Maintenance and Repair of Motor Vehicles

Discussant's remarks
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Statistics Canada
Outline

- Classification
  - Industry
  - Product
- Market conditions
- Surveys of turnover
- Prices
- Observations
Classifications
ISIC

- **Structure**
  - G : Wholesale and retail trade; repair of motor vehicles and motorcycles
    - 45: Wholesale and retail trade and repair of motor vehicles and motorcycles
      - 452 : Maintenance and repair of motor vehicles
452 : Maintenance and repair of motor vehicles

Definition

- This class includes:
  - Maintenance and repair of motor vehicles:
    - Mechanical repairs
    - Electrical repairs
    - Electronic injection systems repair
    - Ordinary servicing
    - Bodywork repair
    - Repair of motor vehicle parts
    - Washing and polishing etc.
    - Spraying and painting
    - Repair of screens and windows
    - Repair of motor vehicle seats
  - Tyre and tune repair, fitting or replacement
  - Anti-rust treatment
  - Installation of parts and accessories not as part of the manufacturing process

- This class excludes:
  - Re-treading and rebuilding if tyres
## Comparison of industry classifications

<table>
<thead>
<tr>
<th>UK SIC</th>
<th>JSIC</th>
<th>NAICS (Mexico)</th>
<th>NAICS (Canada)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G : Wholesale and retail trade; repair of motor vehicles and motorcycles</td>
<td>R: Services nec</td>
<td>81: Other Services</td>
<td></td>
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<tr>
<td>45: Wholesale and retail trade and repair of motor vehicles and motorcycles</td>
<td>89: Automobile maintenance services</td>
<td>811: Repair and Maintenance Services</td>
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<tr>
<td>452 : Maintenance and repair of motor vehicles</td>
<td>891: Automobile maintenance services</td>
<td>8111: Automotive Repair and Maintenance</td>
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<tr>
<td>4520 : Maintenance and repair of motor vehicles</td>
<td>8911: General automotive maintenance services</td>
<td>81111: Automotive Mechanical and Electrical Repair and Maintenance</td>
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<td></td>
<td>8919: Miscellaneous auto maintenance services</td>
<td>81112: Automotive Body, Paint, Interior and Glass Repair</td>
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<td></td>
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<td>81119: All other automotive repair and maintenance</td>
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<td>NAICS (Mexico)</td>
<td>NAICS (Canada)</td>
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<tr>
<td>811111: General mechanical repair for automobiles and trucks</td>
<td>811111: General automotive repair</td>
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<tr>
<td>811112: Electrical system repair for automobiles and trucks</td>
<td>811112: Automotive exhaust repair</td>
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<td>811113: Motor parts rectification for automobiles and trucks</td>
<td>811119: All other automotive repair</td>
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<td>811114: Transmission repair for automobiles and trucks</td>
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<tr>
<td>811115: Suspension repair for automobiles and trucks</td>
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<td>811116: Wheel alignment and balancing for automobiles and trucks</td>
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<tr>
<td>811119: Other mechanical repair for automobiles and trucks</td>
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<tr>
<td>811121: Tinwork and paint for automobiles and trucks</td>
<td>811121: Automotive body, paint and interior repair and maintenance</td>
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<td>811122: Upholstering for automobiles and trucks</td>
<td>811122: Automotive glass replacement shops</td>
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<td>811129: Glass installation and other body repairs for automobiles and trucks</td>
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<td>811191: Minor tire repair</td>
<td>811192: Car washes</td>
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<tr>
<td>811192: Washing and lubricating of automobiles and trucks</td>
<td>811199: All other automotive repair and maintenance</td>
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<tr>
<td>811199: Other repair and maintenance services for automobiles and trucks</td>
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</tbody>
</table>
## Definitions of the industry

