

## ADVISORY PANELS ON CONSUMER PRICES – TECHNICAL

### Minutes

28<sup>th</sup> January 2022

### Teleconference

10:30 – 13:00

#### Members in attendance

Mr Grant Fitzner (ONS)  
Mr Mike Hardie (ONS)  
Prof. Guy Nason  
Dr Martin Weale  
Mr Rupert de Vincent-Humphreys  
Ms Corinne Becker Vermeulen  
Dr Antonio Chessa  
Prof. Bert Balk  
Prof Paul Smith  
Dr Jens Mehrhoff  
Prof. Ian Crawford

#### Secretariat

Mr Chris Payne (ONS)

#### Presenters

Mr Andy King (ONS)  
Mr Joe Barker (ONS)  
Mr David Moran (ONS)  
Ms Helen Sands (ONS)

#### Observers

Ms Sofia Poni (ONS)  
Ms Tanya Flower

#### Apologies

Mr Huw Pierce (ONS)  
Leonie Field (ONS)  
Mr Peter Levell

### 1. Introduction and apologies

- 1.1. Mr Fitzner opened the meeting and passed on apologies from members unable to attend.
- 1.2. Mr Fitzner summarised progress on outstanding actions from previous sessions, all of which have been completed.

### 2. Transformation of UK Consumer Price Statistics

- 2.1. Mr King presented an update on the roadmap for implementing new data sources into Consumer Prices Index including owner occupiers' housing costs (CPIH) and Consumer Prices Index (CPI) and an analysis of the impact that new data sources would have had if they were already part of the consumer price inflation indices.
- 2.2. The introduction of groceries scanner data has been rescheduled to 2024, while new admin data sources for rail fares and second-hand cars will be introduced from 2023.
- 2.3. Dr. Weale asked about how new data sources were prioritised for research and development. Mr Fitzner explained that the quality of existing data sources was a major consideration, as well as the availability of new sources. Mr Hardie added that incremental changes to the data sources allowed ONS to better control the risk associated with each change.
- 2.4. Dr Chessa enquired about the choice of a mean splice for the index number approach when ONS' own ranking of methods favoured a movement splice. Ms Sands advised that further

research carried out by ONS gives further support to a mean splice. This will be presented at a future meeting of the panel.

- 2.5. Dr Chessa also invited comment on the drivers of differences in contributions from the new data sources, whether these were due to using a multilateral index formula or due to the increase in coverage. Mr King offered to take this forward as a piece of impact analysis.

ACTION: ONS to conduct impact analysis on the contributions from new data sources.

- 2.6. Prof Smith asked how ONS will determine whether the new data sources result in an index that is an improvement on the existing process, acknowledging that this is not a settled question in the index methods community. For the case of rail fares, Mr King reasoned that as the current process relied on an annual uplift while new data sources allowed for monthly indices one would expect the latter to be more representative of the price changes affecting consumers.
- 2.7. Ms Becker supported the reasoning for amending the implementation timeline for new data sources and noted the closeness of the two versions of CPIH (with and without the new data sources).
- 2.8. Dr Mehrhoff referred to ONS' identification of run time as a consideration for choosing an index number method and asked for further details, adding that mean splicing was the most secure choice of extension method. Ms Sands advised that run time scaled with the number of consumption segments and strata and was affected by the choice of index method and system configuration. Generating results was measured on timescales of minutes or hours.
- 2.9. Dr Mehrhoff also asked if there were plans to publish results at a greater level of detail. Mr King confirmed that there were as part of forthcoming publication of experimental indices from May 2022.
- 2.10. Prof Nason suggested subsampling the datasets as a way of avoiding the runtime issues raised in the paper. Ms Sands replied that ONS' work to date indicated that reducing the dataset size had a greater influence on the results than the choice of index method.

### **3. New Data Sources for UK Consumer Price Indices (Rail Fares)**

- 3.1. Mr Barker summarised work carried out by ONS on rail fares. The Latest Earnings Networked Nationally Overnight (LENNON) dataset comprises transaction level data giving expenditure and price information, as well as geographic data and information relating to date of purchase and travel. ONS has used these additional fields to construct a definition of a unique product for the purposes of price analysis and used the postcode of the origin station to stratify by region. Future work is to examine the effect of product ID changes on the index, to separate underground travel (these are a different COICOP5 subclass to overground rail), and to trim data within the month.
- 3.2. Dr Chessa queried the decision to exclude child fares from the analysis. Mr Barker explained the complexities created by child fares e.g. seasonality and variability between train operators in the size of discount. Child fares make up a relatively small share of expenditure so as an initial step they have been excluded.
- 3.3. Prof Smith continued the discussion on discounted fares, highlighting that railcards attract an upfront fee and should ideally be included in the index. Mr Barker replied that information on railcard costs was available from the data provider but would require a new

data delivery. Prof Nason drew parallels with discount schemes applied by other types of retailer.

