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# Understanding the Truck Driver Supply and Demand Gap and Its Implications for the Canadian Economy



Understanding the Truck Driver Supply and Demand Gap and Its Implications for the Canadian Economy  
by *Vijay Gill* and *Alicia Macdonald*

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## Preface

Canada is facing a challenge as a result of its aging workforce. This challenge is particularly acute for the for-hire trucking industry, as workers in its key occupation—truck drivers—are aging significantly more rapidly than the rest of the workforce.

This challenge is affecting, and will continue to affect, other industries since all of the goods that we produce and consume in Canada are delivered in part by truck. This report quantifies the expected gap between the supply and demand for truck drivers in the for-hire trucking industry and puts this into the context of the economic importance of the trucking industry.

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## EXECUTIVE SUMMARY

# Understanding the Truck Driver Supply and Demand Gap and Its Implications for the Canadian Economy

### At a Glance

- ◆ The age of the average truck driver has increased more rapidly than the age of the average worker due to fewer young workers entering the industry.
- ◆ Meanwhile, the demand for truck drivers will increase as industries that rely on trucking services continue to grow. By 2020, the gap between the supply and demand of drivers is expected to be 25,000. This number could exceed 33,000, assuming a lower rate of productivity growth.
- ◆ This is cause for concern, not just for the trucking industry, but for its customers, the Canadian economy, and, ultimately, consumers.

Improvements in the movement of goods will have a direct impact on the well-being of individuals. Given that trucks play a part in delivering most of the food that we eat, the leisure goods that we enjoy, and the roofs under which we live, the current challenges faced by the trucking industry are a concern for all Canadians.

Like many industries, the trucking industry is facing growing challenges due to the aging population. However, the magnitude of the demand for goods movement, the resulting demand for truck drivers, and the unfavourable

demographic profile of truck drivers all mean that the impact on the trucking industry is particularly acute. Moreover, the sheer number of drivers required to move our goods makes it all the more difficult to find an adequate supply. There are over 300,000 truck drivers in Canada today, which includes both drivers in the for-hire trucking industry and those drivers engaged in private trucking activity (trucking services that are carried out in-house by companies in other industries). This means that nearly 1 per cent of the Canadian population and over 1.5 per cent of the labour force are employed as truck drivers.

The main purpose of this report is to quantify the truck driver supply requirements and the resulting pressure that the for-hire trucking industry will face to attract new drivers. In a business-as-usual scenario where the trucking industry continues to have difficulty in attracting younger workers to long-haul trucking occupations in particular, we find that the driver supply will remain relatively stagnant until 2020. Yet a significant portion of those industries in Canada that are in a growth stage depends on services from the for-hire trucking industry for sourcing materials, delivering goods to and from distribution centres, and delivering their final products to customers. As these industries continue to grow, so too will their demand for trucking services, which will result in a need for an increased supply of drivers.

If we assume ongoing labour productivity increases of two-thirds of 1 per cent per year for the for-hire trucking industry, the resulting supply and demand gap for truck drivers will be nearly 25,000 drivers—or about 14 per

cent of the driver population required to meet demand by 2020. While past estimates indicate that the industry's productivity performance has been strong, the industry faces significant challenges in the future. Congestion, changes in hours-of-service rules in the United States, restrictions on size and weight regulations, and other challenges will all affect the industry's ability to maintain productivity gains in the coming years. A sensitivity analysis conducted for this study suggests that if an improvement in labour productivity is lower than anticipated, the gap could exceed 33,000 drivers. This is due in large part to the tens of thousands of drivers approaching retirement age and the very small number of young drivers taking their place. (If we were to include the driver requirements for private trucking activity, the gap would be even larger.)

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**Approximately 87 per cent of productivity gains by the for-hire trucking industry since 1986 have flowed through to customers in the form of lower prices.**

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In the face of increasing demographic pressures, a number of factors could help to match the supply and demand for truck drivers. These include:

- ♦ a contraction of the trucking industry relative to the forecast;
- ♦ a smaller- or larger-than-expected increase in trucking industry productivity;
- ♦ a significant improvement in industry working conditions or wages, marketing of the truck driving occupation, and driver training/licensing;
- ♦ a reorganization of trucking activity and supply chains in order to reduce the demand for long-haul drivers; and
- ♦ a change in policy to allow the truck driving occupation to be recognized as a skilled trade.

In the past, productivity gains in the for-hire trucking industry have been quickly passed on to customers. In fact, approximately 87 per cent of productivity gains by the for-hire trucking industry since 1986 have flowed through to customers in the form of lower prices. This demonstrates that shippers have a direct interest in improving trucking industry productivity and addressing labour

challenges, as the resulting benefits are subsequently passed on to shippers in the form of lower prices. For example, small changes at receiving points that minimize the amount of time drivers spend waiting helps to improve carriers' productivity. Such productivity improvements flow back to the shipper.

With \$17 billion in annual gross domestic product (GDP) and as an employer of nearly 300,000 workers, the for-hire trucking industry's impact on the Canadian economy is large. This impact is even larger when the indirect and induced impacts are considered.

More importantly, however, efficient and effective trucking services—along with efficient supply chain logistics—shrink distances between firms and people, and make markets work better. Conversely, a weakening of transportation systems does the opposite: When the distance between firms and people is increased, the cost of doing business increases.

Ultimately, efficient freight transportation improves export competitiveness and results in more goods being available at lower prices for consumers. This makes the health of the trucking industry freight transportation networks an issue of importance for Canadian competitiveness.

It will be up to the trucking industry to address its own labour challenges, and make the industry more attractive to potential drivers. However, industry leaders believe that there is also an important role for government to play in developing policies and regulatory frameworks that establish national occupational, training, and licensing standards that recognize truck driving as a skilled occupation. Furthermore, any policy support that enhances the industry's productivity will help to mitigate the impact that results from the lack of available drivers.

It will also be important to convince customers of the need to address this situation now and to work with them to develop strategies that will make the best use of drivers' time. After all, the trucking industry's long track record in sharing the benefit of its own productivity gains provides a direct incentive for its customers to collaborate on strategies.

## CHAPTER 1

# Introduction

### Chapter Summary

- ◆ Improvements in the movement of goods have a direct impact on the well-being of individuals. They lower the prices of consumer goods and provide us with a wider variety.
- ◆ Almost all goods are delivered at least in part by trucks. Naturally, this trucking activity depends on the availability of a large number of truck drivers. But there is a growing difficulty in attracting an adequate supply of drivers in Canada.
- ◆ This difficulty is cause for concern—for the trucking industry, for its customers, and for consumers.
- ◆ This report quantifies the magnitude of the truck driver supply requirements and the resulting pressure that the trucking industry will face in attracting new talent.

When the general public thinks about investments in transportation infrastructure, they often think about passenger transportation only. This is because improvements or deteriorations in passenger transportation services are very visible and therefore immediately felt by individuals.

Improvements in goods movement also have a direct impact on our well-being—perhaps even to a greater degree. However, this impact is not always at top of mind for individuals.

The challenges faced by the trucking industry generally do not make the front page news. Yet, the industry provides services that are crucial to our daily lives—almost all of the food that we eat, the leisure items that we enjoy, and the roofs under which we live have been delivered at least in part by trucks. The trucking industry is also a major employer in Canada, with close to 1 per cent of all Canadians and 1.5 per cent of the labour force employed as truck drivers.

More than ever, the industry is finding it increasingly difficult to attract an adequate supply of quality drivers.

It is certainly not the only industry facing this difficulty. In fact, the country as a whole has labour challenges. The Conference Board of Canada recently described this challenge as a “demographic tsunami” that will have a profound impact on our society.<sup>1</sup>

However, the magnitude of the demand for goods movement, the resulting demand for truck drivers, and the particularly unfavourable demographic profile of truck drivers mean that the trucking industry will be the first to feel the effects of this demographic tsunami. For example,

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1 Hodgson, *Slow-Motion Demographic Tsunami*.



## Terminology

**Trucking industry/for-hire trucking industry:** This refers to the “for-hire” trucking industry, which is classified as subsector 484 in the North American Industry Classification System (NAICS). This includes companies that provide truck transportation services to other companies.

**Private trucking:** In addition to for-hire carriers, there is a significant amount of “private trucking” activity—trucking services that are carried out in-house by companies for the purpose of moving their own goods. More often than not, private trucking activity is more local (intra-city) in nature.

**Long-haul trucking:** Intercity trucking services where the length of haul is typically 500 kilometres or more.

**Short-haul trucking:** Local trucking services that are typically intra-city or where the length of haul is less than 500 kilometres.

**Truckload (TL) services:** Trucking services that move full or close to full loads of freight.

**Less-than-truckload (LTL) services:** Trucking services that move smaller quantities of freight, making use of centralized terminals in order to consolidate shipments.

**Owner-operator:** A truck driver who supplies his or her own truck.

**Labour Force Survey (LFS):** This monthly survey, conducted by Statistics Canada, provides estimates of employment and unemployment. These data are collected more frequently than data captured by the census, but rely on a much smaller sample size.

Sources: Statistics Canada; Stephens.com; The Conference Board of Canada.

The Canadian Chamber of Commerce highlighted skills issues in a number of industries and included the growing demand for truck drivers, which has been forecasted by other organizations such as the Canadian Trucking Human Resources Council (CTHRC).<sup>2</sup> Meanwhile, an estimate of critical supply chain labour requirements for Alberta and British Columbia projected that most supply chain occupations would be under-supplied by 2020. While the truck driving occupation was found to be more or less in balance overall, it was noted that the level of aggregation in the data obscured the significant challenges found in recruiting long-haul drivers.<sup>3</sup>

The challenges faced by the industry in terms of attracting drivers are not new. Past research has shown that drivers have been aging more rapidly than the labour force in general, in part due to the long hours and irregular schedules faced by long-haul drivers.<sup>4</sup> Other research has shown that the occupation is prone to high turnover due to inadequate pay and quality-of-life issues.<sup>5</sup> In many respects, these challenges persist today.

## PURPOSE OF THE REPORT

The primary purpose of this report is to quantify the magnitude of the truck driver supply requirements and the resulting pressure that the industry will face in its ability to attract new talent. We provide a brief overview of the profile of the current driver population in Canada using census and Labour Force Survey data. We focus primarily on the for-hire trucking industry and use the terms “trucking industry” and “for-hire trucking industry” interchangeably. (For a list of terms and their meanings, see box “Terminology.”) In addition to the for-hire industry, there are truck drivers employed by non-trucking companies, such as retailers, for the purpose of moving their own goods. In general, it is more difficult to measure the level of this “private trucking” activity given that it is dispersed among a wide range of other industries.

Next, we provide a demographic forecast of the supply of drivers out to 2020 using a business-as-usual scenario. This is contrasted with an independent forecast of the demand for drivers, which is derived from the expected demand for trucking services from other industries.

The quantitative work is complemented by qualitative findings from a survey of trucking industry executives and shippers who rely on trucking services to move their products. These findings are followed by an estimate of the economic impact of the trucking industry and a discussion of the economic benefits of a healthy trucking industry.

2 The Canadian Chamber of Commerce, *Canada's Skills Crisis*, 6.

3 Calgary Logistics Council, *The Accelerator Project*, 22.

4 Dubé and Pilon, *On the Road Again*.

5 Chow, *Labour Standard Issues in the Inter-Provincial Canadian Trucking Industry*.



## CHAPTER 2

# Summary of Truck Driver Population Demographics in Canada

### Chapter Summary

- ◆ Many Canadians make their living driving a truck. There are about 180,000 truck drivers in the for-hire trucking industry and over 300,000 truck drivers across all industries.
- ◆ While the overall labour force in Canada is aging, the truck driver population has aged more rapidly. The average age of the truck driver has increased from 40 years in 1996 to over 44 years in 2006.
- ◆ There are also relatively few truck drivers under the age of 30. While a quarter of courier and delivery drivers, who are not included as truck drivers, are under the age of 30, only 12 per cent of truck drivers are under 30. The difficulty in attracting younger drivers poses a problem for the industry, especially as older drivers retire.

Before assessing the supply and eventual demand for truck drivers in Canada, we first provide a summary of the truck driver population in Canada. Primary data sources for the summary are the 2006 Census and the Statistics Canada Labour Force Survey (LFS). The two data sets provide different estimates of the truck driver (and other occupation) data. Later charts normalize the LFS data to the 2006 Census

year. Other data based on the census are projected to 2011, and beyond, using the LFS data and our labour supply model.

Other sources such as previous analysis conducted for CTHRC<sup>1</sup> and Transport Canada<sup>2</sup> provide estimates of the trucking workforce population. It is important to note some of the differences in the definitions that contribute to different totals. For example, Transport Canada provides an estimate of the total employment in the for-hire trucking industry.<sup>3</sup> Its estimate places employment in the industry at just over 300,000. Of this total, over 60 per cent were employed as drivers.

According to the 2006 Census, there were 304,890 truck drivers in the labour force (this includes both the for-hire trucking industry and private trucking).<sup>4</sup> Approximately 180,000 of these drivers were employed in the for-hire trucking industry (corresponding to the 60 per cent mentioned above).

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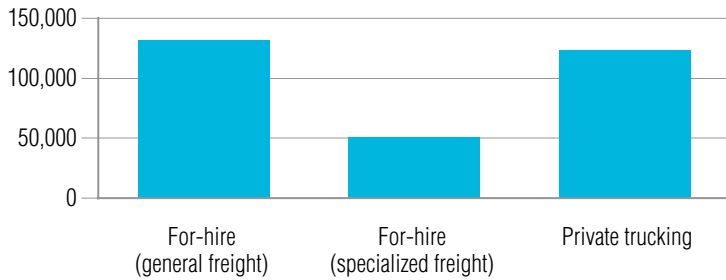
1 Canadian Trucking Human Resources Council, *Labour Market Information*.

