Urban Public Transport Statistics: A Canadian Overview

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE WORKING PARTY ON TRANSPORTATION STATISTICS

June 12, 2019

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Context

- In Canada, urban transport is a provincial responsibility (unless it crosses provincial boundaries) but the federal government plays some role (e.g. earmarking of fuel tax);

- Unlike European cities, the development of urban public transport in Canada was retarded by lower population densities, climate and higher motor vehicle ownership;

- Recent developments provide the Canadian government with a larger role in matters of urban public transport:

  - Transit infrastructure investment = f (transit ridership)

  - Public transit role in reaching GHG emission reductions

  - Demographics - share of urban population growing (> 80%)

Scope

- Urban transportation planning in Canada has tended to focus on modeling the modal split between urban transit and motor vehicles – and data collection reflects this focus;

- However, the 2016 Canadian Census reported that nearly one-third (31.4%) of employed Canadians used a mode of sustainable transportation as their main mode of commuting:
  - 12.4% Public Transit
  - 12.1% Carpooling
  - 6.9% Active (walk or cycle)

- And the Census asks a question on whether each person has *any difficulty walking, using stairs, using his/her hands or fingers or doing other physical activities*.

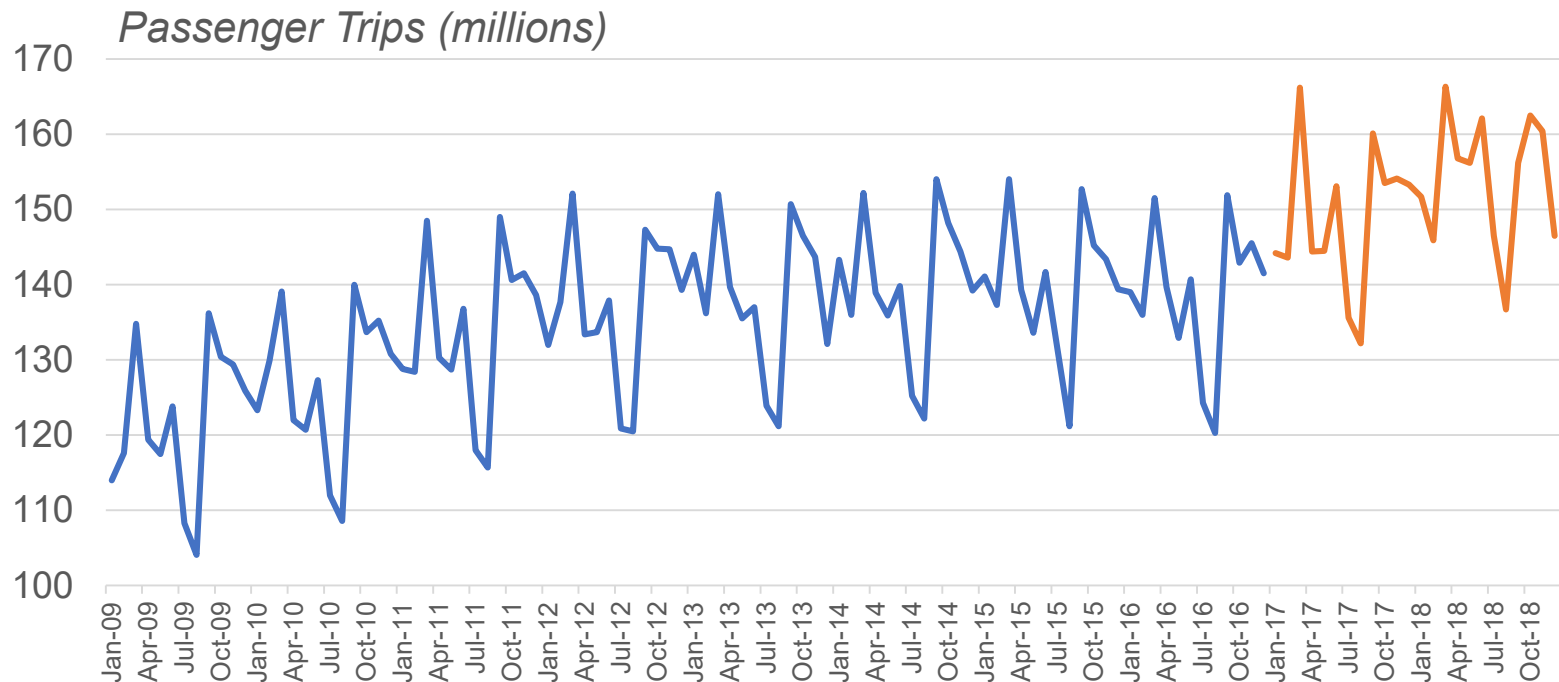# Urban Public Transit Statistics – Direct Measures

