

CSTEC

Canadian Skills Training and Employment Coalition



PRISM

ECONOMICS AND ANALYSIS



APRC
Automotive Policy
Research Centre

Provincial AUTOMOTIVE MANUFACTURING PROFILE: Ontario

The project is a collaboration of the Canadian Skills Training and Employment Coalition, Prism Economics and Analysis, and the Automotive Policy Research Centre.

October 2019

Funded by the
Government
of Canada | **Canada** 

This report was prepared for the Auto Labour Market Information (LMI) Project.

The goal of the Auto LMI project is to help stakeholders better understand the automotive labour market. The Project will create industry-validated, regional, occupational supply and demand analyses and forecasts and skill profiles for skilled trades and other key skilled occupations in the broader automotive sector including vehicle assemblers, parts manufacturers and technology companies that supply the industry. The project will also examine various labour market trends in the sector and facilitate discussions among stakeholders about how to address any forecasted skills shortages and other labour market challenges. The planned outcome of the project is enhanced regional LMI that will support colleges, employers, policy makers and other stakeholders in taking practical steps to address skills shortages and other labour market challenges in the automotive sector.

This project is funded by the Government of Canada's Sectoral Initiatives Program. The opinions and interpretations in this publication are those of the author(s) and do not necessarily reflect those of the Government of Canada.

Canadian Skills Training and Employment Coalition, cstec.ca

Prism Economics and Analysis, prismeconomics.com

Automotive Policy Research Centre, automotivepolicy.ca

October 2019

Table of Contents

Executive Summary	5
Project Background	6
Introduction.....	9
Provincial Economy.....	9
Provincial Labour Considerations.....	12
Population, Age Distribution and Provincial Diversity.....	12
Educational Attainment	16
Labour Market Activity	17
Provincial Automotive Manufacturing Analysis.....	19
Profile of Automotive Manufacturing Employers	23
Automotive Manufacturing Labour Market	26
Competition from Other Industries	29
Automotive Manufacturing Demographics.....	30

This page has been left blank for double-sided copying.

Executive Summary

Ontario is the engine of Canada's economy, accounting for nearly 40% of total national GDP each year between 1997 and 2017. In particular, its automotive manufacturing industry accounted for between 90% and 95% of national automotive manufacturing GDP. Not only is Ontario a key driver of Canada's automotive manufacturing industry, automotive manufacturing is also an important component of the provincial economy. As of 2017, motor vehicle manufacturing (including both assembly and parts manufacturing) represented 2% of Ontario's total GDP, equivalent to over \$14 billion, and 2% of the province's total workforce.

Ontario was home to over 14.3 million people as of 2018, accounting for just under 39% of Canada's total population. The population has grown by 28% since 1997, by 12% since 2007 and by 6% over the past five years. Ontario's population is expected to reach 14.7 million by 2020 and surpass 15.0 million by 2022. While the provincial population will continue growing beyond that point, surpassing 16.0 million by 2026 and 17.0 million by 2030, the annual population growth rate is projected to decline slightly over the coming decade. Population growth in Ontario has largely been driven by migration over the past two decades. Net migration accounted for well over 70% of the total change in the province's population in 2018, the largest share seen in the province since 2002. Ontario's reliance on migration to drive population growth is expected to increase over the coming decade. The proportion of the total provincial population change accounted for by net migration is expected to reach 80% by 2020 and nearly 90% by 2030 based on current trends. The province is expected to see an aging trend in its population, with the share of the population aged 65 years and over projected to increase from 16% in 2016 to 22% by 2030. The provincial unemployment rate, or the proportion of unemployed person in the labour force, was relatively low at 5.6% in 2018, just below the national average of 5.8%.

Ontario's automotive manufacturing industry grew substantially between 2013 and 2016 as a result of investments by Fiat Chrysler Automobiles (FCA), Toyota, Honda and a large network of Canadian and international suppliers. New motor vehicle sales in Ontario reached their highest levels in the past two decades in 2018, with over 860,000 units sold. However, Ontario had a trade deficit of \$16.8 billion in automotive products in 2018 due to a rapidly shrinking trade surplus in assembled vehicles and a consistently large deficit in parts.

Total automotive manufacturing employment in Ontario, including Original Equipment Manufacturer (OEM) assembly and parts plants and independent parts suppliers, was an estimated 133,300 workers across 515 establishments in 2018, based on findings from industry contacts, company websites, industry literature and other sources of publicly available data. As of 2018, five OEMs (FCA, Toyota, General Motors, Ford, Honda) assembled light vehicles across eight facilities in the province, employing an estimated 32,100 workers. Parts manufacturing in Ontario occurs at both OEM-operated facilities and through independent parts suppliers. In 2018, OEM parts employment totaled 5,000 workers, compared to 96,200 workers employed by independent suppliers. The largest automotive manufacturing-related employers in the province include Magna International, Linamar and Martinrea along with the five OEMs.

Project Background

The automotive industry is critically important to Canada's economic well-being. Despite a declining trend over the past decade, Canada still produced over 2 million vehicles in 2018. Furthermore, vehicle assembly plants have the capacity to build over 2.3 million vehicles annually. The industry directly accounted for over 8% of Canada's manufacturing GDP and 17% of Ontario's manufacturing GDP in 2017. The industry also contributes to Canada's economy through expenditures on capital, which totaled \$1.7 billion as of 2017, and research & development, where businesses spent an additional \$265 million in 2018. However, expenditure levels in both cases have dropped off since the early to mid-2000s. Finally, Canada's automotive industry is deeply tied to the global market through foreign trade. The majority of vehicles produced in Canada are exported, mostly to the United States. The U.S. is also the top export destination for automotive parts and components manufactured domestically. Canada also imports vehicles and parts, mainly from the U.S. and Mexico but also from Japan, Germany, South Korea and China. Although Canada has historically maintained a trade surplus in vehicles despite a trade deficit in parts it faced a deficit in both sub-sectors in 2018, leading to a total automotive trade deficit of \$24.6 billion.

The automotive industry is one of the key drivers of innovation in the advanced manufacturing sector and it increasingly spurs innovation across a wide range of industries. In addition to developing new manufacturing technologies and production systems that will increase productivity and competitiveness, the industry is developing innovative solutions to challenges in vehicle connectivity and advanced driver assistance systems and is breaking new ground in vehicle light-weighting and alternative propulsion to reduce greenhouse gas (GHG) emissions. A recent automotive advisory report outlined how the industry can achieve its future goals. It identified talent and skills development as key to industry's success going forward and recommended a detailed analysis of the industry's workforce¹. Similarly, the Canadian Automotive Partnership Council (CAPC) encouraged industry to work with government and its agencies to invest in both current and future workforces in its most recent "Call for Action" report².

Since talent and skills will be a driving force in enabling this innovation and facilitating the industry's future prosperity, it is important to undertake a comprehensive analysis of the workforce required to design and build the new technology intensive vehicles, parts, and systems of today and tomorrow. Accordingly, the Canadian Skills Training and Employment Coalition (CSTEC) and the Automotive Policy Research Centre (APRC) are undertaking a comprehensive labour market analysis of the automotive industry and its supply chain. The project is funded by the Government of Canada's Sectoral Initiatives Program (SIP) and will be completed over a three-year period.

Under the North American Industry Classification System (NAICS) automotive manufacturing is traditionally defined as being comprised of two main sub-sectors: motor vehicle assembly (NAICS 3361), which includes chassis manufacturing, and motor vehicle parts manufacturing (NAICS 3363). These sub-sectors directly employ a combined 125,000 Canadians, based on data collected through the 2016 Census. However, this definition of the industry understates the workforce because it excludes establishments that have been misclassified by Statistics Canada as belonging to a non-automotive NAICS code. Misclassification occurs because many of these establishments dedicate only a portion of

¹ Tanguay, "Drive to Win"

² Canadian Automotive Partnership Council (CAPC), "A Call for Action: II"

their output to automotive-related activities and are not always present within the automotive supply chain³. A 2017 report by the APRC profiling the automotive manufacturing industry in Canada identified over 200 automotive parts manufacturing establishments that were assigned a NAICS industry code other than 3361 or 3363⁴. The APRC's estimates of automotive manufacturing employment, which supplemented Statistics Canada data with establishment-level estimates for businesses that have been misclassified, placed the industry's workforce at over 140,000 people as of 2016.

Rather than limiting automotive manufacturing to Statistics Canada's two main automotive manufacturing NAICS codes, this project will instead broaden the definition of the sector to include producers in the supply chain that have been classified in non-automotive industries. This broader definition of automotive manufacturing will include establishments in the following categories:

1. **OEM Vehicle Assembly** – Car and light-duty truck assembly plants owned by Original Equipment Manufacturers (OEMs) including Ford, Fiat Chrysler Automobiles (FCA), Toyota, Honda and General Motors.
2. **OEM Parts Suppliers** - Motor vehicle parts and components manufacturing plants owned by OEMs. These include facilities that produce internal combustion engines, transmissions, cast wheels and other structural metal components, and plastic or composite interior or exterior trim and mouldings.
3. **Primary Independent Parts Suppliers** – Establishments whose primary purpose is to supply parts and components or provide value-added services (e.g. sub-assembly, sequencing) to the supply chain of OEMs.
4. **Diversified Independent Parts Suppliers** – Establishments that supply OEMs or primary parts suppliers but who also supply a number of other industries.
5. **Automotive Tooling and Automation** – Establishments that provide machine tools, dies, moulds and/or automation equipment (e.g. welding cells, presses, complete assembly lines) to OEMs and parts suppliers.
6. **Bus and Heavy Truck** – Establishments that manufacture buses, medium-duty trucks and/or heavy-duty trucks, or whose primary purpose is to supply parts and components to bus and heavy truck manufacturers.
7. **Automotive Technology** – Establishments that build or develop automotive technologies, including those that are included in the vehicle (e.g. embedded software), in the production process (e.g. systems that monitor the assembly line) and/or in infrastructure (e.g. electric vehicle charging stations).
8. **Raw Materials** – Establishments that are primarily engaged in the production and processing of raw materials (e.g. steel, rubber, glass) used in automotive manufacturing.

It should be noted that while some establishments could be included within more than one of these categories, they are ultimately assigned to only one. Establishments are classified based on the research and expertise of the project team.

³ Sweeney & Mordue, "The Restructuring of Canada's Automotive Industry, 2005-2014"

⁴ Sweeney, "A Profile of the Automotive Manufacturing Industry in Canada, 2012-2016"

The following industries will be included as part of the broader definition of the sector, in addition to the two main automotive manufacturing NAICS codes:

- Paint, coating and adhesive manufacturing (NAICS 3255)
- Plastic product manufacturing (NAICS 3261)
- Rubber product manufacturing (NAICS 3262)
- Glass and glass product manufacturing (NAICS 3272)
- Iron and steel mills and ferro-alloy manufacturing (NAICS 3311)
- Steel product manufacturing from purchased steel (NAICS 3312)
- Foundries (NAICS 3315)
- Forging and stamping (NAICS 3321)
- Cutlery and hand tool manufacturing (NAICS 3322)
- Architectural and structural metals manufacturing (NAICS 3323)
- Hardware manufacturing (NAICS 3325)
- Machine shops, turned product, and screw, nut and bolt manufacturing (NAICS 3327)
- Coating, engraving, cold and heat treating and allied activities (NAICS 3328)
- Computer and peripheral equipment manufacturing (NAICS 3341)
- Communications equipment manufacturing (NAICS 3342)
- Semiconductor and other electronic component manufacturing (NAICS 3344)
- Navigational, measuring, medical and control instruments manufacturing (NAICS 3345)
- Electric lighting equipment manufacturing (NAICS 3351)
- Electrical equipment manufacturing (NAICS 3353)
- Other electrical equipment and component manufacturing (NAICS 3359)
- Architectural, engineering and related services (NAICS 5413)
- Computer systems design and related services (NAICS 5415)
- Management, scientific and technical consulting services (NAICS 5416)
- Motor vehicle and motor vehicle parts and accessories merchant wholesalers (NAICS 415)

One of the central challenges of this project will be to understand the links between companies in these industries and those included in the primary automotive NAICS codes. A two-pronged approach will be used to ensure the broader definition of the sector closely reflects the true profile of the Canadian automotive industry:

1. A bottom up approach will use an establishment-level database to identify individual producers that are involved in the automotive supply chain.
2. A top down approach will use Statistics Canada's input-output tables, which track inter-industry transactions, to better understand the contributions to employment and output that establishments from non-automotive NAICS codes make to the sector.

Preliminary estimates based on this approach indicate the broader automotive manufacturing sector employed roughly 177,000 workers in Canada as of 2015.

Introduction

Ontario’s automotive manufacturing industry grew substantially between 2013 and 2016 as a result of investments by Fiat Chrysler Automobiles (FCA), Toyota, Honda and a large network of Canadian and international suppliers. The industry has been relatively stable since 2016; some firms are growing and making new investments, which offset production curtailments and employment losses as other firms restructure. Ontario’s automotive tooling sector has also grown, as has the province’s automotive technology clusters in Kitchener-Waterloo, the Greater Toronto Area and Ottawa.

