

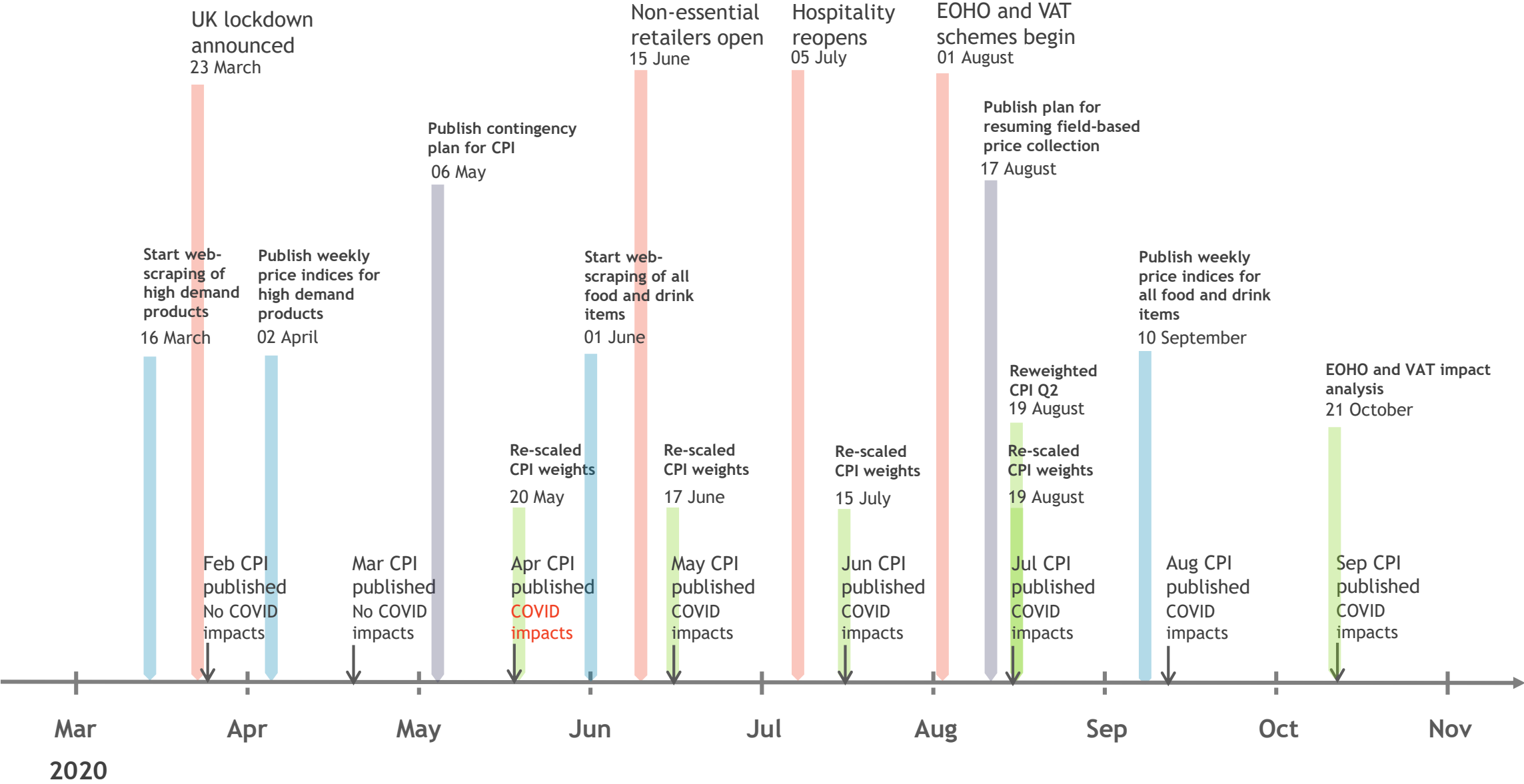
Producing supplementary analysis to assess the impact of lockdown on CPI