2 Transport Canada, *Statistical Addendum 2011*.

3 Transport Canada, *Statistical Addendum 2011*, Table EC32.

4 According to the LFS data for the same year, the total was 281,600 in 2006, growing to 310,500 in 2011. For the trucking industry specifically, the LFS total for 2006 and 2011 were 161,600 and 173,100, respectively. For the purpose of describing driver demographics, we rely primarily on the census data. In the next chapter where we project driver supply and demand for the industry, we rely on the more recent LFS data.

**Chart 1**  
Employed Truck Drivers—For-Hire Trucking Industry and Private Trucking, 2006  
(number)



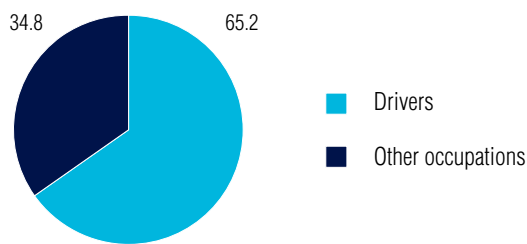
Source: Statistics Canada, 2006 Census.

Chart 1 shows the distribution of driver population by trucking sub-industry (general vs. specialized freight) and all other industries (which includes private trucking) according to the 2006 Census data.

Within the for-hire trucking industry, truck drivers accounted for approximately 65 per cent of the total labour force in the industry. (See Chart 2.) Total employment in the for-hire industry, including owner-operators, was approximately 278,000, which corresponds to the total published by Transport Canada for the same year.

### TRUCK DRIVER AGE COMPARED WITH THE TOTAL LABOUR FORCE

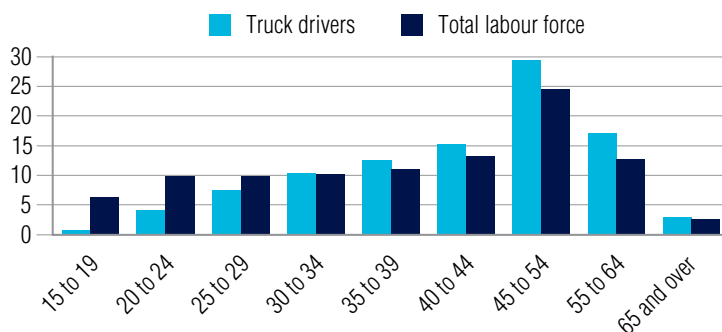
**Chart 2**  
Drivers and Rest of Labour Force—For-Hire Trucking Industry, 2006  
(per cent)



Source: Statistics Canada, 2006 Census.

Chart 3 compares the age distribution of the truck driver population for the for-hire trucking industry and private trucking with the total labour force. The average truck driver age was 44.2 years, compared with an average of 40.2 years for the total labour force. With the exception of motor transport supervisors, this is also the highest average age among selected occupations. (See Table 1.) Furthermore, over 20 per cent of the driver population was over the age of 54. The higher average age of truck drivers is the result of relatively few drivers under the age of 25 and, to a lesser extent, between the ages of 25 and 29.

**Chart 3**  
Age Cohorts—Truck Drivers vs. Total Labour Force, 2006  
(percentage share)



Source: Statistics Canada, 2006 Census.

Although older than average, the truck driver population is not the only occupation faced with an aging labour force. However, other “like” occupations typically fare better in terms of attracting young workers. For example, nearly a quarter of delivery and courier service drivers are under the age of 30, compared with only 12 per cent of truck drivers. And almost half of railway and motor transport labourers are under the age of 30. Chart 4 shows the age distribution of a number of occupations, including a few that are unlikely to compete with the truck driver occupation, such as finance and insurance administrators.

## AGING OF THE TRUCK DRIVER POPULATION

Demonstrating that the average truck driver is older than the average person in the labour force is one thing. But has the average driver age increased more quickly than the total labour force average?

One way to answer this is to consider the average driver age in 2006 compared with data from previous census years. In particular, we take the average driver age from 1996 along with the average age from selected occupations and the labour force in general. Table 1 summarizes these data.

**The average driver age increased 3.7 years between 1996 and 2006, while the average increase was two years across all observed occupations.**

Truck drivers have indeed aged more quickly than the total labour force—as have delivery drivers. The average driver age increased 3.7 years between 1996 and 2006, while the average increase was two years across all occupations. The decrease in the average age for railway labourers reflects the success of attracting younger workers into that occupation, as evident from the data in Table 1.

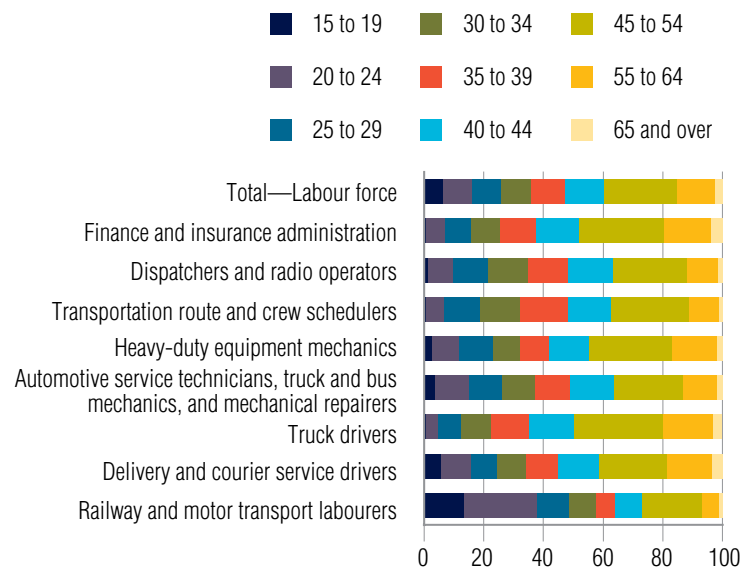
It is interesting to note that in 1996 a smaller proportion of truck drivers was 65 or older, compared with the labour force in general: 1.2 per cent of truck drivers were 65 or older in 1996, while 1.8 per cent of the labour force was 65 or older. This is an intuitive outcome, as the physical demands of the occupation may make it more difficult to continue to work at an older age. However, by 2006, this result reversed: 3 per cent of all truck drivers were 65 or older in 2006, while the corresponding number for the total labour force was 2.6 per cent. This reversal can, in part, be explained by the difficulty that the industry has had in terms of recruiting younger drivers. It also demonstrates that some of the “new” supply of drivers has actually come from current drivers who have delayed their retirement.

**Table 1**  
Aging of the Labour Force and Selected Occupations  
(average age in years)

	1996	2006	Increase
All occupations	38.3	40.2	2.0
A111 Financial managers	41.8	43.9	2.1
A112 Human resources managers	42.5	43.6	1.0
B1 Finance and insurance administrative occupations	40.9	43.5	2.6
B575 Dispatchers and radio operators	38.4	40.3	1.9
B576 Transportation route and crew schedulers	40.3	40.7	0.4
H022 Supervisors, motor transport, and other ground transit operators	42.7	44.9	2.2
H412 Heavy-duty equipment mechanics	39.9	41.6	1.7
H421 Motor vehicle mechanics, technicians, and mechanical repairers	37.1	39.7	2.5
H711 Truck drivers	40.5	44.2	3.7
H714 Delivery drivers	36.1	40.9	4.8
H812 Material handlers	34.7	36.9	2.2
H832 Railway and motor transport labourers	35.6	33.7	-1.9

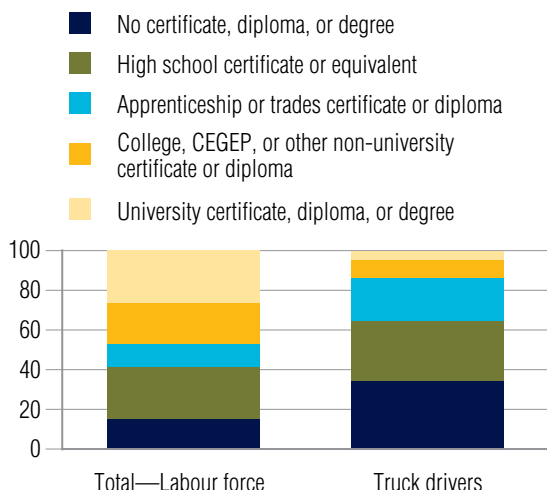
Sources: Statistics Canada; The Conference Board of Canada.

**Chart 4**  
Age Cohorts—Truck Drivers and Selected Occupations\*, 2006  
(percentage share)



\*National Occupational Classification (NOC) definition  
Source: Statistics Canada, 2006 Census.

**Chart 5**  
Education Level—Truck Drivers (For-Hire and Private Trucking) and Total Labour Force (percentage share)



CEGEP = Collège d'enseignement général et professionnel  
\*National Occupational Classification (NOC) definition  
Source: Statistics Canada, 2006 Census.

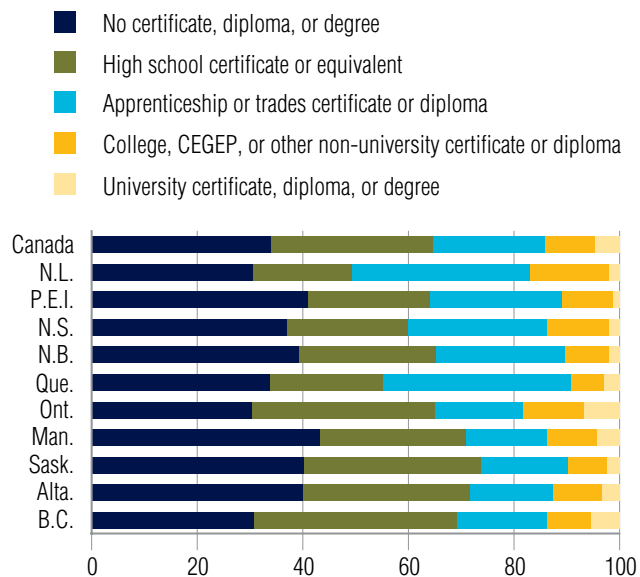
As part of our industry consultations (see Chapter 4), we asked carriers if they tracked the average age of their drivers and if the average age has increased over time. While it was a small sample, it is interesting to note that the average driver age reported ranged from 44 to 51 years, and that this average age continues to increase—indicating that the current driver age may, in fact, be higher than reported in the 2006 Census data.

### TRUCK DRIVER FORMAL EDUCATION

The educational level of the average truck driver was significantly lower than that of the total labour force. (See Chart 5.) About one-third of the driver population had less than a high school education, compared with 15 per cent for the total labour force.

There was considerable variation in the average educational level of truck drivers across the country, with Newfoundland and Labrador, Ontario, and British Columbia having the lowest share of drivers who had less than a high school diploma (just over 30 per cent) and Manitoba having the highest share (44 per cent). (See Chart 6.)

**Chart 6**  
Education Status—Truck Drivers (For-Hire and Private Trucking Combined), by Province (percentage share)



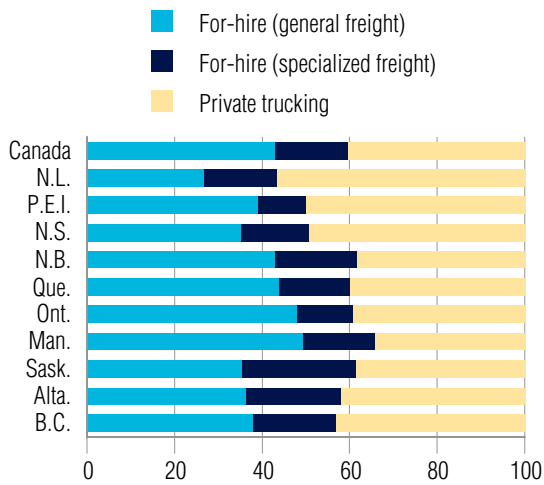
CEGEP = Collège d'enseignement général et professionnel  
Source: Statistics Canada, 2006 Census.

### TRUCK DRIVER INDUSTRY DISTRIBUTION AND IMMIGRANT STATUS

There was also considerable provincial variation in driver population industry distribution. More than half of the drivers in Newfoundland and Labrador were employed in private trucking. On the opposite end of the spectrum was Manitoba, where the share of the private trucking industry was only 35 per cent. (See Chart 7.)

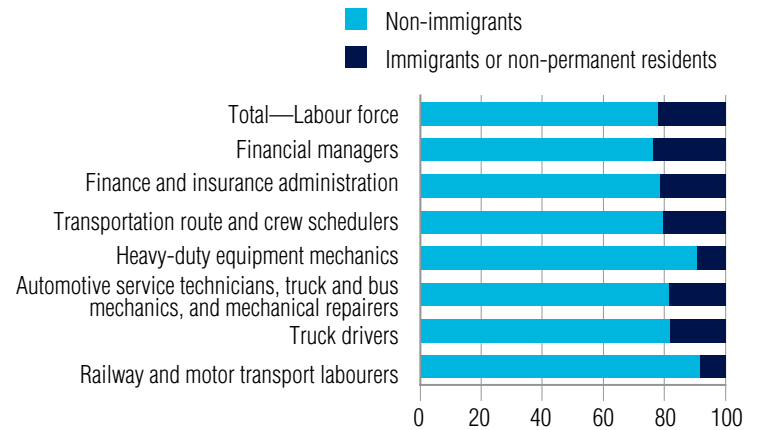
On average, fewer immigrants—about 3 per cent less—have been attracted to working as truck drivers, compared with the total labour force. This is likely because truck driving is not recognized as a skilled occupation. Other occupations such as railway and motor transport labourers—which attract a significantly

**Chart 7**  
Driver Population Industry Distribution, by Province (percentage share)



Source: Statistics Canada, 2006 Census.

**Chart 8**  
Immigrant Status—Truck Drivers and Selected Occupations\* (percentage share)



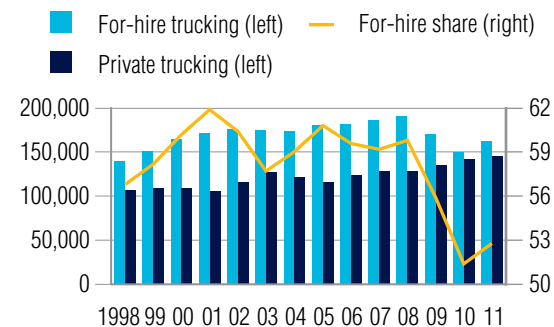
\*National Occupational Classification (NOC) definition  
Source: Statistics Canada, 2006 Census.

younger population—and heavy-duty equipment mechanics have significantly lower immigrant shares, at less than 10 per cent. (See Chart 8.)

