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The Digital Economy and the state of play in national accounting

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Telling Canada's
story in numbers

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Outline – The state of play in National Accounting

- What has changed?
- What does this mean from a national accounting perspective?

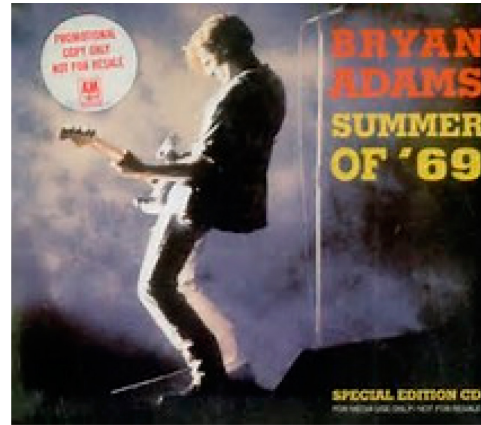


The Digital Economy - What is it?

- There is no clear definition because it is:
 - Part product
 - Part distribution
 - Part intermediation
 - Part old
 - Part new
 - Part business
 - Part household
 - Part national
 - Part international
- The digital economy is pervasive – touching most aspects of the national accounts.
- The digital economy is a particular challenge for national accountants because our traditional data sources and methods need a fundamental re-think.



What has changed? – Same products different packaging / delivery.



- The core products remain the same but packaging and delivery has changed.
 - Music – CDs vs subscriptions
 - Information storage – External hard drive vs Cloud
 - Information processing capacity – Tower vs Cloud
 - Movies – DVD vs Netflix
 - Games/Entertainment – Monopoly vs Power Stars
 - Travel Services – Travel Agent vs TripAdvisor
 - Information services - Newspaper vs GlobeandMail togo

