

Accounting for missing prices in CPI during and after lockdown

Mike Hardie

Head of Prices Division | Office for National Statistics

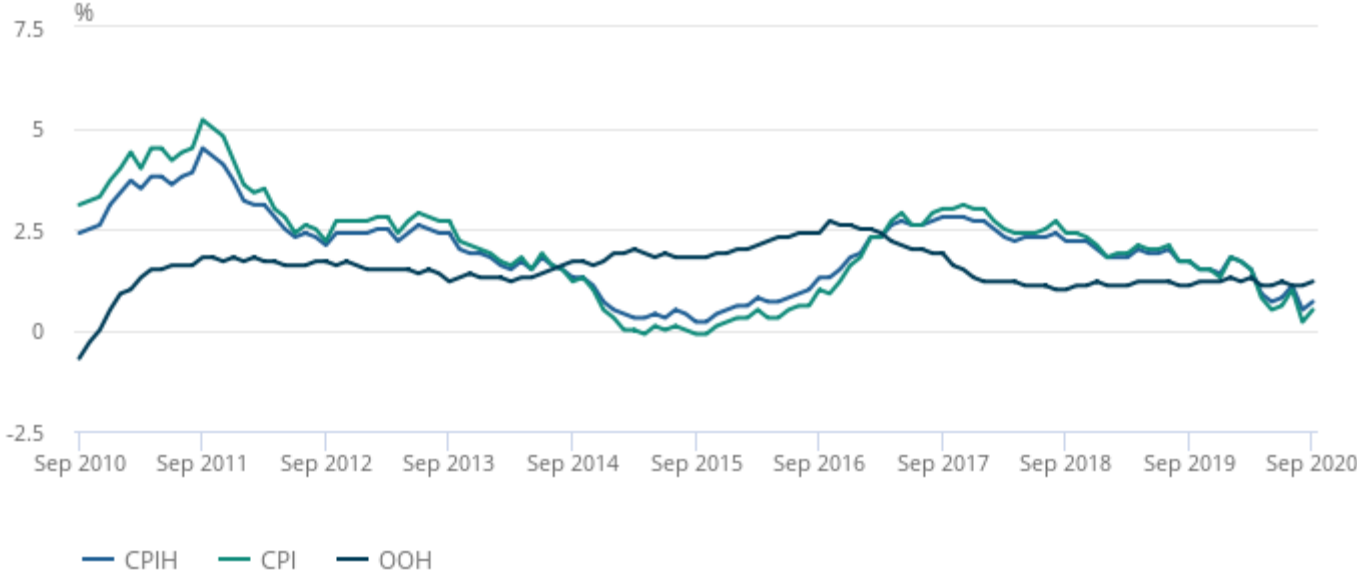
Contents

1. Background
2. Available and unavailable items
3. Analysis
4. After the lockdown

Background

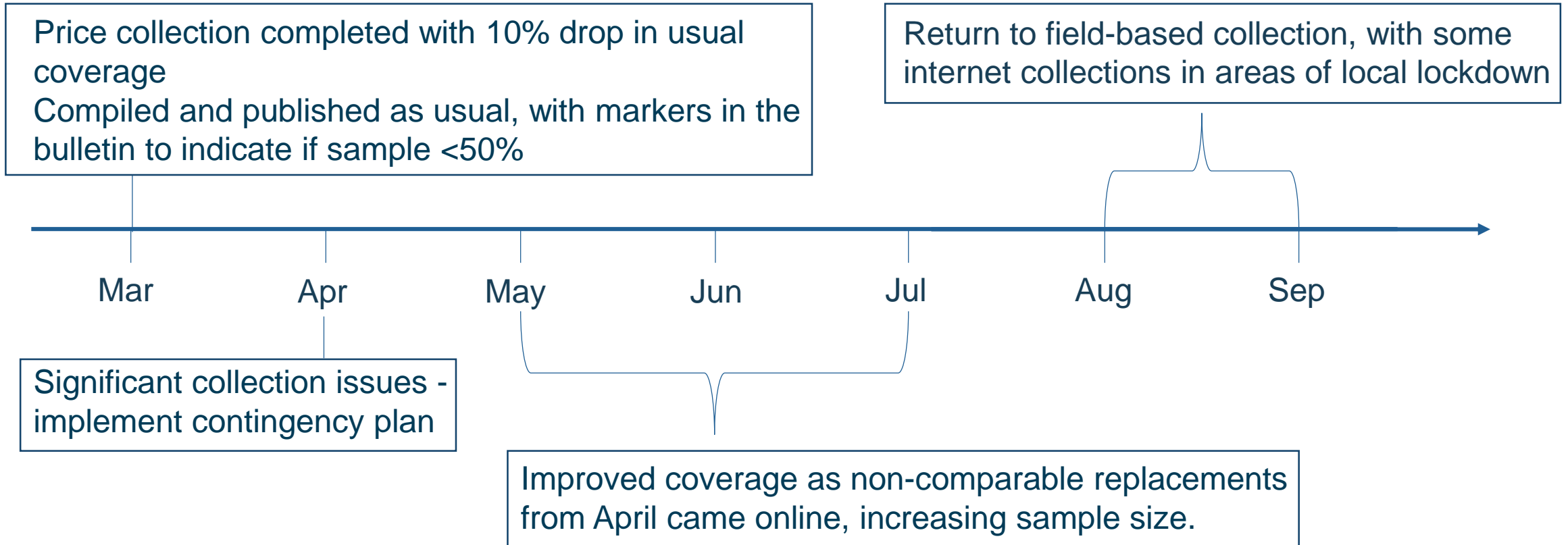
Inflation has slowed since late 2017

CPIH, OOH component and CPI 12-month inflation rates for the last 10 years, UK, September 2010 to September 2020



Source: Office for National Statistics – Consumer price inflation

Background: 2020 timeline



Available items

Available items

Items that remain available to consumers to purchase

- Low or missing sample issues
- Review all indices with $<20\%$ of usual (February) sample
- Imputation should reflect best estimate of missed price movements

‘Available’ imputation methods

1. Impute from parent index
2. Carry forward prices
3. Impute from all-items inflation

Imputations (April 2020)

Most imputations below item level

Sample is stratified by shop-type and region

	Independent stores	Independent x region	Region only	Total
Carry forward	9	6	2	17
Impute from parent	76	34	14	125
Total	85	40	16	142

Unavailable items

Unavailable items

Items which consumers are no longer able to purchase

Definition: government advice, trade body advice,
public perception?

How to impute? prices are not 'missing,' they are
undefined

Imputation for unavailable items

Options considered:

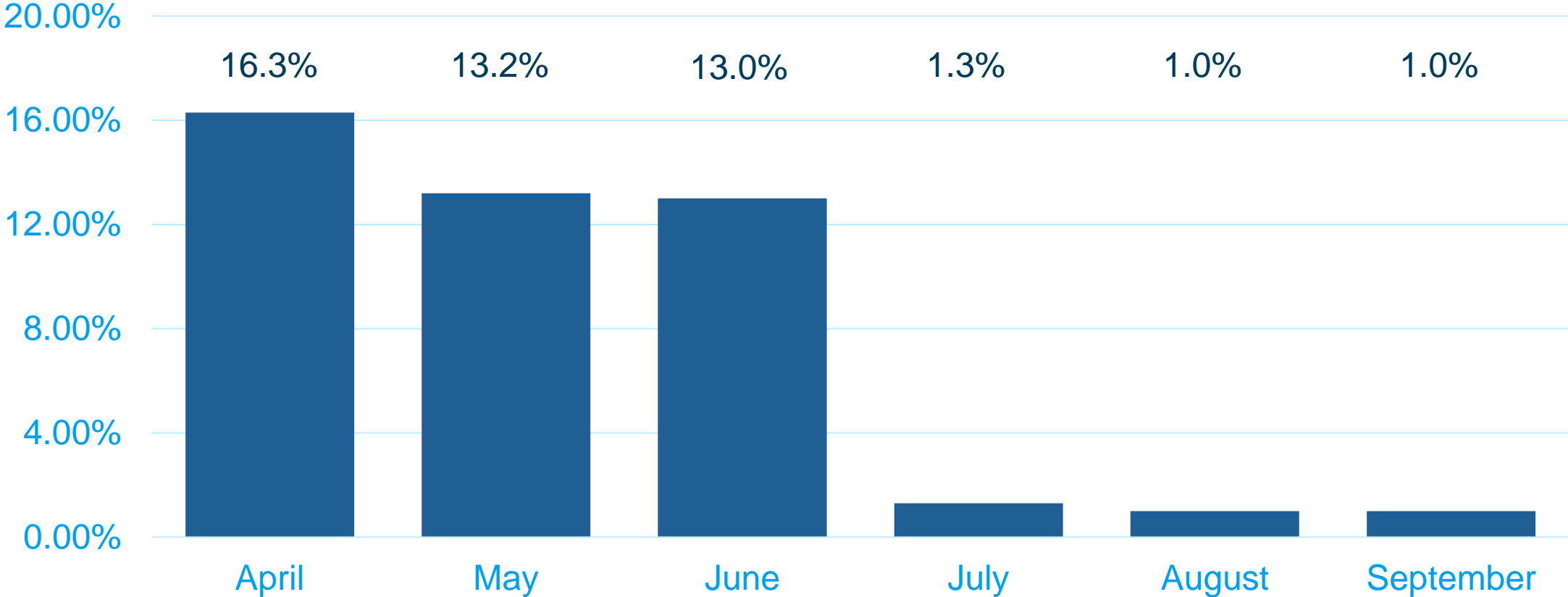
- Re-weight basket?
- Hold unavailable indexes constant?
- Impute for negligible impact at headline?
- Seasonal considerations?

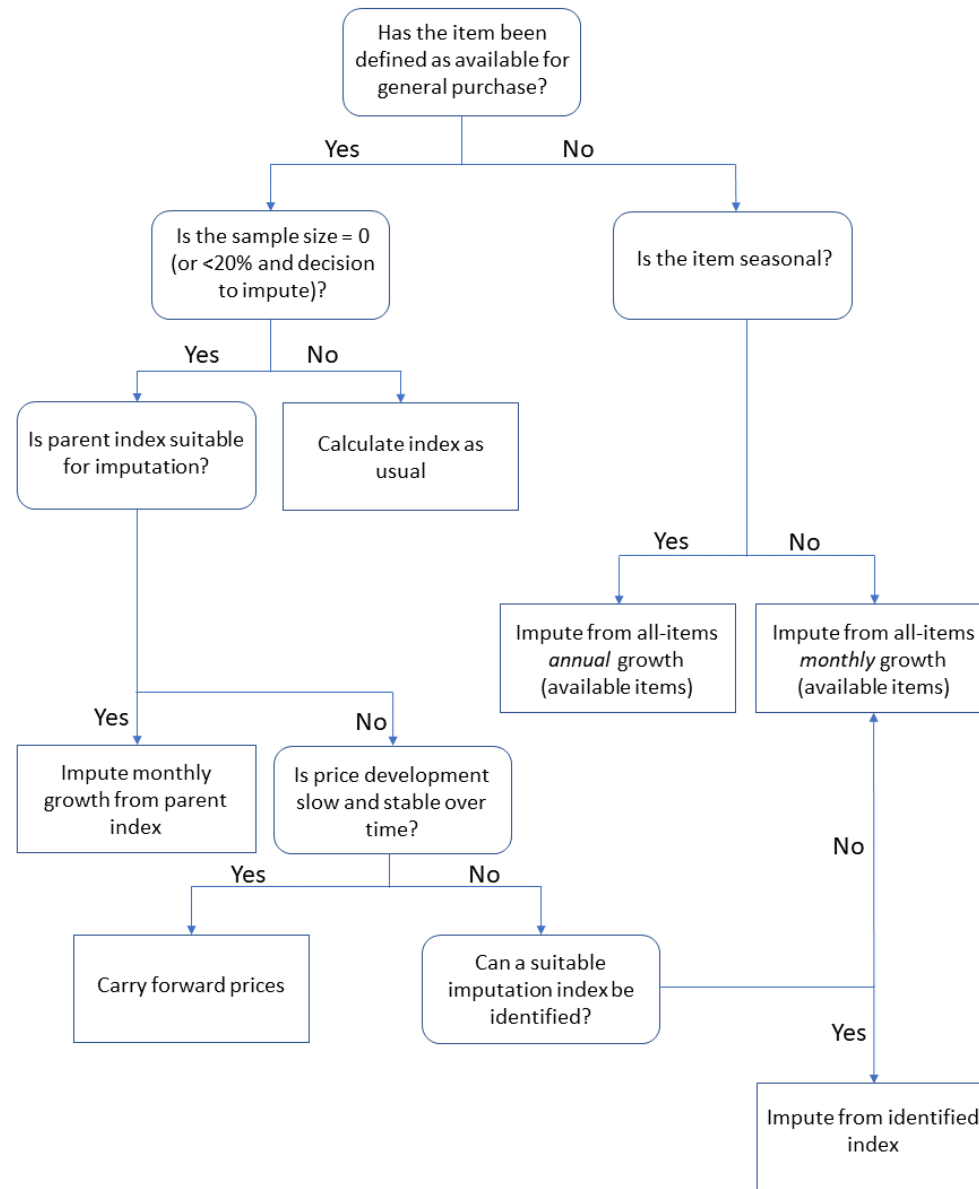
Imputation for unavailable items

Options considered:

- Re-weight basket?
- Hold unavailable indexes constant?
- **Impute for negligible impact at headline?**
- **Seasonal considerations?**

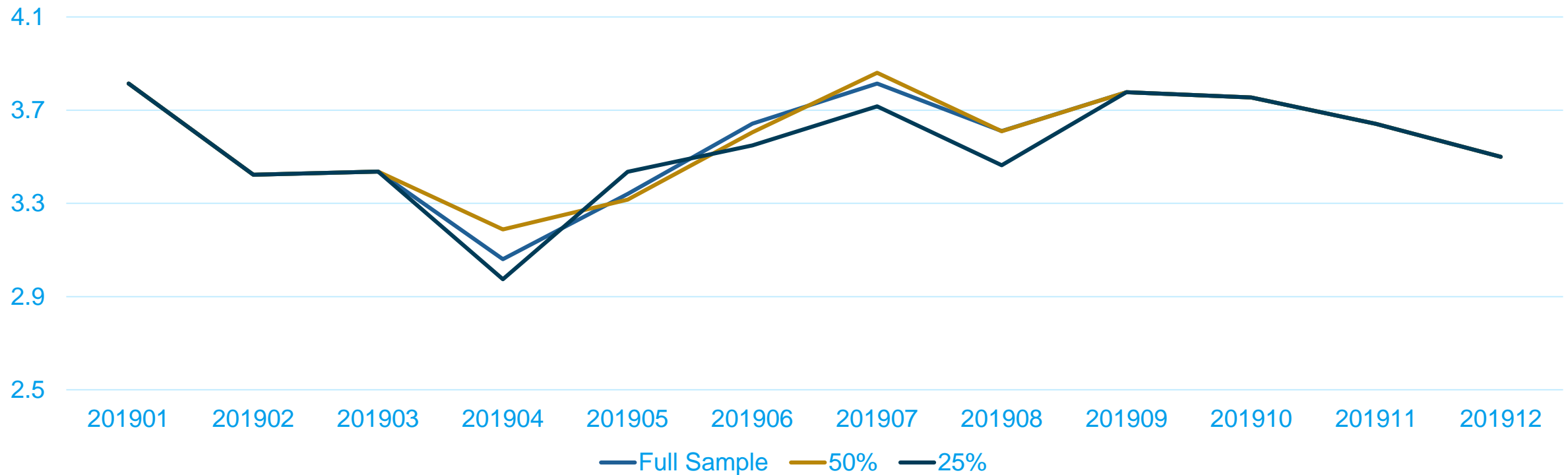
Unavailable items (% of CPIH basket)



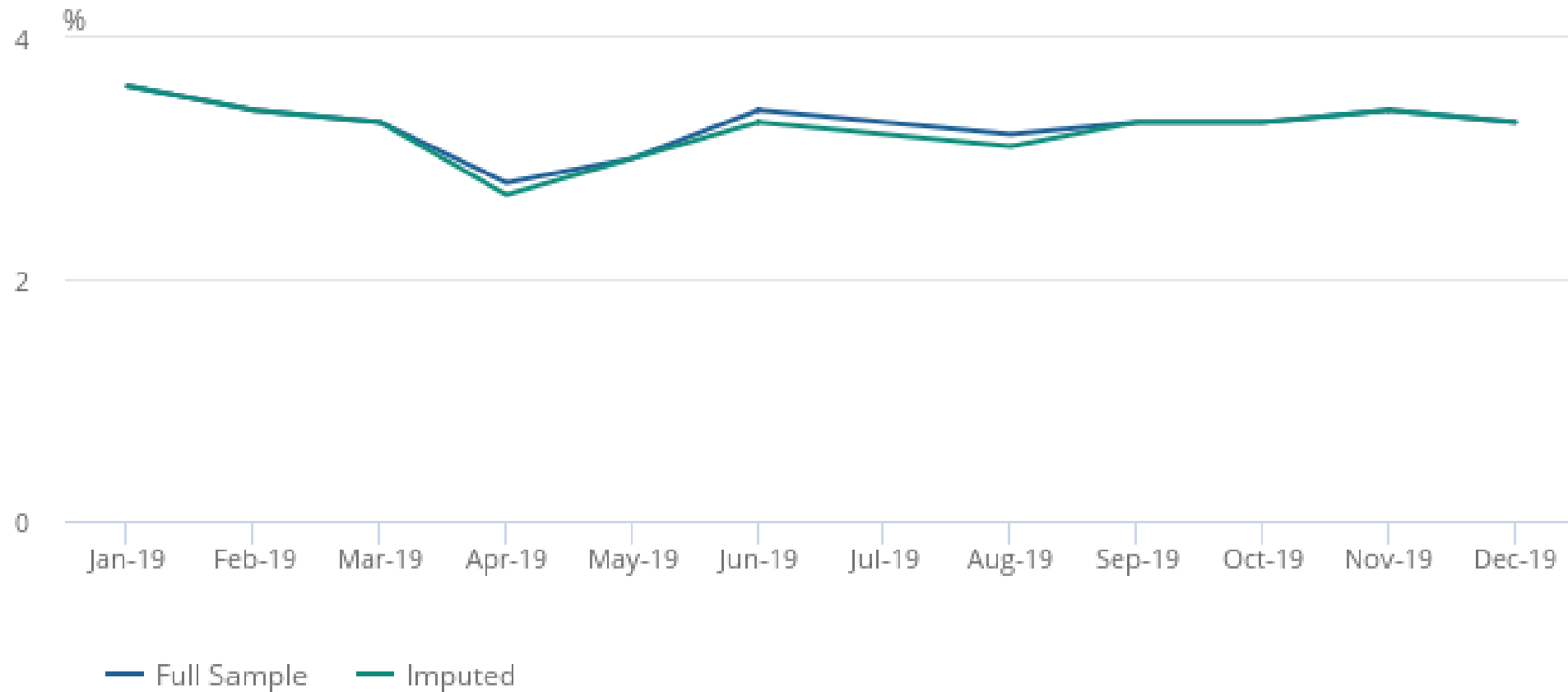


Supporting analysis

Impact of low sample sizes on CPIH (12-m%, 2019)



Impact of imputation on CPIH (12-m%, 2019)



After the lockdown...

After the lockdown...

- Key principle for resuming normal price collection after lockdown:
 - Aim to preserve index levels prior to implementation of Covid-19 lockdown restrictions
- Impact on monthly and annual growths
- Localised lockdowns

Discussion