The following charts provide data based on the Labour Force Survey (LFS), which show a smaller driver population. However, since the LFS is conducted regularly, it makes it possible to observe the growth in the driver occupation population over time. (See Chart 9 for the growth of the truck driver population by industry.) While the overall trend indicates that the driver population has increased from 281,000 drivers in 2006 to 310,000 drivers in 2011, the number of drivers employed in the for-hire trucking industry has decreased, with private trucking making up for the decline. This is a small reversal of the general trend in previous years to outsource trucking activity. Currently, the share of truck driver employment in the trucking industry stands at 56 per cent.

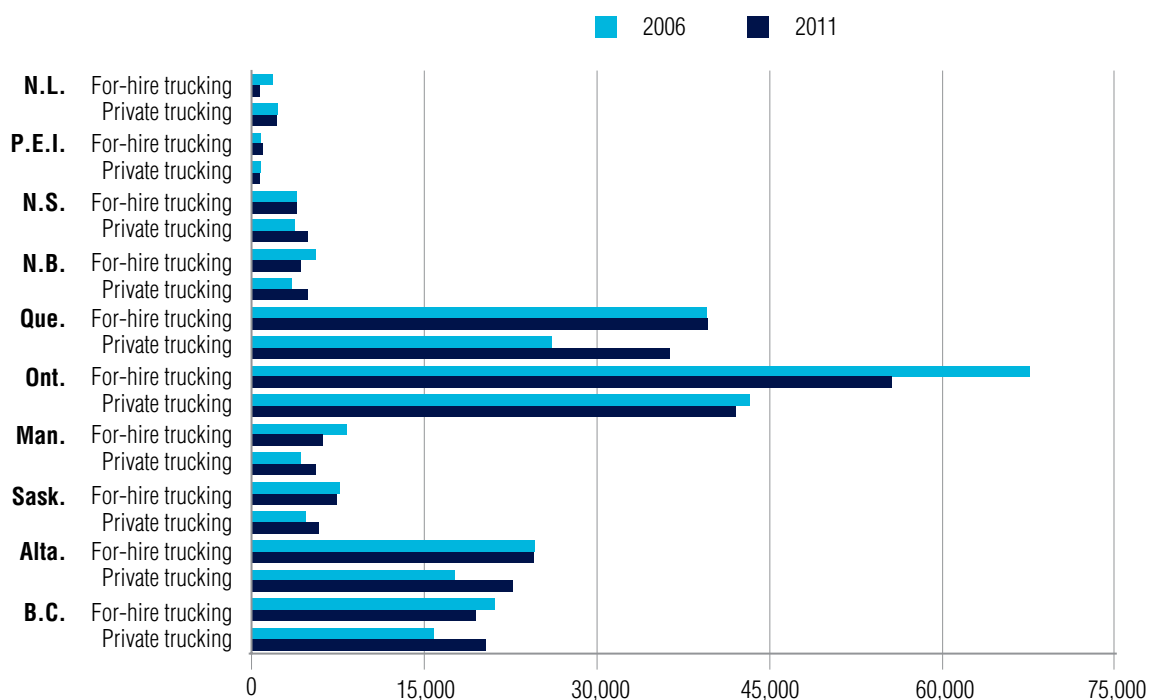
Chart 10 shows the growth of the driver population (for-hire and private trucking) from 2006 to 2011. In Ontario, growth has been relatively flat, although the

**Chart 9**  
Truck Driver Population—For-Hire Trucking and Private Trucking, 1998–2011 (number; per cent)



Sources: Statistics Canada, Labour Force Surveys; The Conference Board of Canada.

distribution changed slightly in favour of the trucking industry. The strong employment growth in the trucking and other industries in Quebec, Alberta, and British Columbia may be an indication of the strength of the resource industries in those provinces.

**Chart 10**Truck Driver Populations—For-Hire Industry and Private Trucking, by Province  
(number)Sources: Statistics Canada, *Labour Force Surveys*; The Conference Board of Canada.

## DRIVER WAGES

The growth in weekly wages in current (nominal) dollars for the 1998 to 2011 period is shown in Chart 11. As expected, wage growth in the trucking and other industries has been strongest in Alberta, Saskatchewan, and Newfoundland and Labrador. In the for-hire industry, weekly wages topped \$1,200 in Alberta in 2011, which is in contrast to the average weekly wage of \$800 or less in most of the Eastern provinces. (These figures are based on weekly wages for drivers who work for companies.)

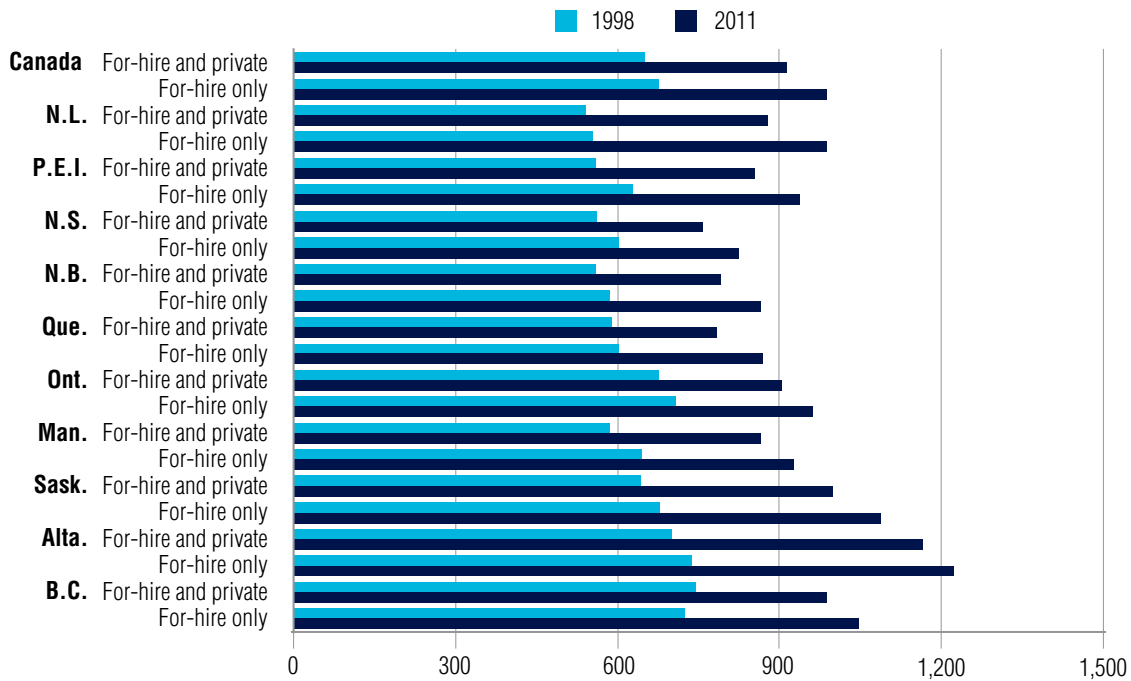
The LFS data do not cover wages for owner-operators (drivers who own their own truck), which accounts for a significant portion—roughly one-third—of for-hire

trucking industry drivers. This is due in part to the difficulty in distinguishing between what the owner-operator is receiving as payment for driving and payment for use of the equipment.

Chart 12 shows the change in weekly wages over the same period, adjusted for inflation.<sup>5</sup> When adjusted for inflation, wages overall have grown at less than 1 per cent per year since 1998. In Ontario, real wages have barely improved.

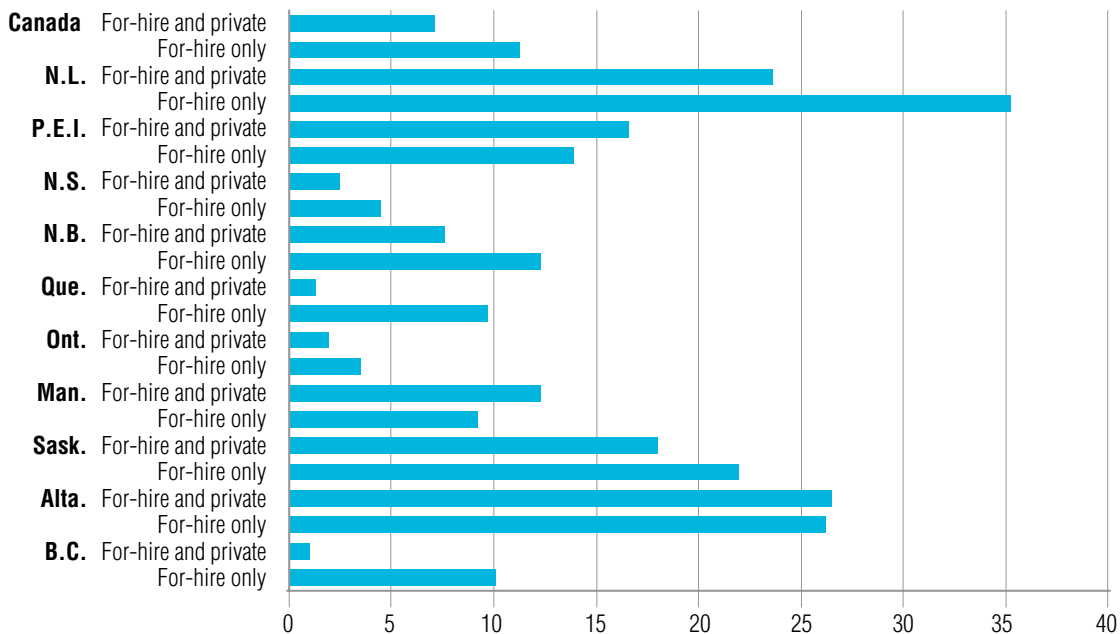
<sup>5</sup> The national Consumer Price Index (CPI) was used as the rate of inflation. The use of CPI indices specific to each province would yield a different result, decreasing the disparity in growth between provinces for the most part.

**Chart 11**  
Weekly Wages of Truck Drivers  
(current \$)



Source: Statistics Canada, *Labour Force Surveys*.

**Chart 12**  
Truck Drivers—Real Change in Weekly Wage, 1998–2011  
(percentage change)



Sources: Statistics Canada, *Labour Force Surveys*; The Conference Board of Canada.



## CHAPTER 3

# The Supply and Demand of Truck Drivers

### Chapter Summary

- ◆ Labour force participation in Canada has been declining and will continue to decline due to the aging boomer population. This decline will be offset to some extent by the echo generation, but labour force participation by those in the younger age cohorts has been dropping off due to a frustration with job searches.
- ◆ Due in large part to the aging workforce, the supply of truck drivers in the business-as-usual scenario is not expected to increase significantly over the next few years. However, even if we assume that industry productivity will increase steadily, a growing demand for trucking services will continue to result in greater demand for truck drivers.
- ◆ This demand is expected to result in a supply and demand gap of nearly 25,000 drivers—about 14 per cent of the anticipated driver population—for the for-hire trucking industry by 2020, if productivity increases by 0.67 per cent per year during this period. If the improvement in labour productivity is lower, the gap could exceed 30,000 drivers.
- ◆ Since this scenario does not factor in any requirements that the private trucking industry may have, the overall supply and demand gap for truck drivers in the country will be higher.

**B**usinesses across the country are facing labour challenges. These challenges are expected to become more prominent in the near future as the population ages.

According to The Conference Board of Canada's *Canadian Outlook Summer 2012*,<sup>1</sup> labour force participation, or the share of the population that is available to work, is declining, and will continue to decline primarily as a function of the aging boomer population. This decline is offset to some extent by the echo generation (the children of the boomers) and by immigration.

Meanwhile, the participation of young cohorts, particularly those between the ages of 15 and 24, has dropped off significantly over the past decade. This may be due in part to the frustration with job searches—resulting in many young people giving up their job searches and dropping out of the labour force.

While labour supply problems have not been as acute in recent times due to the effects of the recession, over the medium term we expect labour to be in relatively short supply overall due to a steady recovery and the aging

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<sup>1</sup> The Conference Board of Canada, *Canadian Outlook Summer 2012*.

workforce. The Conference Board's *Index of Business Confidence* from the third quarter of 2012<sup>2</sup> found that 24 per cent of firms reported a shortage of qualified staff.

The Conference Board's *Compensation Planning Outlook* for 2013 cites a particularly tight labour market in Western Canada and in the natural resources sector in general. As a result, Alberta and Saskatchewan are expected to see the highest base pay increases in 2013.<sup>3</sup>

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Due mainly to the overall older demographics of the driver population, along with the virtual non-existent presence of younger truck drivers, we would intuitively expect the potential labour supply for the trucking industry would grow even less quickly compared with the total labour force.

## OUTLOOK FOR SUPPLY OF TRUCK DRIVERS IN CANADA

Chapter 2 provided some insight on the driver population in terms of how it has aged and the related lack of younger people who have entered the occupation. We developed a model in order to estimate how the supply of truck drivers available to the trucking industry will develop in the near- to mid-term, out to 2020. The model leverages data from Statistics Canada's Labour Force Survey (LFS) and Census of Population. (For brief details on the supply model methodology, see box "Driver Supply Model Methodology.")

The primary function of the model is to estimate annual exits from the occupation due to retirements, compared with annual entries from new entrants into the labour force (primarily those leaving school and new immigrants). The model also considers entrants from and exits to

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2 The Conference Board of Canada, *Index of Business Confidence: Autumn 2012*.

3 Stewart, *Compensation Planning Outlook*, i-ii.

### Driver Supply Model Methodology

In the model, the available supply of truck drivers in a given year is the supply available in the previous year, plus new entries of drivers and minus the exits of drivers. The number of truck drivers who enter the labour pool in a given year is composed of a couple of distinct groups: international immigrants and entrants from the domestic labour force.