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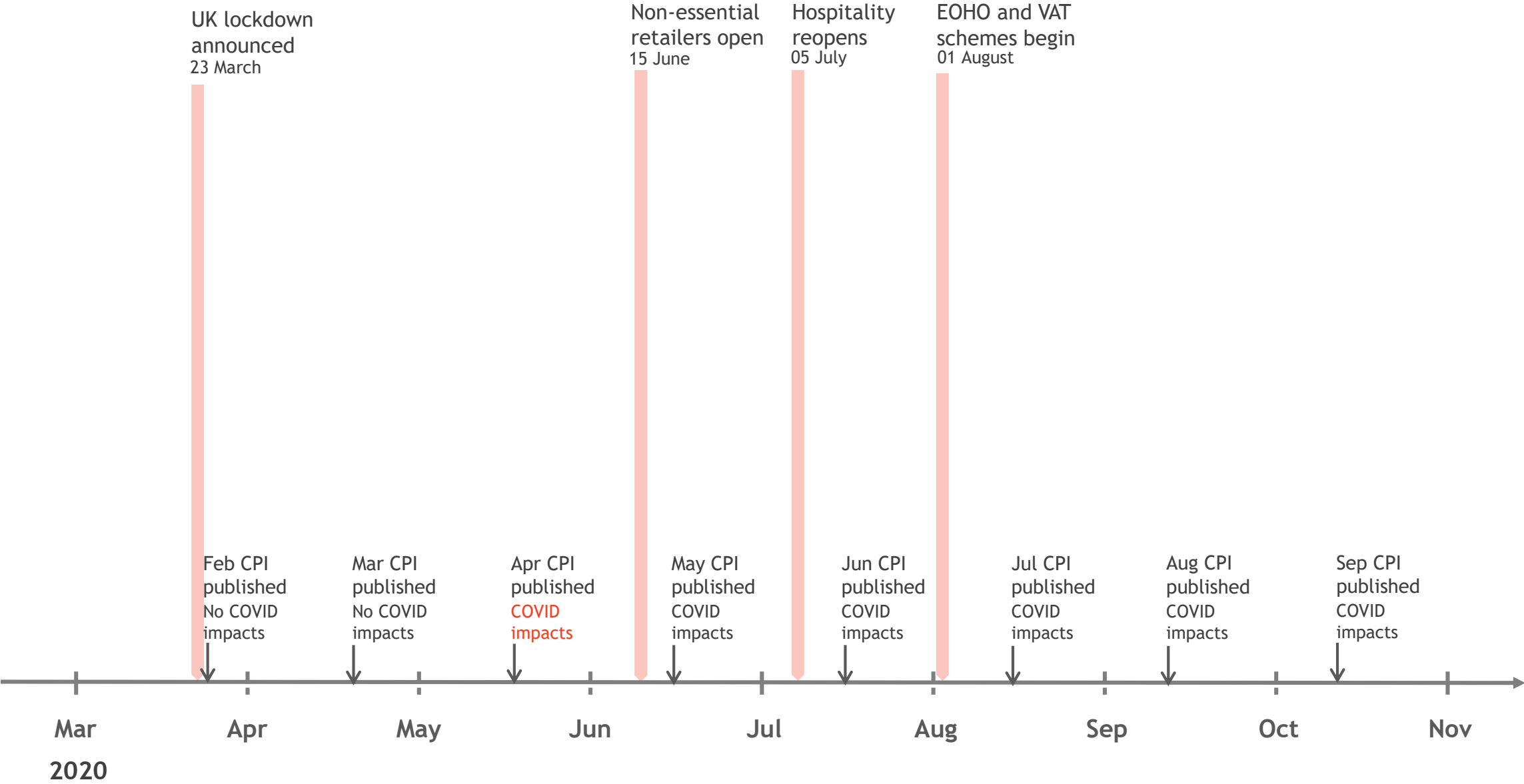
Head of Consumer Prices Methods Transformation
Office for National Statistics

Communications timeline

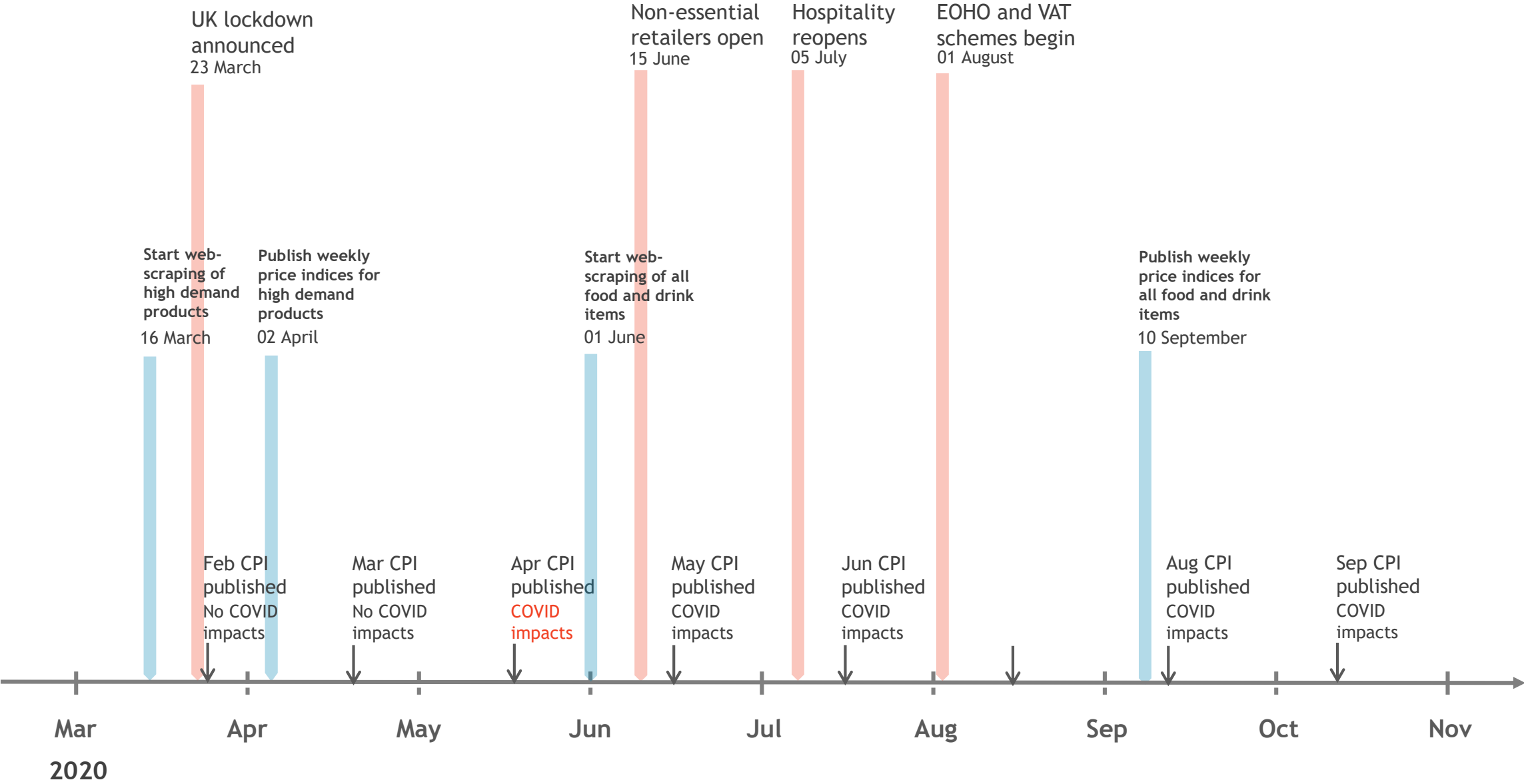
- UK COVID19 timeline
- Web-scraped indices
- Contingency plans
- Supplementary analysis

