

Advisory Panel on Consumer Price Statistics



Outline

- Scanner data update
- Local collection impact analysis
- Northern Ireland impact analysis

Groceries scanner data

Michael Hardie

Impact analysis 2019-2024



Baseline scenario (move to Google Cloud Platform)



Consumption segments



Local collection methods changes



Northern Ireland rents data

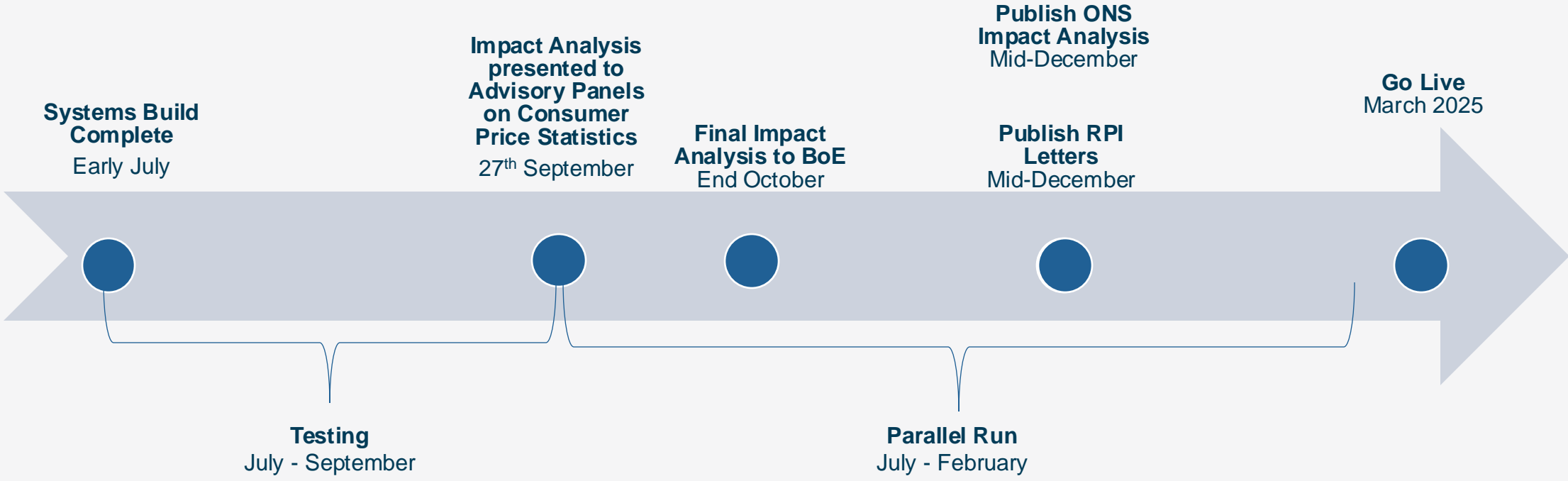


Groceries scanner data

Overview

- The capability to produce consumer price statistics including groceries scanner data will be delivered by March 2025. It is possible to go live, but only with a single month parallel run of the production round with limited time for quality assurance of the scanner data, and this is an unacceptable level of risk given the complexity of systems and data and the high-profile nature of these statistics.
- The project will be ready to go live in April 2025, but we'll be unable to incorporate these data until March 2026.

Timeline for groceries implementation (as previously proposed)



Challenges

- Rail fares, second-hand cars, and rents were complex but self-contained projects. However, given the broader coverage of groceries scanner data, and given that the data are replacing some of the “locally collected” components of the basket, there was an even greater level of complexity involved.
- The project is complex and it’s the first time that ONS has attempted to use commercial admin data on this scale in the monthly production of economic statistics.
- We have adopted a very low tolerance for risk of error, with a multifaceted quality assurance strategy.

Component, end-to-end testing, and impact analysis

- Component testing has been completed with a moderate number of defects being identified (table), these have been fixed, retested and closed.
- End to end testing for local collection is in progress (83% complete) and groceries scanner data (60% complete). To date, no significant defects have been identified.
- We are currently rerunning the groceries scenario which is likely to be ready before Christmas.

Total Tests	777
Executed*	729
Pass	724
Fail	5
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Total Defects	57
Priority 1	16
Priority 2	25
Priority 3	13
Priority 4	3
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FTE Effort	495 days

Proposal

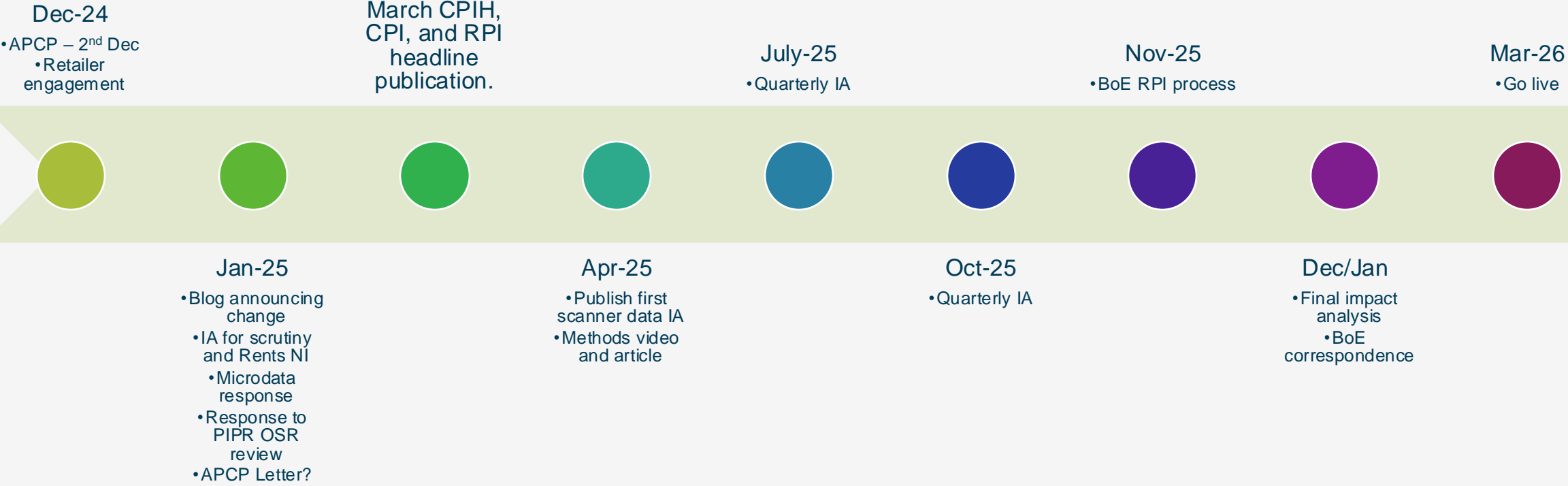
- Move the production of the processing of local collection data from Ingres to GCP, enabling the delivery of consumption segments and local collection methods changes.
- Publish experimental statistics for consumer price statistics including groceries scanner data in April 2025 and implement in headline measures of inflation in March 2026.

