ADVISORY PANELS ON CONSUMER PRICES - TECHNICAL

Minutes
20 January 2017
Board room, UK Statistics Authority, Drummond Gate, Pimlico, London SW1V 2QQ
10.30 – 13.00

Present

Mr Nick Vaughan (Chairman - ONS)	Mr Mike Prestwood (ONS)
Mr John Astin	Dr Jeff Ralph (ONS)
Prof. Bert Balk	Mr Paul Smith
Prof. Alberto Cavallo (via phone)	Dr Martin Weale
Mr Rupert de Vincent-Humphreys	

Secretariat

Mr Chris Payne (ONS)
Ms Helen Sands (ONS)

Apologies

Prof. Ian Crawford
Prof. Sir Stephen Nickell

1. Introductions, apologies and actions

1.1. The chairman welcomed attendees to the APCP-Technical (APCP-T) meeting. A round table of introductions followed. The panel provided a few drafting comments on the minutes from the previous meeting.

> Action 1: APCP-T secretariat to incorporate suggested changes to the September 2016 minutes and republish

1.2. Mr Payne went through the status of the actions from the September panel meeting. Action 1 for ONS to review the methodology used to calculate weights is ongoing. This is a project on the consumer prices development plan and has an implementation date of 2019.

1.3. Actions 2 and 3 regarding producing a payments measure of owner occupiers' housing (OOH) that is not based on the RPI approach and to rework the OOH article are complete. There have since been two quarterly articles published comparing different methods of measuring OOH costs.

1.4. Action 4 is complete. The methodology used to calculate Council Tax in CPIH was sent to panel members alongside the Stakeholder Panel minutes in September, and is now appended to the Council Tax paper published on the UKSA website.

1.5. Action 5 is complete. The chairman expressed the views of the Technical Panel at the Stakeholder Panel.

1.6. Action 6 is complete. The revisions policy was circulated to panel members and will be updated and published alongside the March 2017 consumer price statistics release.

1.7. Action 7 is complete. The timetable for the rewrite of the Consumer Price Indices Technical Manual was circulated to panel members.

1.8. Action 8 is complete. The Technical Panel are aware of the dates for meetings in 2017.

2. Terms of Reference (Paper APCP-T(17)01)

2.1. In addition to a general review of the Terms of Reference, the chairman explained that there were a couple of specific points that needed to be addressed.

2.2. The first point was with regards to whom the panel should be reporting in their annual report. Mr Prestwood pointed out in 2016 the report had been written to advise the National Statistician who could then report any issues or recommendations to the UKSA Authority Board. The panel confirmed that they were happy for the same approach to be followed this year, and suggested that the terms of reference should state that the annual report should be published following the final meeting in September, and prior to the final UKSA Authority Board in December. The National Statistician can then make a decision as to whether any of the advice given needs to be raised at the Board.

2.3. The second point was with regards to transparency and the publication of papers, as some are deemed of a sensitive nature and some are drafts of papers scheduled to be published in the future. The panel agreed that sensitivity of papers should be discussed at each meeting, with papers that are deemed to be market sensitive withheld from publication. One member felt that rather than never being published, potentially market sensitive papers should be published after a long lag (for example, eight years), by when the sensitivity can safely be assumed to have passed. It should also be clearly indicated on the website that the paper has been withheld due to market sensitivity.

2.4. Panel members also proposed that drafts of papers that are already scheduled for publication should not be published ahead of that scheduled date, but that the minutes should clearly state when the finished papers are scheduled to be published. Work in progress papers, for which no publication is scheduled, should however be published and clearly labelled.

2.5. Additional correspondence between meetings was also discussed. It was agreed that any additional papers, of a non-sensitive nature, circulated to panel members should be published and referenced in the minutes of the following meeting.

2.6. Mr Prestwood commented on the timeliness of the minutes and suggested that ONS will endeavour to publish these sooner following the meetings than they have been previously. It was also agreed that any meeting papers that are to be published should be published at the same time as the minutes.