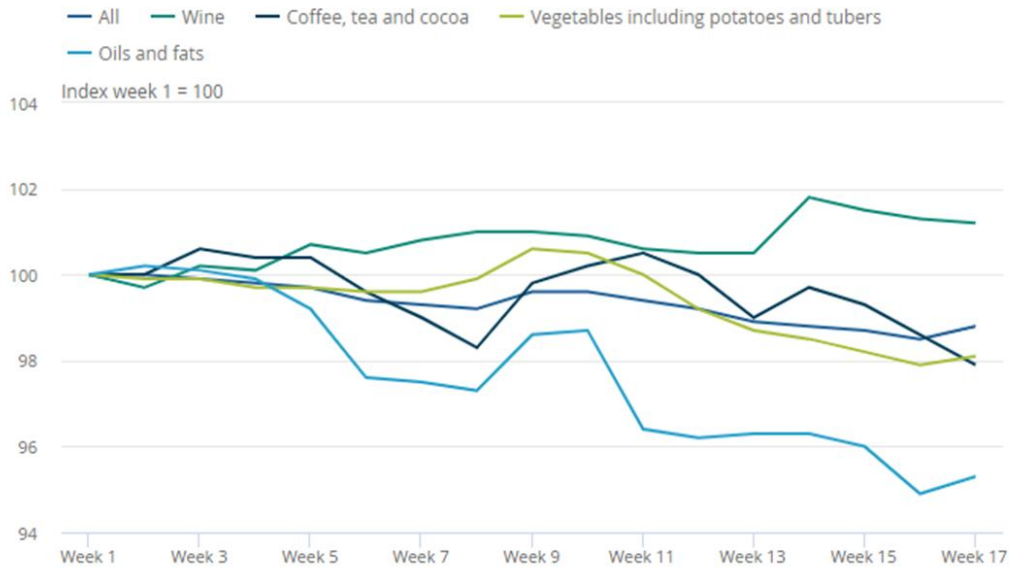


Communications timeline: regular publications



Communications timeline: web-scraped indices





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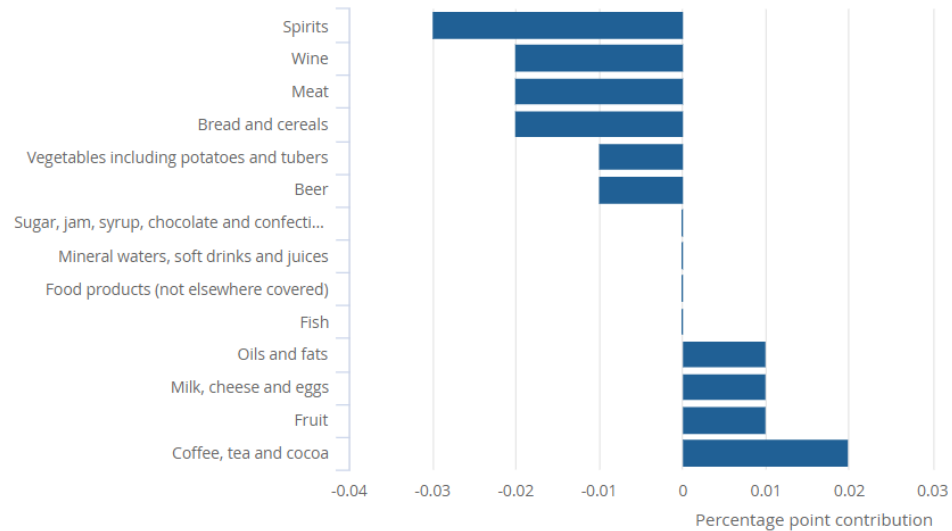
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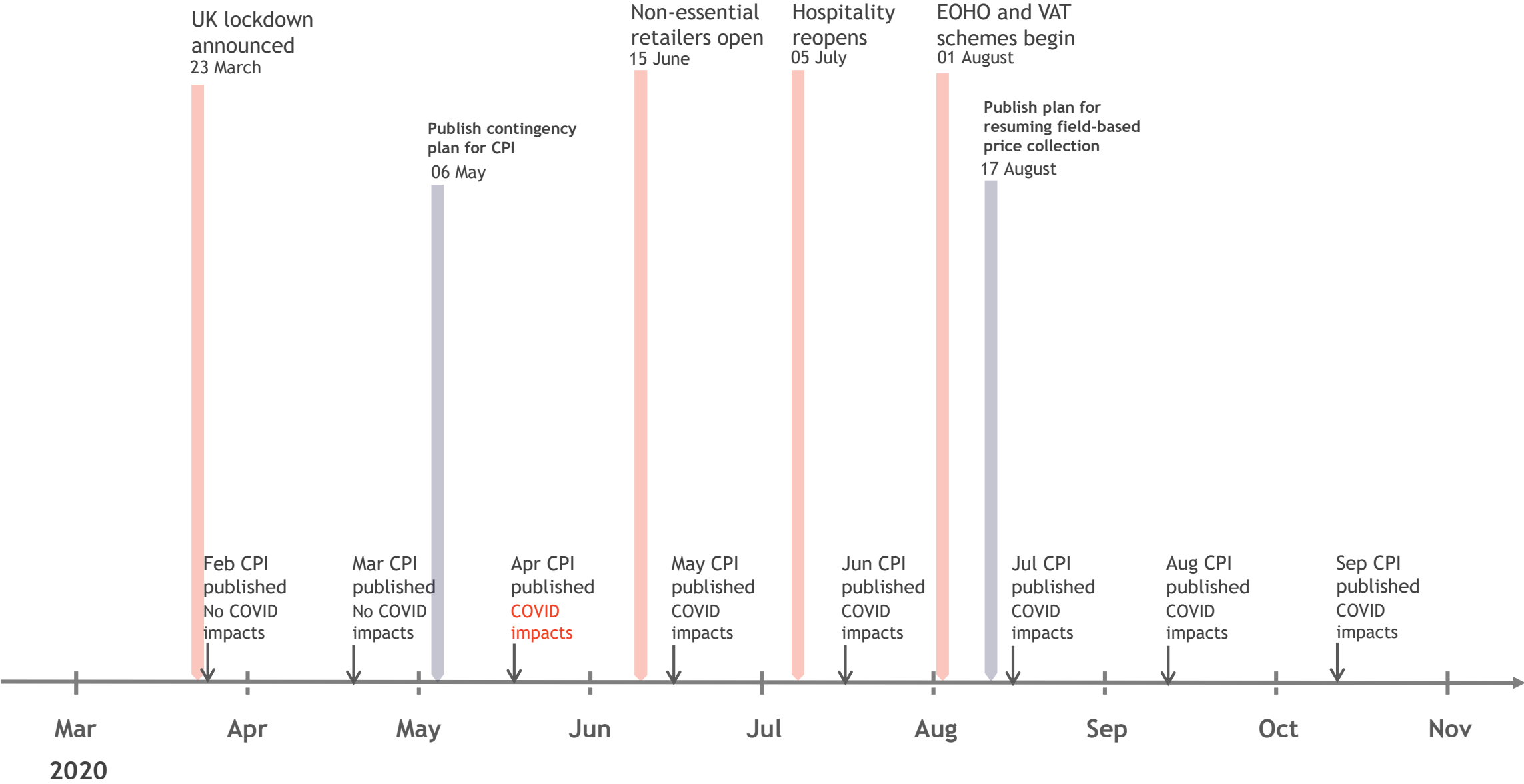
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Lockdown price hikes for beans and cleaning spray

18 June



Communications timeline: contingency plans



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Coronavirus and the effects on UK prices


Plans for data collection, compilation and publication of our various prices statistics following movement restrictions as a result of the coronavirus (COVID-19) pandemic.

Table of contents

1. Executive summary
2. Background
3. Price collection
4. [Calculation of consumer price statistics](#)
5. Further considerations
6. Statistical bulletin changes
7. Summary
8. Annex A: Marker codes
9. Annex B: List of unavailable items
10. Annex C: Case studies

August 2020

Home | Business, industry and trade | **Economy** | Employment and labour market | People, population and community | Taking part in a survey?

