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Automotive Industry Labour Market Analysis: Wage Report

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

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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.

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Preface

This Automotive Industry Wage Report is one of the research reports that is being produced as part of a collaborative effort of the Canadian Skills Training and Employment Coalition (CSTEC), Prism Economics (Prism) and the Automotive Policy Research Centre (APRC) to help better understand the broader automotive sector labour market. Our collaborative project is funded by the Government of Canada and will achieve a number of objectives, as follows:

- In order to illustrate the economic importance of the sector, we want to define the industry broadly to include its extensive and complex supply chain, and identify its contribution to innovation in manufacturing technologies, mobile connectivity and alternative propulsion;
- Build an economic model of the broadly defined sector's workforce and forecast supply and demand for key occupations;
- Identify and examine key labour market trends – including trends related to wages – so stakeholders and policy makers and job seekers can better understand labour market developments, challenges and opportunities facing the sector;
- Engage the industry in consultations and respond to its recommendations and concerns in order to ensure our research is relevant; and,
- Summarize our findings and disseminate the information that we produce as widely as possible to stakeholders and users of information related to the automotive sector. Our initial reports are now available and our final reports will be made public before the end of 2021.

This report on automotive sector wages compensation is based on publicly available data that includes important analysis and identifies some important trends.

However, because the industry is so complex, provides so many different types of jobs, and changes so quickly, we want the reader to understand that publicly available data can provide important information but is insufficient to provide comprehensive insight into the total compensation provided by the broad sector to all occupations. Most of the publicly available data in this report relate to wages or

salaries for production workers and for skilled trades, although we recognize that the sector employs workers of diverse skill levels, qualifications, and educational attainments.

The government statistics for particular sectors are organized by North American Industrial Classification System (NAICS) codes. The two NAICS codes directly associated with the automotive sector are NAICS 3361 (motor vehicle manufacturing) and NAICS 3363 (motor vehicle parts manufacturing). But many jobs other than those provided by automotive assemblers and by companies identified as motor vehicle parts manufacturers are dependent on the success of the industry. Significant numbers of jobs in plastic and glass product production, in metal products and in software production, and in computer and electronics manufacturing are dependent on the sector as well. Unfortunately, we are not able to include wage data from NAICS other than 3361 and 3363 because wage data is unavailable for jobs that are automotive specific but related to those other NAICS codes.

The government wage data used for the report excludes non-wage benefits to employees and retirees. Secondary data sources were used to provide some commentary on the non-wage component of remuneration, which is a significant part of the total compensation bill in the automotive sector. Nonetheless, despite data limitations, this report reveals some important wage trends. In particular, the report found that wages for some production and skilled trades occupations are not keeping pace with wages in other sectors such as construction or utilities. It also reveals that there is a broad range of wage rates in the sector and that generally, wages are lower in parts production than they are in assembly. If the sector's wages are not keeping pace with other industries that could create labour supply challenges. While it is certainly understandable that assemblers will want to outsource some parts production to lower cost suppliers in order to remain competitive and win production mandates, it is possible that in addition to facing challenges recruiting for higher skilled occupations, some parts suppliers may find it challenging to recruit for lower paid occupations as well.

We are still working on how to define the sector and measure the size of the workforce. The industry is complex and changes quickly, and understanding the links between the various sectors that produce for the automotive industry means relying on data that may be a few years old. However, in other papers produced by this project, we are including the jobs in NAICS other than 3361 and 3363 that are dependent on the automotive sector and our preliminary research indicates that between 177,000 jobs and 188,000 jobs are dependent on the sector. Our preliminary work also indicates that included in those job numbers are over 20,000 skilled trades jobs and approximately 28,000 senior management, engineering and other jobs with a technical orientation. Our preliminary estimate of the economic output of automotive assembly and exported automotive parts is well over \$83 B per year.

It is this scale of the sector's economic impact, as well as its role in driving innovation that convinced us of the importance of examining the automotive sector labour market. The complexity of the industry may make it somewhat challenging to report effectively on automotive labour market trends, including trends related to wages, but the size of the sector and the significance of its economic contribution make it important to do so.

Introduction

Canada's automotive industry has long been valued for its capacity to employ tens of thousands of people at higher-than-average wages. This is particularly the case for the production and skilled trade workers of automakers such as Ford, Toyota, Honda, Fiat-Chrysler, and General Motors. However, little research has examined the wages of automotive workers after the substantial industry restructuring that has taken place in the past decade.

This report addresses this gap by analyzing several sources of publicly-available data related to wages in Canada's automotive industry. It provides insight into the wages and earnings of automotive industry workers throughout the supply chain. It examines the extent to which this wage-related data is publicly available, and provides clarity as to where researchers and policy-makers can locate this publicly-available wage data.

The wage section of this report is organized into three sections. The first section draws upon federal government statistics, including the Survey of Employment, Payroll and Hours (SEPH), Labour Force Survey (LFS), the Job Vacancy and Wage Survey (JVWS), and Canada's Census of Population (i.e. the Census). The second section draws upon collective agreements between unions and unionized automotive manufacturing employers, including automakers and automotive parts and technology manufacturers. While the second section provides insight into the wages of unionized automotive industry workers, it provides little insight into the wages of non-unionized workers. Therefore, the third section draws upon recent job postings by non-unionized automotive industry employers for wage insights.

The non-wage section of this report is also organized into three sections. First, an overview of non-wage compensation factors is provided along with general themes which impact non-wage compensation benefits for workers. The second section focuses on healthcare coverage, as it has been identified as the most expensive element of non-wage compensation. The third section draws upon current research regarding attracting and retaining workers within the industry. This is an important consideration as factors related to non-wage compensation issues are being

prioritized by unions as well as new entrants to the labour market. Each of the data sources provides insight into an important aspect of the automotive industry. However, each source of data also has limitations. The report identifies sources of publicly-available wage and non-wage data, the strengths and limitations of these sources, and the manner in which they can be used to identify current and longitudinal trends in automotive industry wages. This allows us to develop methods to identify wage and non-wage trends using publicly-available data that are replicable over time and across different industries/sectors.

Wage Compensation

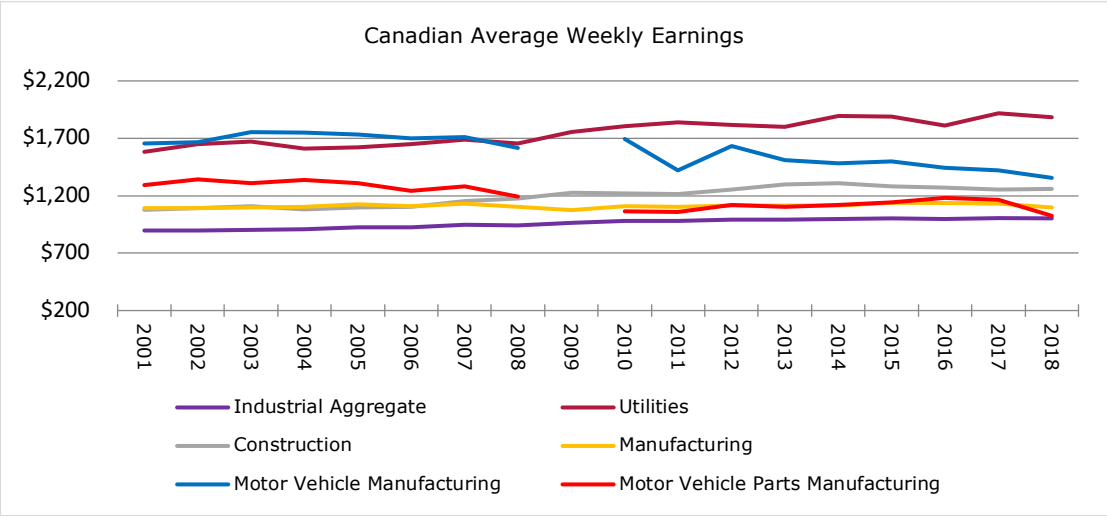
Government Statistics

Statistics Canada publicly disseminates wage and earnings data collected via several surveys. These surveys include the monthly and annual SEPH, the monthly and annual LFS, the quarterly JWWS, and the Census, which is conducted every five years. In most cases, data is organized by either NAICS or NOC codes. Some publicly-available SEPH and LFS tables provide data for 4-digit NAICS or NOC codes, but many provide data publicly only for 1-digit, 2-digit, or 3-digit NAICS or NOC codes. In some cases, more detailed data can be acquired directly from Statistics Canada. Some publicly-available Census tables (primarily those from the 2006 Census) sort NOC data by NAICS, as do some customized tables that this project acquired directly from Statistics Canada.

Data related to average weekly and average hourly earnings collected through the SEPH – a survey of employers – is publicly-available for 4-digit NAICS codes. Some data tables can be further refined geographically (at the provincial level), for different types of employees (salaried and hourly), and to show earnings including or not including overtime. Earnings are calculated based on gross payroll before deductions and thus presumably include bonuses and other contingent earnings. These data tables tend to provide comprehensive information for 4-digit NAICS codes at the highest levels of aggregation. However, data quality decreases for more detailed requests.

Figure 1 illustrates inflation-adjusted average weekly earnings for all industries (i.e. the industrial aggregate), utilities (NAICS 22), construction (NAICS 23), manufacturing (NAICS 31-33), motor vehicle manufacturing (NAICS 3361), and motor vehicle parts manufacturing (NAICS 3363) in Canada between 2001 and 2017 (save for 2009 data for 3361 and 3363, which is too unreliable to be published).¹ These data show that motor vehicle manufacturing employees earn on average \$1,355.43 each week (including overtime). They also show that motor vehicle manufacturing employees out-earn four of the other five employee groups by between 8% and 35%. However, utilities employees out-earn motor vehicle manufacturing employees (assembly employees) by 39%. Motor vehicle parts manufacturing employees (parts employees) out-earn the industrial aggregate and all manufacturing employees, but earn less than motor vehicle manufacturing, construction, and utilities employees. Finally, unlike the industrial aggregate, the manufacturing average, and those employed in construction and utilities, the real earnings of motor vehicle manufacturing and motor vehicle parts manufacturing employees have decreased by 18% and 21%, respectively, since 2001.

Figure 1. Average Weekly Earnings in Canada (Selected Industries), 2001-2018



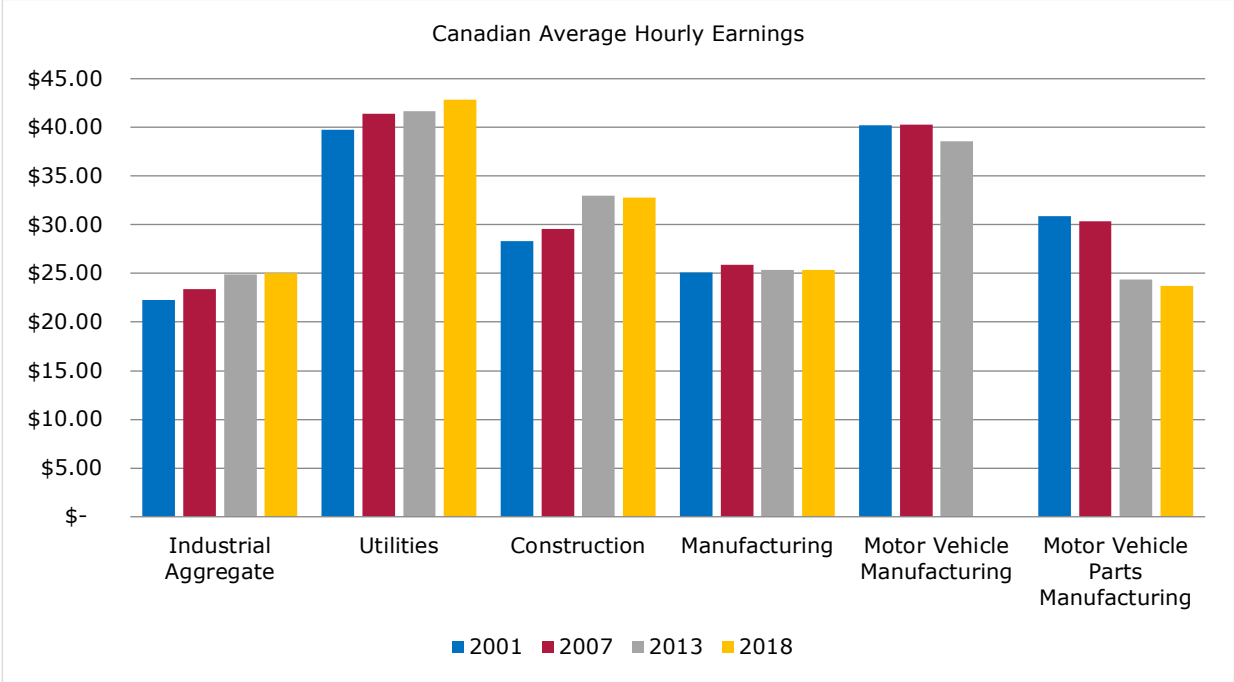
Source: Statistics Canada, 2019; CANSIM Table 14-01-0204-01

Another SEPH data table details average hourly earnings. Figure 2 compares inflation-adjusted hourly earnings from 2001, 2007, 2013, and 2018 (the years in which data

¹ Figure 1 - Data gaps exist in datasets for the period during the Great Recession.

for Motor Vehicle Manufacturing and/or Motor Vehicle Parts Manufacturing were available). It shows that, on average, motor vehicle manufacturing employees earn higher hourly wages than employees in all the other categories save for utilities. It also shows that the hourly earnings of motor vehicle parts manufacturing employees, which were higher than the industrial aggregate, construction, and the manufacturing average, are now the lowest of the six categories of employees. However, Figure 1 shows that the *weekly* earnings of motor vehicle parts manufacturing employees are higher than the industrial aggregate and the manufacturing average. This is because motor vehicle parts manufacturing employees are more likely to be full-time employees and to work more hours each week (see Statistics Canada, 2019; CANSIM Table 14-10-0037-01). Like Figure 1, Figure 2 shows that the average hourly wages of motor vehicle manufacturing and motor vehicle parts manufacturing employees decreased in real terms between the 2001 and 2018. This stands in contrast to the other categories of employees analyzed, whose real hourly wages increased during this period.

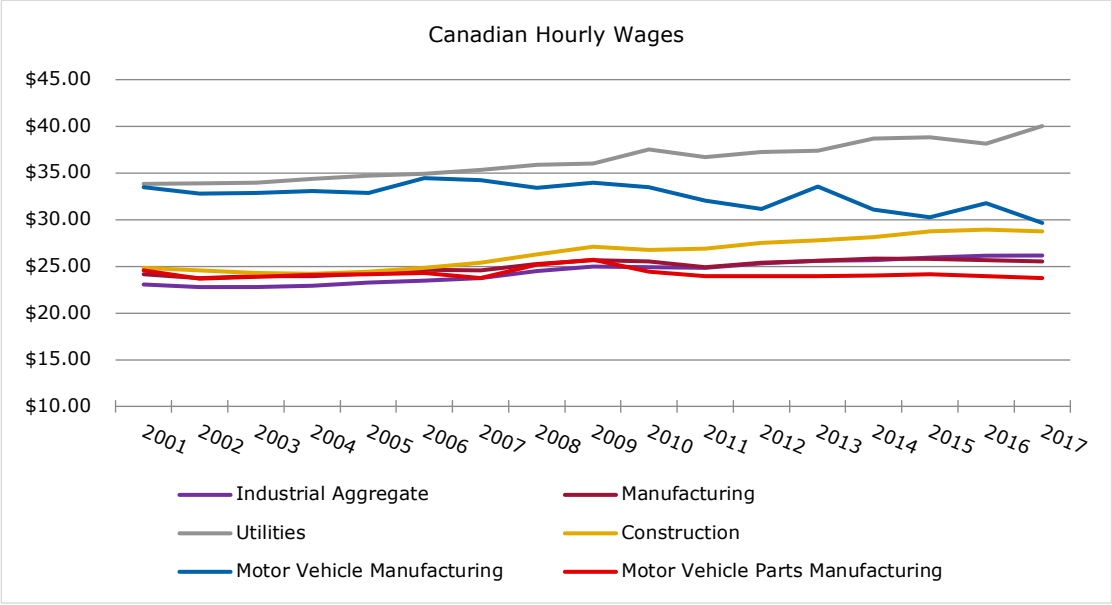
Figure 2. Average Hourly Earnings in Canada (Select Industries), Select Years



Source: Statistics Canada, 2019; CANSIM Table 14-10-0206-01

The LFS – a household survey – also provides hourly wage data. Unlike SEPH data, which is based on gross payroll (and includes bonuses, overtime, and contingent pay), LFS wage data is based solely on the reported base hourly wage. Figure 3 illustrates inflation-adjusted hourly wages between 2001 and 2017. It shows an increase in the hourly wage across all industries and in utilities, construction, and manufacturing, and a decrease in hourly wages in the motor vehicle manufacturing and motor vehicle parts manufacturing industries. Moreover, it shows that hourly wages in the motor vehicle parts manufacturing industry have fallen below the average hourly wage in all industries and in manufacturing, and that the hourly wage in motor vehicle parts manufacturing, which was once comparable to that in construction, is now nearly five dollars an hour less than the average hourly wage in construction.

Figure 3. Hourly Wages in Select Canadian Industries, 2001-2017.

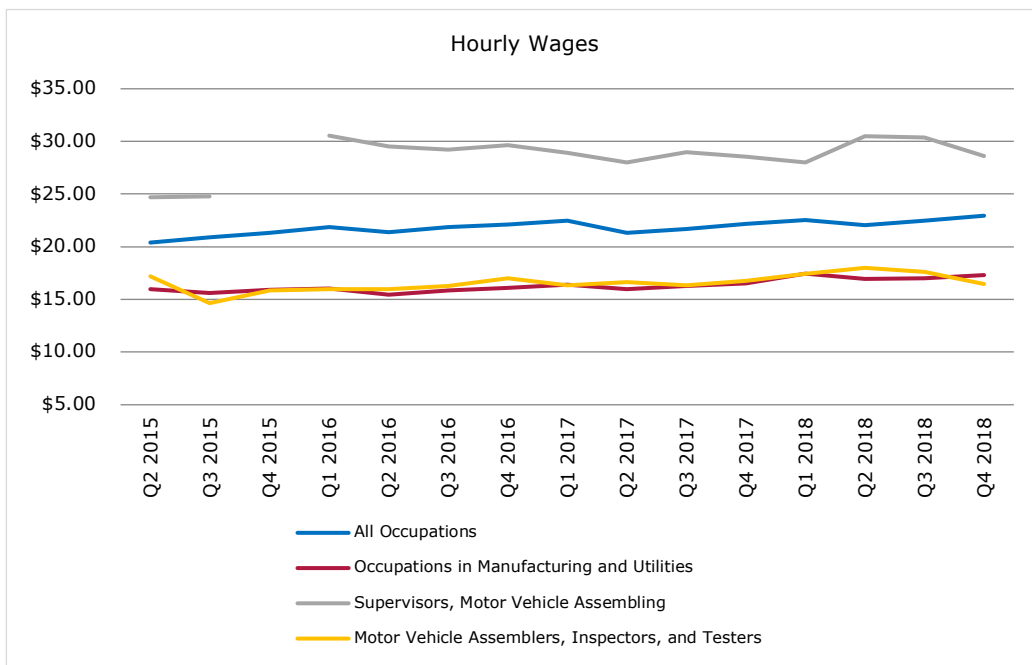


Source: Statistics Canada, 2019; CANSIM Table 14-10-0064-01

Data for particular occupations is available in the JWWS and the Census. The JWWS – a quarterly survey of employers – is relatively new; data is available beginning in 2015. The primary purpose of the JWWS is to collect data about job vacancies, the hourly wage offered, and the minimum level of education sought by employers. JWWS data is not yet available for 4-digit NAICS codes. It is, however, available for 4-digit

NOC codes. The JWWS data provides insight into two occupations for which the majority of employees are employed within NAICS codes 3361 and 3363: Supervisors, Motor Vehicle Assembling (NOC 9221) and Motor Vehicle Assemblers, Inspectors, and Testers (9522). Figure 4 illustrates the hourly wages offered for these two occupations, for all occupations, and for occupations in manufacturing and utilities (NOC 9) between 2015 and 2018. It shows that real hourly wages increased across all four categories over this time. The wages offered to Motor Vehicle Assembling Supervisors increased from \$26.11 an hour (when adjusted for inflation) in 2015 to \$29.36 in 2018. The inflation-adjusted wage increases for the other categories was smaller: an increase from \$22.03 to \$22.50 for all occupations, an increase from \$16.70 to \$17.18 for occupations in manufacturing and utilities, and an increase from \$16.77 to \$17.38 for Motor Vehicle Assemblers, Inspectors, and Testers. Similar to the data above, the JWWS data shows that the entry-level wages of production-based employees (as opposed to skilled trades, supervisors, or professionals such as engineers) working in the automotive industry are currently well below the average for all occupations.

Figure 4. Hourly Wages Offered, Select Occupations, 2015-2018.²

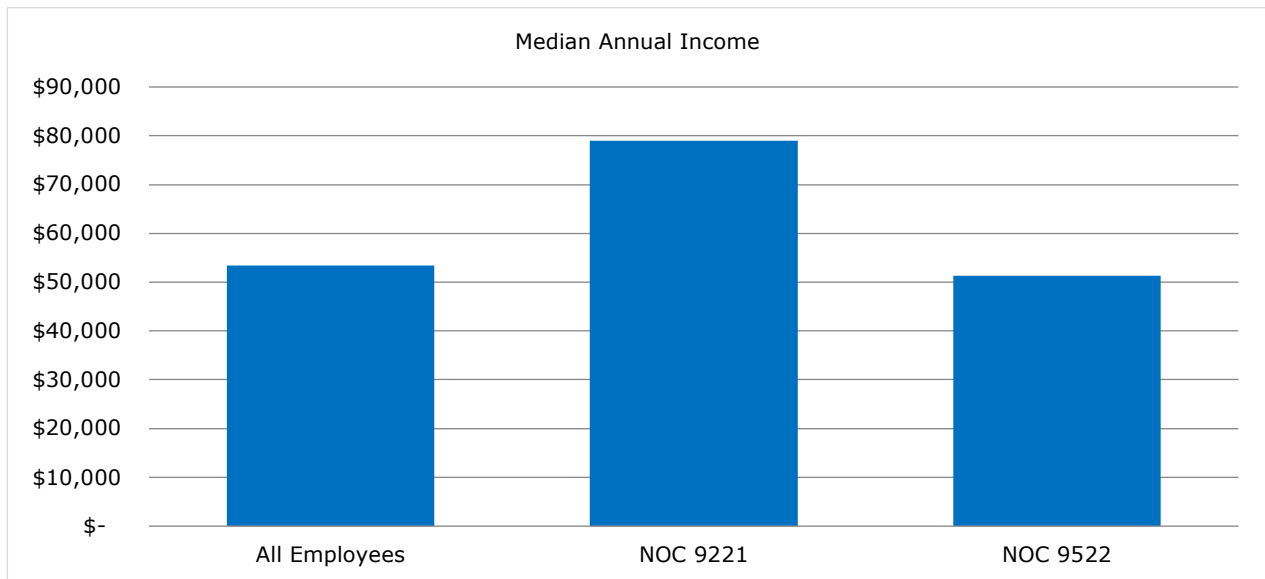


Source: Statistics Canada, 2019: CANSIM Table 14-10-0328-01

Another source of data is the 2016 Census. It provides annual earnings data for Motor Vehicle Assembling Supervisors and Motor Vehicle Assemblers, Inspectors, and Testers. Figure 5 below, draws upon Census data, and illustrates the median annual income for all full-time employees in Canada, for full-time Supervisor, Motor Vehicle Assembling, and for full-time Motor Vehicle Assemblers, Inspectors, and Testers in 2016.

² Figure 4 contains breaks in the trend line are a result of unreliability of data collected in 2009 for NAICS 3361 and 3363

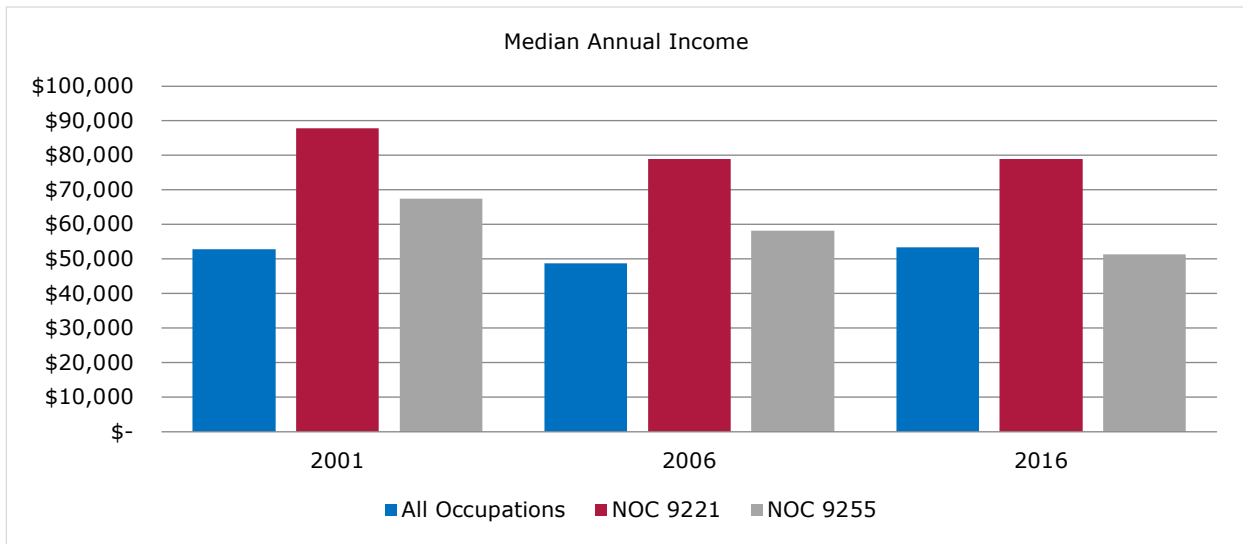
Figure 5. Median Annual Income, Select Occupations, 2016.



Source: Statistics Canada, 2016 Census of Population, Catalogue No. 98-400-X2016271

Figure 6 shows a comparison of Census years - 2001, 2006, and 2016 (2011 data is not available). It should be noted that Supervisors make significantly higher wages than other types of employees in the country. More specifically, the 2016 Census results show that the median annual income of full-time Motor Vehicle Assembling Supervisors is 32.4% higher than that of all full-time employees in Canada while the median annual income of Motor Vehicle Assemblers, Inspectors, and Testers is 4.2% lower. The relatively low wages of full-time Motor Vehicle Assemblers, Inspectors, and Testers are notable, especially when examined over time. The 2006 Census shows that, after controlling for inflation, Motor Vehicle Assemblers, Inspectors, and Testers earned 19.5% more than the average for all occupations and the 2001 Census shows that they earned on average 27.7% more. (See Figure 5) The drop in wages for this occupational group from 2001 through to 2006 and then to 2016 is notable.

Figure 6. Median Annual Income, Select Occupations, 2001, 2006, and 2016.



Source: Statistics Canada, 2016 Census of Population, Catalogue No. 98-400-X2016271; Statistics Canada, 2006 and 2001 Census of Population, Catalogue No. 97-563-XCB2006063

Government statistics show that automotive industry wages are, in most cases, are higher than or close to the average wages of other industries. However, they also show that automotive industry wages have decreased in both real and relative terms over the past two decades. There has been similar wage stagnation in the United States for auto manufacturing workers, as noted by Rattner (2014), based on data from the Bureau of Labour Statistics. Rattner also acknowledges that when non-wage compensation is factored in, the full compensation of US auto workers is higher than service employees.

Collective Agreements

Wage data can also be obtained by examining the collective agreements of automotive manufacturing industry employees in Canada. Collective agreements are accessible through the Ontario Ministry of Labour’s Collective Bargaining Ontario website³ and Employment and Social Development Canada (ESDC)’s Negotech website⁴, and can provide insight into several aspects of the wages of

³ See <https://www.lrs.labour.gov.on.ca/en/main.htm>

⁴ See <https://www.canada.ca/en/employment-social-development/services/collective-bargaining-data.html>

unionized automotive industry employees. These include the range of wages for production-based employees, the wages of skilled tradespersons, and the length of time that it takes for entry-level employees to reach top rates of pay (i.e. the 'grow-in' rate). The primary limitation associated with these data is that union density in Canada's automotive industry has decreased substantially since the late 1990s. Such analysis is therefore limited to a smaller segment of the automotive manufacturing industry than in the past. That said, unions continue to represent a substantial number of automotive industry employees. Moreover, by comparing data from collective agreements to government statistics and other data it is possible to identify similarities and differences in the wages offered by unionized and non-unionized automotive industry employers.

In Canada, the production and skilled trades employees of FCA, Ford, and General Motors' vehicle assembly and powertrain manufacturing facilities are unionized. The production and skilled trades employees of bus and heavy truck manufacturers including New Flyer Industries, Nova Bus, Prevost, and Paccar are also unionized. In 2018, these firms employed approximately 34,000 unionized employees. Table 1 illustrates the wages of production and skilled trade employees and the length of the 'grow-in' period in these facilities as stipulated by collective agreements.

Table 1. Production and Skilled Trade Wages in Unionized Vehicle Assembly Facilities.

Employer	Production – Start	Production – Max	Skilled Trades	Grow-In Period (Months)
FCA	\$21.99	\$35.99	\$42.47	120
Ford	\$22.12	\$36.12	\$42.47	120
GM	\$22.12	\$36.12	\$42.47	120
New Flyer	\$19.02	\$28.86	\$34.05	36
MCI	\$17.86	\$29.74	n/a	Two-Tier
Nova Bus	\$18.82	\$29.01	\$38.03	60
Paccar	\$21.26	\$27.63	\$32.56	48
Prévost	\$19.16	\$28.42	\$40.32	12

Of the over 700 automotive parts and components manufacturing facilities in Canada, we identified 188 that are unionized. While Unifor represents employees at a majority of these bargaining units, the United Steelworkers (USW), Workers United, United Auto Workers (UAW), Teamsters, International Association of Machinists and Aerospace Workers (IAM), and United Food and Commercial Workers (UFCW) also represent automotive parts and components manufacturing

workers. Furthermore, a number of automotive parts and components manufacturing employees in Québec are represented by unions associated with the Confédération de syndicats nationaux (CSN).

Our analysis is based on a sample of 155 collective agreements from 188 unionized automotive parts and components manufacturing facilities. Together, the sample facilities employ approximately 25,000 unionized employees. Table 2 illustrates the average, median, maximum, and minimum entry-level and top hourly wages for production employees in these facilities. These data show that on average, the hourly wage for entry-level employees in unionized facilities was \$16.57 and the average top wage was \$23.57. They also show substantial variation in wages between facilities and between unions. However, starting wages in a large majority of facilities were below the average. Only 8 collective agreements stipulated a starting hourly wage over \$20.00, while 44 stipulated a starting hourly wage of \$15.00 or less. The collective agreements in 10 facilities stipulated a maximum hourly wage for production employees above \$30.00. An additional 17 collective agreements stipulated a maximum hourly wage of between \$25.00 and \$29.99. The collective agreements in 44 facilities stipulated a maximum hourly wage of less than \$20.00. On average, it takes 41 months for entry-level production workers to ‘grow-in’ to the top rate. It generally takes longer (up to 133 months) for employees covered by a collective agreement with higher-than-average maximum hourly wages.

Table 2. Hourly Wages (Production) in Unionized Automotive Parts Manufacturing Facilities.

	Entry-Level	Maximum
Average	\$16.57	\$23.57
Median	\$16.11	\$23.30
Maximum	\$28.88	\$36.30
Minimum	\$14.00	\$14.75

Of the 155 collective agreements in our sample, 112 stipulated wages for skilled trades occupations. The most common skilled trades occupations identified in collective agreements were industrial electricians, industrial mechanics/millwrights, and tool and die makers. Table 3 illustrates the average, median, maximum, and minimum hourly wages for skilled tradespersons who have completed their

apprenticeships and are fully licensed as stipulated by these collective agreements. Most collective agreements stipulated one hourly wage for licensed tradespersons, as opposed to the range of hourly wages associated with production employees.

The average hourly wage for unionized skilled trades occupations was close to \$31.00. There was less variation in the hourly wages of skilled tradespersons than of unionized production employees. However, the hourly wages of skilled tradespersons in unionized automotive parts and component manufacturing facilities was much lower than in unionized vehicle assembly facilities, and in many cases, lower than the hourly wages of production employees with 10 or more years of experience in those same facilities. They are also lower than the hourly wages offered by many non-union automotive parts and components manufacturing facilities, as examined in the next section.

Table 3. Hourly Wages (Skilled Trades) in Unionized Automotive Parts Manufacturing Facilities.

	Electrician	Millwright	Tool & Die Maker
Average	\$31.37	\$30.98	\$31.19
Median	\$31.24	\$31.11	\$31.11
Maximum	\$39.78	\$39.78	\$36.28
Minimum	\$26.41	\$24.21	\$26.43

Job Postings

Job posting data represent an additional source of publicly-available information regarding the hourly wages of automotive manufacturing employees. They are particularly useful in identifying the entry-level wages of production and skilled trades employees in non-unionized vehicle assembly and automotive parts and components manufacturing facilities.

Labour markets in many parts of Canada are tight. As a result, many manufacturing firms are actively recruiting workers. Many firms recruit online through job postings on their company website, private job posting websites (e.g. ca.indeed.com; www.workopolis.com), and government websites (e.g. jobbank.gc.ca).

This section examines data from online job postings for production and skilled trade occupations. The data is drawn from two samples. The first sample includes job postings from December 2018 and January 2019. This sample includes job postings

for production occupations from 83 automotive parts and components manufacturing facilities that employ over 36,000 people and job postings for skilled trades occupations from 49 facilities that employ over 22,000 people. The second sample includes job postings from June and July 2019. This sample includes job postings for production occupations from 77 automotive parts and components manufacturing facilities that employ over 28,000 people and job postings for skilled trades occupations from 46 facilities that employ over 18,000 people.⁵ As noted, these facilities are non-union automotive parts and components manufacturers. Only job postings that include information regarding the hourly wage were included (note: the majority of job postings do *not* include information regarding the hourly wage. Very few job postings for engineers and supervisors included wage information). Job postings by third-party recruiters or employment agencies were excluded, even when it would have been possible to identify the eventual employer. Production occupations are those that did not require specific trades or technical certifications (although the employer may have noted a preferred level of experience or education). Skilled trade occupations are those that required a certification or accreditation by the Ontario College of Trades. Job postings for unlicensed tradespersons (there were some) were excluded.

Table 4 illustrates the average, median, maximum, and minimum hourly wages offered in job postings for production occupations. The average entry-level hourly wage offered in the first sample was \$16.70 and in the second sample was \$17.07. The increase in the hourly rate was possibly the result of inflation or tight labour markets. It may also be related to the size of the sample. There was some variation in hourly wages across establishments, with more facilities posting entry-level production jobs with hourly wages lower than the average and very few posting jobs with a starting wage of \$20.00 or more. In the first sample only four facilities posted an entry-level hourly wage of \$20.00 or more. In the second sample only five facilities posted an entry-level hourly wage of \$20.00 or more.

⁵ The hourly wages at non-union vehicle assembly plants are similar to those at FCA, Ford, and GM. For example, the starting hourly wage advertised in postings for production occupations at Toyota is \$21.33. The hourly wage for skilled trade occupations is \$41.94.

Table 4. Entry-Level Hourly Wages (Production) in Non-Unionized Automotive Parts Manufacturing Facilities.

	Sample 1	Sample 2
Average	\$16.70	\$17.07
Median	\$16.55	\$16.92
Maximum	\$22.00	\$22.49
Minimum	\$14.00	\$14.00

Table 5 illustrates the average, median, maximum, and minimum hourly wages offered in job postings to skilled tradespersons by non-union automotive parts and components manufacturing facilities. It also illustrates the average hourly wages offered to industrial electricians, industrial mechanics/millwrights, and tool and die makers. The average hourly wages offered increased by more than two dollars between the first and second sample. This is more likely to be the result of the relatively small sample size than an actual increase in the hourly wages offered to skilled tradespersons. Nevertheless, the average hourly wages for skilled tradespersons in non-unionized automotive parts and components manufacturing facilities are comparable, if not slightly higher, to those offered in unionized facilities. Facilities with more than 500 employees were more likely to offer hourly wages considerably higher than the average hourly wage.

Table 5. Hourly Wages (Skilled Trades) in Non-Unionized Automotive Parts Manufacturing Facilities.

	Sample 1	Sample 2
Average	\$29.50	\$31.59
Median	\$28.78	\$32.05
Maximum	\$41.06	\$39.78
Minimum	\$18.00	\$18.00
Electrician (Average)	\$29.59	\$34.39
Millwright (Average)	\$31.24	\$32.19
Tool & Die Maker (Average)	\$27.44	\$28.46

Professional Workers

In addition to production workers, the sector employs a growing number of people with professional degrees in technology and engineering to support the changing nature of the industry and product innovation including engineers, software engineer, computer programmers, mechanical engineering technologists, and a wide variety of other high skill occupations. According to a compensation survey (Mercer, 2018) of the OSPE Ontario Society of Professional Engineers, depending on level of responsibility, professional engineers working in all sectors can earn

anywhere from \$60,000 to \$194,000 per year. Experienced software developers in Canada can earn in the range of \$80,000 to over \$150,000 per year (Alibi, 2019). Canada is in a good position to provide a supply of labour in the professional category, as it has the most highly-educated adult population. In 2018, Canada had the highest proportion of the *adult population* 18-64 years with tertiary education (57.9%), followed by Japan at 51.9%, Korea at 49%, the USA at 47.4%, with Mexico at 18% (OECD, 2018). Assuming a more highly educated and skilled workforce is attractive to investors in the evolving automotive industry, this should work to Canada’s advantage in attracting investment.

Non-Wage Compensation

Overview

Overall compensation for employees includes both wage and non-wage components that employers utilize to attract, retain, and motivate workers. Table 6 below outlines the two segments of wage and non-wage compensation.

Table 6. Types of Wage vs. Non-Wage Compensation

Income related, non-wage compensation	Pension and benefit related, non-wage compensation
<ul style="list-style-type: none"> ● Profit-sharing ● Bonuses ● Stock options ● Other contingent compensation 	<ul style="list-style-type: none"> ● Health and dental insurance ● Pensions ● Paid Vacation and sick days ● Life and disability insurance ● Supplemental unemployment benefits ● Educational assistance (tuition - employee and family, training and development, etc.) ● Legal assistance ● Health and wellness (employee assistance programs, etc.) ● Family-friendly benefits (daycare, maternity top-ups, etc.) ● Amenities (fitness center, employee lounge, sports facilities, meditation room/religious, etc.)

Sources: Budd, 2005; Stanford, 2009; Tuor Sartore & Backes-Gallner, 2014; Hirish, 2008; Yerema & Leung, 2018

An employee confidence survey conducted by Harris Poll on behalf of Glassdoor found that among their sample of 2,016 adults over the age of 18 who were either

employed full or part-time or self-employed in the United States, generally 80% of people preferred additional benefits over pay raises (Jones, 2017). In the automotive sector, it is not clear if these results would be generalizable to lower-paid production workers. Beyond base wages, non-wage compensation strategies are useful to attract the best talent and remain competitive in the labour market. Findings show that workers in many cases prefer non-wage compensation benefits over monetary wage increases (Jones, 2017).

Generally, unionization was linked to greater non-wage compensation for workers prior to the recession. In 2005, it was reported that unionized workers in the manufacturing sector were experiencing greater levels of health insurance coverage at 86%, compared to non-unionized manufacturing workers at 73% (Budd, 2005). Pension coverage for unionized workers was also reportedly better in the manufacturing sector at 77%, compared to 59% of non-unionized manufacturing workers (Budd, 2005). Furthermore, unionized workers were more likely to have defined benefit pension plans, which help to attract and retain workers (Budd, 2005). It is important to note that these findings were reported prior to post-recession restructuring and that presently, there is limited research regarding this topic. Overall, it is clear that the automotive industry has been one sector where non-wage compensation has comprised a large part of compensation costs for companies. In 2008, at the start of the recession, the top Canadian automotive manufacturers paid workers more in non-wage compensation benefits than they did in actual monetary wages. In particular, base wages equated to approximately 38% of overall compensation, resulting in 62% of labour costs associated with health benefits and all other non-wage compensation costs (Sherk, 2008). The industry has since rebounded from the recession and labour unions have worked with automotive companies to manage labour costs, in efforts to maintain and grow investments and employment levels.

Healthcare Coverage

Health care coverage has been identified as one of the most expensive non-wage compensation costs for Industry. Since 1973, non-wage compensation costs among companies steadily increased in the United States. Healthcare costs are a primary

factor related to this steady increase. However, non-wage compensation costs have been reduced over the past decade due to a reduction in coverage offerings by employers and slower growth of health services (Baker, 2019). While health care is the most expensive element of non-wage compensation costs, it is also perhaps the non-wage element most valued by workers. Prior to the Great Recession in 2008/2009, union experts reported that unionized workers in the United States were willing to forego wage increases in order to maintain their health coverage (United States Government Accountability Office, 2006). In 2018, per person health care costs in the United States were more than twice the average than in other OECD countries.

Health care coverage costs were reduced for the Big Three companies during the Great Recession through one-time government (US and Canada) assistance and union concessions around costs for new hires and retiree healthcare costs. However, North American assembly companies continue to view health costs as a factor in managing production cost and competitiveness with automotive companies from outside of North America. For instance, it was reported that General Motors spends approximately \$900 million in annual health care contributions globally and this continues to increase (Szymkowski, 2019). Ford, GM, and Fiat Chrysler Automobiles expect their global health care costs to exceed \$1 billion in 2020 (Martinez, 2019). One of the points of contention in the 2019 strike at General Motors was the proposed increase to worker health care coverage contributions. The settlement included a 3% wage increase in two years of the contract, 4% bonus payments in the other two years, and no changes in the amount workers contribute toward their health-care benefits (Naughton & Colias, 2019). When interviewed, individual production and assembly employees reiterated the importance of health benefits, especially for those who may suffer from injuries as a result of their repetitive work (Associated Press, 2019). In Canada and Ontario, where the majority of Canada's automotive sector is located, the public health care system reduces healthcare costs for companies, as healthcare plans provide supplemental coverage not covered by the public healthcare system.

Strategies to Attract and Retain

Non-wage compensation can be used strategically to attract, recruit, retain, and motivate workers. In 2015, Glassdoor, a job and recruiting resource, conducted an employee confidence survey which found that 60% of people reported that benefits were a major factor that they considered prior to accepting job offers and that 80% would prefer additional benefits rather than wage increases (Jones, 2017). Non-wage compensation can also be used as a strategy to retain workers in lower-paying jobs. In one study of approximately 2,000 working age individuals in the United States, Fractal, a research company, found that flexible hours, additional paid vacation, and unlimited vacation time would give lower-paying jobs an advantage over higher-paying job offers with fewer non-wage compensation factors (Jones, 2017). Flexible hours may be challenging to offer to production and assembly workers however, employers can offer workers in technical and engineering occupations this type of non-wage compensation or benefits. In addition, another study that surveyed 1,200 parents with children under the age of 18 who resided in their home found that benefits related to work-life balance were more highly valued over wages and health coverage (Jones, 2017). These non-wage compensation factors can be relatively less costly than health coverage and pension plans in attracting, motivating, and retaining workers in automotive manufacturing.

Beyond highly-valued health benefits, other less expensive benefits that focus on work-life balance and additional paid vacation can sway candidates away from higher-paying job offers that provide fewer or weaker such benefits (Jones, 2017). A study of 2,000 workers (between 18 and 81 years of age) in the United States ranked health benefits as the most valued, followed by flexible working options (flexible hours, shortened and compressed work, telecommuting), unlimited or additional vacation, and student loan assistance (Jones, 2017; Yerema & Leung, 2018). The big auto assembly companies have been offering many of the non-wage options, however, smaller companies, especially in parts supply may not be able to offer these benefits in terms of costs and operational requirements; flexible work arrangements will not be feasible for some production workers but may be possible for professional and managerial workers.

Related to demographics, both older workers and workers with families preferred benefits, rather than monetary compensation strategies offered by employers (Budd, 2005). More recently, women have been found more likely to prefer family-related benefits including paid parental leave and daycare services when considering job offers compared to male counterparts (Jones, 2017). In contrast, a benefits survey from the Society of Human Resource Management found that 52% of companies provide education assistance and noted that employers can provide this assistance for employees each year without being taxed (Jones, 2017).

In order for automotive manufacturers to be competitive in the labour market, flexible non-wage compensatory benefits such as work time flexibility, training, and choice of work assignment locations should be considered where possible (Hirish, 2008). While automotive manufacturing employers and parts suppliers may be limited in what flexible work arrangements that they can offer some workers, it is possible to offer professional workers non-wage compensation options to attract and retain them, especially as work-life balance becomes a priority. Automotive assembly and parts who have less work flexibility may be eligible to receive additional wage compensation in the forms of overtime or other shift premiums as compensation for interference in their life and family due to shift arrangements (Stanford, 2009).

Limitations

Little current research exists regarding the compensation strategies for automotive workers due to industry restructuring that has taken place over the past decade. This report relies on secondary sources of data from government and other sources (online databases, news sources, reports).⁶ Each of the wage compensation data sources provides insight into an important aspect of the automotive industry. This section outlines the limitations of the report by identifying the sources of publicly-available wage data used in the report, and the strengths and limitations of the sources of data.

