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Maintenance and Repair of Motor Vehicles

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1. Introduction

Motor vehicle repair and maintenance services in Canada can be characterized as both an industry and a commodity. As a commodity, it is characterized as providing both the services involved in selling goods purchased for resale (i.e. the parts) and providing the service of replacing the part into the vehicle. In Canada, this service may be provided by establishments specializing in automotive repair, but there are other, large, players in this industry, particularly within retail trade.

The objective of this paper is to describe Canadian practices in measuring the turnover for motor vehicle repair and services. Section 2 of this paper describes the classification of the service as an industry, and as a commodity. Section 3 highlights the surveys that measure sales of this product (both within and outside the industry). The paper continues with a description of industry characteristics, and concludes with a description of measurement issues, particularly in the context of the Canadian System of National Accounts.

2. Defining motor vehicle repair and maintenance services

Statistics Canada currently uses the 2007 North American Industrial Classification Standard (NAICS) in classifying the industry and the North American Product Classification System (NAPCS) (Provisional Version 0.1) to classify the commodity.

2.1. Automotive repair industry

Under NAICS, the Automotive Repair and Maintenance (NAICS 8111) industry group: ... comprises establishments primarily engaged in providing mechanical or electrical repair and maintenance services for motor vehicles, such as engine repair and maintenance, exhaust system replacement, transmission repair and electrical system repair. (NAICS 2007)

Specifically excluded from this industry group are retailers that: sell motor vehicles, parts and accessories and gasoline service stations, both of which can provide vehicle repair services. Also excluded are establishments that convert vehicles on a factory basis and tire retreading or recapping, both of which are classified to manufacturing.

This industry group is further divided into three industries: Automotive Mechanical and Electrical Repair and Maintenance (81111); Automotive Body, Paint, Interior and Glass Repair (81112); and All Other Automotive Repair and Maintenance (81119). These

industries are further broken down to a six-digit level of detail. Table 1 provides a structure of these industries.¹

Table 1: Structure of the Automotive Repair and Maintenance Industry Group

Industry (5 digit)	Canadian Industry (6 digit)	Definition
811111 General Automotive Repair	811111 General Automotive Repair	This industry comprises establishments primarily engaged in providing mechanical or electrical repair and maintenance services for motor vehicles, such as engine repair and maintenance, exhaust system replacement, transmission repair and electrical system repair.
	811112 Automotive Exhaust System Repair	This industry comprises establishments, not classified to any other Canadian industry, primarily engaged in providing specialized motor vehicle mechanical or electrical repair and maintenance.
	811119 Other Automotive Mechanical and Electrical Repair and Maintenance	This industry comprises establishments, not classified to any other Canadian industry, primarily engaged in providing specialized motor vehicle mechanical or electrical repair and maintenance.
81112 Automotive Body, Paint, Interior and Glass Repair	811121 Automotive Body, Paint and Interior Repair and Maintenance	This industry comprises establishments primarily engaged in repairing, customizing and painting motor vehicle bodies, and repairing and customizing motor vehicle interiors.
	811122 Automotive Glass Replacement Shops	This industry comprises establishments primarily engaged in replacing and repairing motor vehicle glass.

¹ Statistics Canada, North American Industry Classification (NAICS) 2007, <http://stds.statcan.gc.ca/naics-scian/2007/cs-rc-eng.asp?criteria=8111>

81119 Other Automotive Repair and Maintenance	811192 Car Washes	This industry comprises establishments primarily engaged in washing and cleaning motor vehicles.
	811199 All Other Automotive Repair and Maintenance	This industry comprises establishments, not classified to any other Canadian industry, primarily engaged in providing motor vehicle repair and maintenance.

Table 2 presents a concordance between NAICS 2007, at a six-digit level of detail and International Standard Industrial Classification (ISIC), Revision 4.² For all of these industries, a NAICS class is equal only to a portion of the ISIC class. The explanatory note gives a description of the overlap between the two classifications.

