ASIA PACIFIC STATISTICS WEEK 2020

Utilizing A Price Comparison Website to Produce Hedonic Price Indices for Mobile Phone

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LIFE AFTER COVID19:

Never thought that data collection could be this hard

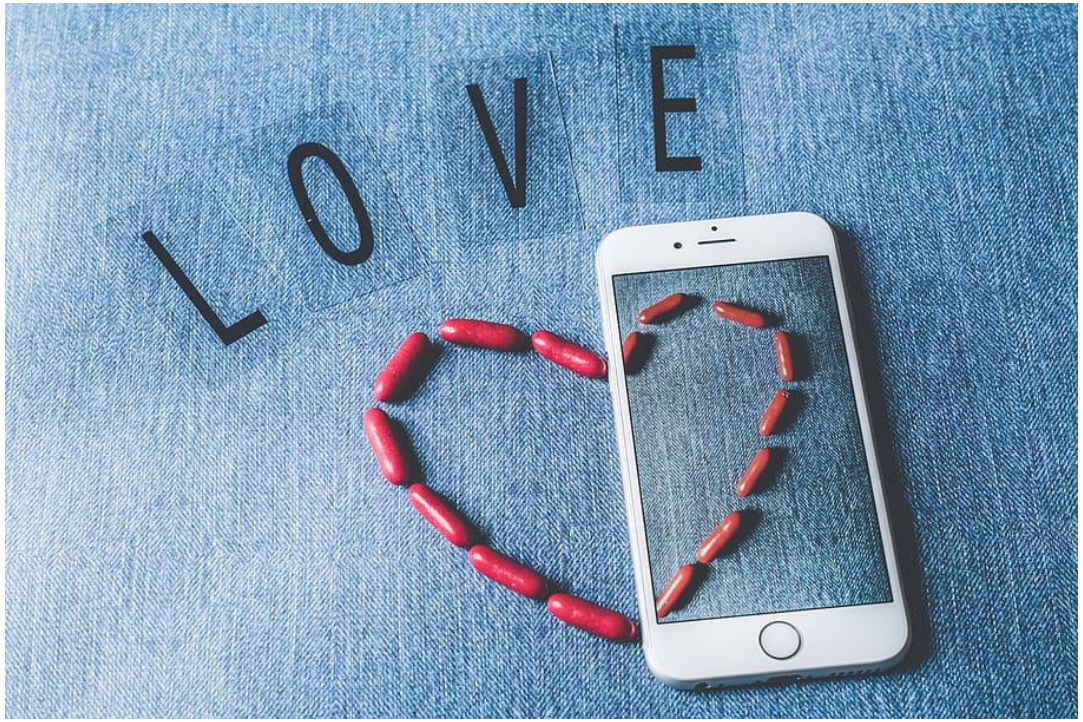
What can we do?*

*(from home is preferred)

- Gather the data online
- Online data will be different from the samples used current CPI
- But it might works!

