ADS impact analysis & readiness impact assessment

Advisory Panels on Consumer Prices: Joint Stakeholder and Technical Panel

27th September 2024

Office for National Statistics

Official Sensitive

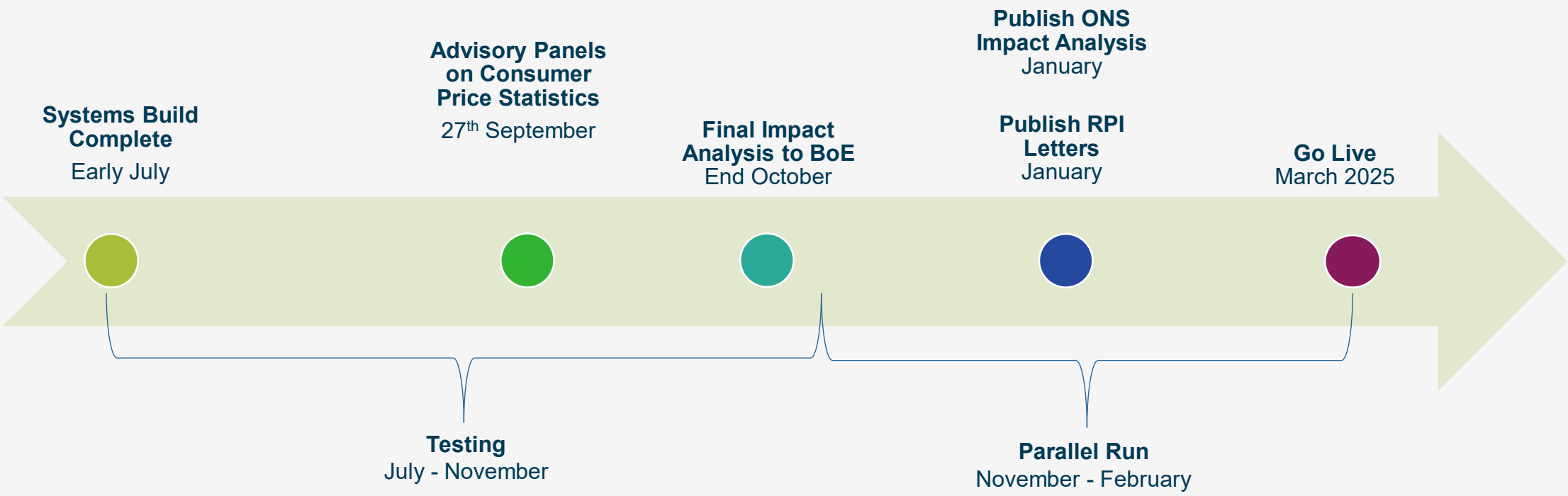
Overview of session

1. Update on transformation timelines
2. Quality assurance process
3. Readiness assessment criteria
4. Rents (Northern Ireland) impact analysis
5. Groceries methods update

Update on transformation timelines

Mike Hardie

Timeline for groceries implementation



Impact analysis update

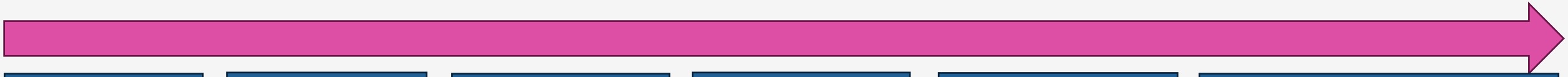
- We've been successfully running data in the new pipelines and early indications are that they are working well with limited defects, which have been addressed – however we've uncovered issues with input data and mappers.
- The scenarios we are running are baseline, consumption segments, local collection methods, and groceries scanner data.
- The groceries scanner data indices by consumption segments are already being quality assured.
- We expect to have a full impact analysis by the w/c 14*th* October.

