

ADVISORY PANELS ON CONSUMER PRICES - TECHNICAL

Minutes**11 May 2018****Board room, UK Statistics Authority, Drummond Gate, Pimlico, London SW1V 2QQ****10.30 – 13.00****Members in attendance**

Mr Nick Vaughan (Chairman - ONS)

Mr Peter Levell

Dr Jens Mehrhoff

Mr John Astin

Dr Antonio Chessa

Mr Mike Hardie (ONS)

Mr Rob Bucknall (ONS)

Mr Paul Smith

Mr Rupert de Vincent-Humphreys

Dr Martin Weale

Prof. Bert Balk

Presenters

Miss Jaya Jassi

Secretariat

Mr Jack Philips (ONS)

Mr Chris Payne (ONS)

Apologies

Prof. Ian Crawford

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.
- 1.2. The panel expressed their appreciation to Ms Sands who is leaving Prices Division on secondment to the BoE. They acknowledged her contribution to the APCPs as well as her work on developing HCIs.
- 1.3. The chairman welcomed two new members to the panel; Dr Antonio Chessa, replacing Alberto Cavallo who left APCP-T in September, and Mr Mike Hardie who has taken over as head of prices from Mike Prestwood for the foreseeable future. The chairman would like to thank Mr Ralph who has retired since the last panel and Mr Prestwood for their contribution to the APCPs.
- 1.4. Mr Jim O'Donoghue has finished the literature review of work on producing standard errors for consumer price indices.

Action 1: ONS to circulate literature review of work on producing standard errors for consumer price indices

- 1.5. Mr Levell found the paper on used cars methodology was not relevant and this action was marked as complete. Due to disclosure constraints, ONS was unable to send Dr Jens Mehrhoff the data extract of used cars. ONS are continuing to research methodology into potential models and methods used by other countries.

2. Calculating a price index for student loan repayments

Paper APCP-T(18)06 – 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 gave an overview of the HCIs and explained how ONS is attempting to capture student loans within the index on a payments basis. Mr Payne outlined the three ways of paying for tuition fees: outright, through a student loan or with scholarship or bursary. The proposed methodology models repayments over the threshold set by government, with payments of 9% of income thereafter. A median graduate salary is used to approximate the payments, however this occurs at a lag. The paper also includes a section on maintenance loans and how to separate out payments for tuition only.
- 2.2. Panel members queried whether data could be used from the Living Costs and Food Survey or HM Treasury. Other members agreed that actual receipts would be a better alternative to modelling repayments if this option is possible. There was agreement that, if data cannot be used, it should be demonstrated that this option is either not available or not suitable.
- 2.3. Some panel members highlighted that the presented index was not a price index. There was some discussion as to whether an increase in an individual's student loan repayments caused by an increase to their income should be treated as a price increase or a quantity increase. Members had differing opinions on this matter. Some members pointed out that if repayment is less than the interest rate then the amount owed goes up, therefore the amount you pay back is dependent on when the payment is made. Other members raised the point that loan repayments can be treated as a tax and therefore ONS could look to replicate some of their current methodology. Two other examples of payments with a similar problem were kindergarten payments and student bus tickets which depend on the person's income.
- 2.4. A number of members pointed out more generally the need to be conceptually consistent across the HCIs with respect to how loans and credit are treated. An example was given of buying a washing machine on credit and the amount being paid back would be dependent on the duration of the payments. This was supported by another point that an individual could take out a loan and spend this on goods and services which could be treated in a similar way to credit. This raised the question as to whether it is important what the source of the income is. There was no consensus on this; however, it was agreed that it would be very difficult to collect accurate data for the income source of people's payments.
- 2.5. The focus of the discussion moved back to the specific nature of capturing student loan repayments. One member said there needs to be further work to understand how to treat the large amount of loans that are never paid off. Another member asked for clarification on the text around disaggregating into component parts. Mr Payne explained that this was referring to inclusion of both maintenance loans and tuition fees but only the tuition fees should be

measured to avoid double counting. The chairman and a number of members highlighted that maintenance loans were a key area for future work.

- 2.6. A number of suggestions came from this discussion. There was some agreement that the use of a mean graduate salary would be more appropriate, to capture the range of graduate salaries. Another suggestion was to use a distribution of incomes. One member suggested a stratification of graduate salaries to fix the basket. Some members did not feel it was appropriate to use real AWE. It was also noted that the use of nominal AWE is not consistent with the opening statement that HCIs are intended to measure how much the nominal disposable income of different household groups would need to change, in response to changes in prices and costs, to enable households to purchase the same quantities of goods and services at a fixed quality.

Action 2: ONS will undertake further work to address the concerns of the panel members with respect to the methodology for calculating a price index for student loan repayments. This work will be presented at a future APCP meeting

3. Draft work programme for consumer price statistics

Paper APCP-T(18)07 - not for publication

This is a draft of a document that will be published in Q4 2018

- 3.1. Mr Hardie provided an outline of the draft work programme and invited opinions from panel members.
- 3.2. There were suggestions from members on what work could be added to the work plan. One member highlighted a move internationally towards considering the digital and sharing economy to better account for companies such as Google and Airbnb and that this could be an area to consider. Other members wanted to see further work on air fares. It would also be beneficial to have a larger dataset. Mr Payne pointed out that airfares had recently been acquired from a third party web scraper. Another member suggested the use of the Eurostat public guide for scanner data, which has a section focused on the acquisition of data. This includes examples of contracts that might be useful when beginning the process of engaging with retailers
- 3.3. One member asked about the drivers behind a regional consumer price index. The chairman pointed out that ONS has a large number of stakeholders who want us to produce better statistics by geography.
- 3.4. One member was happy to see continuing work on Used Cars as this is an area of priority in Europe.