Local collection and scanner data

Why is a one-month parallel run sufficient for local collection, but not scanner data:

- We have completed the full impact analysis for local collection and have already thoroughly quality assured the data.
- We have a benchmark (published data) to compare against
- The complexity of the data and methods

Communication timeline



Key messages

- **Delivered suite of technology improvements making use of cloud infrastructure to process existing and new large admin sources, such as scanner data**
 - Allowing us to move away from legacy platforms, reducing risk of error and improving sustainability of core statistics.
 - Functionality to process all future scanner data, the most significant and complex part of the development.
- **We have delivered a huge amount of what we planned**
 - Delivered 95% of the benefits set out in our business case and greater granularity such as moving from 12 regions to approx 300 local authorities on private rents (rents, used cars, rail fares, legacy uplift of consumer prices)
- **Quality is our primary consideration**
 - We have never used data of this size and complexity in official statistics before. Given the CPI's importance, ensuring it remains a quality, fit for purpose accredited statistic, we want to be extra cautious to ensure the quality of these key decision-making statistics.
 - The decision has been made in collaboration with stakeholders
- **Clear on what users and stakeholders can expect and when**
 - Clear on what the Jan impact analysis does and doesn't cover
 - Clear on Scanner Impact Analysis will be published in April and the timelines on slide 3

Discussion

Panel member are invited comment on the proposal to:

1. Delay the implementation of scanner data by a year
2. Implement all other changes (consumption segments etc)
3. Produce scanner data supplementary analysis?

