

ADVISORY PANELS ON CONSUMER PRICES – TECHNICAL

Minutes9th July 2021**Teleconference**

10:30 – 13:30

Members in attendance

Mr Grant Fitzner (ONS, chair)
Mr Mike Hardie (ONS)
Prof. Guy Nason
Dr Martin Weale
Mr Rupert de Vincent-Humphreys
Mr Peter Levell
Prof. Ian Crawford
Ms Corinne Becker Vermeulen

Secretariat

Mr Huw Pierce (ONS)
Mr Chris Payne (ONS)

Presenters

Ms Natalie Jones (ONS)
Ms Helen Sands (ONS)
Ms Annabel Summerfield (ONS)

Apologies

Dr Antonio Chessa
Prof. Bert Balk
Prof Paul Smith
Dr Gareth Clews (Methodology, ONS)

Observers

Ms Tanya Flower (ONS)

1. Introduction and apologies

- 1.1. Mr Fitzner opened the meeting and passed on apologies from members unable to attend.
- 1.2. Mr Payne summarised progress on outstanding actions from previous sessions. The precision/recall data requested at the January meeting was circulated to panel members ahead of this session. Updates on private rental development will be covered by agenda item 2 and in a supplementary paper to be provided after this meeting. A comparison of mortgage interest calculations for the HCIs will be included in a paper to be presented at the October meeting. Prof. Crawford has provided contact details for colleagues working on machine learning. Text has been added to the UKSA website indicating how interested parties can provide feedback on submitted papers.
- 1.3. Mr Fitzner introduced Corinne Becker Vermeulen, who has joined the panel. Ms Becker has over twenty years of experience in price statistics and has overall responsibility for price statistics at the Swiss Federal Statistical Office.

2. Update on Private Rental Prices Development

- 2.1. Ms Jones gave a presentation to update the panel on the Private Rental Prices Development work.
- 2.2. Additional work has been undertaken by the Economic Statistics Centre of Excellence (ESCoE) to review the proposed methodology.

- 2.3. The following discussion has been redacted due to the market sensitive nature of the subject.

ACTION: ONS to circulate supplementary rentals paper to panel members by Summer 2021.

3. RPI Revisions Policy

- 3.1. Mr Hardie gave a brief update on proposed changes to the RPI revisions policy.
- 3.2. The discussion has been redacted owing to market sensitivity

4. Alternative Data Sources in the CPI and CPIH

Ms Sands gave an overview of the topics to be considered and the motivation for the paper. The objective is to integrate new data sources with the traditional collection to maintain current commitments in respect of smaller retailers and the RPI, align better with COICOP at the elementary aggregate level and support the future development of regional price statistics.

4.1. Proposed updates to aggregation structure.

- 4.1.1. Ms Sands contrasted the current aggregation structure with the proposed changes. The new hierarchy is aligned to COICOP 2018, with the current item level replaced with consumption segments. Beneath this there will be a regional layer weighted by LCF data and then below this a retailer level where retailers using alternative data sources will receive a unique weight reflective of their market share. Remaining retailers who are collected from locally will be divided into two groups to maintain necessary sample sizes. These groups will be determined according to a market share threshold of 2% (i.e. retailers above 2% market share and retailers below 2% market share). The current items will be maintained in the local collection as being representative of the consumption segment, whereas all products pertaining to a consumption segment will be used in the indices calculated based on alternative data sources.
- 4.1.2. Mr de Vincent-Humphreys noted that the specific items collected locally in the new hierarchy would also be present within the scanner and web scraped data sets and asked if this presented an opportunity for cross checking prices between data source types. Ms Sands concurred, explaining current research into linking products between data sets using barcodes, which have recently started being collected as part of the local collection.
- 4.1.3. Ms Becker was supportive of the approach and asked where in the new hierarchy an online-only retailer would sit if stratification first occurred by region and then by retailer. Ms Sands outlined an ongoing piece of research into the extent that retailers employ national pricing policies, suggesting that if the practice was sufficiently widespread then indices from web scraped data could be applied uniformly across all regions.
- 4.1.4. Dr Mehrhoff asked if there were plans to publish more granular breakdowns of data than COICOP5. Ms Sands described the current arrangements for publishing microdata down to the item level indices and suggested that this would likely be replaced by consumption segments in the new hierarchy, with a possibility of publishing a further regional breakdown at this level.

4.1.5. Mr Levell asked for clarification on the reasoning for stratifying by retailer market share. Ms Sands explained that this was so that retailers could be given appropriate weights within the sample, with the optimal situation being that all retailers would have an individual market share. Analysis has shown this to be unfeasible due to small sample sizes, so the 2% market share threshold has been proposed as an alternative to the current multiple-independent split currently applied to the local collection. Mr Levell suggested stratifying online and in-store retailers separately as their price dynamics may differ.

