

## ADVISORY PANELS ON CONSUMER PRICES - TECHNICAL

**Minutes****15 January 2018****Board room, UK Statistics Authority, Drummond Gate, Pimlico, London SW1V 2QQ****10.30 – 13.00****Members in attendance**

Mr Nick Vaughan (Chairman - ONS)

Prof. Ian Crawford

Mr Peter Levell

Dr Jens Mehrhoff

Mr Mike Prestwood (ONS)

Dr Jeff Ralph (ONS)

Mr Paul Smith

Mr Rupert de Vincent-Humphreys (by phone)

Dr Martin Weale

**Secretariat**

Ms Helen Sands (ONS)

Mr Chris Payne (ONS)

**Observers**

Mr Jack Philips (ONS)

**Presenters**

Mr James Dawber

Mr Jim O'Donoghue (ONS)

**Apologies**

Mr John Astin

Prof. Bert Balk

**1. Introductions, apologies and actions**

- 1.1. The chairman welcomed attendees to the APCP-Technical (APCP-T) meeting and passed on apologies from those who were unable to attend. He specifically thanked Mr Dawber and Mr O'Donoghue for joining the meeting to present papers, and a round table of introductions followed.
- 1.2. The chairman noted that ONS were in the process of recruiting a panel member with expertise in alternative data sources. It was also made aware that Dr. Ralph was soon to be retiring and so a suitable replacement from ONS methodology department would need to be considered in due course.
- 1.3. The panel requested a redraft of sections 2.8 and 2.9 of the September 2017 minutes to improve clarity over the wording.

Action 1: Secretariat to update minutes from the September 2017 APCP-T meeting

- 1.4. The action for ONS to produce distribution charts of the price relatives of web-scraped data is ongoing, and has been added to the web-scraping work programme. All other actions from the September meeting had been completed.

**2. CPIH sampling errors – Jan 2015 to Jan 2017**

*Paper APCP-T(18)01 – Draft for future publication*

*This is work in progress and will be published in the future when additional analysis has been undertaken.*

- 2.1. Mr O'Donoghue gave an overview of the work that had been completed to date in calculating standard errors for the CPIH. He explained that the standard errors estimated were for the price relatives collected, and that two factors had been calculated: between-item variance (where the selection of items that are representative of a sub-class may result in variance in the index) and within-item variance (where the products chosen as representing an item can cause variance).
- 2.2. Mr O'Donoghue described the complexities that this work involved, and many panel members reiterated this point throughout the discussion.
- 2.3. The chairman raised the comments of Prof. Balk whom had been unable to attend the meeting in person. Prof. Balk had highlighted the great complexity underlying this problem and that the issue should be given further discussion at a later meeting. He also shared a number of references to other work that had been carried out in the field, which were gratefully received by the presenter. Panel members requested a literature review of the work completed in this area.

Action 2: ONS to undertake a literature review of work on producing standard errors for consumer price indices

- 2.4. Panel members pointed out that jackknife techniques (as used in the analysis presented to the panel) often underestimated the variance slightly, while bootstrapping techniques, which had also been considered, tended to overestimate. However, it was agreed by the panel that these were valid methods and a strong starting point with regards to this work.
- 2.5. Other methods suggested by the panel were using linearization techniques and creating a synthetic universe or population that could be used to create a simulation of the CPI and calculate a more accurate estimate of the variance of price relatives. The chairman pointed out that the ONS are working towards obtaining scanner data and this may enable the latter work.
- 2.6. One panel member also suggested a post-enumeration survey could be completed as a means of checking whether the approach used is sufficient. This would involve checking the results didn't diverge from what a more detailed collection would have shown.
- 2.7. Panel members discussed the presentation of these results, and suggested they should not be referred to as standard errors of the CPIH as this is not technically what they are measuring. For example, it was raised that there were other uncertainties in consumer price indices, such as the use of quality adjustment that would not be captured by these error estimates. One panel member recommended that a version be produced that focussed on the within-item standard error and didn't utilise the between-item. This would produce a variance estimate conditional on the items that had been chosen as representative.
- 2.8. Panel members agreed that the measures could be useful as a diagnostic tool, for example to identify categories with high variance and see if this could be reduced in some way. However, it was raised that this had potential to lead to misinterpretation, as low variability does not necessarily mean the results are un-biased.