Our methodology incorporates the relative mobility of truck drivers in the forecast. For example, if it is an occupation where people have historically been less, or more, likely to move to work for, it will continue to display the same characteristic.

To forecast domestic entry into the truck driver labour force, the Conference Board estimated the number of school leavers who enter the truck driving occupation. To complete this forecast, the Board examined the educational attainment of workers between the ages of 25 and 34 years to establish an educational profile for the occupation. This profile varied across regions. A separate "occupation ratio" was created to capture the attractiveness of the occupation to school leavers. These variables were then applied to the Conference Board's forecast of population at the relevant age to develop the forecast for school leavers.

At the provincial level, we considered both interprovincial immigration and emigration. To establish the number of truck drivers entering the province from other provinces, we applied the ratio of truck drivers to the total labour force from the 2006 Census to provincial immigration. Lastly, we adjusted for employment growth of truck drivers in the province, compared with Canada as a whole. If one particular occupation had especially strong growth in the province, it was expected that more people would be coming in and fewer would be leaving the occupation.

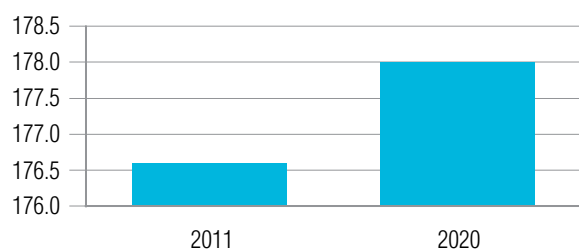
Source: The Conference Board of Canada.

other occupations. However, in our base scenario, we assume these to be equal. As a result, we can consider the base scenario to be a "pure" scenario that is based primarily on demographics, in order to give a sense of the increase or decrease in pressure that the industry will ultimately face in terms of attracting drivers from other sources.

### SUPPLY OF TRUCK DRIVERS FOR THE FOR-HIRE TRUCKING INDUSTRY IN CANADA

We focus here on the supply of truck drivers for the for-hire trucking industry, rather than the supply of drivers available to all industries that employ truck drivers, as it is more likely that these drivers are engaged in the less desirable long-haul (particularly unscheduled) activity. Conversely, private trucking fleets are more likely to focus on shorter, more regular intra-city movements, which allow drivers to be on a fixed schedule and, most importantly, be home every night.

**Chart 13**  
Estimate of Truck Driver Supply—For-Hire  
Trucking Industry  
(000s)



Source: The Conference Board of Canada.

Our baseline truck driver population for modelling purposes is based on the 2011 LFS. While the census data offer greater accuracy due to the much larger sample size, for this purpose we used the LFS data because of their timeliness. According to these data, the total number of drivers employed in the trucking industry in 2011 was 173,100. What is important is to retain a consistent definition (both on the supply and demand sides) when making use of the data in order to assess the potential supply and demand gap in the future.

Chart 13 summarizes the baseline result of driver supply for the trucking industry at the national level. Due to the relatively weak economic conditions that continued to prevail in 2011, we assumed a 2 per cent oversupply of drivers (above and beyond those who would be unemployed for frictional and structural reasons). Therefore, the base supply of drivers in 2011 was approximately 176,600. Given that the driver supply increases only slightly—from 176,600 to 178,000 drivers—by 2020, the eventual impact of the aging driver population is clear.

This slight increase demonstrates the potential impact of the demographic cliff that is facing the industry. Without additional entries into the driver occupation from new workforce entrants (young people), increased levels of immigration, or other occupations, the growing pending retirements will barely be replaced by the number of new entrants.

As mentioned, another potential “new” source of supply is for current truck drivers to delay their retirement. Our baseline projection assumes an average retirement age of approximately 63.8 years, which is slightly older than the average current retirement age in Canada, at 63 years.<sup>4</sup> Factors such as growing incentives for older drivers (increased wages, greater flexibility, better working conditions, etc.) and household finances could induce retirement postponements. It is worth noting that over this period, the recent announcement of age of eligibility changes to the Old Age Security (OAS) benefit will not have an effect, as those changes will not begin to take effect until 2023.<sup>5</sup>

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High and low scenarios for the supply forecast based on different assumptions occupational attractiveness ratios and retirement ages are included in Appendix B.

### PROVINCIAL/REGIONAL SUPPLY

The same model was applied in order to project driver supply for the trucking industry at the provincial/regional level. The key difference between the national and provincial model is the inclusion of interprovincial migration and the varying propensities of provinces to attract immigrant labour. Naturally, differences in the average age of the driver population between provinces contributed to the expectations of retirements over the next several years.

Due to the weakness of the data at the territorial level, only provincial data were used in the following analysis.

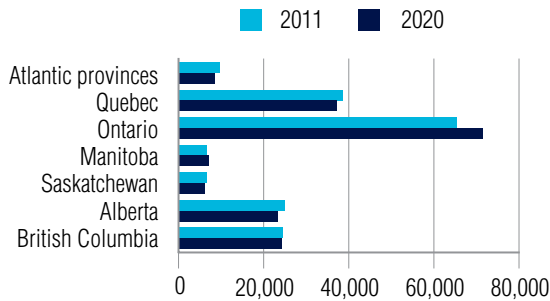
Chart 14 shows the impact that the differences in driver demographics and the propensity to attract immigrant labour is estimated to have on the driver supply by region.

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4 Government of Canada, *Working in Canada, Job Market Report*.

5 Service Canada, *Questions and Answers*.

**Chart 14**  
Estimate of Truck Driver Supply—For-Hire Trucking Industry, by Province/Region (number)



Source: The Conference Board of Canada.

Of note is the contrast in the projected supply between Quebec and Ontario. While the supply is projected to increase in Ontario, it is projected to decline in Quebec. This is not explained by driver demographics, as the average driver age and number of drivers near retirement age (55 and over) are similar. Rather, stronger immigrant entry and interprovincial migration account for the more level projection in Ontario.

Manitoba and Saskatchewan have the highest proportion of drivers reaching retirement age. However, relatively strong immigration levels are expected to help relieve that burden to an extent, so the driver population is at least maintained. Meanwhile, Alberta has an average level of pending retirements but a slightly smaller number of school-leavers relative to its population, as it has experienced a slight increase in its natural population growth.

## OUTLOOK FOR TRUCK DRIVER DEMAND

The Conference Board of Canada's short-term (5-year) and long-term (20-year) national and provincial economic forecasts were utilized in order to produce a forecast for trucking industry demand out to the year 2020. Demand for trucking services is largely a function of general economic activity. Given that about 90 per cent of final goods—products that individuals buy and consume—

are delivered by truck, it is difficult to imagine significant economic growth without corresponding growth in trucking activity.

Our forecast for industry driver demand begins with a brief overview of the general economic outlook. This is followed by the demand forecast for the trucking industry. From this forecast, we derive the estimate for the number of truck drivers that will be required to allow for the projected growth of the trucking industry at the national and regional levels.

## GENERAL ECONOMIC OUTLOOK

According to the Conference Board's 2012 national outlook, GDP is expected to grow approximately 2.7 per cent per year on average from 2012 to 2016. This provides an immediate expectation for the growth in demand for trucking services, as more economic activity generally means more goods being shipped from producers and to consumers. Over a longer period of time, this relationship is expected to be tempered slightly due to the fact that as the population ages, household expenditure patterns are expected to shift toward services.<sup>6</sup> Nonetheless, a growing economy will mean growing demand for goods movement.

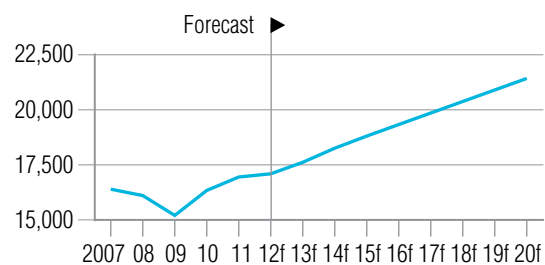
## FOR-HIRE INDUSTRY GROWTH FORECAST

As a result of the demand from goods-producing and retail industries, the demand for services from the trucking industry is expected to grow significantly out to 2020. We are projecting an increase in trucking industry output from \$17 billion to \$21.4 billion in constant dollars over the 2011 to 2020 period, which represents an increase of 26 per cent. (See Chart 15 for a summary of the data.)

In order to project provincial demand, we first estimated demand for the entire transportation and warehousing sector, by province, using our provincial forecast model. Next, we estimated the shares of the trucking industry output by province relative to total transportation and warehousing growth based on historical (five-year) shares for each province. Finally, we adjusted the individual provincial forecasts for the trucking industry in order to match the total trucking industry forecast at the national

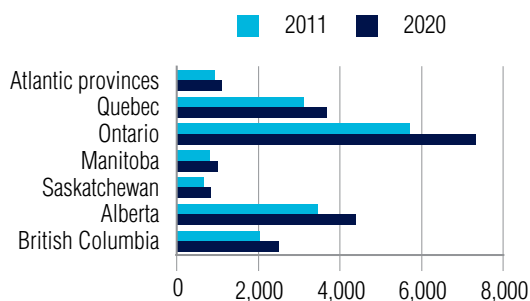
6 The Conference Board of Canada, *Canadian Outlook Summer 2012*, vi.

**Chart 15**  
For-Hire Trucking Industry GDP Forecast  
(constant 2002 \$ millions)



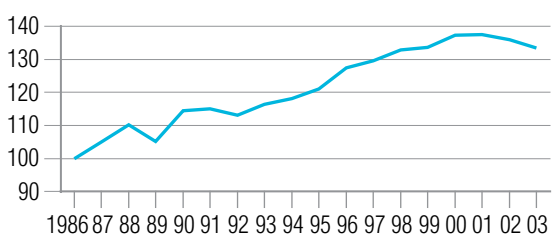
f = forecast  
Source: The Conference Board of Canada.

**Chart 16**  
Trucking Industry GDP Forecast, by Province/Region  
(2002 \$ millions)



Source: The Conference Board of Canada.

**Chart 17**  
Total Factor Productivity Growth—For-Hire  
Trucking Industry, 1986–2003  
(1986 = 100)



Source: Transport Canada, Economic Analysis Directorate.

level. Chart 16 provides the trucking industry output forecasts by province/region. As with the driver supply data, due to the quality of the data, we omitted territorial data.

Not surprisingly, trucking industry output is largest in Ontario, and is expected to continue to be so from now through 2020. However, the 28 percentage rate of growth expected in Ontario may come as a surprise. Despite the difficulties faced by the province’s manufacturing sector, the sector is still expected to drive demand for trucking services—as will the retail sector, which serves the largest population base in the country.

### GOING FROM INDUSTRY DEMAND TO DRIVER DEMAND

Naturally, an increase in the demand for trucking services will mean an increase in the number of truck drivers required. However, this is not necessarily a 1:1 relationship. The main reason for a divergence from a 1:1 relationship is the expectation of productivity gains. For example, the industry has been able to increase output from 2007 to 2011 by \$500 million (a gain of 3.3 per cent) in real terms, while the number of employed drivers in the industry actually decreased by approximately 6,000. This translates to a 1.7 percentage annual increase in labour productivity.<sup>7</sup>

Transport Canada maintains detailed estimates of productivity gains in the trucking industry based on an analysis of commodity origin and destination data.<sup>8</sup> These data show that the trucking industry’s total factor productivity (output relative to labour, capital, and other inputs) has increased by a similar 1.7 per cent over the 1986 to 2003 period. (See Chart 17.)

Despite relatively strong increases in productivity from the industry over the past couple of decades, there is reason to believe that productivity gains in the future will be muted. While the industry benefited from

7 On the other hand, according to Statistics Canada productivity data, multi-factor productivity growth has been almost non-existent over the same period.

8 This model is currently under review due to changes in the data collection methodology for the underlying Trucking Commodity Origin and Destination Survey.

deregulation and the opening of trade in the 1980s and 1990s, and while significant increases in size and weight regulations during this time allowed for the greater haul of goods per truck and driver, it is unlikely that we will see similar increases in the years to come. Initiatives like the controlled expansion of long-combination vehicles in Ontario and in Eastern Canada, where these vehicles have not historically been permitted to operate, will improve productivity, but these gains will likely be modest given the controlled nature of their use. Moreover, expected changes to U.S. hours-of-service rules could have a negative impact on productivity.

**At the national level, the industry requirement for drivers is expected to increase by 17 per cent, or nearly 30,000 drivers.**

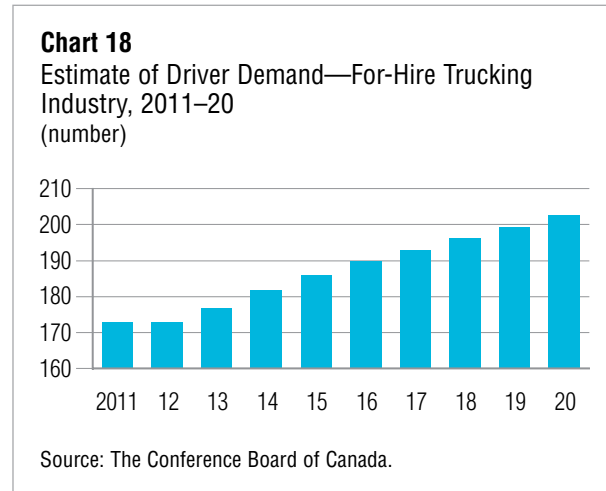
For these reasons—and given the contrary estimates of historical productivity growth indicated in the Statistics Canada productivity data—we believe our base assumption of an annual labour productivity increase of between one-third and 1 per cent is reasonable. The following data are based on the middle scenario, where productivity growth is at two-thirds of 1 per cent. Additional scenarios with respect to the driver demand forecast using lower rates of productivity increases are found in Appendix B.

Chart 18 presents the results of this estimate at the national level. Table 2 breaks down the estimate by province/region.

At the national level, the industry requirement for drivers is expected to increase by 17 per cent, or nearly 30,000 drivers. In percentage terms, demand growth is expected to be strongest in Ontario and Alberta.

### THE DRIVER SUPPLY AND DEMAND GAP

Using independent estimates of driver supply and demand, we can assess the size of the gap. It is important to note that while we have produced independent estimates of



**Table 2**  
Estimate of Driver Demand—For-Hire Trucking Industry, by Province/Region  
(000s)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlantic provinces	9.5	9.6	9.8	10.0	10.1	10.2	10.2	10.3	10.4	10.6
Quebec	37.9	38.4	39.0	39.7	40.2	40.8	41.1	41.5	42.0	42.4
Ontario	64.1	64.5	65.9	67.9	69.8	71.5	72.9	74.4	75.9	77.3
Manitoba	6.5	6.5	6.7	6.9	7.1	7.2	7.3	7.4	7.5	7.6
Saskatchewan	6.5	6.2	6.5	6.7	6.8	6.8	7.0	7.2	7.4	7.7
Alberta	24.6	23.8	24.6	25.3	26.0	26.7	27.4	28.1	28.9	29.4
British Columbia	24.0	23.7	24.4	25.3	26.2	26.9	26.9	27.2	27.3	27.7
Total	173.1	172.8	176.9	181.9	186.1	190.0	192.9	196.1	199.4	202.7

Source: The Conference Board of Canada.

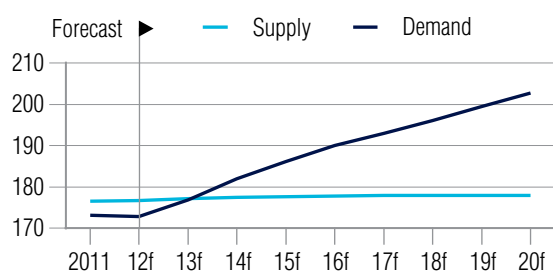


**Table 3**  
For-Hire Trucking Industry Supply and Demand Gap, 2020  
(000s)

	Supply	Demand	Gap
Canada	178.0	202.7	24.7
Atlantic provinces	8.5	10.6	2.0
Quebec	37.2	42.4	5.2
Ontario	71.4	77.3	5.9
Manitoba	7.0	7.6	0.6
Saskatchewan	6.1	7.7	1.6
Alberta	23.3	29.4	6.2
British Columbia	24.3	27.7	3.4

Source: The Conference Board of Canada.

**Chart 19**  
For-Hire Trucking Industry Driver Supply and Demand Gap, Canada  
(000s)



f = forecast

Source: The Conference Board of Canada.

supply and demand, the supply and demand for drivers will adjust on an ongoing basis. Our assessment of the gap for 2020 is an indication of the pressure that the industry—and its customers—will face as a result of the extrapolation of the current trend in driver demographics. How that pressure is ultimately managed is another question, and is briefly discussed in the following chapter.

Using the above estimates, Table 3 shows the supply, demand, and supply/demand gap for truck drivers employed in the trucking industry in 2020 at the national and provincial/regional levels. Chart 19 plots the same data at the national level on an annual basis.

The resulting gap at the national level is about 25,000 (24,700) drivers by 2020—or about 14 per cent of the anticipated driver population—assuming year-over-year productivity increases of two-thirds of 1 per cent. A lower productivity performance, which is possible, would push the gap to over 33,000 drivers. As can be seen in the regional data, there is an expectation of a gap across the entire country. Perhaps not surprisingly, the gap is highest in Alberta, both in absolute terms and compared with the driver population. In absolute terms the second-highest gap is in Ontario; however, compared with the driver population, the gap is actually the smallest in Ontario.



## CHAPTER 4

# Surveying the Industry and Industry Stakeholders

### Chapter Summary

- ◆ A number of factors can contribute to the supply and demand for truck drivers in the future. This includes an industry contraction due to difficulty in attracting labour, smaller- or larger-than-expected productivity gains, or an improvement in the attractiveness of the truck driving occupation.
- ◆ Most of the productivity gains that have been achieved by the for-hire trucking industry have been swiftly competed away in the form of lower prices to their customers. While there has been some consolidation in the industry, there is no reason to believe that this trend will not continue.
- ◆ Industry leaders have observed an increasing difficulty in recruiting drivers over the past several years and see this trend continuing in the future. Long-haul trucking is generally more difficult to recruit for, particularly when the routes are unscheduled.

The results from Chapter 3 suggest that the trucking industry will face increasing pressure to attract drivers in order to meet the expected level of demand over the next 5 to 10 years. Ultimately, supply and demand for drivers will adjust according to

conditions. For example, productivity of the industry may increase or decrease at a different pace as the capital to labour cost ratio changes as a result of labour supply constraints. Or, the industry could simply contract or not grow as expected, thereby potentially taking growth potential from downstream industries with it. What happens will be up to the trucking industry itself, its customers, and policy-makers.

A number of other factors can also help to match the supply and demand for truck drivers in the face of increasing demographic pressures. These include:

- ◆ a weaker-than-expected demand for services from the trucking industry;
- ◆ a smaller- or larger-than-expected increase in trucking industry productivity;
- ◆ a significant improvement in industry working conditions, marketing of the truck driving occupation, and driver training/licensing;
- ◆ a significant increase in driver wages; and
- ◆ a change in policy that recognizes the truck driving occupation as a skilled trade.

Let's look at these factors in more detail.

### **A weaker-than-expected demand for services from the trucking industry**

Other modes such as rail may be able to pick up some of the slack, but unlikely a large amount. For example, an extensive review of rail traffic conducted in the early 2000s as part of the Canadian Transportation Act

Review found that direct intermodal competition between rail freight and trucking services was limited.<sup>1</sup> In addition, a shift in favour of rail for long-haul traffic still requires a transfer to truck on at least one end of the movement.

Shippers may be able to make other adjustments (at a cost) such as shifting from less-than-truckload (LTL) to truckload (TL) services or building in more lead time for shipments and holding more inventory as a consequence, or reducing stock-keeping units (SKU).

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**Shippers may be able to make other adjustments (at a cost) such as shifting from less-than-truckload (LTL) to truckload (TL) services.**

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Another potential consequence is that marginal (the least lucrative) traffic will decline. Due to peaks and troughs for trucking services, carriers can vary their prices in order to ensure best utilization of their fleets. The more that supply is constrained, the less likely that this sort of discounting will happen. Shippers who have typically less time-sensitive freight to move and as a result can take advantage of the discounting will be most affected, with a reduction of their own output being the consequence.

**A smaller- or larger-than-expected increase in trucking industry productivity**

The expanded allowance and use of long-combination vehicles in Ontario and in the Atlantic provinces is an example for the potential to increase the amount of goods moved per driver. However, given the controlled growth in the number of vehicles permitted in the grand scheme of things, it (or any other improvement) will likely bring with it only incremental productivity improvement at best. Moreover, the additional productivity that initiatives like this bring could be more than offset by changes to the U.S. hours-of-service regulation, for example.

The industry has had difficulty improving its fuel productivity, in part due to the equipment required in order to meet emissions standards, which often comes with a fuel consumption penalty. In addition, the increased level of service and the need to drive in congested conditions may have also hurt fuel-efficient performance.

However, there is potential for reducing fuel consumption in the near term through the increasing use of such things as trailer side skirts, better tractor aerodynamics, low rolling resistant tires, and auxiliary power units.

Other factors can work against the industry in terms of improving productivity. For example, congested road conditions not only affect fuel efficiency but the cost of delivering goods in general.

**A significant improvement in industry working conditions, marketing of the truck driving occupation, and driver training/licensing**

The Canadian Trucking Human Resources Council has cited barriers that the industry faces when recruiting drivers, such as designation of the occupation as a low skill trade for immigration purposes<sup>2</sup> and poor public perception of the industry.

Having the occupation recognized as a skilled trade would increase the potential to access immigrant labour. To accomplish this, the Canadian Trucking Alliance is recommending that governments mandate a minimum level of entry-level training, ongoing professional development, and enhanced licensing standards. This will also help to improve the image of both the industry and the occupation, which could make it more desirable for younger workers in particular. Providing access to student loans for adults to take a recognized driver training course could make training more accessible. As well, improving access to credit for immigrants who wish to purchase a truck and become an owner-operator would make entry more accessible. And lastly, a graduated licensing scheme could help to reduce the learning curve for new drivers.

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<sup>1</sup> Government of Canada, *Vision and Balance: Report of the Canada Transportation Act Review Panel*.

<sup>2</sup> Canadian Trucking Human Resources Council, *Closing the Gap*, 3.

### A significant increase in driver wages

Carriers have long indicated the difficulty of passing on the cost of an increase in driver wages. However, if carriers can find cost savings elsewhere (this is related to the productivity gains point mentioned above), they may be able to offset the wage increase with those cost savings.

The potential of compressed or Liquefied Natural Gas (LNG) as an alternative fuel source in light of persistently low natural gas prices is an example of an opportunity to reduce trucking fuel costs, but there are high upfront capital costs to purchase LNG trucks, along with other obstacles involved.<sup>3</sup> Consequently, there has been little take-up of this potential in Canada so far, although there has been slightly more activity south of the border.

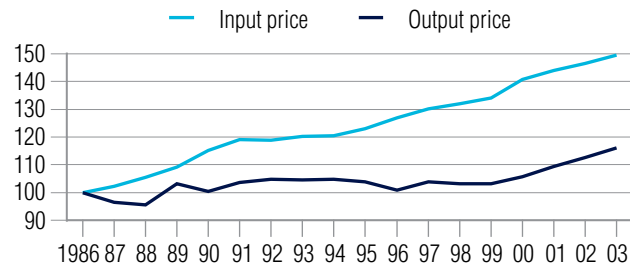
That said, the trucking industry has passed on all of its productivity gains in the form of lower prices to customers—a result of the industry's highly competitive nature. For example, the Transport Canada data cited in the previous chapter suggested that total factor productivity growth has increased by 1.7 per cent per year over the 1986 to 2003 period (for a total of 33 per cent over the period). Over this same period, the industry's output prices—the prices charged to customers for moving goods—have increased by a smaller margin than its input prices—the prices paid for fuel, trucks, labour, etc. Productivity gains allow for the possibility for output prices to grow at a slower rate than input prices.

Naturally, carriers will want to keep the productivity gains, in the form of profits, for themselves. But if the industry is highly competitive, this would mean losing business to other carriers that are willing to pass along these gains.

Chart 20 shows how output prices have changed compared with input prices from 1986 to 2003. Over this period, input prices have increased by 29 per cent more than output prices.

**Chart 20**

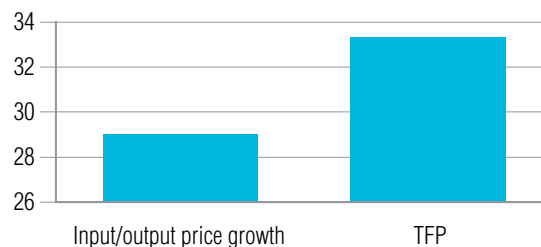
Input and Output Price Growth—For-Hire Trucking Industry, 1986–2003  
(1986 = 100)



Source: Transport Canada, Economic Analysis Directorate.

**Chart 21**

Ratio of Input to Output Price Growth and Total Factor Productivity (TFP) Growth—For-Hire Trucking Industry, 1986–2003  
(percentage change)



Source: Transport Canada, Economic Analysis Directorate.

Recall that productivity grew by 33 per cent over the same period. The ratio of the two rates of change provides an estimate of the extent to which the trucking industry has passed on the productivity gains. In other words, if the industry allowed input prices to grow 33 per cent faster than output prices, it would only maintain its level of profitability—with all of the productivity gains passed on to customers. Chart 21 summarizes these data.

When any business is able to increase its productivity, it can potentially earn more profits. This is because the cost of producing one unit of output declines as productivity increases. However, if it faces competition from other businesses that have also increased productivity, it will face downward pressure on the price of its products

3 Gill and Coad, *Cheap Enough? Making the Switch From Diesel Fuel to Natural Gas*.

or services. This is due to the fact that the competing business may use the productivity gains to decrease prices in order to capture market share.

Since input prices actually grew 29 per cent faster than output prices, we estimate that 87 per cent of productivity gains have flown through to customers.<sup>4</sup> Put another way, 87 per cent of productivity gains have been used to hold down output prices in the face of rising fuel, capital, labour, and other costs, rather than to increase profit. The key takeaway is that when the trucking industry is able to cut costs due to productivity gains, these savings are usually lost through competition relatively quickly.

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**The truck driver industry is intensely competitive, and there is little reason to expect a variation in the degree of competition in the future.**

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This result speaks to the intensely competitive nature of the industry. And while this result may not bode well for those in the industry, it is of huge benefit to customers and, ultimately, consumers. Moreover, there is little reason to expect a variation in the degree of competition in the future. Despite the fact that we have seen some consolidation in the industry, and can expect to see more, the industry will continue to exhibit relatively low barriers to entry and be home to a large number of small-to medium-sized firms. As a result, any time we begin to see significant increases in industry profits, we can expect to see new entrants and downward pressure on freight prices as a result.

#### **A change in policy that recognizes the truck driving occupation as a skilled trade**

Truck driving is not considered a skilled trade. As a result, it is nearly impossible for qualified foreign truck drivers to enter the country in order to continue their

careers beyond perhaps being allowed in on a temporary basis. This puts the occupation at a disadvantage when competing for immigrant labour compared with other occupations that are recognized as skilled trades.

Provincial nominee programs, which have been introduced on an ad hoc basis, allow temporary workers to enter the country to work as truck drivers. However, since the programs are geared toward attracting workers on a temporary basis, they are often little more than a band-aid solution.

## **GENERAL RESULTS AND OBSERVATIONS FROM INDUSTRY CONSULTATIONS**

To get a better perspective on the difficulty in attracting drivers to the industry along with the potential consequences, we conducted a series of interviews with about 15 industry leaders and some of the industry's customers. The following is a summary of some of the questions that we asked and the answers that we received.

