UN-ECLAC, UNCTAD, and IMF Webinar

Measurement of the digital economy and trade in Latin America and the Caribbean

November 8-11, 2022

STATISTICS

Specific Measurement Challenges: E-commerce

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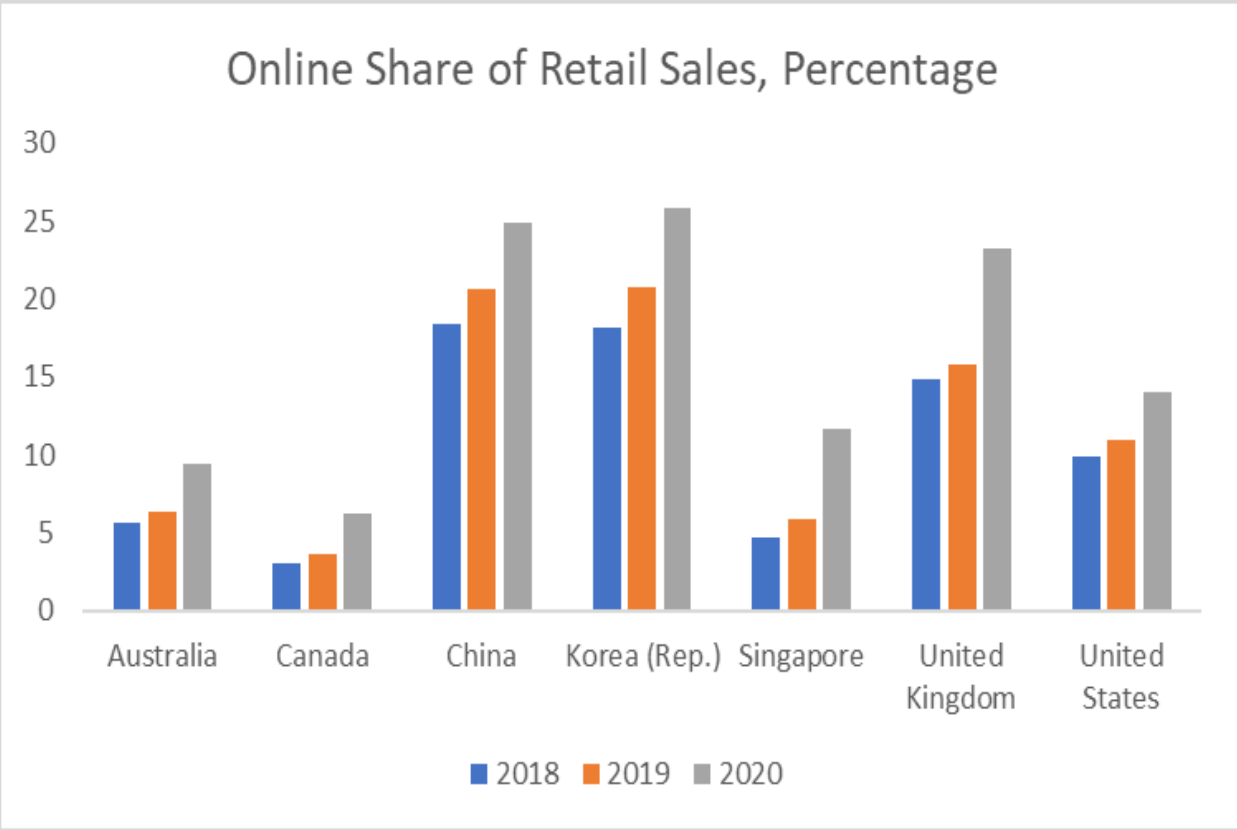
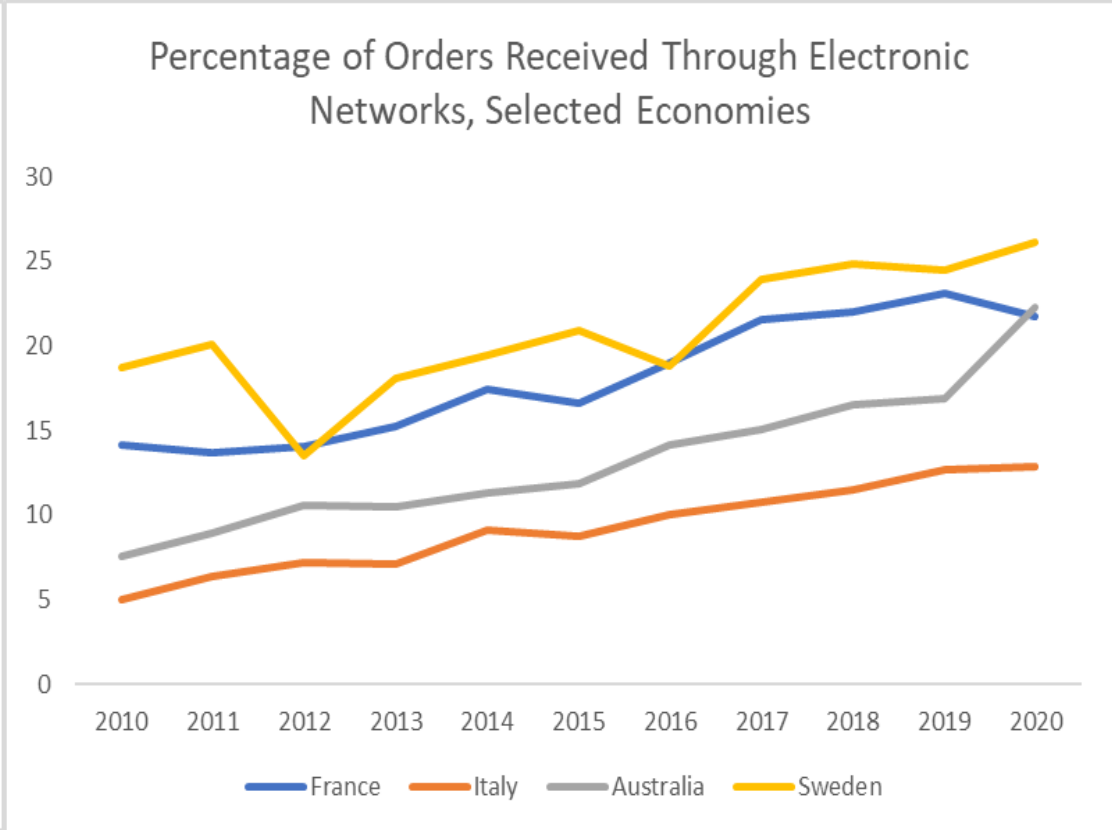
Importance of e-commerce is growing…



