

ADVISORY PANEL ON CONSUMER PRICES – TECHNICAL

Initiating a Review of Quality Adjustment in Consumer Price Statistics

Status: final

Expected publication: alongside minutes

Purpose

1. This paper presents a brief overview of a proposed quality adjustment review in consumer prices and some of the work planned. It also contains details of some of the research to date.

Actions

2. Members of the Technical Panel are invited to:
 - a) give feedback on the project deliverables outlined in this paper
 - b) provide any suggestions about the project approach and, in particular, whether there are any further areas of quality adjustment that should be considered
 - c) suggest any additional indicators of method suitability that are not mentioned in this paper

Project Background and Aim

3. Quality adjustment is already heavily utilised throughout consumer price statistics, however, the process for choosing which quality adjustment method has previously followed a very 'ad-hoc' approach, and the method that is decided upon is then rarely monitored. Furthermore, there is no regular review process to monitor the quality adjustment of items, or the impact that quality adjustment has on the headline figures.
4. Both the Johnson Review [UK Consumer Price Statistics- Paul Johnson](#) (see chapter 12) and the Bean Review [Independent Review of UK Economic Statistics- Sir Charles Bean](#) (see section 3, pages 106-112) highlighted this point, and made a number of recommendations as to how quality adjustment processes could be improved within the ONS. The Bean review also specifically raised the issue of quality adjustment of services.
5. A project has been established that aims to review quality adjustment procedures across consumer price statistics in the UK. It is intended to look in detail at how procedures are chosen and monitored, and make improvements to them if necessary. The project also aims to make sure that current procedures are in line with international best practice and that quality adjustment methods are kept up to date.

Project Deliverables

6. The first deliverable will be to assess the current state of quality adjustment within UK consumer price statistics. This will include looking at the proportion of the CPIH basket that each quality adjustment method is used for, and a review of the quality adjustment process itself, as in, how methods are chosen, monitored and reviewed. It will also involve research into quality adjustment processes in other National Statistic Institutes (NSIs) that can be

used to further improve our methods and ensure they are in line with international best practice.

7. The next deliverable will be an assessment of whether current methods and practices are suitable using a range of indicators. One such indicator could be an Implicit Quality Index (IQI). This shows the implied quality change in a sample over time, and can be used to identify where inappropriate quality adjustment methods are being used. For example, if towels are showing a 50% quality increase within a year, they are likely to be using an inappropriate quality adjustment method. Conversely, if computers are showing 0% or a quality decline then the quality adjustment method would also come into question. The number of non-comparable replacements within a sample, and the standard deviation of the price relatives within a sample can also be used to indicate the suitability of quality adjustment methods.
8. The third deliverable will be to recommend a way to monitor quality adjustment methods and act upon improving these methods when they prove inappropriate, which could make use of the indicators described in paragraph 7. Another part of this deliverable is to recommend a method to determine which quality adjustment procedure should be used in particular situations.
9. The final deliverable will then be to implement these recommendations within consumer price statistics. We currently have a suggested implementation date of January 2019.

Thomas Lewis
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August, 2017

List of Annexes

Annex A	Initial research into other NSI approaches compared with UK
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Annex A- Initial research into other NSI approaches compared with UK

Initial research into other NSI's quality adjustment procedures has revealed that the methods used are broadly similar to those used in the UK, which indicates that our methods are in line with international best practice. The most common methods used across Europe are Direct Comparison and Bridged Overlap (Class Mean Imputation), with Quantity Adjustment being used in cases where the package size/ weight of an item has altered between time periods.

Other methods used in UK consumer price statistics, such as hedonic adjustment, are only used in a handful of other countries such as France, Germany, Spain, Sweden and Austria. This is largely due to other countries not having the resources available to carry it out.

Although other countries use these same techniques as the UK, there are some differences between the items that they use them for. For example, we use hedonics for laptops, smart phones, tablets and PCs, whereas hedonics is also used for additional technological goods, used cars and residential properties in Germany, and only for clothing and used cars in Sweden.

Additionally, it has been found that other countries use methods that aren't currently used within UK consumer price statistics. The most interesting of these was the Supported Judgement method, which involves considering additional costs, in particular the fuel/energy consumption of a product, to determine its quality change. The other was the Expert Judgment approach where a team of experts determine the quality change subjectively. However, this method seems to be primarily used as a last resort when other methods cannot be applied.