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# REGIONAL AUTOMOTIVE MANUFACTURING PROFILE

Quebec

May 2019

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**CSTEC** CANADIAN SKILLS TRAINING &  
EMPLOYMENT COALITION



## **Executive Summary**

The Quebec region is comprised of the Province of Quebec as described by Statistics Canada. The region's GDP was an estimated \$331 billion in 2018, 14% of which was generated by the manufacturing sector. Manufacturing is also a major employer in the region, accounting for 12% of the total labour force. The region has a positive economic outlook, with annual GDP growth of at least 1.88% projected through 2029. However, the region's manufacturing sector is expected to see its GDP growth slow in the coming years.

The Quebec region's population was an estimated 8.3 million in 2018. Healthy population growth is expected in the region through 2025 before leveling off in the latter half of the next decade. Population growth will likely be driven primarily by migration into the region as a declining birth rate means little natural population change. The region 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 18% in 2016 to 23% by 2030. The region is also expected to see its unemployment fall from 7.1% in 2016 to 5.7% by 2020 before stabilizing over the coming decade.

The Quebec region's automotive manufacturing industry employed an estimated 10,719 workers across 68 businesses in 2018, based on findings from industry contacts, company websites, industry literature and other sources of publicly available data. Employment in the past five years is has remained relatively stable with its height in 2018. The region is home to bus assembly plants that employed an estimated 2,900 workers in 2018. Independent parts suppliers in Quebec employ nearly 8,000 workers. The region's largest automotive manufacturing employers include New Flyer, Paccar, and Prevost.

## 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, 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 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 drives 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 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 workforce<sup>1</sup>. 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” report<sup>2</sup>.

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.

Using the North American Industry Classification System (NAICS), automotive manufacturing is traditionally defined as being comprised of two main sectors: motor vehicle assembly (NAICS 3361), which includes chassis manufacturing, and motor vehicle parts manufacturing (NAICS 3363). Together, these sectors directly employed approximately 125,000 Canadians as of 2016. 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 their output to automotive-related

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<sup>1</sup> Tanguay, “Drive to Win”

<sup>2</sup> Canadian Automotive Partnership Council (CAPC), “A Call for Action: II

activities and are not always present within the automotive supply chain<sup>3</sup>. 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 3363<sup>4</sup>. 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 industry 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. Their assignment is based on the research and expertise of the project team.

Moving beyond the traditional definition of the automotive manufacturing industry requires a database of establishment-level data for producers that are involved in the automotive supply chain. Industry

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<sup>3</sup> Sweeney & Mordue, “The Restructuring of Canada’s Automotive Industry, 2005-2014”

<sup>4</sup> Sweeney, “A Profile of the Automotive Manufacturing Industry in Canada, 2012-2016”

contacts, company websites, industry literature and other sources of publicly available data will be used to identify establishments not classified in the two main automotive manufacturing NAICS codes and collect key information about them, namely employment estimates. Establishments that should be included as automotive manufacturers may instead be associated with a wide range of non-automotive NAICS codes, including but not limited to:

- Plastic product manufacturing (NAICS 3261)
- Glass and glass product manufacturing (NAICS 3272)
- Architectural and structural metals manufacturing (NAICS 3323)
- Computer systems design and related services (NAICS 5415)
- Software publishers (NAICS 5112)
- Navigational, measuring, medical and control instruments manufacturing (NAICS 3345)
- Foundries (NAICS 3315)
- Rubber product manufacturing (NAICS 3262)
- Alumina and aluminum production and processing (NAICS 3313)
- Forging and stamping (NAICS 3321)
- Steel product manufacturing from purchased steel (NAICS 3312)
- Machine shops; turned products; and screw, nut, and bolt manufacturing (NAICS 3327)
- Coating, engraving, heat treating, and allied activities (NAICS 3328)
- Basic chemical manufacturing (NAICS 3251)
- Printing and related support activities (NAICS 3231)
- Aerospace product and parts manufacturing (NAICS 3364)
- Warehousing and storage (NAICS 4931)
- Electrical equipment manufacturing (NAICS 3353)
- Computer and peripheral equipment manufacturing (NAICS 3341)
- Architectural, engineering and related services (NAICS 5413)

These industries are part of a preliminary list of 40 non-automotive NAICS codes that include establishments with ties to the automotive supply chain. Together these additional industries represented a workforce of over 1.3 million people as of 2016. Other key components of the industry include companies working on alternative propulsion, new drivetrain technologies, energy storage and other advanced or future-focused technologies.

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. The establishment-level database will identify individual producers that are involved in the automotive supply chain. Additionally, Statistics Canada’s input-output tables, which track inter-industry transactions, will be used to better understand the contributions to employment and output that establishments from non-automotive NAICS codes make to the automotive industry.

## Introduction

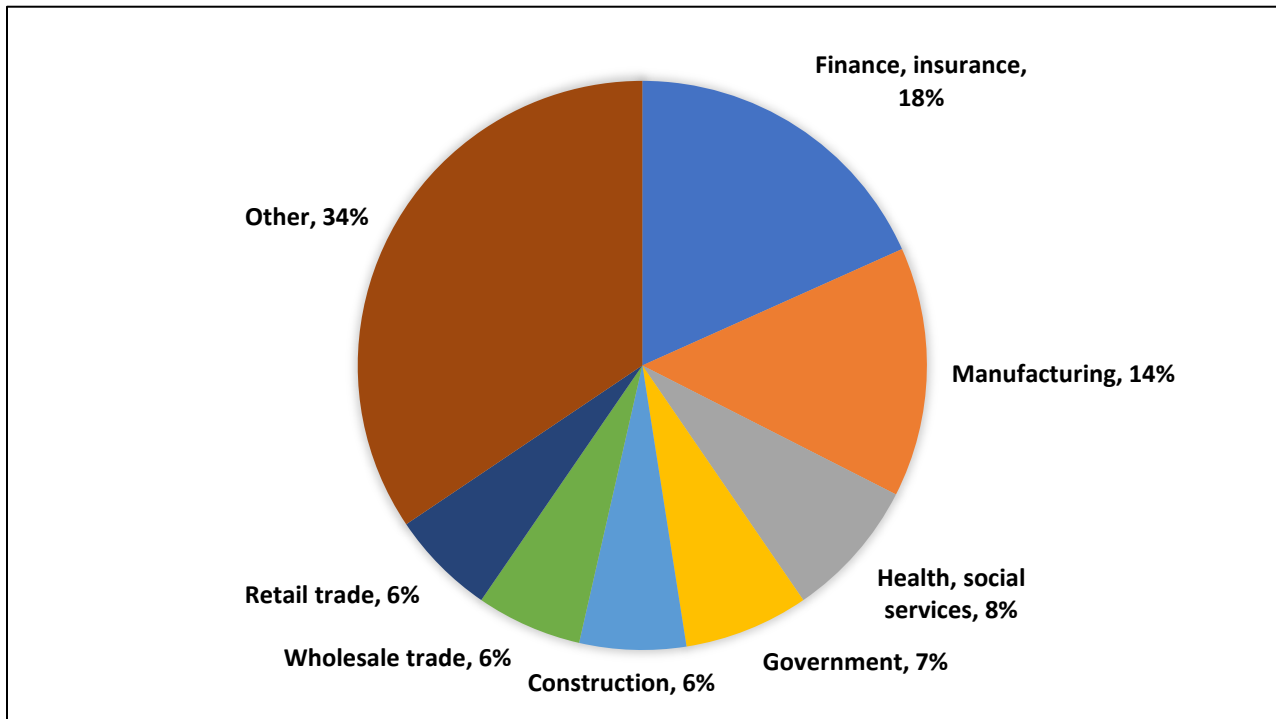
The Quebec region is comprised of the Province of Quebec as defined by Statistics Canada. The Quebec region is the second largest province in terms of population, as it is home to 23% of Canada’s population and covers a land area of 1.3 million square kilometers.