- ◆ To what extent has it become more or less difficult to recruit truck drivers over the past 5 to 10 years? Any specific reasons why you believe that it has become more or less difficult?
  - All respondents indicated that it has become more difficult to recruit drivers.
  - The aging demographic of the current driver population was generally cited as contributing to the difficulty.
  - More drivers are objecting to the lifestyle of the long-haul driver in particular. In the past, there were those who sought out the type of “cowboy” lifestyle that long-haul driving brought along with it. For whatever reason, fewer younger people are willing to embrace a lifestyle where they have to be away from home for days or even weeks at a time.
  - There is a generally inaccurate view of the life of a driver and an unfair stigma of the “typical” driver.

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<sup>4</sup> Technically, returns from productivity gains can also go to labour in addition to capital (through profits). Given the number of carriers and the competitive nature of the industry, as well as the absence of any rapid growth in wages over the period, the analysis assumes wages to be strictly an input cost.

- The more stringent quality standards have had some impact. The more established carriers in particular have become more proactive in creating higher level of professionalism.
- Over time, carriers required drivers to be over 25 and to have several years of experience before hiring them, which of course makes it more difficult to enter the occupation as a young driver.
- Wages are often not competitive enough with alternative occupations. In addition, pay is often not consistent from month to month, as it varies with the volume of work.
- ♦ Do you expect that recruiting drivers will become more difficult over the next few years? If so, why?
  - The demographics of the current driver population were often cited as a reason why it will continue to be difficult or become increasingly difficult.
  - In the past, the industry would get applicants who had worked on farms and were used to being around equipment and the demands of physical labour. With family farms disappearing, this will continue to add to the difficulty.
  - Related to the above, it used to be sufficient to place an advertisement in the local newspaper or on a radio station in order to attract applicants. This is no longer an effective tool, as the search for drivers has gone far beyond the local level.
  - Companies that were experiencing and targeting significant growth cited driver recruitment as their greatest hurdle.
- ♦ Has it been more difficult to attract drivers in certain geographic locations? If so, where?
  - Many respondents suggested that it was particularly difficult to find quality drivers in Alberta. While wages have increased there, it has been difficult to keep pace with the wage rate increases and the sheer volume of labour demanded by the resource sector.
  - With that said, there were varied responses overall. Many respondents suggested that the difficulty persists across the country, despite the focus that is often placed on the West. This is in part due to the fact that many potential drivers are, in fact, migrating from the East to the West. Some cited more difficulty in Quebec, where there appears to be less supply from immigrant populations.
- ♦ Which areas of business have been most affected (truckload, LTL, refrigerated trucking, dangerous goods, etc.)?
  - Long-haul trucking was overwhelmingly cited as the biggest problem. In particular, unscheduled long-haul/LTL was difficult to recruit for, although it was mentioned that in some cases drivers like to vary their destinations.
  - Some respondents suggested that long-haul was not as much of a problem as long as the schedule and routes were regular, as it allows the driver to plan his or her family life around the days he or she would be away from home. However, others suggested that being away from home as well as the physical demands were a problem.
  - Hauling dangerous goods into the U.S. requires FAST certification, which shuts the door to drivers with less than clean legal records, even if they made a mistake decades in the past. This is making the available pool of potential drivers even smaller.
  - Some respondents indicated that any type of work that requires more than just driving, such as increased customer interaction, driving equipment off of trailers, and actively monitoring temperatures, adds to the difficulty. However, others said that as long as the drivers are trained properly, that is not much of an issue.
  - Business that serves construction industries tends to be more seasonal and more difficult to recruit for as a result. Unlike those in the construction industry, it is difficult for drivers to work fewer hours in the less-busy winter months and make up the time by working more hours in the summer months, due to hours-of-service regulations.
- ♦ Do you feel that it is more difficult to attract drivers to the for-hire industry compared with attracting drivers for private fleets?
  - Many private fleets are used solely for local and/or regularly scheduled runs. As a result, the contrast between for-hire and private fleets is somewhat analogous to the contrast between long-haul and local trucking, by default making it more difficult for the for-hire industry. However, this response was not entirely unanimous, as some suggested that it was difficult to hire for private/local fleets as well.

- ♦ What is/will be the result of not being able to recruit enough drivers to meet demand?
  - Respondents were split on the wage issue. Some were adamant that wages would have to go up and in fact would have by now, but the increased value in the Canadian dollar and the slack in the economy in general has delayed this from happening. Others suggest that wage increases would have to result in increased prices for customers, which would not be tolerated. As a consequence, other solutions would have to be found.
  - Shippers that rely on the spot market in general (rather than buying capacity ahead of time) will find that market dried up. These shippers are often sending inexpensive/least time-sensitive freight. For these goods, transportation costs are a higher share of the final price of the good. Less competitive or available transportation services in general will contribute to their exit from the industry. Some of these companies have already disappeared all together (such as the textile and shoe-producing companies in central Canada), although relative labour costs between Canada and competing countries have certainly played a large role in this.
  - There is still some opportunity to shift more freight to rail. But shippers are already taking advantage of rail where they can, so the overall opportunity is somewhat limited. With that said, some respondents suggested that east–west long-distance trucking will eventually be a thing of the past, as the majority will go by rail. Shippers that prefer the level of service provided by truck transportation will have to live with the level of service provided by rail.
  - Several respondents cited the use of a relay network in order to reduce the number of long-haul drivers required to move freight over a long haul. This involves a network of drivers in different geographic locations who would hand off freight as set points along frequently travelled routes. Each driver only drives a distance that allows him or her to be home every night. Naturally, this comes at a cost. However, some companies have already set up such networks in certain places and as long-haul labour becomes scarce, the cost of setting up such a network relative to the benefit of doing so will decrease. Given the fact that many or most trucking companies are regionally based, this would likely mean more consolidation in the industry.
- ♦ Have you experienced any difficulty in obtaining timely or adequate trucking services (for-hire or otherwise) that may be a result of the lack of drivers?
  - Capacity issues seem to come up later in the week, such as Friday afternoon in particular. In those cases, it becomes more time-consuming and/or more costly to secure a delivery.
  - In general, it was easier during the recession due to the slack in capacity. As the economy has recovered, it has become more difficult at times. However, shippers who regularly work with the same carriers and maintained relationships through the good and bad times are likely to get better service.
- ♦ Are you concerned with the potential impact that the driver recruitment issue (if you feel that there is an issue) will have on your own operations? Or do you feel that you will be able to adjust to whatever the conditions may be (through supply chain reorganization, modal shift, etc.)?
  - This issue manifests itself in the quality of service at times. There are drivers with little experience and/or poor communications skills, which is required despite the perception of the occupation.
  - For shippers, receiving real-time communication is extremely important, and carriers rely on their drivers to provide this. Shippers are at the mercy of their own customers, who are in turn becoming more demanding due to their own competitive pressures. For example, in the food retail sector, it is not uncommon to face penalties in the vicinity of \$1,000 per hour for a late delivery. With real-time communication, shippers can make attempts at alternative arrangements when later delivery is anticipated.
- ♦ If you feel that there is a recruitment problem that will continue to grow, what do you feel are some of the remedies?
  - The relay network (switch network) was cited as one method of carrying the same amount of freight over the long haul but with fewer long-haul drivers. This requires upfront investment in technological solutions to optimize scheduling, which can also help to make shifts more predictable for drivers in general.



- Introducing initiatives that facilitate interlining between Canadian, U.S., and Mexican fleets could help to reduce the number of empty loads on trans-border traffic.
- The expansion of long combination vehicle (LCV) permits in Ontario was cited as having the potential for moving more goods with fewer drivers. For freight that cubes out (rather than weighs out) in particular, LCVs effectively allow twice the freight to be carried with the same number of drivers and power units. At the moment, there are only a limited number of LCV permits allowed (four per company). In addition, Highway 185 in Quebec near the New Brunswick border limits the potential of LCVs in the Eastern corridor, as most of it is not twinned.
- Road congestion has exacerbated the problem of moving freight both for short and long hauls. Alleviating congestion has major potential, as it reduces the number of hours required to move a given distance. Perhaps more importantly, less congestion makes planning easier. Policies that tackle road congestion could help to reduce recruitment pressures.
- Sophisticated shippers and carriers have invested in the technology necessary that allows them to communicate information between them fluidly. Continued investment is required in order to maximize efficiency and therefore labour productivity.
- Recognizing the occupation as a skilled trade will help to recruit immigrant drivers. Interviewees suggested that if hairstylists and tile-setters qualify as skilled trades, then truck driving certainly should, particularly given the fact that they are regularly responsible for millions of dollars worth of goods and equipment. At the same time, this would heighten the importance and emphasis on high-quality training schools.
- There is always some level of unemployment, often at a level that is above the natural rate of employment. While this does not seem to be intuitive given that the industry is having trouble attracting labour, this may relate to the misperception of the occupation, which results in even those who are persistently unemployed from entering this occupation. There is a need for increased awareness and education about the benefits of the occupation.
- While the industry is regulated at the provincial level, municipal regulations and policies regarding noise and other restrictions have a major impact on when and where goods can be delivered and, ultimately, on the efficiency of goods movement in general. This provides an opportunity to further enhance the productivity of the industry and make better use of drivers' time.
- While the emphasis on experience when hiring new drivers is understandable, some carriers have recognized that they have to be more proactive in terms of training. As a result, more carriers have taken and will likely continue to take high-quality applicants with little experience into in-house training programs.
- Anything that shippers can do to use up less driver time would allow drivers to spend more time on the road and be more efficient as a result. However, there may be resistance to doing this as it requires out-of-pocket costs for the shipper and shippers do not see an immediate payback. (However, as evidenced earlier in this chapter, most trucking industry productivity gains are swiftly passed on to customers, so they should expect to see a payback.)
- Government subsidization of training was cited as a potential method to make driver training more accessible, with the subsidy perhaps being funded through fuel taxes or other fees on the industry. Although this may drive up carrier costs, as long as the subsidy is on a level playing field, the ability to pass on costs should be uniform, whereas in-house training that is provided directly by a carrier always runs the risk of losing the driver to another carrier after the training has been provided.



## CHAPTER 5

# The Economic Importance of the Trucking Industry

### Chapter Summary

- ◆ The for-hire trucking industry itself is large, with industry GDP of \$17 billion in 2011. This does not include the output of private trucking activity. The economic footprint of the for-hire trucking industry, including direct, indirect, and induced impacts, is over twice this size.
- ◆ The true benefits of the trucking industry lie in the value that its services have in terms of contributing to more competitive goods markets, greater specialization in production, and greater concentration in economic activity. In other words, efficient trucking services make markets work better.
- ◆ For shippers, it is not just the freight rate that matters, but the speed and reliability of delivery. Without these last two components, shippers are unable to manage their inventories or plan their production. For consumers, this means higher prices and a lower selection of goods.

In this chapter we consider the economic importance of the trucking industry, in part to demonstrate why the health of the industry is of importance to more than just the industry itself. First, we quantify the economic footprint of the for-hire trucking industry using

The Conference Board of Canada's national forecast model. Second, we review the downstream benefits of the industry in terms of its role as an economic enabler.

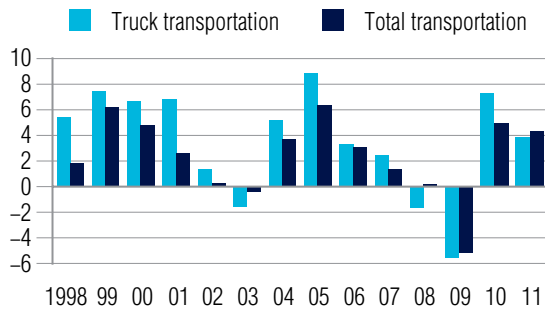
### ECONOMIC IMPACT ANALYSIS

#### HISTORICAL REVIEW

Activity in the for-hire trucking industry consists of moving general or specialized freight locally or over long distances. Gross domestic product in the for-hire trucking industry measures only the activity of for-hire trucking services and does not capture the value-added from own-account trucking (which are trucking services that occur within a firm such as trucks operated by retail businesses). Trucking is the largest transportation segment, accounting for an estimated 33 per cent of real GDP in the transportation sector. Trucks move 90 per cent of all consumer products and foodstuffs within Canada and about 60 per cent, by value, of our trade with the U.S., our largest trading partner. The fortunes of the trucking sector are tied to the domestic economy, with performance in the manufacturing and retail and wholesale trade industries being the key driver of demand for truck transport services.

Given Canada's relatively robust economic performance from 1999 to 2011, truck transportation has posted the strongest annual GDP growth among transportation segments. From 1999 to 2011, average annual compound growth in truck transportation GDP was 3.3 per cent,

**Chart 22**  
For-Hire Trucking GDP Growth  
(percentage change, 2002 \$)



Sources: The Conference Board of Canada; Statistics Canada, CANSIM Table 379-0027.

compared with 2.4 per cent per year for the aggregate transportation sector. (See Chart 22.) When the domestic economy is strong, truck transportation generally fares well. Real output in the sector experienced a small contraction in 2003 and a deeper contraction during the 2008–09 recession. But growth bounced back strongly in 2010, nearly recouping the losses that occurred during the recession. With strong growth occurring again in 2011, real GDP in the for-hire trucking industry reached \$17 billion and surpassed its previous peak in 2007.

**Unlike other transportation segments, trucking has increased employment since 1999, with 272,700 people employed in 2011—up from 239,500 in 1999.**

Employment in the trucking sector has grown at an average annual pace of 1.1 per cent per year from 1999 to 2011, slightly below the average increase of 1.5 per cent for the transportation sector as a whole. Employment levels are still trying to recover from the recent recession, and in 2011 were 5.7 per cent below their 2008 peak. Nonetheless, unlike other transportation segments, trucking has increased employment since 1999, with 272,700 people employed in 2011—up from 239,500 in 1999.

Average weekly wages in the for-hire trucking industry are very close to the national average. From 1999 to 2009, average weekly wages in trucking were a few

percentage points higher than the national average, but dropped below the national average in 2010. In 2011, average weekly wages in truck transportation reached \$883.56—above the national average of \$874.76.

