

7 December 2017

Chris Young and Sarah John  
Head of Structural Economic Analysis Division  
Monetary Analysis, Division 3  
Bank of England  
Threadneedle Street  
London  
EC2R 8AH

Dear Chris and Sarah

This letter covers changes to consumer price inflation statistics in 2018. The letter addresses routine and non-routine changes to the suite of consumer price inflation statistics. This is provided for information.

## 1. RPI: NO PLANNED CHANGES AT THE TIME OF THE ANNUAL RE-WEIGHTING AND UPDATING OF THE BASKETS

### i. Issue

There are no planned changes to the Retail Prices Index (RPI) proposed by the UK Statistics Authority (the Authority) for implementation alongside the update to the basket in 2018.

### ii. Action

To note the contents of this letter, which is being sent to acknowledge the requirements under Section 21 of the Statistics and Registration Service Act 2007. In previous years it has initiated the Authority's consultation with the Bank over whether any proposed changes to the RPI would constitute a fundamental change in the index which would be materially detrimental to the interests of holders of relevant index-linked gilts, and hence trigger the redemption clause.

### iii. Timing

For response by 8 January 2018.

## 2. CPIH, CPI, and RPI: Further planned changes

This section details other routine and non-routine changes to the suite of consumer price inflation statistics.

### 2.1. Changes that only affect CPIH and CPI (non-routine)

#### *i. Introduction of temporal sampling for volatile items*

ONS has been piloting the collection of additional price quotes for items which show sharp and irregular price changes within the same month since January 2011. The 48 volatile items being collected are those in the COICOP classes for fruit (01.1.6) and vegetables (01.1.7), which have a combined weight of 17 parts per thousand (ppt) in CPIH and 22ppt in CPI. The additional price quotes are collected on the Friday before index day. (Early stages of the pilot involved collecting prices on the Friday after index day as well as the Friday before; however, this was shown to have relatively little impact on the temporal results.)

ONS plans to include the temporal price quotes in live production for the first time in the February 2018 CPIH and CPI indices, published in March 2018. Results of the pilot suggest that the impact on headline CPIH and

CPI is negligible; however, there are some impacts at the COICOP4 level. The estimated maximum impact on the COICOP4 annual growth rates for 2016 is 1.065 percentage points (pp) in magnitude for fruit and 0.675pp for vegetables, and the estimated average impact is 0.044pp for fruit and 0.161pp for vegetables. We published a full impact article on 14 November 2017 with the Consumer Price Inflation bulletin<sup>1</sup>.

The collection of additional price quotes will improve the precision with which we measure price changes for volatile items in the index and also brings the CPI (which is the same as the EU's Harmonised Index of Consumer Prices, or HICP) into line with European regulations which state that, for energy products, and fresh food such as fruit and vegetables, price collection should be carried out across more than one working week.

#### *ii. Further updates as a result of implementing COICOP5 in 2017*

Last year, in the February 2017 index, an additional level of aggregation was introduced: COICOP5. As CPIH and CPI are double chain linked, however, the treatment of COICOP aggregation is different in January than in other months. This necessitates the introduction of a change in the aggregation methodology from the January 2018 indices onwards.

Until January 2017 higher level CPIH and CPI aggregates for January were constructed by rereferencing the index to a December base at COICOP4, and then aggregating to higher levels. From January 2018, higher level CPIH and CPI aggregates for January will be constructed by rereferencing the index to a December base at item level and aggregating to COICOP5 and higher levels. This change will result in an index that is more robust to changes in classification and aggregation methods in the future, and ensure that the aggregation methodology is consistent at all levels.

The impact of this change was described in my previous letter and is discussed further in a previously published impact article<sup>2</sup>.

## **2.2. Other routine changes to CPIH, CPI and RPI**

### *i. Location Boundary Review*

In 2014 the sampling frame used to define the location boundaries for the suite of consumer price inflation statistics captured around 76% of total retail activity in the UK. New methodology has been developed to define the sampling frame which captures around 85% of the retail activity in the UK.

The live-pilot will be continued in next year's sample refresh in January 2018, incorporating fourteen further locations based on the new sampling frame. Within the annual sample re-fresh, nine of the current locations which have been chosen to be re-enumerated will have their location boundaries changed in line with the new sampling frame. Five of the locations dropped will be replaced using five locations from the new sampling frame.

Following the success of the pilot study, ONS intends to roll out the new sampling frame over a five year period. From January 2019 all thirty locations chosen for sample refresh will be either re-enumerated under the new location boundaries, or dropped and replaced with new locations which follow the new boundaries. Changes to the location boundaries will be carefully controlled to avoid overlaps with current locations within the sample. We expect the sample to be entirely on the new sampling frame by January 2022, at which point the location boundaries will be redrawn and the boundaries for live collection will once again be updated over a five year period.

