The economic footprint of automobile dealerships in Ontario

Trillium Automobile Dealers Association

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pwc

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1. Executive summary

Introduction and scope

The Trillium Automobile Dealers Association ("TADA") represents the franchised new car dealer industry ("the Industry") in Ontario. The Industry consists of over 1,040 individual dealerships, around 90% of whom are TADA members, and together they make a significant contribution to the Ontario economy.

In October 2017, PwC issued a study that assessed the 2016 economic impact of the TADA's member's ongoing operations in the province as well as wider economic and environmental benefits associated with the provision of car dealership services, such as sales of used cars and repair and maintenance services (the "2016 Study").

PwC was retained by TADA to update the 2016 Study in order to reflect changes between 2016 and 2018.

The following four steps summarize our methodology to update the study:

Step 1 Review of previous study	A detailed review was undertaken of the previous research, including the survey of TADA dealers in 2016.
Step 2 Data collection	The latest available data on the automotive market in Ontario was collected from Statistics Canada and updated figures were sourced from TADA and other third parties.
Step 3 Update of Input-output modelling	Relevant information was used as an input into the input-output model, yielding the updated economic impact estimates of TADA members in Ontario.
Step 4 Update of wider impact analysis	Wider social and environmental benefits of automobile dealers were analysed, using secondary research and information on TADA donations, incorporating the latest available data.

Key findings

We estimate that TADA members contributed $13.9bn in GDP in 2018 to the province of Ontario due to their operating activities[1]. This represents an increase from $12.15bn in 2016.

TADA members generated and supported 85,300 jobs in the province and a total labour income of $4.94bn in 2018, this is up from 77,554 jobs and $4.33bn in labour income in 2016.

Figure 1: TADA Members Economic Impact Estimates[2,3]

The payments of provincial taxes on production and imports, corporate income taxes and personal income taxes resulting from TADA members operating activities amounts to $3.2bn in 2018, up from $2.1bn in 2016

Figure 2: TADA Members' Impacts on Tax Revenue

In 2018, over 1.1% of jobs in Ontario were facilitated by TADA members' operating activities. Over 1 in 20 (5.55%) of provincial retail trade jobs was generated directly by TADA members.

[1] Value added or GDP is the value added to the economy, or the output valued at basic prices less intermediate consumption valued at purchasers' prices. GDP includes only final goods to avoid double counting of products sold during a certain accounting period.

[2] Note that numbers may not add up due to rounding.

[3] Direct impacts result from company's spending on suppliers and employees. Indirect impacts arise from the activities of the firms providing inputs to company's suppliers (in other words, the suppliers of its suppliers). Induced impacts are the result of consumer spending by employees of the businesses stimulated by direct and indirect expenditures. The total economic impact equals the sum of the direct, indirect, and induced economic impacts. Note that all dollar impacts are expressed in 2018 dollars

1 in 20 of all retail jobs in Ontario are directly sustained by TADA members

TADA members also contribute to the Ontario economy through their community engagement focused on educational endeavours and cooperation with local charities.Between 2008 and 2018, TADA contributed almost $4.4 million in charitable donations, including $2 million to the Ronald McDonald House Toronto and over $1 million to the Holland Bloorview Kids Rehabilitation Hospital Foundation. TADA is also supporting the 2020 “Rock the Road” raffle by donating two sports cars as the grand prize. This program invests in improving and awareness, detection and treatment of prostate cancer.

TADA members also make positive contributions to the environment by providing reliable and orderly car maintenance and by facilitating a trusted used car market.

2. Introduction

2.1. Background and Study Objectives

The Trillium Automobile Dealers Association ("TADA") represents 90% of Ontario's franchised new car dealers (in this report we refer to the aggregation of all auto dealers in Ontario as "the Industry"). In 2018, the Industry consisted of over 1,040 individual dealerships who provide over 57,000 direct jobs and generates $48 billion in retail sales annually, or 22% of total retail sales in the province[4].

TADA members represent around 90% of dealerships and in 2018, TADA's members directly employed over 48,000 people with the value of cars sold of $40.8 billion[5].

In October 2017, PwC issued a study that assessed the 2016 economic impact of the TADA's member's ongoing operations in the province as well as wider economic and environmental benefits associated with the provision of car dealership services, such as sales of used cars and repair and maintenance services (the "2016 Study").

PwC was retained by TADA to update the 2016 Study in order to reflect changes between 2016 and 2018. Unless otherwise noted, all dollar amounts in this report are expressed in Canadian currency.

