



The Pharmacist in Your Neighbourhood.

Economic Footprint of Nova Scotia's Community Pharmacy Sector

At a Glance

- The community pharmacy sector provides benefits to society by supplying products and services that improve health outcomes and population health and support the creation of jobs.
- With about 300 community pharmacies in Nova Scotia, the total economic footprint of the pharmacy sector (direct, indirect, and induced effects) is estimated at over \$492.9 million in GDP and 9,900 jobs.
- In addition, it was estimated that the pharmacy sector in the province generated a combined \$58.4 million in fiscal benefits to all levels of government in 2016.

Executive Summary

Nova Scotia's community pharmacy sector provides health care to residents in a retail setting. It contributes to the province's wealth in several ways: it improves health outcomes, creates efficiencies in the broader health care system, and creates jobs. The link between health outcomes and the wealth and well-being of citizens is well established; by increasing life expectancy and treating and preventing illnesses, the sector contributes to a more productive workforce, reduces absenteeism, and increases the number of residents able to work.

The direct economic footprint of the sector in Nova Scotia is the economic contribution made by community pharmacies that provide health services directly to residents. This is equivalent to the wages and salaries paid to employees who deliver services, in addition to any profits or other surpluses earned while delivering those services. Essentially, it is the portion of Nova Scotia's overall gross domestic product (GDP), employment, and labour income that is linked to the activities of the pharmacy sector.

In terms of direct effects, the pharmacy sector is estimated to generate about \$241.6 million in GDP, representing about 6.9 per cent of the provincial health sector. The pharmacy sector also employs 7,000 residents and directly generates about \$216.4 million in labour income among its residents, which translates into \$30,900 per employed person. Given that service delivery in the pharmacy sector is labour-intensive and that most services are produced domestically, the ratio of the direct GDP contribution is relatively high compared with other sectors.

While the analysis reveals that the community pharmacy sector makes a significant direct contribution to the economy, it also generates significant spillover effects in other sectors. Nova Scotia's pharmacy services sector

The pharmacy sector is estimated to have generated \$58.4 million in fiscal benefits to all levels of government in 2016.

supports an additional 1,300 jobs and \$108.7 million worth of economic activity across the country from indirect effects. It also supports an additional 1,600 jobs and an additional \$142.6 million worth of economic activity across the province and the rest of Canada from induced effects. Overall, this leads to an additional \$60.6 million in indirect labour income and \$67.1 million in induced labour income among local residents and residents of other provinces.

All in all, with about 300 community pharmacies in Nova Scotia, the total economic footprint of the pharmacy sector (direct, indirect, and induced effects) is estimated at over \$492.9 million in GDP and 9,900 jobs. Furthermore, the pharmacy sector in the province is estimated to have generated a combined \$58.4 million in fiscal benefits to all levels of government in 2016, with about 84 per cent of that amount occurring in Nova Scotia and the remainder across the rest of the country.

Approach

In this analysis, The Conference Board of Canada employed Statistics Canada's detailed model of the nation's economy to estimate Nova Scotia's community pharmacy contribution to the Canadian economy. The pharmacy sector is defined using the 2017 version of the North American Industry Classification System (NAICS 2017). NAICS is an industry classification system developed by the statistical agencies of Canada, Mexico, and the United States that provides common definitions of the industrial structure of the three countries.¹ It is intended to make industrial data suitable for the analysis of production-related issues, such as industrial performance. Against this backdrop, NAICS industry 44611 (pharmacies and drug stores) comprises establishments, known as pharmacies and drug stores, that primarily dispense prescription or non-prescription drugs and medicines. These establishments also often sell snacks, cosmetics, and personal hygiene products, among others.²

1 Statistics Canada, "North American Industry Classification System 2017 Version 2.0."

2 Statistics Canada, "North American Industry Classification System 2017 Version 2.0: Health and Personal Care Stores."

The pharmacy sector's impact is determined by estimating its economic contribution, revealing the portion of Nova Scotia's GDP that is linked to the activities of the sector. This contribution also affects employment, wages, and tax revenues. However, the economic contribution of a given industry is generally larger than the impact of the organizations that make up the sector. Given that industries are linked to each other, economic activity in one can trigger economic activity in another. Therefore, to estimate the full contribution of an industry, its indirect and induced contributions must also be calculated.