Quality assurance process

Mike Hardie

Office for National Statistics

Key QA processes by project phase



1. Design	2. Build	3. Test	4.Parallel run	5. Production	6. External Assurance
Detailed data quality checks	Peer review	Business / user acceptance testing	Parallel run	Data checks notebooks	Stakeholder and technical panels
Internal review & sign-off	Unit testing	Component testing	Impact analysis	Pipeline data validation	Deep Dive Quality Assurance Panel
Stakeholder and technical panels	Smoke testing	End to end testing		Automated data cleaning	Review by another National Statistics Institute
ESCoE				Data validation dashboards	External assurance workshops
				Monthly QA and curiosity	
				Contingency planning	

All these activities are supported by regular internal and external engagement to ensure stakeholders are aware and supportive of changes

Quality processes have been reviewed holistically by an independent methods team at ONS in 2022 (looking at rail fares) and then in 2024 for groceries; with recommendations currently being reviewed.

Late October/November Joint Advisory Panel

- Two-hour virtual Advisory Panel meeting to provide feedback on the final impact analysis for CPIH, CPI and RPI.
- Provide feedback on the proposed publications and wider engagement to update stakeholders on the changes.

National Statistics Institute visit

We've invited the Australian Bureau of Statistics (ABS) and Stats NZ to the UK for a study visit. We're keen to learn from other national statistics institutes to ensure that we're aligning to best practice and have considered all the risks associated with delivering a change of this scale. Areas of focus include:

- Managing retailer relationships
- Quality assuring aspects of our code particularly around GEKS-T and splicing.
- Learn from how ABS and Stats NZ have incorporated the new data sources, methods, and processes in their monthly production round.
- To provide feedback on whether our communication plan is sufficient to ensure that our wide range of stakeholders understand the proposed changes and the impact on consumer price statistics.

Discussion

- Members of the Advisory Panels are invited to comment on:
  - If current quality assurance processes are adequate.
  - Whether there's appetite to participate in an additional Advisory Panel in November, deep dive quality assurance panel and external quality assurance panel?

Readiness assessment criteria

Abi Casey

Office for National Statistics

Stakeholder Communications G

Criteria	Checklist
Thoroughly communicate the new methods, data sources, and impacts to the wide range of stakeholders that use consumer price statistics.	• Publish impact analysis, updated methods paper, Quality and Methodology Information (QMI), and Technical Manual. • Publish exchange of letters between ONS/Bank of England under s.21 of the Statistics and Registration Service Act. • Publish outcome of the ONS microdata survey • Publish blog on COLI/COGI index • Publish a GEKS-T video explainer, to complement the article previously published. • User feedback collated, reviewed and actioned where appropriate.

Data Quality

Criteria	Checklist
Deliver high-quality electronic point of sale and ‘local collection’ data for implementation in March 2025.	• Clear process for managing the electronic point of sale data feeds from retailers, including go live meetings/checklist. • Dashboards and analytical tools in place to monitor the quality of the data. • Contingency plan in place and tested, clearly setting out how ONS will respond if a retailer is unable to provide data.

Methods G

Criteria	Checklist
Ensure that statistics meet user needs, make use of new and innovative methods and data sources, and follow international best practice, with the overall aim of Improving the quality and granularity of ONS's consumer price statistics.	• Methods reviewed by; the Advisory Panel for Consumer Price Statistics – Technical, ESCoE, international experts, and ONS prices experts. • The new methods have been thoroughly communicated to stakeholders via a wide range of outputs – including articles and video explainers.

Systems are developed, with a support model. G

Criteria	Checklist
New systems are developed, with a support model in place, which allow the processing of large admin data and reduce the reliance on legacy platforms.	• Completion of web app development (scrutiny, relaunches and classifications), local collection, and groceries scanner data pipelines. • Dashboards developed which will allow the quality assurance of groceries scanner data. • Non-functional requirements tested, documented and signed off. • Support model agreed across ONS including data engineering and IT teams.

Testing complete and defects impacting core functionality resolved

A

Criteria	Checklist
The systems are thoroughly tested and defects addressed	• A wide range of testing has been undertaken, with multiple layers of assurance, and defects have been logged and addressed. • The whole end-to-end process has been tested and runs successfully.

