 2009 RPI

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[33] House of Lords Economic Affairs Committee (2019), Measuring Inflation

[34] Joseph Rowntree Foundation (2008), The impact of benefit and tax uprating on incomes and poverty

[35] Joseph Rowntree Foundation (2008) have reviewed uprating approaches in a number of contrasting countries and found that backward-looking approach is more common.

[36] House of Commons Briefing (December 2011), Uprating of social security benefits

rate was negative the UK Government decided to increase some benefits by 1.5% in 2010/11 irrespective of RPI growth. In effect, it brought forward a proportion of the expected increase in RPI in April 2011. In year 2011/12 rates were increased with the remaining amount that was necessary to make up the difference from the increase in the September 2010 RPI and 1.5%. Benefits covered by this provision included: Attendance Allowance, Carer's Allowance and Disability Living Allowance.[37]

Alternative inflation measures for uprating policy in the future

The ONS are developing experimental statistics, which may become inflation measures that could be considered for uprating of devolved benefits in the future. Currently, these statistics are work in progress and have a number of limitations. It is not clear if these statistics will become National Statistics and this could take considerable time.[38]

Inflation estimates for different household types

The experience of different household groups may differ across different household types. For example, lower income households may experience higher price increases than higher income households. While initial estimates published by the ONS support this, these statistics are still in development and testing phase which means that they do not meet yet the standards of National Statistics and cannot be used as the uprating measure albeit could be considered in the future. More detail is provided in Box A3.

Regional inflation index

Price changes experienced by households in Scotland may be different from the UK average. The ONS have been assessing feasibility of calculating estimates of inflation rates for different regions in the UK which may provide a more useful indicator of price changes in Scotland.[39] There are still major challenges around producing regional estimates which will be addressed as methodology continues to develop.[40] These measures are covered in more detail in Box A3.

Box A3 Inflation estimates for different household groups and regions

[37] House of Commons Library (February 2010), 2010 Benefit Uprating

[38] For example, the 1992 Maastricht Treaty required member states of the European Union to develop a harmonised measure of consumer price inflation. In the UK it became known as Consumer Price Index (CPI). The UK first published CPI in 1997 and in 2003, following further methodological improvements, HM Treasury changed the Bank of England's inflation target to be set in reference to CPI. This suggests that it make take considerable time for an experimental statistic to become a National Statistic.

[39] Office for National Statistics (2018), Relative regional consumer price levels of goods and services

[40] Office for National Statistics (2019), The development of regional CPIH: assessment of small area estimation for regional expenditure weights

Households specific inflation

ONS is currently developing the Household Cost Indices (HCIs) which are a set of experimental measures that aim to reflect UK households' experience of changing prices and costs.[41] One of the key differences between HCIs and CPI-type indices, in addition to differences in population and commodity coverage, is that the former gives equal weight to each household whereas the weighting for the latter is based on total expenditure in the economy on each item. Weighting by expenditure is standard practice for consumer price indices but implicitly gives more weight to high-spending households.

There are also differences in terms of what is included in the representative basket; for example, HCIs include elements of owner-occupiers' costs (OOH), such as mortgage interest, as opposed to excluding these costs as in the case of CPI or using the rental equivalence approach as in the case of the headline measure of inflation (CPIH).[42] This is where HCIs are similar to RPI. The inclusion of OOH costs, as discussed earlier, makes the index particularly sensitive to the changes in interest rates which was evident during the recent financial crisis.

In April 2019, the ONS published a second round of preliminary estimates of HCIs for household groups over the period of January 2005 and December 2018.[43] These data suggest that retired households have experienced larger increases in prices than non-retired households, although disposable incomes received by retired households have grown more. In addition, low-income households (in the second income decile) have experienced higher annual price rises (an average of 2.6%) than richer households (in the ninth decile) at an average of 2.2%.

ONS is also developing a UK-wide CPIH-consistent inflation rate estimates for various household groups with the primary goal to provide an insight into how price changes have impacted different groups.[44] These estimates follow the same methodology as CPIH which combines price changes with relevant weights for each household group.[45] These series also present estimates of inflation rate by household expenditure decile. This complements estimates by income decile as when lower income households experience a temporary fall in their disposable income they may still maintain their expenditure through borrowing or savings. The preliminary estimates suggest that on average the annual inflation rate for the second decile in the expenditure distribution is 0.3 percentage points higher compared to the ninth decile between 2006 and 2016.

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[41] Office for National Statistics (2018), Developing the Household Cost Indices (HCIs)

[42] House of Lords Economic Affairs Committee (2018), Royal Statistical Society (RSS) – Written evidence (RPI0001)

[43] Office for National Statistics (2019), Household Cost Indices

[44] Such as those with and without children, retired and non-retired households, as well as households grouped by tenure type and by equivalised disposable income and expenditure deciles/quintiles.

[45] Office for National Statistics (2019), Methodology to calculate CPIH-consistent inflation rates for UK household groups

Both HCIs and CPIH-consistent inflation rate estimates suggest that household groups have different experience of changing prices and costs.

Regional Inflation Indices

The ONS have been comparing regional consumer price levels with the UK average and produced a series of reports capturing these differences.[46] The results for 2016 suggest that Scotland has the second highest (after London) relative price levels across all of the UK regions.[47] Prices in Scotland were on average 0.4% higher compared with the UK average which means that price differences are fairly small. In comparison, prices in Northern Ireland are on average 2.3% lower than the UK average price level suggesting that the divergence from the national measure is much larger. There also may be differences in how household expenditure on different items is allocated across the regions. For example, the ONS analysis suggests that Scottish households spend the largest share of total expenditure on transport.

It is worth noting that relative regional estimates suggest the Scottish price levels are fairly close to the average UK levels. These data, however, do not track price changes over time which is typically known as inflation and only provide an insight into differences in price levels across regions.

ONS have also been assessing feasibility of calculating estimates of inflation rates for different regions in the UK which may provide a more useful indicator of price changes in Scotland.[48] These estimates would be consistent with the CPIH methodology and would show how prices of goods and services have changed over time within regions, as opposed to comparison of the relative price levels across regions that were discussed above. There are, however, still major challenges around producing regional estimates which will be addressed as methodology continues to develop.[49]

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[46] ONS measure the cost of purchasing a common basket of goods and services in each region and define that cost relative to purchasing the same basket nationally.

[47] Office for National Statistics (2018), Relative regional consumer price levels of goods and services

[48] Office for National Statistics (2017), Feasibility study into producing CPIH consistent inflation rates for UK regions

[49] Office for National Statistics (2019), The development of regional CPIH: assessment of small area estimation for regional expenditure weights