⁶ See References list

Government Statistics

Data used in the report came from Job Vacancy and Wage JWWS survey and the Survey of Employment, Payrolls and Hours (SEPH). In addition, data from the Labour Force Survey and the 2001, 2006, and 2016 Census (2011 data is not available) was referenced. Using official government sources provides trust in the reliability and validity of the data related to better coverage and results, e.g., legal requirement for employers to provide data. While useful, there are limitations to government data. First, each dataset uses different methods, data collection frequencies/periods, sources (employers, households, administrative data), and/or groups that create variation in data across time. Second, NAICS and NOC codes do not perfectly capture the entire automotive industry. JWWS data is not granular with gaps at the region and Industry level. Data is not yet available for 4-digit NAICS codes (it is available for 4-digit NOC codes) which is important as research shows that up to 30% of automotive parts and technology suppliers are assigned a NAICS code other than 3361 or 3363 (Mordue & Sweeney, 2017). The third limitation is specific to the JWWS, and is primarily related to the fact that the JWWS is relatively new which does not allow for time series analysis, and that data quality and availability tends to increase over time. Also, the SEPH estimates have been criticized for underestimating the volume of unoccupied positions in the economy. The government data is also limited in that it provides information primarily for production and skilled trades occupations and lacks information on professional and managerial occupations in the automotive industry, an important and growing component of the automotive workforce.

Collective Agreements

The primary limitation of associated data extracted from Collective Agreements is that union density in Canada's automotive industry has decreased substantially since the late 1990s (Gordon, 2011). Such analysis is therefore limited to a smaller segment of the automotive manufacturing industry than in the past. That said, unions continue to represent a substantial number of automotive industry employees. Moreover, by comparing data from collective agreements to government statistics and other data it is possible to identify similarities and

differences in the wages offered by unionized and non-unionized automotive industry employers.

There are several limitations in addition to the diminishing number of unionized automotive industry employees in Canada. First, although collective agreements are useful in determining the range of hourly wages in production occupations, there is no way to tell how many people are employed in each category. Second, analyzing collective agreements can be difficult and time-consuming. There is no common collective agreement template, and the actual layout and formatting of collective agreements varies substantially both across and within unions. Despite our best efforts there may be errors based on interpretation.

Job Postings

Similar to the other sources of data, online job postings have limitations. First, unlike collective agreements, it is difficult to ascertain the top rates of pay for production employees. Second, most job postings do not advertise the hourly wage rate. Specifically, we do not have reliable data for higher paid professional and management positions within the industry. While there were a large number of job postings for engineers and supervisors, these advertisements seldom include hourly wage or salary. Third, many automotive manufacturing employers use recruitment firms to hire entry-level employees or engage temporary employment agencies. It is difficult to determine the number of persons employed through these means, although our analysis suggests that it is substantial. Finally, using online job postings to gain insight into the wages of non-unionized automotive manufacturing employees is most useful during periods of low unemployment and/or when labour markets are tight. This strategy is less useful during periods of high unemployment, when fewer positions are being advertised.

Non-wage compensation data

The wage section of this report does not take into consideration the total compensation costs within the automotive industry for employers as a result of non-wage compensation factors. The non-wage compensation section of this report supplements the wage section and provides an overview of worker benefits that have significant impacts on automotive manufacturers' ability to attract and retain workers. We do not have official, government data regarding non-wage labour costs in Canada especially for higher paid professionals, including engineers and managers. This information is primarily confidential. This report's sources regarding non-wage compensation focus on general manufacturing, with some references to the automotive industry and to how various elements of non-wage compensation can assist employers in attracting and retaining lower-paid workers. In addition, some references to wages for high-skilled workers used online recruiting firms who compile wage data based on job postings.

Missing Data Points

Finally, some of the figures included in this report are missing data points for particular years, a common occurrence for datasets which cover the period of the Great Recession. Any data that was unavailable or considered to be unreliable was excluded from this report.

Discussion and Conclusion

This report illustrates several important points related to wages in Canada's automotive industry. First, the automotive industry remains an important source of employment, and includes many well-paying jobs. However, it is increasingly evident that wages and earnings in at least some segments of the automotive industry have not kept pace with the industrial aggregate, the manufacturing average, and average wages in construction and utilities; two industries with which automotive manufacturing employers compete for labour. There has also been wage stagnation in the United States for auto manufacturing workers (Rattner,

2014; Haglund, 2019). Research done by the Center for Automotive Research (CAR) found that nominal wages for U.S. workers in the auto manufacturing sector increased by just over 6% from \$28.49 in 2002 to \$30.20 in 2018 but real wages fell by 23.5% (as cited in Haglund, 2019). Second, there is substantial diversity in wages and earnings throughout the supply chain. As is evident from this report, most automotive original equipment manufacturers (OEMs) pay experienced production workers more than many suppliers pay supervisors and tradespersons. The hourly wages of both production and skilled trades employees also vary substantially across employers, unionized or not. Third, there is substantial and potentially increasing diversity in wages and benefits across occupations. Namely, many vehicle assembly and automotive parts manufacturing facilities pay tradespersons an hourly wage that is more than twice that paid to entry-level production employees. This may be indicative of the importance of skilled trades to manufacturing processes and the tight labour market for skilled tradespersons in regions with substantial automotive manufacturing capacity.

While this report is not exhaustive, and limitations remain, we venture several potential reasons for the decreasing real wages of automotive manufacturing employees in Canada.

First, automotive manufacturing wages increased considerably in the 1980s and 1990s. This was due to both industry growth, improved productivity, and to gains made through collective bargaining. The wage rates in the late 1990s and early 2000s thus provide a lofty starting point for our analysis.

Second, competition and industry restructuring beginning in the mid-2000s had a significant impact on Canada's automotive industry. In order to maintain production and attract investment, many firms reduced entry-level wages through extended 'grow-in'⁷ and two-tier compensation systems⁸. Such restructuring did not impact

⁷ Extending 'wage schedule grow-ins' means altering or introducing new collective agreement language which sets out pay levels linked to seniority so as to extend the period of time and employee must serve before attaining certain stipulated rates of pay.

⁸ Two-tier collective agreements stipulate different scales and progressions of compensation and/or other terms of employment based on employees' seniority. Two-tier collective agreements might provide that new hires receive lower wages, different/weaker pensions or retirement income provisions, different/weaker benefits, different/weaker job security

construction, utilities, or other service or tertiary industries to the same degree, as all of the latter are less impacted by foreign competition and are less likely to be 'off-shored' than are automotive manufacturing activities.

In addition, this report provides information primarily for production and skilled trades occupations. It provides less information about an important segment of highly-skilled, professional and managerial occupations in the automotive industry, such as engineering, technical, supervisory, managerial, and R&D personnel. These jobs are, on average, higher-paying and may represent a greater proportion of the automotive workforce moving forward.

In addition to wages, the report does highlight general industry costs associated with non-wage compensation, with some reference to the automotive sector, and the importance of non-wage compensation (monetary and non-monetary) in attracting and retaining workers. When non-wage compensation is factored in, auto workers' full compensation is comparable to or better than other sectors. Depending on demographics and type of worker – production, professional or managerial – different types of non-wage compensation may be more important for attracting and retaining workers in the automotive sector.

protections, longer probationary periods or a combination of these measures. These differences may be temporary or permanent, depending on the specific language in the agreement.

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