Local collection

Emily Hopson

Summary of methods changes

Currently published series

Multi/indep

2 month imputation lag

RPI base price imputation

No consumption segments

Seasonal items base prices carried forward

GCP baseline

Multi/indep

2 month imputation lag

RPI base price imputation

No consumption segments

Seasonal items base prices imputed

Introduction of consumption segments

Multi/indep

2 month imputation lag

RPI base price imputation

Consumption segments

Seasonal items base prices imputed

All local collection methods

Multi/indep

1 month imputation lag

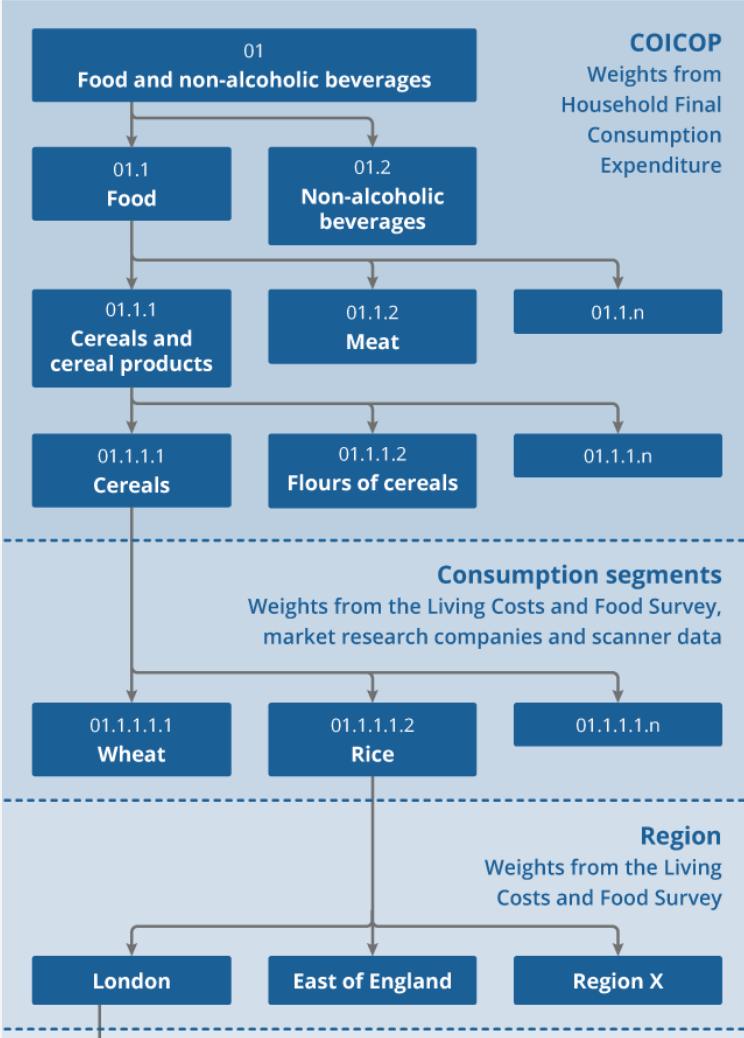
CPI base price imputation for CPI/CPIH

Consumption segments

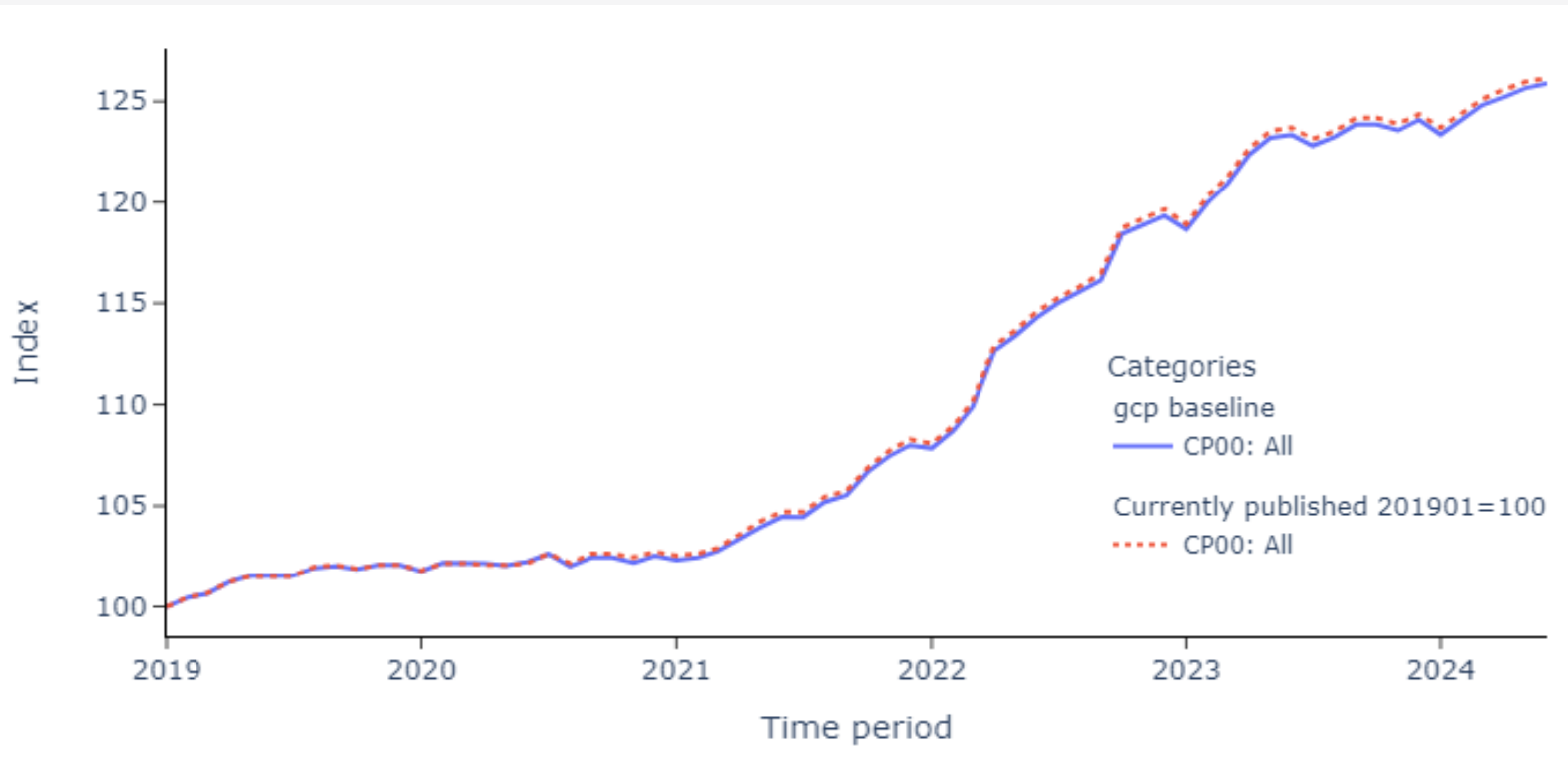
Seasonal items base prices imputed

Consumption segments

- Introducing consumption segments for:
 - Groceries (divisions 1 & 2)
 - Rail fares items
 - Used cars items
- Benefit introducing without scanner data means we will have annual growth rates for consumption segments next year.
- Structure:
 - COICOP 1
 - COICOP 2
 - COICOP 3
 - COICOP 4
 - COICOP 5
 - *Consumption segment*
 - Region
 - Retailer type (multiple or independent)
 - Item



Baseline GCP vs published CPI

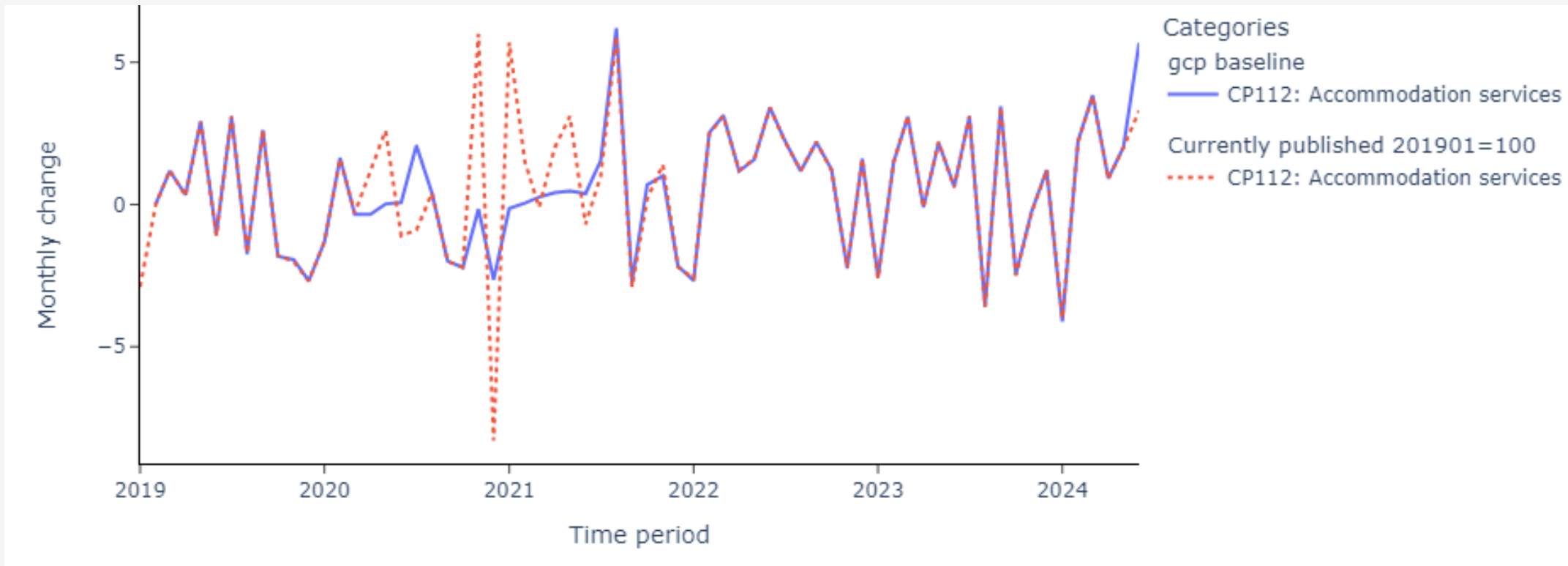


There are **4 main areas of explainable differences** between our published and GCP baseline scenario:

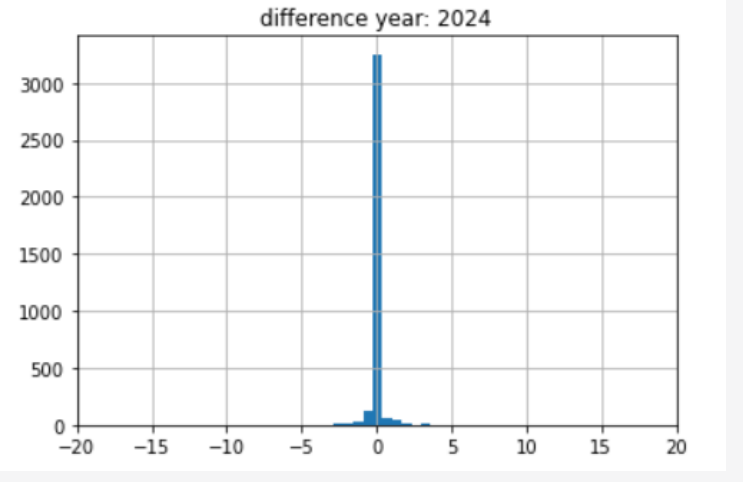
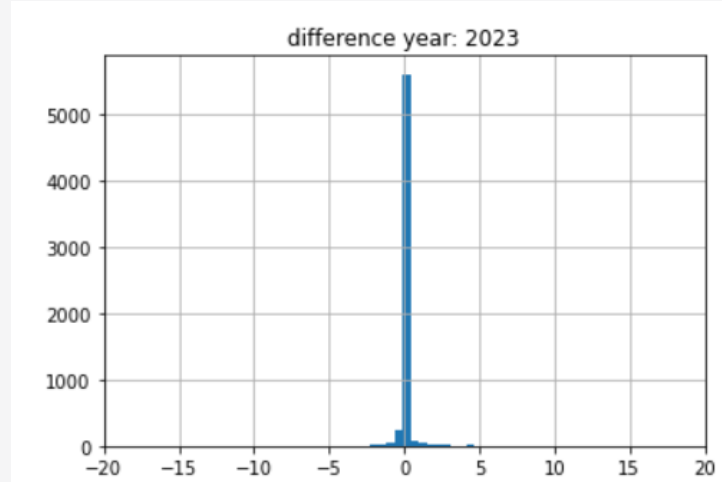
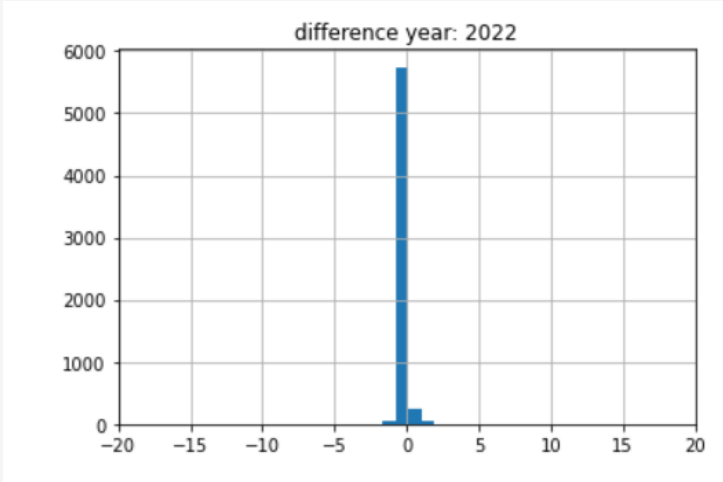
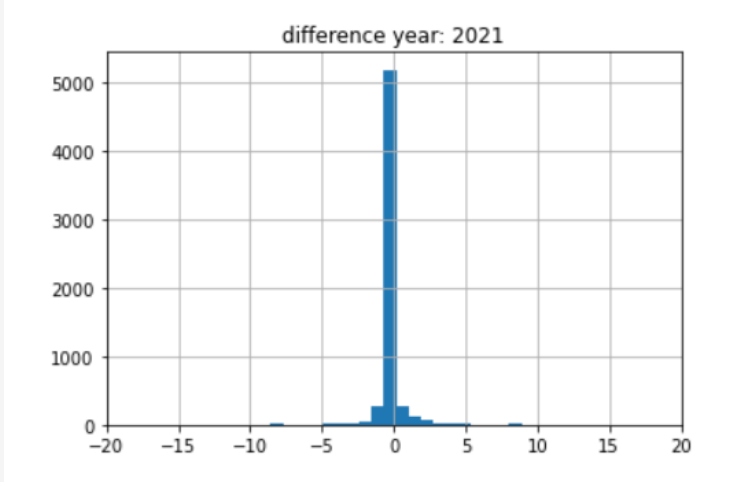
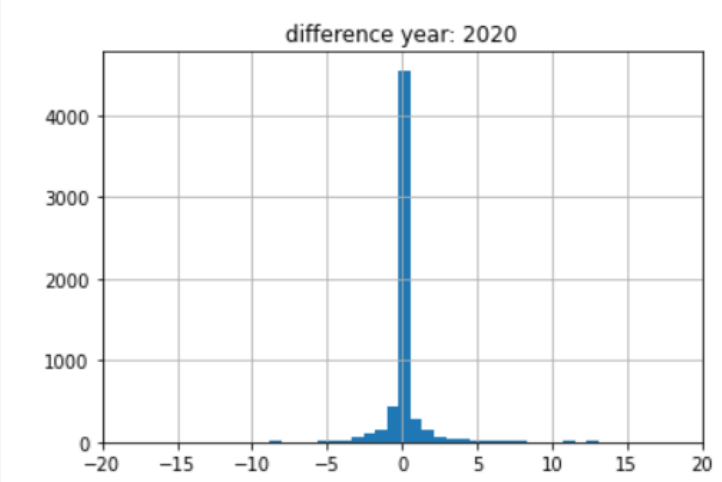
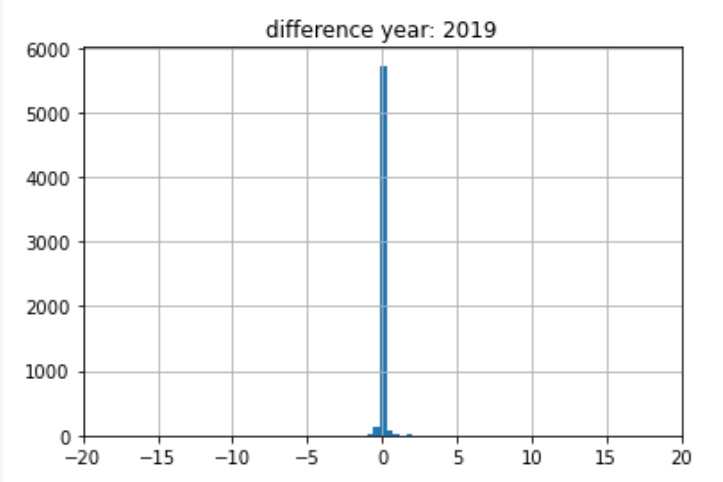
1. COVID
2. Seasonal items
3. Quotes that were rejected in January no longer being used to set base prices
4. Small adhoc edge cases that are associated with quirks introduced previously in the historical data