<table>
<thead>
<tr>
<th>Classification</th>
<th>Definition at “common” level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISIC: 454</td>
<td>Maintenance and repair of motor vehicles; tyre and tune repair, fitting or replacement; anti-rust treatment; installation of parts and accessories not as part of the manufacturing process</td>
</tr>
<tr>
<td>UK SIC: 454</td>
<td>Maintenance and repair of motor vehicles; tyre and tune repair, fitting or replacement; anti-rust treatment; installation of parts and accessories not as part of the manufacturing process</td>
</tr>
<tr>
<td>JSIC: 891</td>
<td>Establishments engaged in providing maintenance and repair service of motor vehicles and motorcycles</td>
</tr>
<tr>
<td>NAICS: 8111 (Mexico)</td>
<td>Economic units primarily engaged in the repair and maintenance of cars and trucks, such as mechanical and electrical repair cars and trucks, body metal, upholstery, glass installation and other repairs to the bodywork, the minor repair of tires and tubes, washing and lubrication of automobiles and trucks.</td>
</tr>
<tr>
<td>NAICS: 8111 (Canada)</td>
<td>This industry group comprises establishments primarily engaged in repairing and maintaining motor vehicles, such as cars, trucks, vans and commercial trailers.</td>
</tr>
</tbody>
</table>
### CPA 2008 (UK)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>45.20</td>
<td>Maintenance and Repair of Motor Vehicles</td>
</tr>
<tr>
<td>45.20.1</td>
<td>Maintenance and Repair of cars and light goods motor vehicles</td>
</tr>
<tr>
<td>45.20.11</td>
<td>Ordinary maintenance and repair services (except electrical system, tyre and body repair) of cars and light motor vehicles</td>
</tr>
<tr>
<td>45.20.12</td>
<td>Electrical system repair services of cars and light goods motor vehicles</td>
</tr>
<tr>
<td>45.20.13</td>
<td>Tyre repair services, including wheel adjustment and balancing of cars and light goods vehicles</td>
</tr>
<tr>
<td>45.20.14</td>
<td>Body repair and similar services (door, lock, window, repainting, collision repair) of cars and light motor vehicles</td>
</tr>
<tr>
<td>45.20.2</td>
<td>Maintenance and repairs of other motor vehicles</td>
</tr>
<tr>
<td>45.20.21</td>
<td>Ordinary maintenance and repair services (except electrical system, tyre and body repair) of other motor vehicles</td>
</tr>
<tr>
<td>45.20.22</td>
<td>Electrical system repair services of other motor vehicles</td>
</tr>
<tr>
<td>45.20.23</td>
<td>Body repair and similar services (door, lock, window, repainting, collision repair) of other motor vehicles</td>
</tr>
<tr>
<td>45.20.3</td>
<td>Car-washing, polishing and other similar services</td>
</tr>
<tr>
<td>45.20.30</td>
<td>Car-washing, polishing and other similar services</td>
</tr>
<tr>
<td>NAPCS 0.1 (Canada)</td>
<td></td>
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<tr>
<td>--------------------</td>
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</tr>
<tr>
<td>811001 - Maintenance and repair services for automobiles, trucks and other road transportation vehicles, and motor homes, travel trailers and campers</td>
<td></td>
</tr>
<tr>
<td>811001.1.1 - Maintenance and repair services for automobiles and light trucks</td>
<td></td>
</tr>
<tr>
<td>811001.1.1.1 - Maintenance and repair services for automobiles and light trucks, except cleaning and washing, and regulatory safety and emissions inspections</td>
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<tr>
<td>811001.1.1.2 - Washing and cleaning services for automobiles and light trucks</td>
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<tr>
<td>811001.1.1.3 - Regulatory safety and emissions inspection services for automobiles and light trucks</td>
<td></td>
</tr>
<tr>
<td>811001.1.2 - Maintenance and repair services for motor homes, travel trailers and campers</td>
<td></td>
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<tr>
<td>811001.1.3 - Maintenance and repair services for heavy trucks and buses</td>
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</tr>
<tr>
<td>811001.3.1.1 - Maintenance and repair services for heavy trucks and buses, except cleaning and washing, and regulatory safety and emissions inspections</td>
<td></td>
</tr>
<tr>
<td>811001.3.1.2 - Washing and cleaning services for heavy trucks and buses</td>
<td></td>
</tr>
<tr>
<td>811001.3.1.3 - Regulatory safety and emissions inspection services for heavy trucks and buses</td>
<td></td>
</tr>
</tbody>
</table>
Market conditions
## Market conditions

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of establishments</th>
<th>Indicator of Concentration and/or size</th>
<th>Revenue (£)</th>
<th>Revenue (Mexican Pesos)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>34,014</td>
<td>Companies with over 300 employees represent 0.15% of enterprises, but 30% of revenue</td>
<td>£23.5 billion</td>
<td>495.0 billion</td>
</tr>
<tr>
<td>Japan</td>
<td>59,323</td>
<td>91% of firms have fewer than 10 employees</td>
<td>¥6.44 trillion</td>
<td>929.9 billion</td>
</tr>
<tr>
<td>Mexico</td>
<td>185,720</td>
<td>Average establishment employs 2.6 people</td>
<td>46.6 billion Pesos</td>
<td>46.6 billion</td>
</tr>
<tr>
<td>Canada</td>
<td>34,000</td>
<td>Top 20 firms generate 13% of revenue</td>
<td>$13.1 billion</td>
<td>155.0 billion</td>
</tr>
</tbody>
</table>