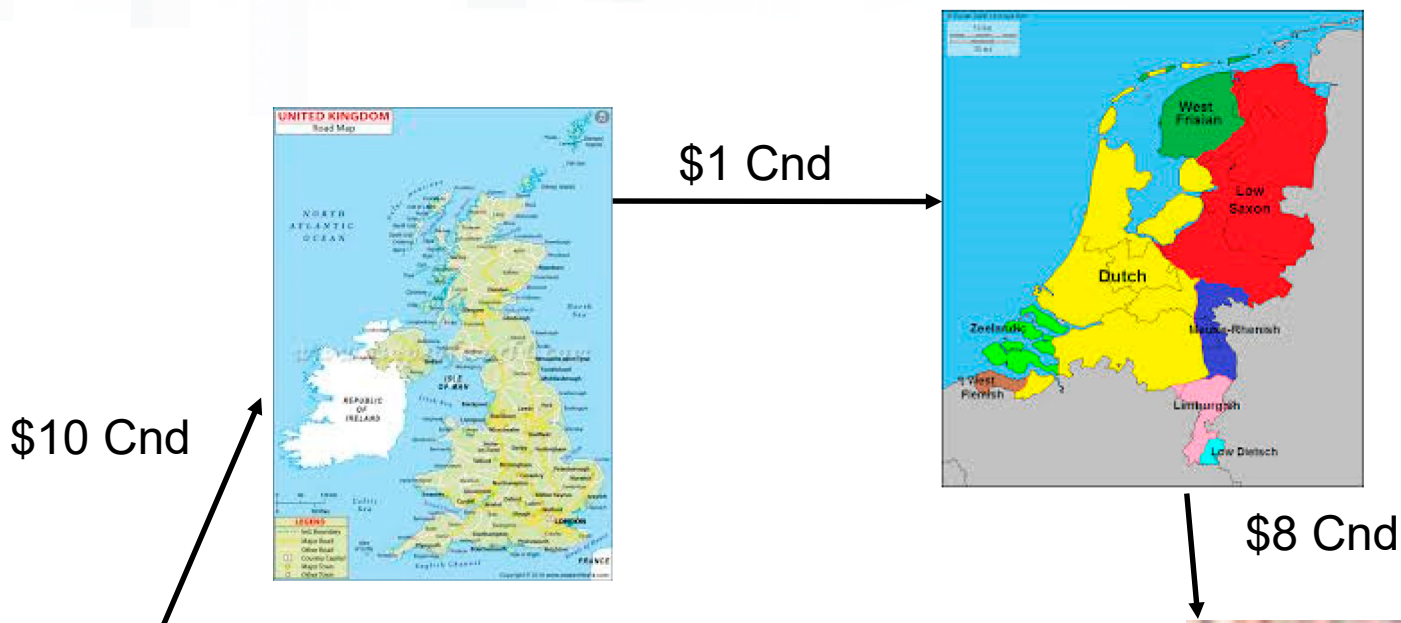


What has changed?

- The change in the nature of the product, the way they are delivered / consumed and who delivers them are having a significant impact on national accounting.
- From the perspective of the Canadian national accounts these changes can be grouped into the following broad categories:
 - ✓ Global consumers / Global consumption
 - ✓ Household production
 - ✓ Digital marketplace
 - ✓ Digital assets



What has changed? – Global consumer



De-composing the transaction:

- Household expenditure = \$10
- Domestic Output=\$8
- International Imports of services = \$2.

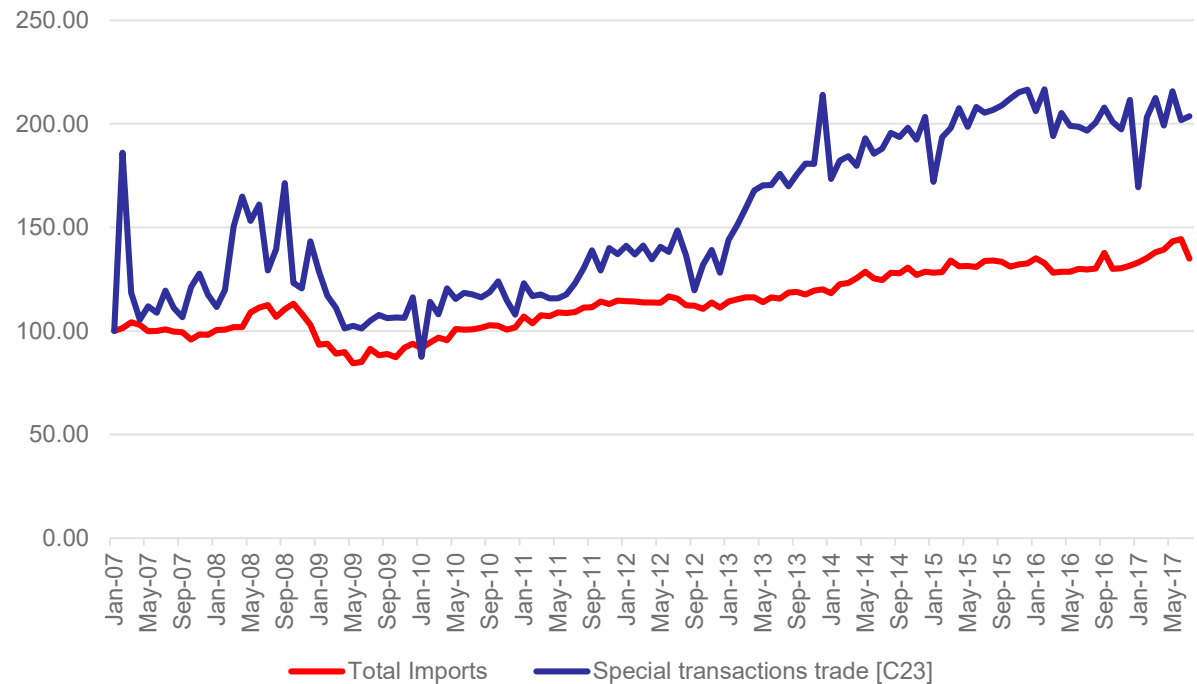




What has changed? – Global consumer

- The digital economy facilitates global consumption.
- Local retailers now need to compete internationally.
- Households are becoming direct importers.
- Households are importing more and more digital services (e.g gambling, gaming, travel services)