### ECONOMIC FOOTPRINT METHODOLOGY

In this section, we describe the methodology used to quantify the economic footprint of Canada’s for-hire trucking industry. This involves identifying the key supply chain linkages in the for-hire trucking industry as well as quantifying the impact of the sector on key economic indicators, such as GDP, employment, income, and government revenues. The analysis evaluates the combined direct, indirect, and induced economic impacts, where:

- ◆ **Direct impact** measures the value-added<sup>1</sup> to the economy by the for-hire trucking industry that is attributed directly to the sector’s employees, the wages earned, and the firms’ revenues generated.
- ◆ **Indirect impact** measures the value-added that the “direct impact firms” generate within the economy through their demand for intermediate inputs or other support services. For example, activity in the for-hire trucking industry creates demand for finance, insurance, and real estate services.
- ◆ **Induced impacts** are derived when employees of the aforementioned industries spend their earnings and when owners spend their profits. These purchases lead to more employment, higher wages, and increased income and tax revenues, and can be felt across a wide range of industries.

To derive the indirect impact (supply chain linkages) of the for-hire trucking industry on the economy, the Conference Board performed an input–output shock on our national forecasting model.<sup>2</sup> An input–output shock involves increasing or decreasing output in a particular industry to get the total direct and indirect impacts of that change on various other industries. In this scenario, it allowed us to determine which industries are most

1 Value-added or net output is the difference between total revenue and the sum of expenses on parts, materials, and services used in the production process. Summing the value-added across all industries in a region will yield the GDP in that region.

2 Detailed economic footprint results can be found in Appendix A.

affected by activity in the for-hire trucking industry. The Board's national forecasting model was also used to obtain the additional induced impacts on the economy to estimate the total economic footprint of the for-hire trucking industry on the Canadian economy over the 2007–11 time frame.

### ECONOMIC FOOTPRINT OF THE FOR-HIRE TRUCKING INDUSTRY

In 2011, real GDP in the for-hire trucking industry was valued at \$16.96 billion, but its impact on our economy is far greater. The trucking sector provides benefits to the economy through the sales, jobs, and taxes generated by firms and sole proprietors operating in the sector. Moreover, truck transportation companies create supply-chain (indirect) effects on other businesses in the country through demand for services and products, such as transportation fuels, finance, insurance, and real estate services, which results in further economic benefits. The trucking sector also affects the economy another way, through what economists refer to as “induced effects.” When employees in the for-hire trucking industry and all the other companies linked to the sector spend the money that they earn on goods and services, the economy receives an additional economic benefit in the form of new jobs and activity generated in other sectors of the

economy. The sum of the direct, indirect, and induced effects represents the overall contribution—or the economic footprint—that the sector has on our economy.

The Conference Board estimates that the total economic footprint of the for-hire trucking industry in 2011 was \$36.7 billion, which resulted in an economic multiplier of 2.11. (See Table 4 for the total economic footprint of the for-hire trucking industry on key economic indicators.) When looking at just the direct and indirect impacts, the multiplier for the for-hire trucking industry was 1.93—significantly higher than that of many other business services, which have a comparative weighted-average multiplier of 1.52. Part of the reason why the multiplier is much larger in the trucking sector is because it is more capital-intensive than many other service sectors.

When including indirect and induced impacts, the sector supported 477,600 jobs in 2011. The job creation in the for-hire trucking industry and those that benefit indirectly or through induced impacts resulted in \$23.6 billion in personal income in 2011. This increased income is a boon for government coffers, with the lift to personal income resulting in \$4.2 billion in personal income taxes and \$4.1 billion in indirect taxes (which consist mostly of sales taxes). The total increase in economic

**Table 4**  
Key Economic Indicators—For-Hire Trucking Economic Footprint

	2007	2008	2009	2010	2011
GDP at market prices (\$ millions)	37,121	38,837	37,131	39,860	42,352
Real GDP at market prices (2002 \$ millions)	35,570	35,317	33,882	35,654	36,717
Average weekly wages industrial composite (percentage difference)	0.2	0.2	0.2	0.2	0.2
Employment (000s)	462	474	448	457	478
Personal income (\$ millions)	20,609	21,555	21,112	22,178	23,579
Pre-tax corporate profits (\$ millions)	4,163	4,656	4,477	4,837	5,109
Personal income tax (\$ millions)	3,441	3,843	3,815	4,004	4,237
Corporate income tax (\$ millions)	801	819	732	769	815
Indirect taxes (\$ millions)	3,121	3,554	3,636	3,875	4,125
Federal government balance (\$ millions)	8,164	8,393	8,042	8,415	9,008
Regional government balance (\$ millions)	4,781	6,225	5,496	6,035	6,490

Note: Level-difference shock minus control, except where otherwise indicated  
Source: The Conference Board of Canada.

activity generated by the for-hire trucking industry supported \$5.1 billion in pre-tax corporate profits, which led to a collection of \$815 million in corporate income taxes. The federal government balance benefited from the increased economic activity by \$9 billion in 2011, while the aggregate provincial/territorial governments' balance improved by \$6.5 billion.

A number of industries benefit from the demand that the for-hire trucking industry creates for the goods and services required to support its operation. Given the fuel intensity of the trucking sector, it creates demand for refined petroleum products and for the oil and gas extraction sector. In 2011, demand from the for-hire trucking industry supported real output of \$3.2 billion in the mining sector. (Full shock results for the footprint on real GDP by sector are provided in Table 1 in Appendix A.) The finance, insurance, real estate, and rental and leasing (FIREL) sector also benefited from the indirect and induced economic impacts of the trucking sector—to the tune of \$2.9 billion in 2011. The FIREL sector benefits from the demand that the sector creates to insure all the vehicles that operate in the industry, as well as the demand for legal and accounting services required for some operations. Other notable increases occurred in manufacturing, in particular transportation equipment and petroleum and coal product manufacturing (\$2.2 billion); other business services, which include categories such as travel and accommodation (\$2 billion); and wholesale and retail trade (\$1.9 billion).

As mentioned earlier, the for-hire trucking industry supported 477,600 jobs in 2011. Most of these jobs are in the transportation and warehousing sector<sup>3</sup>: including direct employment in the sector, 277,300 jobs are supported by the trucking sector. (Full shock results for the footprint on employment by sector can be found in Table 2 in Appendix A.) Additional jobs supported by the demand created by the trucking sector include 82,400 in other commercial services, 33,800 in wholesale and retail trade, and 18,800 in the primary sector, which includes mining as well as oil and gas.

3 The transportation employment data in our model is aggregated into transportation and warehousing and, as a result, includes all transportation segments, as well as the postal service and couriers and messengers, and the warehousing and storage sectors.

## THE BENEFITS OF A HEALTHY TRUCKING INDUSTRY

The previous section estimated the economic impact of the for-hire trucking industry by estimating the value added directly by motor carriers and the impact of the demand for goods and services from motor carriers. However, the true benefits of a healthy trucking industry result from the services that the motor carriers provide to their customers and the eventual impact on consumers.

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**Researchers and policy-makers have become more interested in measuring the benefits of transportation investments, primarily for the purpose of evaluating potential transportation infrastructure investments.**

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Researchers and policy-makers have become more interested in measuring the benefits of transportation investments, primarily for the purpose of evaluating potential transportation infrastructure investments. Traditional transportation infrastructure investment appraisals have generally worked on the assumption that a cost-benefit analysis from the user's perspective will capture all of the economic benefits of the proposed investment. However, this approach ignores the interactions between transportation activities and all the other activities that make use of transportation services.<sup>4</sup>

For example, users of freight transportation services benefit directly from improvements that result in more timely and reliable delivery times. As a result of this direct benefit, they are willing to pay an amount for the service that is equivalent to the value of the benefit derived. However, in addition to this direct benefit, there are wider benefits that are not directly captured by users. As a result, users are not willing, or able, to pay directly for these benefits.

4 Organisation for Economic Co-operation and Development/International Transport Forum, *The Wider Economic Benefits*, 34.

For freight transportation services, these benefits primarily flow from greater connectivity with input and output markets, and the productivity improvements that result from this connectivity. For example, greater connectivity can allow for:

- ♦ greater access for producers to a supply of inputs needed in their production process (upstream benefits);
- ♦ greater specialization in production, as producers gain access to a greater number of buyers that allow them to focus on specific products for which they have a comparative advantage (downstream benefits); and
- ♦ greater concentration of economic activity of “like” firms that benefit from being in close proximity to one another.

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**Simply put, efficient and effective freight transportation shrinks distances between firms and people, and makes market work well.**

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Simply put, efficient and effective freight transportation shrinks distances between firms and people, and makes markets work well. Conversely, a weakening of transportation systems does the opposite; it increases the effective distance—and therefore the cost of doing business. This results in fewer goods becoming available and higher prices for consumers.

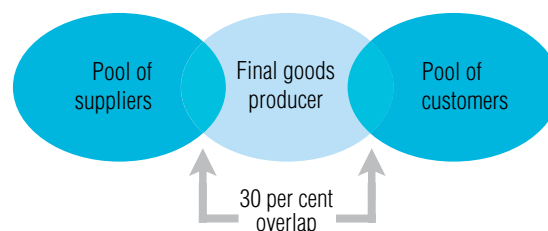
This point is illustrated by the simple example shown in Exhibit 1. The first diagram shows the overlap in catchment areas between a single goods producer and its potential suppliers and customers. In this situation it is assumed that the goods producer can access 30 per cent of the available pool of suppliers within a reasonable period of time (or travel time reliability). The second diagram illustrates how the overlap increases as a result of the transportation improvement, which reduces the travel time and/or travel time reliability to and from the producer’s location. As a result of the improvement, the goods producers can access a larger pool of suppliers and customers (40 per cent is used as an illustration).

The result has the same impact of moving the suppliers and customers physically closer to the goods producer. With access to a greater number of suppliers, competition between suppliers is increased. Meanwhile, the greater

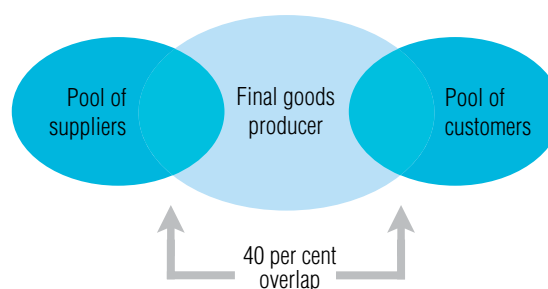
### Exhibit 1

#### Illustration of Goods Producer, Supplier, and Customer Market Catchment Before and After Transportation Improvements

Before improvements: Goods producer can access 30 per cent of available pool of suppliers and customers



After improvements: Goods producer can access 40 per cent of available pool of suppliers and customers



Source: The Conference Board of Canada.

access to customers allows for the producer to either specialize in certain products or spread its fixed costs over a larger number of transactions. However, the transportation improvement would also likely affect competing producers. Therefore, just as competition between suppliers has increased, we can also expect competition between final goods producers to increase (with the benefits accruing to consumers).

Just as the previous chapter described how the competitiveness of the trucking industry ensured that efficiency gains get passed on to their customers, competition in general ensures that these overall productivity improvements eventually flow through to consumers. For this reason, consumers ought to be as concerned with the health of their freight transportation links as they are with the passenger transportation links that they make use of on a daily basis.

## TAKEN FOR GRANTED—UNTIL IT'S TAKEN AWAY

We generally take the benefits of freight transportation for granted, in part because the system typically works well—at least in terms of making a variety of products available to consumers in a timely fashion. However, disruptions in freight transportation systems can have a rapid impact, reminding consumers of the value of these services.

A prime example of such a disruption was the “strike” of approximately 1,000 truck drivers who served port terminals in Vancouver in 2005.<sup>5</sup> The labour stoppage was a result of frustration by the drivers (predominantly owner-operators), who wanted to pass on their rapidly rising costs, particularly their fuel costs.<sup>6</sup>

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### The impact of a backlog can quickly turn what initially seems to be a local issue into a national one.

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The economic implications of the six-week work stoppage were massive. For each week that passed, \$32 million worth of goods piled up at the docks. Shippers started to look for alternative routes through other ports, and the railways stopped accepting container shipments bound for Vancouver (they required truckers to deliver the containers from the railways to the terminals). The eastern ports of Montréal and Halifax began to feel the impact of the backlog as well, quickly turning what initially seemed to be a local issue into a national one.

Similarly, a truckers’ blockade in New Brunswick in the same year demonstrated the widespread impact that a single broken link in freight supply chains can have. Local impacts began to be felt within hours of the blockade. By the fourth day of the blockade, the region began to see food, fuel, and medical supply shortages, and food products destined for export rotted away.<sup>7</sup> And while

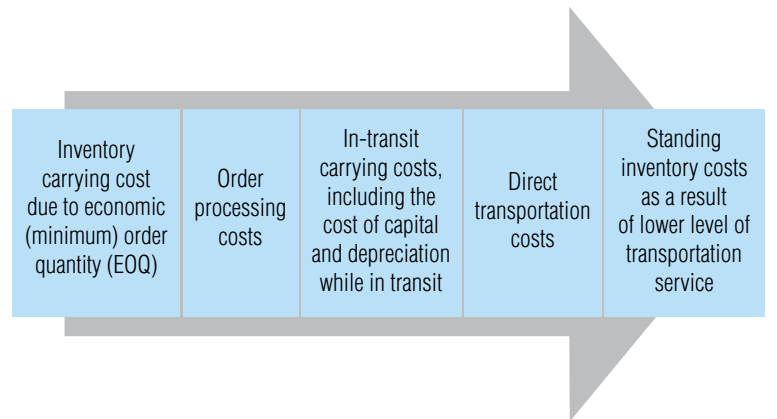
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5 Technically, this was not a strike, as most of the workers were not unionized or otherwise formally organized.

6 Archibald and Rutten, *Keep It Moving*, 19.

7 *Ibid.*, 7.

### Exhibit 2 Components of Supply Chain Logistics Costs



Source: The Conference Board of Canada (adapted from Baumol and Vinod).

the region is served by CN Rail, the lead time required for rail shipments prevented any rapid shift to rail freight as a contingency.