Business Change/ New Processes A

Criteria	Checklist
Handover to the production team is complete, ensuring they are upskilled and able to take ownership.	• Parallel run complete • Training complete • Desk instructions and supporting documentation complete • Long term maintenance of the system is understood, and resources allocated (service catalogue) • Production teams are confident running the systems • Contingency plans & escalation routes in place

Discussion

- Members of the Advisory Panels are invited to comment on:
  - The overall readiness assessment for going live in March 2025, if there are any notable gaps or areas of concern which require further work.

Rents (Northern Ireland) impact analysis

Ian Boreham

Office for National Statistics

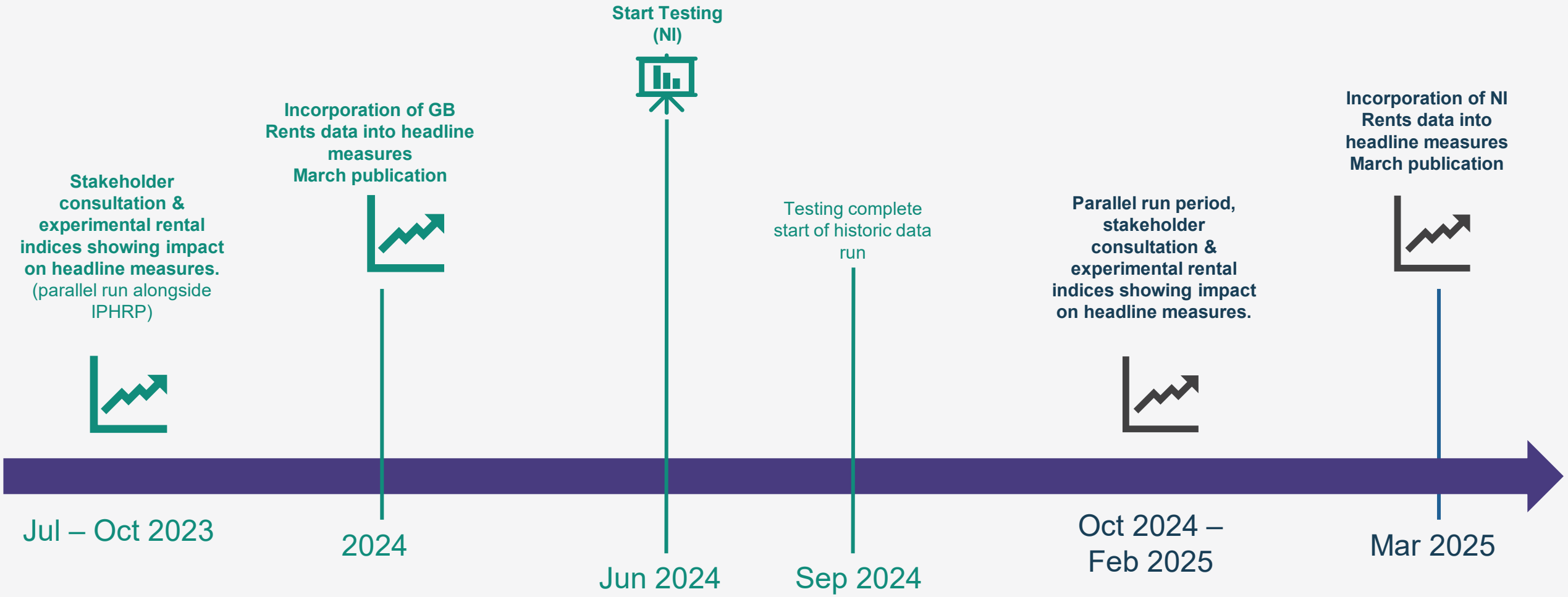
Rents Project Overview

- ONS Prices divisions have developed its new rental price index PIPR (Price Index of Private Rents)

- PIPR went into monthly production in March 2024
  - PIPR currently only covers Great Britain