Total imports and Imports of special transactions 2007=100



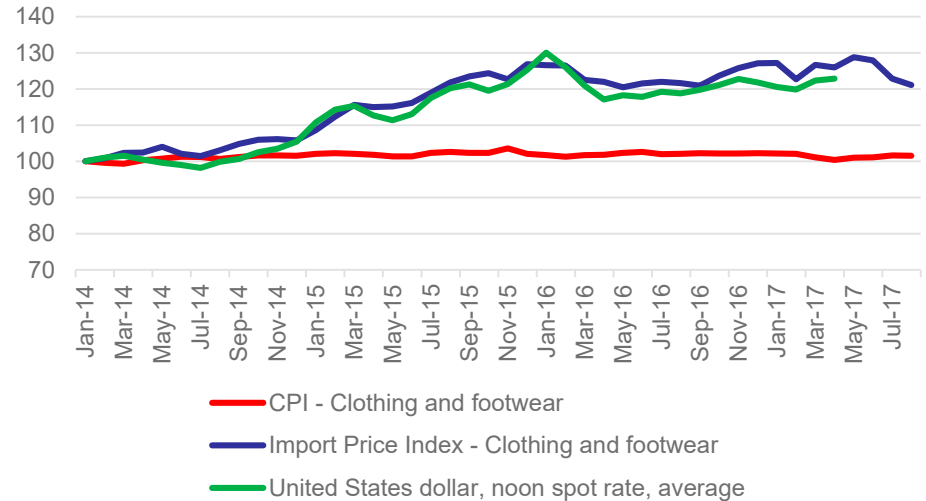


What has changed? – Global consumer

Average Transaction Value



Import prices and Consumer Prices Clothing and Footwear



- Canadian consumers are going global and are facing both domestic and international prices.
- A global purchase often bundles goods and services together (such as financial services, transportation services and the cost of the good). What is the appropriate price of the 'good' and 'service'.

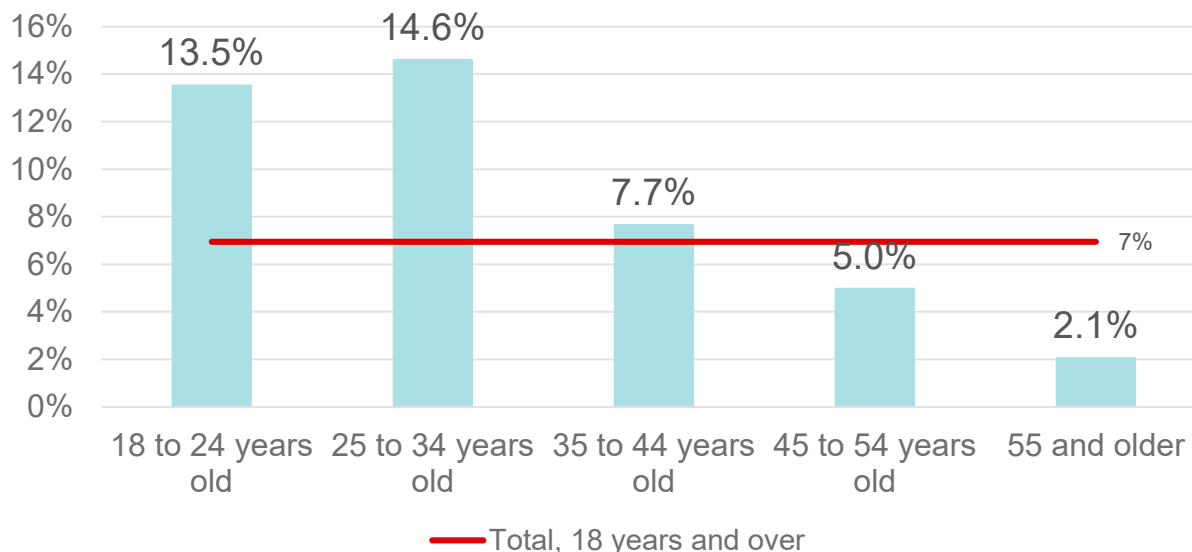
What has changed? – Household production

