

ADVISORY PANELS ON CONSUMER PRICES – TECHNICAL

Minutes**7 September 2018****Board room, UK Statistics Authority, Drummond Gate, Pimlico, London SW1V 2QQ****10.30 – 13.30****Members in attendance**

Mr John Astin
 Prof. Bert Balk
 Mr Rob Bucknall (ONS)
 Dr Antonio Chessa
 Prof. Ian Crawford
 Mr Mike Hardie (ONS)
 Mr Peter Levell
 Dr Jens Mehrhoff
 Mr Paul Smith
 Mr Nick Vaughan (Chairman – ONS)
 Mr Rupert de Vincent-Humphreys

Presenters

Miss Heledd Thomas (ONS)

Secretariat

Mr Chris Payne (ONS)
 Mr Jack Philips (ONS)

Apologies

Dr Martin Weale

1. Introductions and apologies

- 1.1. The Chairman welcomed attendees to the APCP-Technical Panel (APCP-T) meeting and passed on apologies from those who were unable to attend.
- 1.1. There were no comments on the previous meetings minutes.
- 1.2. Mr Payne let the panel know that ONS are providing an update to Stakeholder Panel on the used cars work; however, the work was not yet sufficiently developed to warrant a Technical Panel paper. Panel members asked to be made aware of any further discussion

Action 1: Secretariat to inform technical panel of discussion on used cars from the stakeholder panel

- 1.3. Panel members asked for the literature review included within the CPIH variance paper to be expanded upon with a full description of the academic literature available. The Chairman asked panel members to send in any relevant papers.

Action 2: Panel members to send the APCP-T secretariat any literature relevant to standard errors for consumer price indices to expand the literature review

2. Updating the data source for shop type weights

Paper APCP-T(18)11 – *Work in progress*

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

- 2.1. Mr Payne set out the focus of the paper which is to put forward an alternative to the current data used to construct the shop type weights and assess the impact of this change by looking at the back series. Mr Payne explained that the shop type weights had not been updated since 2006 and therefore were out of date. The suggested alternative is the RSI data which includes a distinction between large and small businesses, alternative to the current split of multiple and independent. However, the RSI has some negatives, including a classification structure that is less detailed than the current structure.
- 2.2. The discussion started with suggestions from panel members of data that might provide an improvement to the breakdown of industries over the RSI data. The suggested alternatives were the Annual Business Survey (ABS) and the new Annual Survey of Goods and Services from the ONS which could be adapted to further meet the requirements. The Chairman also mentioned the possibility of using information from the British Retail Consortium although this would not represent small retailers. Another suggestion was using a SPREE estimator to improve detail of classification, and using IDBR to match on actual multiple and independent status.
- 2.3. Mr Hardie advised some caution with using the Annual Survey for Goods and Services as it is in its second year and the questions are still being developed. The survey may therefore need some time to become established before using it on a permanent basis.
- 2.4. Some panel members discussed the possibility of using no weights or self-weighting though targeted price collection. Panel members thought that as the UK is not set up for using self-weighting this could potentially bias the index and that a crude estimate of the weights may be a better alternative.
- 2.5. One panel member suggested that not having a breakdown of the weight for internet sales was not future proof. If prices for internet sales are moving in a different way to other sales or do so in the future this will bias the index. Another panel member commented that the suggestion that the impact was small depended on what was considered small and the scale you were looking at. The panel wanted to see other figures as a comparison, for example household expenditure.

3. Variance estimates for the Consumer Prices index including owner occupiers' housing costs

Paper APCP-T(18)12 - *Work in progress*

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

- 3.1. Mr Bucknall gave an overview of the paper which was written by Mr O'Donoghue of the ONS. The paper estimated standard errors for prices, by decomposing the variance into between and within item variance. This builds on previously published work to develop standard errors for LCF weights. This included an assessment of other European country's estimates of variance within their consumer price statistics and discussion of the methods used.
- 3.2. Some panel members asked about the need for conducting analysis of the variance around CPI and whether ONS would be using these findings to improve their estimates. This led onto a discussion focusing on the practical implications of producing CPIH and what this analysis would suggest needs improvement.
- 3.3. The discussion moved onto the graphs presented in the paper. Panel members agreed that some more clarity was needed on the reasoning for some of the differences and the variance shown in the graphs, particularly figures 2 and 3. There was also a query on why monthly variances are so variable as the sample sizes do not change.

- 3.4. One panel member asked whether housing was an item or elementary aggregate and suggested that items like these that are not well defined for the between and within item framework could be removed from the paper.
- 3.5. A large part of the discussion focussed on how to make the use of accuracy estimates clear to the reader. Panel members asked for all aspects that affect accuracy to be made clear making clear in the article what has not been included and an explanation of the assumptions used to calculate the standard errors. It was suggested that ONS should list the sources of uncertainty and say what we can and cannot quantify. One panel member suggested that the first paragraph gave the impression that it would be a decisions paper and should be modified to avoid being misleading. Panel members suggested that the purpose of this paper needed to be better explained. Another suggestion was to write the paper in a more academic style and create a short explanatory article to precede it.
- 3.6. Overall, the panel welcomed the work on this topic and found the findings interesting. Panel members also pointed to the complexity of this work and understood that the work would take time to develop.