Baseline differences example - COVID

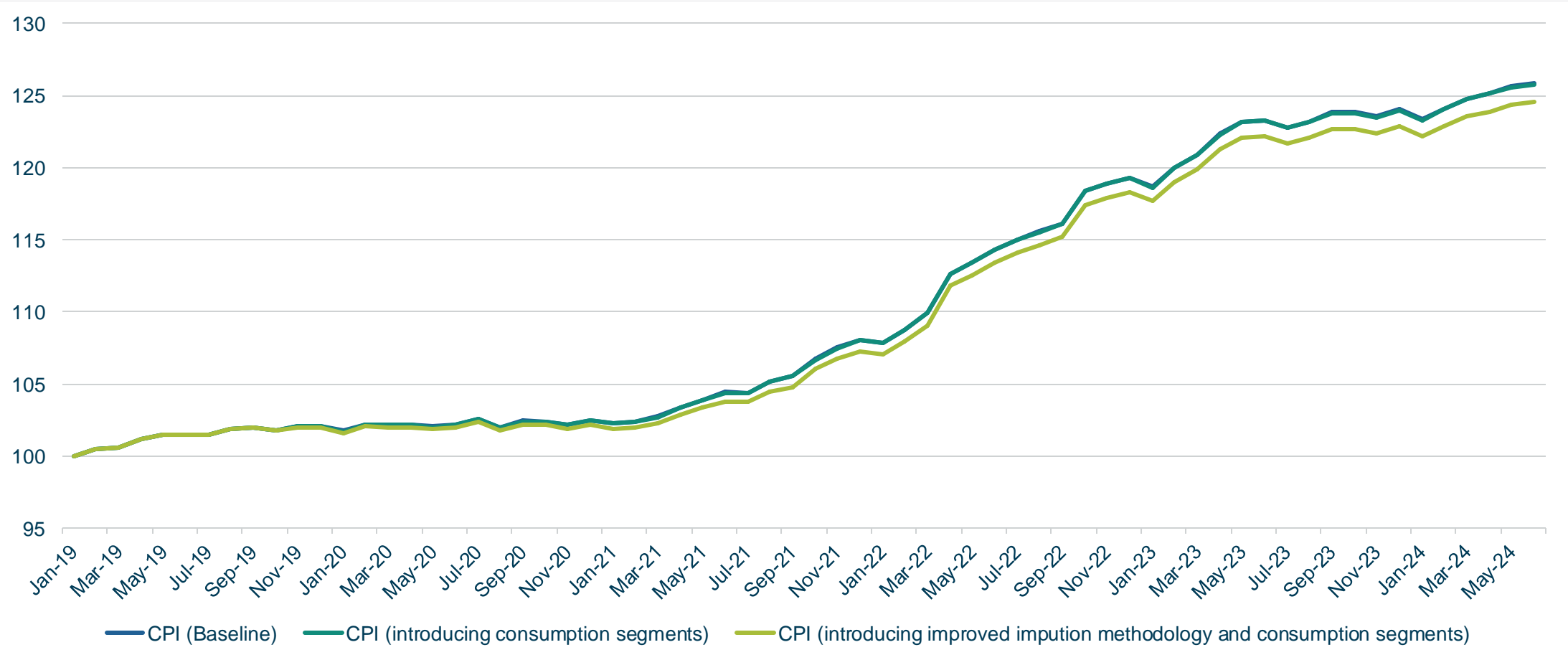
COICOP3 - Accommodation services (monthly growth rate)