Table 2: Concordance between NAICS 2007 and ISIC rev. 4 for Automotive Repair

NAICS (6-digit)		ISIC rev.4		Explanatory Notes
811111	General Automotive Repair	G4520	Maintenance and repair of motor vehicles	General automotive repair
811112	Automotive Exhaust System Repair	G4520	Maintenance and repair of motor vehicles	Specialized automotive repairs (e.g., brakes, air-conditioning, transmissions)
811119	Other Automotive Mechanical and Electrical Repair and Maintenance	G4520	Maintenance and repair of motor vehicles	Specialized automotive repairs (e.g., brakes, air-conditioning, transmissions)

² Statistics Canada, Concordance between the North American Industry Classification System (NAICS) 2007 and the International Standard Industrial Classification System (ISIC), Revision 4, <http://stds.statcan.gc.ca/concordances/naics-scian-2007-eng.asp>

811121	Automotive Body, Paint and Interior Repair and Maintenance	C2920	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	Custom fabrication of trailer bodies and custom conversion of vans in a shop, rather than a factory
		G4520	Maintenance and repair of motor vehicles	Automotive body and upholstery shops
811122	Automotive Glass Replacement Shops	G4520	Maintenance and repair of motor vehicles	Automotive glass replacement shops
811192	Car Washes	G4520	Maintenance and repair of motor vehicles	Car Washes
811199	All Other Automotive Repair and Maintenance	G4520	Maintenance and repair of motor vehicles	Automotive repair and maintenance n.e.c. (e.g., lubricating service; undercoating)
		M7120	Technical testing and analysis	Automobile emissions inspection services and safety inspection services

2.2 Automotive repair products

Statistics Canada has started to use the provisional North American Product Classification Canada Provisional Version 0.1 (NAPCS) to describe automotive maintenance and repair services a commodity.³ NAPCS identifies a product group for Maintenance and repair services for automobiles, trucks and other road transportation vehicles, and motor homes, travel trailers and campers (811001).

NAPCS is a hierarchical classification and provides additional detail for this product group. This is enumerated in Table 3.

³ Statistics Canada, North American Product Classification System (NAPCS) – Canada [Provisional version 0.1], http://stds.statcan.gc.ca/napcs-scpn/ioeslev2-ioesniv2-eng.asp?iowc_code=811001

Table 3: Breakdown of Maintenance and repair services for automobiles, trucks and other road transportation vehicles, and motor homes, travel trailers and campers (NAPCS 811001)

NAPCS: 8-digit	NAPCS: 9-digit
811001.1.1 - Maintenance and repair services for automobiles and light trucks	811001.1.1.1 - Maintenance and repair services for automobiles and light trucks, except cleaning and washing, and regulatory safety and emissions inspections
	811001.1.1.2 - Washing and cleaning services for automobiles and light trucks
	811001.1.1.3 - Regulatory safety and emissions inspection services for automobiles and light trucks
811001.1.2 - Maintenance and repair services for motor homes, travel trailers and campers	
811001.1.3 - Maintenance and repair services for heavy trucks and buses	811001.3.1.1 - Maintenance and repair services for heavy trucks and buses, except cleaning and washing, and regulatory safety and emissions inspections
	811001.3.1.2 - Washing and cleaning services for heavy trucks and buses
	811001.3.1.3 - Regulatory safety and emissions inspection services for heavy trucks and buses

Maintenance and repair services in 811001.1.1 and 811001.1.3 includes maintenance and repair services, repairs to defective parts, cleaning and washing; regulatory safety and emissions inspection services; body repairs; conversions of individual vehicles to a different use, or a different engine system; and scheduled, factory-recommended and preventative maintenance services. Repair and maintenance services are included whether paid by the owner of the good being repaired, or by a warranty. These NAPCS products include labour, parts and supplies used in providing these services.

3. Surveys of turnover

As described in the introduction, the provision of maintenance and repair of motor vehicles is not exclusively the domain of the automotive and repair industry group. Much of this activity is provided by the retail trade sector, while converting vehicles on a factory basis and tire retreading are classed to manufacturing.