While it is challenging to determine how much economic activity is dependent on the pharmacy sector, using national and provincial multipliers produced through Statistics Canada's input-output (I-O) model, the economic "footprint" of a given industry can be estimated. When considering the economic footprint of a sector, there are a variety of different effects that can be considered. In this report, we consider the following four economic effects associated with Nova Scotia's pharmacy sector:

1. **Direct Effects.** These are the economic effects directly associated with the day-to-day operations of the pharmacy sector. Essentially, this covers the economic activity of the sector itself in the province.
2. **Indirect Effects.** The indirect or supply chain effects measure the economic effects associated with the intermediate inputs or other support services that are used by the pharmacy sector in all regions of the country.
3. **Induced Effects.** These are the spillover effects (both direct and indirect) from those employed in the pharmacy sector spending their earnings and profits outside of the sector. These purchases lead to more employment, wages, income, and tax revenues, and their impact can be felt across the country.
4. **Fiscal Effects.** Finally, the fiscal impact associated with the above effects is measured at the federal, provincial, and municipal levels.

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To generate these results, gross output³ for the pharmacy sector is used as the input for the I-O model. Unfortunately, gross output data are not readily available for NAICS 44611 and must be estimated. This is achieved using gross output data for NAICS 4461 (health and personal care stores)⁴ and the employment data for both NAICS sectors 4461 and 44611.^{5,6} Using these data, the Conference Board estimated the gross productivity of sector 4461 in each province and applied these productivity figures to NAICS 44611 employment to produce gross output for the pharmacy sector. These values were inputted into the I-O model to generate the outputs of real GDP, employment, and labour income, as well as the fiscal contributions.

However, employment data for sector 44611 are also not readily available and are generated using a combination of Canada business patterns data⁷ and data from the National Association of Pharmacy Regulatory Authorities (NAPRA). Since the Canada business patterns data represent only about 85 per cent of the community pharmacies in Canada, the average number of employees per pharmacy calculated from these data is applied to the total number of pharmacies in Canada (available from NAPRA) to estimate total employment in the pharmacy sector. These estimates are then compared with the employment totals published for sector 4461 in the 2016 Census, and the estimates for sector 44611 are then adjusted to remain consistent with the Census data. Gross output is then calculated by multiplying employment for sector 44611 with productivity for sector 4461. This result is used as the input for the I-O model.

Even though employment for sector 44611 is estimated as an input to the I-O model, and is also an output of the model, this analysis uses the output from the I-O model to represent total employment in the sector. In addition, since Canada's community pharmacy sector provides

- 3 The measure of total economic activity. It is a much broader measure of economic output than gross domestic product (GDP), which is limited mainly to final output (i.e., value added).
- 4 This subsector comprises establishments primarily engaged in retailing health and personal care products. Drug stores and pharmacies, cosmetics, beauty supplies and perfume stores, optical goods stores, food (health) supplement stores, and health appliance stores are included.
- 5 Statistics Canada, Labour Force Survey.
- 6 Statistics Canada, Data Tables, 2016 Census.
- 7 Industry Canada, "Businesses—Canadian Industry Statistics."

health care to residents in a retail setting, for comparison purposes we combined data from sector 44611 with data from sector 62 (health care and social assistance) to produce an overall view of the health sector and determine pharmacy's place in it.

Economic Footprint Results

Direct Effects

The results indicate that Nova Scotia's pharmacy sector directly employed an estimated 7,000 people in 2016. This figure includes everyone who works with pharmacy-related services, such as community pharmacists, pharmacy technicians, and pharmacy aides, as well as sales supervisors, cashiers, clerks, and shelf stockers. While the pharmacy sector accounts for less than 1 per cent of all jobs in Nova Scotia, it comprises approximately 8.6 per cent of all health employment in the province.

On a GDP basis, the pharmacy sector is estimated to be about \$241.6 million, representing about 6.9 per cent of the provincial health sector. (See Chart 1.) The reason Nova Scotia's pharmacy sector employment accounts for a larger share than its GDP is because GDP per employee in the pharmacy sector is relatively lower than other health and retail sectors. The pharmacy sector also directly generates about \$216.4 million in labour income among Nova Scotia residents, which translates into \$30,800 per employed individual.