It might sound counter-intuitive, but the speed and reliability with which motor freight disruptions affect the cost and availability of goods is, in part, a symptom of the efficiency of the system itself. The efficiency of the freight transportation system allows producers to serve their customers with little or no standing inventory, which is costly to hold (these costs are passed on to their customers through higher prices).

This point can be demonstrated by considering the logistics costs of a shipper’s supply chain and how those costs are influenced by transportation service levels. Shippers will either explicitly or implicitly value the speed and reliability of transportation service according to this impact. They may explicitly value the impact by using a logistics or landed cost model.

The original landed cost model developed by Baumol and Vinod<sup>8</sup> has since been adapted in order to address a number of options with respect to transportation choices faced by shippers. The core elements of the cost model are summarized in Exhibit 2.

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8 Baumol and Vinod, “An Inventory Theoretic Model of Freight Transport Demand.”



The key points in this case are that slower delivery times result in higher in-transit inventory costs and less reliable service results in higher standing inventory costs. These service levels are often traded off against higher or lower direct transportation costs (freight rates). For example, shippers may elect to incur higher freight charges in order to ship by truck rather than rail, as long as the faster and more reliable service offsets the inventory costs to a large enough extent.

Shippers that rely on just-in-time (JIT) or close to JIT supply models are naturally more inclined to value reliable service. Exactly how these qualitative factors can affect costs is demonstrated by an application of the logistics cost model. The following is an example of how a shipper may estimate logistics costs according to higher or lower available service levels. Table 5 provides an example of the shipper/product parameters that are used to calculate the following logistics costs.

**Table 5**  
Total Logistics Cost Example, Product/Shipper Parameters

Cost of capital (per cent)	10
Rate of obsolescence (per cent)	10
Total holding cost (per cent)	20
Annual demand (D) (tonnes)	120
Unit cost of the order (A) (\$)	100
Unit price of the good (v) (\$)	10,000
Per unit transportation cost (\$)	150
Customer service level (per cent)	95
Economic order quantity (tonnes)	10

Source: The Conference Board of Canada.

Using these variables, we calculate the total logistics costs in three scenarios, which differ by level of service (high, medium, and low). These service levels are differentiated by transit time and transit time variability. (See Table 6.)

The above variables and service levels are applied to the logistics cost model in order to estimate the cost impact on the shipper. The transit time directly influences the

**Table 6**  
Level of Service Scenarios

Service level	High	Medium	Low
Transit time (days)	6	8	8
Transit time variability (days)	1	2	4

Source: The Conference Board of Canada.

in-transit inventory costs, while the transit time variability causes the shipper to increase standing inventory in order to meet the defined customer service level (defined in Table 5). Table 7 presents the results.

While the low level of service differs only by two and three days, respectively, in terms of transit time and transit time variability, the additional costs incurred are estimated to be over \$5,000, which represents an 11 per cent increase. It is not uncommon for shippers to be significantly more time-sensitive (in which case we would be expressing the transit times in hours rather than days). In those cases, service levels would have an even larger impact on logistics costs. For example, assembly plants that rely on JIT logistics would target a significantly higher customer service level because the cost of delay means halting the assembly line process. In the extreme case, shutting down an assembly plant for an hour due to a delay in the delivery of parts (or any other reason for that matter) can cost \$60,000.<sup>9</sup>

Included in transit time and transit time variability are order lead times. As the supply of trucking services becomes more constrained, order lead times increase. This is because there is less idle capacity to deploy at a moment's notice. This symptom may not show up anywhere in industry statistics that show the total *amount* of goods that are moved rather than *when* they are moved. But as shippers need to be able to move *what* they want, *when* they want, they have a real and demonstrable effect on their bottom lines. In other words, a less healthy trucking industry results in additional costs for shippers by a larger margin than the related increase in freight rates.

9 Anderson and Coates, "Delays and Uncertainty," 7.



**Table 7**  
Impact of Service Levels on Shippers' Logistics Costs  
(\$)

	<b>High</b>	<b>Medium</b>	<b>Low</b>
Direct transportation cost	18,000	18,000	18,000
Inventory carrying cost due to economic order quantity	18,000	18,000	18,000
Order processing cost	1,200	1,200	1,200
In-transit carrying cost	3,945	5,260	5,260
Standing inventory cost (safety stock)	1,237	2,473	4,947
<b>Total logistics cost</b>	<b>42,382</b>	<b>44,934</b>	<b>47,407</b>

Source: The Conference Board of Canada.

## CHAPTER 6

# Conclusion

### Chapter Summary

- ◆ As a result of aging driver demographics and a growing demand for trucking services, the for-hire trucking industry can expect to face a driver supply and demand gap of nearly 25,000 drivers by 2020 in a business-as-usual scenario.
- ◆ While the industry's productivity performance has been strong in the past, it faces significant challenges in maintaining these productivity gains in the future. Sensitivity analysis conducted for this study suggests that if the improvement in labour productivity is lower, the gap could exceed 33,000 drivers.
- ◆ While this will affect the fortunes of the trucking industry, it will also have an impact on the ability of its customers to do business and, ultimately, consumers in the prices they pay for goods.
- ◆ Policies and strategies that will help to make the truck driving occupation more attractive and enhance the productivity of the industry could help to reduce the size of the supply/demand gap.
- ◆ It will also be important to convince customers of the need to address the situation now and to work with them in order to develop strategies to make the best use of drivers' time.

**T**here is no doubt that employers across the country will continue to deal with the challenge of an aging population. For the trucking industry and for the truck driver occupation in particular, this challenge is particularly acute. Our research shows that the for-hire trucking industry can expect to face a driver gap of 25,000 drivers (or about 14 per cent of the anticipated driver population) by 2020 in a business-as-usual scenario. This is due in large part to the tens of thousands of drivers approaching retirement age and to the miniscule number of young drivers who are taking their place. While the industry's productivity performance has been strong in the past, it faces significant challenges in maintaining these productivity gains in the future. Sensitivity analysis conducted for this study suggests that if the improvement in labour productivity is lower during the period, the gap could exceed 33,000 drivers. Furthermore, if we include the number of drivers required for private trucking activity, the number could be even larger.

At \$17 billion in annual contribution to Canada's GDP—by far the largest of any of the freight transportation modes—the size of the for-hire trucking industry itself is huge. But the potential implications for this go beyond the trucking industry itself. Consumers do not generally buy the services of the industry directly; nevertheless, the cost and efficiency of the industry have a direct impact on the products that consumers buy—and, ultimately, on their quality of life. While there is some

potential to rearrange supply chains or shift to other modes of transportation, lower availability and higher prices of trucking services will mean lower availability and higher prices for the goods that consumers buy on a daily basis.

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**Industry leaders believe there is an important role for government to play in developing licensing standards that recognize truck driving as a skilled occupation.**

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Conversely, an enhancement to the availability and efficiency of the industry increases product market competition, lowers the cost for goods-producing businesses, and lowers the prices of consumer goods. This is in part thanks to the intensely competitive nature of the industry, which forces carriers to pass on efficiency gains (or lose business). However, this preoccupation with day-to-day competition may also hurt the industry by preventing longer-term strategic thinking that would allow the industry (and its customers) to cope with mounting demographic and other challenges.

While it will largely be up to the trucking industry to address the labour challenges it faces in order to make the industry more attractive to potential drivers, industry leaders believe there is also an important role for government to play in developing policies and regulatory frameworks in order to establish national occupational, training, and licensing standards that recognize truck driving as a skilled occupation. Any policy support that enhances productivity will help to mitigate the impact of the lack of available drivers.

It will also be important to convince customers of the need to address the situation now and to work with them to develop strategies that make the best use of drivers' time. After all, the long track record that the trucking industry has had in terms of sharing the benefit of its own productivity gains provides a direct incentive for customers to collaborate on these strategies.

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## APPENDIX A

# Detailed Economic Footprint Results

This appendix provides additional detail on the economic impact analysis provided in Chapter 5.

**Table 1**

Components of GDP by Sector—For-Hire Trucking Economic Footprint

	2007	2008	2009	2010	2011
<b>2002 \$ millions (basic prices)</b>					
<b>Real GDP</b>	34,500	33,930	32,121	34,382	35,724
<b>Total goods</b>	6,805	6,711	6,433	6,819	7,100
Crop, forestry, fishing and trapping, and support	124	122	115	124	128
Mining	3,118	3,064	2,892	3,103	3,222
Utilities	266	261	247	265	275
Construction	1,203	1,206	1,237	1,244	1,309
Manufacturing	2,094	2,058	1,942	2,084	2,164
<b>Business services</b>	27,317	26,847	25,337	27,187	28,234
Wholesale and retail trade	1,804	1,773	1,673	1,795	1,864
Wholesale trade	1,037	1,019	962	1,032	1,072
Retail trade	767	754	711	763	793
Transportation and warehousing	19,417	19,083	18,010	19,325	20,069
Truck transportation	16,408	16,126	15,219	16,330	16,959
Transit and ground passenger transportation	402	396	373	401	416
Pipeline transportation	562	553	522	560	581
Other transportation	1,767	1,737	1,639	1,759	1,827
Postal service and couriers and messengers	90	89	84	90	93
Warehousing and storage	186	183	173	185	192
Information and cultural services	518	509	480	516	535
Finance, insurance, and real estate	2,766	2,719	2,566	2,753	2,859
Professional, scientific, and technical	881	866	817	877	910
Other business services	1,931	1,898	1,791	1,922	1,996
<b>Public sector</b>	378	372	351	376	391
<b>Multiplier</b>	2.1	2.1	2.1	2.1	2.1

Note: Level-difference shock minus control, except where otherwise indicated  
Source: The Conference Board of Canada.

**Table 2**  
Labour Market Impacts by Sector—For-Hire Trucking Industry Economic Footprint  
(000s)

	2007	2008	2009	2010	2011
<b>Total employment</b>	<b>461.8</b>	<b>474.0</b>	<b>448.3</b>	<b>456.6</b>	<b>477.6</b>
Primary	16.3	17.5	17.5	18.5	18.8
Construction	16.1	18.9	20.6	20.9	22.1
Utilities	1.2	1.3	1.2	1.3	1.4
Manufacturing	22.1	23.0	22.9	22.7	22.8
Other commercial services	73.8	74.1	72.4	78.2	82.4
Wholesale and retail trade	33.3	32.4	31.5	32.5	33.8
Transportation and storage	283.7	289.5	264.6	264.1	277.3
Finance, insurance, and real estate	10.4	11.2	11.3	11.7	12.1
Public sector	4.9	6.0	6.3	6.6	6.7
Unemployed	-409.8	-415.6	-398.2	-414.2	-438.2

Note: Level-difference shock minus control

Source: The Conference Board of Canada.

## APPENDIX B

# High and Low Driver Demand Scenarios

This appendix provides additional estimates of the supply and demand for drivers for the for-hire trucking industry out to 2020. These scenarios assume higher or lower productivity growth than the base-case scenario, which in turn would increase or decrease the available supply of drivers, or increase the demand for drivers. (See Table 1 and Chart 1; Table 2 and Chart 2.)

### SCENARIO 1

Assumptions:

- ◆ Productivity growth at 1 per cent per year (decreases the demand for drivers for a given level of output)
- ◆ Supply side: Immigrant and occupational ratio increased by 2 per cent over base
- ◆ Retirement rate decreased by 2 per cent over base (average retirement age is 64.8 years)

### SCENARIO 2

Assumptions:

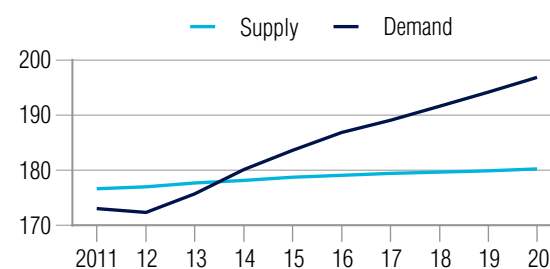
- ◆ Productivity growth at 0.33 per cent per year (increases the demand for drivers for a given level of output)
- ◆ Occupational share of immigrant labour decreased by 2 per cent
- ◆ Occupational ratio (attractiveness of truck driving to new workforce entrants) decreased by 2 per cent
- ◆ Retirement rate increased by 2 per cent (average retirement age is 62.1 years)

**Table 1**  
Driver Supply and Demand Gap, 2020  
(000s)

	Supply	Demand	Gap
Canada	180.2	196.8	16.6
Atlantic provinces	8.7	10.2	1.6
Quebec	37.6	41.2	3.6
Ontario	72.3	75.0	2.7
Manitoba	7.1	7.4	0.3
Saskatchewan	6.3	7.5	1.1
Alberta	23.5	28.6	5.0
British Columbia	24.6	26.9	2.2

Source: The Conference Board of Canada.

**Chart 1**  
Driver Supply and Demand Gap by Year, Canada  
(000s)



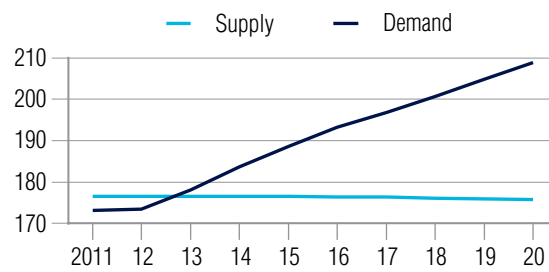
Source: The Conference Board of Canada.

**Table 2**  
Driver Supply and Demand Gap, 2020  
(000s)

	Supply	Demand	Gap
Canada	175.8	208.9	33.1
Atlantic provinces	8.4	10.9	2.4
Quebec	36.8	43.7	6.9
Ontario	70.5	79.7	9.1
Manitoba	6.9	7.9	0.9
Saskatchewan	6.1	7.9	1.8
Alberta	23.0	30.3	7.4
British Columbia	24.0	28.5	4.5

Source: The Conference Board of Canada.

**Chart 2**  
Driver Supply and Demand Gap by Year, Canada  
(000s)



Source: The Conference Board of Canada.



## APPENDIX C

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