Statistics Canada has a variety of surveys that measure this activity, both on an annual basis, as well as using more current indicators. This section provides an overview of the various sources of data.

3.1 Annual Survey of Service Industries: Repair and Maintenance

Statistics Canada collects structural business statistics on the automotive repair industry through an annual survey on repair and maintenance. In addition to collecting data on automotive repair, the survey also covers: electronic, precision equipment and commercial and industrial machinery and equipment repair and maintenance.⁴

The survey consists of modules of financial questions (revenues and expenses) that are generic to all service industry questionnaires. It also includes industry-specific questions, breaking-down sales by product, divided further by sales of parts and labour. The survey also collects inventories of parts and accessories.

Data on operating revenues and expenses; salaries wages and benefits; and operating profits are published at a 4-digit NAICS level of detail and by province. Detailed operating expenses, as well as sales by type of client are available at only the national level for all automotive repairs (4-digit).

Product-level data are not published from the survey. These data are used to help estimate the commodity dimension of the Canadian System of National Accounts.

3.2 Quarterly Service Indicators program

More current revenue data are available through the Quarterly Industry Revenue Indices (QIRI).⁵ This program produces sub-annual indicators of turnover for selected business and consumer services. This program combines administrative data from Canada's Goods and Services Tax (a value-added tax), supplemented by a small survey to measure changes in the quarterly operating revenues in current dollars.

For each industry covered by the program, unadjusted as well as seasonally adjusted series are available, at both the national and provincial levels. Results are produced in the form of indices of operating revenues with 2007 as the base year.

⁴ Statistics Canada (2011), Repair and Maintenance Services, Catalog no.: 63-247-XWE. <http://www.statcan.gc.ca/bsolc/olc-cel/olc-cel?catno=63-247-XWE&lang=eng>

⁵ Statistics Canada, Quarterly Industry Revenue Indices (QIRI), <http://www.statcan.gc.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&SDDS=5104&lang=en&db=imdb&adm=8&dis=2>

3.3 Quarterly Retail Commodity Survey

The Quarterly Retail Commodity Survey (QRCS) publishes detailed information about retail commodity sales in Canada at the national level, for different types of retail outlets in Canada.⁶ This survey is a supplement to the Monthly Retail Trade Survey (MRTS). MRTS gathers total monthly retail sales, while QRCS collects a breakdown of these sales by product.

The information provided by QRCS tracks commodity sales within and across various types of retail stores. The data indicate the retail industries where certain commodities are sold.

Expansion of the NAPCS to cover the retail sector is in the final stages of completion for the 2012 version of NAPCS. In the meantime, the QRCS uses a unique commodity classification scheme that was developed in cooperation with large Canadian retailers.

With regards to motor vehicle maintenance and repair, in the QRCS, sales can be broken-down into: tires, other parts and accessories, and labour receipts. Data are published for sales of these products for the total retail trade sector, as well as by motor vehicles and parts dealers, but sales can also occur in other industries (i.e. gasoline stations, general merchandise stores).

4. Market conditions and constraints

As described above, maintenance and repair of motor vehicles can describe both an industry, as well as a product. This section outlines first the industry characteristics, and then describes the broader market conditions for the product.

4.1 Industry data

Between 2008 and 2009, operating revenues for the automotive repair and maintenance industry advanced by 3.3%. Operating expenses rose at a slightly higher level (+3.7%), moderating the operating profit margin in 2009. Table 4 provides summary statistics for the period 2005-09.

⁶ Statistics Canada, Quarterly Retail Commodity Survey, <http://www.statcan.gc.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&SDDS=2008&lang=en&db=imdb&adm=8&dis=2>

Table 4: Summary Statistics for Automotive Repair and Maintenance

	2005	2006	2007	2008	2009
Operating revenue (\$million)	11,731	11,666	11,926	12,679	13,091
Operating expenses (\$million)	11,107	10,899	11,108	11,775	12,214
Operating profit margin (percent)	5.3	6.6	6.9	7.1	6.7
Salaries, wages and benefits (\$million)	3,254	3,235	3,310	3,563	3,561

Source: Statistics Canada, CANSIM Table 361-006

Within the automotive repair and maintenance industry, nearly two-thirds of the revenue in this industry came from general automotive repair (58%) in 2009. About one-third of operating revenue came from establishments that specialized in automotive body, paint and interior repair and maintenance (35%). All other automotive repair and maintenance (including car washes) had an 8% share of sales. These proportions generally remain stable over time.