Passenger Bus and Urban Transit Survey (Annual)

- <u>Content</u>: Financial (revenues, expenses, balance sheet) and operating (fuel, employment, equipment) statistics

- <u>Coverage</u>: Sample of NAICS 485 including Urban transit (4851) as well as other ground passenger transport (Intercity, School, Scenic, Charter …)

Passenger Bus and Urban Transit Survey (Monthly)

- <u>Content</u>: Collects gross revenue (excluding subsidies) and passenger trip data only

- <u>Coverage</u>: Panel of urban transit (& Intercity) companies that represent at least 75% of transit revenues in each province; panel changed in 2017 causing a break in series

Monthly Urban Transit Ridership in Canada, 2009 to 2018

Urban Public Transit Statistics: Measures of Accessibility

Passenger Bus and Urban Transit Survey (Annual)

Industry output measures of:

- Revenues: Amount earned from Para Transit services

- Passengers: Total Number using Para Transit Services

- Equipment: Percentage of fleet equipped for persons with disabilities

Other Selected Measures of Accessibility

- Survey of Canada's Core Public Infrastructure, 2017: Data on inventory, condition and management of public transit rolling stock assets including Specialized Transit

- Canadian Survey of Disability, 2017: Provides information about Canadians whose everyday activities are limited due to a long-term or health-related condition

Urban Public Transit Statistics – Indirect Measures
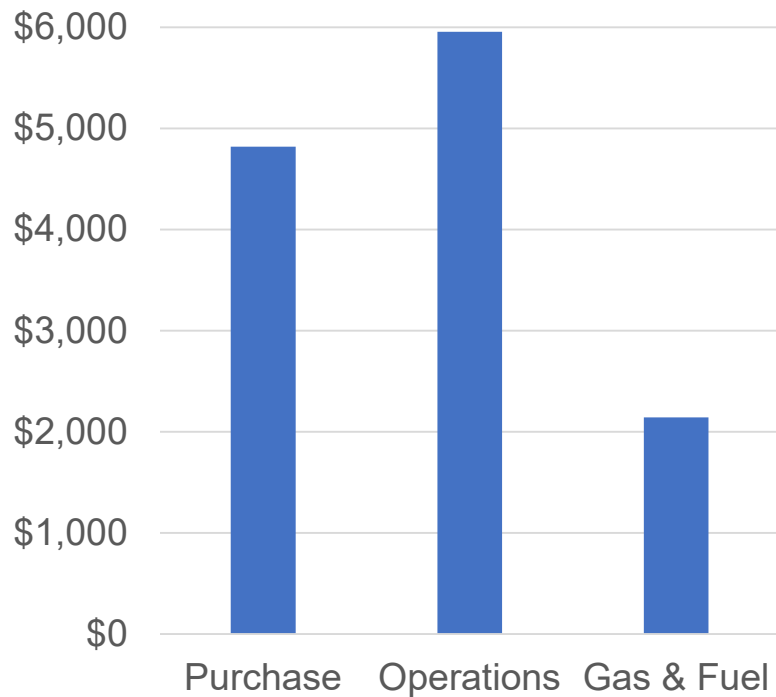
Survey of Household Spending (Annual)

- <u>Content</u>: Large sample of Canadian households provide data on expenditures, dwelling characteristics, household composition and equipment (motor vehicles), and wealth