2.2. Scope of Review

This study was prepared using information provided by the TADA and its members, discussions with TADA's staff and our own research.

A complete list of the documents and sources we have reviewed is listed in **Appendix B**.

2.3. Authors

The following members of PwC contributed to this report:

Michael Dobner	Richard Snook	Michal Staszewski	Sanghee Hwang
Partner, Leader of PwC Economics Practice	Senior Manager	Economist	Economist

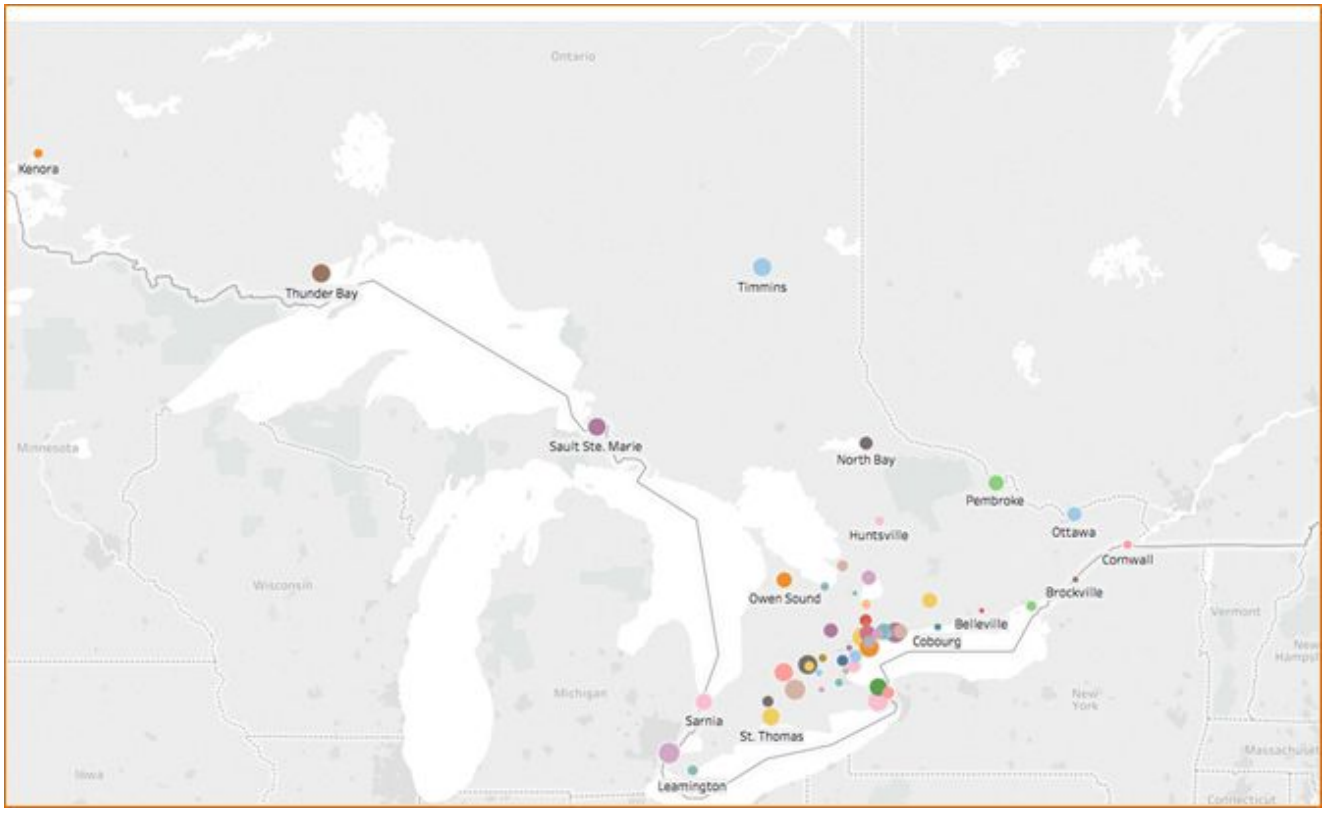
[4] Retail sales based on Statistics Canada data for the 'New car dealers' industry in 2018. Number of dealerships based on TADA data. Employment based Statistics Canada data for 'Automobile dealers' industry in 2018.
[5] Approximation based on the survey of TADA members conducted in 2017 and adjusted to 2018 using secondary data. Note that the 48,000 jobs estimated from the survey is slightly higher than the 44,500 direct jobs we estimate with the economic impact analysis. The latter is based on full time equivalent roles, rather than total employees (including part-time) so the value is slightly lower.