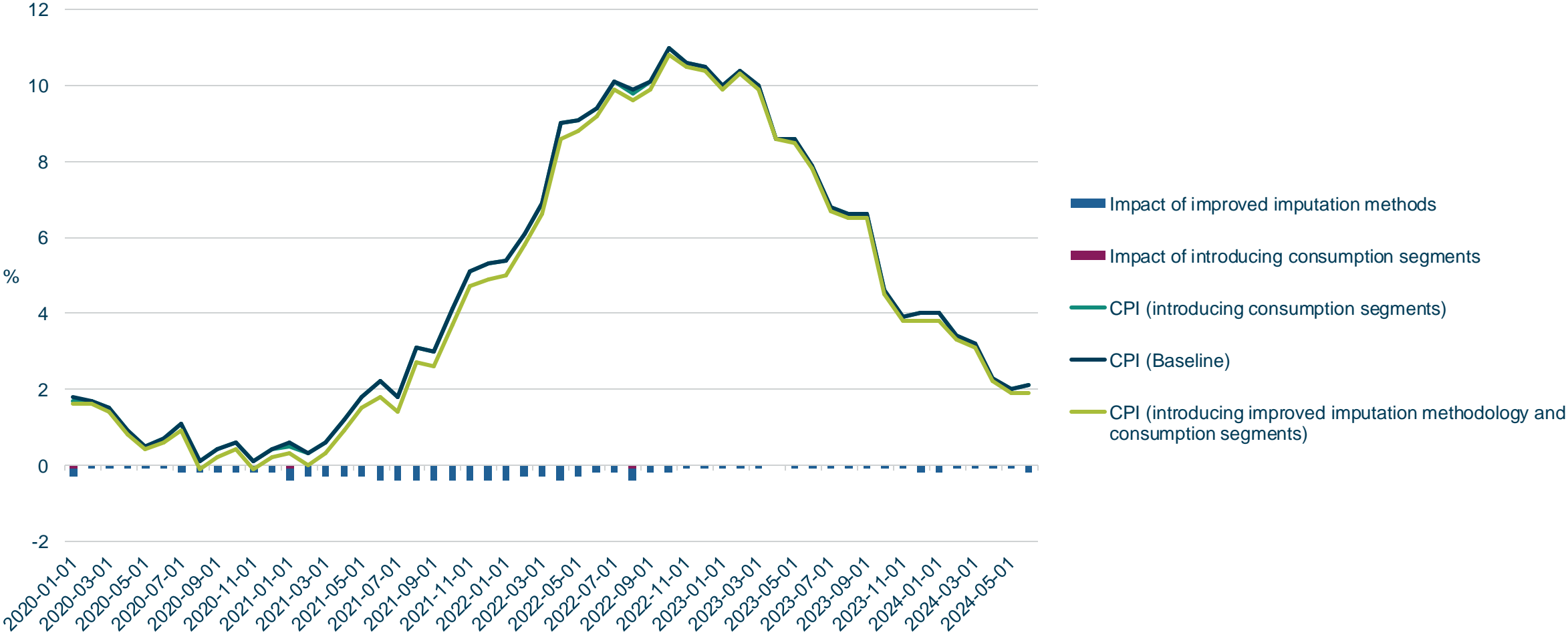
Count of differences for item indices



CPI headline graph for all scenarios



Annual growth rate



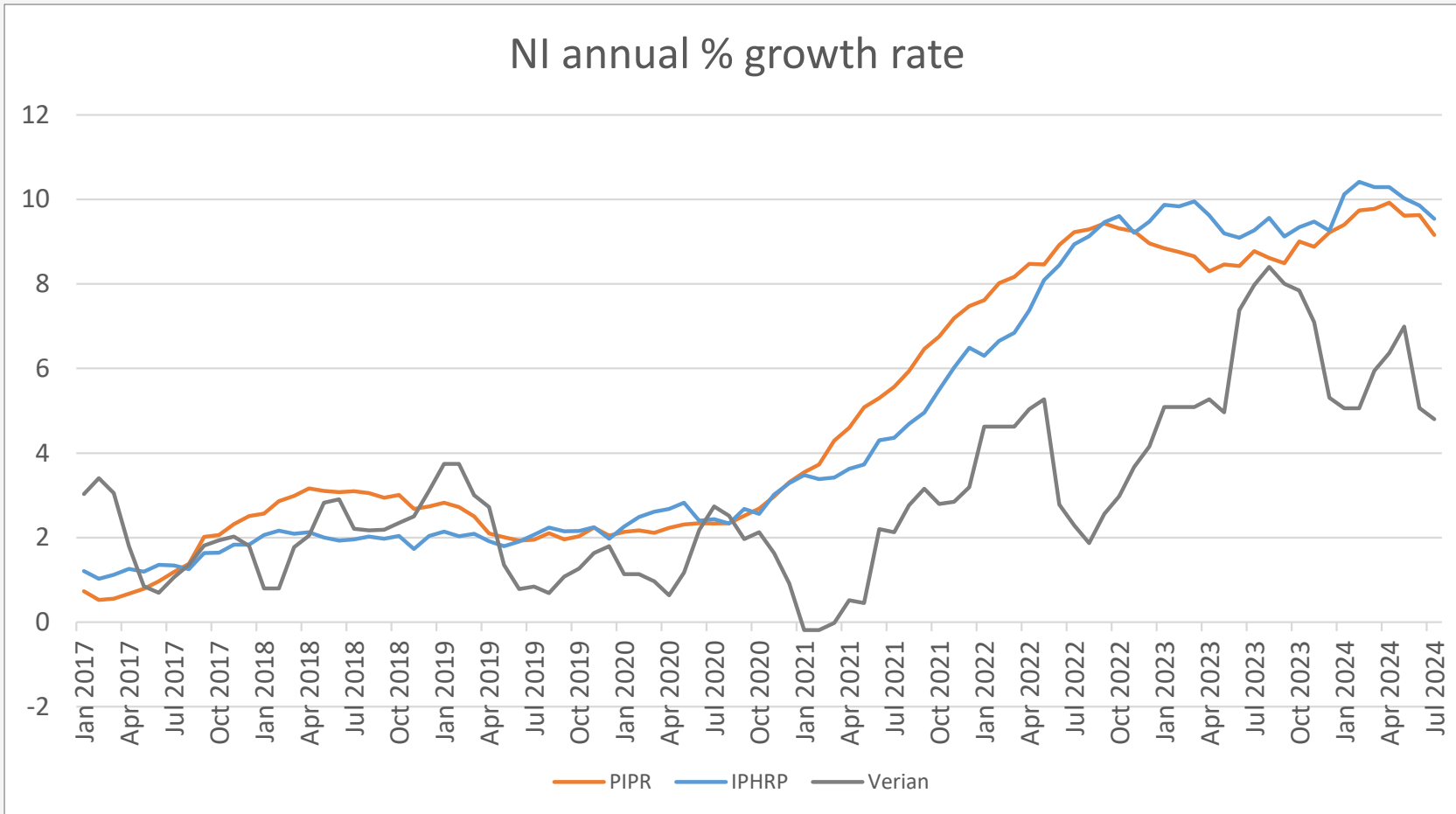
Rents – Northern Ireland

Ian Boreham

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
 - Our intent is to introduce Northern Ireland data into production from March 2025
- In September we presented an initial view of PIPR data for Northern Ireland
 - We are now able to share the full time series