This provincial profile includes three main sections. First, a discussion of the provincial economy, including outlooks for GDP. Next, a section outlining labour considerations with respect to the province’s population, demographic characteristics and overall workforce. Finally, an overview of the province’s automotive manufacturing industry, including recent trends, key employers and occupations. Separate profiles have also been prepared for the following regions within Ontario that have a significant automotive manufacturing presence:

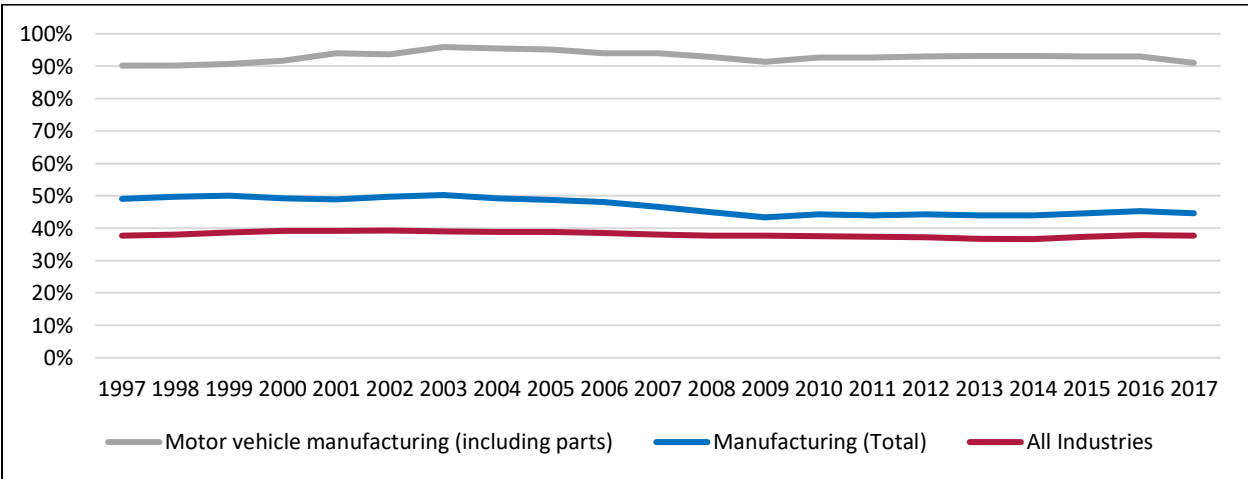
- 1. Eastern Ontario (includes Ottawa, Kingston-Pembroke and Muskoka-Kawarthas)
- 2. Golden Horseshoe (includes Toronto and Hamilton-Niagara Peninsula)
- 3. London/Stratford-Bruce Peninsula
- 4. Windsor-Sarnia

All data presented in this profile are provincial averages. Except where noted, data on the automotive manufacturing industry refers to Statistics Canada’s two main industry codes for motor vehicle assembly (NAICS 3361) and parts manufacturing (NAICS 3363).

Provincial Economy

Ontario is the engine of Canada’s economy, accounting for nearly 40% of total national GDP each year between 1997 and 2017. Over the same period, the province’s manufacturing sector accounted for between 45% and 50% of national manufacturing GDP. Furthermore, its automotive manufacturing industry accounted for between 90% and 95% of national automotive manufacturing GDP.

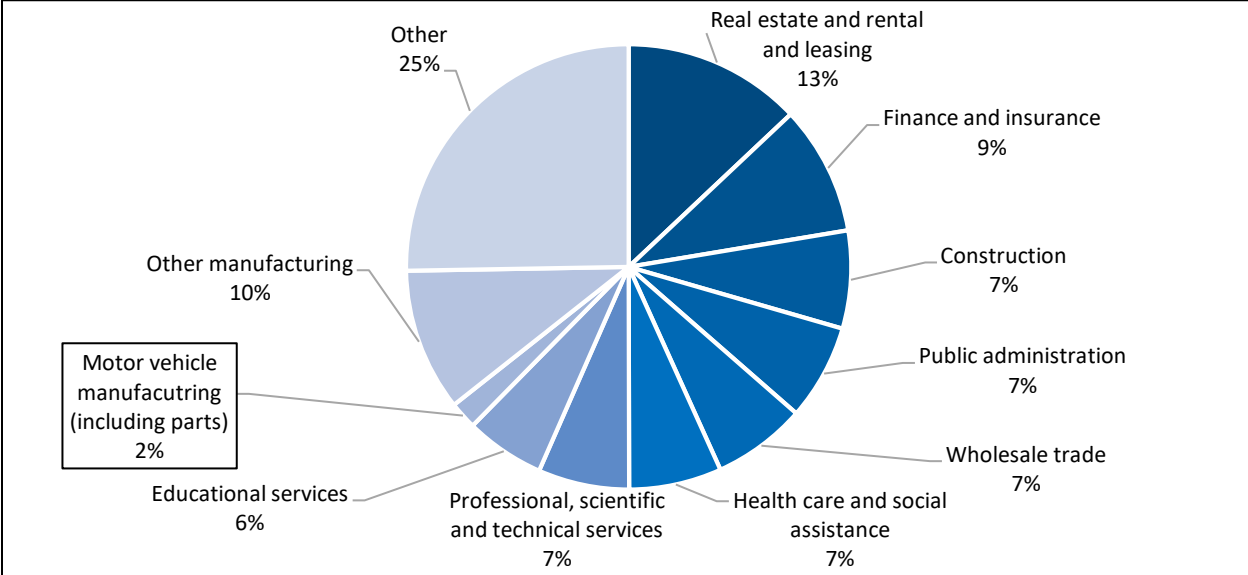
Provincial Shares of National GDP, 1997-2018



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Not only is Ontario a key driver of Canada’s automotive manufacturing industry, automotive manufacturing is also an important component of the provincial economy. As of 2017, motor vehicle manufacturing (including both assembly and parts manufacturing) represented 2% of Ontario’s total GDP, equivalent to over \$14 billion. Manufacturing as a whole accounted for 12% of the provincial economy, second only to real estate (13%) in terms of sectoral contribution. Other sectors making major contributions to the provincial economy included finance and insurance (9%), construction (7%), public administration (7%), wholesale trade (7%), health care and social assistance (7%), professional services (7%) and educational services (6%).

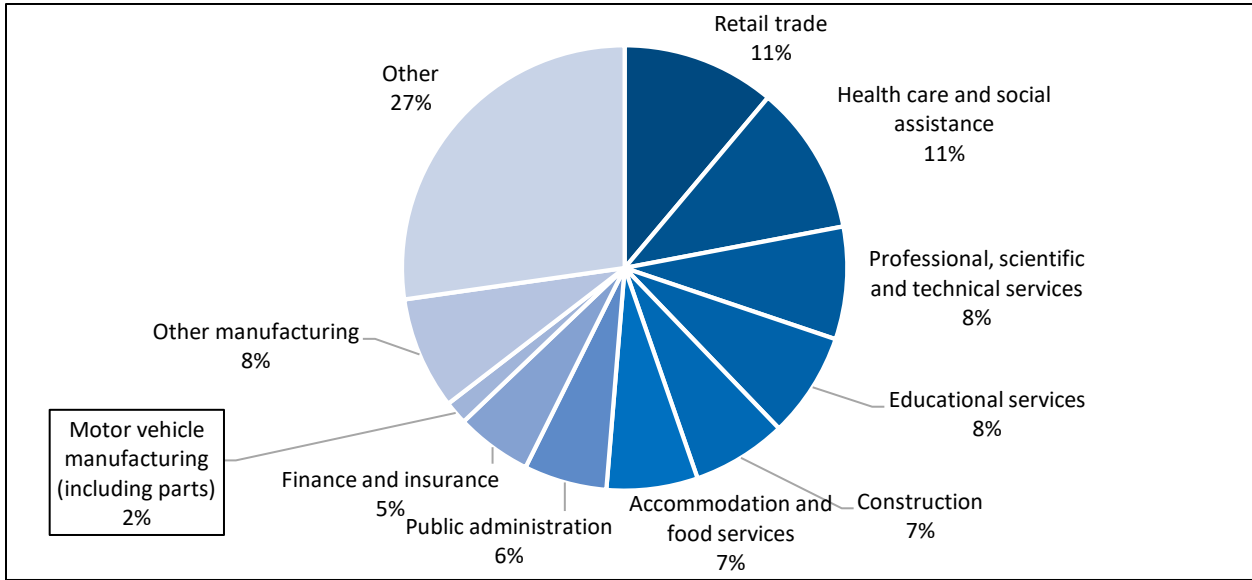
Provincial GDP Shares by Sector, 2017



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

The province’s largest sectors by workforce size reflect the major GDP contributors with some exceptions. For instance, retail trade had the largest provincial workforce of any sector as of 2016, accounting for 11% of Ontario’s labour force. Conversely, real estate, despite accounting for the largest share of the provincial economy, represented just 2% of Ontario’s labour force. Other sectors making major contributions to the provincial workforce included health care and social assistance (11%), professional services (8%), educational services (8%), construction (7%), accommodation and food services (7%), public administration (6%) and finance and insurance (6%).

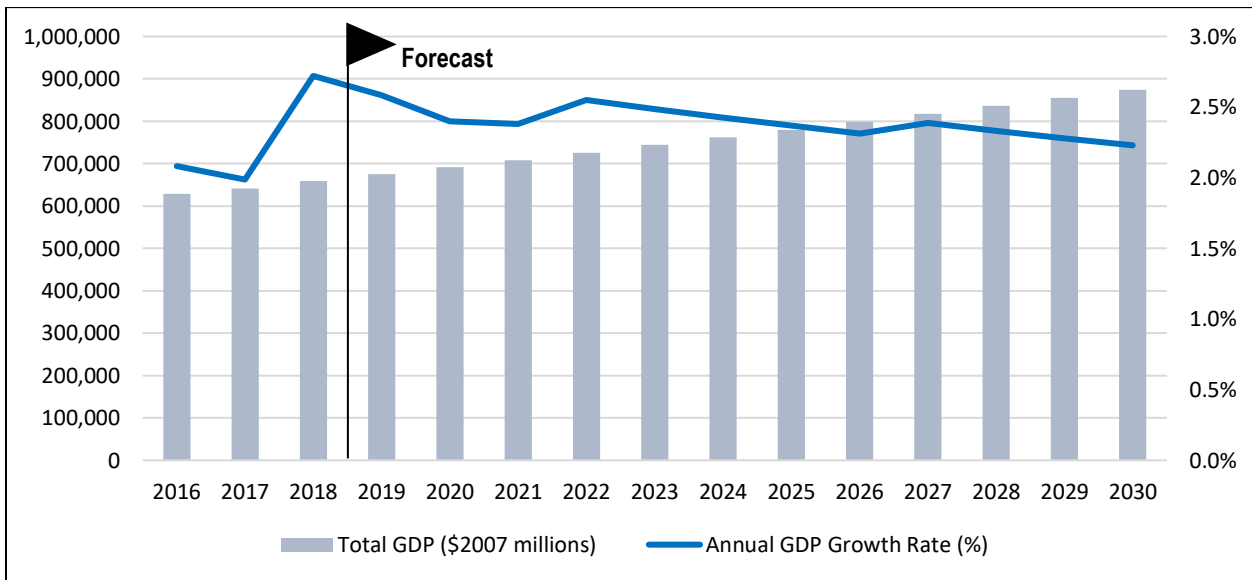
Provincial Labour Force Shares by Sector, 2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Looking ahead, Ontario’s total GDP is expected to grow at an annual rate of at least 2.0% each year through 2030, including 2.6% growth in 2019 and 2.4% growth in 2020. However, the province’s annual GDP growth rate is projected to decline slightly over the period, falling to 2.2% on average during the 2026-2030 period.

Total Provincial GDP Outlook, 2016-2030

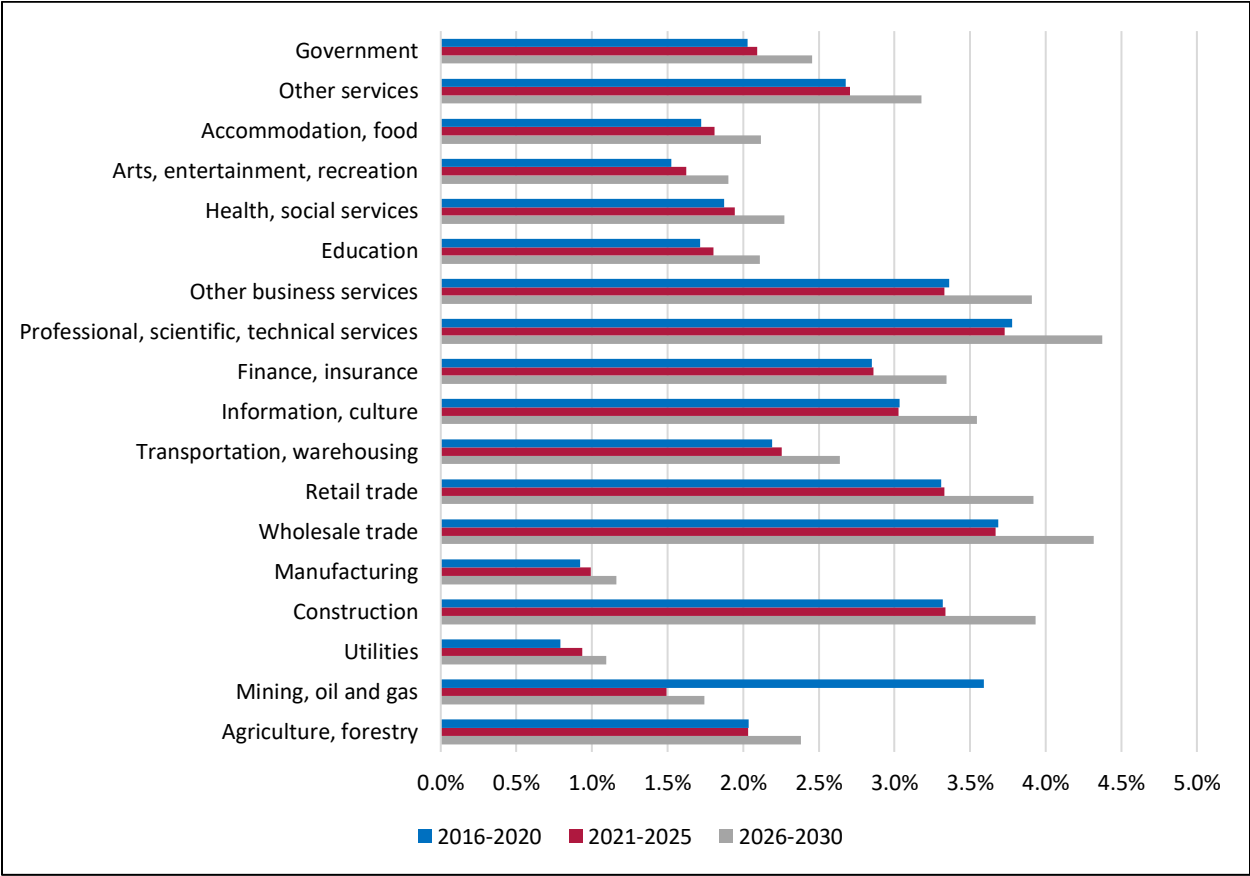


Source: Canadian Skills Training & Employment Coalition, Metro Economics

Segmenting the total GDP growth outlook by sector provides insights into areas of relative strength and weakness for the provincial economy. Sectors expected to see strong GDP growth in the short and medium-terms include professional services, wholesale trade and mining. In contrast, manufacturing

and utilities are both expected to experience relatively weaker GDP growth over the same periods. Long-term projections indicate retail trade and construction, in addition to wholesale trade and professional services, will see strong GDP growth over the latter half of the next decade.