---

<sup>1</sup> For more information please see the article 'Impact of inclusion of additional price quotes on Consumer Prices Indices', at

<https://www.ons.gov.uk/economy/inflationandpriceindices/articles/impactofinclusionofadditionalpricequotesonconsumerpricesindices/2017-11-13>

<sup>2</sup> <https://www.ons.gov.uk/economy/inflationandpriceindices/methodologies/assessingtheimpactofmethodologicalimprovementsontheconsumerpricesindex>

It is considered that the introduction of a new sampling frame is a periodic routine change, necessary to maintain the suite of consumer price inflation statistics.

#### *ii. Annual Basket Update*

The annual update of the suite of consumer price inflation statistics will take effect with the February 2018 indices, which will be published in March 2018. An accompanying article describing the changes to the baskets will be published on the ONS website about a week earlier. A fuller description of the reweighting and updating process can be found in the basket article for 2017, which is available online<sup>3</sup>.

The standard procedures for the annual updating of the baskets are well rehearsed. Although fixed within each year, the contents of the baskets of goods and services and their associated expenditure weights are updated annually to ensure they are representative of household spending patterns. The updating mitigates potential biases that might otherwise occur from not allowing for consumers switching purchases away from goods and services that have increased in price relative to those whose prices have reduced relative to other goods and services. Each year ONS conducts research into expenditure patterns to help inform decisions on which goods and services are under-represented and in which areas of the basket there is scope for removing items. Criteria for choosing a set of items to represent particular categories of expenditure, such as clothing and footwear or food, include the size of expenditure and the diversity of the market based on information from the Living Costs and Food (LCF) survey, observed price variations based on historic data, and market research from a variety of sources on latest consumer trends. Information principally from the latest LCF and UK national accounts is used to update the expenditure weights.

It is considered that the changes in the contents of the Consumer Prices Index including owner occupiers' Housing costs (CPIH), CPI and RPI baskets and the associated weights are not significant beyond their primary aim of ensuring the continuous and proper representation of consumer expenditure habits.

#### *iii. Transformation of inflation statistics*

In line with the wider transformation of economic statistics, ONS will be considering the current platforms used to both collect and calculate consumer price inflation and, where feasible, migrate these functions to alternative platforms. This migration will not result in any change to methodology nor have any impact on published indices. It is considered that any such migration of production processes is a periodic routine change, necessary to maintain the production of consumer price inflation statistics.

The expectation would be there is lesser scope for error as we move to common, corporate platforms. Of course, the migration to any new platform will be subject to parallel run and thorough quality assurance to ensure there is no impact on any of the inflation measures being migrated.

### **2.3 Other routine changes that only affect RPI**

#### *i. Potential reduced validation for fruit and vegetables*

As a result of the introduction of additional temporal price quotes for fruit and vegetables in CPIH and CPI, the Tukey algorithm<sup>4</sup>, which is used to identify unusual price quotes for further scrutiny, will now be run on both Friday and Tuesday (F-T) price quotes in the fruit (01.1.6) and vegetable (01.1.7) classes. For the majority of items in these classes, the Tukey algorithm is bypassed in favour of a +/- 40% check. There remain a few items, however, which are scrutinised using Tukey.

---

3

<https://www.ons.gov.uk/economy/inflationandpriceindices/articles/ukconsumerpriceinflationbasketofgoodsandse rvices/2017>

<sup>4</sup> For more information on the Tukey algorithm, please see section 6.3.3.4 of the Consumer Prices Technical Manual at <http://webarchive.nationalarchives.gov.uk/20160114034015/http://www.ons.gov.uk/ons/rel/cpi/consumer-price-indices---technical-manual/index.html>

This may have an impact on the RPI because the temporal price quotes are not included in RPI. Therefore, because a different set of price relatives are entered into the algorithm than would have been used for RPI validation, the resulting parameters will differ from the parameters that would have been calculated were the algorithm being run solely for RPI. This may result in fewer Tuesday price quotes being flagged than would have otherwise been the case. Substantial systems reprogramming would be required to run a separate validation, and this would require considerable resource.

However, our analysis suggests that in the majority of cases the same price quotes are flagged regardless of whether price relatives for Tuesday-only (T) or F-T are used as inputs into the algorithm. We have also found that the price changes flagged tend to be of a similar magnitude and direction whether the algorithm is run with T quotes or F-T quotes. Moreover, of those quotes flagged for further scrutiny, only a very small number are actually rejected. The fruit and vegetable items which are validated using the Tukey algorithm have a combined weight of 7.66ppt in the RPI in 2017. Taken together, we do not expect this to have an impact on RPI.

Please let me know if you have any queries or would like to discuss any of the changes raised in this letter further.

A copy of this letter goes to Nicholas Butt and Rebecca Maule at the Bank of England, to Vanessa MacDougall and Daniel Gallagher at the Treasury and to Jonathan Athow and Nicholas Vaughan here at ONS.

Yours sincerely

A handwritten signature in blue ink that reads "Mike Prestwood". The signature is written in a cursive style and is underlined with a single horizontal line.

Mike Prestwood