- 3.4. Dr Mehrhoff and Mr de Vincent-Humphreys agreed that the decision to treat the station of origin as the basis for assigning region made sense for a return ticket, however felt that this was less obvious for a single. Prof Nason and Prof Smith noted that it was not always the case that a return ticket is cheaper than two singles, and Prof Smith suggested amending the weights of single tickets to reflect this in regional aggregation, perhaps drawing on rail passenger surveys as a data source.
- 3.5. For the treatment of discounted fares, Dr Mehrhoff observed that distinguishing these within the data was a requirement for their proper processing. Mr Barker replied that this would require a redelivery of the data. Mr de Vincent-Humphreys reflected that index movements due to fluctuating take up of discounts would not be a good basis for policy making, and these should be minimised by treating them as separate strata.
- 3.6. Prof Crawford observed that rail fares were a particularly salient component of the basket, generating strong public feeling. He suggested future work might include incorporating performance data so that quality adjustment could be applied to the index.

#### **4. New Data Sources for UK Consumer Price Indices (Used Cars)**

- 4.1. Mr Moran set out the landscape for current treatment of second-hand cars within CPI and CPIH and research carried out on a new dataset provided by a leading website. The new data covers both dealerships and private sales and is updated daily. Data is filtered to remove listings other than second-hand cars, sales by private sellers and other outliers. Records are then stratified by age, engine type and manufacturer. Indices produced from the data are sensitive to the rules chosen for unique product definition, while the choice over whether to use all listings or just the latest listing for a vehicle is observed to have little effect.
- 4.2. Ms Becker suggested investigating whether there were any differences between the advertised and transacted prices for cars, given the likelihood of negotiation taking place between buyer and seller, and comparing results from using quantity and expenditure-based weights. Mr Moran replied that the Harmonised Index of Consumer Prices (HICP) manual recommended using the listed price in the absence of any other information. When ONS analysed the results using expenditure weights the index was heavily skewed by the most expensive cars, while quantity weights gave results that aligned more closely with records held by DVLA. Responding to Dr Mehrhoff, Mr Moran said that there was limited market research in the UK into second-hand cars that could be used as an external data source to validate weights.
- 4.3. Dr Mehrhoff observed that greater granularity of stratification led to a lower index, indicating issues with quality characteristics. He proposed exploring hedonic techniques in future, drawing comparisons with a house price index.
- 4.4. Dr Mehrhoff and Dr Chessa offered views on the MARS scores for the three product definition approaches compared in the paper. Dr Mehrhoff noted that the three scores were close, suggesting that the choice was a close one, while Dr Chessa shared his own analysis that the ranking was consistent when adjusting the weights in the MARS formula.

- 4.5. Mr de Vincent-Humphreys queried whether relying on a single data provider for a particular component of the basket presented a risk once this data source had been introduced into production. Mr Moran highlighted the established nature of the provider and the contractual arrangements that guaranteed a notice period prior to service withdrawal.
- 4.6. Prof Balk raised a concern about both papers, asking how ONS would justify using different index number methods at different levels of aggregation. Ms Sands agreed that this would be a task for inclusion in ONS' communications strategy.

## 5. AOB and date of next meeting

- 5.1. All papers will be published following the publication of the experimental indices for second-hand cars and rail fares in May 2022.
- 5.2. Ms Poni updated that the three papers will be presented to the Stakeholder Panel at their next meeting as part of a wider discussion about the volume and timing of future publications.
- 5.3. Mr Fitzner referred to growing interest in regional indices and highlighted these as a likely topic for future presentations.
- 5.4. Mr Hardie updated on a positive discussion held with Jack Monroe on the price statistics landscape and notified the panel of her plans to publish her own price index. Mr de Vincent Humphreys and Mr Fitzner explored the problem of forced substitution for lower income households that Jack Monroe has raised. Mr Hardie expressed interest in researching this topic in collaboration with the Data Science Campus, while distancing this research from the headline price indices.
- 5.5. Mr Hardie confirmed that the rents development work had completed its discovery phase and was now moving into alpha build. A period of parallel running is planned for next year alongside a user consultation. In the interim further methods papers will be published covering the research and development work undertaken to date.
- 5.6. The next meeting will be held on Friday 8<sup>th</sup> April 2022.

No.	Action	Person Responsible
1	ONS to conduct impact analysis on the contributions from new data sources.	ONS