This regional profile includes three main sections. First, a discussion of the regional economy, including outlooks for GDP. Next, a section outlining trends in the region’s population, demographic characteristics and overall workforce. Finally, an overview of the region’s automotive manufacturing industry, including key employers and occupations. All regional data presented in this profile are aggregates (or weighted averages where appropriate) of ER level data. 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

The Quebec region’s GDP totaled an estimated \$331 billion dollars in 2018. Finance and insurance was the largest single contributor to the region’s GDP of any sector, accounting for nearly one-fifth (18%) or approximately \$191 billion. The next largest sector, real estate and rental and leasing, accounted for 11% of the regional economy. Other major sectors in the region include construction (8% of GDP), finance and insurance (8%), and wholesale trade (7%).

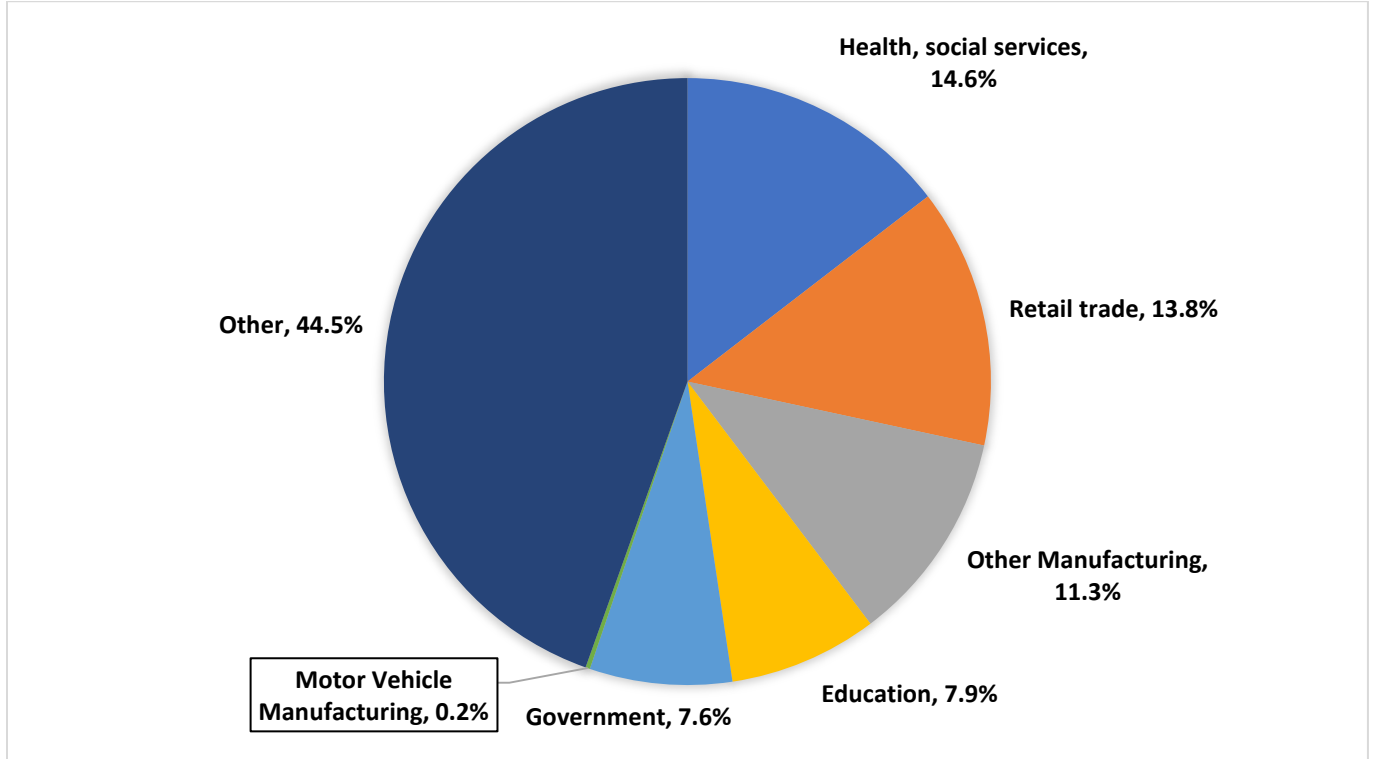
**Regional GDP Shares by Sector, 2018**



Source: Canadian Skills Training & Employment Coalition, Metro Economics

The region’s largest sectors by workforce size include health and social services (14.6% of the total regional workforce), retail trade (13.8%), and other manufacturing (11.3%), while motor vehicle manufacturing makes up 0.2%.

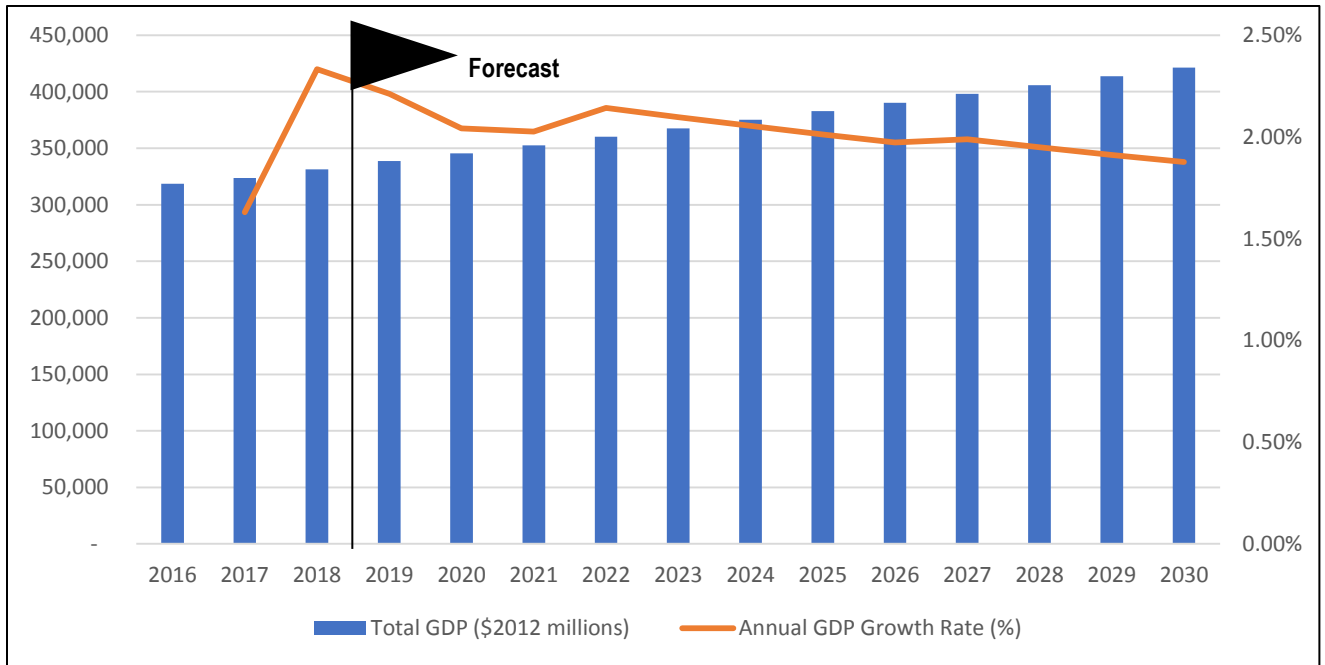
**Provincial Labour Force Shares by Sector, 2016**



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

The region’s economic outlook is expected to be positive over the coming decade. Regional GDP is expected to grow 2.21% in 2019 and 2.03% in 2021, surpassing \$552 billion. Furthermore, annual GDP growth of at least 1.9% is projected for every year from 2019 to 2029, surpassing \$89 billion, with 1.8% growth projected in 2030.

**Provincial GDP Outlook, 2016-2030**

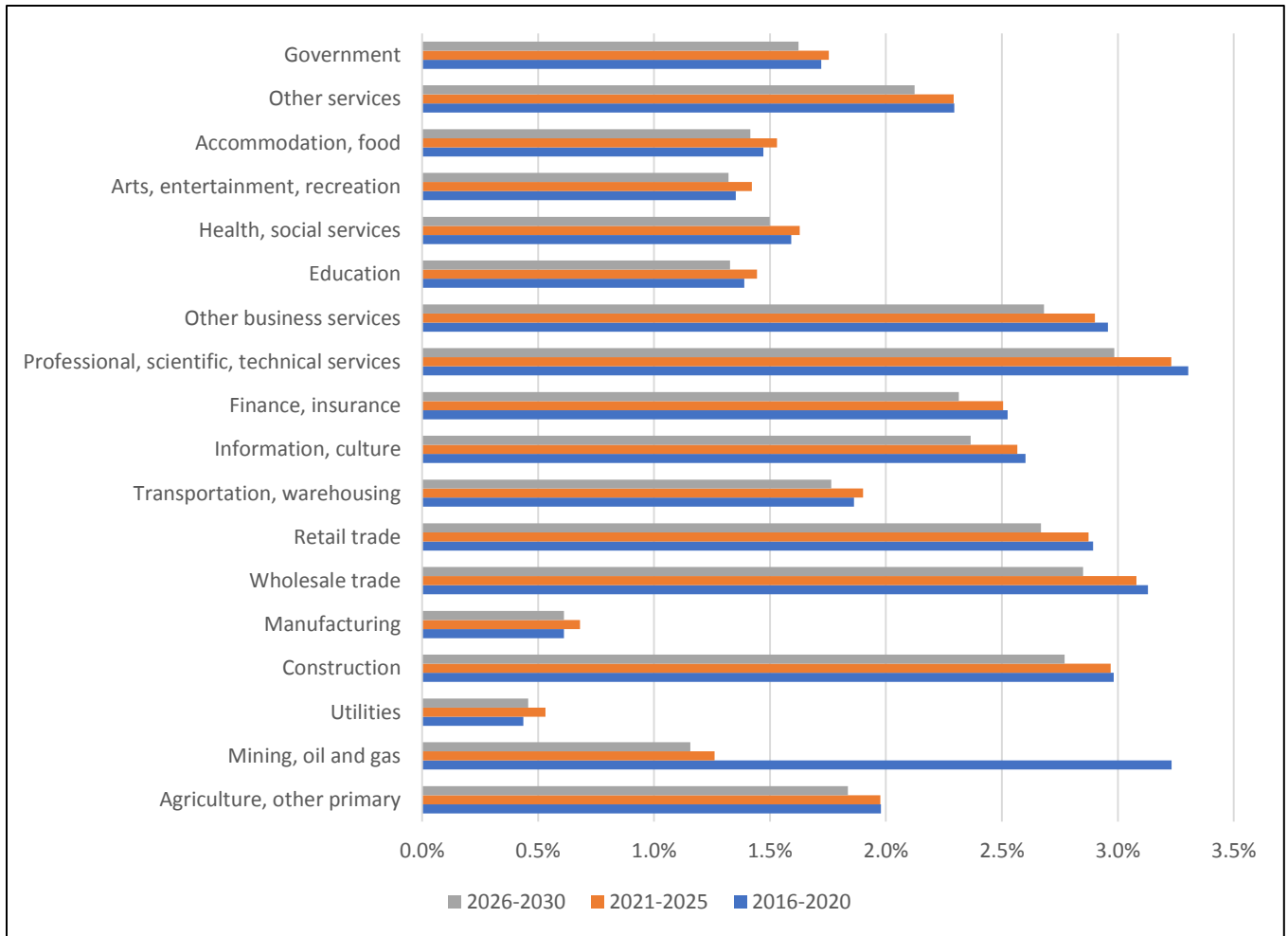


Source: Canadian Skills Training & Employment Coalition, Metro Economics

While the region’s overall GDP growth outlook is healthy, projections by sector vary significantly. In the near term, industries such as mining and oil (3.2%), construction (3%), and retail trade (2.9%) have experienced strong GDP growth and will continue to do so through 2020. Wholesale trade (3.1%) is expected to experience the strongest growth between 2021 and 2025, while manufacturing (0.7%) and utilities (0.5%) are expected to see little growth during the same period. Both professional and scientific services (3.0%) and wholesale trade (2.9%) are projected to continue their strong growth over the 2026 to 2030 period. The manufacturing sector, which includes automotive manufacturing, is expected to see its GDP growth slow in the coming years. Growth is projected to fall to 0.6% for the 2026-2030 period.



**Annual Average Provincial GDP Growth by Sector, 2016-2030**



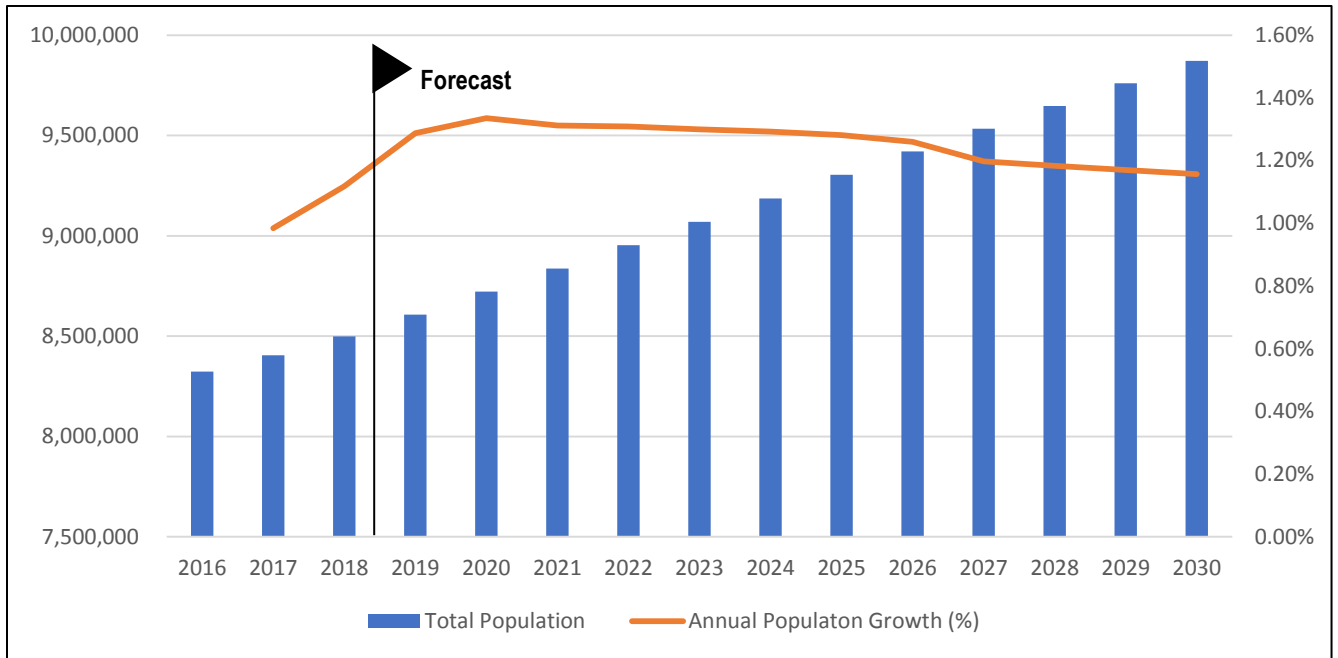
Source: Canadian Skills Training & Employment Coalition, Metro Economics

**Regional Labour Considerations**

**Population, Age Distribution and Regional Diversity**

Quebec is among the most populous regions in Canada, with approximately 23% of the nation’s population. The region’s population was estimated at just over 8.6 million people in 2019. Looking ahead, the region’s population is expected to reach 8.7 million people by 2020. The population is then expected to grow by 5.3% between 2021 and 2025 to 9.3 million. However, population growth is expected to slow to 4.8% over the latter half of the next decade, reaching 9.8 million by 2030.

**Total Provincial Population Outlook, 2016-2030**

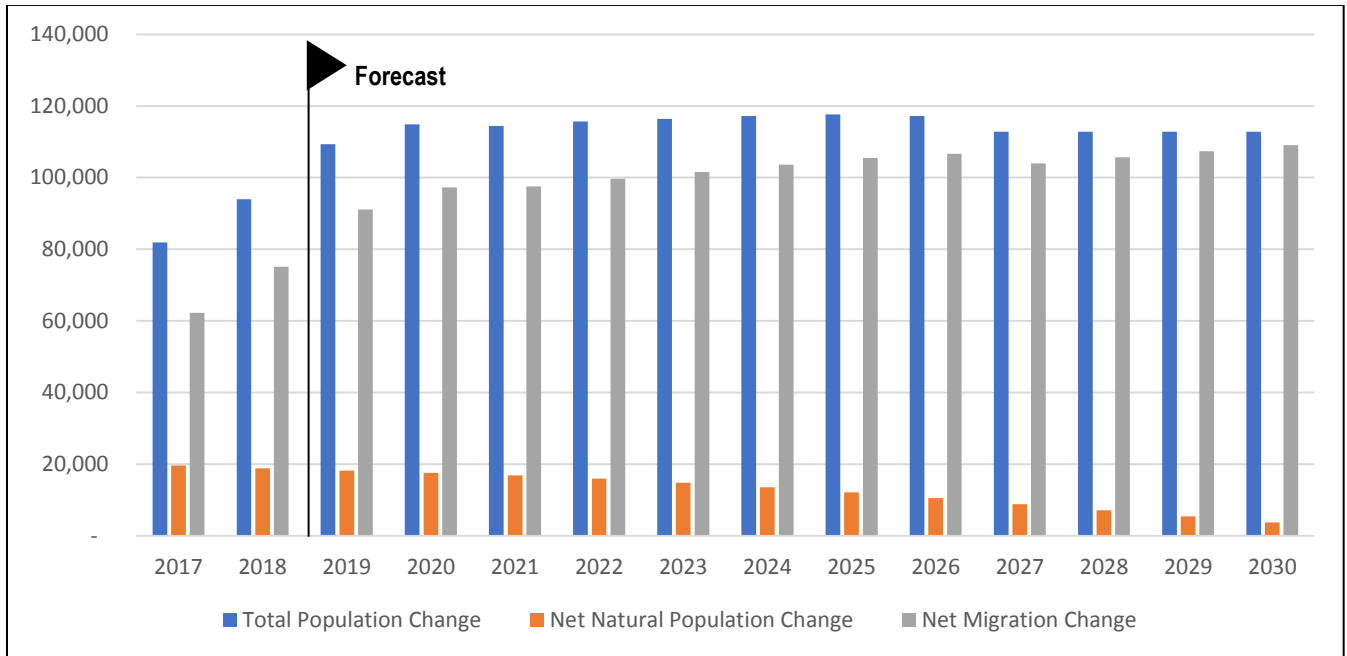


Source: Canadian Skills Training & Employment Coalition, Metro Economics

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.

In the case of the Quebec population change is predominantly a result of net migration, which was responsible for nearly 76% of the region’s population growth in 2018. This share is expected to increase over the following decade reaching 97% by 2030 as growth in natural population gradually decreases. Overall, the region is expected to add an average of nearly 110,000 people to its population annually through 2030.

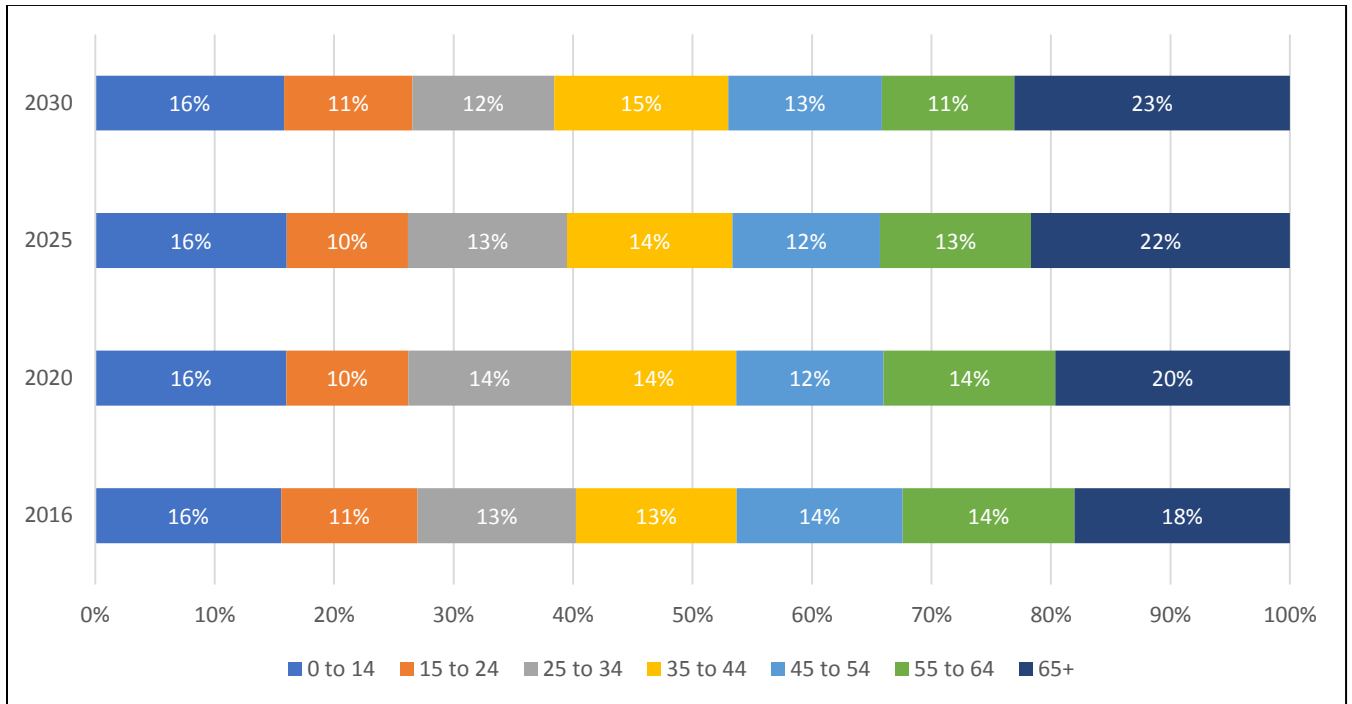
**Total Provincial Population Change Outlook, 2016-2030**



Source: Canadian Skills Training & Employment Coalition, Metro Economics

The Quebec region’s age distribution is also expected to shift in the coming years. In 2018, an estimated 18% of the region’s population were 65 years of age or older, and that proportion is expected to rise to 23% by 2030. The region will the population shares of the 45-54 and 55-64 age remain stable between 13% - 15% through to 2030. Among younger age cohorts, the population share of the 15-24 age cohort is projected to remain between 11% - 13% during the period. This is notable as this cohort is traditionally the largest source of new entrants to the labour force.

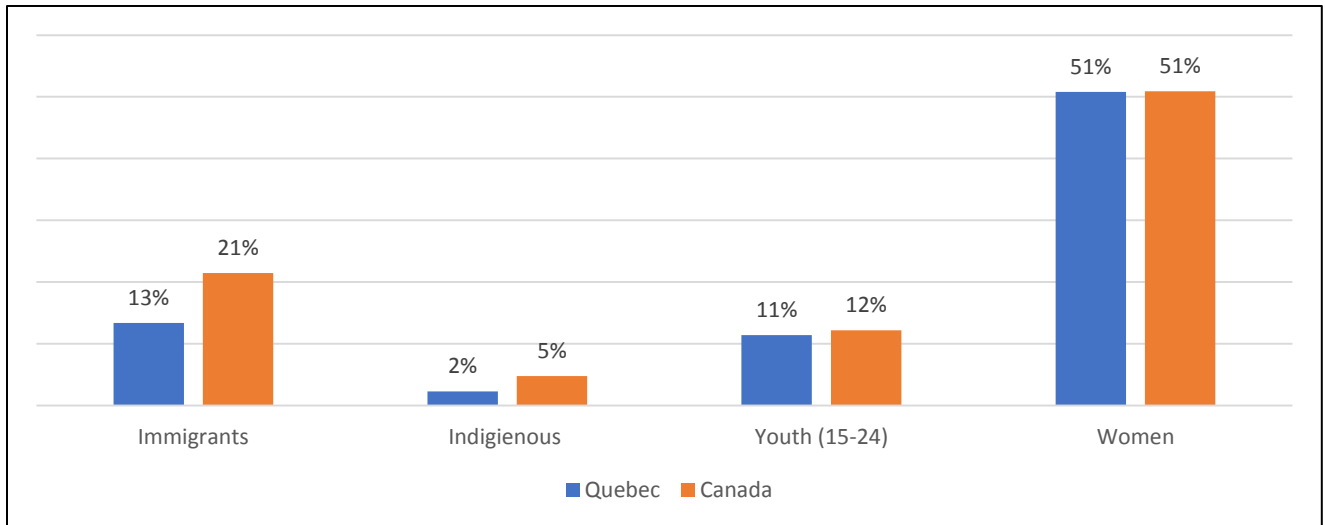
**Provincial Population Outlook by Age Distribution, 2016-2030**



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 region’s total population can illustrate the magnitude of the untapped potential for the industry. The shares of these groups in the Quebec region’s population are generally on par with those of Canada as a whole. The region had similar shares of immigrants, Indigenous peoples, youth and women as the provincial population as of 2016. The two regions differ in the percentage of immigrants with Quebec’s population 13%, compared to Canada’s 21%.

**Provincial and National Population Diversity, 2016**



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

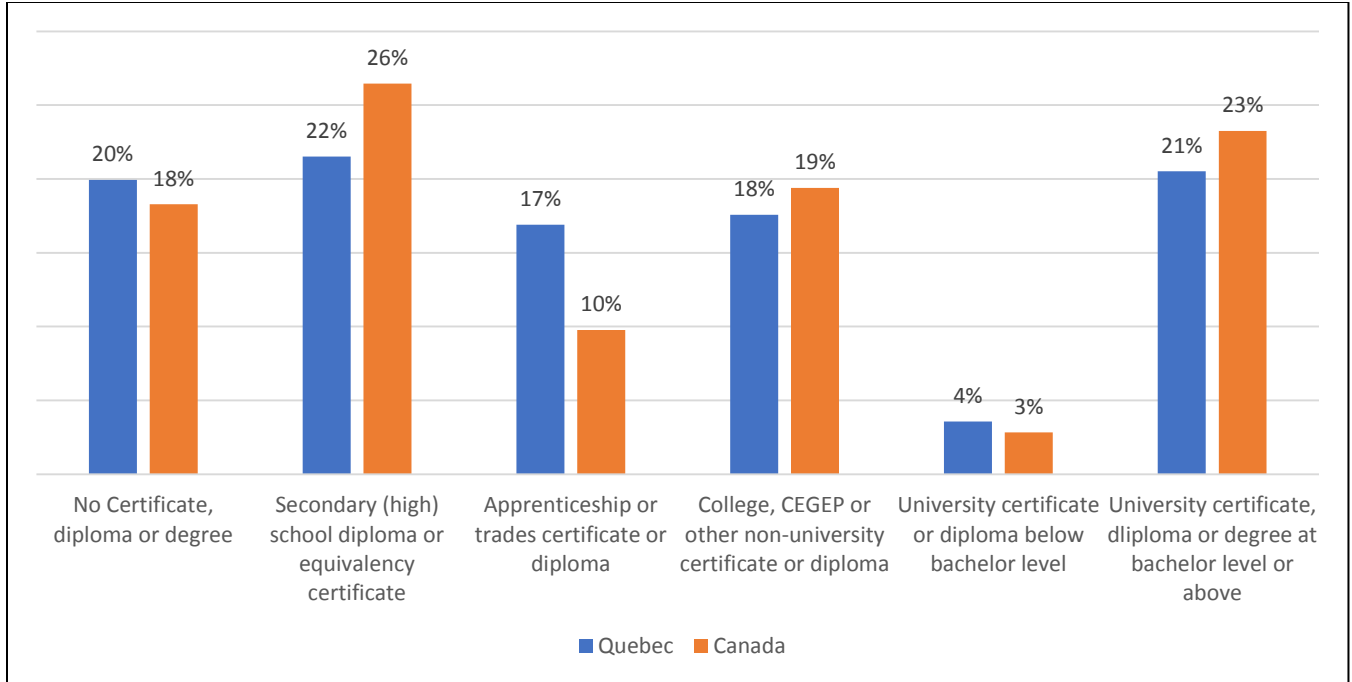
**Educational Attainment**

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 regional educational attainment rates to provincial averages can help identify what skills the region needs to cultivate internally or attract externally.

Under half (44%) of people in the Quebec region had either a high school diploma or no certificate, diploma or degree of any kind as of 2016. The share of the same group was 44% for Canada as a whole. The region also had a slightly higher share of people with apprenticeship or trades certificate (17%) than the national average (10%). Conversely, 21% of the region had a university degree at bachelor level or above, compared to 23% for Canada.

**Provincial and National Educational Attainment, 2016**

REGIONAL AUTOMOTIVE MANUFACTURING PROFILE – Quebec

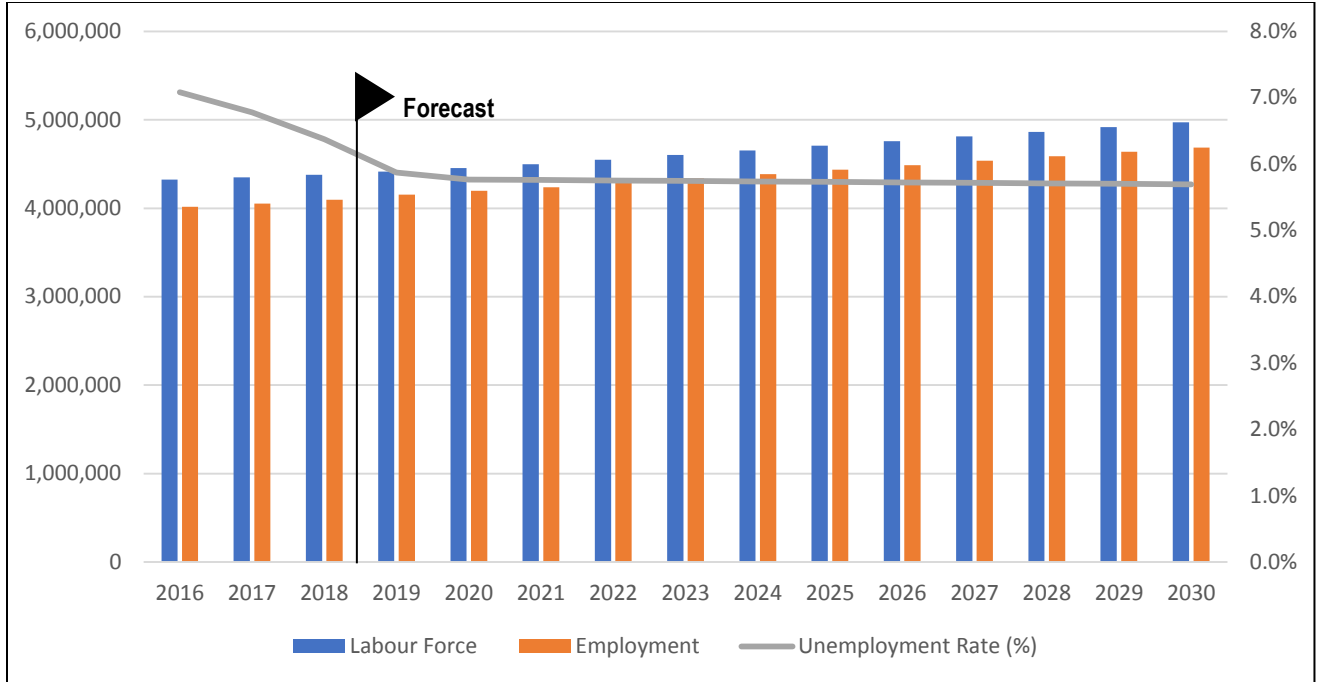


Source: Canadian Skills Training & Employment Coalition, Statistics Canada

**Labour Market Activity**

Total employment in the Kitchener – Waterloo – Barrie region was an estimated 4 million in 2018, while the region’s labour force, including both the employed and those who are unemployed and actively seeking work, totaled 4.3 million. The unemployment rate, or the proportion of unemployed persons in the labour force, was 6.4%. This was a decline from both 2016 and 2017, when the unemployment rate was 7.1% and 6.8% respectively. The region’s unemployment rate is projected to continue this trend going forward, falling to 5.8% by 2020 before stabilizing over the coming decade.

REGIONAL AUTOMOTIVE MANUFACTURING PROFILE – Quebec



Source: Canadian Skills Training & Employment Coalition, Metro Economics

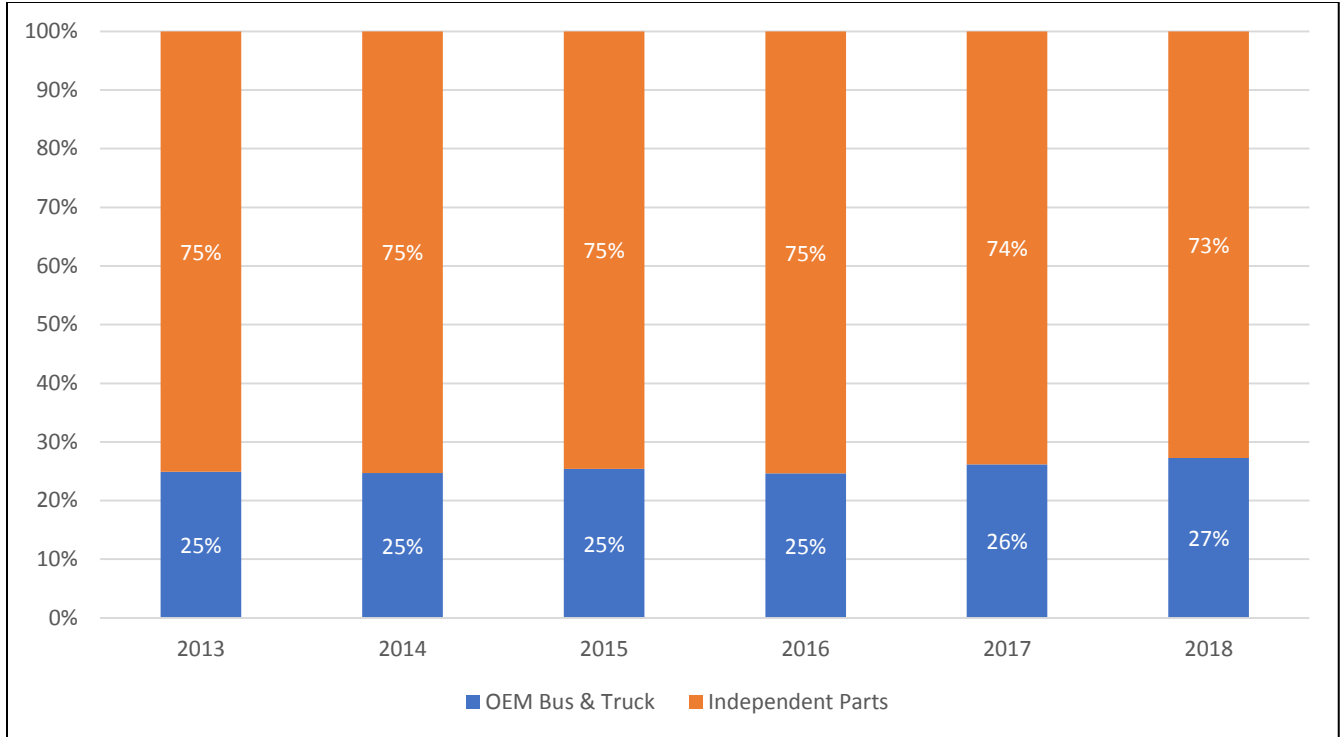
**Regional Automotive Manufacturing Analysis**

**Profile of Automotive Manufacturing Employment**

Quebec has a diverse motor vehicle manufacturing industry that includes bus and truck manufacturers and a network of automotive parts manufacturers. Parts manufacturers focus on aluminum, rubber, and electronics. Quebec also has an emerging automotive technology cluster that includes EV component manufacturers, LIDAR technology firms, and software developers. Denso, one of the world's largest automotive parts and technology manufacturers, recently opened a software development centre in Montreal that focuses on AI.

**Regional Automotive Manufacturing Employment by Activity, 2013-2018**

## REGIONAL AUTOMOTIVE MANUFACTURING PROFILE – Quebec



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

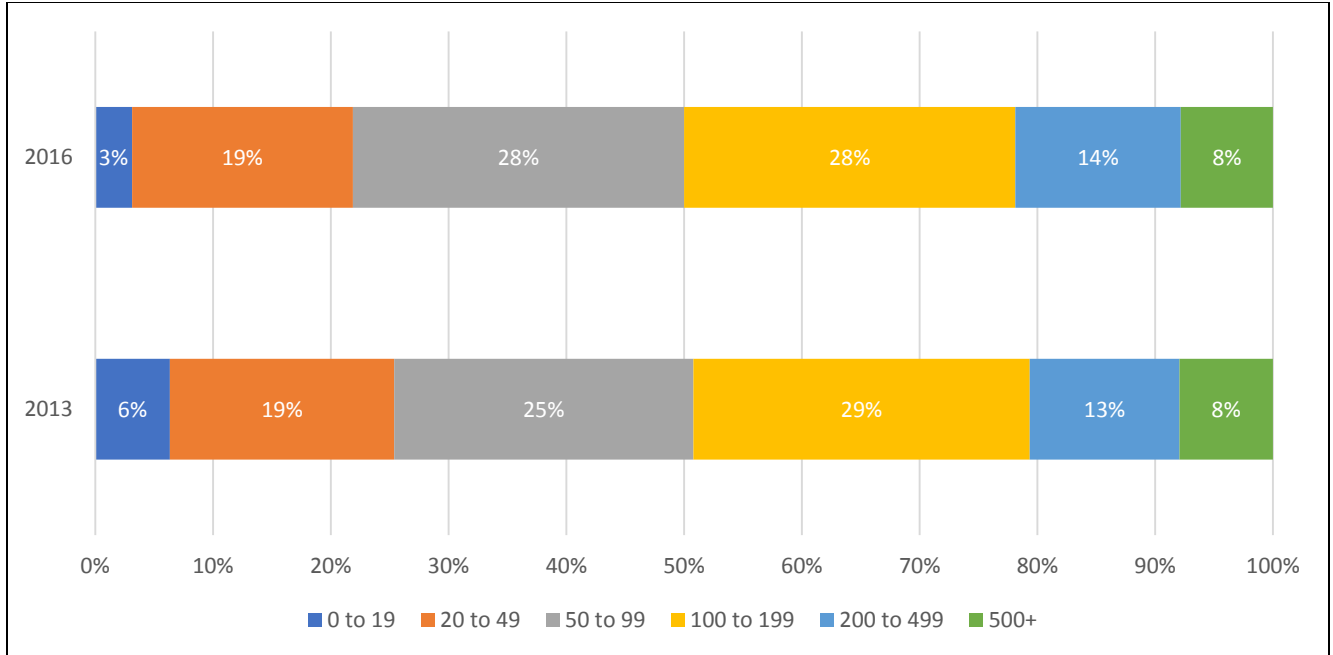
### Profile of Automotive Manufacturing Employers

Statistics Canada's business counts data provides insights into the mix of business types present in the Quebec region's automotive manufacturing industry. A comparison of data from 2013 and 2016 reveals that the proportion of small-sized automotive manufacturing establishments (i.e. 1 to 99 employees) remained stable. The region also saw the share of medium-sized automotive manufacturing establishments (i.e. 100 to 199 employees) remained stable in both 2013 and 2016.

### Regional Automotive Manufacturing Establishments by Employment Size, 2013-2016



REGIONAL AUTOMOTIVE MANUFACTURING PROFILE – Quebec



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

The largest OEM automotive manufacturing employers in the Quebec region include Volvo Group with three operations. Additionally, Paccar and Toyota Gosei operations employ over 1,700 employees in the region. Taken together, the region’s top employers employed 6,300 people in 2018, based on findings from industry contacts, company websites, industry literature and other sources of publicly available data.

**Largest Regional Automotive Manufacturing Employers, 2018**

Employer	Plants	Employees
Nova Bus (Volvo Group)	2	976
Paccar	1	925
Prevost (Volvo Group)	1	900
Toyota Gosei	2	887
Spectra Premium	3	844
Kongsberg Automotive	1	530
DBM Reflex	3	350
Koyo Bearings (J-Tekt)	1	325

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

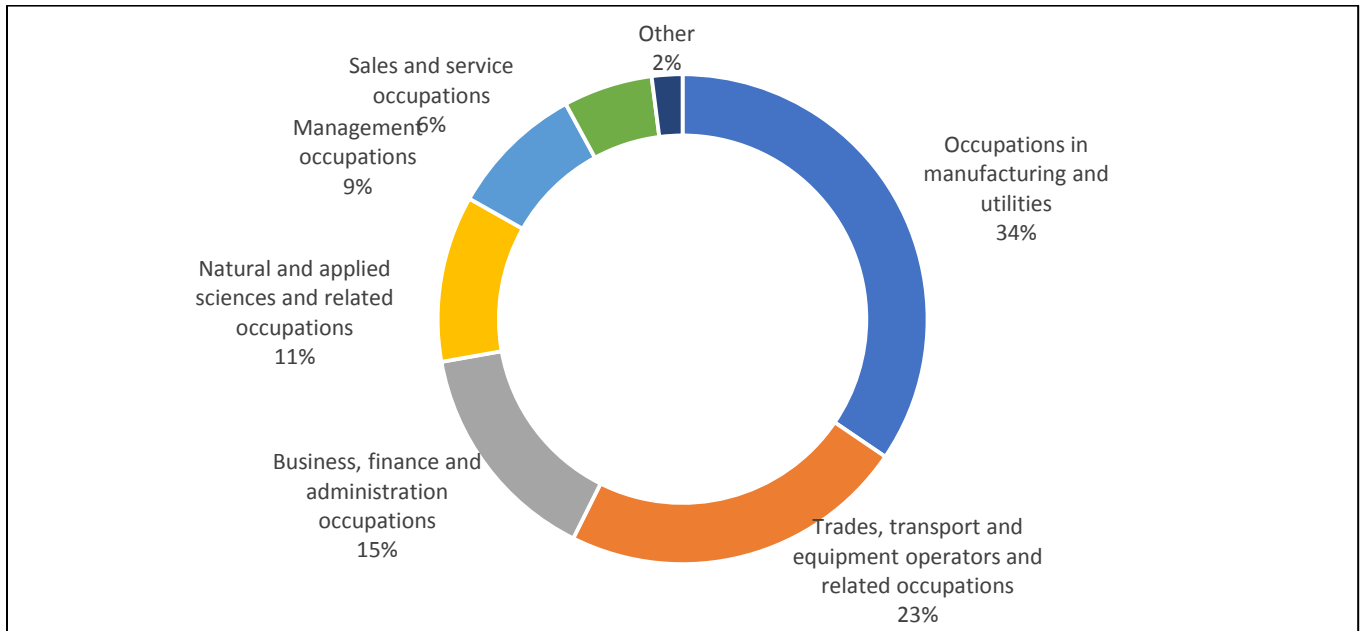
**Automotive Manufacturing Labour Market**

Workers in the Kitchener – Waterloo – Barrie 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 over three-fifths (61%) of the region’s automotive manufacturing labour force. A further 19% is accounted for by trades, transport and

equipment operators. The remaining workers are split between business, finance and administration occupations (6%); natural and applied sciences occupations (7%); and all other occupation types (2%).

**Regional Automotive Manufacturing Workforce by Job Family, 2016**



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

A more granular analysis of the region’s automotive manufacturing workforce shows that almost half (13%) 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 including<sup>5</sup>:

- 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 region’s automotive manufacturing workforce include mechanical assemblers and inspectors (NOC 9526), welders and related machine operators (NOC 7237), manufacturing managers (NOC 0911), and mechanical engineers (NOC 2132). The following table lists the occupations that make up the region’s automotive manufacturing labour force:

**Key Regional Automotive Manufacturing Occupations and Trades, 2016**

<sup>5</sup> <http://noc.esdc.gc.ca/English/NOC/QuickSearch.aspx?ver=&val65=9522>

REGIONAL AUTOMOTIVE MANUFACTURING PROFILE – Quebec

Occupation	Automotive Manufacturing Labour Force	Share of Automotive Manufacturing Labour Force
Motor vehicle assemblers, inspectors and testers (NOC 9522)	1100	13%
Mechanical assemblers and inspectors (NOC 9526)	785	9%
Welders and related machine operators (NOC 7237)	470	5%
Manufacturing managers (NOC 0911)	360	4%
Mechanical engineers (NOC 2132)	340	4%
Automotive service technicians, truck and bus mechanics and mechanical repairers (NOC 7321)	300	3%
Supervisors, motor vehicle assembling (NOC 9221)	270	3%
Material handlers (NOC 7452)	200	2%
Construction millwrights and industrial mechanics (NOC 7311)	175	2%
Other labourers in processing, manufacturing and utilities (NOC 9619)	155	2%
Industrial painters, coaters and metal finishing process operators (NOC 9536)	130	2%
Shippers and receivers (NOC 1521)	125	1%
Industrial and manufacturing engineers (NOC 2141)	70	1%
Tool and die makers (NOC 7232)	60	1%
Metalworking and forging machine operators (NOC 9416)	45	1%
Industrial electricians (NOC 7242)	40	0%

Source: Canadian Skills Training & Employment Coalition, Statistics Canada

This list of key occupations and trades reflects the region’s automotive manufacturing workforce as reported by traditional industry codes (NAICS 3361 and 3363). Under a broader definition of the automotive manufacturing industry, this list would likely be revised to include occupations and trades that are prevalent in other manufacturing, technology and materials industries.

### 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 X% of the Quebec region's total workforce in 2016. Among manufacturing and utilities occupations, however, the industry accounted for X% of the workforce. The primary competition for these occupations comes from other manufacturing employers (XX%). Greater regional competition exists within other job families. For example, the construction industry accounted for XX% of region's workforce employed in trades, transport and equipment operator positions. Regional growth in this industry could impact the availability of workers in this job family for automotive manufacturing employers.

### **Regional Workforce Distribution by Job Family and Sector, 2016**

INPUT GRAPH After speaking with Simon

Source: Canadian Skills Training & Employment Coalition, Statistics Canada

### **Automotive Manufacturing Demographics**

- section will be completed following receipt of Stats Can data order