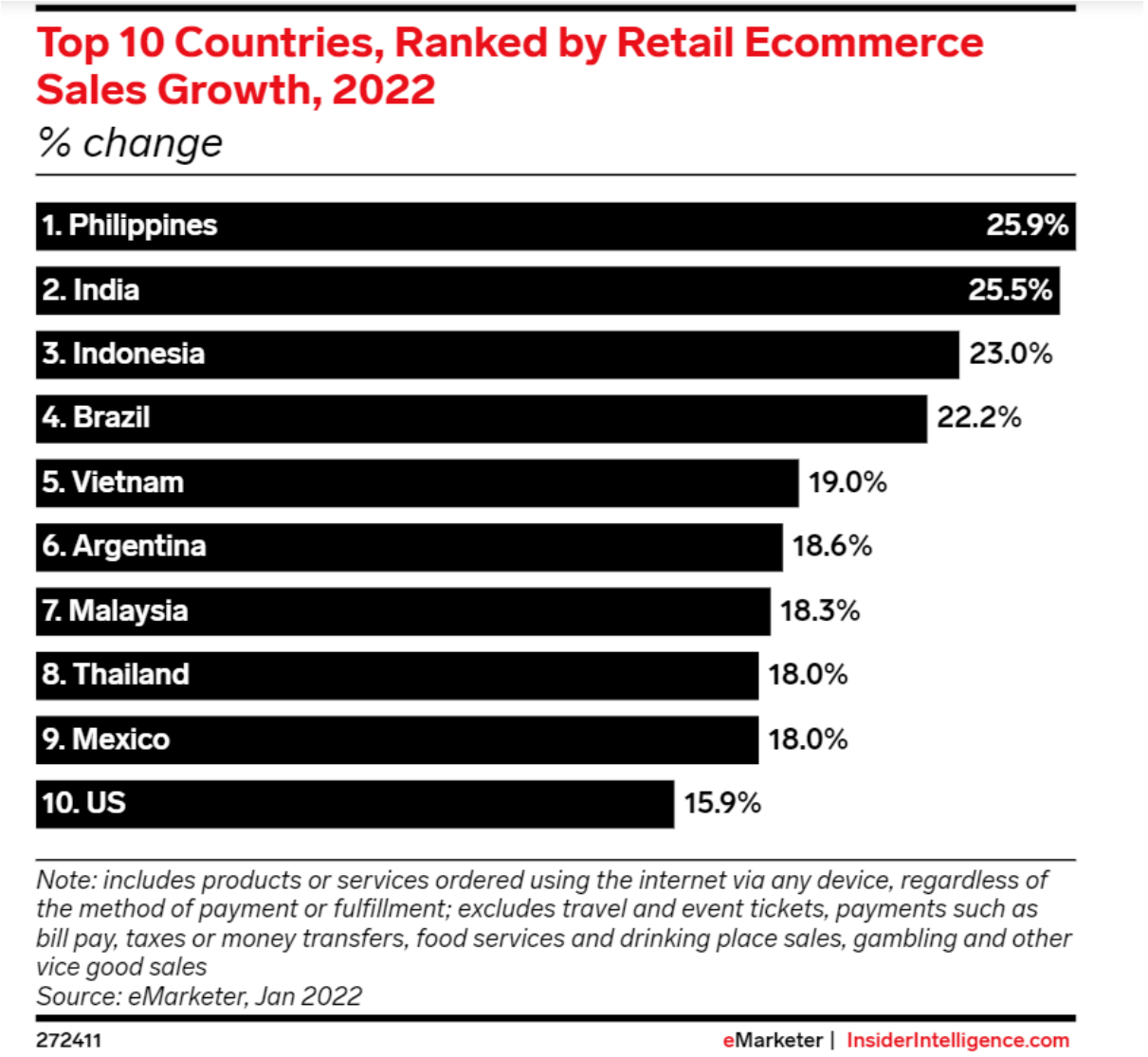
Source: UNCTAD, based on reports from national statistical offices