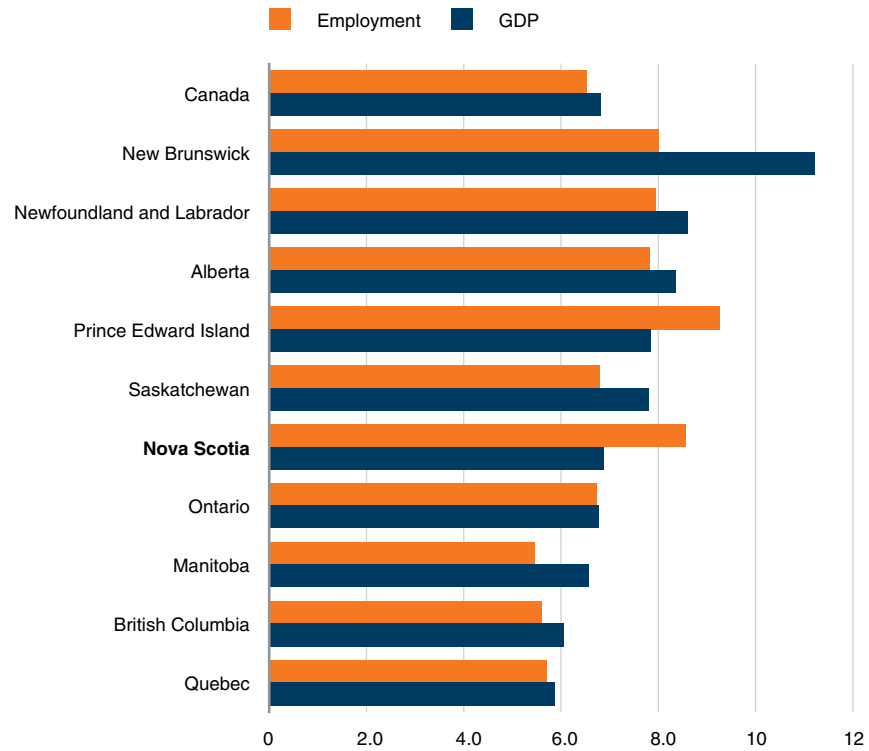
Indirect Effects and Induced Effects

Further to the people that the pharmacy sector directly employs, it also generates effects in other areas of the economy. Indirect effects measure the economic benefits associated with intermediate inputs or other support services that are used as inputs into the pharmacy sector. In effect, the indirect effects describe a sector's supply chain, highlighting the inputs necessary to operate a retail pharmacy. Meanwhile, induced effects measure the spillover effects from those employed in the pharmacy sector. For example, individuals employed in a pharmacy spend their income on goods and services, which in turn contributes to the economy.

Chart 1

Pharmacy Sector Comprises a Decent Amount of Retail Activity

(percentage of GDP and employment in the pharmacy sector, 2016)



Sources: Statistics Canada; The Conference Board of Canada.

In aggregate, Nova Scotia's pharmacy services sector supports an additional 1,300 jobs from indirect effects. The indirect effects can also be measured in terms of GDP, as the pharmacy services sector supports an additional \$108.7 million worth of economic activity across the country. On top of that, the pharmacy sector supports an additional 1,600 jobs and an additional \$142.6 million worth of economic activity across the country from induced effects. Overall, this leads to an additional \$60.6 million in indirect labour income and \$67.1 million in induced labour income among Nova Scotia residents and residents of other provinces.

The indirect and induced effects of an industry can also be expressed as a multiplier, which is the ratio of the combined direct, indirect, and

induced effects to the direct effects. In this case, the pharmacy sector has an employment multiplier of 1.42, meaning it supports 0.42 jobs elsewhere across Canada for every direct job in the sector. For GDP, the multiplier is 2.04, signifying that for every \$100 the pharmacy sector directly generates in Nova Scotia, it supports an additional \$104 across the country.

All in all, the total economic contribution of the pharmacy sector is the combined effects of the direct, indirect, and induced impacts. These are outlined in Table 1. What is more, although Nova Scotia enjoys most of the additional benefits (indirect and induced effects) of the pharmacy sector, its impact reaches across the country. (See Table 2.)

Table 1
Breakdown of Pharmacy Employment, GDP, and Labour Income Effects

	Direct		Indirect		Induced		Total	
	Value	Share of effects (%)	Value	Share of effects (%)	Value	Share of effects (%)	Value	Share of effects (%)
Employment	7,007	70.4	1,331	13.4	1,612	16.2	9,950	100.0
GDP (\$ 000s)	241,627	49.0	108,732	22.1	142,560	28.9	492,920	100.0
Labour income (000s \$)	216,398	62.9	60,591	17.6	67,083	19.5	344,073	100.0

Sources: Statistics Canada; The Conference Board of Canada.