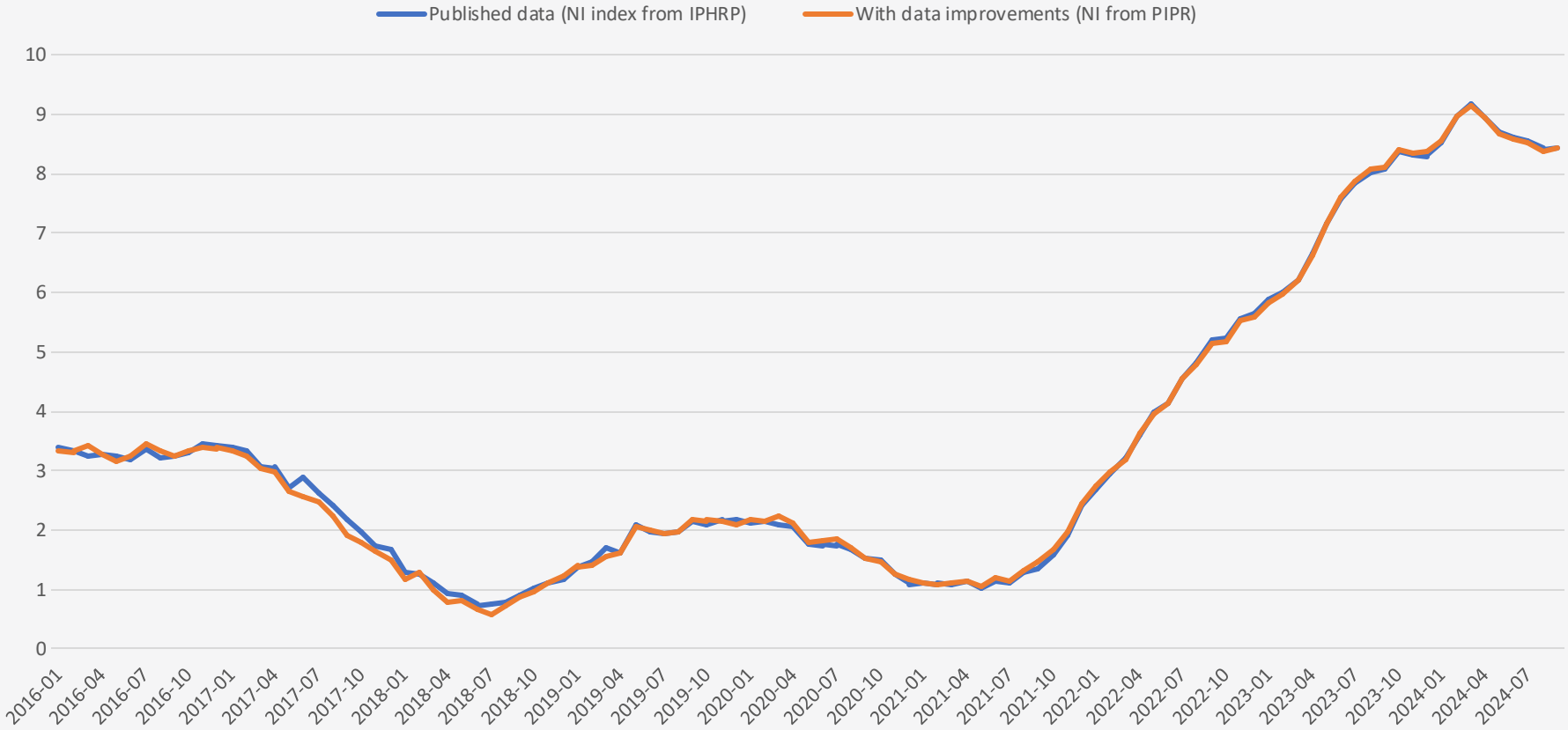
PIPR changes to NI index



- Verian data (used for CPI production) is very volatile due to small sample sizes
- For Northern Ireland PIPR more closely matches IPHRP.
- This is different to what we saw for GB, but is mainly because data for Northern Ireland over-represents Belfast, and under-represents more rural regions.

Impact of NI build of PIPR at UK level

Annual growth rate (%) comparison between GB and NI build: UK



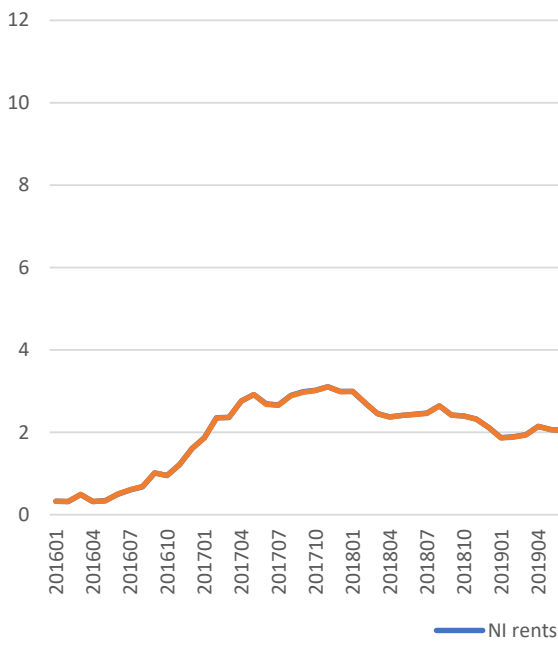
- Improved PIPR includes NI data & data quality improvements for GB
- Annual growth rates broadly match
- Due to the low relative weight, there is a very small impact of moving NI from IPHRP to PIPR.
- The larger changes to the previous index are from incorporating additional data and changes due to rerunning the imputation model.

Imputation / nowcasting

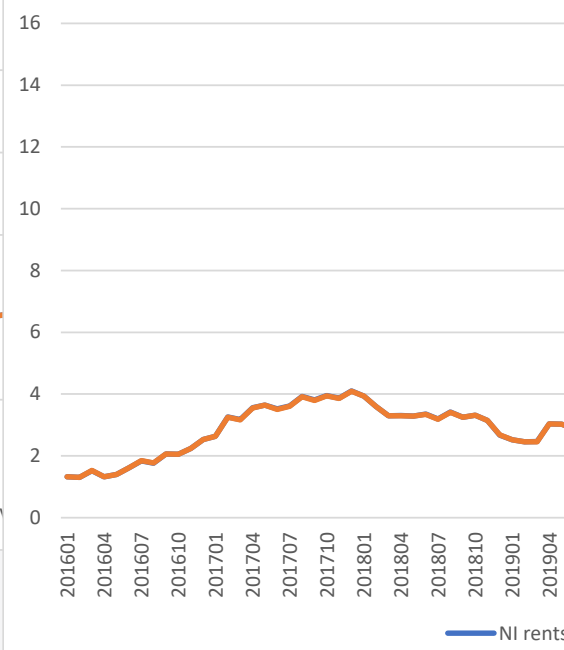
- Rental price data from Northern Ireland is delivered at a two-month lag.
- To produce timely CPI/RPI estimates we need to impute two months growth rate for Northern Ireland rental prices.
- From our analysis we are proposing to use the most recently available 2-month growth rate as a proxy for the growth rate that is not available.
- We are also considering applying this nowcasting method to the PIPR UK series (which is currently nowcast using GB growth rate).
- This is an area we could consider for a future improvement project, although the impact on headline measures would be very small.