- 2.9. A panel member highlighted that the variation in weights is also of importance, and the ONS hasn't yet looked at how the variation in weights and the variation in prices work together. However analysis of the variance of the weights is also exceedingly complex, so in the first instance it may be better to produce estimates of accuracy that are conditional on the weights that are being used.
- 2.10. The chairman summarised the discussion by saying the ONS will continue to pursue the work and revisit the discussion at a later meeting. In the short-term the ONS will look at linearization techniques and in the medium term we will have a "universe" of a product from scanner data that standard errors can be produced from.
- 2.11. Panel members suggested that the work should not be published at this stage until further exploration has been completed.

### **3. Feasibility study into producing CPIH-consistent inflation rates for UK regions**

*Paper APCP-T(18)02 - This paper will be published alongside the minutes*

- 3.1. Mr Smith provided an outline of the paper that was published in November 2017 and invited opinions from panel members.
- 3.2. There was a view that relative regional price levels may be of more interest to users as the key output rather than the inflation rate. These are currently produced every 6 years so would need a method of interpolation or completion of the analysis more often. The data used to calculate these levels currently comes from an extended sample of the Purchasing Power Parities (PPP) collected for price comparisons across other European countries.
- 3.3. It was highlighted that part of the future work programme for regional inflation estimates was to explore using the PPP data to improve the sample size of the regional price data.
- 3.4. It was questioned whether the regional estimates could be constrained to the national aggregate, however this was considered extremely difficult.
- 3.5. The declining response in the Living Costs and Food Survey (LCF) was raised as a concern; this is a considerable problem for producing regional baskets and weights, however small area estimation is currently being investigated to help alleviate this problem, and the observed volatility in the resulting weights. ONS National Accounts are also looking to produce regional household expenditure estimates that may further enable this work.
- 3.6. One panel member suggested that an indication of the sample size issue could be observed by looking at the variability within each region as a function of the respective sample size. Another panel member suggested more (or all) of the prices could be assumed national (i.e. consistent across regions).
- 3.7. The panel briefly discussed the potential use of credit card data which enables expenditure to be matched to COICOP using merchant codes. However panel members raised the uncertainty of the merchant codes over what item has been purchased, and also highlighted that the credit card data may include business purchases as well as consumer purchases.
- 3.8. A panel member cited some countries that use regional indices as a starting point to aggregate their national CPIs (Germany, for example). The UK consumer price indices could be rearranged to meet this need, although it was noted that this would take a considerable amount of work.

*NB: Mr De-Vincent Humphreys left the meeting at this point.*

#### **4. Producing a historical series for CPIH**

*Paper APCP-T(18)03 - This is work in progress and will be published once the work and estimates are finalised*

- 4.1. Mr O'Donoghue discussed the paper and the methodology used to calculate a historical series for CPIH for the period 1947 to 2005. The biggest complexity in this calculation is obtaining data for imputed rentals prior to 2005 as the source used from 2005 is unavailable in previous periods.
- 4.2. The panel questioned the data that had been used and suggested better weights data may be available through the FES for earlier periods. It was thought these may be available from the IFS, as IFS had manually created a dataset based on historical reports, or published on the data archive.

Action 3: Mr. Levell to investigate whether IFS hold the FES data back to 1971 and whether this can be shared with ONS

- 4.3. It was considered whether there should be a call for a larger project to look at the historical calculation of imputed rentals in the National Accounts, and a panel member suggested that this could potentially be carried out within the Economic Statistics Centre of Excellence (ESCOE).
- 4.4. Mr Payne raised that there was a strong user demand for this historical series and so there was some pressure to get the estimates out quickly. Panel members suggested a discussion should be held with stakeholders to determine how long the time series needed to be in the first instance as it was mainly the pre-1985 data that seemed implausible.