- <u>Purpose</u>: Provides weights for items contained in the "typical" basket used for the Consumer Price Index (CPI)
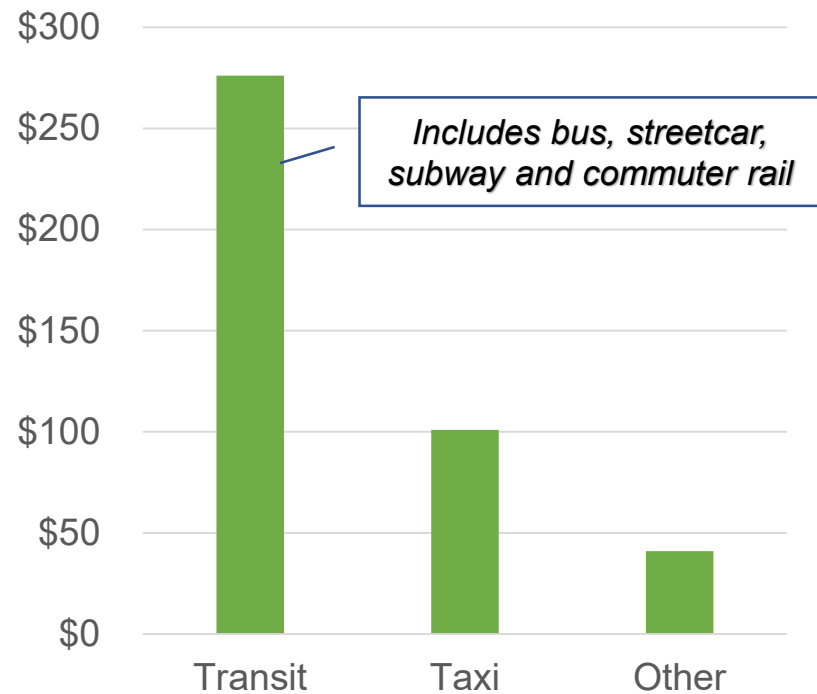
Consumer Price Index (Monthly)

- <u>Content</u>: Estimates monthly change in consumer prices based on a consumer basket of goods and services. Basket has ten components including transportation, which accounts for one-fifth (20%) of its weight

- <u>Method</u>: Integrates direct observation with admin data and other sources such as web-scrapping

Household Expenditures on Selected Transport Items, 2017

Private Transportation - Vehicles

(Bar chart, y-axis in dollars from $0 to $6,000)
- Purchase: ~$4,800
- Operations: ~$5,950
- Gas & Fuel: ~$2,150

Urban Public Transportation

(Bar chart, y-axis in dollars from $0 to $300)
- Transit: ~$275
- Taxi: ~$100
- Other: ~$40

Includes bus, streetcar, subway and commuter rail

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Emerging issues

- Peer-to-peer ridesharing is likely to change urban transportation patterns in significant ways:

  - <u>In the United States</u>, some research has indicated that ridesharing has increased urban traffic congestion and resulted in higher levels of GHD emissions

  - <u>In Canada</u>, Hagag & McKeown (2018) report that those who rideshared during 2016 spent more on this service ($122) than did the average Canadian household on taxis ($100)

- Given emergence of Autonomous and Connected Vehicles (AC/CV), ridesharing could be disruptive and render current urban transport planning axioms and models passé

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Data Challenges

- In Canada, robust urban travel data collected at the municipal level; however, these efforts tend to be expensive, occasional and uncoordinated, even within provinces;

- Traditional difference between urban (intra-city) and intercity travel is blurring as commuters now travel to work in other cities, planning efforts must become more coordinated; and

- National statistical agencies should be prepared to work with other levels of government to create new concepts and methods as well as to embrace alternative sources of data, for example:

  - Cell phone information on travel patterns
  - Electronic fare collection methods used in pubic transit
  - Partnering with private sector to harvest "big data"

Summary

- Jurisdictional matters in Canada have prevented the collection of systematic national and comparable data on urban public transport;

- Technological changes (sharing economy, AV/CV) combined with demographics (lower propensity to drive/own vehicles) will provide measurement challenges; and

- National statistical agencies must develop new concepts and methods as well as forge new partnerships in order to embrace alternative sources of data.

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