Digital Economy and Consumer Prices
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Agenda

- Overview of Digital Economy
- Opportunities presented by digitalization
- Analysis initiatives
- The Bottom Line
In a few words

Digitalization

Digital Economy
Sharing economy  Big Data  Internet of things

E-commerce
## Data Sources

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<td><strong>Web-scraping</strong></td>
<td>Canadian retailers: miscellaneous categories</td>
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<td><strong>Application Programming Interface (API)</strong></td>
<td>Aggregators for hotels, flights, car rentals, package holidays, etc.</td>
<td>Prices and characteristics</td>
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<td><strong>Other Data</strong></td>
<td>3rd party providers</td>
<td>Prices and some characteristics</td>
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Prices from digital sources

- **Web Scraping data for:**
  - Clothing stores
  - General Merchandisers
  - Home improvement
  - Electronics and Appliances

- **API data for:**
  - Airlines
  - Hotels
  - Car Rentals

- **Scanner data for:**
  - Food
  - Personal Care
  - Household operations

- **In-house Internet collection of:**
  - Travel
  - Transportation
  - Communications
  - Furniture
  - Services
Comparing instore vs online data

Average Price of Web Scraped vs In-store, same product

vs

onlinestore.ca
Increased product coverage

Count of All

Month 1

Month 2

Month 3

Month 4

Number of Products

Availability (Web Scraped vs Field Data)

Field Data

WebScrape Data
API data for Air Transportation
### Integration of online pricing

- Some CPI aggregates are fully or partially priced online
  - Hotel accommodations
  - Air fares
  - Rental cars
  - Telephone services (local and cellular)
  - Internet access services
  - Inter-city trains and buses
  - Local transit
  - Driver’s licenses
  - Passports
  - Passenger vehicle registration fees
  - Retail club memberships
  - School books
  - Cars

- CPI aggregates partially priced online
  - Travel tour packages
  - Furniture
  - Mattresses
  - Household textiles (sheets, towels, window coverings)
  - Toys, games and hobby supplies
  - Household appliances
  - Cookware
  - Tableware
  - Tablets
  - Photographic equipment and supplies
  - Audio equipment

Source: MRTS 2017-04 to current
Implementing more online data in the future

Web Scraped
• Online vs instore
  • Clothing
  • Electronics

Application Programming Interfaces (APIs)
• Travel

Sharing Economy
• Netflix & Spotify
• Uber & Lyft
• Airbnb

Future Trends
• Scope definition could extend beyond country
• Growth online marketplace
• New product offers: Internet Of Things
Growing supply

Unique Property Types

Number of Listings

Boat  Earth House  Hut  Igloo  Island  Tent  Tipi  Train  Treehouse  Yurt

Apartment House

Apartment and Houses

10,000  20,000  30,000  40,000  50,000  60,000  70,000  80,000  90,000

2015  2016  2017

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www.statcan.gc.ca
And growing demand
## Prices Investigation areas

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| Assessing exchange rate pass-through        | Should the scope of the Canadian CPI be broadened to US or international online retailers?  
Are Canadian and US prices moving in tandem for the same good? |
| Pricing dynamics                             | Is the price collection frequency affecting the measured inflation?  
Are prices moving differently for online vs brick-and mortal stores for the same good?  
Are online prices uniform across all Canadian regions? Does it depend on retail sectors? |
Conceptual challenges

- Bundling of services – Communications / Cable / Internet
- Shipping charges - Variable depending on purchase amount
- Quality adjustment - Service level and shipping speed
- Scope of Canadian CPI – Geographical boundary definition to reflect changing consumer shopping habits
Prices are less static. A dynamic approach needed for the CPI measurement.

Digital Economy presents an opportunity to improve the quality and coverage of price statistics.

The growing impact of the digital economy will continue to be analyzed and monitored.
THANK YOU!

For more information please visit,
www.statcan.gc.ca

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