Annual Average Provincial GDP Growth by Sector, 2016-2030



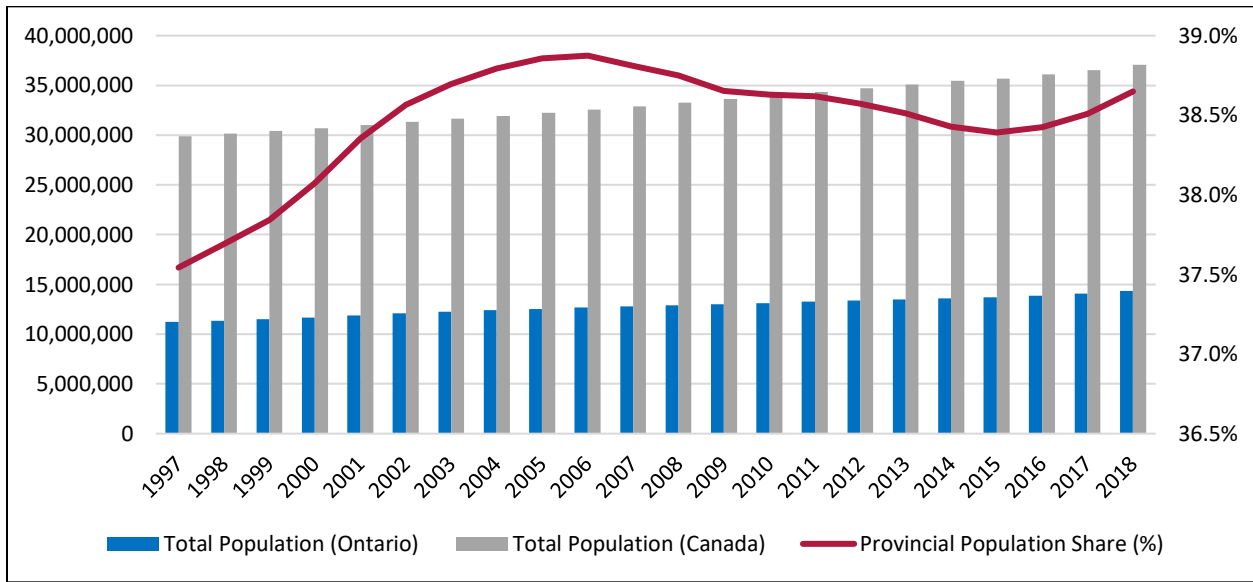
Source: Canadian Skills Training & Employment Coalition, Metro Economics

Provincial Labour Considerations

Population, Age Distribution and Provincial Diversity

Ontario was home to over 14.3 million people as of 2018, accounting for just under 39% of Canada’s total population. The population has grown by 28% since 1997, by 12% since 2007 and by 6% over the past five years. The provincial population share has remained relatively stable over the past two decades, ranging between 37.5% in 1997 and 38.9% in 2015 and 2016. Ontario’s largest population centre is the Toronto Census Metropolitan Area (CMA) which is home to 44% of the provincial population. Other large population centres include Ottawa (8% of the provincial population), Hamilton (6%), the Kitchener-Cambridge-Waterloo area (4%) and London (4%).

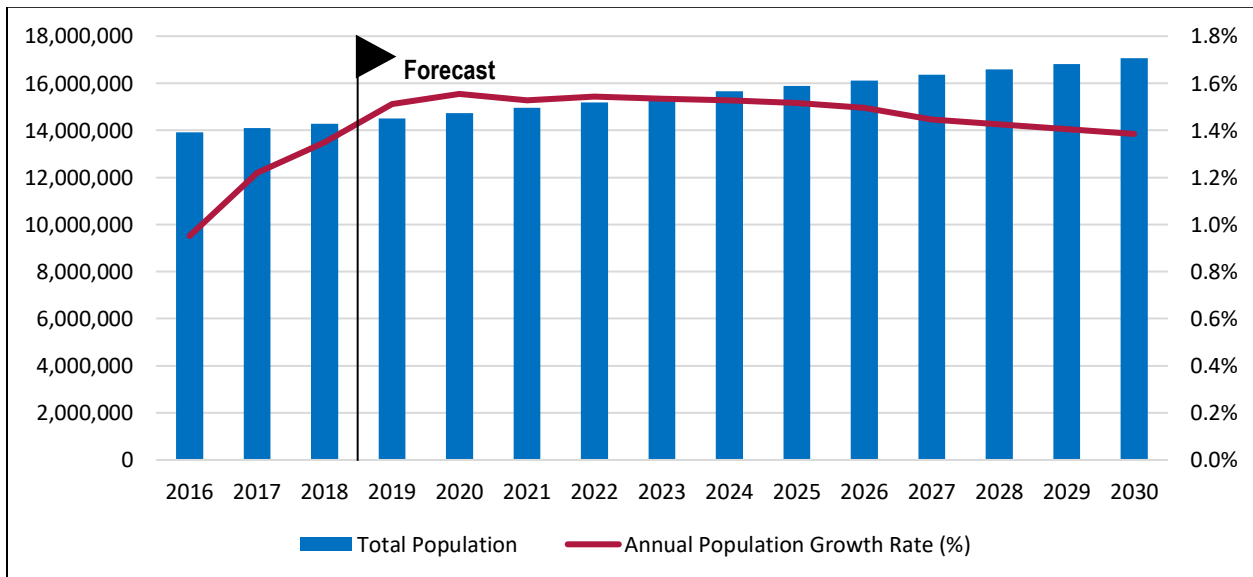
Total Provincial Population Trend, 1997-2018



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Ontario's population is expected to reach 14.7 million by 2020 and surpass 15.0 million by 2022. While the provincial population will continue growing beyond that point, surpassing 16.0 million by 2026 and 17.0 million by 2030, the annual population growth rate is projected to decline slightly over the coming decade. The population is projected to grow by 6.3% over the first half of the next decade, compared to 5.8% growth over the latter half.

Total Provincial Population Outlook, 2016-2030

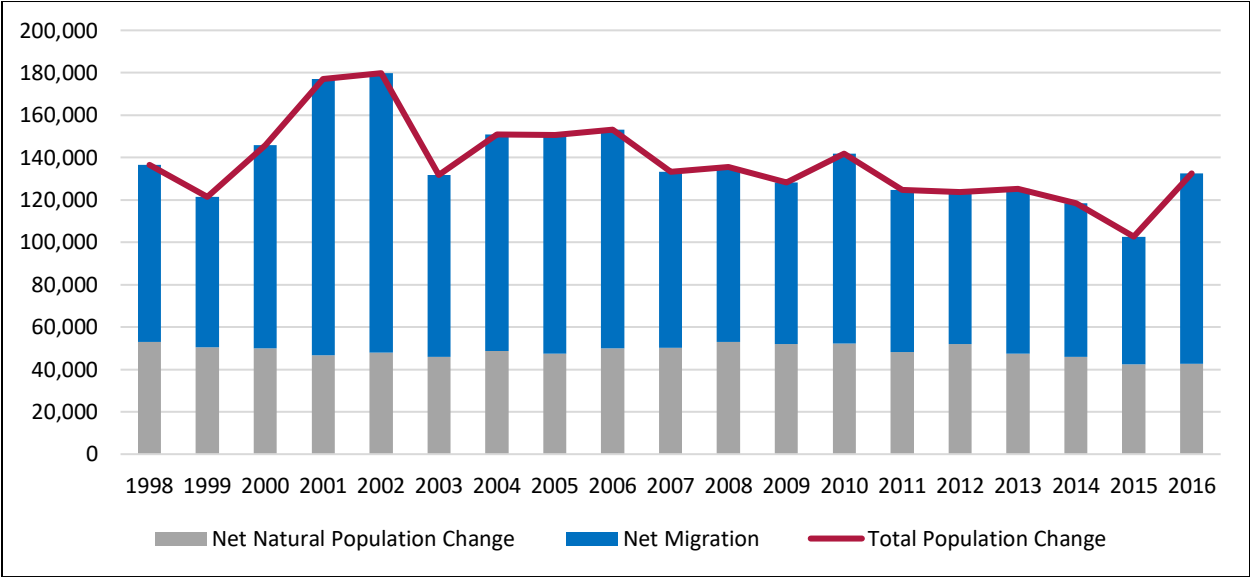


Source: Canadian Skills Training & Employment Coalition, Metro Economics

Changes in total population occur through net natural population change (i.e. the difference between the number of births and deaths in a region) and net migration (i.e. the difference between the number of people moving in and out of a region). Categorizing a region’s total population change based on these components can be useful in identifying whether its future population growth will be driven by natural means or through drawing people in from outside the region.

Population growth in Ontario has largely been driven by migration over the past two decades. Net migration accounted for well over 70% of the total change in the province’s population in 2018, the largest share seen in the province since 2002. Net migration has accounted for at least 58% of the total population change in Ontario since 1998. Moreover, total provincial population change fell noticeably in years where net migration declined, as in 1999, 2003 and 2015.

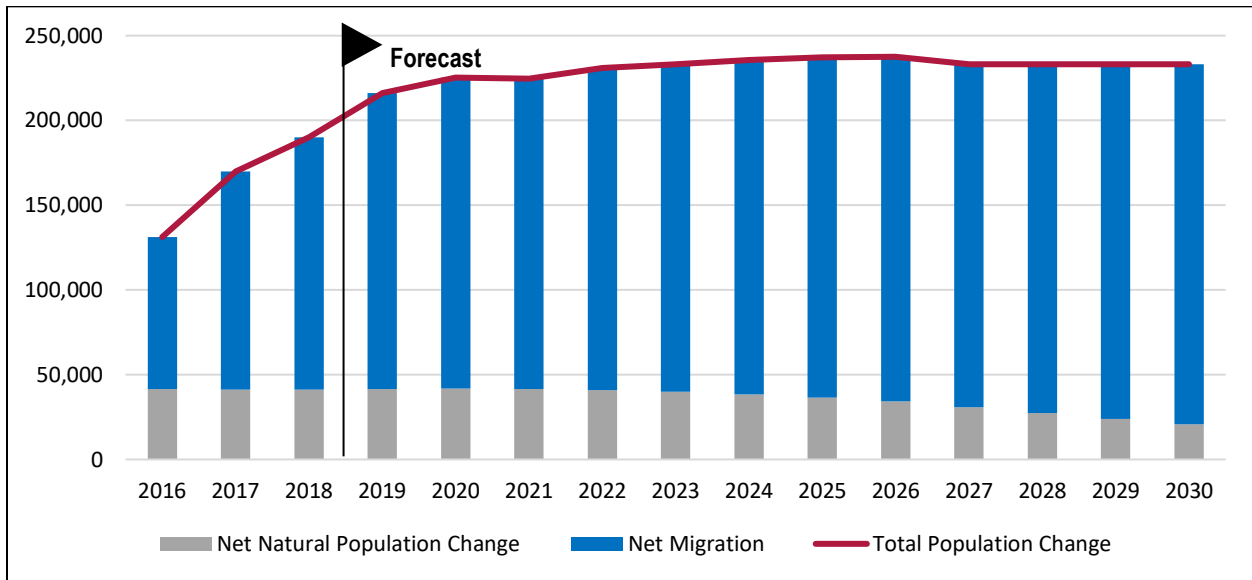
Total Provincial Population Change Trend, 1998-2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Ontario’s reliance on migration to drive population growth is expected to increase over the coming decade. The proportion of the total provincial population change accounted for by net migration is expected to reach 80% by 2020 and nearly 90% by 2030 based on current trends. Natural population change is expected to see its contribution to population growth diminish due to projected declines in the number of births and increasing deaths as a result of an aging population, particularly over the latter half of the next decade. Overall, Ontario is expected to add an average of over 230,000 people to its population annually between 2020 and 2030.