Data on the table represent the following reference years: UK – 2011; Japan – 2009; Mexico – 2009; Canada – 2009
Specific market conditions - UK

- UK
  - UK industry covers three sectors:
    - Car servicing and repairs
    - Car body repairs
    - Car breakdown/recovery services
  - Service providers
    - Franchised car dealers
    - Independent garages
    - Garage chains and auto centres
    - Car body repairs
    - Fast-fit centres
  - Other characteristics
    - New cars generally carry a three year warrantee, requiring annual maintenance at a car dealer
    - Vehicles older than three years are inspected annually. Consumers usually have annual service performed at the same time
    - Smaller firms tend to focus on household trade
Specific market conditions - Japan

- Drivers required to have periodic inspections (every one to three years depending on class of vehicle and whether it is an initial or renewal inspection)
  - Inspections done at national inspection centres or sanctioned car maintenance facilities. Most choose the latter.
- Mandatory periodic checkups (12 and 24 month services)
  - 24 month check-ups are often done the same time as inspections.
- Turnover by type of service:
  - Inspections (37.6%)
  - Periodic checkups (36.9%)
  - Accidents (20.3%)
  - Other (5.2%)
Specific market conditions - Mexico

- In 2008, for NAICS 8111, turnover concentrated in:
  - NAICS 811111: General mechanical repair for automobiles and trucks (34.39%)
  - NAICS 811121: Tinwork and paint for automobiles and light trucks (16.86%)
  - NAICS 811119: Other mechanical repair for automobiles and trucks (10.23%)

- Number of establishments concentrated in:
  - NAICS 811111: General mechanical repair for automobiles and trucks (33.56%)
  - NAICS 811121: Tinwork and paint for automobiles and light trucks (14.90%)
  - NAICS 811191: Minor tire repair (11.99%)
Specific market conditions - Canada

- In 2009, turnover in the industry can be broken down by:
  - General automotive repair (58%)
  - Body, paint and interior repair and maintenance (35%)
  - Other automotive repair and maintenance (8%)  
- Nearly three-fifths of sales are to individuals, most of the remaining sales to businesses.
- Vehicle repair and maintenance services are sold by other industries as well (i.e. new motor vehicle dealers).
  - Sales by NAICS 8111 account for about one-tenth of the overall market
Surveys of turnover
## Surveys of turnover

<table>
<thead>
<tr>
<th>Country</th>
<th>Economic Census</th>
<th>Annual survey</th>
<th>Sub-annual survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td></td>
<td>yes</td>
<td>monthly</td>
</tr>
<tr>
<td>Japan</td>
<td>2012 Economic Census of Business Activities</td>
<td>Under consideration</td>
<td>monthly</td>
</tr>
<tr>
<td>Mexico</td>
<td>Every five years</td>
<td>yes</td>
<td>monthly</td>
</tr>
<tr>
<td>Canada</td>
<td></td>
<td>Yes</td>
<td>quarterly</td>
</tr>
</tbody>
</table>
Surveys of turnover - Japan

- Monthly Survey on Service Industries
  - Includes intra-firm services (i.e. no turnover)
  - Collects turnover (which includes sales of service as well as parts)
  - Considering a breakdown of sales by type of service

- 2012 Economic Census for Business Activities
  - Will show turnover for entire sector
  - Will become the benchmark for the monthly survey

- Proposed annual survey
  - Determine regional turnover and greater industrial detail
Surveys of turnover - Mexico

- Monthly survey
  - Variables:
    - Employment (number of employees, payroll, days worked)
    - Revenues and expenses (vehicle repair and secondary activity)

- Annual survey
  - Variables:
    - Same as monthly with addition of:
      - Production value
      - Fixed assets
      - Identification of suppliers and customers

- Economic census
  - Variables:
    - Same as monthly with addition of:
      - Stocks
      - Fixed assets
      - Units and transport equipment
      - Innovation and research
Surveys of turnover - Canada

**Annual**
- Data collected through the Annual Survey of Service Industries: Repair and Maintenance. Information on auto repair collected along with electronic, precision equipment and commercial and industrial machinery equipment repair and maintenance
- Variables
  - Revenues and expenses
  - Sales by product (broken down into parts, labour)
  - Inventories of parts and accessories
  - Turnover by product