3. Overview of Trillium Automobile Dealers Association

TADA was established in 1908. With a membership of over 930 dealers it accounts for one-third of all new car dealers in Canada and 90% in Ontario. In 2018, TADA's members directly employed over 48,000 people with the value of cars sold of $40.8 billion[6].

TADA members are distributed across the entire province. Figure 3 depicts the presence of TADA member dealers within Ontario with the size of each coloured dot indicating the density of dealership in a specific location. While the majority of member dealers are concentrated in South-western Ontario, TADA members also have a strong presence in Thunder Bay, Timmins and Sault Ste. Marie.

Figure 3: Distribution of TADA member dealers across Ontario



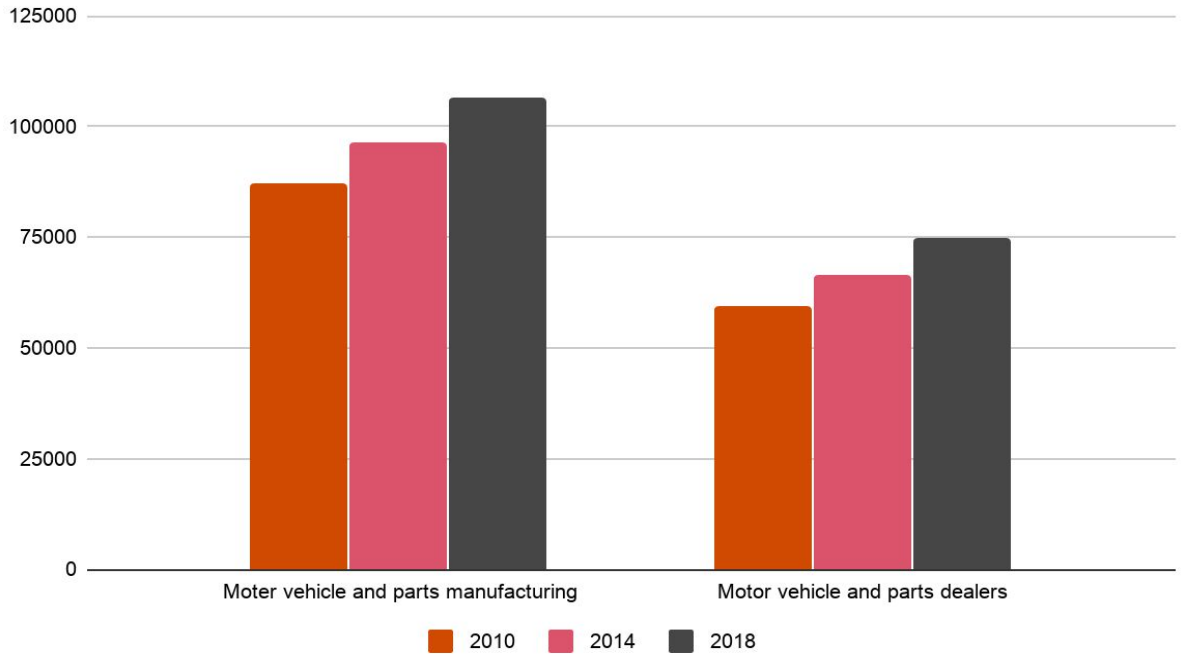
Source: PwC analysis of TADA data

While employment in auto vehicle and parts manufacturing increased by approximately 22% between 2010 and 2018, employment in motor vehicle and parts dealerships have increased by more than 26% during that time period, reaching 75,000 direct jobs in 2018. This measure of the industry is significantly broader than that represented by TADA since it also includes, amongst other things, specialist used car dealerships and dealers of automobile parts.

This increase in employment was higher than the overall employment increase in Ontario's retail sector of approximately 10 percent over this period (2010-2018).

[6] Based on PwC survey responses and data provided by TADA.