Impact on UK headline inflation

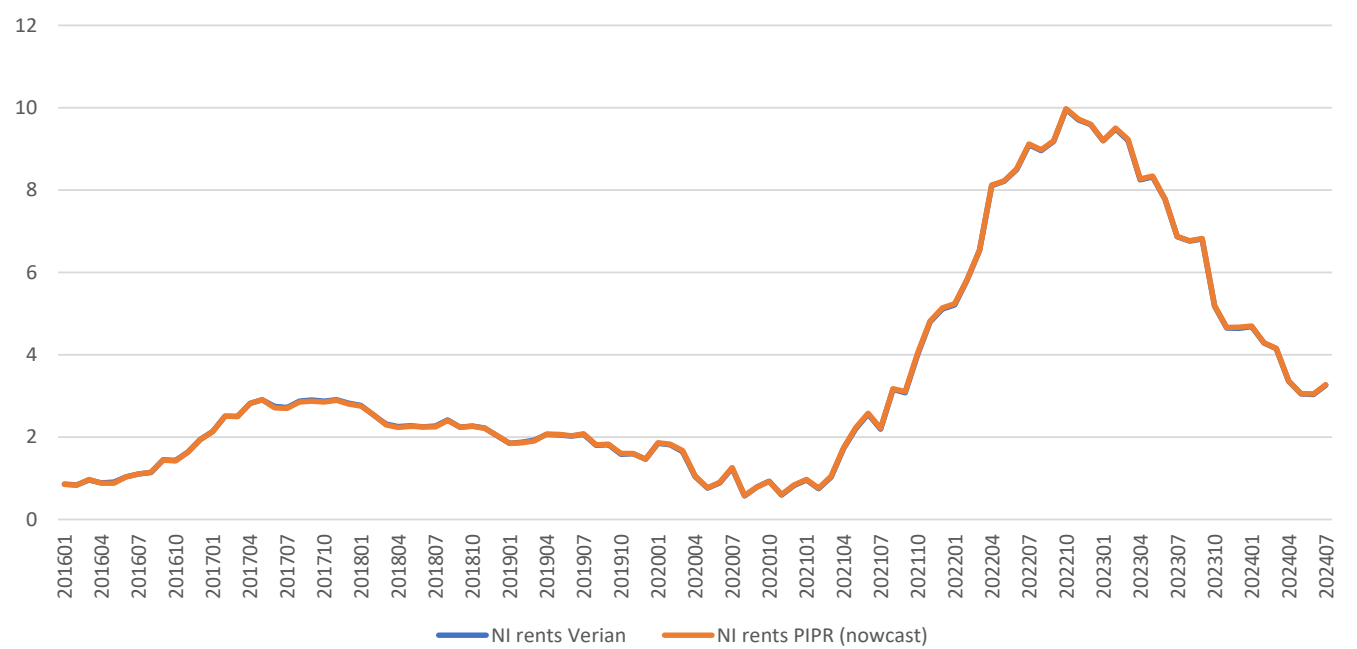
CPI headline - Annual % change



RPI headline - Annual % change

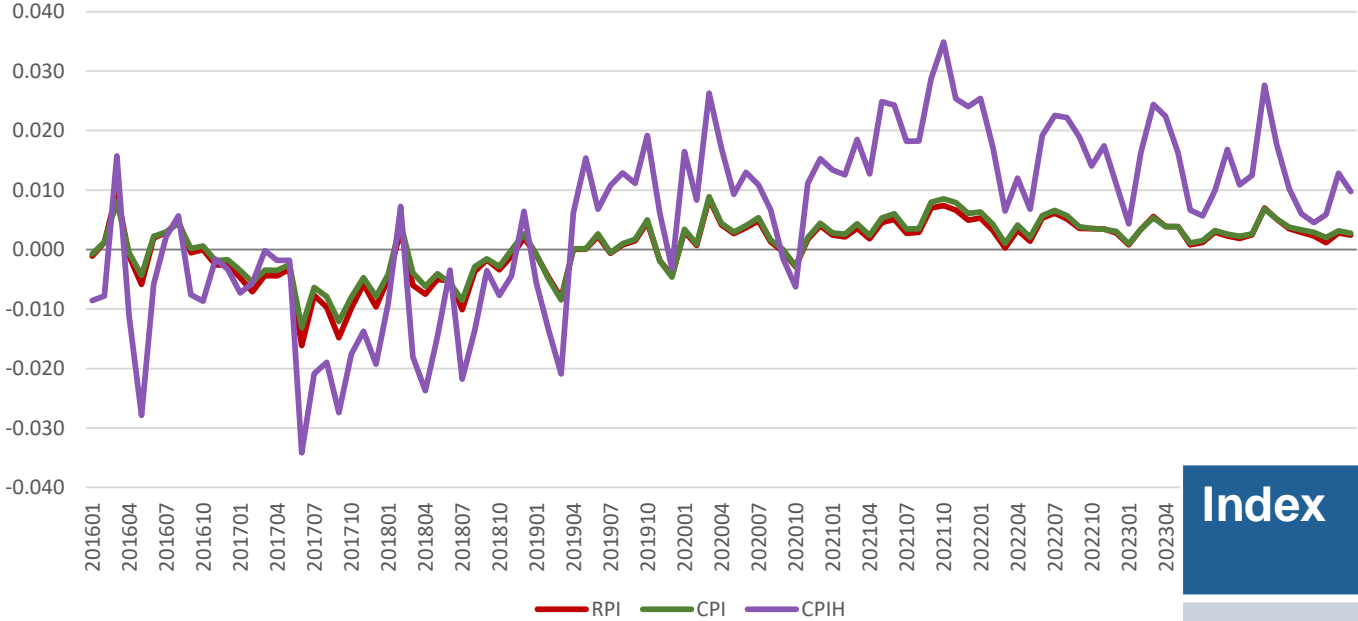


CPIH headline - Annual % change



Impact on CPI / RPI / CPI(H)

Difference in annual % change
NI rents moving from Kantar to PIPR



- At a headline level, there is a very small impact for moving the NI rents component from Verian data to a nowcast PIPR estimate.
- The biggest changes are seen in CPI(H), where estimates for imputed rent are derived from PIPR.

Index	Average change	Biggest decrease	Biggest increase
RPI	+ 0.000 351%	-0.016%	+0.010%
CPI	+0.000 919%	-0.013%	+0.009%
CPI(H)	+0.005 125%	-0.034%	+0.035%

Discussion

- Are members of the panel content with our proposed nowcasting approach to impute NI rental price for CPI/RPI/CPI(H)?
- Would members of the panel have any concerns with also applying this approach to the currently published PIPR index?