- Through 2024 we have developed PIPR to include Northern Ireland

Rent development timeline



Early sight of impact

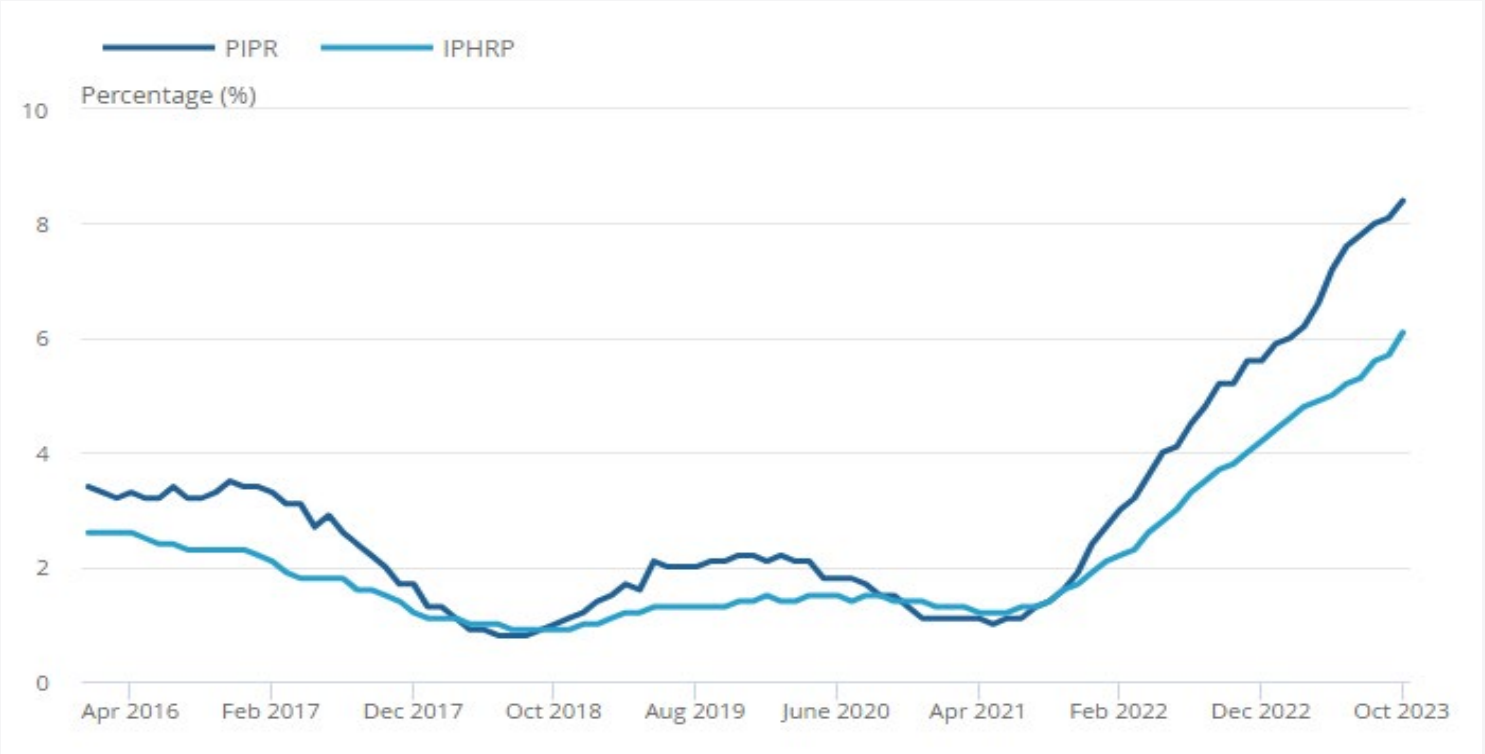
- We are still producing, and quality assuring, the impacts of extending PIPR to cover Northern Ireland.

- For transparency, the following slides provide a preview of the new index from this model, and the potential impact of this change.

- This data is still subject to QA, and may be revised prior to publication and further dissemination.