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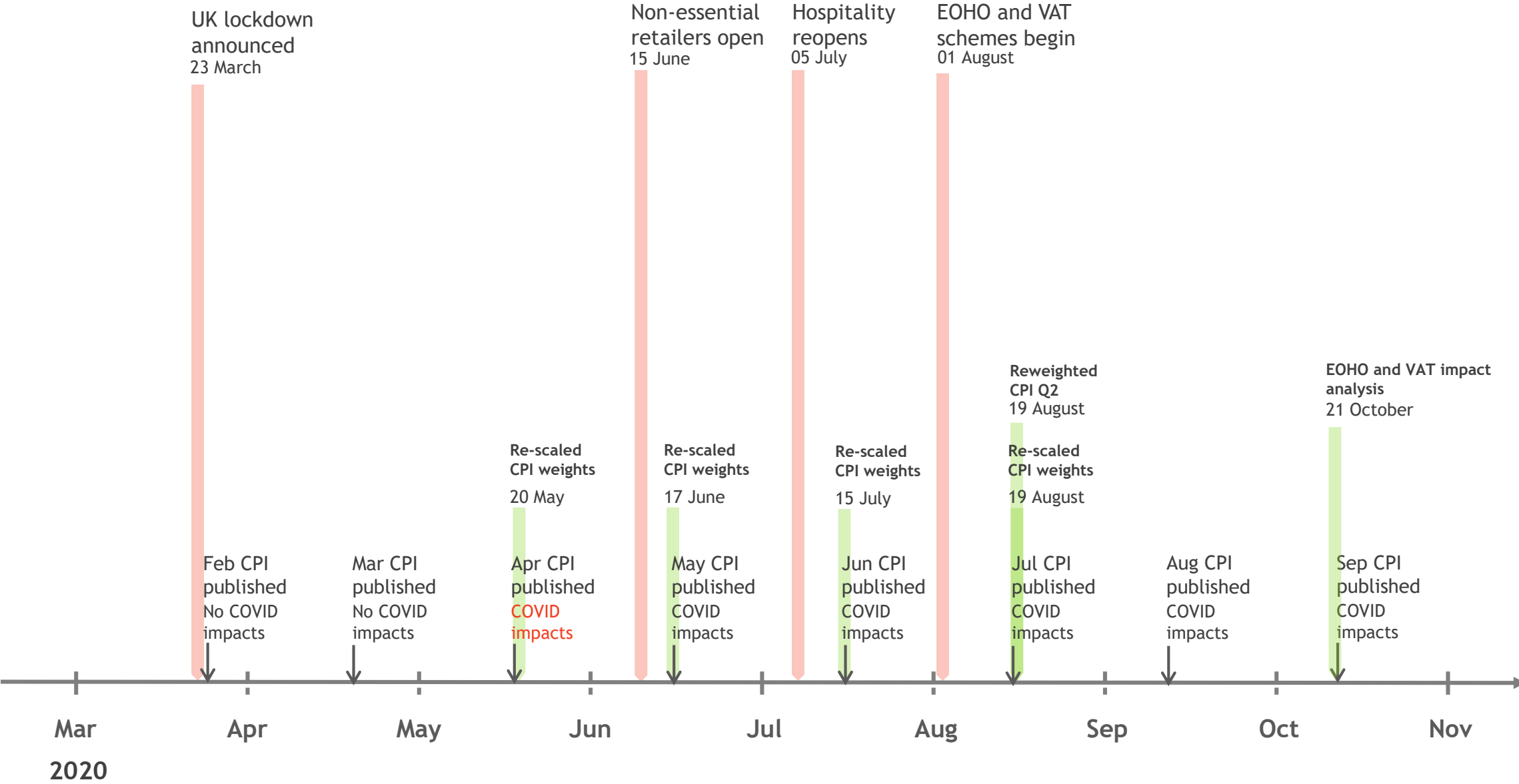
Consumer price statistics: resuming a field-based price collection

This article describes our plans for resuming a field-based price collection for our consumer price statistics, in light of the relaxing of movement restrictions in the UK.

Table of contents

1. Introduction
2. Background
3. Principles for calculating consumer price statistics on resumption of a field-based price collection
4. Price collection issues
5. Further considerations

Communications timeline: supplementary analysis



Re-scaled basket analysis: User need

- Large scale imputations were introduced to CPI during COVID to minimise the impact of unavailable items on the headline indices - there wasn't full support for this approach from users
- There was also concern over the sizeable consumption changes that had occurred during the first two quarters of 2020, and that these weren't accounted for by our fixed-weights methodology
- Supplementary analyses were first released in May (alongside the April CPI) to show users what the index would have looked like if we had removed unavailable items and reweighted CPI
- We also tested reducing the weight of fuels and lubricants (petrol & diesel) by 70% and reallocated the weights to remaining items, to see the impact this had on our headline rate

Re-scaled basket analysis: Methods

- **Scenario 1:** New monthly weights constructed by removing unavailable items and rescaling the weights for the available items to equal 1000. This means the weight for unavailable items was distributed evenly across available items, under the assumption that expenditure was likely to shift to other areas of the consumer prices basket (e.g. a shift from transport and recreation services to food and household energy)
- **Scenario 2:** Same method as above except we further reduced the weight for motor fuels and lubricants by 70% and rescaled the weights to effectively redistribute motor fuel spending elsewhere
- To account for the change in weights a monthly chain was introduced – we compared to a monthly chained series with official weights to ensure that any differences in result were not driven by introduction of chain-link.
- Some methodological concerns over whether there is some downward bias from essentially chaining a current period weighted index (Paasche-type) onto a base weighted index (Laspeyres-type), but the benefits of the analysis outweighed the risks

Re-scaled basket analysis: Results

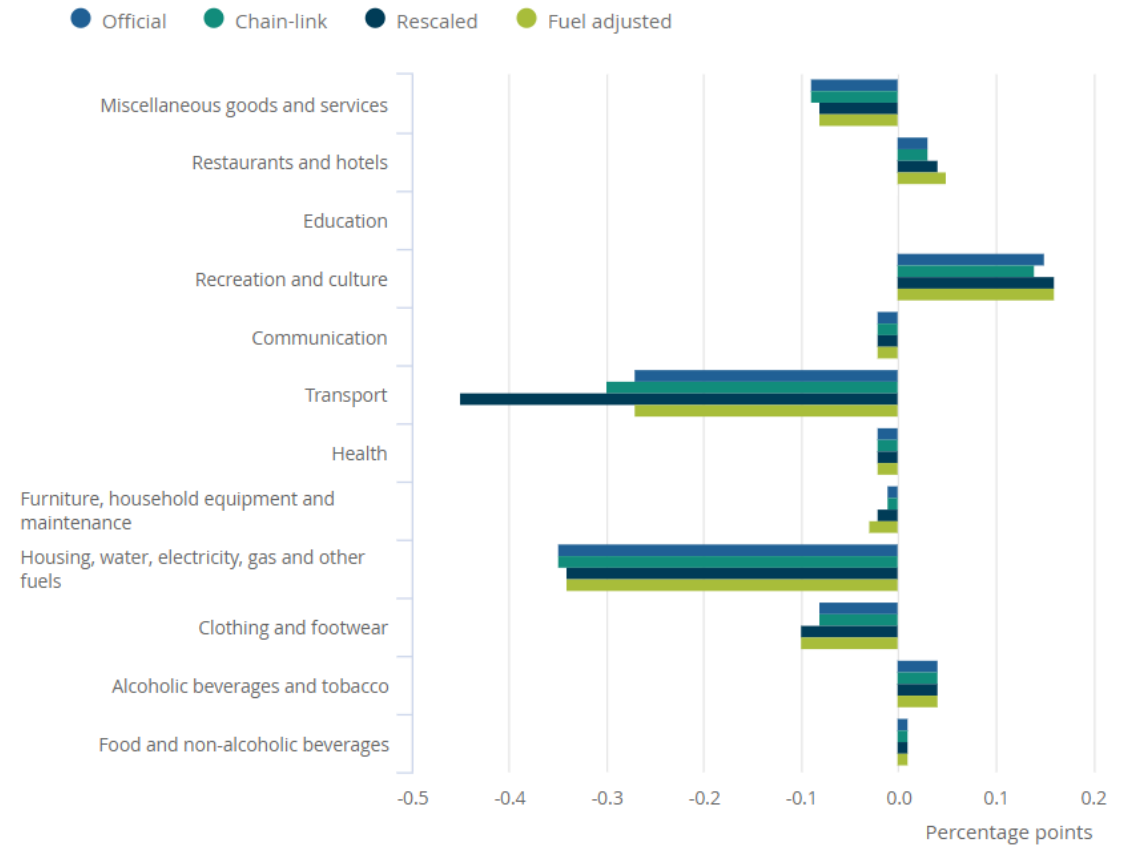
Figure 1: Contributions to the change in the 12-month growth rate of CPIH for the official and experimental series

UK, April 2020

Table 1: Index and growth rate values for adjustments to CPIH

April 2020

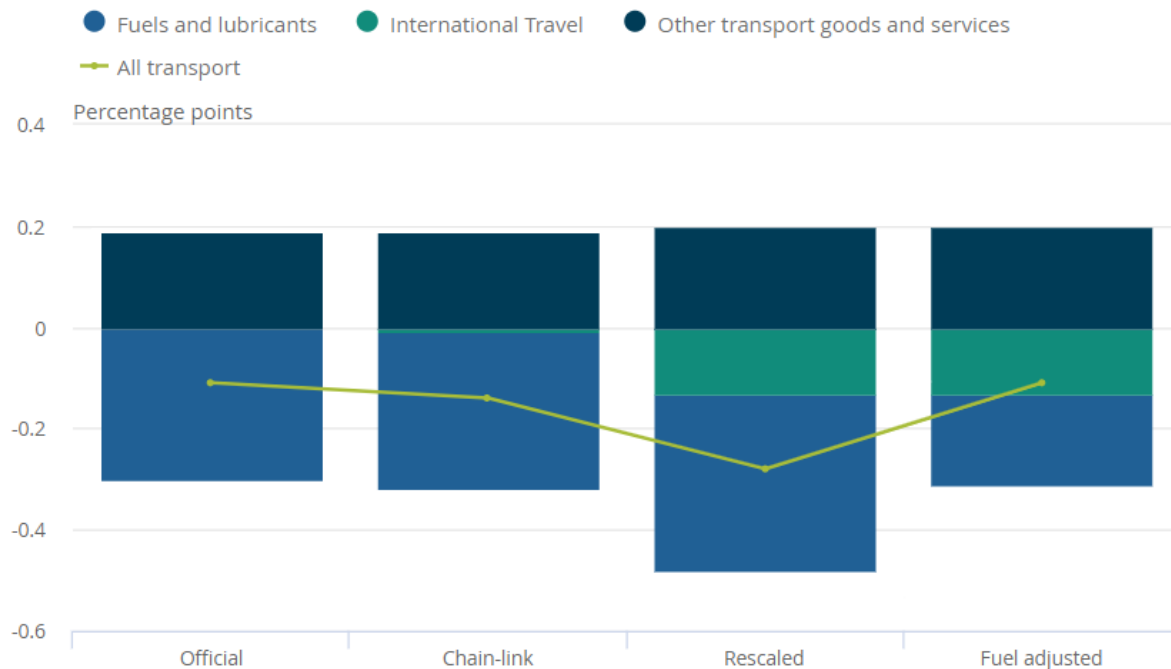
April 2020 CPIH	CPIH (2015=100)	YoY%
Official	108.6	0.9
Chain-link	108.6	0.9
Rescaled	108.5	0.8
Fuel adjusted	108.7	0.9



Re-scaled basket analysis: Results

Figure 2: Contributions to the 12-month growth rate of CPIH by component of transport

UK, April 2020



Imputing price indices for unavailable international travel meant these had no impact on the annual growth rate of the official series in April 2020

Removing international travel from the re-scaled index in April 2020 meant it still had a negative contribution to the annual growth rate, as prices had fallen between April 2019 and March 2020

The fuel adjustment scenario still saw this negative contribution from international travel, but had a reduced contribution from motor fuels and lubricants, bringing it back in line with the official rate

Re-weighted basket analysis: User need

- Sizeable shifts in consumption observed throughout Q2, these were not properly accounted for by either fixed base or re-scaled baskets
- Users/academic institutions had started releasing their own view of what inflation would have been had ONS accounted for consumption changes over this period – mixed results showed need for an official view
- We built upon the re-scaled analysis that we'd already been publishing each month to adjust the underlying expenditure for each item, a new set of weights was calculated for each month in Q2 based on this adjusted expenditure

Re-weighted basket analysis: Methods

Table 3: Data sources used to adjust subclass weights in the re-weighted CPIH analysis, including the approximate weight that these subclasses accounted for in February 2020, for the CPIH and CPI, UK

Data source	Count	CPIH weight %	CPI weight %
RSI	186	35.3	43.7
Kept the Same	57 (55 in CPI)	39.6	25.2
Unavailable	24	7.7	9.6
Transaction data / informed judgements	9	11	13.6
MBS - Construction and Allied Trades	6	0.2	0.2
Department for Transport	4	1.6	2
SMMT	3	3.4	4.2
Department for Education	1	1.2	1.5

We adjusted the expenditure that had been used to calculate February using a variety of data sources

Official data sources were used where possible, but were supplemented with some alternative data sources (e.g. transaction data)

Where not possible or where we didn't believe there had been sizeable shifts in consumption (e.g. rent, council tax, electricity and gas) we carried forward the expenditure

Unavailable items were treated as having 0 expenditure and still removed

The remaining methods are the same as used in our re-scaled basket analysis, using a monthly chain-link to introduce new weights