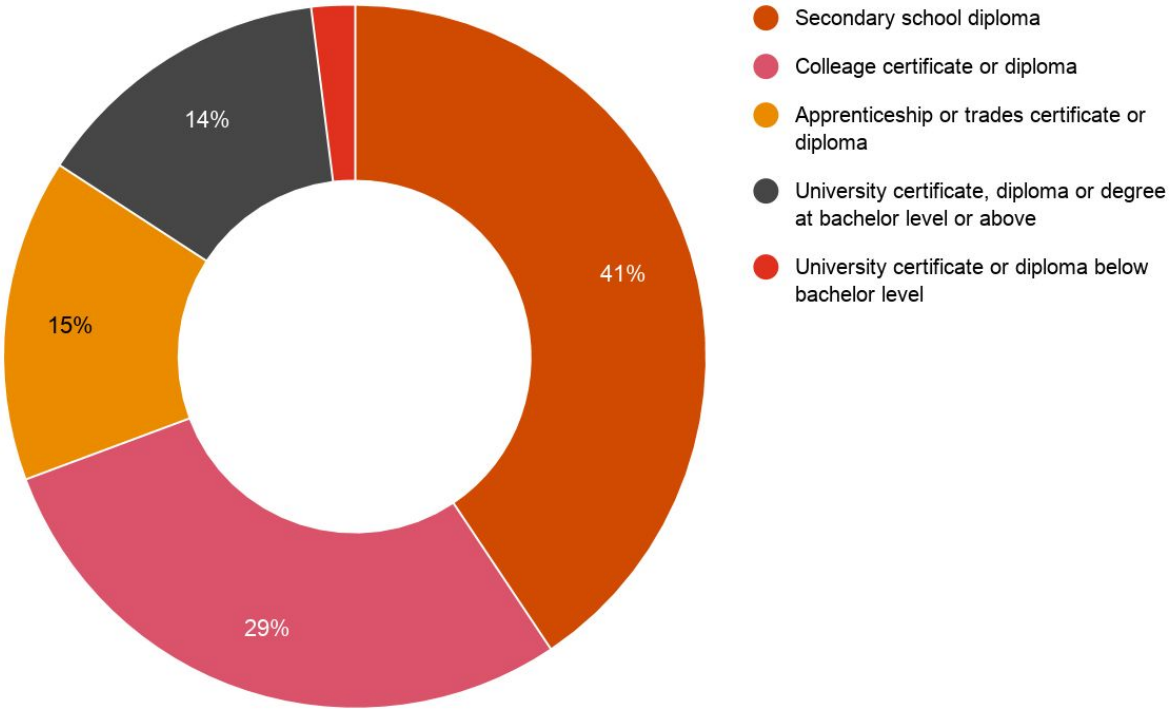
Figure 4: Employment in motor vehicle and parts manufacturing and dealers in Ontario, 2010-2018



Source: Statistics Canada, CANSIM Table 281-0024

Overall, the educational attainment among employees in the Industry is relatively high. As Figure 5 indicates, 13 percent of all employees in Ontario's motor vehicle and parts retail industry had completed university certificate, diploma or degree, while 62 percent had either secondary school diploma or college certificate.

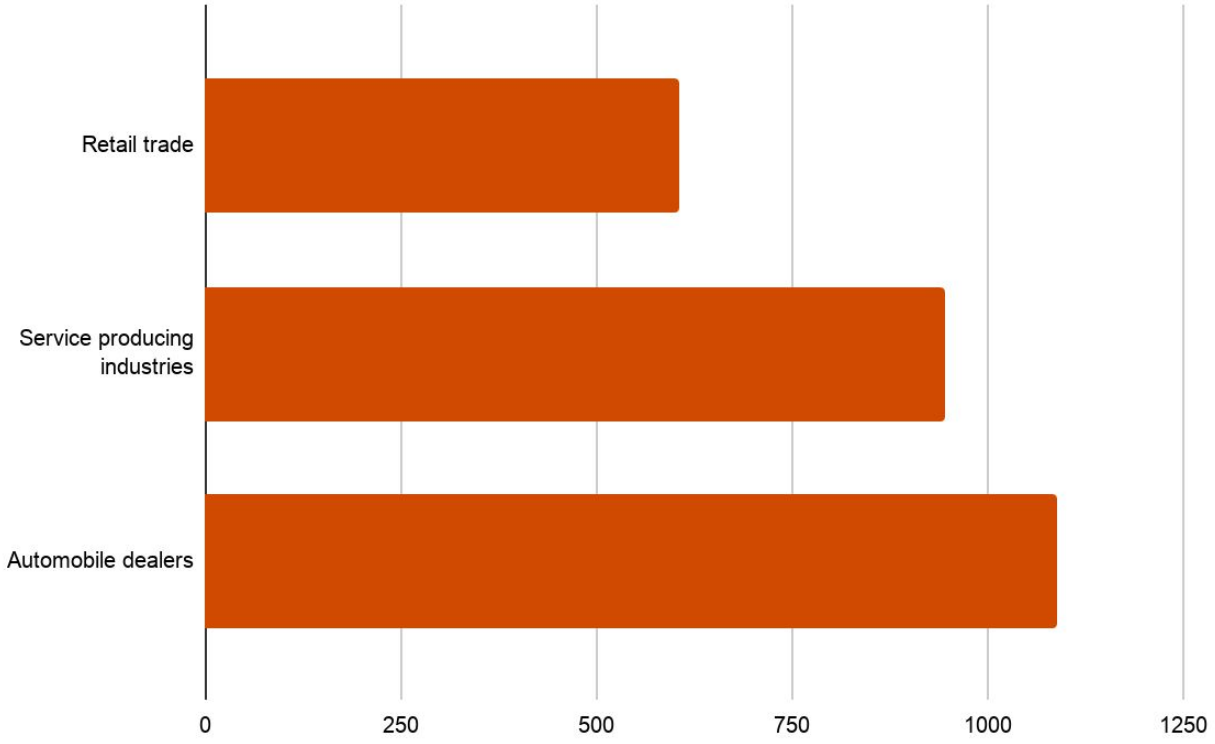
Figure 5: Educational attainment of employees in Ontario's motor vehicles and parts retail industry, 2015. Source: Statistics Canada Labour Force Survey