It is another preliminary study

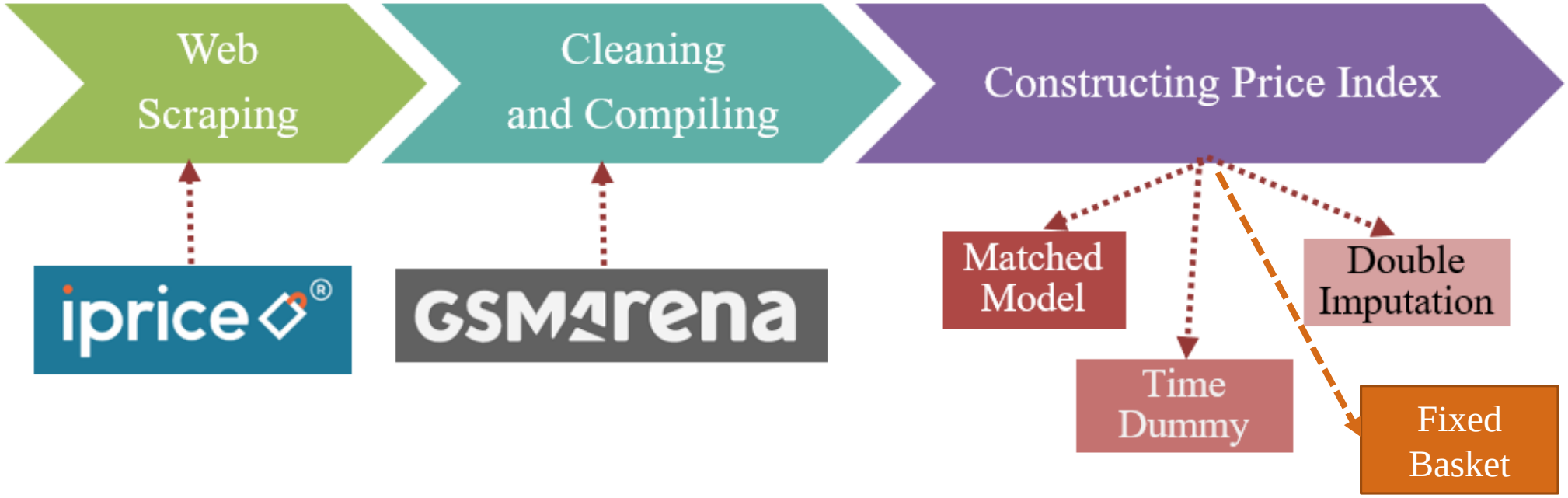
We focused on one commodity we couldn’t live an hour without



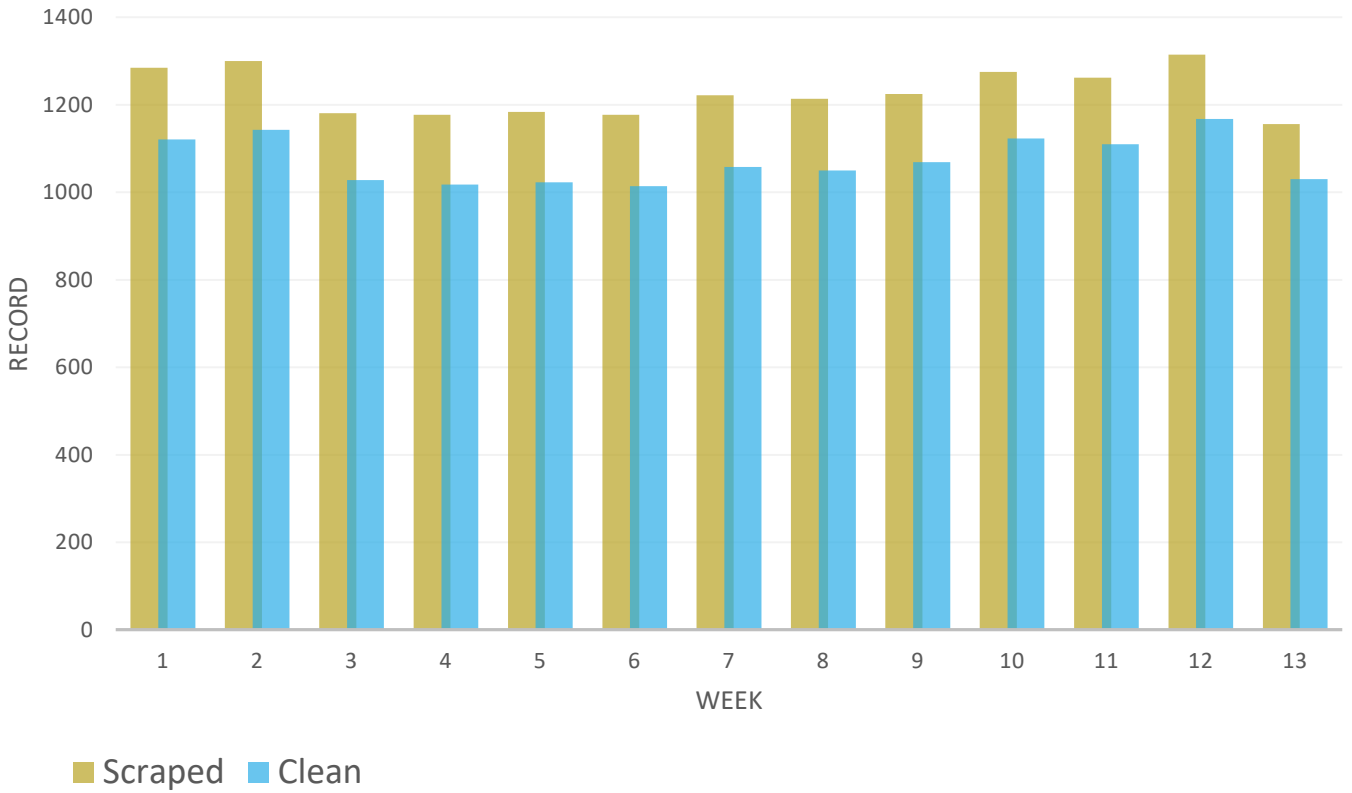
- Mobile phone is one of the commodities calculated in CPI
- One of the commodities most frequently bought online
- undergo rapid quality change -> Hedonic method