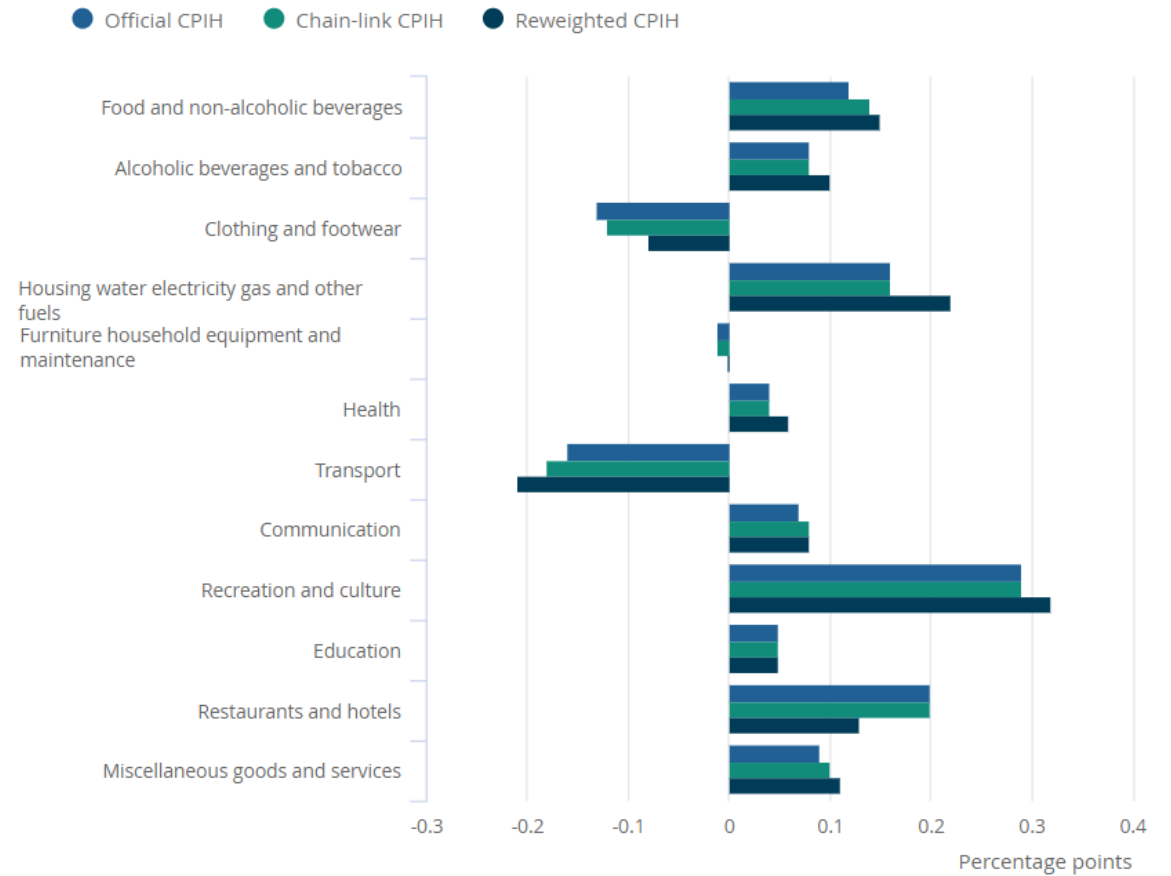
The caveats remain surrounding chaining a current-period weighted index onto a base-period weighted index

Re-weighted basket analysis: Results

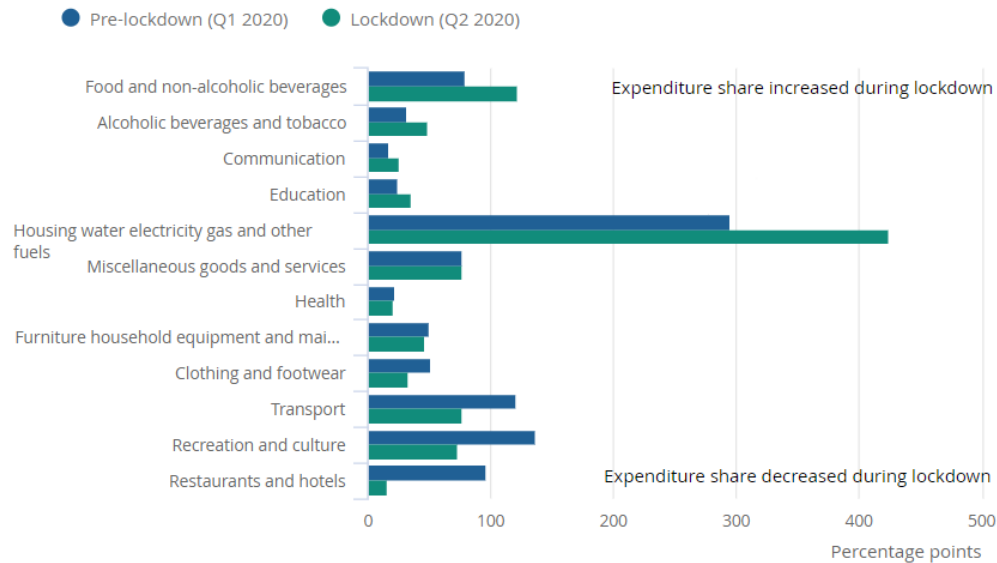
Table 1: Annual growth rate values for adjustments to the CPIH, UK, April to June 2020

	April 20	May 2020	June 2020	Quarter 2 2020
Official CPIH	0.9%	0.7%	0.8%	0.8%
Chain-link CPIH	0.9%	0.7%	0.9%	0.8%
Reweighted CPIH	1.0%	0.8%	1.0%	0.9%

Division-level contributions to the experimental CPIH annual growth rates, UK, Quarter 2 (Apr to June) 2020



Average expenditure shares used in the CPIH, UK, Quarter 1 (Jan to Mar) and Quarter 2 (Apr to June) 2020



Additional supplementary analyses

August 2020 sensitivity analysis:

- the impact of having a smaller sample size than usual
- the impact of having to impute various stratum-level indices as a result of not being able to collect any prices, or only a handful of unrepresentative prices

October 2020 COVID schemes analysis:

- the impact of eat out to help out scheme on consumer price inflation
- pass-through of VAT changes to consumer price inflation

Ongoing comms...

- Continue weekly online price indices for food and drink items
- Continue quarterly reweighted basket article until consumption patterns normalise (somewhat) – next article due next week!
- Continue to update users on contingency plans/methodological changes through ad-hoc publications (next one due to be an update on how we carry out our annual weights update for 2021...)

Any questions?

- UK COVID19 timeline
- Web-scraped indices
- Contingency plans
- Supplementary analysis