Employees at motor vehicles and parts dealerships in Ontario also enjoy comparatively high wage jobs. As Figure 6 shows average weekly earnings among automobile dealers in 2018 were $1,088 per week or $483 (80%) higher than average

weekly earnings in the retail trade overall. The wages are also around $142 (15%) higher than average weekly earnings in the overall service producing industries.

Figure 6: Average weekly earnings in service producing industries, Ontario 2018



Source: Statistics Canada, CANSIM Table 281-0027, 2019.

4. Economic Impact Results

To assess the economic impacts of TADA members' operations, we have calculated the contributions to the Ontario economy generated and facilitated by their operating activities. The result of our analysis is a measure of widely considered economic variables and the total contribution to each variable of the industry's activities. We note that the economic impacts measured are limited to the economy of Ontario and they do not include economic impacts on other provinces that may be benefiting from such activity in Ontario.

4.1. Methodology

The fundamental philosophy behind economic impact analysis is that spending on goods and services has attendant impacts throughout the economy. For instance, automobile repair will generate demand for the inputs to this process (such as tools and labour) that in turn generates additional demand that extends beyond the initial spending. Our analysis permits the estimation of this cascading effect by using the input-output model of the Ontario economy based on inter industry relationships calculated by Statistics Canada.

The input-output model used for the purpose of this report estimates the relationship between a particular economic activity for a given good or service and the resulting impacts throughout the economy (including demand for other goods and services and tax revenues). For the purpose of this report economic impacts were estimated for the following measures of economic activity:

- **Value added or GDP** – the value added to the economy, or the output valued at basic prices less intermediate consumption[7] valued at purchasers' prices. GDP includes only final goods to avoid double counting of products sold during a certain accounting period.
- **Employment** – the number of jobs created or supported. It is expressed as the number of full-time equivalent ("FTE") jobs indicated in person years.
- **Labour income** – the amount earned by the employment expected to be generated by existing operations.
- **Taxes on Production and Imports** – taxes payable on goods and services when they are produced, delivered, sold, transferred or otherwise disposed of by their producers plus taxes and duties on imports that become payable when goods enter the economic territory by crossing the frontier or when services are delivered to resident units by non-resident units.
- **Personal Income Tax** – the amount of provincial tax revenues generated from taxes on the income of employees and self-employed individuals.
- **Corporate Income Tax** – the amount of provincial tax revenues generated from taxes on the profits of corporations.

Economic impacts are typically estimated at the direct, indirect and induced levels:

- **Direct impacts** result from company's spending on suppliers and employees.
- **Indirect impacts** arise from the activities of the firms providing inputs to company's suppliers (in other words, the suppliers of its suppliers).
- **Induced impacts** are the result of consumer spending by employees of the businesses stimulated by direct and indirect expenditures.
- The **total economic impact** equals the sum of the direct, indirect, and induced economic impacts.

We undertook a previous assessment of the TADA economic footprint in October 2017 and this study updates the previous analysis by making use of the latest industry data. The previous assessment estimated the economic footprint of TADA members in 2016.

2016 Study methodology

In conducting the analysis of the economic footprint of TADA members in the 2016 Study, we have used the results of the survey completed by participating TADA members in conjunction with secondary data sources to estimate revenues, employment and labour income resulting from operating activities of all TADA members. The survey was sent to all TADA members (representing 960 dealerships) and we have received responses from 74 dealerships, capturing 8% of the association's members. We estimated the employment of TADA members in 2016 to be 45,674, their revenues (or output)

[7] Defined as the value of goods and services used or transformed as inputs by a process of production.

to be $35.7 billion and the labour compensation (including salaries, wages and benefits) to be $2.5 billion. The above figures were estimated using aggregate survey responses scaled by the employment of survey respondents relative to the employment of all TADA members.

When performing an economic impact analysis of a retail operation, it is necessary to recognize the fact that only the gross margin (i.e. sales minus cost of sales) is reflected as revenues produced by that retail operation in the input-output model. Otherwise, we would be attributing revenues generated by the suppliers of that retail operation to the retail operation (i.e. in the case of auto dealers that would mean attributing revenues generated by auto manufacturers to auto dealers). Our analysis fully accounted for this, thus avoiding misallocation of economic activity to the Industry.

2016 Study update methodology

In order to update the analysis completed in the 2016 Study, we have relied on publicly available data sources. Specifically, we have used the increase in the value of new cars sold in Ontario between 2016 and 2018 to estimate the increase in the TADA dealer's GDP between 2016 and 2018.

Jobs impact estimates were updated to 2018 based on the employment increase between 2016 and 2018 in the motor vehicles and parts dealers in Ontario. This adjustment allowed us to estimate the economic footprint of TADA members in 2018.

Such methodology implicitly assumes that the economic structure of TADA members is the same as the wider car dealers industry in Ontario and that there were no significant changes in the economic structure of the Industry between 2016 and 2018. We believe this is a reasonable assumption as TADA dealers represent a large share of the total car dealers market and the structural relationships within the industry have likely not changed significantly in the period of two years. This assumption was validated in discussions with TADA representatives.

4.2. Impact of TADA Members Operating Activities

Using the input-output model, we estimated the total annual economic footprint (i.e., including direct, indirect and induced impacts) generated and facilitated by the TADA members operational spending and employment. The results are summarized in the table below.

Table 1: Economic Impacts of TADA Members' 2018 Operating Activities

Total Operating Activities[8]	Direct	Indirect	Induced	Total
GDP ($ million)	9,621	1.878	2,381	13,881
Jobs (Annual FTE)	44,525	17,887	22,892	85,304
Labour Income ($ million)	2,657	1,095	1,192	4,943
Taxes on Production & Imports ($ million)				1,596
Personal Income Taxes[9] ($ million)		Not available		1,245
Corporate Income Taxes ($ million)				364

Through its direct, indirect and induced impacts, TADA members generated and supproted 85,304 total jobs, $13.88bn of GDP to the Ontario economy. We further estimate a total contribution of $3.21bn in provincial taxes on production and imports, personal income taxes, and corporate income taxes.

[8] Note that all dollar impacts are expressed in 2018 dollars

[9] Since the input-output modelling system only estimates total tax implications for provincial taxes on production and imports, we approximate provincial income and corporate taxes by assuming that the ratio of each of those tax impacts to the production and import tax is the same as the actual ratio of the same taxes collected by the Government of Ontario in 2015 (latest year available). See Statistics Canada Canism Table 384-0047.

5. Wider Economic Benefits of Automobile Dealers

5.1. Environmental Benefits

In addition to the economic impacts assessed in the previous section, TADA member dealers provide broader benefits to Ontario's economy – especially with regard to car maintenance services and facilitating a trusted used cars' market.

Most automobile dealerships are equipped with vehicle repair and maintenance facilities. Due to their affiliations with particular automobile manufacturers, car dealerships generally provide more reliable repair and maintenance services than unaffiliated entities and encourage their clients to undergo maintenance and servicing on a regular basis, which improves the efficacy of the service. The affiliation with particular vehicle's brand also ensures the use of quality parts in the case of a car repair.

The provision of reliable maintenance and repair services using qualified staff, quality parts and systematic maintenance schedule has a positive impact on automobiles' longevity and as ensures vehicles on the road are running at optimal or near optimal performance, which leads to more efficient driving and lessens the impact on the environment. In order to quantify the aforementioned environmental benefits associated with automobile dealerships, we consider an illustrative scenario where auto dealerships do not provide repair and maintenance services. We assume that this would lead to a reduction in the average life span of cars. For the purpose of our illustration, we measure the increase in CO2 emissions for every one year of decline in the average life span of a car currently serviced by TADA members.