Impact of moving from PIPR to IPHRP
(for Great Britain)

Private rental price annual change for the UK



Source: Redevelopment of Private Rental Prices Statistics Impact Analysis, December 2023

Discussion

- Members of the Advisory Panels are invited to comment on:
  - The trends and data from initial indices of NI PIPR?
  - Would members of the panel like further visibility of our outputs at the joint panel in November?

Groceries methods update

Tanya Flower

Office for National Statistics

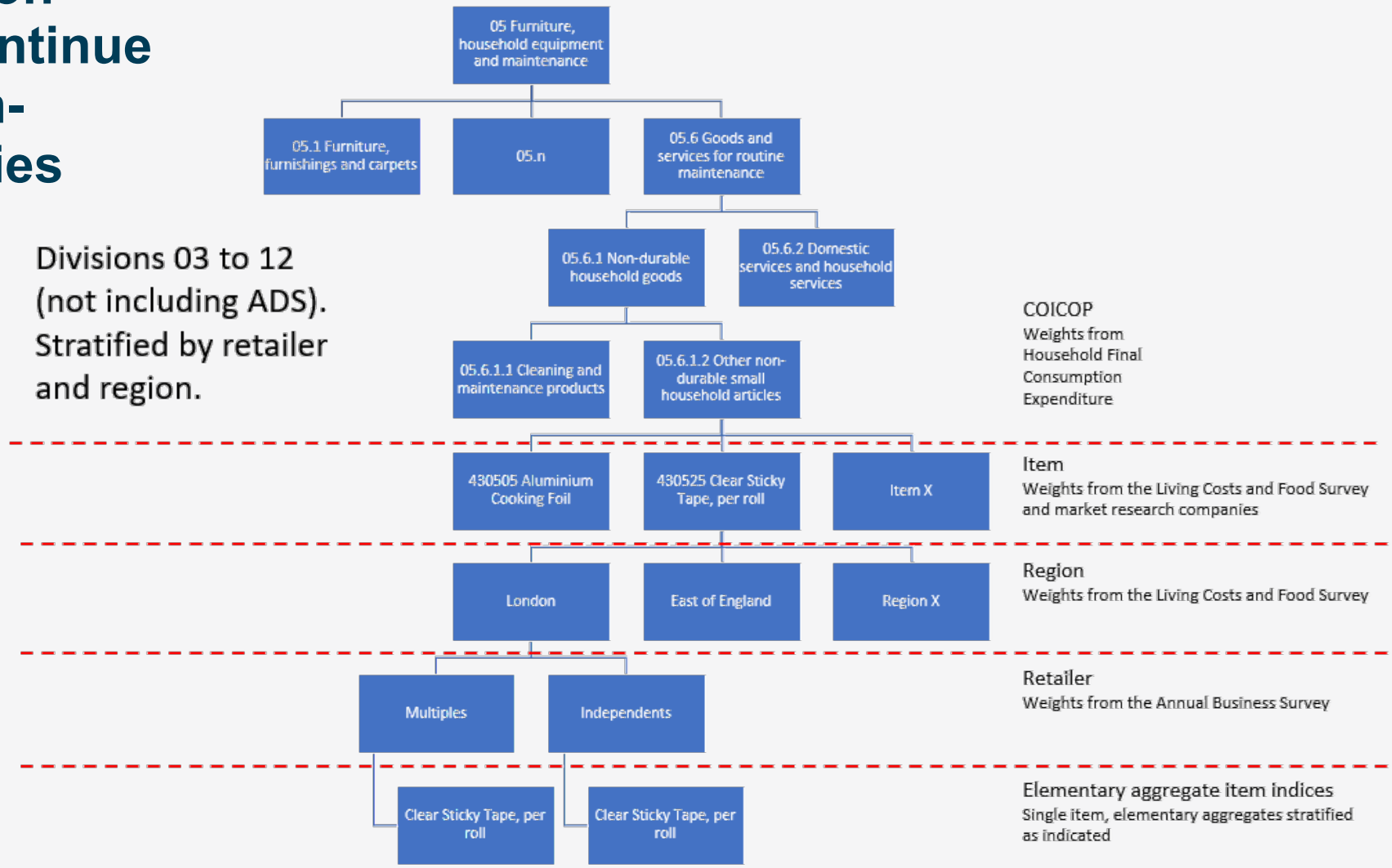
Overview

1. Changes required to aggregation structure because of introducing alternative data sources (ADS) for groceries
2. Summary of methods used for ADS
3. Changes required to existing methods (to be implemented at the same time as groceries ADS)
4. Microdata feedback survey

Current aggregation structure – will continue to be used for non-groceries categories

Published in bulletin

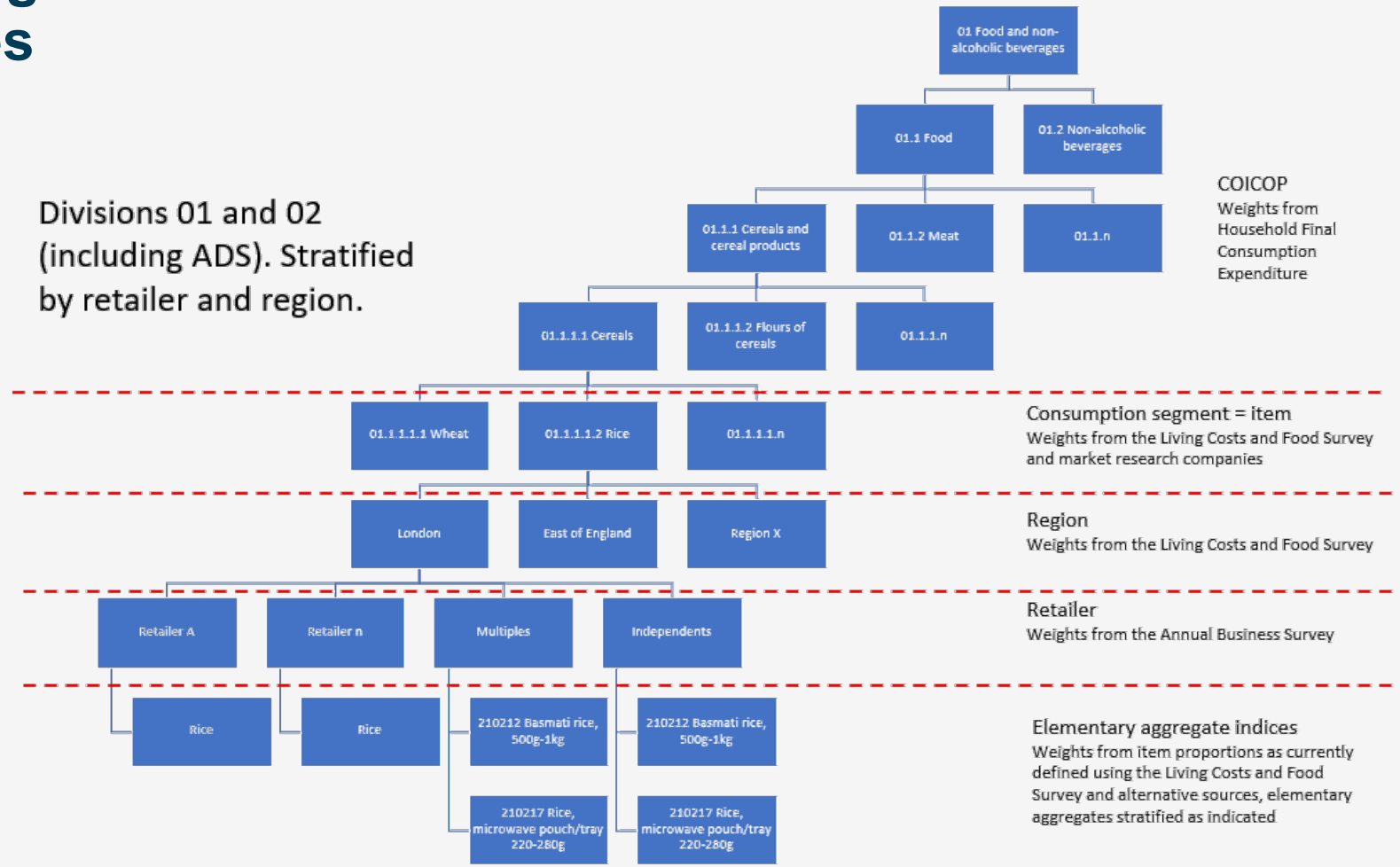
Published in microdata (item indices)