Action 3: ONS to work with Mr Smith to produce an academic paper on variance estimates for the Consumer Prices index, taking on comments from the panel

4. Proposed pipeline for processing alternative data sources

Paper APCP-T(18)13 – This paper will be published alongside the minutes

- 4.1. Mr Payne outlined the recent work covered in this paper. ONS has recently completed a discovery phase of the alternative data sources project to establish how such data could be processed. This included consolidating all appropriate research from the ONS and other NSIs. The paper also covers the efforts of ONS to gather web scraped and scanner data. The paper outlines some of the research questions that will need to be answered to construct the pipelines.
- 4.2. Members of the panel highlighted some of the key challenges they thought ONS would face with this project. Product churn was emphasised as one of the key issues which was shown in a number of the figures in the paper. One member suggested that finding how much churn was present in the data should be a priority for future work.
- 4.3. Another point from the panel was around how the larger data sets of prices would be sampled from. The Chairman outlined some thoughts from ONS that a sample to replicate the existing collection would be taken which could then be added to over time. One panel member gave some examples of how sampling of scanner data had been used by other NSIs in their CPI measures. One panel member pointed out the need to have an automated process for sampling when using big data. The example scanner data set provided by Dr Mehrhoff to the ONS would give the opportunity to develop this type of sampling method.

Action 4: Secretariat to share Dr Mehrhoff's draft scanner data paper with panel members

- 4.4. There were additional points from panel members at this stage. One panel member asked for a better distinction to be made between pre-processing and data editing. The GSBPM was suggested as a guide to laying out the pipeline steps and the Sato-Vatia index could be used to remove the need for modules 5,6 and 7.

5. The use of approximate weights for web scraped data in consumer price indices

Paper APCP-T(18)14 – Work in progress

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

5.1. Miss Thomas gave an overview of the research into creating a proxy of expenditure weights that could be used in the absence of actual expenditure for web scraped prices. The paper assesses the effectiveness of using website page rankings, by deriving expenditure rankings from scanner data for shampoo and tooth paste. The research shows where the weights for these items would under or over estimate the expenditure and applied various index methodologies to create an item level index.

Action 5: Dr Chessa offered to apply methods of creating proxy expenditure weights to scanner data available at Statistics Netherlands to assess how the distribution might vary for other items

5.2. A large part of the discussion focused on the distribution one would expect for weights at an item level. Panel members agreed that they would expect market leaders to be present for most items and therefore a large part of expenditure will come from one product or retailer.

5.3. Some panel members were sceptical of how much the product ranking could be trusted. Some retailers do not list products by popularity but rather by relevance. Potentially retailers might include the most profitable products at the top of their websites.

5.4. One panel member pointed out that the research was looking at expenditure rather than the number of transactions. Therefore, further research should look at the distribution when using expenditure to better show the popularity of products being bought.

5.5. Another member suggested that if retailers could supply some statistics about the expenditure on an item, for example the mean, standard deviation and distribution then ONS could use this to create a better approximation of expenditure without needing the data by assuming a distribution for expenditure and using these summary statistics to recreate it. Other panel members agreed that this was worth pursuing.

6. AOB

6.1. Mr Payne discussed with the panel the possibility of holding an extra technical panel in November or December to allow us time to produce the next iteration of the Household Cost Indices in early 2019. In particular, this meeting will focus on the inclusion of student loans and capital costs. Panel members were supportive of this suggestion.

Action 6: Secretariat to find appropriate date for extra technical panel and find out availability of panel members

6.2. The Chairman made the group aware that he would be leaving ONS in the near future and therefore is stepping down as Chairman of the technical panel. The Chairman thanked the panel for their contributions and expressed his enjoyment of the discussions. The panel expressed their appreciation to Mr Vaughan for his valuable input during his time as Chairman.

No.	Action	Person Responsible
1	Secretariat to inform technical panel of discussion on used cars from the stakeholder panel	Mr Chris Payne
2	Panel members to send the APCP-T secretariat any literature relevant to standard errors for consumer price indices to expand the literature review	Panel members
3	ONS to work with Mr Smith to produce an academic paper on variance estimates for the Consumer Prices index, taking on comments from the panel	Mr Jim O'Donoghue
4	Secretariat to share Dr Mehrhoff's draft scanner data paper with panel members	Mr Jack Philips
5	Dr Chessa offered to apply methods of creating proxy expenditure weights to scanner data available at Statistics Netherlands to assess how the distribution might vary for other items.	Dr Antonio Chessa
6	Secretariat to find appropriate date for extra technical panel and find out availability of panel members	Mr Jack Philips