Measuring price change from big data in New Zealand

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Overview

- Import data – OTI
  - phones and TVs (since 2013)
- Scanner data – CPI
  - consumer electronics from GfK (since 2014)
  - supermarkets (negotiating access)
- Online data from PriceStats
  - 15 major NZ retailers/sites (from mid-2016)

Methodology important

- Methodology was unresolved
  - SNZ started considering use of scanner data in 2008
- Collaboration
  - Netherlands, Australia, Luxemborg
- Method determines data requirements
  - Most big data lacks product characteristic information
  - Longitudinal nature of data leveraged for implicit quality adjustment (the FEWS index)

Consumer electronics scanner data

- Market research company GfK (worldwide)
- Aggregate level since 2006
  - informing expenditure weighting in CPI
- Research data 2008-2011
  - used for R&D into methods
- In production from 2014
  - NZ first country to directly use consumer electronics products in CPI

Webscraped online data

- MIT's Billion Prices Project (BPP)
  - mutual research interest identified 2012 via EMG
- PriceStats
  - commercial arm of BPP
  - shared research data with us in 2013
- Webscraping strategy
  - internal SNZ discussions
- Data purchased 2016
  - year's worth of daily online data
  - 15 NZ retailers

Supermarket scanner data

- Two major retailers in NZ
- Initial supply
  - sample of data from one retailer
  - corresponds to existing fixed basket
- Reluctance to supply full-coverage data
  - confidentiality concerns
- Considering remote running
  - estimate indexes
  - include analysis/monitoring processes

Lessons learned

- Access and use evolves
  - data owners may not fully understand data for our use
- Different approaches for different partnerships
  - different skills, knowledge, $ incentives, privacy concerns
- We are secondary users
  - need to adapt usage around data, rather than data around usage
- We are likely to be a small % of revenue stream
  - so we need mutually beneficial arrangements

References

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