Table 2
The Impact of Nova Scotia's Pharmacy Sector

	Nova Scotia			Rest of Canada	
	Direct	Indirect	Induced	Indirect	Induced
Employment	7,007	841	1,051	490	561
GDP (\$ 000s)	241,627	70,072	86,986	38,660	55,574
Labour income (\$ 000s)	216,398	36,788	36,788	23,804	30,296

Fiscal Effects

The direct, indirect, and induced effects associated with the pharmacy sector also have significant fiscal implications across the country. For the federal and provincial governments, the key areas where government

The economic output of the pharmacy sector in Nova Scotia is approximately \$241.6 million.

revenues are affected include federal and provincial gas taxes, indirect taxes (which include things like sales taxes), and taxes on trading profits. At the municipal level, fiscal impacts are mostly from taxes on production. The analysis estimates that the pharmacy sector generated a combined \$58.4 million in fiscal benefits in 2016, specifically:

- \$10.1 million for the federal government, consisting of \$6.4 million from import duties, \$1.4 million from federal duties, \$1.3 million from the gas tax, and \$750,000 from federal sales taxes like the HST and GST;
- \$24.5 million for the provincial government from the provincial HST (\$10.9 million), taxes on production (\$5.1 million), and the provincial gas tax (\$2.5 million);
- \$23.8 million in municipal tax collections, mainly from taxes on production.

Conclusion and Discussion

The economic output of the sector in Nova Scotia is approximately \$241.6 million, larger than the provincial ship and boat building sector.⁸ (See Chart 2.) Once the indirect and induced effects are included, the total economic contribution of the pharmacy sector reaches more than \$492.9 million. The sector employs about 7,000 Nova Scotia residents, slightly smaller than the number employed in the provincial agriculture and utilities sectors.⁹ Once the indirect and induced effects are included, the pharmacy sector contributes to around 9,900 jobs across the province and the rest of Canada.

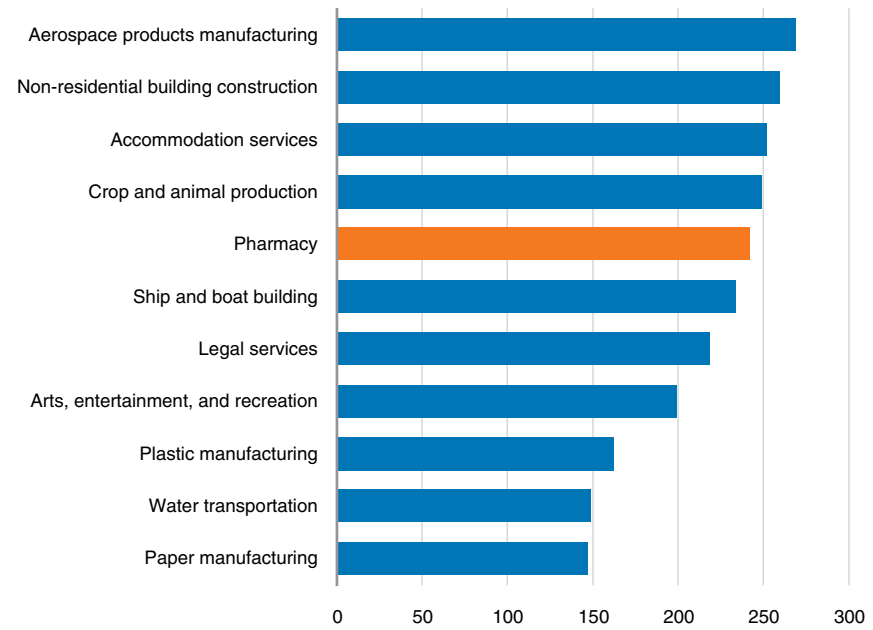
8 Statistics Canada, CANSIM table 381-0030.

9 Statistics Canada, CANSIM table 282-0008.

Chart 2

Pharmacy Sector Compares With Other Industries

(\$ millions of GDP, 2016)



Sources: The Conference Board of Canada; Statistics Canada.

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APPENDIX A

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