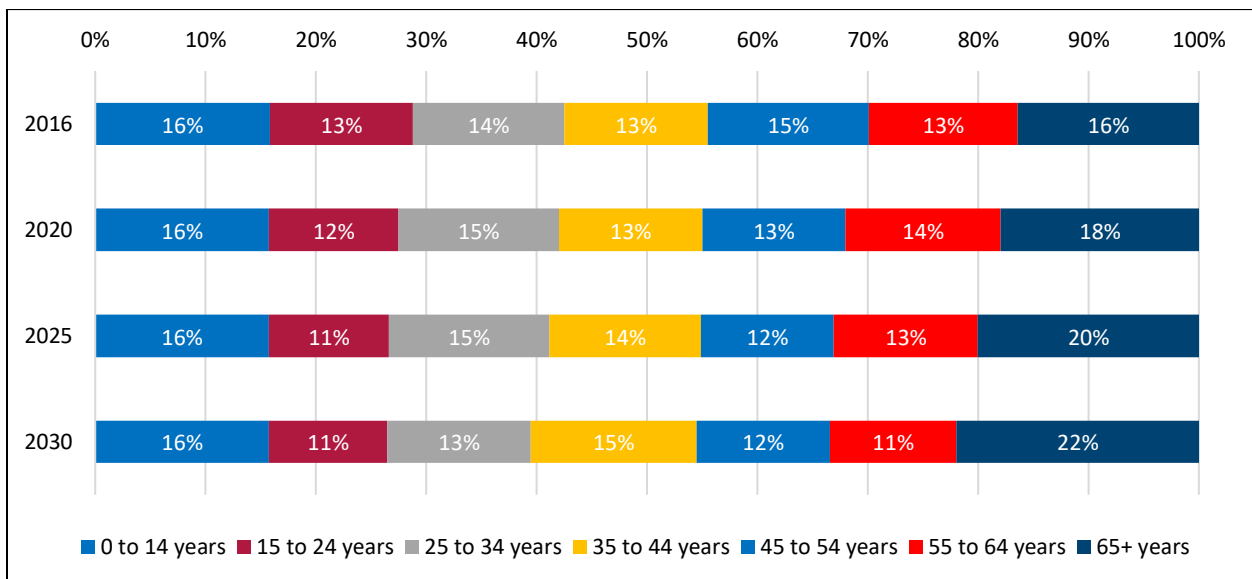
Total Provincial Population Change Outlook, 2016-2030



Source: Canadian Skills Training & Employment Coalition, Metro Economics

The province’s age distribution is also expected to shift over the coming decade. In 2018, an estimated 17% of Ontario’s population were 65 years of age or older; that proportion is expected to rise to 22% by 2030. The province will see concurrent declines in the population shares of the 45-54 and 55-64 age cohorts as part of the aging trend. Among younger age cohorts, the population share of the 15-24 age cohort is projected to fall from 13% to 11% during the period. This is notable as this cohort is traditionally the largest source of new entrants to the labour force.

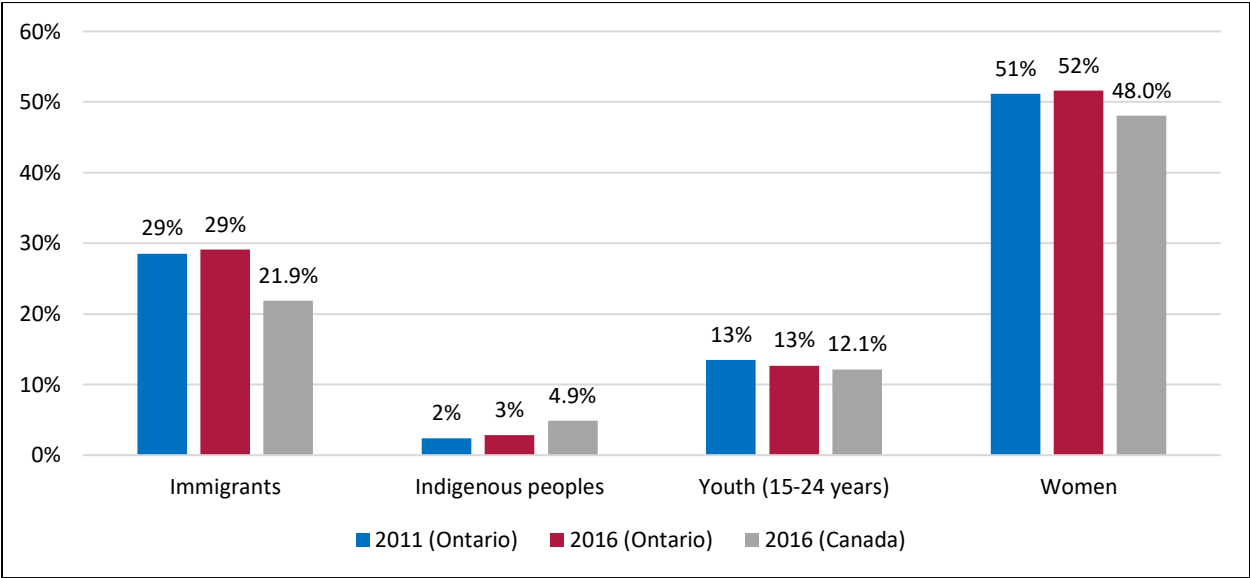
Provincial Population Outlook by Age Distribution, 2016-2030



Source: Canadian Skills Training & Employment Coalition, Metro Economics

Some portions of society are likely underrepresented in the automotive manufacturing workforce. Examining their population shares in the province’s total population can illustrate the magnitude of the untapped potential for the industry. In Ontario, the population shares of these underrepresented groups remained mostly stable between the 2011 and 2016 Census years. A slight uptick was seen in the immigrant share of the population while a slight decline was seen in youth share. These changes reflect trends in the components of provincial population growth and provincial age distribution respectively. Both immigrants and women represent larger shares of Ontario’s population than of Canada’s as a whole. Conversely, the population share of Indigenous peoples in the province is nearly half that of the national average.

Provincial and National Population Diversity, 2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Educational Attainment

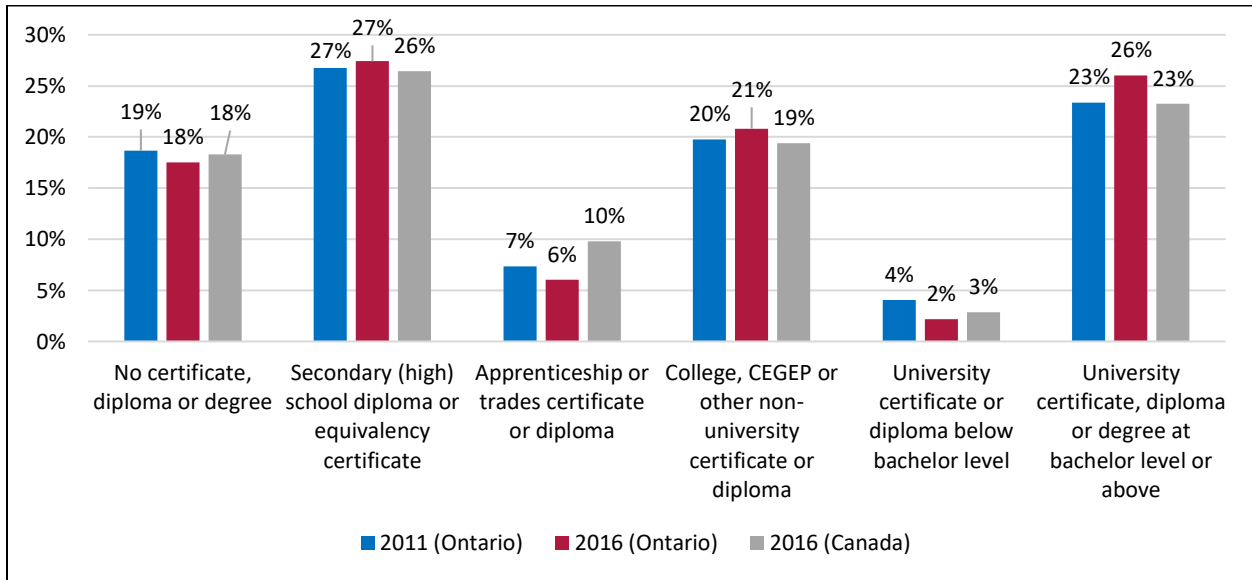
Educational attainment among the population aged 15 years and over provides important insights into workforce qualifications and potential labour supply for the automotive industry. Comparing provincial educational attainment rates over time can help identify what skills the province needs to cultivate internally or attract externally.

Overall, Ontario’s population became more highly educated between the 2011 and 2016 Census years. Ontario saw a decrease in the share of the provincial population with no certificate, diploma or degree. There were also declines in the population shares with apprenticeship or trades certificates and university certificates or diplomas below bachelor level, the latter of which are commonly connected with professional associations in fields such as accounting, banking, insurance or public administration⁵.

⁵<http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=306216&CVD=306220&CPV=2.2.3.1&CST=07042016&CLV=6&MLV=6>

Notably, Ontario’s share of persons with apprenticeship or trades certificates is somewhat lower than the national average as of 2016. Conversely, there were increases seen the provincial population shares of college graduates and university graduates at bachelor level or above. Both shares are also larger than the national average as of 2016.

Provincial and National Educational Attainment, 2016

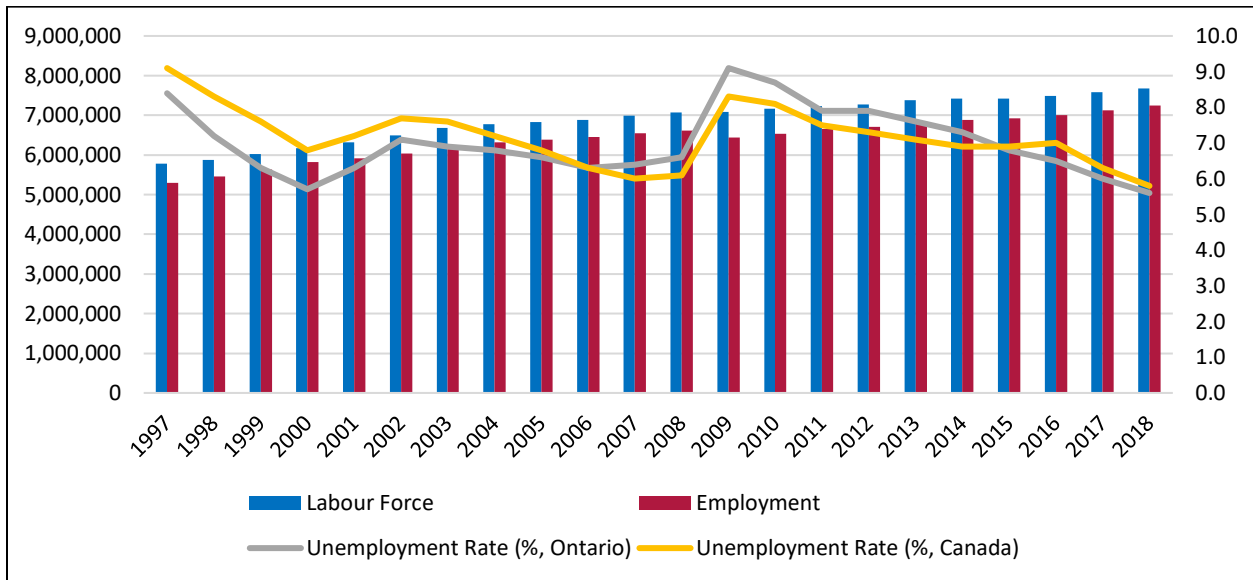


Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Labour Market Activity

There were over 7 million employed persons in Ontario as of 2018, representing 39% of total employment in Canada, while the province’s labour force, including both the employed and those who are unemployed and actively seeking work, totaled over 7.5 million workers. The provincial unemployment rate, or the proportion of unemployed person in the labour force, was relatively low at 5.6%, just below the national average of 5.8%. By comparison, the unemployment rate reached as high as 9.1% provincially and 8.3% nationally in 2009 as a result of the recession.