Table 5: Percentage breakdown of type of operating expense

Expense	2007	2008	2009
Cost of goods sold	42.9	42.2	43.7
Salaries, wages and benefits	30.8	32.7	31.1
Rental and leasing	4.6	4.5	4.7
Repair and maintenance	3.3	3.1	3.2
Amortization and depreciation of tangible and intangible assets	2.3	2.2	2.3
Utilities and telecommunications expenses	2.2	2.1	2.1
Subcontract expenses	1.6	1.5	1.7
Insurance	1.4	1.5	1.4
Advertising, marketing and promotions	1.4	1.4	1.3
Professional and business services fees	1.8	1.3	1.3
Office supplies	1.0	1.3	1.1
Financial services fees	1.4	1.0	1.0
All other expenses	3.0	2.9	2.7
Total operating expenses	100	100	100

Source: Statistics Canada, CANSIM Table 361-017

In 2009, nearly three-quarters of operating expenses are for cost of goods sold (43.7%) and salaries, wages and benefits (31.1%). The percentage breakdown of expenditure is fairly stable over time. Table 5 gives a more detailed breakdown of operating expenses.

Nearly three-fifths of sales were to individuals in 2009. Most of the remaining sales were to businesses. Only a small proportion (3.2%) of sales were to governments, not-for profit organizations and public institutions (see Table 6).

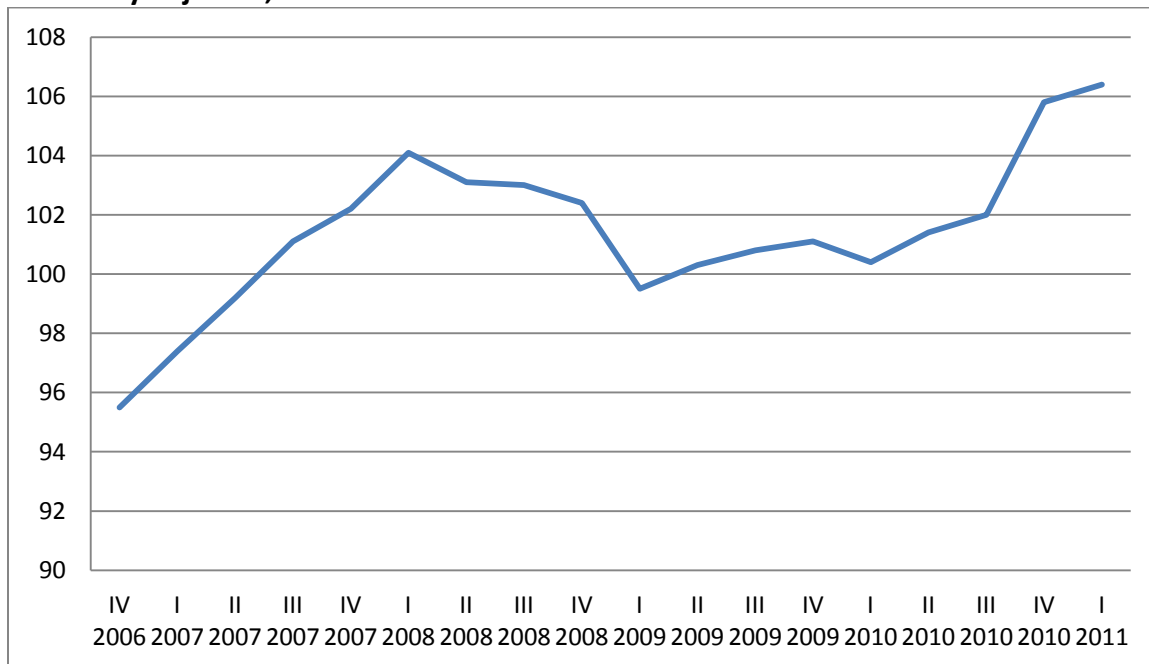
Table 6: Percentage breakdown of sales by class of customer