To this end, we also consider the fact that over time new cars become more environmentally friendly emitting, on average, 2.5% less CO2 per mile than in a previous year[10]. Thus, on the one hand automobile dealers extend the average lifetime of a car, but on the other newly manufactured cars offer emission efficiency improvements relative to used cars.

Assuming the average car's lifetime of 13 years[11] and a yearly CO2 emissions improvements of 2.5%, we estimate that over a period of 50 years, a car owner would purchase a newly manufactured car 4 times. During those 4 purchase cycles, the production process and mileage driven would lead to emissions of 67.23 metric tons of CO2. If the average car's lifetime would be one year lower (i.e. 12 years instead of 13 years), a car owner would purchase 5 newly manufactured cars with a total 50 years CO2 emission of 68.52 metric tons. We thus estimate that the repair and maintenance services offered by automobile dealers leads to an average CO2 emission reduction of 1.29 metric tons per car owner for each year of a vehicle's life extension.

In addition to providing high quality repair and maintenance services, dealerships facilitate trust in the used car market. The market for used cars is characterized by information asymmetry that can lead to undesirable outcomes from a societal standpoint[12]. Both economic theory and empirical studies demonstrate that reputable dealerships fulfil an important function in facilitating transactions between buyers and sellers by mitigating the problem of asymmetric information.

Without the existence of auto dealerships that mitigate the information asymmetry, many consumers may not feel comfortable acquiring a used car. This may lead to a significant diminution in the size of the used cars market in Ontario.

[10] The 2.5% emissions reduction is based on the UK Department for Transport statistics (Vehicle Licensing Statistics), obtained by taking a yearly average of emissions reduction between 2008 and 2018.

[11] We have assumed that an average car's yearly mileage of 15,000 and a total lifespan of 200,000 miles.

[12] George Akerlof developed a theory which explains the above issue in his seminal article "The Market for Lemons: Quality Uncertainty and the Market Mechanism". The basic argument of Akerlof's paper is the following. In general, buyers of used cars cannot easily tell apart good cars, or 'peaches', from malfunctioning cars, or 'lemons'. Sellers of used cars, on the other hand, generally have full information about the quality of used cars in their pool and thus know the number of peaches and lemons they aim to sell. This asymmetric information between sellers and buyers of used cars can bring about market failure to the extent that the entire used cars market breaks down.

5.2. Community Engagement

TADA is significantly involved in community engagement. Through its “Career Start” education program, TADA collaborates with a variety of colleges, universities and secondary schools to raise awareness with regard to career opportunities within the industry. For instance, this Education Program has initiated a new mentorship program targeting young women since 2018. Its official name is “Women in Automotive Mentoring Program”. This program was a one-year pilot project designed to connect post-secondary students with automotive industry leaders who can offer support and advice while encouraging young women to their skill regarding retail auto industry[13]. In addition to this, TADA has launched a program called “CarsandJobs.com”. Its role is to notify job opportunities to job seekers and support students throughout several ways (e.g. Scholarships, Co-op education, etc.). It also makes the industry more efficient with better labour market matching.

In addition, the education program provides financial support to students and graduates in automotive programs and associated areas as well as financial awards and bursaries at a number of colleges throughout Ontario. TADA has also initiated a province-wide graduating award for secondary school students who are pursuing an automotive or motive power education.

In terms of its financial contributions TADA has contributed almost $4.4 million in charitable donations between 2008 and 2018, including $2 million to the Ronald McDonald House in Toronto, over $1 million to the Holland Bloorview Kids Rehabilitation Hospital Foundation and over$600,000 to Prostate Cancer of Canada.

TADA is also supporting the “Rock the Road” campaign which aims to raise research funds and awareness in the fight against Prostate Cancer. Since 2013, the raffle has raised $2.5 million of funds to invest into the prevention, detection and treatment of prostate cancer. The 2020 draw prizes, two sports cars with a combined value of $152,000, are being donated by TADA.

From an economic perspective, this type of community involvement fosters the development of social capital and community cohesion. As Robert Putnam (2000) shows, social capital, defined by the OECD as networks together with shared norms, values and understandings that facilitate co-operation within or among groups, brings about tangible social and economic benefits. Formal and informal networks lower search costs, promote the exchange of information and knowledge and enhances economic achievements (Fukuyama 1995).