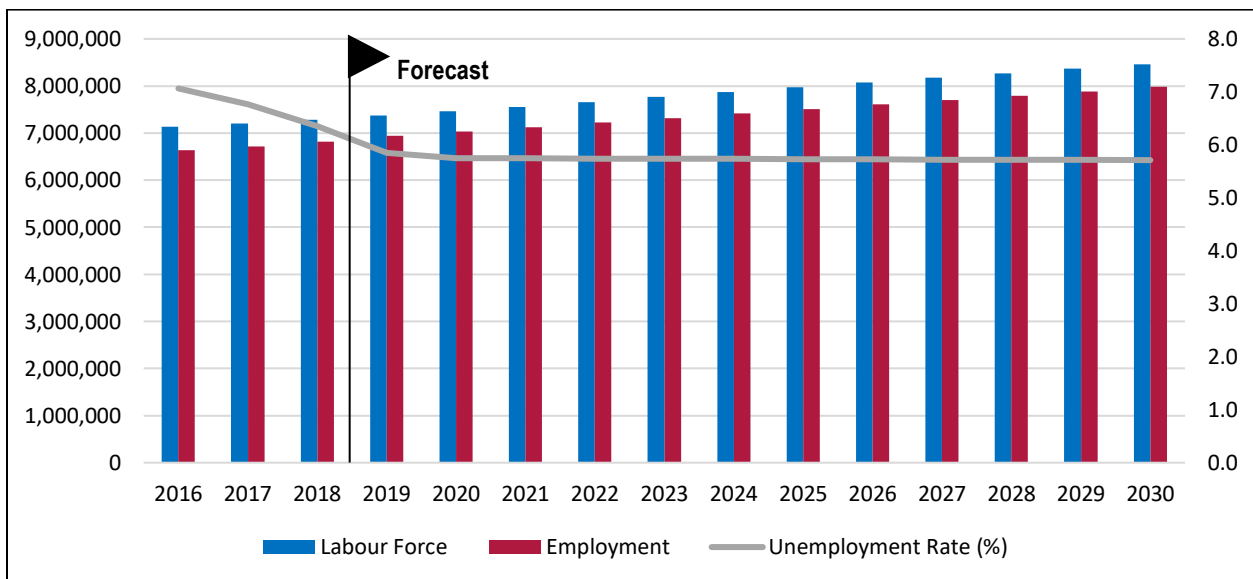
Total Provincial Employment Trend, 1997-2018



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Looking ahead, Ontario is projected to have a labour force of 8.5 million workers and employment of over 8 million by 2030. Provincial employment is expected to grow by 5.5% between 2021 and 2025 and 4.8% between 2026 and 2030. Finally, the provincial unemployment rate is expected to follow recent declines by stabilizing between 5.6% and 5.8% over the coming decade.

Total Provincial Employment Outlook, 2016-2030



Source: Canadian Skills Training & Employment Coalition, Metro Economics

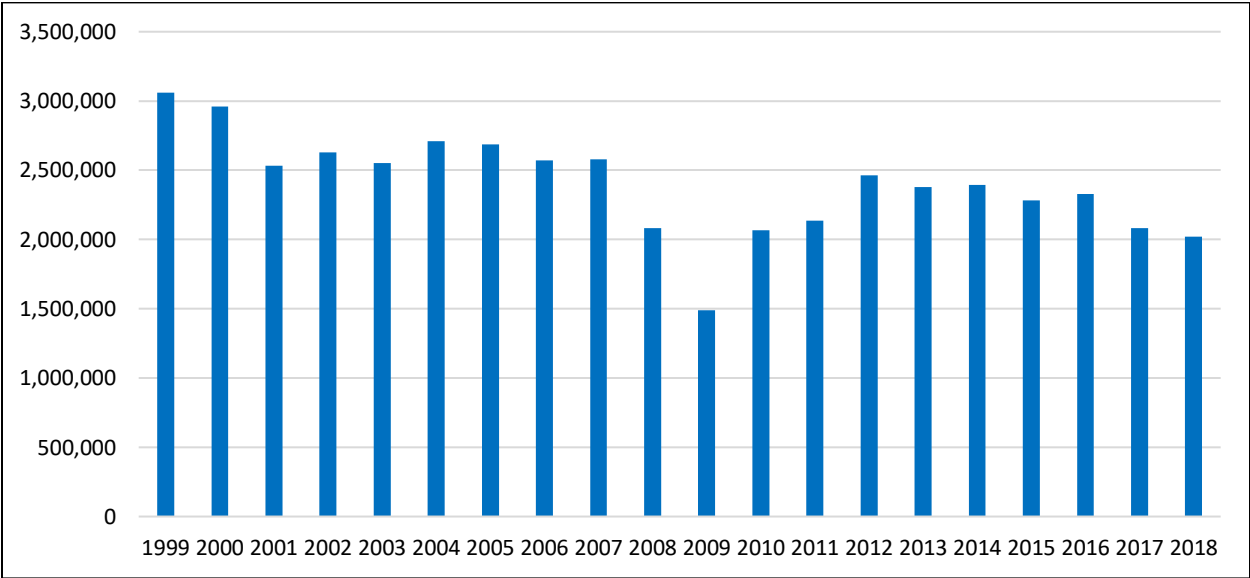
Provincial Automotive Manufacturing Analysis

The following sections use data based on a broader definition of the automotive manufacturing industry where applicable, including the traditional industry codes (NAICS 3361 and 3363) as well as an additional set of industries. Please refer to the Project Background section of this report for more details.

Recent Automotive Manufacturing Trends

Canadian vehicle assembly plants built just over 2 million vehicles in 2018. The number of vehicles manufactured annually in Canada decreased over the past decade as a result of production curtailments at a small number of assembly plants. However, most Canadian assembly plants are currently operating at between 80% and 100% capacity, and several companies recently made significant investments that ensure the long-term viability of their Canadian assembly plants.

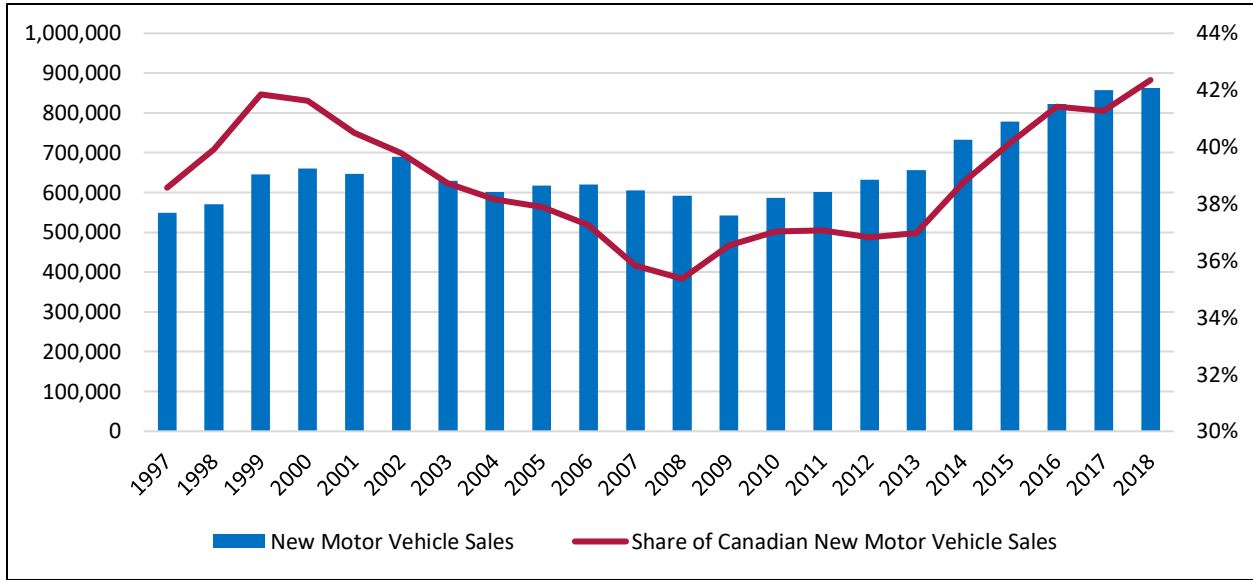
National Motor Vehicle Production (Units), 1999-2018



Source: Canadian Skills Training & Employment Coalition, Automotive News Canada, International Organization of Motor Vehicle Manufacturers

New motor vehicle sales in Ontario reached their highest levels in the past two decades in 2018, with over 860,000 units sold. Sales in Ontario accounted for 42% of Canada’s total new motor vehicle sales last year, the province’s highest share of total sales since 2000. Consumer demand has fully recovered from a swoon during the recession, when sales fell below 550,000 units. While sales were high in 2018, they were virtually identically to 2017, indicating that the cycle of rapid increases seen in the post-recession period may be coming to an end.

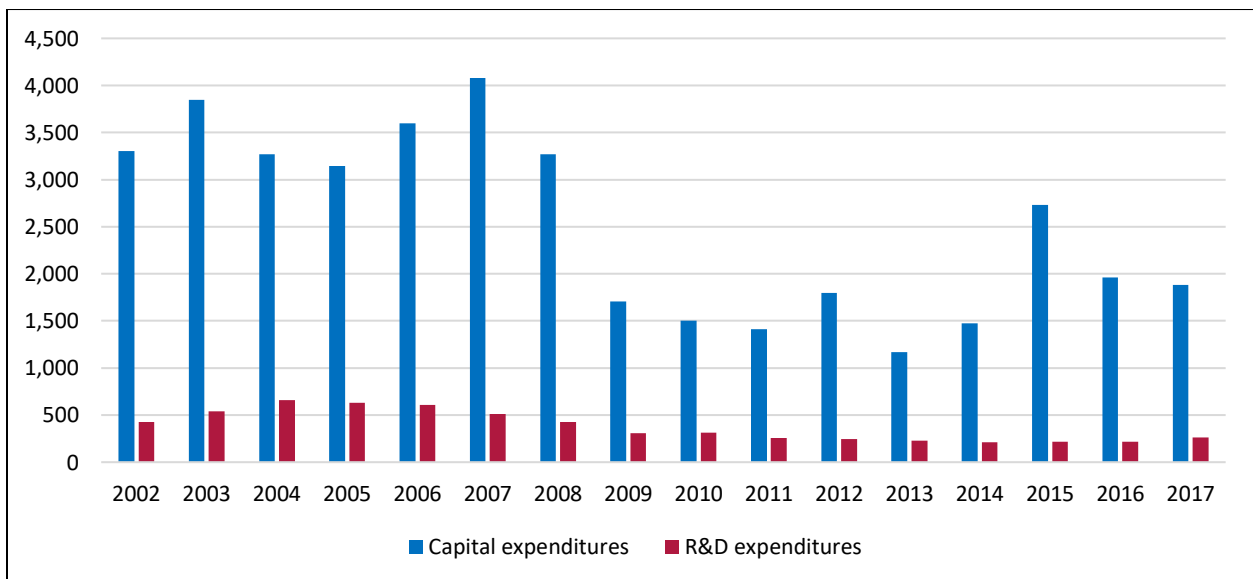
Provincial New Motor Vehicle Sales (Units), 1997-2018



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Canadian automotive manufacturing capital expenditures were just under \$1.9 billion in 2017. Annual capital expenditures averaged just over \$1.7 billion between 2009 and 2017. Most capital expenditures went towards upgrading existing facilities. Canadian automotive OEMs and parts manufacturers spent an additional \$261 million on business enterprise R&D in 2017. R&D spending increased by nearly \$50 million from 2016 as industry stakeholders and policymakers emphasized Canada’s role in the development of software and other new vehicle technologies. However, both capital and R&D expenditures remain far below their levels from the early and mid-2000s.

National Capital and R&D Expenditures (\$ millions), 2002-2017

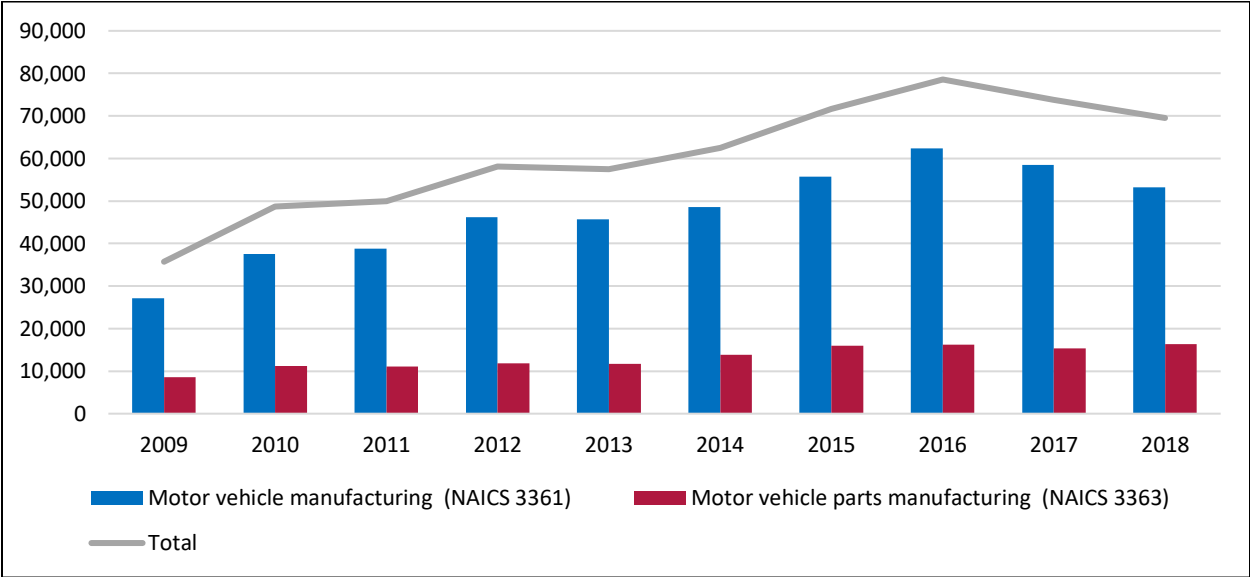


Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Canada’s automotive manufacturing industry is heavily dependent on foreign trade. The vast majority (as high as 85%) of vehicles built in Canada are exported. Nearly all of these vehicles are destined for the United States. While a large proportion of Canadian automotive parts production is destined for vehicle assembly and parts manufacturing facilities in Canada, the bulk of automotive parts exports are also destined for the United States. The United States is also the largest source of Canadian vehicle and parts imports, followed by Mexico. Japan, Germany and South Korea are important sources of vehicle imports, while China and Japan supply parts imports. Overall, Canada had a deficit in the trade of both vehicles and automotive parts in 2018, leading to a record \$24.6 billion deficit in the trade of automotive products. Both the renegotiated trade deal with the United States and Mexico, known as CUSMA, and new trade deals such as CETA and the CPTPP are expected to impact Canada’s trade of automotive products.