Action 2: ONS to update Terms of Reference to reflect Technical Panel decisions.

3. RPI and CPI, A tale of two formulae (Paper APCP-T(17)02)

3.1. Mr de Vincent-Humphreys talked through his presentation, highlighting issues pertinent to the measurement of clothing prices in consumer price indices. He pointed out that clothing accounted for about half of the post-2010 'formula effect' difference between CPI and RPI

inflation, even though it comprised only about 5% of the indices by weight; it was not unusual for measured CPI and RPI inflation rates to differ by as much as ten percentage points, even though they are both calculated from the same of prices. He noted that one could infer from this that the distribution of price relatives for clothing must be significantly wider than for other items in the CPI basket. ONS are able to carry out work to assure this is the case.

> **Action 3: ONS to investigate the distribution of price relatives for other items in the CPI basket, to be compared with clothing, as part of the ongoing work on clothing and the formula effect.**

3.2. Mr de Vincent-Humphreys pointed out that the unusual width of the price relative distributions for clothing items was often attributed to January sales, but there was another factor which seemed to be at least as important: the high product turnover in this sector. For the data sample he presented, only about 15% of the specific garments for which prices had been collected at the start of the year, were still present in the shops the following year. This meant that for the other 85%, the price collectors had to find replacement items. Mr de Vincent-Humphreys presented a simulation to show that the subjective decision of the price collector as to whether a replacement clothing item was comparable or non-comparable could have a potentially large impact on the price index, and that the RPI (using the Carli formula) was particularly sensitive to this.

3.3. One member also pointed out that there were other items in the CPI basket that could be considered fashion goods (for example, Smart Phones), and suggested ONS consider comparing these fashion goods with clothing.

3.4. One member raised that monthly prices could be related to annual averages rather than the same month in the previous year, and that January and December were not typical months to use as the fixed base, as they display unusual pricing behaviour. It was highlighted that this might not be practical and is relevant to other areas beyond clothing, but that it could make for an interesting discussion point at a future meeting. One member raised that the choice of base month has little relevance as the pricing behaviour seen in December and January would still be apparent in the indices.

3.5. Dr. Ralph discussed how clothing panel data that was previously acquired by ONS was provided as averages due to the erratic nature of the individual price quotes. The Technical Panel members suggested that ONS should get in touch with the company that holds the data, and ask for the individual price quotes as the erratic pricing is the point of interest.

3.6. A number of suggestions for future work ONS could carry out were given, including:
- to model the standard path for product prices and estimate transition probabilities between states such as, for example, 'new', 'normal', 'sale'
- to use propensity score matching and use price and characteristics to calculate propensity scores
- to look at using a Kalman filter using all the quotes as inputs to smooth the clothing index
- to look at price movements for non-fashion items, for example, uniforms
- to investigate the use of winsorization or truncation techniques to minimise the impact of extreme price relatives
- to investigate ratios of averages; for example, the Dutot formula or a unit value index.

3.7. The panel also pointed out that given the nature of clothing data, it may benefit from some of the web-scraped techniques as discussed in APCP-T(17)04. Some panel members disputed this, saying the problems pertinent to locally collected data would still be apparent using larger datasets. One panel member suggested that big data may help with choosing replacement goods, as it provides the collector with more detailed information.

3.8. Professor Cavallo discussed how PriceStats® had been investigating the use of machine learning algorithms to find replacement products, and that this worked well, providing similar results to the hedonically adjusted clothing indices produced for the USA CPI.

3.9. The panel requested whether ONS could circulate the instructions that are given to local price collectors, including details of how to handle sale prices and how base prices for non-comparable items are imputed.

Action 4: Mr Payne to send local price collection instructions to panel members, including information on how to handle sale prices and how base prices for non-comparable items are imputed.

4. 'Readdressing the formula effect' (Paper APCP-T(17)03)

4.1. As much of this agenda item had been discussed as part of the previous item, no more discussion on the formula effect was held. The paper will be re-circulated to panel members and any further comments are to be given via email correspondence.

Action 5: Technical Panel members to send any further comments on paper APCP-T(17)03 by email correspondence.

5. Review of web-scraped price indices (Paper APCP-T(17)04)

5.1. Mr Payne gave details of the work that ONS have been doing to investigate and review the use of web-scraped data in price statistics. He explained this work is supported by a Eurostat grant that expires in May 2017. One of the grant objectives is to explore the different methods for compiling price indices using high frequency data, with a view to finalising a price index methodology for use of web-scraped data in the UK CPI.

5.2. Panel members praised the work ONS has completed to date on developing and producing web-scraped price indices, complimenting ONS on being one of the most advanced National Statistic Institutes with regards to this work.

5.3. One panel member thought that the ONS papers regarding web-scraping were very good, but that the latest papers may have started to overcomplicate the work. It was suggested that the remainder of this work should focus on improving the current process and using well known methods to calculate indices from the web-scraped data, before experimenting with new methods. Many of the problems ONS are currently facing result from technical problems with the scrapers rather than issues with the methods that are being used.

5.4. Three techniques were recommended as being the focus of the review: chained bilateral indices, fixed base indices and indices using Fixed Effects Window Splicing (FEWS). It was agreed that these methods are easy to understand and implement, while FEWS also adjusts for changes in quality. It was also suggested that price collectors could collect prices from the web-

scraped database in the same way that price collectors currently do in the field, and use auxiliary information to select the best replacement products.

5.5. The unit price index was criticized as unit prices are difficult to obtain from web scraped data due to needing additional information on weight and characteristics, for example. It was also highlighted that the GEKS methods were developed and adapted to deal with chain drift issues when quantities correlate with price movements. This is not a problem for web-scraped data as no quantities are being collected.

5.6. Some panel members were sympathetic to the clustering approach, but recognised that there are many challenges with the approach, primarily in defining and explaining the clusters. One panel member pointed out that the same method didn't need to be used for every product, and that some methods may be more suitable for certain products than others – as such, a mixed approach could be used. It was suggested ONS could complete work summarising potential biases, drawbacks and advantages of these methods.

5.7. The comparison between offline and online prices was discussed. Professor Cavallo referenced his paper that found that 90 per cent of the time the prices that were observed online were the same as those collected in the field. Mr Payne highlighted that ONS had completed a similar piece of work, finding that online prices typically matched the larger supermarkets, but not the smaller, local chains.

5.8. There was also discussion regarding transaction prices. One member raised that web-scraped data would not collect transaction prices, and that would be the true aim of a CPI. Although this is true, it was highlighted that price collectors in the field also don't collect transaction prices, just the advertised sale price, so this method is no less accurate than the field collection in that sense. Web-scraping also doesn't collect quantity data, so there is a question as to how the indices should then be weighted.

5.9. One panel member pointed out problems regarding big data are relevant to many countries, and will make up a large part of the discussion at the Ottawa Group meeting in 2017. ONS will have representation at this meeting to discuss progress regarding big data methodology and techniques.

6. AOB and date of next meeting

6.1. There were two topics for discussion under AOB. As ONS are rewriting the Consumer Price Indices Technical Manual, the panel were asked how much involvement they would like in the rewrite. It was agreed that panel members would review chapters that are of interest to them using a staggered approach, and that ONS would send the chapters out for review, by correspondence, as soon as they had been rewritten.

6.2. The panel were also informed of the recent interest regarding Financial Intermediation Service Indirectly Measured (FISIM) and its inclusion in CPIH. Members were asked for their initial thoughts on the matter, whether it should be part of ONS's work programme, and with what priority. Mr Prestwood highlighted that this initial phase would be discovery and based on previous work carried out by ONS, so nothing would need to be modified on the work programme at this stage. A paper on FISIM will be taken to the Technical Panel at May's meeting and it was agreed that the panel would assess whether FISIM should be incorporated, when they review the work programme at the same meeting.

6.3. One member asked for an update on the CPIH reassessment. Mr Prestwood stated the monitoring and assessment team were currently engaging with stakeholders and users, and would be meeting in mid February to make an assessment. Even if the CPIH doesn't regain National Statistic status, the current plan is still to move towards CPIH as the headline measure in March.

6.4. The panel briefly discussed the governments continued use of the RPI, and questioned whether the National Statistician should do more to encourage government departments to stop using the RPI wherever possible.

6.5. The panel also discussed the use of focus groups to provide views on consumer price statistics. . It was thought by many that public perception of inflation was typically misinformed, and Professor Cavallo and Mr Vaughan alluded to separate papers that supported this premise. ONS will circulate these papers to panel members.

Action 7: ONS to circulate papers regarding public perception of expenditure and inflation to panel members

6.6. It was noted that focus groups could be used to instead provide views on conceptual and methodological issues. One member noted that although in some areas this could be beneficial, some concepts are technically very difficult (for example, housing) and that, for most subjects, a certain level of understanding would be required. ONS use focus groups for digital publishing, so it could be considered whether Prices Division should use these groups.

Action 6: ONS to consider the use of focus groups to provide views on conceptual and methodological issues.

6.7. The next Technical Panel meeting will take place on Friday 19 May 2017.

7. Additional correspondence

7.1. In line with the agreement to publish and minute additional correspondence between meetings, 1 paper was circulated to the Technical Panel through email correspondence in November 2016 [APCP-T(16)13]. The Technical Panel were asked to advise ONS on whether the weight for owner occupiers' housing costs (OOH) in CPIH should be updated to include expenditure for "Other imputed rentals".

7.2. To date, the calculation of OOH weights has been based on expenditure for the COICOP class 04.2.1 "Imputed rentals for owner occupiers". This class, along with class 04.2.2 "Other imputed rentals" forms the aggregate group 04.2 "Imputed rentals for housing", with expenditure split roughly 95% to 5% in favour of class 04.2.1. Class 04.2.2 "Other imputed rentals" is made up of "owned secondary residences" and "households paying free or reduced rent"

7.3. The majority of members believed that expenditure on secondary homes should be included conceptually. Some added that this should not include expenditure on secondary homes bought for investment or business purposes. The argument given for including the expenditure generally surrounded the point that a person pays a cost to live in a space, but that this doesn't necessarily mean a single house, and that consumption does not necessarily require presence.

One member felt the owner is forgoing nothing if they were not to live in the property because they do not live in it anyway, and as such imputed rents on second homes should be excluded.

7.4. There was less agreement regarding the inclusion of expenditure for households paying free or reduced rents. Some members believed expenditure should be included as "consumption in-kind". One member pointed out that the prices for this category should be treated the same as imputed rents. Other members felt that the expenditure should be excluded. It was noted that this category relates principally to those rented residences provided through employment, for example a school caretaker. Since this relates exclusively to those who rent and is separate both in concept and practice from owned properties, one member felt that this expenditure should be excluded.

7.5. The new weight for OOH will be based on the total expenditure for group 04.2 "imputed rentals for housing". More details can be found in the following article.

8. Actions

No.	Action	Person Responsible	Status
1	APCP-T secretariat to incorporate suggested changes to the September 2016 minutes and republish	Ms Sands	
2	ONS to update Terms of Reference to reflect Technical Panel decisions.	Ms Sands	
3	ONS to investigate the distribution of price relatives for other items in the CPI basket, to be compared with clothing, as part of the ongoing work on clothing and the formula effect.	Mr Payne	
4	ONS to send local price collection instructions to panel members, including information on how to handle sale prices and how base prices for non-comparable items are imputed.	Mr Payne	
5	Technical Panel members to send any further comments on paper APCP-T(17)03 by email correspondence.	Technical Panel members	
6	ONS to consider the use of focus groups to provide views on conceptual and methodological decisions.	Mr Prestwood	
7	ONS to circulate papers regarding public perception of expenditure and inflation to panel members	Mr Vaughan	