Empirical studies indicate that higher social capital is associated with better health outcomes, better educational achievement, greater income equality and improved child welfare (Wilkinson 1996, Kawachi et al. 1997, Cote and Healy 2001, Helliwell 2003). Economists also found a robust association between social cohesion and economic wellbeing in the form of both household income and aggregate economic growth (Knack and Keefer 1997, Zak and Knack 2001, Narayan and Pritchett 1999, Grootaert 2001, Tabellini 2005, Knowles and Weatherston 2007).

[13] https://tada.ca/introducing-the-women-in-automotive-mentoring-program/

Appendix A: Assumptions

The conclusions expressed and information presented in this report rely on the following major assumptions:

- Completeness, reliability, and accuracy of survey responses collected from TADA members.
- Reliability and accuracy of external sources used in this report. All external sources are listed in **Appendix B**.
- It is reasonable to extrapolate TADA members' aggregate metrics including revenues and labour compensation using the aggregate employment data from TADA along with employment reported by survey respondents.
- Out of all 51 TADA survey respondents, 37 provided 2016 yearly financials and 12 provided 2015 figures (2 respondents did not specify a year). For completeness' sake, it was assumed that all responses can be treated as if relating to 2016 and thus the 2015 financial data of respondents approximates their respective 2016 data well.
- The Statistics Canada Input Output table is a reasonable representation of the underlying relationships in the economy during the relevant periods modelled in the report.
- In order to adjust the estimated economic impacts of TADA members in 2018 using 2016 results, it is reasonable to apply to the real increase in new cars sold in Ontario between 2016 and 2018 to adjust the economic impacts on GDP, labour income and tax impacts, as well as employment increase in the Motor Vehicle and Parts Dealers industry between 2016 and 2018 to adjust the employment impacts.

We note that significant deviations from the above listed major assumptions may result in a significant change to our analysis.

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Appendix C: Study limitations

Data limitations: PwC has relied on the information provided by TADA members regarding the operating expenses of companies' business operations in Ontario. PwC has relied upon the completeness, accuracy, and fair presentation of all information and data obtained from participating TADA members and the various data sources set out in Appendix B, which were not audited or otherwise verified. The findings in this report are conditional upon such completeness, accuracy, and fair presentation, which have not been verified independently by PwC. Accordingly, we provide no opinion, attestation or other form of assurance with respect to the results of this study.

Where the information or data provided is not sufficient to conduct the analysis that has been requested, we have made assumptions, as set out in **Appendix A**.

Receipt of new data or facts: PwC reserves the right at its discretion to withdraw or make revisions to this report should we receive additional data or be made aware of facts existing at the date of the report that were not known to us when we prepared this report. The findings are as of January 2020 and PwC is under no obligation to advise any person of any change or matter brought to its attention after such date, which would affect our findings.

Input-output analysis: Input-output analysis (a model used to estimate economic impacts) does not address whether the inputs have been used in the most productive manner or whether the use of these inputs in this industry promotes economic growth by more than their use in another industry or economic activity. Nor does input-output analysis evaluate whether these inputs might be employed elsewhere in the economy if they were not employed in this industry at the time of the analysis. Input-output analysis calculates the direct, indirect and induced economic impacts that can reasonably be expected to affect the economy based on historical relationships within the economy. This analysis does not take into account fundamental shifts in the relationships within the economy that may have taken place since the estimation of inter industry relationships by Statistics Canada, nor shifts that may take place in the future.

Use limitations: This report has been prepared solely for the use and benefit of, and pursuant to a client relationship exclusively with TADA. We understand that the TADA intends to make our report publicly available upon its submission. TADA can release this report only in its entirety and any commentary or interpretation in relation to this report that the TADA intends to release to the public either requires PwC's written consent or has to be clearly identified as the Associations' own interpretation of the report. PwC accepts no duty of care, obligation or liability, if any, suffered by TADA or any third party as a result of an interpretation made by TADA of this report.

Further, no other person or entity shall place any reliance upon the accuracy or completeness of the statements made herein. In no event shall PwC have any liability for damages, costs or losses suffered by reason of any reliance upon the contents of this report by any person other than TADA.

This report and related analysis must be considered as a whole: Selecting only portions of the analysis or the factors considered by us, without considering all factors and analysis together, could create a misleading view of our findings. The preparation of our analysis is a complex process and is not necessarily susceptible to partial analysis or summary description. Any attempt to do so could lead to undue emphasis on any particular factor or analysis.