Trends in Ontario’s automotive manufacturing trade closely mirror those seen nationally. In 2018, the United States accounted for 97% of vehicle exports and 90% of parts exports from Ontario. Mexico (7%) was the only other country to account for at least 1% of parts exports, while no other country accounted for at least 1% of vehicle exports. Total automotive exports in 2018 had a value of just under \$70.0 billion, three-quarters of which were accounted for by assembled vehicles. Export value has declined for two consecutive years since peaking at \$78.6 billion in 2016.

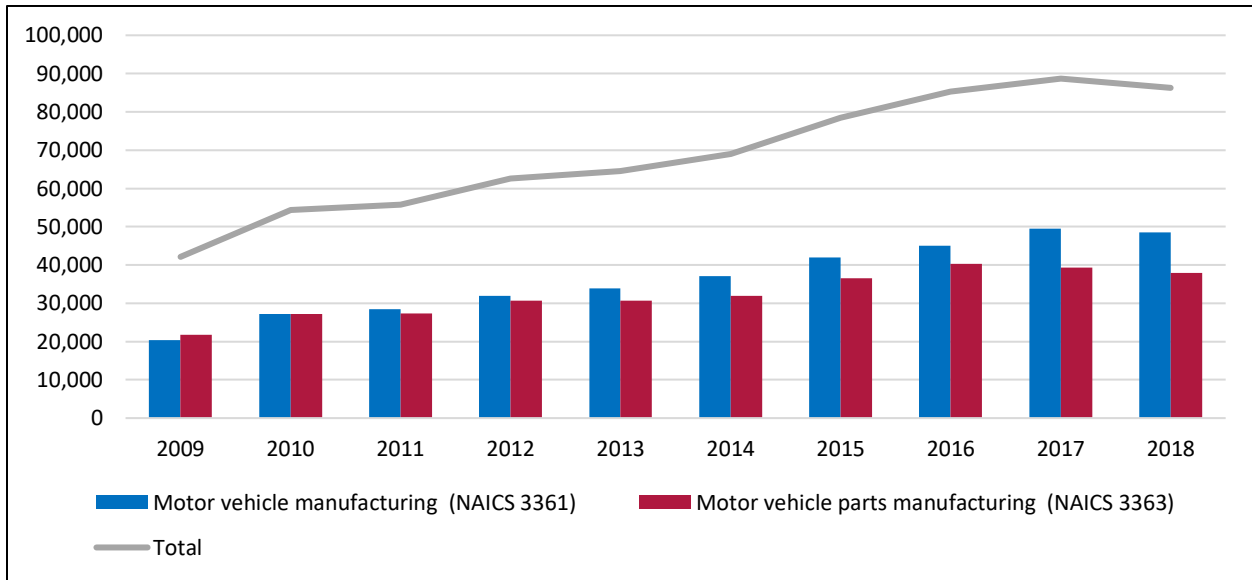
Provincial Automotive Exports (\$ millions), 2009-2018



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Vehicle imports to Ontario came largely from the United States (65%), Mexico (16%), Japan (7%) and South Korea (6%). Parts imports to Ontario were supplied by the United States (68%), Mexico (16%), China (5%) and Japan (4%). Total automotive imports in 2018 were valued at \$86.3 billion, with a much more even split between vehicles (56%) and parts (44%) than was seen for exports. Imports declined slightly from 2017 but have largely seen an increasing trend over the past decade.

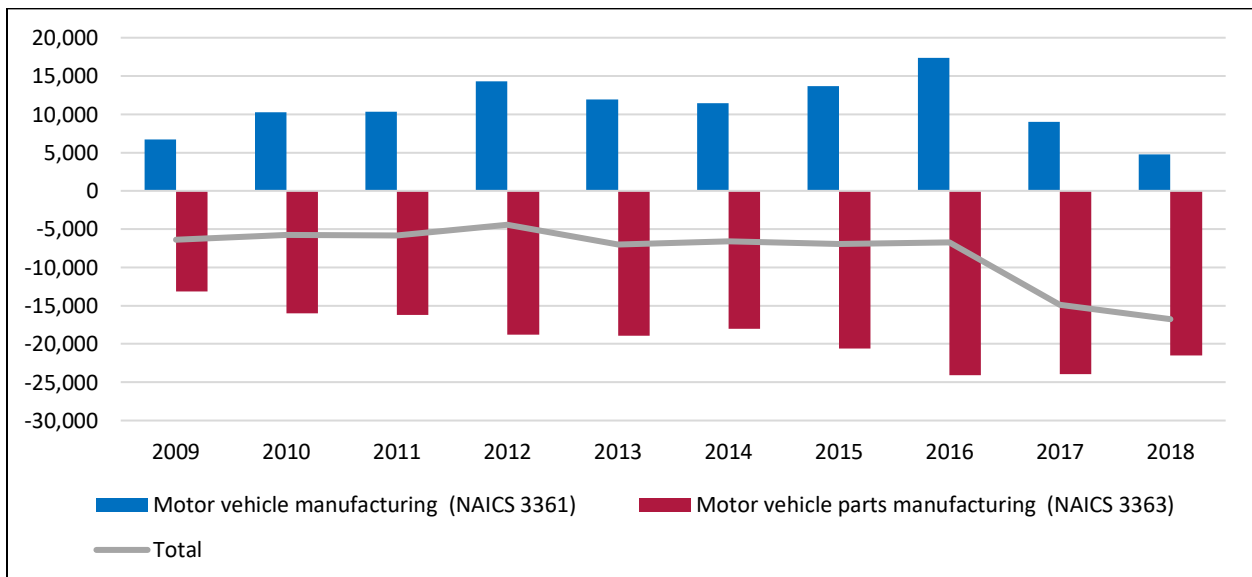
Provincial Automotive Imports (\$ millions), 2009-2018



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Overall, Ontario had a trade deficit of \$16.8 billion in automotive products in 2018. Ontario has historically had a surplus in the trade of vehicles and a deficit in the trade of automotive parts. While that remained true in 2018 the trade surplus in vehicles was only \$4.7 billion, significantly lower than the \$17.4 billion surplus from 2016 and not nearly enough to counteract the \$21.5 billion trade deficit in parts. The shrinking surplus in vehicles is responsible for the large increase in the provincial trade deficit seen since 2016.

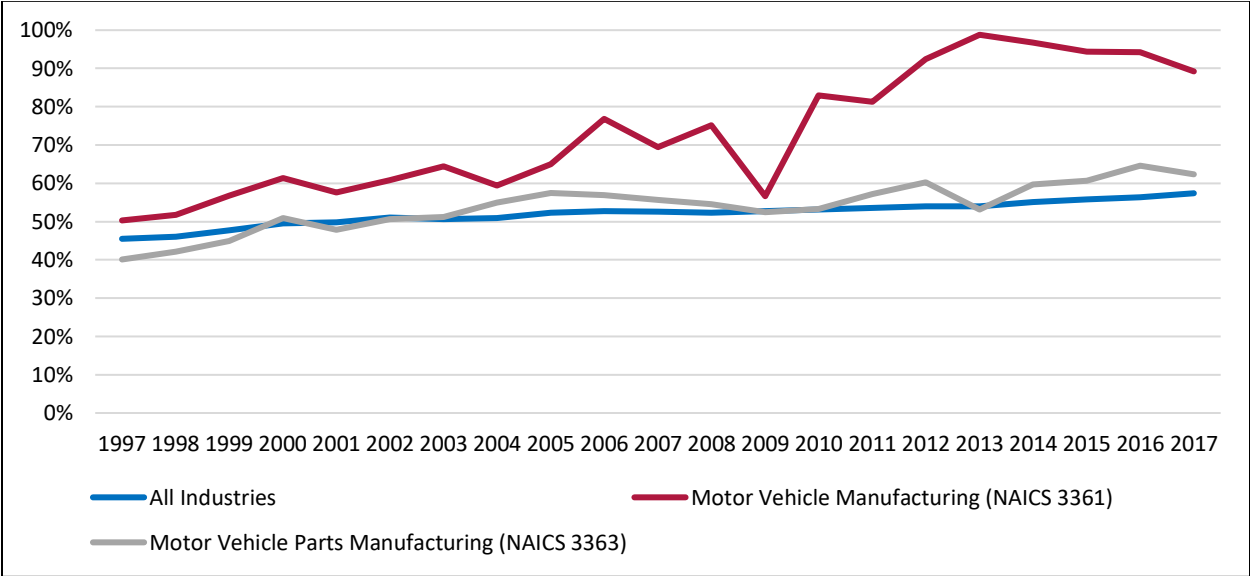
Provincial Automotive Trade Balance (\$ millions), 2009-2018



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Labour productivity is defined as the ratio between real output and hours worked. In the post-recession period, labour productivity in vehicle assembly has advanced dramatically, increasing by over 30% between 2009 and 2017. Productivity gains in parts manufacturing were comparatively muted, increasing just 10% over the same period and remaining on par with the average across all industries.

Provincial Automotive Labour Productivity, 1997-2017

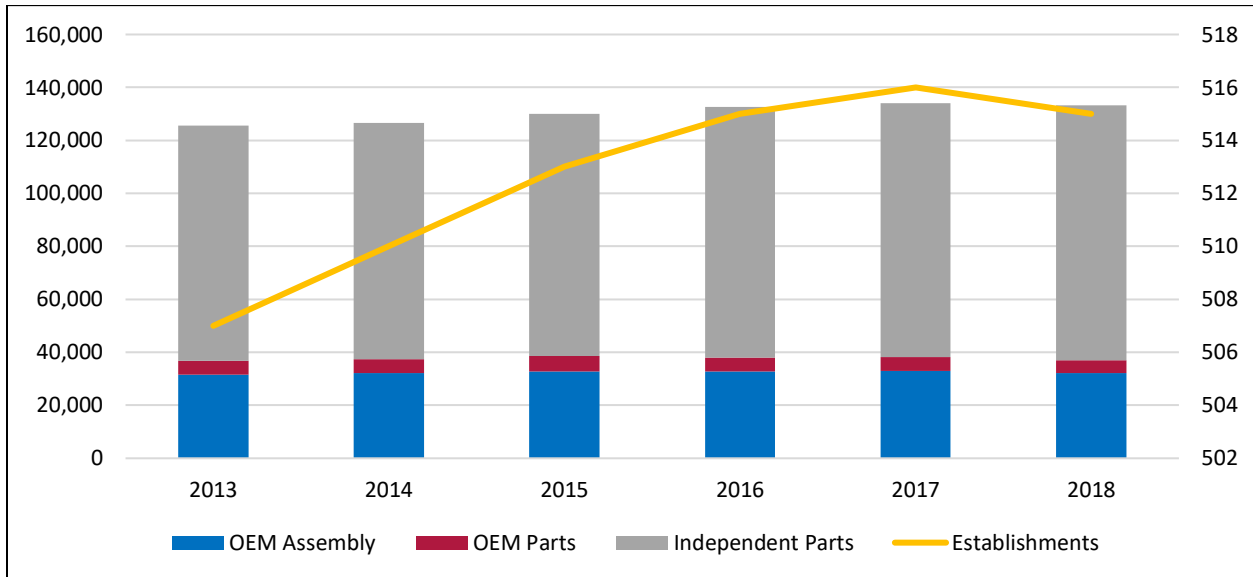


Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Profile of Automotive Manufacturing Employers

Total automotive manufacturing employment in Ontario, including Original Equipment Manufacturer (OEM) assembly and parts plants and independent parts suppliers, was an estimated 133,300 workers across 515 establishments in 2018, based on findings from industry contacts, company websites, industry literature and other sources of publicly available data. Employment in the five years prior is estimated to have ranged from a low of 125,500 in 2013 to a peak of 134,100 in 2017. In comparison, data from Statistics Canada’s 2016 Census reports Ontario’s automotive manufacturing employment as totaling 109,100 workers.