Adults living in Canada offered a service in the sharing economy from November 2015 to October 2016

- 72,000 (0.3%) offered ride services
- 69,000 (0.2%) offered private accommodation services



% of Canadians who used ride services between November 2015 and October 2016





What has changed? - Household production

- AirBnB listings in Canada 2014 and 2016

Listing in 2014



Listing in 2016





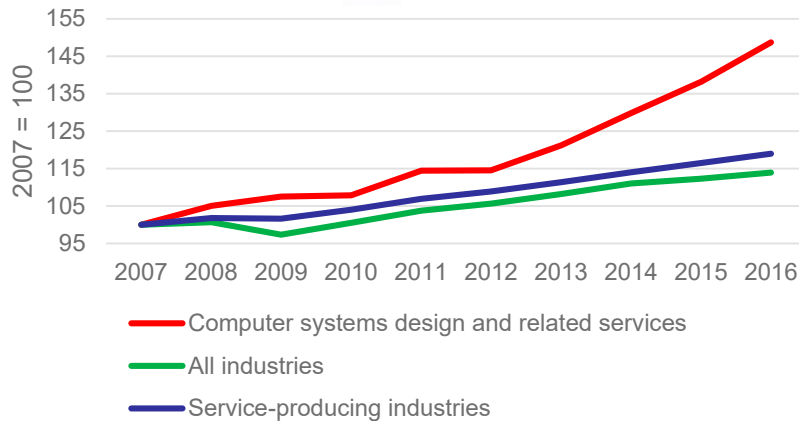
What has changed? – Digital marketplace

- A digital marketplace is emerging where we are observing digital margins, digital intermediation services indirectly measured, explicit digital charges
 - Implicit digital charges such as Uber – charges consumer one price and pays the driver a lower price?
 - Explicit digital charges such as Kijiji – charging a flat rate to place an ad for used goods.
 - Digital Margin – Payment based on number of views
- These are new products (or are they?) and it is uncertain whether mainstream classification systems properly reflect these products.
- There is often an international component to these charges making them difficult to track.

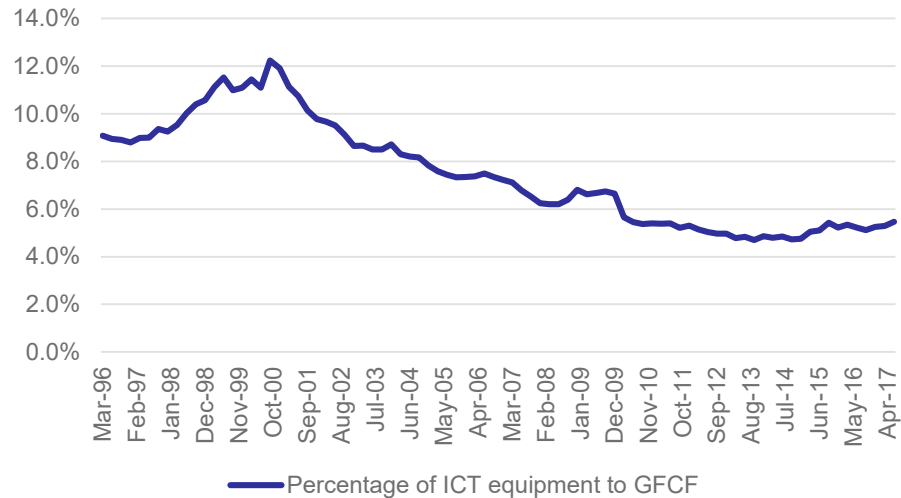


What has changed? – Digital Assets

Value Added - Computer systems design and related services



ICT share of GFCF in Canada is declining



■ Digital Assets – Who owns them?