**Quarterly**
- Quarterly Industry Revenue Indices
- Collects data on turnover only
- Estimates based largely on GST records (a value-added tax)
## National Accounting concepts and measurement issues - turnover

<table>
<thead>
<tr>
<th></th>
<th>Relationship with SNA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mexico</strong></td>
<td>For purposes of calculating Gross Domestic Product (GDP) and the Global Indicator of Economic Activity (GIEA), the National Accounts makes an indirect calculation based on the relationship between indicators of physical volume of automobiles production, considering that the vehicle fleet with an average age of five years or more, require frequent repair services and maintenance, also included in the calculation, the variables of incomes and expenses provided by the Economic Censuses and Surveys.</td>
</tr>
</tbody>
</table>
| **Canada**     | • data on motor vehicle maintenance and repair published in the Input-Output Accounts, monthly GDP program. Sales of these products are also used in estimates of personal expenditure  
• Annual survey designed to specifically meet the needs of the SNA  
• Sub-annual data not timely enough for use by the SNA                                                                                   |
Prices
Background

- **UK**
  - Originally two sources of data used:
    - Third-party source – focusing on large players
    - RPI – covered small businesses not covered by third-party source
    - Sources were weighted 60/40 respectively
  - Concerns over the quality of the third party source led to the SPPI based 100% on the RPI

- **Canada**
  - SPPI program targeted the business sector focusing on business-to-business transactions, as well as the development of the Retail Service Price Index
  - As these services are covered by CPI, this industry was excluded from development activities
Current methods - UK

- UK SPPI is a quarterly average of RPI prices
- Component services specified in terms of a defined service or a defined unit of time
- Cost of parts excluded from the service price (unless they cannot be removed)
- Conceptually the discounts received for business-to-business transactions is excluded
**Current methods - Canada**

- *Motor vehicle repair and maintenance* is included in the Transportation major component of the CPI
  - Covers only passenger vehicles
  - Category is further broken down into:
    - Passenger vehicle parts, accessories and supplies
    - Passenger vehicle maintenance and repair services
- Price collection occurs at point of sale, based on a representative sample of establishments – prices are collected for several products
- Excludes business-to-business transactions
- Prices are collected at varying frequencies through the year
- Methodology under review
  - Selection of sampling units from the Business Register
  - Use Quarterly Retail Commodity Survey and other sources to refine weights
  - Quality adjustment methods (hedonic models, group imputation) being considered.
Quality adjustments

- UK
  - Direct comparison
    - Replace with another product that is directly comparable – unlikely to be used
  - Direct quality adjustment
    - Place a value on the quality change so base price can be adjusted
      Preferred method – difficult to implement
  - Imputation
    - Applied average change in aggregate index to the new products base price
    - Used if no information is available to quantify a difference in quality
Quality adjustments - Canada

Approaches:

• Explicit adjustments
  • Assessing the difference in worth between new and replaced items
  • Most common approach
• Splicing, or linking in of new products
  • Collect prices for initial item and replacement item and use the ration of these prices to adjust over time
• Hedonic methods
  • Not used for Passenger Vehicle Maintenance and Repair Services
National Accounting concepts and measurement issues - turnover

- **UK**
  - National accounts uses RPI directly

- **Canada**
  - CPI is expressed in purchasers’ price
  - Converted to a basic price by removing taxes, subsidies and other trade margins
  - Turnover surveys break out labour and parts - IO commodity includes only the service, a mock-up on parts is computed and recorded as retailing margin
    - Issue: CPI includes parts
  - While CPI covers passenger vehicles, IO includes light trucks.
Observations
Observations

- Classifications – some place in retail, others in ‘other services’, nevertheless, the essential definition is very similar

- Industry vs. activity
  - Sales of the service can occur in establishments that are not classified to repair and maintenance of motor vehicles (i.e. other types of retail establishments)
  - Need all of the activity to understand the complete market (turnover)
  - Can samples for CPI/PRI be representative if they only include establishments that are classified as ISIC 4520?
Observations

- Services vs. parts
  - Turnover in the industry involves the sales of both parts and services
  - It is desirable to break-out the sales of both (particularly in the production of Input-Output accounts)
  - It would similarly be desirable to have prices for each
Observations

- Given use of CPI/RPI as a proxy of SPPI, is there any value in developing a specific SPPI for this industry?
  - Do business prices move the same as consumer prices, or do the differences provide a good enough business case to move ahead?
  - Is there a significant coverage issue?