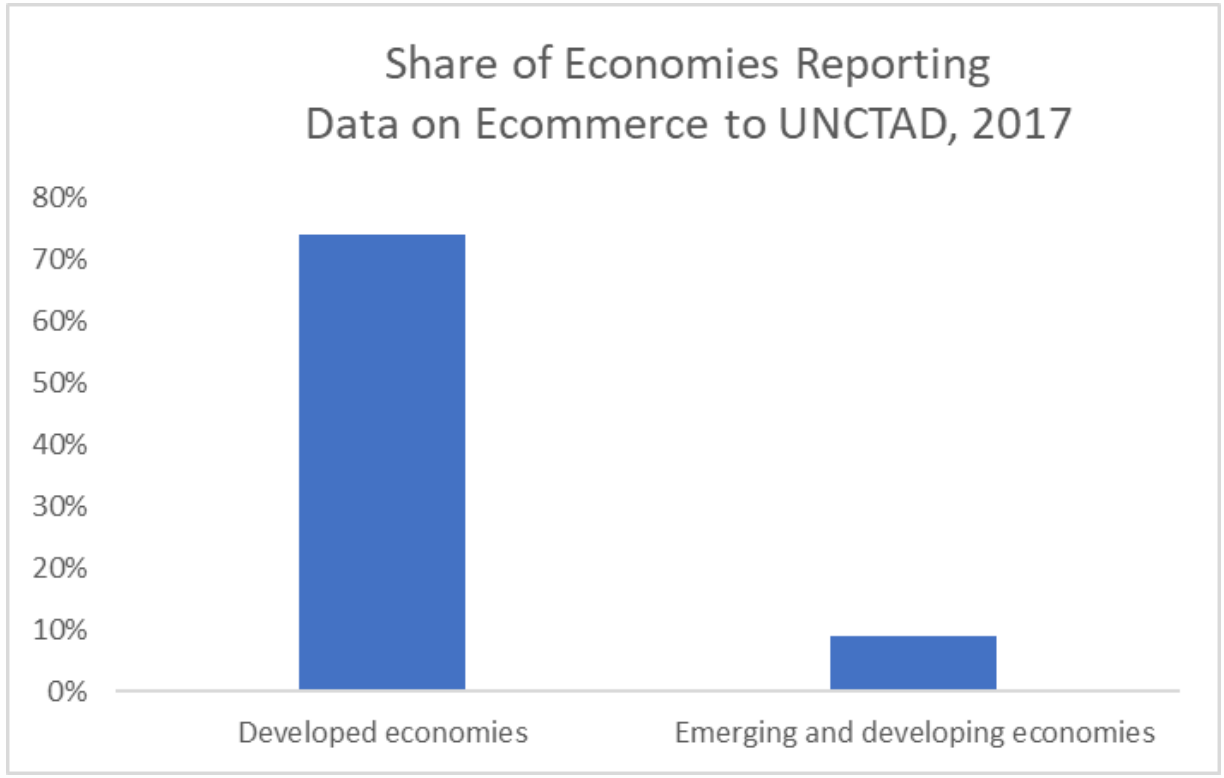
Source: OECD

...particularly in Asia and Latin America

eMarketer projects that 3 of 9 economies with largest retail ecommerce sales growth in 2022 will be in Latin America



But few developing economies produce timely official statistics on e-commerce

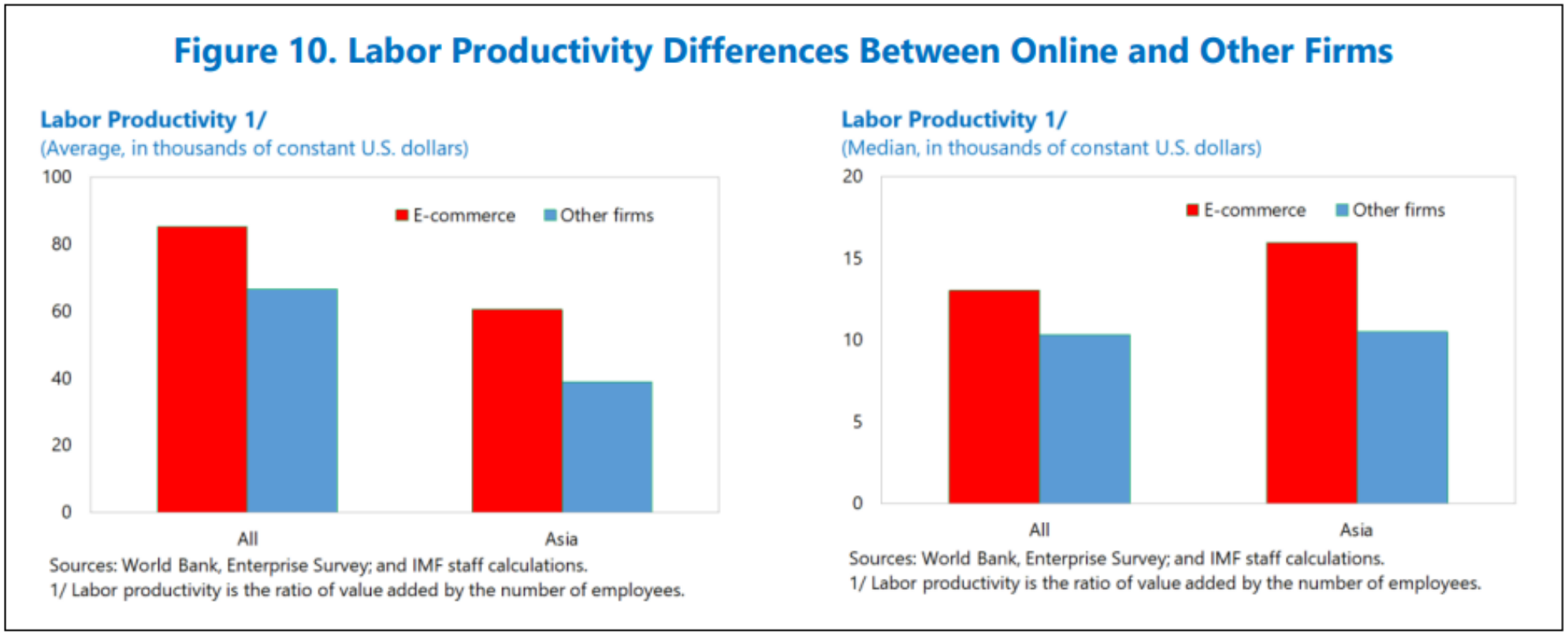


Official data on cross-border e-commerce is even scarcer – only a few developed economies produce this data

Why is data on e-commerce important?

- E-commerce offers opportunity for development
  - Firms that sell online are more productive than peers
    - More likely to hire and export
  - Platforms can support entrepreneurship and growth of micro/small businesses
- Official data on e-commerce and related ICT indicators allows policymakers to track progress and identify obstacles
- Incorporating e-commerce outlets into CPI needed to capture current market prices and improve accuracy of inflation measures

E-commerce as driver of productivity growth



Kinda, 2019 “E-commerce as a Potential New Engine for Growth in Asia”, IMF Working Paper 19/135 https://www.imf.org/en/Publications/WP/Issues/2019/07/01/E-commerce-as-a-Potential-New-Engine-for-Growth-in-Asia-46950

Action Plan to Improve E-Commerce Data

1) Utilize or Initiate Recurring Enterprise Surveys
2) Utilize or Initiate Recurring Household Surveys
3) Private Non-Survey Data to Supplement Official Data
4) Address Coverage of E-Commerce in CPI

Recurring enterprise surveys – E-commerce

1) Collect recurring survey data on enterprise e-commerce and related ICT infrastructure

- Dedicated e-commerce and ICT enterprise survey *and/or*
- Incorporating questions about e-commerce and ICT to existing enterprise surveys
- Enterprises should also be asked to estimate the proportion of their total sales that are generated from orders through computer networks (Internet, EDI, etc.)