Data scraping

Research Method



Dataset



Period:

January-March 2020

Average of clean records each week:

≈1073 records

Time needed:

± 30 minutes

Methods

Pure price comparison

Fixed Basket

Price comparison for exact fixed basket for all periods

Matched Model

Pure price comparison for Matched products in two successive periods

With hedonic model

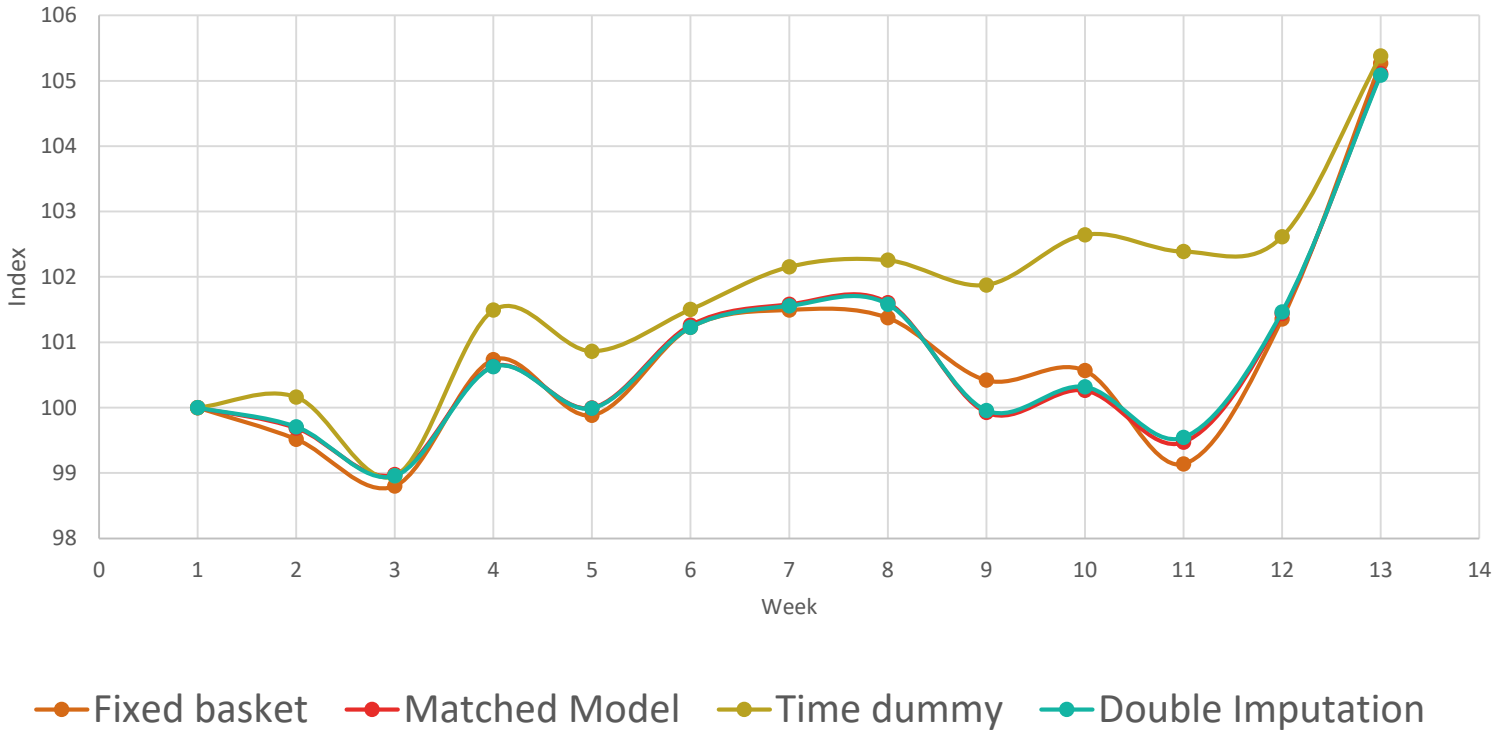
Time Dummy

Hedonic regression with period as dummy variable

Double imputation

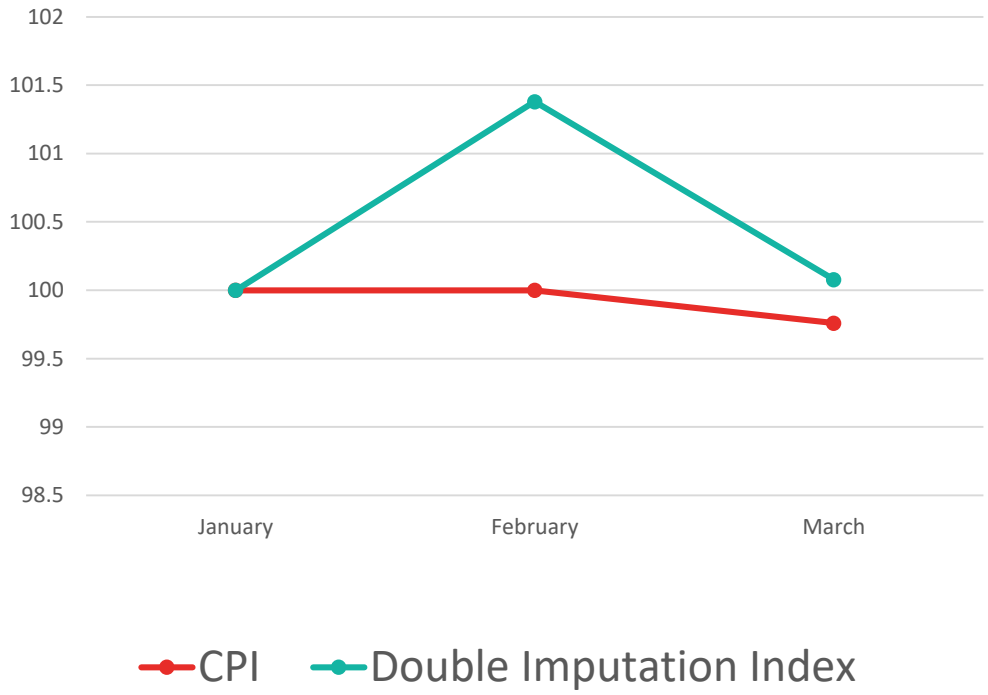
Combination of matched model and hedonic regression to measure price movements

Mobile phone weekly price indices



- The time dummy model gave the most distorted results.
- Matched model and double imputation are almost in a squeezed line because of the small proportion of unmatched data

Comparison to CPI



- The index produced seemed more volatile
- series is still too short to derive a conclusion

Conclusion

- Data scraping was reliable for collecting a large amount of data in a short time with minimal resources
- The indices calculated using online price seemed to be more volatile than CPI
- Possible bias in data collection due to the algorithm used in price comparison website

Discussion

1

BPS **has done the mapping** and identified the opportunity and priorities for change generally, but **not yet specifically for the use of big data in CPI**

2

Generally, **big data tools has been used** and beneficial for BPS, such as Hadoop, data stage, IBM cloud and IBM 2 to some statistics from big data.

However, for **CPI it is still in the stage of research** and have not use the tool regularly


THANK YOU