Changes to the aggregation structure for groceries

Published in bulletin

We expect the consumption segment level indices to be published in the item indices microdata but this will be finalised once we have the results of the user feedback survey



Previous version published here: [Introducing alternative data into consumer price statistics: aggregation and weights]

Strata and product definitions

Groceries ADS strata are defined by:

- COICOP
- Consumption segment (e.g. Rice)
- Region (e.g. Rice in Wales)
- (Elem agg) Retailer (e.g. Rice from Retailer A in Wales)

From classification: each SKU is manually assigned a consumption segment

Using regional lookups: each store is automatically assigned a region using its postcode

Within an elementary aggregate (e.g. Rice from Retailer A in Wales), products are defined by:

- SKU (e.g. 36263263)
- Store type (e.g. convenience store)
- Unit of measurement (e.g. grams)

Within a month, sum expenditure and (size-adjusted) quantity per product, then calculate (size-adjusted) unit values, which will be used as our representative price.

Summary of ADS methods

Topic	Decision	Relevant links
Classification	Manual classification of products	Classification of new data in UK consumer price statistics
Time coverage	Use a consistent, fixed timeframe every month; this would entail using the first three full weeks in each month	Date trimming for consumer prices alternative data sources
Identifying unique products	Use SKU, store type, and unit of measurement. Manual identification of relaunches supported by text matching	Research into the use of scanner data for constructing UK consumer price statistics
Accounting for inconsistent units of measurement	Derive size adjusted price and quantities	Research into the use of scanner data for constructing UK consumer price statistics
Discounts	Include price promotions, multibuy offers and discriminatory discounts. Remove reduced to clear type products where possible	Research into the use of scanner data for constructing UK consumer price statistics
Refunds	Refunds will be accounted for where possible	Research into the use of scanner data for constructing UK consumer price statistics
Data cleaning	Remove junk observations. Detect outliers using user defined price relative fences and a price quantity filter	Outlier detection for grocery scanner data in consumer price statistics

Index methods (same as for used cars/rail)

Elementary aggregates:

- GEKS-Törnqvist
- 25-month window
- Mean splice on published

Higher-level aggregates:

- Lowe with double weights (for COICOP in CPI/CPIH)
- Imputation performed using month-on-month growth rates of higher aggregates (see: Introducing alternative data into consumer price statistics: aggregation and weights)

Changes to existing methods

- At the same time as introducing scanner data for groceries, we are also upgrading our processing system for our non-ADS quote level data
- This will allow us to make 2 additional changes to our existing methods:
  - introduce flexibility into the system to align imputations with the defined index method for each "use case“
  - reduce the lag on reintroducing non-comparable products to 1 month (from 2 months)
- In addition, we will also need to change the stratification type for certain items to enable consumption segments to have the same stratification structure

Changes to existing methods contd

- We are also reviewing our methods for the calculation of retailer weights.
- We have decided to postpone implementing changes (if that is the decision taken) for March 2025 to enable more time to review the impact. Therefore, we will continue to use the current multiple/independent stratification until at least **March 2026.**

Microdata feedback survey

- We currently publish:
  - **Raw price quote data** and related metadata from the local price collection, and
  - **Item indices** for the majority of the basket.
- We will not be able to publish the same level of information for groceries from March 25.
- We will continue to publish non-groceries data in the same format.
- User feedback survey is live until 23 October