Action 3: ONS to consider suggestions to the workplan from the panel against the current priorities

4. Investigating the use of web scraped data to improve clothing measurement

Paper APCP-T(18)08 - This is work in progress and will be published once the development work has been completed

- 4.1. Miss Jassi discussed the complexities of creating indexes for clothing and showed graphs for various clothing items based on differing methodological approaches. When using a chained Jevons index prices fall quickly which we do not consider is reflective of consumer experience. The chained Dutot displays a more stationary trend, however there is some volatility in index movements.
- 4.2. A number of members spoke about the volatility and downward drift shown in the graphs. One member pointed out the similarities with previous studies on grocery data where prices decline when volatile prices are chained. These types of problems are therefore not unique to clothing. Another member asked about the possibility of using items with less volatility such as uniforms or white t-shirts. Mr Payne informed members that they had proxied a uniform index by creating an index based on items that had not left the sample (assuming that these will be 'staple' items which are not influenced by fashion) and this also declined rapidly.
- 4.3. Members also pointed out reasons for the downward drift. The first was the lack of weights. Products that do not sell well are weighted equally to high selling products, and these low selling products are also more likely to be discounted to clear. Another cause mentioned was seasonality, which meant that certain products would move in and out of the sample quicker than others. Another point was that having a large sample size and more diverse products in comparison to the manual collection means there will be a larger range of prices.
- 4.4. The discussion moved towards suggestions of how to avoid the downward drift and improve on the current methods used. One member suggested creating an index of products when they are introduced in order to follow the lifecycle of products. Another suggestion was that winsorization would not solve this issue. A better approach would be to choose the index methodology and create a cleaning technique suited to the chosen method. Another member identified that an alternative approach could be to stratify the sample before the index methodology is applied.
- 4.5. Members ended the section by suggesting alternative methodologies including the Time Product Dummy and Geary-Khamis. Members were in agreement that this is a hugely complex problem which hedonics may not be able to resolve.

Action 4: ONS will trial the use of the suggested methodologies with the available web scraped clothing data and report back to the APCP-T at a future meeting.

5. Extending the classification structure using web scraped data

Paper APCP-T(18)09 - This paper will be published alongside the minutes

- 5.1. Mr Payne explained the current classification structure and how ONS could extend this with the introduction of alternative data sources in two ways. These are: to add additional items to the structure, for example adding peaches within the fruit classification, and to add a further level within items; for example, to create a group for plantains within the item for bananas. The paper also lists some considerations before ONS could implement a change.
- 5.2. The initial part of the discussion focused on the extension of the item level, particularly what items should be added. One suggestion was that services should have an extension as well as goods. It was highlighted that within the newly acquired third party web scraped data there

were services data for package holidays and airfares which could be considered in the same way.

- 5.3. Members wanted ONS to provide some more information in relation to the paper. Firstly, the addition of distribution charts on a normalised basis, with diagnostics; for example, the standard deviation and coefficient of variation. Another member wanted to know more about the techniques used in web scraping and asked ONS to provide a description of how web scraping worked.

Action 5: ONS to circulate description of web scraping
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Action 6: ONS to produce distribution charts on a normalised basis with diagnostics

- 5.4. The discussion moved to some of the issues with extending the classification structure. One member pointed out there is a risk with the comparability of the scanner and local collections if your 'representative item' is not representative. Members also said ONS should be aware of the increased volatility that will come with alternative data sources when creating indexes. However, the panel was in agreement that ONS should be making full use of the increased amount of data that will come from alternative data sources and therefore supported the addition of more items.
- 5.5. The additional layer of classification at the sub item level was also discussed. Members were in agreement that creating more homogeneous groups was important however care needed to be taken to make sure these groups make sense in practice. One member asked whether it would be better to consider classifying between premium, mid-range and budget goods, as other classifications might not create homogeneous groups if they contain different groups of products.
- 5.6. Mr Mehrhoff suggested the use of a public scanner data set from the University of Chicago which is open source. This would help prepare for the introduction of scanner data.

Action 7: Mr Mehrhoff to share details of open source scanner dataset

6. AOB and date of next meeting

- 6.1. No further business was raised.
- 6.2. The next Technical Panel meeting will take place on Friday 7 September 2018.

7. Actions

No.	Action	Person Responsible
1	ONS to circulate literature review of work on producing standard errors for consumer price indices with members	Mr O'Donoghue
2	ONS will undertake further work to address the concerns of the panel members with respect to the methodology for calculating a price index for student loan repayments. This work will be presented at a future APCP meeting	Mr Payne

3	ONS to consider suggestions to the workplan from the panel against the current priorities	Mr Payne
4	ONS will trial the use of the suggested methodologies with the available web scraped clothing data and report back to the APCP-T at a future meeting.	Miss Jassi
5	ONS to circulate description of web scraping	Ms Flower
6	ONS to produce distribution charts on a normalised basis with diagnostics	Ms Flower
7	Mr Mehrhoff to share details of open source scanner dataset	Dr Mehrhoff