Core indicators on use of ICT by enterprises

B1	Proportion of businesses using computers
B2	Proportion of persons employed routinely using computers
B3	Proportion of businesses using the Internet
B4	Proportion of persons employed routinely using the Internet
B5	Proportion of businesses with a web presence
B6	Proportion of businesses with an intranet
B7	Proportion of businesses receiving orders over the Internet
B8	Proportion of businesses placing orders over the Internet
B9	Proportion of businesses using the Internet by type of access
B10	Proportion of businesses with a Local Area Network
B11	Proportion of businesses with an extranet
B12	Proportion of businesses using the Internet by type of activity

Manual for the Production of Statistics on the Digital Economy 2020

Source: UNCTAD, Manual for the Production of Statistics on the Digital Economy, 2020

Enterprise surveys on e-commerce – model questions

Indicator code and name: B7: Proportion of businesses receiving orders over the Internet		
Model question: Did your business receive orders for goods or services (that is, make sales) via the Internet during <reference period>? Yes/No.		
D2	**E-sales value by platform and type of customer** (as % of total turnover)	Platforms include (a) EDI and (b) web. Customers include end consumers and other enterprises and government: these two latter categories might need being joined, where separate data are unavailable. As survey practice showed that respondents find it difficult to report their total e-sales (e-purchases), thesefigures might be better obtained by summing up components. Also, values can be collected in absolute terms.

Indicator code and name: B8: Proportion of businesses placing orders over the internet		
Model question: Did your business place orders for goods or services (that is, make purchases) via the Internet during <reference period>? Yes/No.		
D8	**E-purchase value by platform** (as a % of total purchases)	Platforms include EDI and web. Values can be collected in absolute terms (excluding VAT) and/or by bands and asking for components separately (see comments to D2 and D7).

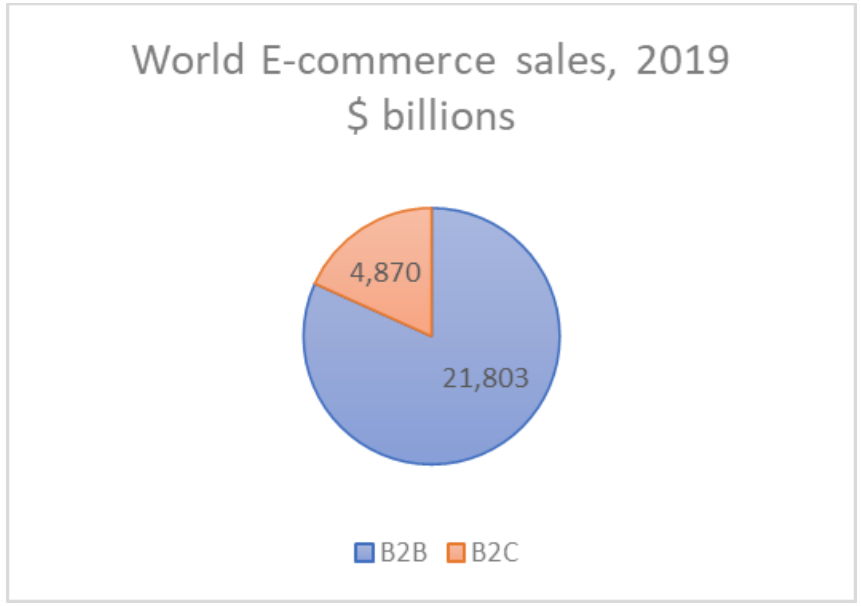
- Pre-survey testing of questionnaires recommended to find best wording for your country
- Generally, avoid ambiguous phrases like “e-commerce”, “e-sales” and “e-purchases”; ask directly about sales generated from Internet and EDI orders
- Since many non-retail businesses will have difficulty providing precise sales and expenses figures for orders from Internet and EDI, encourage reporting as estimated percentage shares of total sales or total expenses

Sources: UNCTAD, Manual for the Production of Statistics on the Digital Economy, 2020 and OECD Model Survey on ICT Usage by Businesses (2nd Revision)

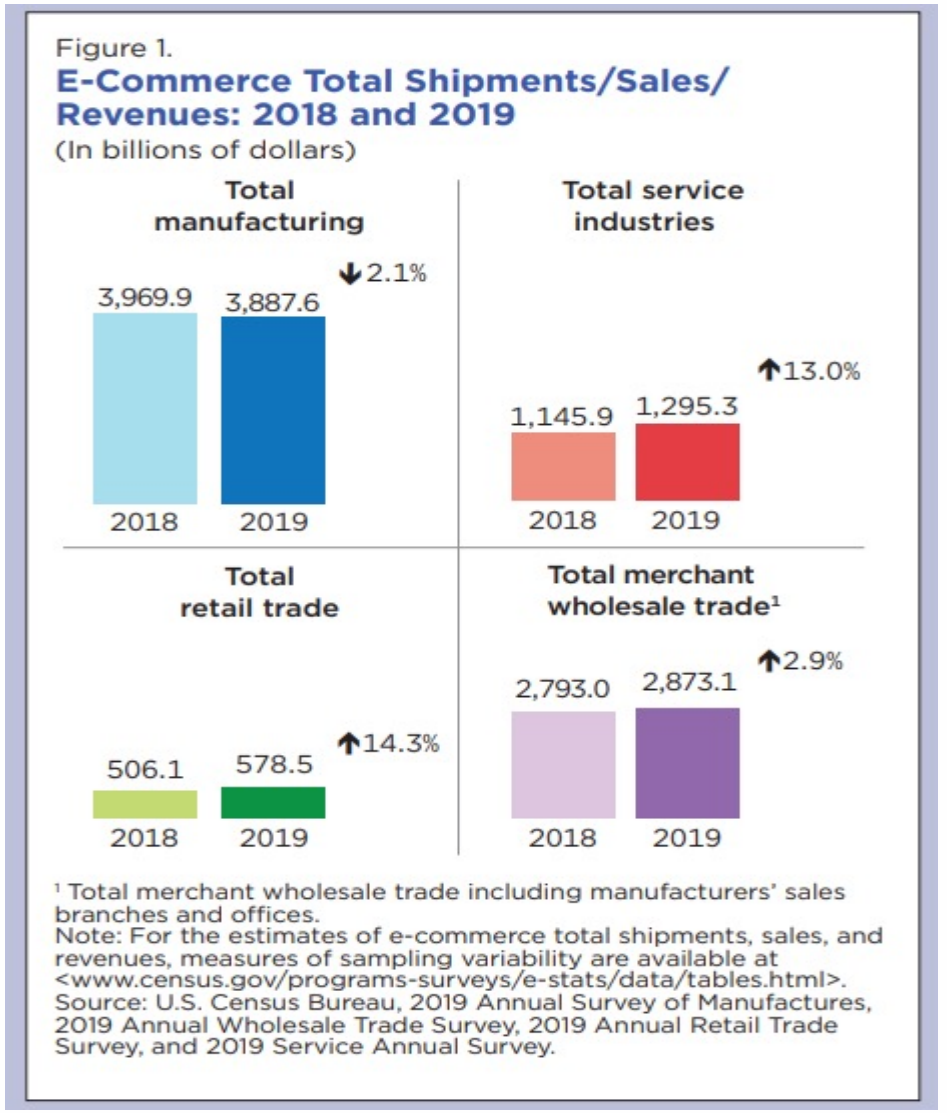
Based on official definition of e-commerce, most is B2B