4.1.6. Ms Becker followed by asking how the new hierarchy handled using multiple collection techniques for the same retailer. Ms Sands replied explaining that ONS will adopt a bespoke strategy for each retailer and category, and weight the indices accordingly.

4.2. Consumption segments

4.2.1. Ms Sands described the concept of a consumption-segment level index. A consumption segment is broader than an item, which allows greater use of scanner and web scraped data. Item level indices will continue to be produced from representative items in the local collections to maintain homogeneity of these items. The decision over how many consumption segments to include will be driven by the market share coverage of scanner and web scraped data, however for certain areas of the basket there may not be sufficient coverage and a more conservative approach to introducing consumption segments may be required to ensure retailers providing alternative data sources do not implicitly receive a greater overall weight because they have data in more consumption segments.

4.2.2. Ms Becker advocated flexibility in the breadth of consumption segments for different areas of the basket, depending on the availability of data and homogeneity of products.

4.3. Weighting structure and new strata

4.3.1. Ms Summerfield presented proposed changes to the usage of Annual Business Survey (ABS) data. Currently the data are used to weight stores as either multiples or independents dependent on the number of physical outlets. In future, turnover data from the ABS will be used to weight retailer indices (for those with alternative data sources) and to weight groups of retailers based on their market share threshold within the local collection. Imposing both market share and regional strata increases the number of strata that price quotes are divided between and the distribution of quotes between them, resulting in some strata being empty.

4.3.2. Prof Nason enquired about the amount of variation in the ABS data from year to year. This would determine the impact of the three-year lag in the data. Ms Summerfield reported that trends in the data were generally stable, however noting that retailers can close abruptly.

4.3.3. Mr Levell raised the scenario of a retailer not being present in the ABS data. Ms Summerfield averred that such a retailer would almost certainly fall into the under 2% market share stratum and would be weighted accordingly.

4.3.4. Responding to Dr Weale, Ms Summerfield confirmed that all retailers within the under 2% market share stratum are weighted equally within the stratum.

4.4. Imputation for missing strata

4.4.1. Ms Sands outlined options for imputing data for missing strata. Nearest parent imputation was the ONS preferred option, where missing stratum indices are imputed based on the movements of the remaining consumption segment. The alternative was nearest neighbour imputation which sometimes gave better approximations; however, the choice of neighbour was subjective and the nearest neighbour can change.

4.4.2. Dr Mehrhoff asked how a stratum could come to be empty, whether there were no outlets of that type or whether there were simply no transactions within the stratum for the period. Ms Sands replied that both scenarios were possible. Dr Mehrhoff argued that the appropriate treatment of the first scenario would be to apply zero weights rather than impute a value. Ms Becker proposed imputing values in such a way that they had no impact on the overall index.

4.5. Imputation for missing consumption segments

4.5.1. Ms Sands presented the options for imputing a missing consumption segment, a scenario that may emerge for seasonal goods or during periods of interrupted supply. The available options are parent imputation, as applied for seasonal items currently, or all-items imputation as applied for unavailable items during the Covid-19 pandemic.

4.5.2. Dr Weale favoured parent imputation, as the scenario under consideration was closer to that of a seasonal good.

4.5.3. Dr Mehrhoff advocated for the methods used in HICP, and shared [research](#) he presented at the UNECE conference in 2018 addressing this topic. He added that the international consensus is to use 25-month rolling windows so that two in and out-of-season periods are covered.

4.6. Concluding thoughts

4.6.1. Mr Levell observed that elementary aggregates are compiled using the geometric mean of price relatives and then aggregated as a Lowe index. This raises a concern that disaggregating the headline index to a greater extent diminishes the benefits of using the geometric mean. Ms Sands reiterated that the intention is to minimise changes to local collection practices, while scanner and web scraped data are calculated using improved multilateral methods and aggregated together with the current collection using the traditional Lowe-type methodology. Further analysis is being undertaken internationally to understand the interaction between multilateral method and a Lowe-type aggregation.

4.6.2. Mr Fitzner highlighted the increased interest in regional price indices in the UK and the significance of this work in this context.

5. Publication Status of Presented Papers

5.1. Mr Hardie and Ms Sands agreed that the paper presented for item 4 can be published with redactions made to appendix A due to commercial confidentiality.

ACTION: Ms Sands to provide a redacted copy of the paper to the Secretariat for publishing.

6. AOB and date of next meeting

6.1. The next meeting will be on Friday 8th October 2021.

No.	Action	Person Responsible
1	ONS to circulate supplementary rentals paper by 6 th August 2021.	APCP-T Secretariat
2	Ms Sands to provide a redacted copy of the paper to the Secretariat for publishing.	Ms Sands