	2007	2008	2009
Sales to businesses	38	39	38.0
Sales to governments, not-for-profit organizations and public institutions	4	3	3
Sales to individuals	58	57	59

Source: Statistics Canada, CANSIM Table 361-018

Figure 1 shows an index of sales, broken down by quarter (using QIRI). The more current data indicate a modest increase in sales (+2%) between 2009 and 2010.

Figure 1: Revenue Index for Automotive Repair and Maintenance (NAICS 8111), seasonally adjusted, 2007=100



Source: Statistics Canada, CANSIM Table 362-0001

4.2 Commodity data

The annual survey of repair and maintenance provides detailed information on sales by NAPCS product, for the automotive repair and maintenance industry. In 2009, within the motor vehicle repair and maintenance product group (NAPCS 811001), most sales were for maintenance and repair services for automobiles and light trucks (85%). A smaller percentage of sales (14%) were from the sale of maintenance and repair services for heavy trucks and busses. Only a small percentage of operating revenues were derived from the sale of maintenance and repair services for motor homes, travel trailers and campers. Details are contained in Table 7.

Table 7: Turnover of motor vehicle repair and maintenance products, by NAPCS, for the automotive repair and maintenance industry (NAICS 8111), 2009

Product	Sales (\$million)	Percentage of sales parts	Percentage of sales labour
<i>Maintenance and repair services for automobiles and light trucks</i>			
Maintenance and repair services for automobiles and light trucks, except cleaning and washing, and regulatory safety and emissions inspections	8,131.2	57	43
Washing and cleaning services for automobiles and light trucks	196.2	29	71
Regulatory safety and emissions inspection services for automobiles and light trucks	261.2	21	79
<i>Maintenance and repair services for motor homes, travel trailers and campers</i>			
Maintenance and repair services for motor homes, travel trailers and campers	78.3	47	53
<i>Maintenance and repair services for heavy trucks and buses</i>			
Maintenance and repair services for heavy trucks and buses, except cleaning and washing, and regulatory safety and emissions inspections	1,217.2	58	42
Washing and cleaning services for heavy trucks and buses	69.3	27	73
Regulatory safety and emissions inspection services for heavy trucks and buses	109.2	24	76

Source: Statistics Canada, Annual Survey of Service Industries: Repair and Maintenance, special tabulation

These product classes reflect the total cost of these services, which include not only the sales of labour, but also associated parts. The annual survey of repair and maintenance provides a further breakdown of revenue, breaking out the sales of parts and labour

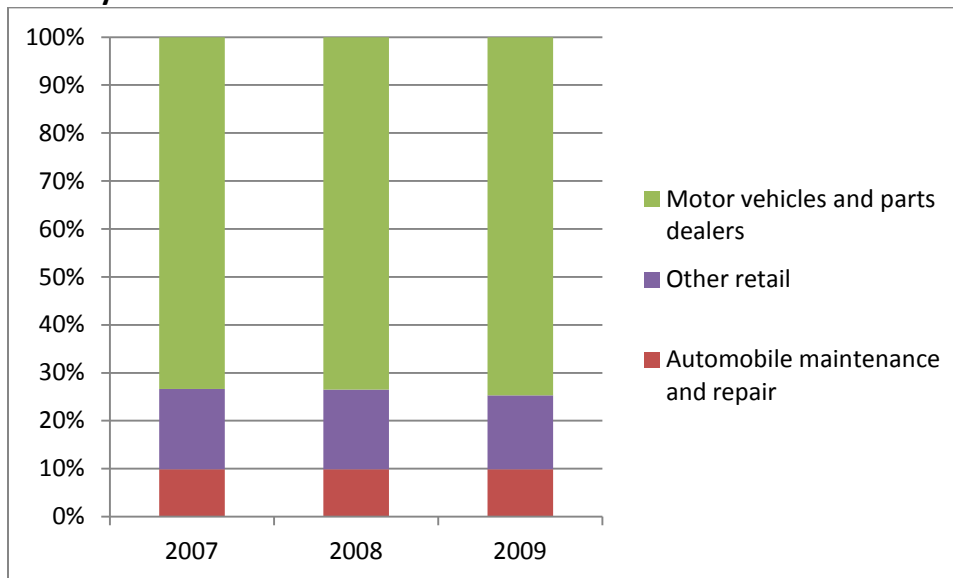
from the total. In 2009, 55% of revenues from the sale of these services were derived from the sale of parts, the remainder reflect the sales of labour.

These data, however, reflect only the sales of these services by establishments in the automotive repair and maintenance industry. As noted earlier, a significant proportion of these services are provided by the retail trade sector.

While the QRCS does not use NAPCS, it does provide commodity detail for the sale of auto parts, tires and labour. Combining this with the turnover data from the annual survey of repair and maintenance indicates that the retail activity accounts for an overwhelming majority of the activity, accounting for nine-tenths of the activity. Within the retail trade sector repair activity is largely concentrated among motor vehicles and parts dealers (Figure 2).

There is a weakness in this comparison as the two commodity classifications do not align. The retail data includes the sale of auto parts to customers that make the repair themselves. However, looking at only the labour receipts from automotive repairs, maintenance and service, from retail, with the sale of labour from the auto repair industry, retail trade still dominates with a 56% share.

Figure 2: Percentage breakdown of motor vehicle repair and maintenance sales, by industry.



Source: Statistics Canada, CANSIM Tables 080-0022, 361-006

5. National accounting concepts and measurement issues

The Canadian System of National Accounts publish data on motor vehicle and repair in a number of products, including the Input-Output Accounts, the Monthly Industry Gross Domestic Product (GDP) program and the provincial GDP program. Sales of these commodities also are used in estimates of personal expenditure.⁷

5.1 Annual Survey of Service Industries: Repair and Maintenance

The annual survey on repair and maintenance was designed to meet the specific needs of the CSNA. Variable definitions for all financial variables are aligned with the Canadian Chart of Accounts. With the modernization of the Input-Output (IO) program, both the service industries program and the IO accounts will align to NAPCS, making easier the integration of data. Conceptually, the survey aligns well with the needs of the CSNA, its principal client.

In Canada, the motor vehicle repair and maintenance industry can be characterized by a large number of very small businesses. An ongoing concern is in managing the sample for this survey. The annual survey, as part of Statistics Canada's Unified Enterprise Survey (UES) Program allows for a managed overlap in the sample from year to year. This is to balance the need for stability in the series against the cost in burdening the same respondent year-after-year. Also, each year, the strata boundaries between the take-all and take-some strata shift. This results in similar units carrying different weights over the two reference periods. Monitoring and resolving this is an ongoing task.

5.2 Quarterly Service Indicators program

While providing a more current indicator of activity in the industry, QIRI releases data 90 days after the end of the reference period. This is not early enough for incorporation of these data into the CSNA.

5.3 Deriving a complete picture

Motor vehicle maintenance and repair services are provided by both the service and retail sectors. Deriving a complete NAPCS-based picture of the product is not yet possible as QRCS uses a separate commodity classification. There are proposals to move QRCS to a NAPCS basis, which would alleviate integration issues.

⁷ A more comprehensive discussion of the use of the motor vehicle repair and maintenance data by the CSNA can be found in Loranger (2011).

6. Summary

As a product, motor vehicle repair and maintenance can be provide by a number of players. In Canada, these include establishments in the retail trade (especially vehicle dealers) and repair and maintenance industries. It is important to integrate data from these sources to develop a complete understanding of the market for this product.

Turnover in motor vehicle repair and maintenance is well covered by Statistics Canada. The annual survey covering the repair and maintenance provides good quality information on the turnover, as well as other structural characteristics of the industry.

References

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