An e-commerce transaction describes the sale or purchase of goods or services conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders

Source: OECD Guide to Measuring the Information Society (OECD, 2011)



Source: UNCTAD, based on reports from national statistical offices and other sources



Recurring household surveys – E-commerce

2) Collect recurring survey data on household e-commerce and ICT usage

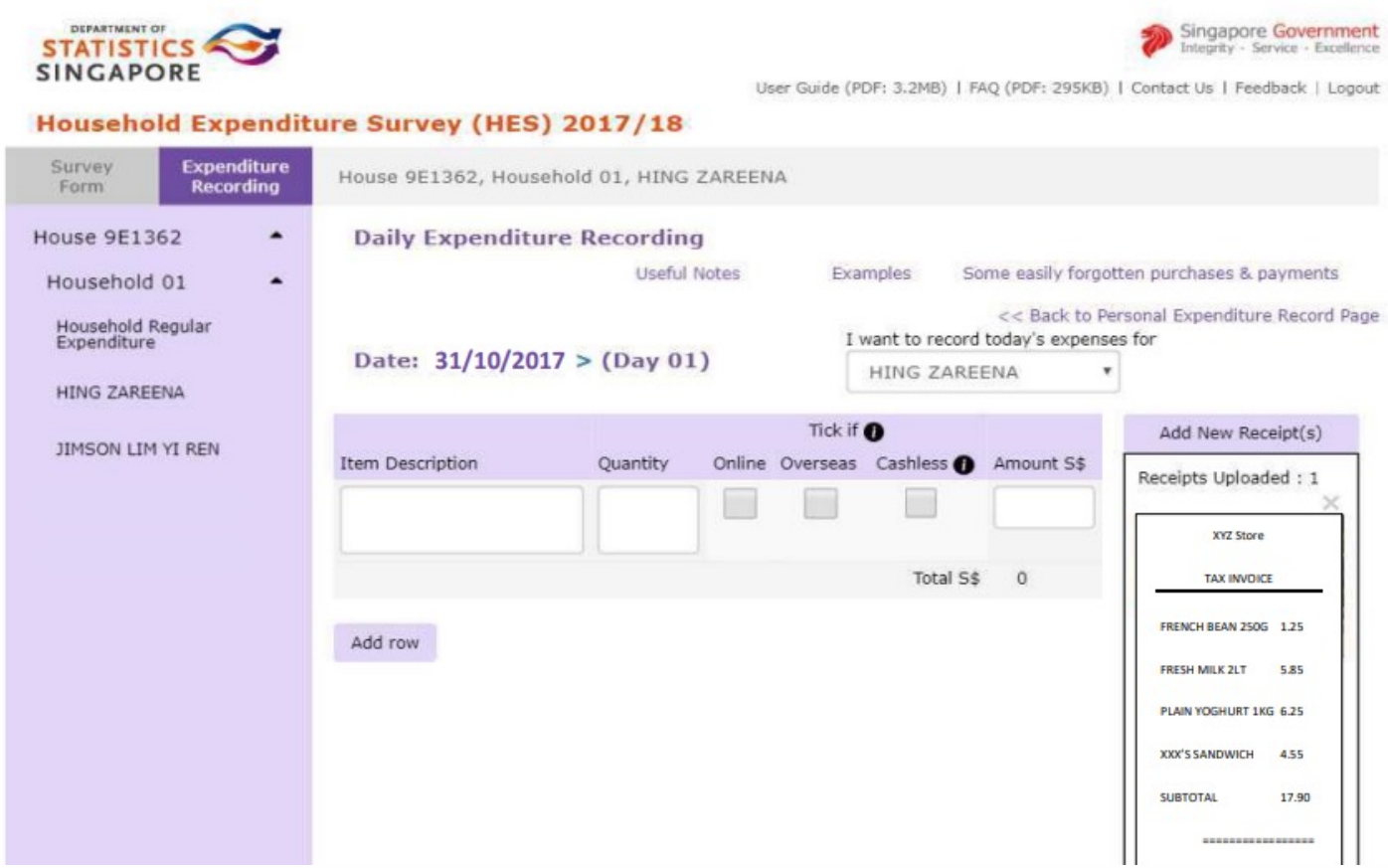
- Dedicated e-commerce and ICT household survey *and/or*
- Incorporating questions about e-commerce and ICT to existing household surveys
- Households should also be asked to estimate the proportion of their total expenditures that are generated from orders through the Internet

HH6	Proportion of households with Internet
HH7	Proportion of individuals using the Internet
HH11	Proportion of households with Internet, by type of service
HH12	Proportion of individuals using the Internet, by frequency
HH14	Barriers to household Internet access
HH20*	Proportion of individuals who purchased goods or services online, by type of good and service purchased
HH21*	Proportion of individuals who purchased goods or services online, by type of payment channel
HH22*	Proportion of individuals who purchased goods or services online, by method of delivery

Source: ITU Manual for Measuring ICT Access and Use by Households and Individuals, 2020 Edition

Household surveys on e-commerce – model questions

29 What types of goods or services did you buy or order over the Internet for private use in the last 3 months? Please tick all that apply.