Action 4: "Producing a historical series for CPIH" paper to be taken to the Stakeholder APCP in February to discuss user needs and priorities.

- 4.5. A panel member questioned whether it was important to have a historical series comparable with CPI where adjustments have been made over time or to have a series that is comparable with the current CPIH. While some felt that everything should be kept as it was to avoid making a counterfactual history, others felt that the history would not be counterfactual and that ONS have the freedom to introduce things historically.
- 4.6. Most believed that the CPI components should be left as they are and the intention should be made clear.

#### **5. Improving the used cars index**

*Paper APCP-T(18)04 - This paper will be published alongside the minutes*

- 5.1. Mr Payne gave an overview of the paper. While the trend shown in the ONS used-cars index is difficult to explain, a similar issue is seen across European countries, and Eurostat have been working to resolve the issue.
- 5.2. One panel member made the point that being broadly in line with the EU was not necessarily reassuring, as other EU members results were showing trends that are hard to explain.
- 5.3. Panel members suggested the actual price movements of representative models of cars could be investigated to see whether they showed the same long-term trend. It was thought that the IFS had carried out similar work in the past, although there was uncertainty as to whether this had been published.

Action 5: Prof. Crawford / Mr Levell to see whether paper on used cars methodology is published anywhere or available to be shared.

- 5.4. It was also suggested that the lease market could be explored as they use a depreciation factor to estimate what a car would cost in X years time.
- 5.5. The panel questioned whether the movement of 2 and 3 year old cars were representative of the entire used-car market, and what the weight of the other aged used-cars could be.
- 5.6. The chairman highlighted the increased interest in the car finance and car leasing market and suggested the impact of the growth in these markets needed consideration.
- 5.7. Dr Mehrhoff explained that Eurostat were investigating the issue of used-cars measurement and if ONS provided them with used cars data that would be helpful in reaching a solution.

Action 6: ONS to investigate producing a data extract that can be shared with Dr Mehrhoff, within disclosure constraints

- 5.8. The decision on whether to pursue changing the methodology for used-cars and with what priority has been postponed until more information has been prepared for the panels.

## 6. AOB and date of next meeting

- 6.1. One panel member asked the current position on the Household Costs Indices (HCIs). Mr Payne stated that the ONS had released their first preliminary estimates of the HCIs in December and were now welcoming feedback from users to help identify priorities and next steps. ONS would expect to release the next estimate of the HCIs in late 2018/early 2019, and will aim to better time the release in conjunction with the household disposable income and inequalities release. Technical Panel members were invited to submit responses to the HCIs papers.

Action 7: Panel members to consider submitting a response to the HCI papers released in December to [cpi@ons.gov.uk](mailto:cpi@ons.gov.uk) by 23 February 2018 (cc. APCP-T secretariats).

- 6.2. No further business was raised.
- 6.3. The next Technical Panel meeting will take place on Friday 11 May 2018.

## 7. Actions

No.	Action	Person Responsible
1	Secretariat to update minutes from the September 2017 APCP-T meeting	Ms Sands
2	ONS to undertake a literature review of work on producing standard errors for consumer price indices	Mr O'Donoghue
3	Dr. Levell to investigate whether IFS hold the FES data back to 1971 and whether this can be shared with ONS	Mr Levell
4	Producing a historical series for CPIH paper to be taken to the Stakeholder APCP in February to discuss user needs and priorities.	Mr Payne
5	Prof. Crawford / Dr Levell to see whether paper on used cars methodology is published anywhere or available to be shared.	Prof. Crawford Mr Levell
6	ONS to investigate producing a data extract that can be shared with Dr Mehrhoff, within disclosure constraints	Dr Tucker
7	Panel members to consider submitting a response to the HCI papers released in December to <a href="mailto:cpi@ons.gsi.gov.uk">cpi@ons.gsi.gov.uk</a> by 23 February 2018 (cc. APCP-T secretariats)	All