

ADVISORY PANEL ON CONSUMER PRICES – TECHNICAL

Re-addressing the formula effect**Purpose**

1. This paper describes the legislative and political context around current statistics on consumer price inflation, and considers how work on addressing the formula effect might be taken forward in light of this.

Actions

2. Members of the panel are invited to:
 - a) consider the ways in which work on the formula effect might be taken further, and advise on project aims, objectives and deliverables

Discussion

3. In 2010, [changes to the way that clothing prices are collected](#)¹ led to an increase in the difference between the Consumer Prices Index (CPI) and the Retail Prices Index (RPI). From 2010 to 2012 ONS carried out [extensive research](#)² to understand this difference, which culminated in the creation of the RPI-Jevons (RPIJ). The Carli formula, used to aggregate price relatives at the item level in the RPI, was found to be flawed, and RPIJ replaced this flawed formula with the Jevons, which is widely used internationally.
4. In 2016, the National Statistician's Advisory Panel on Consumer Prices (APCP) recommended that work on the formula effect should be returned to a high priority. ONS has subsequently raised the profile of this work stream on its [Consumer Prices Development Plan](#) (item 3.2.7).
5. The [Statistics and Registration Service Act 2007](#) limits the development of the RPI, such that the Chancellor of the Exchequer must give consent for any changes to be made which 'constitute a fundamental change ..., which would be materially detrimental to the interests of the holders of relevant index-linked gilt-edged securities.'
6. Further, the [Johnson Review](#) in 2015 recommended that 'The logic of the National Statistician's recent decisions is that the RPI should be considered a legacy measure to be used only where contractually required. No further changes should be made to the RPI.' In his [letter](#) to Andrew Dilnot of 9th March 2016, John Pullinger wrote that 'the RPI is not a good measure of inflation and does not realistically have the potential to become one' and 'ONS would only consider making methodological changes to the RPI if to not do so would inhibit the improvement of CPIH and the Consumer Prices Index.'

¹ CPI and RPI: increased impact of the formula effect in 2010 (2010)

² Discussion paper: results of ONS research into the application of the stochastic and sampling approaches to the choice of elementary aggregate formula (2012)

7. There is, therefore, little scope to make changes to the RPI. We can improve the measurement of clothing prices in the CPI and CPIH, although the CPI is governed by [HICP](#) (Harmonised Index of Consumer Prices) regulations. These state that 'elementary aggregate indices are computed as the ratio of geometric average prices or the ratio of arithmetic average prices.' Although CPIH is not governed by HICP regulations, there is a benefit to maintaining consistency between CPI and CPIH.
8. We have recently acquired web scraped clothing data free of charge from a fashion forecasting company called WGSN. We will shortly be publishing an article as part of the GSS Methodology Series, which analyses product churn in the data and then attempts to use it to construct a price index for nine clothing items using various different methodologies.
9. In order for this research to be useful we need to carefully define the scope and objectives in relation to the limitations around our consumer price indices. We therefore ask Technical panel members to consider the following points:
 - Should we be actively seeking to **reduce the difference** between RPI and CPI? It seems unlikely we will be able to achieve this with the restrictions on RPI.
 - Should we focus on the **collection** of clothing items (including alternative methods of collection, such as web scraping)? Would a change to collection methodology be considered a **fundamental change** to the RPI?
 - Should we consider **improving the methodology** for compiling a price index for clothing with regards to CPI and CPIH? How will this help address the formula effect?
 - Should we be trying to provide a better **understanding of the divergences**?
 - Are there **other areas** where we could contribute useful research into the formula effect?

Christopher Payne
Prices, Office for National Statistics
January, 2017