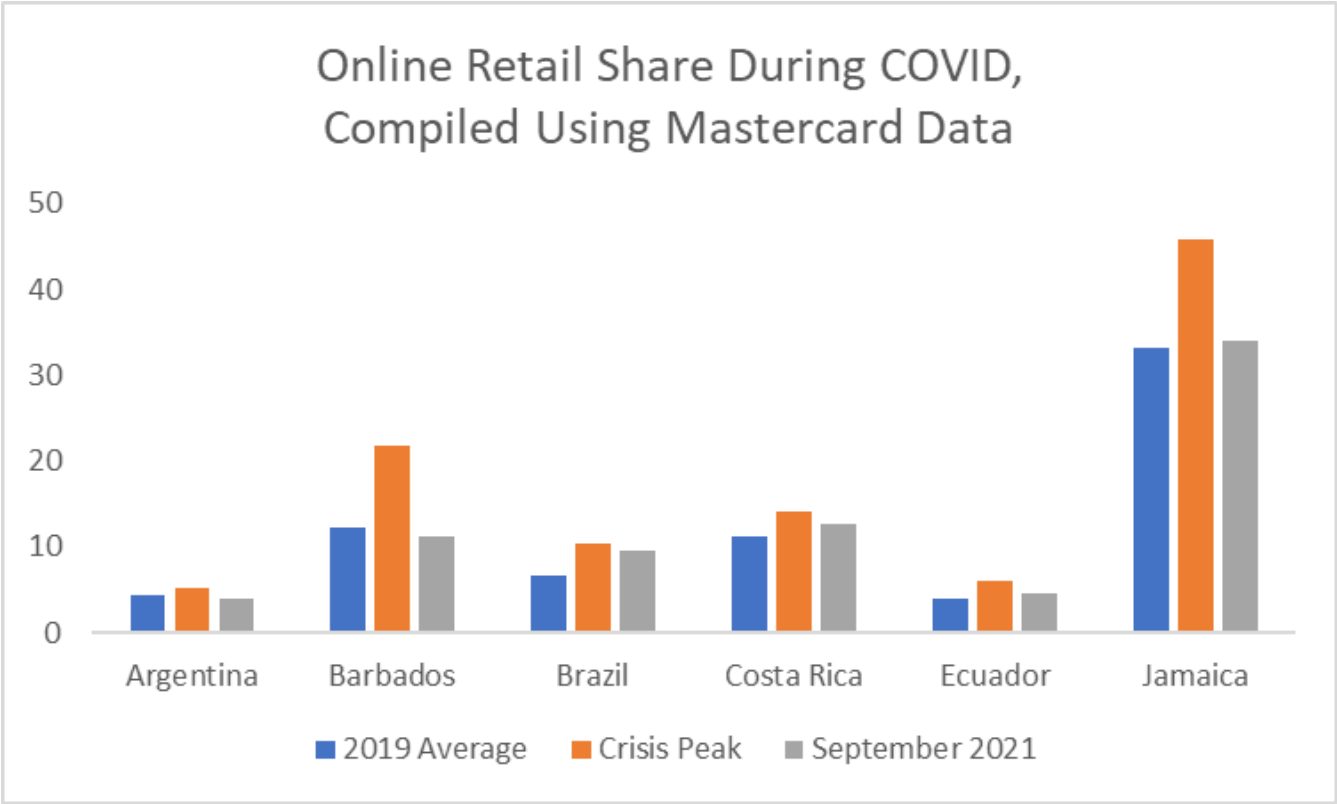
Books, magazines or newspapers	☐
Clothing, footwear, sporting goods or accessories	☐
Computer equipment or parts (including peripheral equipment)	☐
Computer or video games	☐
Computer software (includes upgrades and paid apps; not games)	☐
Cosmetics	☐
Financial products (including shares and insurance)	☐
Food, groceries, alcohol or tobacco	☐
Household goods (e.g. furniture, toys, etc.; excluding consumer electronics)	☐
ICT services (excluding software)	☐
Medicine	☐
Movies, short films or images	☐
Music products	☐
Photographic, telecommunications or optical equipment	☐
Tickets or bookings for entertainment events (sports, theatre, concerts, etc.)	☐
Travel products (travel tickets, accommodation, vehicle hire, transport services etc.)	☐

Non-survey data as complement to official statistics

3) Consider partnering with private data partners to acquire non-survey data as complement to official statistics

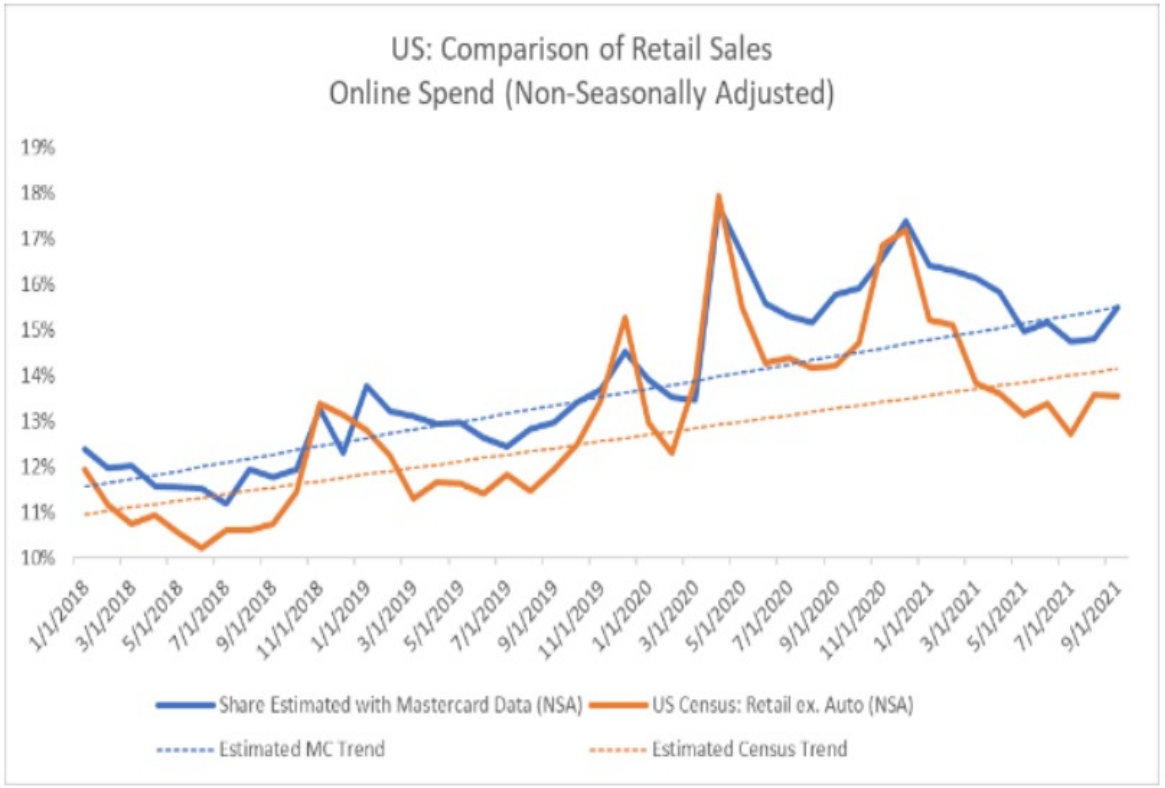
- Opportunities to produce new / faster statistics from big data sources such as credit card transactions

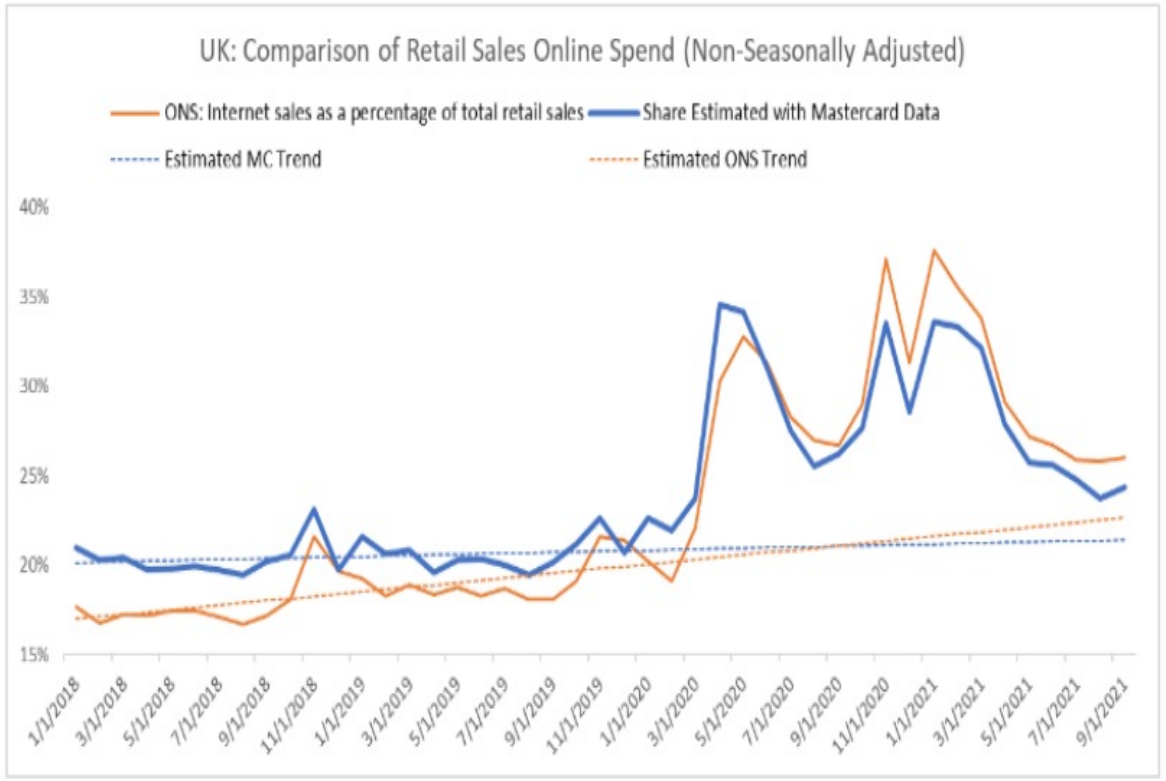
- Key challenges:
  - Costs to access
  - IT resources
  - Consistency of data collection to facilitate time series
  - Protecting consumer privacy
  - Ethics/legal protections - private data providers with access to pre-release official data



Alceda, et al, 2022 "E-commerce During Covid: Stylized Facts from 47 Economies", IMF Working Paper 22/19 https://www.imf.org/en/Publications/WP/Issues/2022/01/28/E-commerce-During-Covid-Stylized-Facts-from-47-Economies-512014

Official statistics compared to Mastercard data (US, UK)





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Addressing coverage of e-commerce in CPI

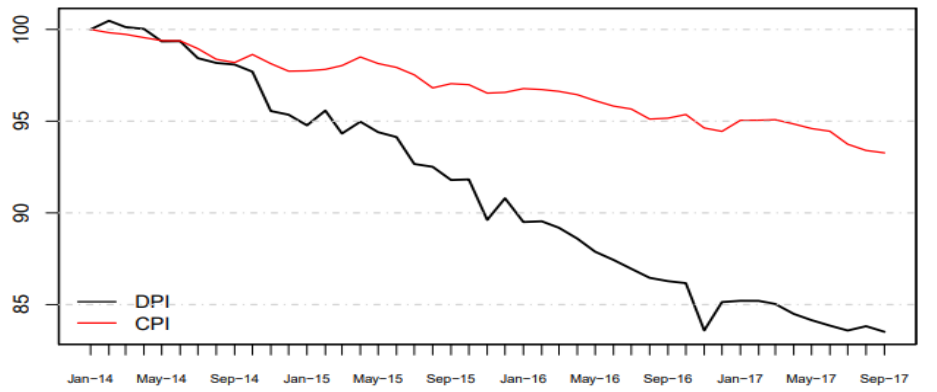
4) Update CPIs to reflect growing share of e-commerce

- New products, varieties, and suppliers appear at an accelerated pace and expenditure patterns can shift quickly
- Challenge: prompt inclusion of new models/varieties and new suppliers in the sample
- Importance compounded by research finding lower price levels and lower rate of price changes associated with e-commerce outlets