- Canada has seen declining ICT investment over the last decade.
- The SNA distinguishes between legal ownership and economic ownership. An asset should be assigned based on economic ownership rather than legal ownership.
- How does this apply to a company that is purchasing IT services from a foreign firm. Who owns the IT? Should we treat this as a financial lease and assign the asset to the ‘purchaser’ or ‘lessee’

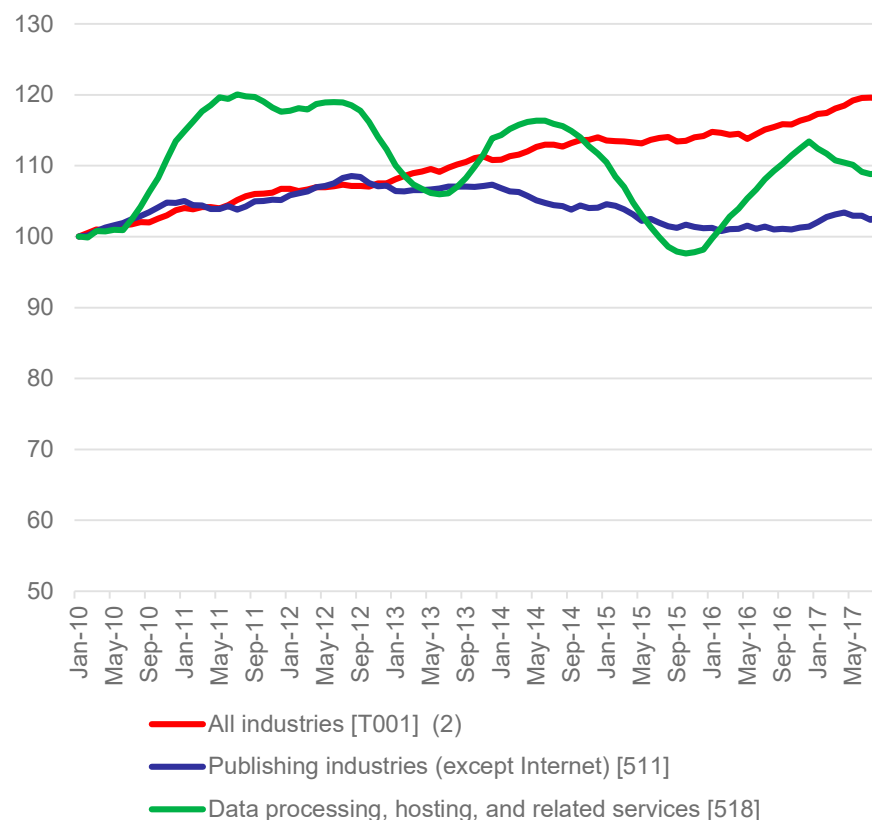
What has changed? – Digital Assets

Databases or ? – what should we be capitalizing?

- “Databases consist of files of data organized in such a way as to permit resource-effective access and use of the data. Databases may be developed exclusively for own use or for sale as an entity or for sale by means of a licence to access the information contained. The standard conditions apply for when an own-use database, a purchased database or the licence to access a database constitutes an asset.” 2008 SNA 10.112

What do we do with all the unstructured information that is readily available (often for free) that is improving productivity?

Selected 'Data' publishing industries in the Canadian National Accounts





What is does this mean for the Canadian national accounts in the near term?

- Statistics Canada will need to determine if certain household expenditure deflators to should include an import price component.
- Business Registers and business survey's will need to be updated to ensure Canadian operations of digital operators are properly identified and production (or imports) are properly recorded.
- The Canadian national accounts household sector will need to be expanded to include a larger set of industries such as accommodation services, transportation services and cultural services. Imports and exports of household producers will need to be recorded.
- New products (e.g digital margins, intermediations services, digital charges) may need to be added to classification systems and both domestic / international transactions will be measured.
- The Canadian National Accounts needs to expand its Asset boundary to include 'databases' or digital assets?



What does this mean for the Canadian national accounts in the near term? – Development of new data sources?

- Household digital use survey
- ‘Surveying’ / ‘web-scraping’ various platforms and building models to measure Canadian production and consumption.
- Updating the investment survey’s and related data sources to properly capture digital assets (e.g. Capital Repair and Expenditure Survey and the Research and Development in Canada Survey).
- Working with Canadian governments to secure access to various administrative data they are collecting to help ‘regulate’ digital markets.