Provincial Automotive Manufacturing Employment by Activity, 2013-2018



Source: Canadian Skills Training & Employment Coalition, Automotive Policy Research Centre

OEM assembly employment in Ontario was estimated at 32,100 in 2018, accounting for just under one-quarter of total automotive manufacturing employment. While parts suppliers, technology companies and other parts of the automotive supply chain can be found across the country, all of Canada's vehicle assembly plants are located in Ontario. As of 2018, five OEMs assembled light vehicles across eight facilities in the province:

Original Equipment Manufacturers (OEMs) Assembly Plants in Ontario, 2018

Company	Location	Products
FCA	Brampton	Chrysler 300, Dodge Challenger, Dodge Charger
FCA	Windsor	Dodge Grand Caravan, Chrysler Pacifica, Pacifica Plug-In Hybrid
Ford	Oakville	Ford Edge/Flex, Ford GT* (limited-edition), Lincoln MKT/MKX
General Motors	Oshawa	Chevrolet Impala, Cadillac XTS/Silverado/Sierra
General Motors	Ingersoll	Chevrolet Equinox
Honda	Alliston	Honda Civic, Honda CR-V
Toyota	Cambridge	Toyota Corolla, Lexus RX350, Lexus RX540h Hybrid
Toyota	Woodstock	Toyota RAV4

Source: <https://www.ic.gc.ca/eic/site/auto-auto.nsf/eng/home#pane2>

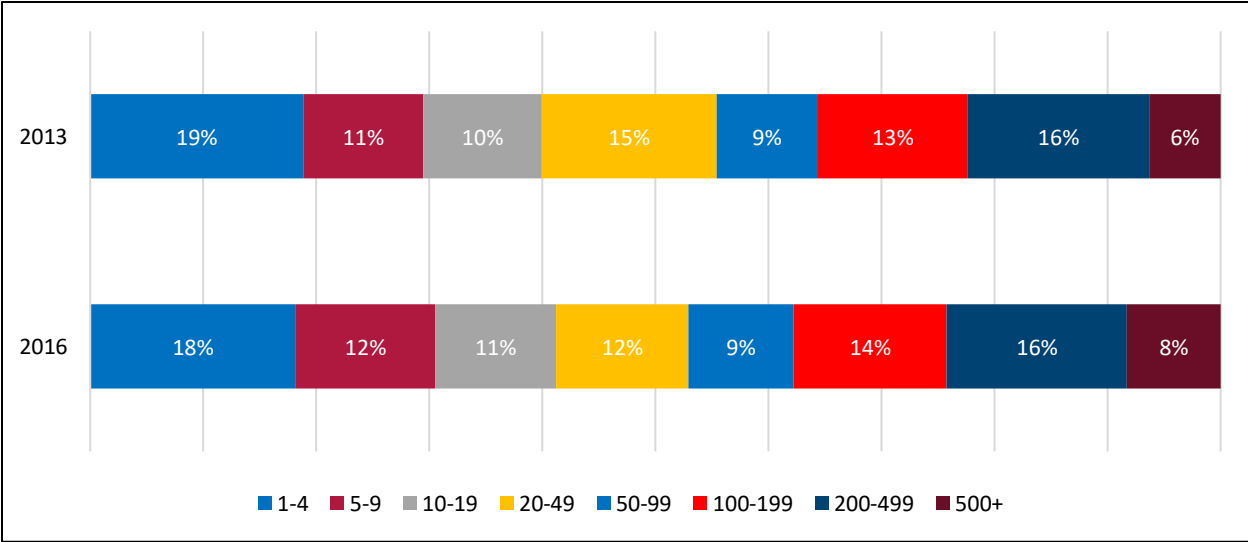
Ontario is also home to medium-duty truck assembly facility located in Woodstock and operated by Hino Canada, a subsidiary of Toyota. Assembly employment has remained relatively stable since 2013, however two recent announcements by OEMs point to declines in the near-term. In November 2018, General Motors announced it would close its Oshawa assembly plant at the end of 2019. In March 2019, FCA announced it would terminate its third shift at the Windsor assembly plant as of September 2019. Both announcements will have a negative impact on provincial employment, the magnitude of which will depend in part on opportunities for reallocation of laid off workers.

Parts manufacturing occurs at both OEM-operated facilities and through independent parts suppliers. The former group includes facilities that produce internal combustion engines (e.g. Ford, General Motors, Honda); transmissions (e.g. General Motors St. Catharines Propulsion); cast wheels and other structural metal components (e.g. FCA Etobicoke Castings); and plastic or composite interior and exterior trim and mouldings (e.g. FCA’s CpK Interior Products). The latter includes some of the world’s largest automotive suppliers such as Magna International, Linamar and Martinrea. In 2018, OEM parts employment totaled 5,000 workers, compared to 96,200 workers employed by independent suppliers. The gap in employment between OEM and independent parts suppliers has widened since 2013, as independent parts employment has risen from 88,700 workers while OEM parts employment has declined slightly from 5,250 workers.

Profile of Automotive Manufacturing Employers

Statistics Canada’s business counts data provides insights into the mix of business types present in Ontario’s automotive manufacturing industry. Overall, the mix of establishment sizes remained relatively stable in the province between 2013 and 2016 despite growth in the industry. The largest change occurred among firms with 20 to 49 employees, which accounted for over 15% of automotive manufacturing establishments in 2013 and less than 12% in 2016. Conversely, both the 5-9 and 500+ employee groups saw their shares grow by nearly 2%. The largest group of employers remained those who employed fewer than five workers, which was the case for nearly one-fifth (18%) of automotive manufacturing establishments.

Provincial Automotive Manufacturing Establishments by Employment Size, 2013-2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

The single largest automotive manufacturing employer in Ontario is Magna International. The global automotive parts supplier employed an estimated 20,000 workers across 44 facilities in 2018, based on findings from industry contacts, company websites, industry literature and other sources of publicly available data. Magna’s workforce is nearly twice as large as any other employer in the industry. Linamar and Martinrea, two other major parts suppliers, are both also among the largest automotive manufacturing employers in the province. The five OEMs with assembly plants in Ontario are all among the largest employers. FCA had the largest workforce in 2018, employing 10,600 workers at five plants, followed by Toyota (8,500 workers at three plants), General Motors (6,800 workers at four plants), Ford (6,300 workers at three plants), and finally Honda (4,300 workers at three plants). In total, the province’s largest employers accounted for 53% of total automotive manufacturing employment across 113 locations.

Largest Provincial Automotive Manufacturing-Related Employers, 2018

Employer	Plants	Employees
Magna International	44	20,000
FCA	5	10,600
Toyota	3	8,500
Linamar	22	6,900
General Motors	4	6,800
Ford	3	6,300
Honda	3	4,300
Flex-n-Gate	12	3,300
Martinrea	12	2,500
Stackpole	5	1,800

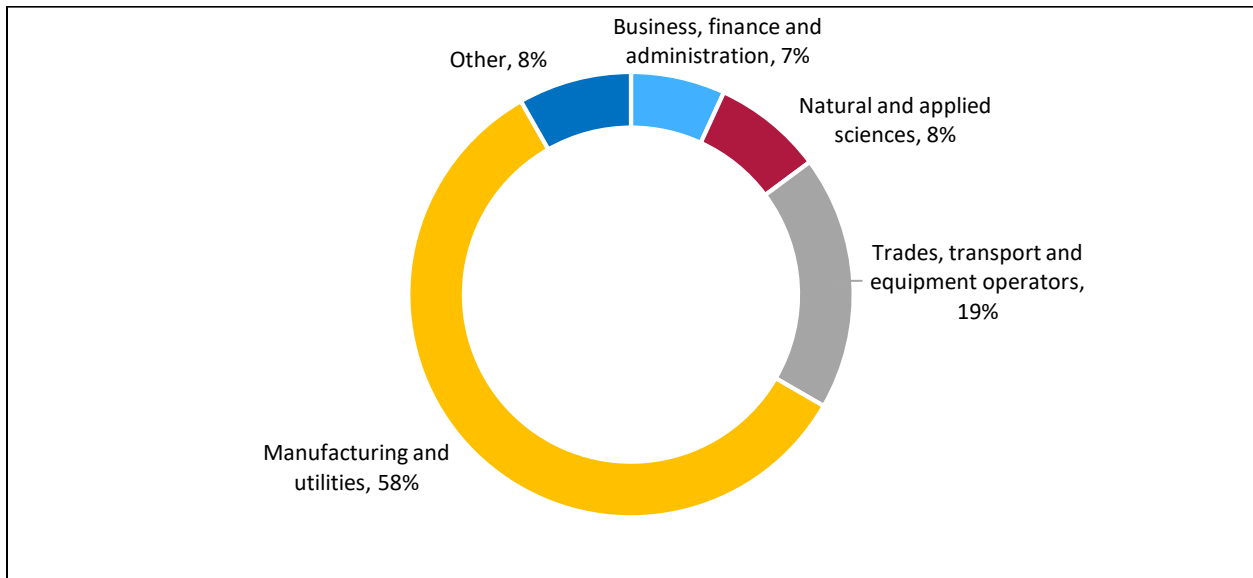
Source: Canadian Skills Training & Employment Coalition, Automotive Policy Research Centre

Automotive Manufacturing Labour Market

Workers in Ontario’s automotive manufacturing industry can be classified by job family, which indicates the broad area of work in which they are employed. Employees in each of these occupational groups play distinct roles in contributing to the industry’s success.

Unsurprisingly, manufacturing and utilities occupations account for nearly three-fifths (58%) of the province’s automotive manufacturing workforce. A further 19% is accounted for by trades, transport and equipment operators. The remaining workers are split between business, finance and administration occupations (7%); natural and applied sciences occupations (8%); and all other occupation types (8%).

Provincial Automotive Manufacturing Workforce by Job Family, 2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

A more granular analysis of the province's automotive manufacturing workforce shows that nearly half (43%) of the industry's labour force are classified by Statistics Canada as motor vehicle assemblers, inspectors and testers (NOC 9522). This occupational code covers a range of activities including⁶:

- connecting cables, tubes and wires to complete assemblies and installations;
- positioning and installing parts, subassemblies and accessories such as engines, transmissions, door panels or instrument panels;
- driving and testing motor vehicles on roll testing devices to ensure proper functioning;
- and fitting and adjusting parts such as doors, hoods and trunk lids

Other key occupations in the province's automotive manufacturing workforce include motor vehicle assembling supervisors (NOC 9221); mechanical engineers (NOC 2132); welders and related machine operators (NOC 7237); and construction millwrights and industrial mechanics (NOC 7311). The following table lists the occupations that account for at least 1.0% of Ontario's automotive manufacturing workforce:

⁶ <http://noc.esdc.gc.ca/English/NOC/QuickSearch.aspx?ver=&val65=9522>

Key Provincial Automotive Manufacturing Occupations and Trades, 2016

Occupation	Automotive Manufacturing Employment	Share of Automotive Manufacturing Employment
Motor vehicle assemblers, inspectors and testers (NOC 9522)	48,880	42.7%
Supervisors, motor vehicle assembling (9221)	6,380	5.6%
Material handlers (7452)	5,505	4.8%
Manufacturing managers (0911)	3,085	2.7%
Mechanical engineers (2132)	2,870	2.5%
Welders and related machine operators (7237)	2,655	2.3%
Construction millwrights and industrial mechanics (7311)	2,385	2.1%
Industrial painters, coaters and metal finishing process operators (9536)	2,165	1.9%
Other labourers in processing, manufacturing and utilities (9619)	2,085	1.8%
Tool and die makers (7232)	2,005	1.8%
Industrial electricians (7242)	1,865	1.6%
Automotive service technicians, truck and bus mechanics and mechanical repairers (7321)	1,665	1.5%
Metalworking and forging machine operators (9416)	1,520	1.3%
Machinists and machining and tooling inspectors (7231)	1,340	1.2%
Industrial and manufacturing engineers (2141)	1,290	1.1%
Shippers and receivers (1521)	1,245	1.1%
Machining tool operators (9417)	1,205	1.1%
Mechanical assemblers and inspectors (9526)	1,130	1.0%

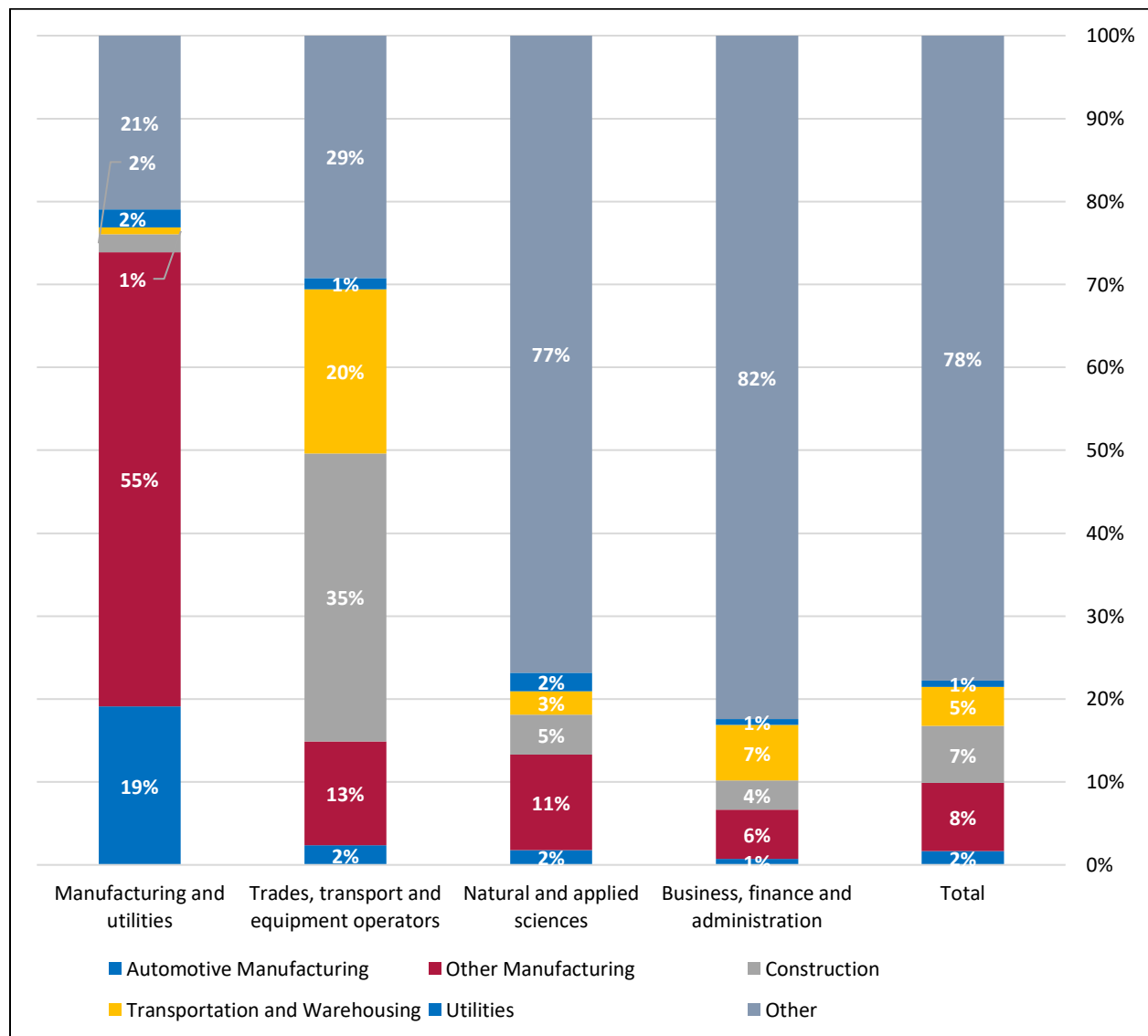
Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Competition from Other Industries

While the automotive manufacturing industry remains a premier employer, competing employment demands from other industries are worth analyzing for their potential impact on hiring decisions for key trades and occupations.