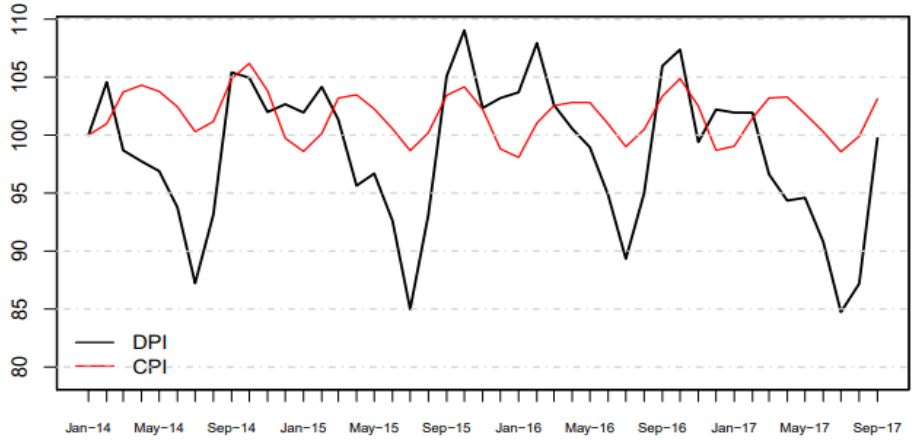
E-commerce prices and traditional retail prices

- Goolsbee and Klenow (2018) create matched-model price indexes based on Adobe Analytics data on online transactions for millions of products in the U.S.
- Showed prices declining faster than U.S. CPI in 2014-2017
- Also found evidence of substantial new good bias

Household goods, Adobe Digital Price Index vs. U.S. CPI



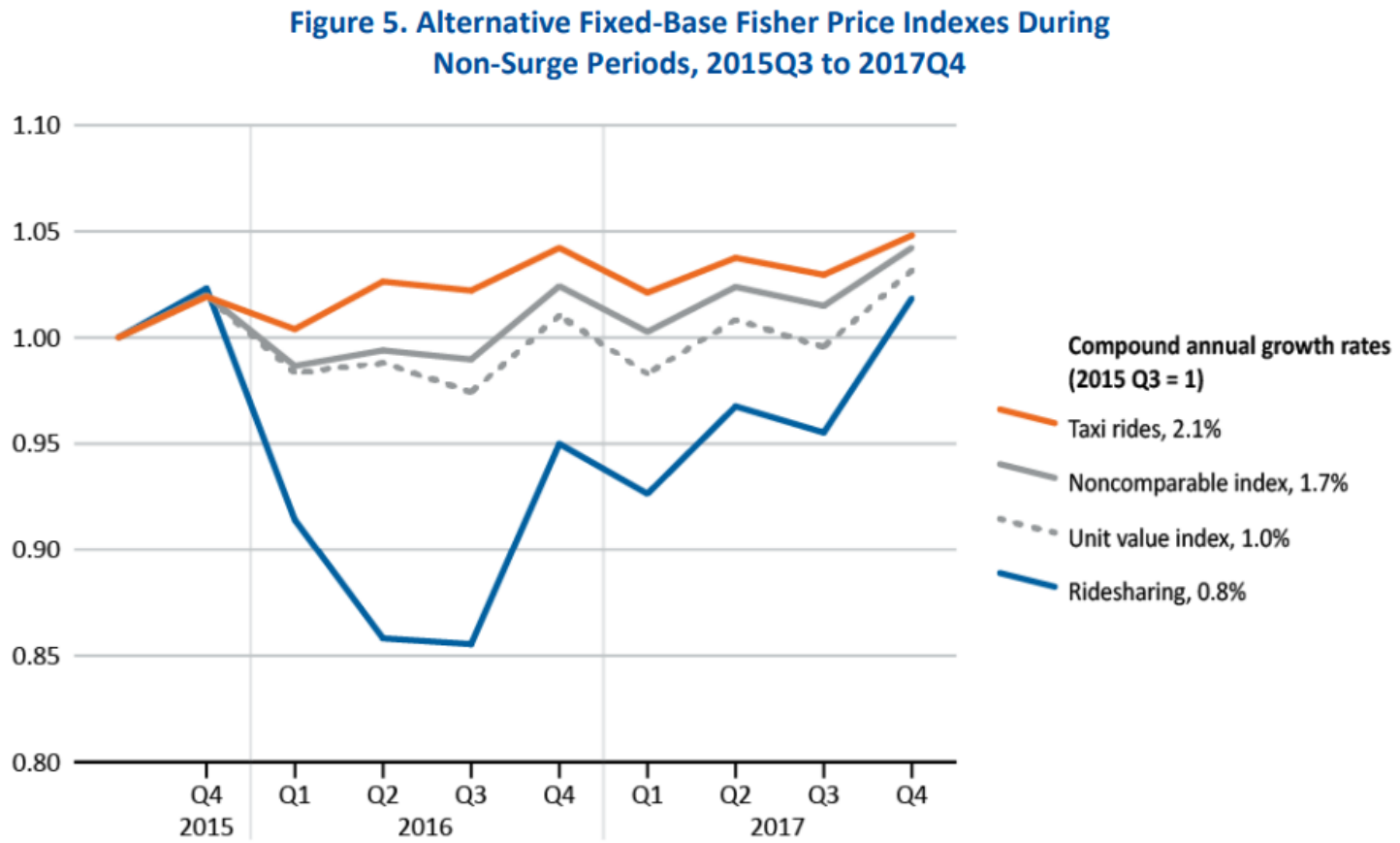
Apparel, Adobe Digital Price Index vs. U.S. CPI



Source: Austan D. Goolsbee & Peter J. Klenow, 2018. "Internet Rising, Prices Falling: Measuring Inflation in a World of E-Commerce," AEA Papers and Proceedings, vol 108, pages 488-92.

U.S. BEA research – Uber vs. taxis in New York

- Ridesharing index for New York city using big data developed by researchers at the U.S. BEA
  - Prices came from emailed receipts received by ridesharing customers who agreed to let a data vendor scrape their inboxes
  - Unit value prices for specified routes (starting neighborhood, ending neighborhood, time of day)



https://www.bea.gov/system/files/papers/BEA-WP2022-1.pdf

Addressing coverage of e-commerce in CPI

Key recommendations:

- Regularly review samples for activities/products known to be affected by digital transformation
  - Examples – apparel, cell phones, taxis, accommodation, insurance
- Augment sample where needed to introduce new online outlets/suppliers
- Perform directed substitution where needed to introduce new product varieties
- Substitute from outdated varieties to newer ones for existing outlets/suppliers