Overall, automotive manufacturing accounted for 2% of Ontario’s total workforce in 2016. Among manufacturing and utilities occupations, however, the industry accounted for 19% of the workforce. The primary competition for these occupations comes from other manufacturing employers (55%). Greater provincial competition exists within other job families. For example, the construction industry accounted for 35% of province’s workforce employed in trades, transport and equipment operator positions. Provincial growth in this industry could impact the availability of workers in this job family for automotive manufacturing employers.

Provincial Workforce Distribution by Job Family and Sector, 2016

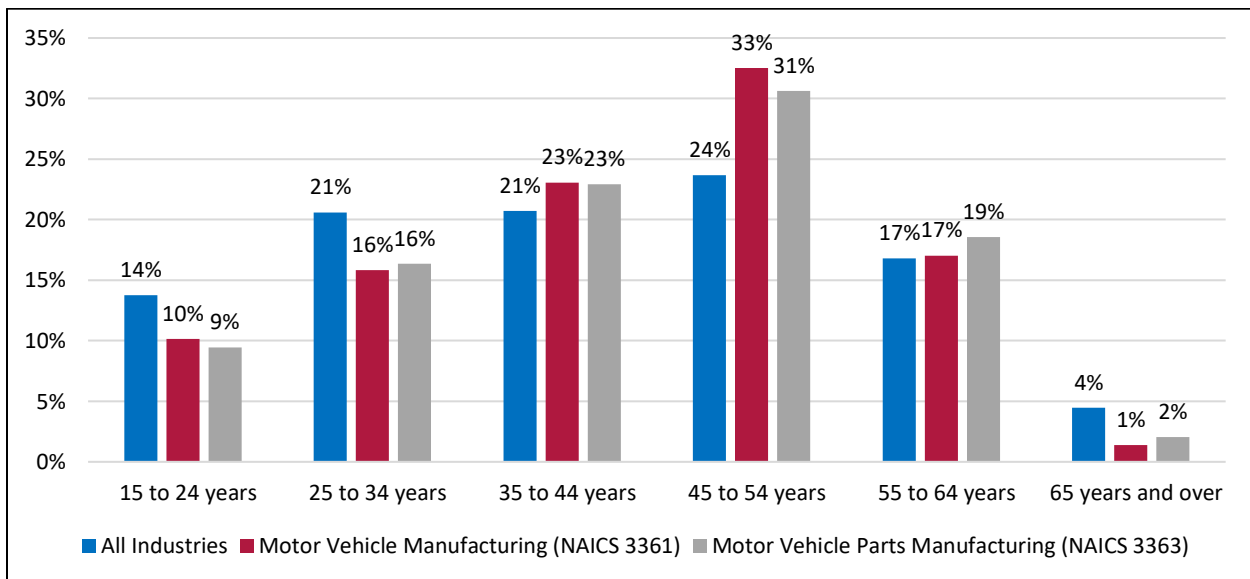


Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Automotive Manufacturing Demographics

The age distribution of Ontario’s automotive manufacturing workforce is distinct from that of the province’s total workforce across all industries. Notably, 10% of motor vehicle manufacturing workers and 9% of motor vehicle parts manufacturing workers were between the ages of 15 and 24 as of 2016. In contrast, 14% of the province’s total workforce belonged to the 15-24 age cohort. New entrants to the workforce are critical for sustaining long-term growth for the industry. The province’s automotive manufacturing workforce consists of more mid-career workers, with higher proportions of the workforce belonging to the 35-44 and 45-54 age cohorts. The province’s total workforce (18%) saw similar levels of workers aged 55+ compared to motor vehicle manufacturing (21%) and motor vehicle parts manufacturing (21%).

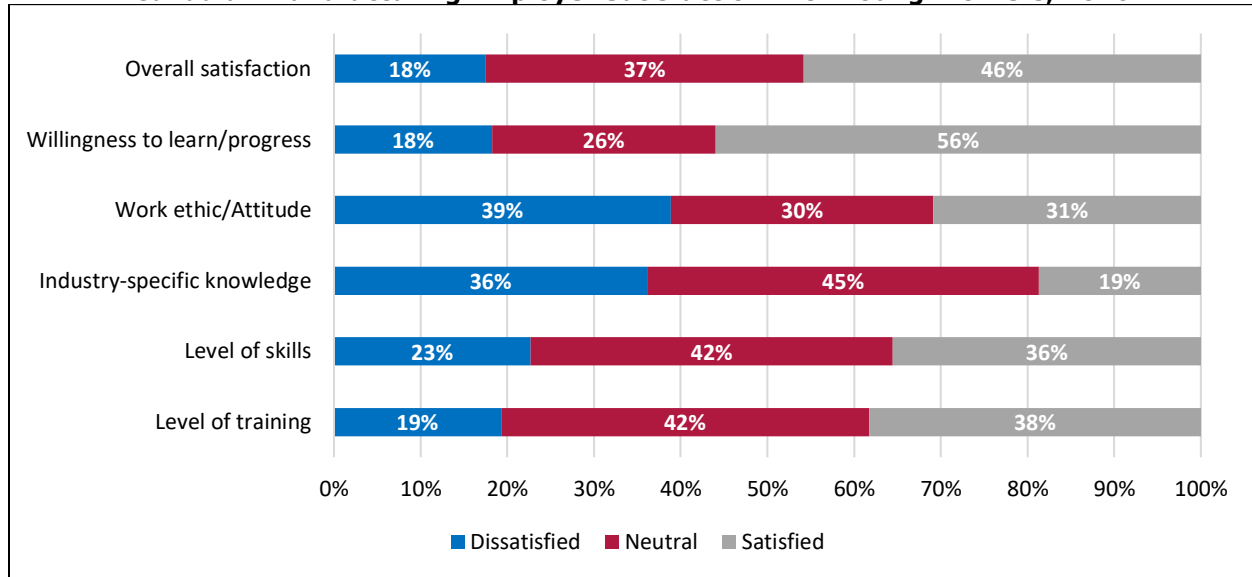
Provincial Automotive Manufacturing Workforce Age Distribution, 2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

As older workers move into retirement it will be essential to replenish the province’s automotive manufacturing workforce with the next generation of skilled workers. A recent survey of Canadian manufacturers examined the level of satisfaction with the young workers they employ. Overall, manufacturers were only moderately satisfied, with just 46% of respondents indicating that they are satisfied with their young workers. 39% of employers were dissatisfied with their work ethic and attitude, while 56% were dissatisfied with their industry specific knowledge. However, 56% of employers were satisfied with their willingness to learn.

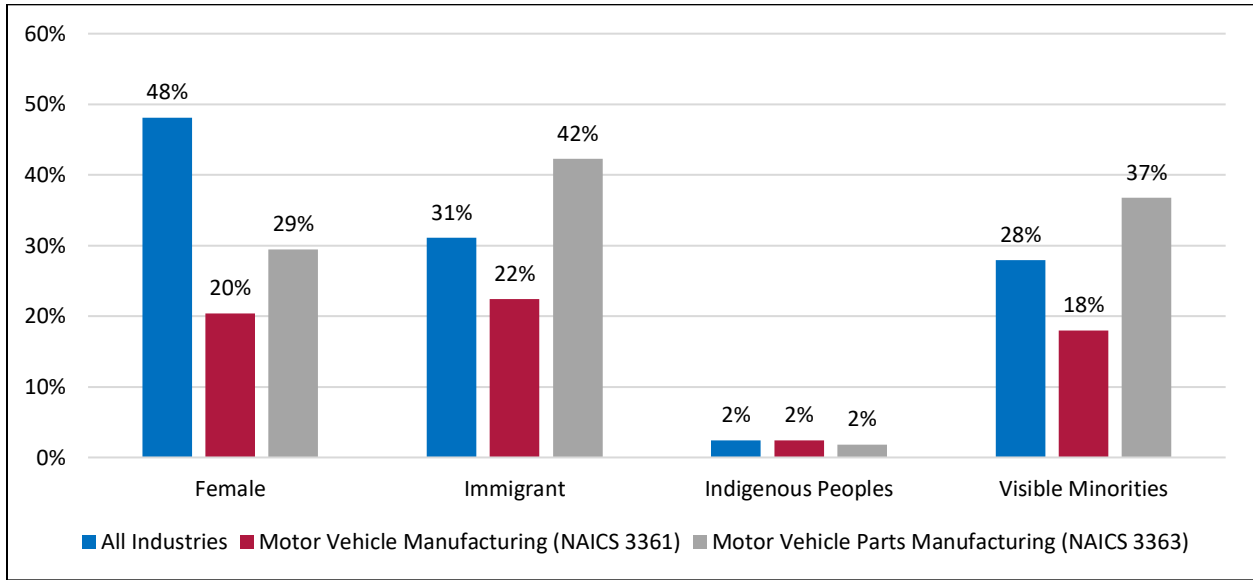
Canadian Manufacturing Employer Satisfaction with Young Workers, 2016



Source: Canadian Skills Training & Employment Coalition, Prism Economics and Analysis

The province's automotive manufacturing workforce also differs from the total workforce in terms of its diversity. The biggest difference is with respect to the proportion of women in the workforce. The female share of the province's total workforce was 48% as of 2016, on par with their population share. However, the proportions of women working in motor vehicle manufacturing (20%) and motor vehicle parts manufacturing (29%) were well-below average. Elsewhere, foreign-born workers account for 31% of the province's total workforce, higher than the share found in motor vehicle manufacturing (2%) but lower than the share found in motor vehicle parts manufacturing (42%). A similar trend is observed with regard to the share of workers who are visible minorities. There is no notable difference in the proportion of the workforce who are Indigenous peoples between automotive manufacturing and the total Provincial workforce.

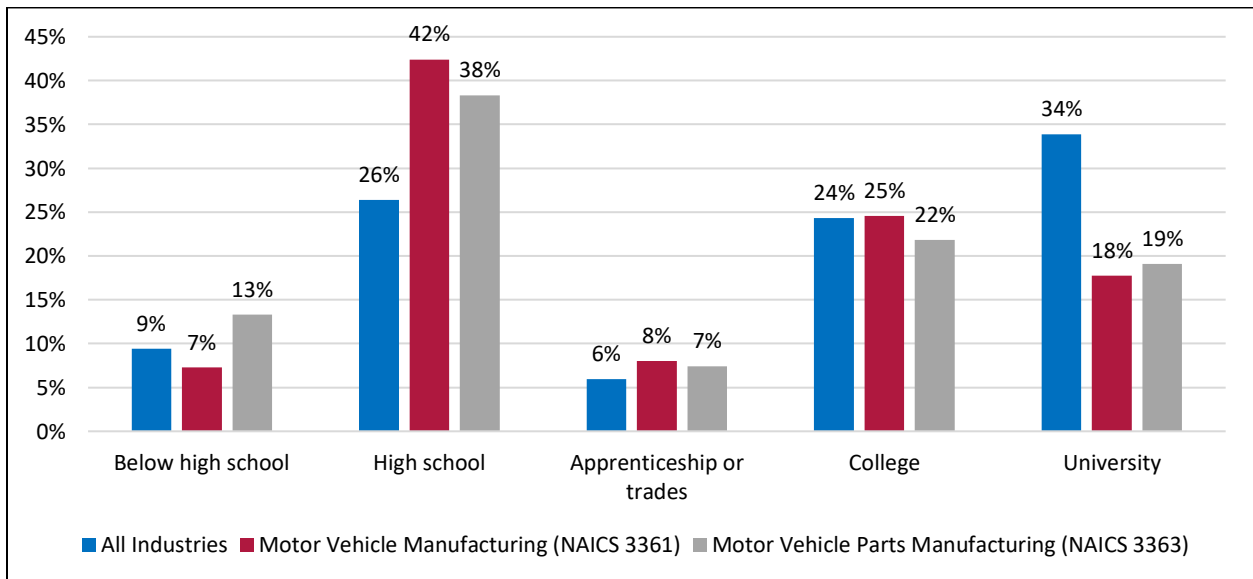
Provincial Automotive Manufacturing Workforce Diversity, 2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Educational attainment is yet another dimension where the province’s automotive manufacturing workforce diverges from the total Provincial workforce. In this province, 50% of motor vehicle manufacturing workers and 52% of motor vehicle parts manufacturing workers in the province have no more than a high school diploma as of 2016, compared to 36% for the total Provincial workforce. Conversely, the automotive manufacturing workforce has a much lower than average proportion of workers with a university degree.

Provincial Automotive Manufacturing Workforce Educational Attainment, 2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada