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Achieving Sustainable Prosperity.

Benchmarking the Competitiveness of Newfoundland and Labrador



Achieving Sustainable Prosperity: Benchmarking the Competitiveness of Newfoundland and Labrador

Jacqueline Palladini

Preface

Newfoundland and Labrador has experienced unprecedented economic and employment growth since 1997 due to the development of its offshore oil and its nickel and iron ore mining industries. But there are many areas where the province's competitiveness has lagged that of its closest competitors. Looking ahead, the province will face additional economic and fiscal challenges with a maturing oil sector and a rapidly aging population.

The purpose of this report is to identify areas where Newfoundland and Labrador can improve its long-term competitive business environment. This report identifies the areas where Newfoundland and Labrador has underperformed relative to its closest competitors using a benchmarking analysis methodology. The report then offers potential policy areas where the province could improve its competitive position and mitigate some of the challenges it will face in the not-too-distant future.

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EXECUTIVE SUMMARY

Achieving Sustainable Prosperity: Benchmarking the Competitiveness of Newfoundland and Labrador

At a Glance

- Newfoundland and Labrador has experienced unprecedented economic, productivity, and fiscal growth since 1997 due to the development of the offshore oil and metal mining sectors.
- But this growth was driven by the development of finite resources. The province needs to foster a competitive policy environment to maintain its high level of productivity, and to sustain economic prosperity for future generations.
- This report identifies the province's current competitive strengths and weaknesses relative to its peers by benchmarking several performance indicators against its direct competitors.
- The results of the benchmarking analysis are used to identify broad policy areas where the province can enhance its competitive business environment. These policies cover four areas of competitiveness: innovation, investment, human capital, and the business and policy environment.

Newfoundland and Labrador has experienced unprecedented economic growth since 1997 due to a natural resources boom. The development of the oil extraction industry and the strength of metal mining have brought with them economic, employment, and fiscal benefits. Annual inward greenfield foreign direct investment averaged \$750 million over the past five years.¹ Investment in, and development of, highly productive industries pushed labour productivity to the highest levels in the country, and the provincial government managed to pay down public debt and balance its books for a period of time.

Despite these important gains, there are concerns about the breadth of economic prosperity—in areas of the economy outside the mining, oil and gas sector—and also about the future sustainability of this prosperity that currently hinges largely on finite resources: oil, nickel, and iron ore. The purpose of this report is to identify areas where Newfoundland and Labrador can improve its long-term competitive environment to broaden its areas of prosperity and to sustain the province for future generations.

Using a benchmarking analysis methodology, this report identifies the areas in which Newfoundland and Labrador has underperformed (or performed well) relative to its closest competitors. The results of the benchmarking analysis are then used to identify broad policy areas where the province can enhance its competitive position in order to take on some of the challenges it will face in the not-too-distant future.

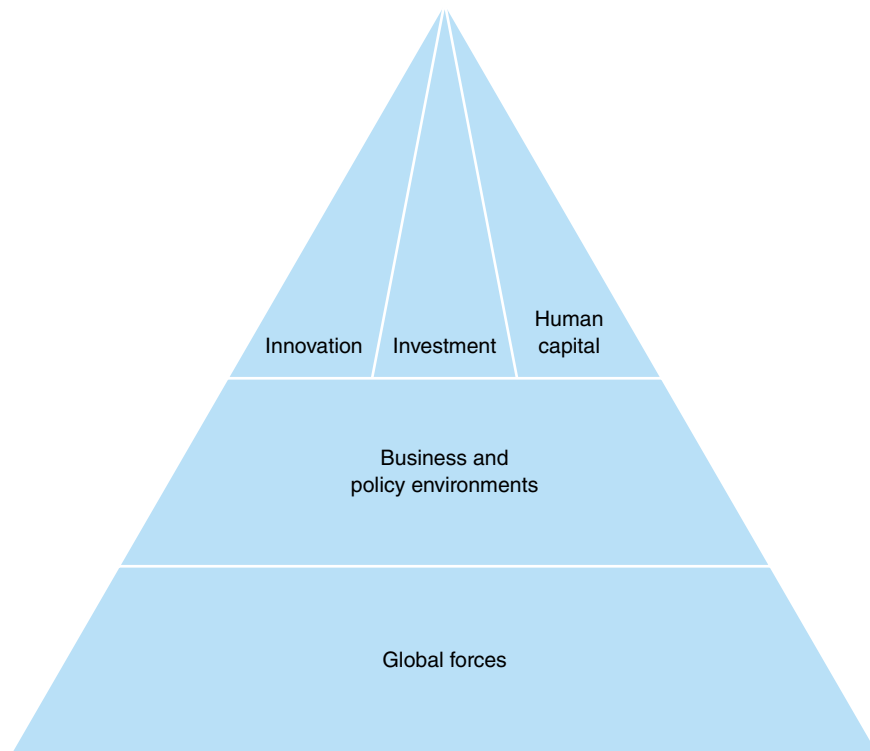
1 fDi Markets.com, Database.

Benchmarking Analysis and Results

The framework for the benchmarking analysis is based on four foundational themes that together determine business competitiveness: innovation, investment, human capital, and the business and policy environment. (See Exhibit 1.) Newfoundland and Labrador's performance was benchmarked against nine of its direct competitors (see Table 1) on competitiveness indicators grouped within these four themes. For each of the 32 indicators benchmarked, a report-card-style letter grade was assigned to each jurisdiction based on relative performance.

Exhibit 1

Framework for Determinants of Competitiveness



Source: The Conference Board of Canada.

Table 1

Newfoundland and Labrador's Comparator Jurisdictions

International	U.S. states*	Canadian provinces
Norway	Texas	Alberta
United Kingdom	North Dakota	Saskatchewan
		Quebec
		Nova Scotia
		New Brunswick

*For indicators where state data were not available, U.S. national variables were used.
 Source: The Conference Board of Canada.

The results of the benchmarking analysis revealed that Newfoundland and Labrador's "big picture" indicators of GDP and labour productivity levels rank in the middle compared with its competitors. However, growth of these indicators over the past five years has been slow, indicating that overall competitiveness is slipping.

Newfoundland and Labrador performs poorly on all innovation indicators, which include research and development spending and patent applications. Investment indicators showed generally mixed performance, with Newfoundland and Labrador being very successful at attracting foreign direct investment but investing relatively little in infrastructure. In terms of human capital, the province ranks below average on the education and skills indicators and its labour market underperforms relative to its competitors.

The benchmarking exercise revealed high published provincial corporate income tax rates in Newfoundland and Labrador with a prevalence of tax measures targeting various sectors and areas of the economy. When the tax credits in this complex system are taken into account, the effective tax rates on businesses are actually low. However, the multitude of tax credits contributes to one of the most distortive tax systems in Canada. Targeted sector-specific tax relief benefits less productive sectors of the

The benchmarking results revealed a picture of Newfoundland and Labrador's competitiveness that has come a long way in the last 15 years.

economy, yields high compliance costs for businesses, and results in high monitoring costs for governments. Other business costs for items such as payroll, transportation, and utilities are high.

The fiscal health of the province shows middle-of-the-pack performance in the net debt indicator. The province managed to pay down its debt in the mid-2000s, but this has since crept up again and could ramp up quickly given the impact of the recent slide in oil prices on royalty revenues.

Policy Challenges and Opportunities

The benchmarking results revealed a picture of Newfoundland and Labrador's competitiveness that has come a long way in the last 15 years. However, there are many areas within the competitive building blocks—innovation, investment, human capital, and business policy environment—where individuals, businesses, and the government can make improvements that will support the province's competitive position. (See "Summary of Policy Recommendations.")

Innovation is a key factor in the province's future prosperity. Increased competition leads to new ideas, improved business organization, and innovative production procedures. Lowering trade barriers can expand opportunities in new markets. Furthermore, the links between post-secondary institutions and companies can be strengthened to boost innovation in the economy.

Investing in new technologies and machinery can increase production and productivity while managing labour costs. Taxes on private capital need to become more efficient and less distortive to encourage this investment. Local businesses face hundreds of "boutique" tax credits that increase compliance time and costs, and lead to inefficient overall allocation of limited investment funds. Productivity can also be improved by increasing investment in public infrastructure.

There are several current and future areas that will present major challenges to individuals, companies, and governments.

There are labour skill gaps in the province that will only worsen as the population ages rapidly. Policies to increase skills, such as boosting apprenticeship training and better aligning education with labour market needs, would mitigate some of the issues. Attracting more interprovincial and international immigration would strengthen the labour market, while engaging older workers and under-represented groups would also help cushion the impacts of aging.

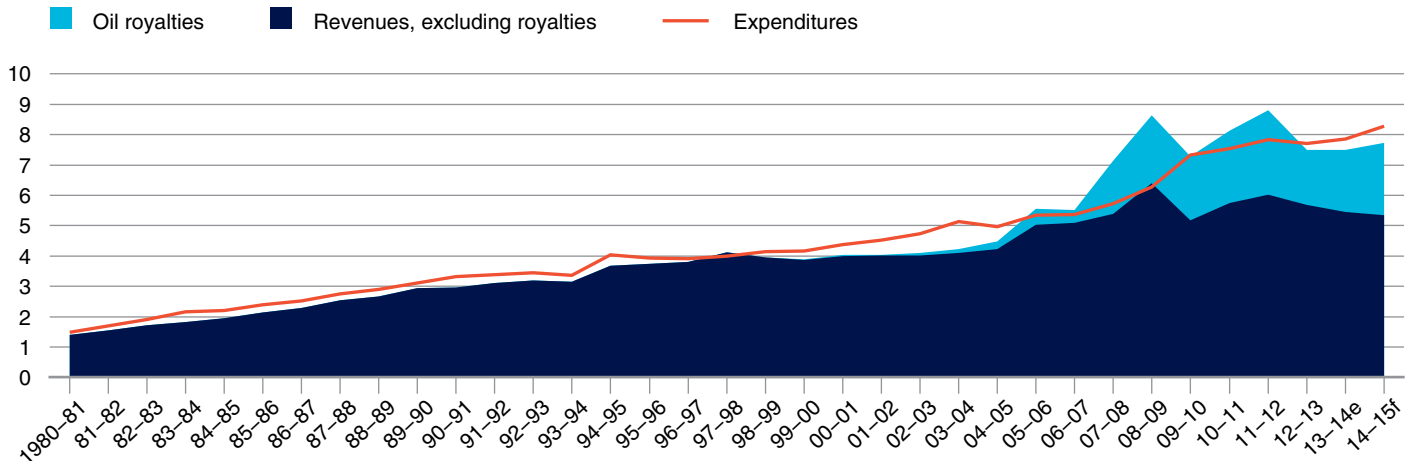
The current fiscal situation is not sustainable. Expenditures have outpaced revenues through most of recent history and net debt is increasing. The province managed to balance its books during the mid-2000s because of a sharp rise in royalty revenues. But the surplus situation was short-lived as expenditures continued to rise. Expenditures have expanded much faster than revenues, excluding royalties. In fact, day-to-day programming such as health and education is being funded largely by royalty revenues, exposing these programs to fluctuating commodity prices. (See Chart 1.) As a result of this rapid increase in expenditures, net debt is growing. This has been during a time of relative economic prosperity when the debt should have been reduced. Program spending needs to be prioritized, with a focus on reining in the public administration sector that has ballooned in recent years. Moreover, a portion of non-renewable resource revenues could be set aside in a sovereign wealth fund to ensure that future generations can benefit from the current resource extraction and to ensure that program spending is not subject to commodity price swings.

In summary, Newfoundland and Labrador has experienced unprecedented economic growth that has brought many economic, employment, and fiscal benefits. Despite these gains, there are several current and future areas that will present major challenges to individuals, companies, and governments. Oil brought an economic boom that will eventually come to an end. Now is the time to take on the challenges so a competitive and prosperous environment will continue long after the resource is exhausted.

Chart 1

Province Depends on Oil Royalties to Balance Its Books

(\$ billions)



e = estimate

f = forecast

Sources: Newfoundland and Labrador Department of Finance; The Conference Board of Canada.

Summary of Policy Recommendations to Enhance Newfoundland and Labrador's Business Competitiveness

Several policies would help meet the upcoming challenges of aging and resources. This report's recommendations include the following:

Innovation

- strengthen links between higher education institutions and the private sector;
- increase competition by lowering trade barriers and through government procurement.

Investment

- create equitable and efficient tax systems for capital;
- increase investment in public infrastructure.

Human capital

- boost immigration and corresponding recognition of credentials;
- increase education levels and match skills training with labour force needs;
- retain and engage older workers and under-represented groups.

Fiscal policies

- reduce government programs' reliance on funding coming from annual oil revenues;
 - keep net debt in check by reducing spending, especially in public administration;
 - create a sovereign wealth fund so future programming can rely more on interest and less on oil prices.
-

CHAPTER 1

Introduction

Chapter Summary

- Newfoundland and Labrador has experienced unprecedented economic, productivity, and fiscal growth since 1997 due to the development of the offshore oil and metal mining sectors.
- The province needs to implement a competitive policy environment to maintain its high level of productivity and economic prosperity.
- This report identifies the province's competitive strengths and weaknesses relative to its peers by benchmarking several performance indicators against its direct competitors.
- The results of the benchmarking analysis are used to identify broad policy areas for the province to enhance its competitive business environment.

After many years of economic stagnation, Newfoundland and Labrador experienced unprecedented economic growth from the late 1990s to the mid-2000s due to a resources boom—particularly in the mining and oil and gas industries. Newfoundland and Labrador’s real gross domestic product (GDP) grew substantially faster (5 per cent) than the national average (3.3 per cent) over the 10-year period 1997–2007 (expressed in annual average compound growth rates). Large resource projects and the development and production of oil at several offshore platforms during this time also led to impressive growth in labour productivity in the province. Business sector labour productivity—the amount of output per hour worked—expanded at a pace more than three times the national average.¹ By 2007, the provincial economy’s overall labour productivity levels were the highest in the country.²

Because the economic and productivity gains were driven by the development of oil, a finite and non-renewable resource, concerns have been raised about both the province’s breadth of economic prosperity and its sustainability for future generations. The province has already shown signs that its prosperity has begun to languish. Real GDP peaked in 2007, coinciding with a peak in oil extraction. While there is no doubt the economy is operating at very high levels, real GDP experienced no

1 Statistics Canada, CANSIM table 383-0011.

2 Statistics Canada, CANSIM table 383-0029.

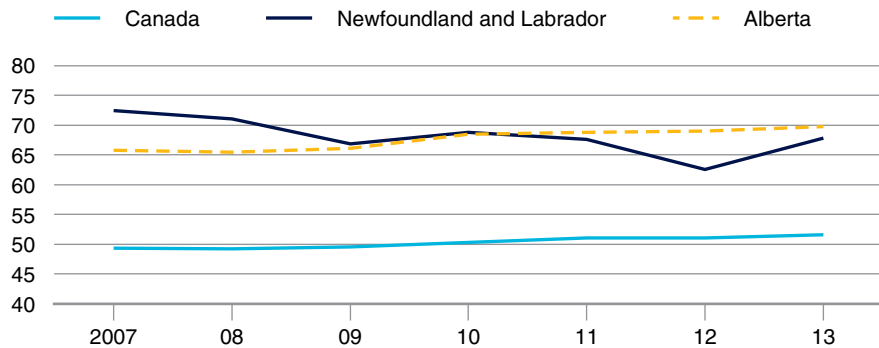
growth from 2007 to 2013 (a period that includes the 2008–09 global financial crisis). Meanwhile, the national economy grew 8.3 per cent over the same period.

Another concern is waning labour productivity. While Newfoundland and Labrador was able to maintain its first-place standing as the most productive economy in the country for several years, Alberta has overtaken Newfoundland and Labrador for top spot since 2011. Indeed, Newfoundland and Labrador experienced the largest productivity declines in the country over the five years since 2007, though productivity levels still remain high. (See Chart 2.)

Chart 2

Newfoundland and Labrador's High Productivity Has Declined

(real value-added output per hour; chained 2007 \$)



Sources: Statistics Canada; The Conference Board of Canada.

The challenge ahead for Newfoundland and Labrador is twofold: first, maximize the labour and income benefits from the current boom; and second, ensure the sustainability of this current prosperity for future generations. Achieving these goals requires a policy environment that encourages competitiveness and productivity. The province has derived considerable benefit over recent history from surging investment in the oil extraction industry, but the province will not be able to rely as heavily on this one industry to drive economic growth

While investment will remain robust, the contribution of the oil extraction industry to the economy will wane as exports fall in line with production.

over the longer term. While we expect several new energy basins to be developed in the future, these may not fully offset the declines expected at existing maturing fields. Thus, while investment will remain robust, the contribution of the oil extraction industry to the economy will wane as exports fall in line with production.³ Moreover, the province's population is the oldest in Canada and this will exacerbate current labour skills gaps over time. Fostering a highly competitive business environment will help mitigate the negative effects of these issues and allow the province to continue attracting investment and enhancing the success and wealth of its industry and citizens.

This purpose of this report is to identify areas where Newfoundland and Labrador can improve its competitive environment. Chapter 2 contains a description of the report's methodology. Then, in Chapter 3, Newfoundland and Labrador's competitiveness is benchmarked against jurisdictions that are direct competitors in international and domestic markets. This benchmarking identifies the areas in which the province performs well and the areas in which it could improve its competitiveness. Chapter 4 provides broad policy recommendations to improve Newfoundland and Labrador's competitiveness against its peers. Chapter 5 concludes.

3 Cooke, "Newfoundland and Labrador."

CHAPTER 2

Competitiveness Framework

Chapter Summary

- Improving labour productivity is at the heart of improving competitiveness and therefore is the main “big picture” indicator of competitiveness.
- The benchmarking indicators reflect the four foundational themes that contribute to higher labour productivity—innovation, investment, human capital, and the business and policy environment—themes that together determine a region’s business competitiveness.
- The comparator jurisdictions chosen are Newfoundland and Labrador’s competitors and have similar business operating environments.
- The areas where the province underperforms in the benchmarking analysis are the policy focus areas of this report. Policy recommendations are developed based on the findings from the benchmarking analysis and from a literature review of current competitive policy research.

What Is “Competitiveness”?

The framework for this analysis focuses on the essential building blocks of competitiveness and its sustainability—labour productivity, innovation, investment, and human capital—all operating within an enabling business environment. The concept of “competitiveness” and the methodology used to benchmark the competitiveness of comparator regions are guided by the definitions developed by the Organisation for Economic Co-operation and Development (OECD) and the World Economic Forum (WEF).

The OECD defines competitiveness as “the degree to which a country can, under free and fair market conditions, produce goods and services which meet the test of international markets, while simultaneously maintaining and expanding the real incomes of its people over the long term.”¹ Although targeted toward countries, this definition is also appropriate for a provincial-level analysis. In today’s global marketplace, the ability to meet the test of international markets is an increasingly important factor affecting economies, whether national or provincial.

1 OECD, *Technology and the Economy*.

The WEF defines competitiveness as “the set of institutions, policies, and factors that determine the level of productivity of a country.”² Ultimately, both definitions identify improving productivity as being at the heart of improving competitiveness. This link has been made by academics as well:

“ True competitiveness is measured by productivity. Productivity allows a nation to support high wages, attractive returns to capital, a strong currency—and with them, a high standard of living. What matters most is not exports per se or whether firms are domestic or foreign-owned, but the nature and productivity of the business activities taking place in a particular country.”³

Dr. Michael Porter

Increasing labour productivity does not mean working harder, as many assume, and it certainly does not mean working longer hours. Rather, increasing labour productivity means generating more output in any given hour worked by making better use of machinery and equipment (investing in capital); by changing the organizational structure or developing new methods of production or new products (innovation); or by having a workforce with appropriate skills and knowledge (human capital).

The Conference Board has developed a framework to illustrate the key determinants of productivity. (See Exhibit 2.) There are three sets of determinants. The first set comprises firm-specific factors that relate to innovation, investment, and human capital in a particular organization.

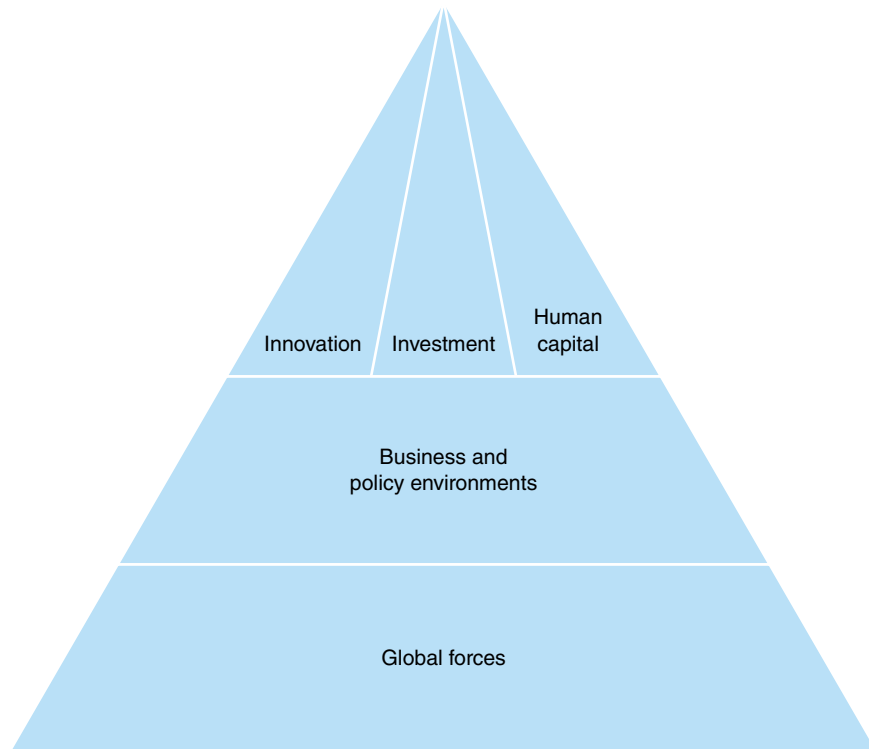
The second set consists of the business and policy environments in which organizations operate. The third set relates to dynamics in the global economy—such as changes in global commodity prices—over which individual regions or organizations have little influence.

2 Schwab, *The Global Competitiveness Report 2014–15*.

3 Porter, *What Is Competitiveness?*

Exhibit 2

Framework for Determinants of Competitiveness



Source: The Conference Board of Canada.

Indicator Selection

The indicators chosen all fit into the framework described in Exhibit 2. The following qualities were considered when choosing the indicators: they must be theoretically valid, empirically reliable, comparable across regions, and relevant to the overall goal of benchmarking competitiveness.

Typically, the indicators measure outcomes—what has actually been achieved—rather than the inputs used to produce the outcome or policy responses to those outcomes. To measure education quality, for example, student skills in math and reading are chosen as indicators

The indicators measure outcomes—what has actually been achieved—rather than the inputs used to produce the outcome.

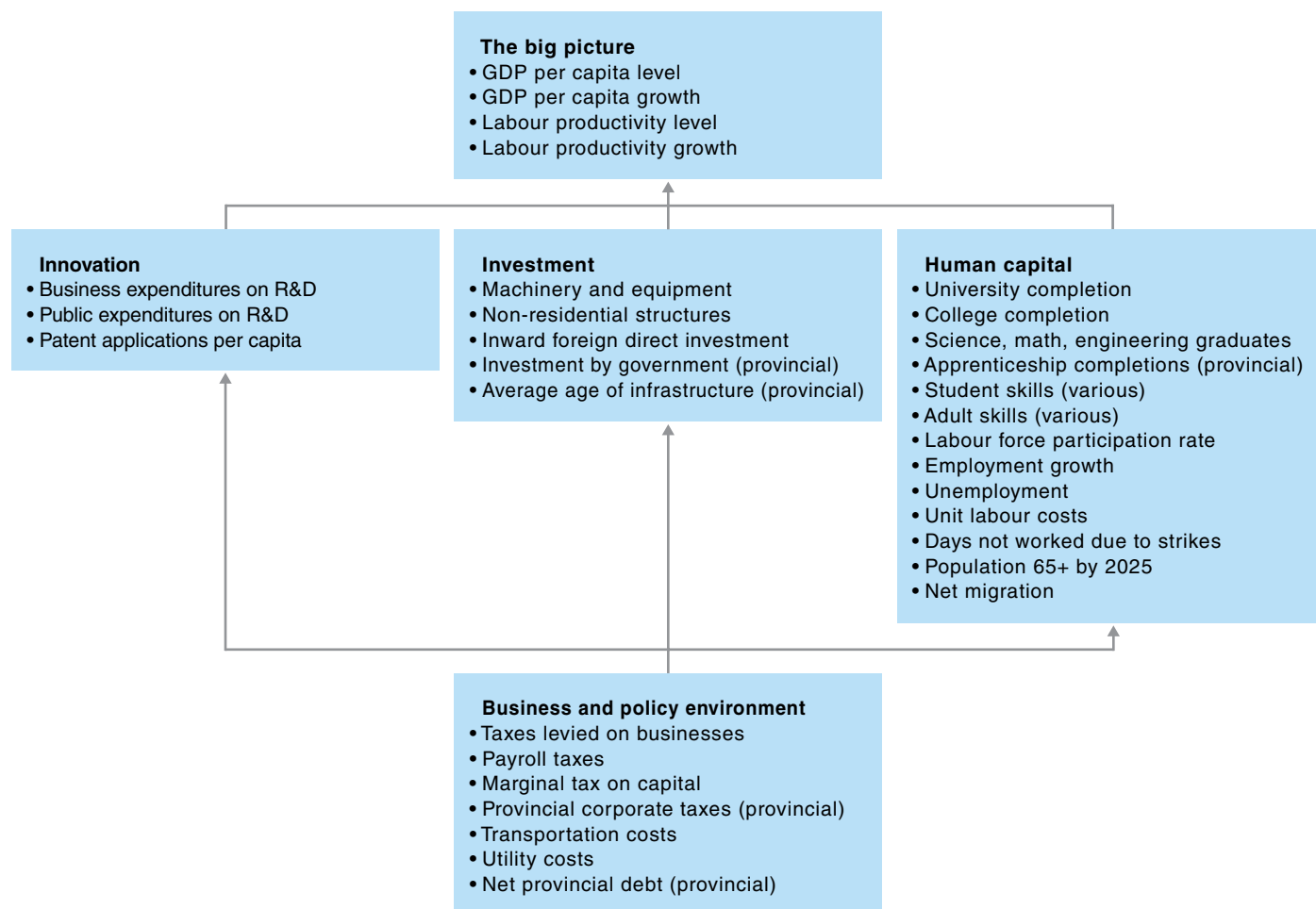
rather than government expenditures on education. We focus on what has actually been achieved rather than on how much has been invested. This approach enabled us to assess where a region is reaping a good return on its investments and where new strategies are needed. However, using outcomes rather than input indicators is more challenging at the provincial level than at the national level, due to limitations in data availability. Therefore, proxy input indicators were used in some instances. For example, the amount of research and development spending by businesses and government was used as indicators of innovation performance.

In addition, The Conference Board of Canada uses only those indicators where it is clear whether movement of the indicator value in a given direction is considered desirable or undesirable. For example, a higher value is always better for income per capita. However, with an indicator that measures wages and salaries, for example, the distinction is not always clear. While higher wages and salaries can attract high-performing workers to the province, they may be undesirable for businesses in the province because they put pressure on profitability in international markets. Therefore, such an indicator would not be included in the benchmarking exercise. That said, movement of the chosen indicators in a particular direction is not necessarily indicative of better performance. For example, the presence of greater research and development (R&D) investment may lead to better innovation outcomes, but only if smart investments are made and the funds are actually being used efficiently. Increased spending does not necessarily guarantee better outcomes.

We saw from Exhibit 2 that there are several sets of determinants of productivity that need to be benchmarked. Exhibit 3 shows the indicators that were chosen for each set of determinants. (“Global forces” are not benchmarked.) The final list of indicators was chosen based on consultations with project investors and on data availability. A total of 32 competitiveness indicators are benchmarked. Because comparable data were not available for all regions, some indicators were ranked for

just the provinces. Some indicators emphasize a gap in performance (differences in levels among regions); others emphasize progress toward closing a gap (differences in growth rates among countries).

Exhibit 3 Competitiveness Indicators



Source: The Conference Board of Canada.

Comparator jurisdictions were chosen for their similarities in economic structure, export markets, and business environment.

Four indicators—gross domestic product (GDP) per capita levels and per capita growth and labour productivity levels and labour productivity growth—present the “big picture” on economic and competitive performance. The remaining indicators are considered drivers of competitiveness and are grouped into four categories: innovation, investment, human capital, and the business and policy environment.

Jurisdiction Selection

The selection of jurisdictions for comparison is important to properly benchmark Newfoundland and Labrador’s competitiveness. These jurisdictions were chosen for their similarities in economic structure, export markets, and business environment in order to gain insight into how the province performs against its competitors.

The chosen jurisdictions are direct competitors of the province and face similar business challenges. Choosing jurisdictions that are direct export competitors eliminates jurisdictions that have different export markets and exported products—Prince Edward Island, for example. Selecting jurisdictions that face similar business challenges rules out many oil exporting countries in the Middle East, for example, because those countries’ operating environments differ too much from that of Newfoundland and Labrador even though they export oil to the same regions as does Newfoundland and Labrador.

Export competitors with common export destinations and a similar trade mix to Newfoundland and Labrador are identified using internationally available trade data. In addition to these two criteria, the industrial structure, rural population dispersion, and the size of the economy were considered. For a detailed description of the jurisdiction selection methodology, please see Appendix B.

The list of comparator regions was finalized after consultations with representatives from the Newfoundland and Labrador Employers' Council. The list includes two countries, two U.S. states, and five Canadian provinces:

Norway

The trade mix of Norway is very similar to that of Newfoundland and Labrador, with a prominence in the oil sector—offshore oil in particular. According to the World Trade Organization, fuel and mining products make upward of 75 per cent of Norway's exports. The top import from Norway in both the U.S. and Canada is crude oil. This oil-rich country also faces some similar business challenges such as having to transport goods by ship to reach markets.

United Kingdom

The United Kingdom is one of the most diversified economies on the list and includes some offshore oil exports. The U.K. exports oil to many of the same U.S. states as Newfoundland and Labrador, making it a direct competitor. It also has a history of iron mining and still has large reserves of iron ore, although its mining industry is more mature and mining activities have decreased substantially.

Texas

Texas has a large established oil industry and exports oil to many of the same countries as Newfoundland and Labrador, including China, the U.K., Netherlands, France, Japan, and Spain. In the early 1980s, oil was the backbone of the Texan economy, as is the case in Newfoundland and Labrador today. However, Texas diversified its economy in the 1990s and is now far less sensitive to volatility in oil prices than it once was. Texas may be able to offer some best practices in this regard.⁴

4 There are limited U.S. state data available for many of the indicators benchmarked. In cases where U.S. data are not available at the state level, a U.S. national variable was substituted in the benchmarking calculations.

North Dakota is experiencing a modern oil boom and has many similarities to Newfoundland and Labrador.

North Dakota

North Dakota is a major producer of oil and is experiencing a modern oil boom thanks to the discovery of the Parshall Oil Field in 2006. Since it is a fairly recent boom, it has many similarities to Newfoundland and Labrador. The rest of North Dakota's economy is largely agriculturally based. There is also a large rural population, with 40 per cent of the population living in rural areas compared with 41 per cent in Newfoundland and Labrador.⁵

Alberta

Alberta is the largest producer and exporter of oil in Canada and, as it exports oil to many of the same places as Newfoundland and Labrador, it is a competitor. While Alberta's mineral fuel production is much larger than Newfoundland and Labrador's, petroleum products make up a smaller proportion of its total export mix because Alberta's economy is more diversified. The provinces face some similar business challenges, including shortages of skilled labour.

Saskatchewan

Saskatchewan is Canada's second-largest exporter of oil, which accounts for 35 per cent of the province's total exports. However, Saskatchewan exports to different markets than Newfoundland and Labrador and, as such, is not currently a direct competitor to the same extent as the other comparator jurisdictions selected. Although it does not produce iron ore, the mining of uranium, potash, and other minerals is extremely prominent in Saskatchewan, making this province a good comparator for benchmarking. Also, there is a relatively high proportion of the population (33 per cent) living in rural areas.

5 There are limited U.S. state data available for many of the indicators benchmarked. In cases where U.S. data are not available at the state level, a U.S. national variable was substituted in the benchmarking calculations.

Quebec

Quebec shares a border with Labrador and exports many of the same products: iron ore, refined oil products, newsprint, and lumber. Eight of Newfoundland and Labrador's top 10 international export destinations are also in Quebec's top 10 export destinations, making Quebec a direct competitor. It is the only other province that is a large producer of iron ore. Quebec is also facing the challenge of an aging population. By 2025, the proportion of the provincial population that is 65 and older will be higher than the national average in both provinces.

Nova Scotia

Nova Scotia's industrial structure is different from Newfoundland and Labrador's. However, Nova Scotia exports many of the same goods, including seafood, fish, lumber, and newsprint products. Moreover, four out of Nova Scotia's top five international export destinations are also listed in Newfoundland and Labrador's top five export destinations. This province has many other aspects that make it comparable, such as similar rates of urbanization and an older population.

New Brunswick

Oil-related products make up 60 per cent of New Brunswick's exports, making it a relevant comparator region. There are many other export products such as crustaceans, lumber, and metals that the province has in common with Newfoundland and Labrador, and the two provinces share about half of the same top export destinations. Only 53 per cent of New Brunswick's population is urbanized and the province is also experiencing population aging.

Report-Card-Style Ranking and Policy Recommendations

We adopt a report-card-style A-B-C-D ranking for this report, and each region was graded on each indicator. Grade levels are assigned to each indicator using the following method:

Areas where Newfoundland and Labrador falls short of its competitor jurisdictions will help identify policy areas that may need improvement.

For each indicator, the difference between the top- and bottom-performing regions was calculated, and this figure was divided by four. A region received an “A” grade on a given indicator if its score was in the top quartile, a “B” if its score was in the second quartile, a “C” if its score was in the third quartile, and a “D” if its score was in the bottom quartile.

For example, suppose that the top performer on real GDP growth is Saskatchewan at 3.5 per cent and the bottom performer is the U.K. with a rate of 1.5 per cent. The four ranges for grades using the above method are as follows:

- A: 3.0–3.5
- B: 2.5–2.99
- C: 2.0–2.49
- D: 1.5–1.99

Each jurisdiction is assigned a letter grade, determined by the range into which the jurisdiction’s GDP growth falls. This methodology ensures that those regions awarded an “A” grade are truly the best. One weakness of the A-B-C-D ranking methodology, however, is that very small differences in indicator values between the highest- and lowest-ranking regions result in the regions with the lowest values being given a “D” grade, even though their score may be close to the leader’s score. As well, extreme outliers may skew the results. For example, an extreme top performer could be awarded an “A” while everyone else gets a “D,” including the second-best performer. Because of these limitations in certain cases, the overall ranking of the regions is an important consideration as well and should be analyzed along with the letter grade.

The benchmarking exercise yields results that highlight Newfoundland and Labrador’s competitive performance outcomes. Areas where the province falls short of its competitor jurisdictions will help identify policy areas that may need improvement. Broad policy recommendations are offered that could help improve these competitive outcomes.

CHAPTER 3

Benchmarking Results

Chapter Summary

- Despite major economic and productivity gains over the 1997–2007 period, Newfoundland and Labrador’s economy faltered more recently in the “big picture” indicators of GDP and labour productivity.
- Newfoundland and Labrador performs poorly on all innovation indicators.
- Investment indicators showed generally mixed performance despite large capital investments in the province since the beginning of the oil boom in 1997.
- The province ranks below average on the education and skills indicators and its labour market underperforms its competitors.
- While published corporate tax rates are high in the province, the tax system is rife with tax credits giving preferential treatment to certain sectors. When the tax credits are taken into account, the effective tax rates are low. However, other business costs such as payroll, transportation, and utilities are high.
- The fiscal health of the province improved but indicators still show middle-of-the-pack performance in the net debt indicator.

Benchmarking is a useful public policy tool that provides a reality check by assessing performance—in this case, the competitive performance of Newfoundland and Labrador relative to its direct competitors. It allows us to gain perspective on the province’s current performance and helps to identify policy priorities. To envision where you want to go, you must first determine where you are.

Benchmarking against other regions helps to identify competitive performance gaps. There is much to be learned from developments in other jurisdictions, where better or worse performances can often be explained by the policies pursued. In the new global economy—where companies develop supply chains around the globe in search of higher efficiency and lower costs for each component of the final product—the province needs to do better not only in absolute terms but also in relation to other jurisdictions.

We benchmark Newfoundland and Labrador’s competitive performance against nine competitor jurisdictions: two countries, two U.S. states, and five Canadian provinces. In total, 32 competitiveness indicators are benchmarked. Four indicators—gross domestic product (GDP) per capita levels and per capita growth and labour productivity levels and labour productivity growth—present the “big picture” on economic and competitive performance. The remaining indicators are considered drivers of competitiveness and are grouped into four categories: innovation, investment, human capital, and the business and policy environment.

The Big Picture

Despite major economic and productivity gains during the 1997–2007 period, Newfoundland and Labrador’s performance faltered for the big-picture benchmarking indicators of gross domestic product and

labour productivity due to its performance in more recent years. (See Table 2.) After reaching very high levels of productivity and economic growth by 2007, the economy has not made much progress since then.

Table 2
Big Picture Indicators Summary

Indicator	Newfoundland and Labrador's grade	Newfoundland and Labrador's rank
Real gross domestic product (GDP) per capita (2013 level)	C	6/10
Growth in real GDP per capita growth (compounded over 2008–13)	D	8/10
Labour productivity (GDP per hours worked) (2013 level)	B	5/10
Growth in labour productivity (compounded over 2008–13)	D	10/10

Sources: OECD; Statistics Canada; U.S. Bureau of Economic Accounts; The Conference Board of Canada.

Real gross domestic product per capita measures the average standard of living of citizens and is the most common measure of economic prosperity.¹ Real GDP, rather than nominal GDP, is used in order to remove the effect of inflation on the value of goods and services produced. It does have shortcomings because it does not convey how income is distributed or how much income is actually available for personal consumption. Nonetheless, it is a key indicator of economic prosperity and, along with GDP growth, sets the context for benchmarking competitiveness.

Newfoundland and Labrador held a fairly middle-of-the-pack ranking of GDP per capita in 2013. (See Chart 3.) The province scored a “C” grade and ranked 6th out of the 10 jurisdictions. In 2013, Newfoundland and

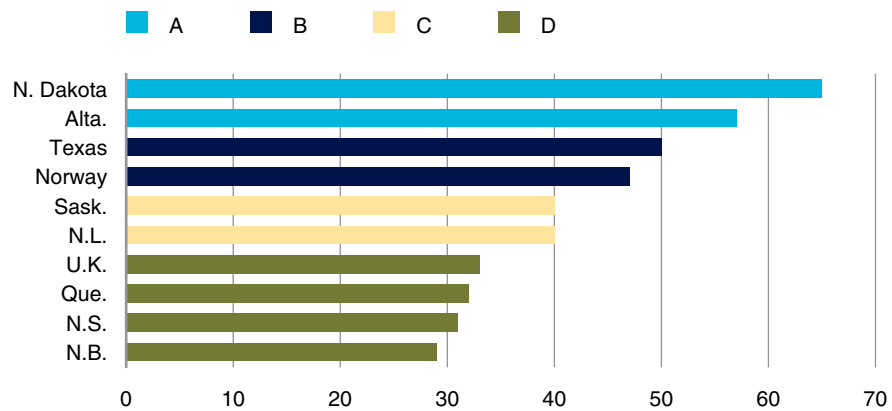
¹ In the benchmarking exercise, all GDP per capita calculations have been converted to US\$ constant prices using constant purchasing price parities (PPP) and setting 2005 as the base year.

Labrador's GDP per capita was US\$39,700, some US\$25,600 below that of the top performer on this indicator—oil-rich North Dakota. The province was third in terms of its provincial comparators.

Chart 3

Real GDP Per Capita, 2013

(2005 US\$ 000s, constant PPP)



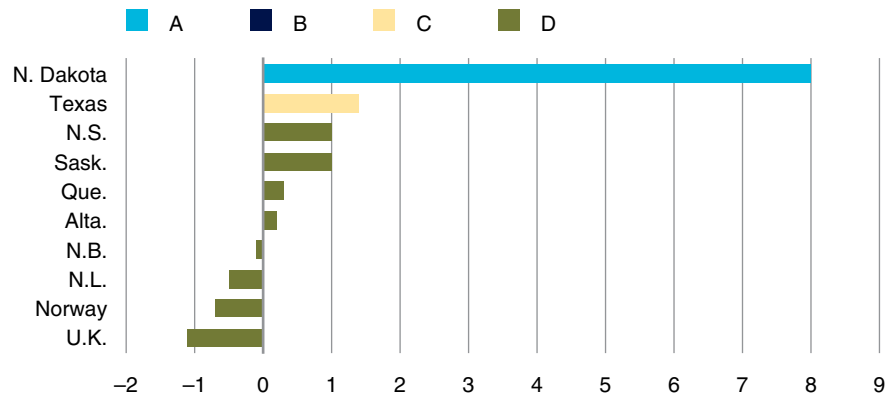
Sources: OECD; Statistics Canada; U.S. Bureau of Economic Accounts; The Conference Board of Canada.

While GDP per capita presents a snapshot of economic wealth at a certain point in time, GDP per capita *growth* measures how quickly the wealth is increasing. The average annual five-year real growth rate over the 2008–13 period in Newfoundland and Labrador actually declined by 0.5 per cent. (See Chart 4.) This earned the province a “D” grade and a rank of 8th out of the 10 jurisdictions. While it is true that this time period included the recession, the global recession impacted all comparator jurisdictions to various degrees. Six of the 10 comparator jurisdictions managed to experience positive GDP per capita growth over the period, having recovered their losses since the recession. North Dakota’s GDP per capita growth dwarfed the other regions, as it expanded by 8 per cent over the period. The state is experiencing a rapid economic boom as it develops its oil extraction industry.

Chart 4

Real GDP Per Capita Growth, 2008–13

(compound annual average growth, per cent)



Sources: OECD; Statistics Canada; U.S. Bureau of Economic Accounts; The Conference Board of Canada.

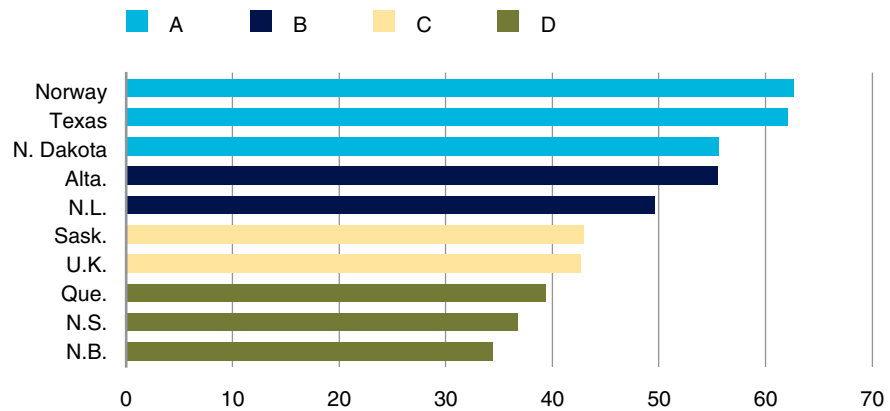
Labour productivity is the primary determinant of a region's standard of living over the longer term and is closely connected to competitiveness. Labour productivity is GDP output per worker per hour worked. It is a measure of how well labour inputs are being used to produce a given level of output. This indicator captures the differences in average hours worked across various industries and regions. Improving productivity does not mean working harder or working longer; it means working smarter, more efficiently. Productivity gains can be achieved in many ways: fostering innovation, adopting new technologies, and increasing capital intensity are critical; however, improving organizational practices, increasing global integration, strengthening human capital, and improving the business environment are equally crucial. These factors are all interconnected.

Newfoundland and Labrador performs slightly better than average when it comes to labour productivity levels. (See Chart 5.) For an average hour of work in the province, almost US\$50 in real GDP is generated. The province ranks 5th of 10 and earned a “B” grade. Norway and the U.S. states were the top performers, and only Alberta was ahead of Newfoundland and Labrador when it came to provincial comparators.

Chart 5

Labour Productivity, 2013

(real GDP per hour worked; constant 2005 US\$, constant PPP)



Sources: OECD; Statistics Canada; The Conference Board of Canada.

There is no doubt that Newfoundland and Labrador achieved this high productivity standing because of its mining industry, including the oil and gas sector. A detailed analysis of Newfoundland and Labrador’s productivity found that 78.2 per cent of the increase in labour productivity between 1997 and 2010 can be directly attributed to the mining and oil and gas sector.² But, during the same time period, other industries struggled to make productivity gains. The productivity contribution by

2 Grand’Maison and Sharpe, *A Detailed Analysis*.

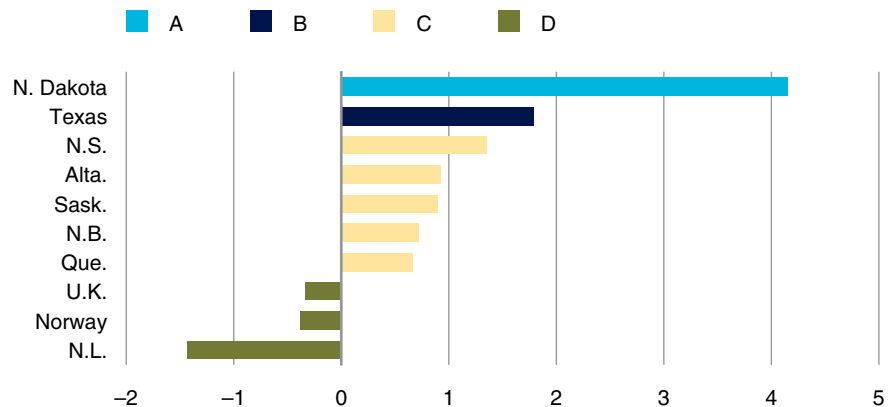
both the professional, scientific, and technical services industry and the administrative and waste management services industry was negative over the same period (though both have rebounded more recently).³

Moreover, Newfoundland and Labrador has been unable to maintain the rapid pace of labour productivity growth that it experienced during the 1997–2007 period. Labour productivity has actually declined since then, along with a decline in oil production. (See “Productivity Performance by Industry.”)

Chart 6

Labour Productivity Growth, 2008–13

(compound annual average growth, per cent)



Sources: Statistics Canada; OECD; The Conference Board of Canada.

Newfoundland and Labrador’s labour productivity growth was the lowest of all comparator jurisdictions over 2008–13, earning a “D” grade. (See Chart 6.) The main reason for this stagnation in productivity improvement is that oil production peaked in 2007. There were some shutdowns in recent years that affected productivity, including one in June to November 2012 at Terra Nova for maintenance that contributed to the 25 per cent decline in provincial oil production. A less severe shutdown

3 Ibid.

The U.S. remains at the forefront of innovation and technology adaption, and is widely viewed as a global leader in labour productivity growth.

occurred a year earlier in fall 2011 due to sour gas, but production rebounded immediately after. Aside from these shutdowns, there has been a general decline in oil production in the province since 2007 due to natural declines in production as the resource is gradually exhausted. There have also been concerns about skilled labour gaps in recent years;⁴ the dearth of qualified workers for key jobs can also have a negative impact on labour productivity.

Despite being one of the economies most negatively affected by the 2008–09 global recession, the U.S. experienced the largest labour productivity gains of all the jurisdictions. The U.S. remains at the forefront of innovation and technology adaption, and is widely viewed as a global leader in labour productivity growth. North Dakota's increases in labour productivity were the best of the comparator regions due to the oil boom experienced over the period.

Productivity Performance by Industry

Newfoundland and Labrador's labour productivity is high but has not grown in recent years. Oil extraction activities propelled provincial labour productivity growth over the 1997–2007 period, while many other industries experienced few or no productivity gains. There has been much concern about whether productivity gains can be sustained as the oil industry matures. We have seen labour productivity stagnate since 2007. (See Chart 7.)

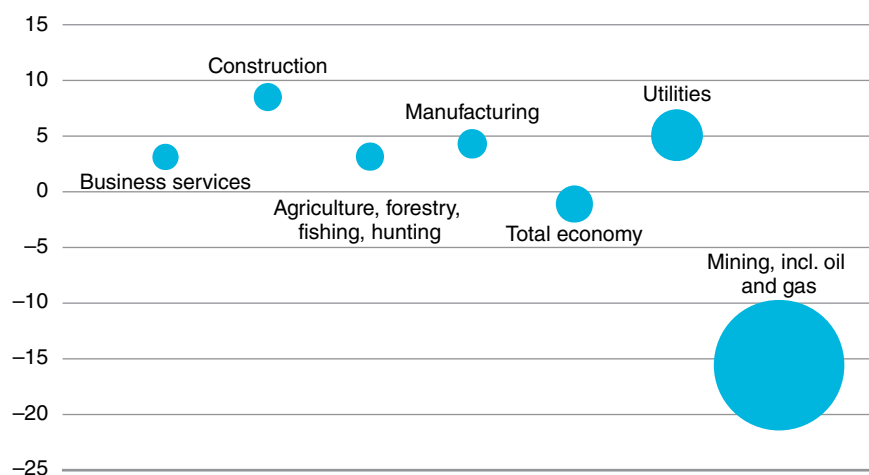
But there is a silver lining to the province's productivity story. While overall labour productivity has declined over the past five years, pushed down by declining oil production, many other industries have experienced labour productivity gains (although not enough to compensate for declines in the mining, oil, and gas sector). In other words, the top-performing industries in the province in terms of labour productivity levels happen to be the same industries that are bottom performers when it comes to labour productivity growth over the past five years. (See Table 3.) Specifically, the mining and oil and gas industries and the agriculture, forestry, fishing, and hunting industries are some of the

4 McCarthy, "Labour Shortage Looms."

Chart 7

N.L.'s Labour Productivity Has Not Improved, 2007–13

(growth, or decline, by industry (left axis); size of bubble denotes level of productivity in 2007 \$ per hour)



Sources: Statistics Canada; The Conference Board of Canada.

Table 3

Industries With Highest Productivity Levels Experienced Slowest Growth

(labour productivity levels in real GDP per hour worked, 2007 \$, average over 2007–13; labour productivity growth compounded annually over 2008–13)

Top performers	Productivity levels		Productivity growth	
	N.L.	Can	N.L.	Can
Total economy	68.2 ¹	50.3	-1.1 ¹⁰	0.8
Business sector industries	73.9 ¹	47.2	-1.2 ¹⁰	0.6
Business sector, goods	150.3 ¹	60.2	-6.0 ¹⁰	0.6
Agriculture, forestry, fishing, hunting	40.0 ¹	31.3	3.2 ⁷	4.6
Mining and oil and gas extraction	836.3 ¹	247.5	-15.6 ¹⁰	-1.4

Note: The superscript numbers in the N.L. columns indicate the provincial ranking.

Sources: Statistics Canada; The Conference Board of Canada.

top performers in the province in terms of their productivity levels but have experienced some of the slowest growth in the country. The mining industry's (including oil and gas extraction) labour productivity level in Newfoundland and Labrador is fourfold the national average; over 2007–13, labour productivity in the mining, oil, and gas industry averaged \$836 in real output per hour worked. The second-highest performer was Manitoba's mining industry, which produced only \$361 output per hour worked. Oil-rich Alberta's mining industry ranked fifth in labour productivity.

Table 4

Industries With Highest Productivity Growth Still Have Room for Improvement

(labour productivity levels in real GDP per hour worked, 2007 \$, average over 2007–13; labour productivity growth is compounded annually over 2008–13)

Top performers	Productivity levels		Productivity growth	
	N.L.	Can	N.L.	Can
Construction	38.4 ⁴	38.1	8.5 ¹	−0.6
Manufacturing	43.8 ⁸	50.8	4.3 ¹	1.2
Wholesale trade	46.1 ⁷	51.4	3.2 ¹	1.7
Retail trade	24.5 ⁷	26.6	3.8 ¹	2.1
Transportation and warehousing	36.2 ⁷	40.7	2.5 ¹	0.3
Information and cultural industries	107.4 ²	84.6	17.2 ¹	−0.3
Finance and insurance, and holding companies	59.7 ⁵	69.3	3.0 ¹	−1.6
Professional, scientific, and technical services	35.9 ⁷	41.5	2.3 ¹	0.2
Administrative and support, waste management, and remediation services	25.1 ⁴	26.2	3.7 ¹	−0.1
Accommodation and food services	18.2 ⁵	19.1	4.0 ¹	0.7
Total business sector, services	34.6 ⁷	41.2	3.1 ¹	0.7

Note: The superscript numbers in the N.L. columns indicate the provincial ranking.

Sources: Statistics Canada; The Conference Board of Canada.

The opposite is true for the top industry performers in the country in terms of labour productivity growth. Generally, these industries are sitting in the middle

to bottom of the country when it comes to productivity levels, meaning they have room to continue to grow. (See Table 4.) In fact, three of the top industries (in terms of labour productivity growth)—retail trade, manufacturing, and construction—add more than \$1 billion to Newfoundland and Labrador's real GDP, so their contribution is substantial. With the exception of manufacturing and construction, all of the top-performing industries in terms of labour productivity growth are in the services sector. A study by the Centre for the Study of Living Standards found evidence of spillover productivity effects from the high productivity growth in the oil sector.⁵

Declining labour productivity is less of a concern at present since the province is still enjoying middle-of-the pack productivity performance against its comparator jurisdictions. However, the province may be at risk of falling behind its competitors as the others slowly overtake it. Alberta's labour productivity has been higher than Newfoundland and Labrador's since 2011, and all of the other provincial competitors have experienced labour productivity growth over the last five years. Despite many industries increasing their productivity at encouragingly fast rates, this is not enough to compensate for faltering mining (including oil and gas) labour productivity. The mining industry accounts for one-third of the entire economy.

Innovation

Innovation is the ability to turn knowledge into new and improved goods and services, and technological innovation fosters economic growth by enhancing the efficiency of labour and capital. Innovative products and processes lead to better production methods. Knowledge gained through research and development (R&D) and by using new products and services leads to further economic growth. Overall, countries that are more innovative perform much better on measures such as income

5 Grand'Maison and Sharpe, *A Detailed Analysis*.

per capita, productivity, and the quality of social programs.⁶ Without innovation, a region's competitive performance deteriorates relative to that of its peers.

Innovation is a difficult concept to quantify, and only a few internationally comparable indicators measure the actual innovation outcomes in a given region. Unfortunately, there are few indicators available that can be used to compare the innovation outcomes of international regions with those of Canadian provinces. Therefore, in this report, we include two innovation input indicators as proxies for innovation outcomes: business expenditures on R&D and public expenditures on R&D. A third indicator—patent applications—is used to gauge how well the jurisdictions transform knowledge into usable inventions. Newfoundland and Labrador performs poorly on all innovation indicators. (See Table 5.)

Table 5
Innovation Indicators Summary

Indicator	Newfoundland and Labrador's grade	Newfoundland and Labrador's rank
Business expenditures on research and development	D	8/10
Public expenditures on research and development	C	8/10
Patent applications per million people	D	10/10

Sources: OECD; Statistics Canada; The Conference Board of Canada.

A strong positive correlation has been shown to exist between business R&D intensity and GDP per capita.⁷ Since business sector R&D is highly market oriented, it is a critical link between innovation and commercialization of ideas. Firms that take innovative products and services to market can make substantial contributions to economic growth and employment.

6 The Conference Board of Canada, *How Canada Performs 2013*.

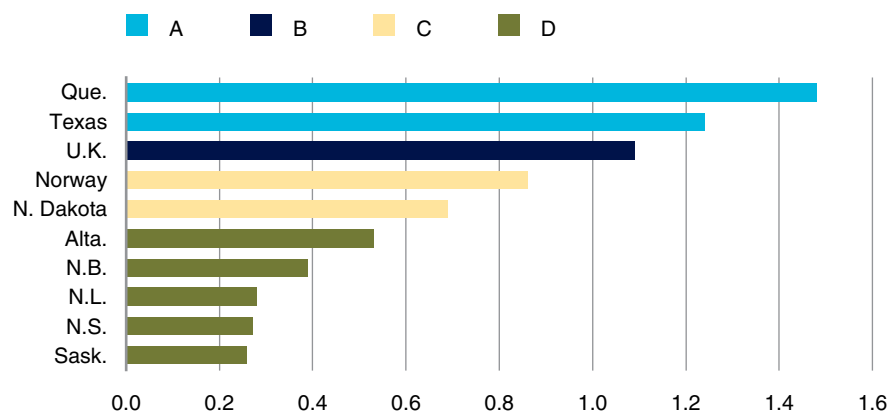
7 Aiginger and Falk, "Explaining Differences in Economic Growth."

Newfoundland and Labrador performs poorly on the business expenditures on R&D indicator, earning a “D” and ranking 8th out of the 10 regions. (See Chart 8.) The jurisdictions that performed well all have larger populations and more diversified economies. The top performer is Quebec, a province that has long supported R&D through fiscal incentives. Similar to other jurisdictions, the province offers R&D investors tax breaks, but it goes even further by offering generous tax incentives for firms that partner each other. This helps anchor R&D activities within the province and helps both large and small companies alike.⁸ As a result, Quebec is home to R&D investments in health care, biotech, transportation, and digital design and gaming.

Chart 8

Business Expenditures on R&D, 2007–11 Average

(as a percentage of GDP)



Sources: OECD; Statistics Canada; The Conference Board of Canada.

Economies that are heavily reliant on oil, such as Norway, North Dakota, and Alberta, have lower levels of investment in R&D relative to the size of their economies. Only Saskatchewan and Nova Scotia have lower levels of business R&D than Newfoundland and Labrador.

8 Ovsey, “R&D Tax-Credit Program.”

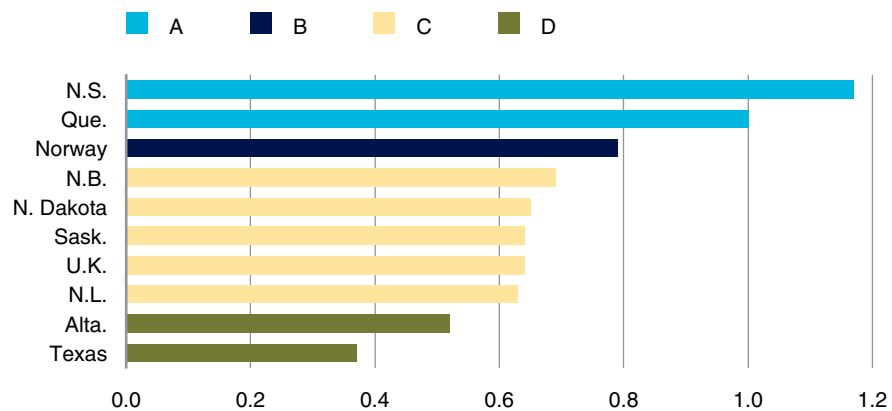
Public investment in R&D (which includes both government and higher education spending) is the next indicator. While the link to implementation and commercialization is generally weaker in public sector R&D compared with its business counterpart, public R&D spending is important because it is often focused on the basic research that underpins an innovative economy but that businesses are less inclined to conduct.⁹

Newfoundland and Labrador earns a “C” grade on public R&D expenditures and ranks 8th of 10. (See Chart 9.) Some economies specialize in either public performed R&D or business performed R&D. Note that some of the jurisdictions that ranked poorly on the business R&D indicator did well on the public metric (Nova Scotia and New Brunswick). The worst performer is Texas, a state that placed second best on the business R&D measure. Newfoundland and Labrador, however, performs poorly on both indicators.

Chart 9

Public Expenditures on R&D, 2007–11 Average

(government and higher education R&D spending as a percentage of GDP)



Note: Provincial average over 2007–10 for higher education component.
Sources: OECD; Statistics Canada; The Conference Board of Canada.

9 The Conference Board of Canada, *Public R&D Spending*.

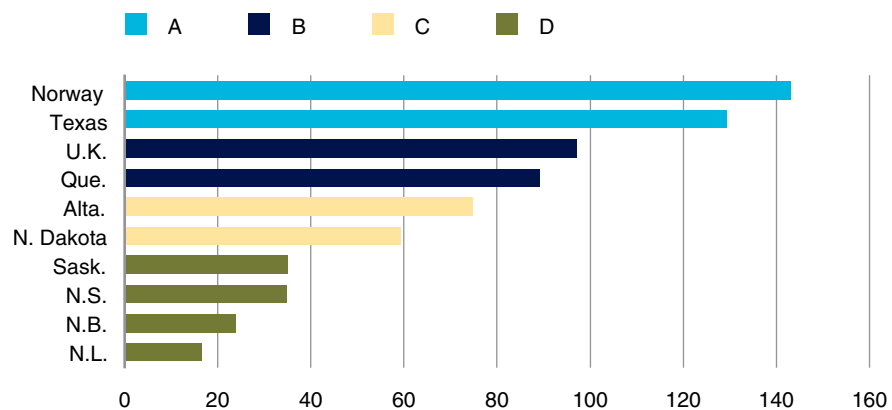
There is a direct link between patents and economic prosperity: patents protect the investments that businesses have made in research and development.

There is a direct link between patents and economic prosperity. Patents protect the investments that businesses have made in R&D: “Without the possibility of patent protection, many people might not take the risk of investing the time or money necessary to create or perfect new products, without which our economy would suffer.”¹⁰ Newfoundland and Labrador has the lowest number of patent applications of all the comparator jurisdictions, scoring a “D” grade on the patents indicator. (See Chart 10.) This comes as no surprise given the province’s low standing in R&D spending.

Chart 10

Patent Applications, 2006–10 Average

(PCT patent applications per million people)



Sources: OECD; The Conference Board of Canada.

Investment

The link between investment and labour productivity is long-standing. Investment is associated with productivity gains and increased economic activity as workers use the latest technologies (investment in machinery and equipment); as goods and services move to markets efficiently

10 Canadian Intellectual Property Office, *A Guide to Patents*.

(investment in infrastructure); and as new factories and offices are built (investment in non-residential structures). Investment indicators act somewhat as a barometer of what is to come, since there is often a lag between investments and results.¹¹ Newfoundland and Labrador has experienced a mixed performance in investment indicators, despite many large capital investments occurring since 1997. (See Table 6.)

Table 6
Investment Indicators Summary

Indicator	Newfoundland and Labrador's grade	Newfoundland and Labrador's rank
Business investment in machinery and equipment as a percentage of GDP	D	7/9*
Business investment in non-residential structures as a percentage of GDP	C	4/9*
Inward greenfield foreign direct investment	A	1/9*
Government investment in gross fixed capital formation (provincial comparison only)	—	8/10 provinces
Average age of public infrastructure (provincial comparison only)	—	9/10 provinces

*due to data availability, Texas and North Dakota data replaced with U.S. national data
Sources: OECD; Statistics Canada; The Conference Board of Canada.

Natural resources projects generally contain business sector investments in both machinery and equipment (M&E) and in non-residential structures, but the type and timing of a project can influence the split between the investment components. For example, a new mine might focus its spending in the first several years of development on non-residential structures and then concentrate its investments on M&E during the last year of development.

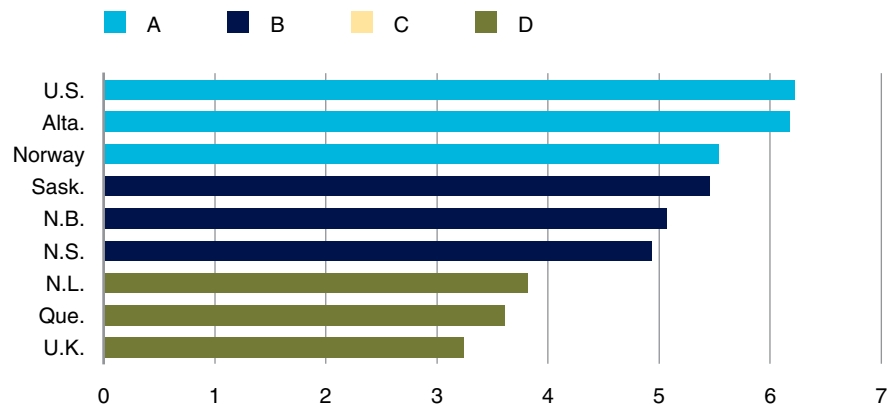
11 Baldwin and others, *Investment in Intangible Assets*.

Business investment in M&E is associated with the adoption and diffusion of the latest state-of-the-art technologies that, in turn, lead to growth in labour productivity. Newfoundland and Labrador ranked 7th out of 9 on the business M&E investment indicator, earning a “D” grade. (See Chart 11.) M&E investments account for less than 4 per cent of GDP in the province compared with more than 6 per cent in the top-performing U.S. economy

Chart 11

Investment in Machinery and Equipment, 2008–12 Average

(investment of M&E as a percentage of GDP; inflation-adjusted)



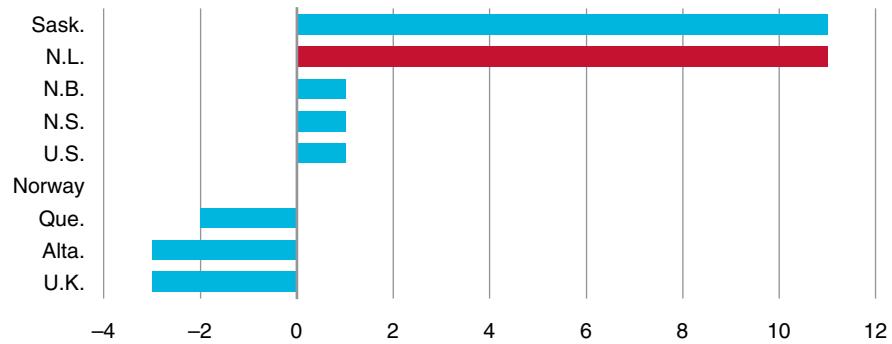
Sources: Statistics Canada; OECD; The Conference Board of Canada.

While the province does not perform well on M&E investment as a percentage of GDP, Newfoundland and Labrador experienced large growth in M&E investments over 2008–12. In fact, M&E investments experienced double-digit annual growth during that period, and Saskatchewan was the only other jurisdiction to experience such rapid gains. (See Chart 12.) This means that the province is catching up to its competitors. Early estimates indicate that investments in M&E in 2013 and 2014 were higher than average, which likely will help to close the gap in the investment levels between Newfoundland and Labrador and its competitors.

Chart 12

Growth in Machinery and Equipment Investment

(average annual compound growth rate of inflation-adjusted investment over 2008–12)



Sources: Statistics Canada; OECD; The Conference Board of Canada.

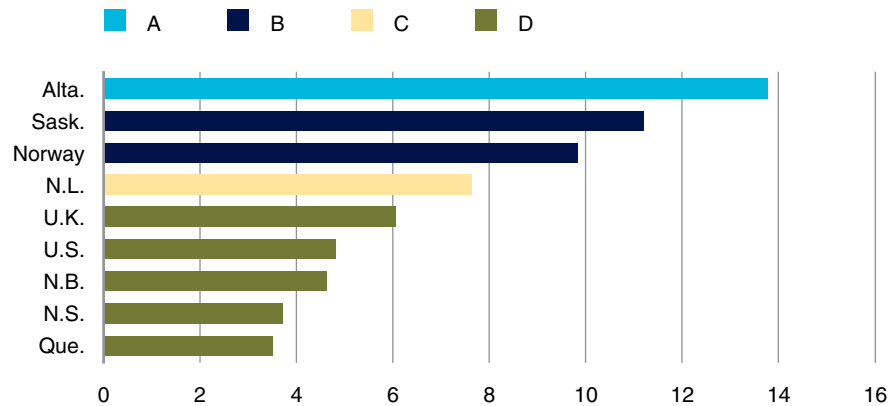
While business investments in M&E are generally linked with productivity improvements, business investments in non-residential structures are generally associated with increased economic activity and GDP growth. In Newfoundland and Labrador's case—and in any economy focused on natural resources—this adage is not as simple because the two types of investments go hand in hand, greatly influenced by the timing of the investment. Newfoundland and Labrador performs in the middle of the pack on the business investment in non-residential structures indicator, ranking 4th of 9 and earning a “C” grade. (See Chart 13.)

During the 2008–12 period, businesses in Newfoundland and Labrador made some large investments in key resource industries. These investments tended to have a greater impact in non-residential structures as opposed to M&E. Iron ore and nickel mining investments, as well as the construction of offshore oil platforms, contributed to this indicator. Only three comparator jurisdictions outmatched the province's non-residential investment levels as a share of GDP—Alberta, Saskatchewan, and Norway.

Chart 13

**Business Investment in Non-Residential Structures,
 2008–12 Average**

(investment in non-residential structures as a percentage of GDP)



Sources: Statistics Canada; OECD; The Conference Board of Canada.

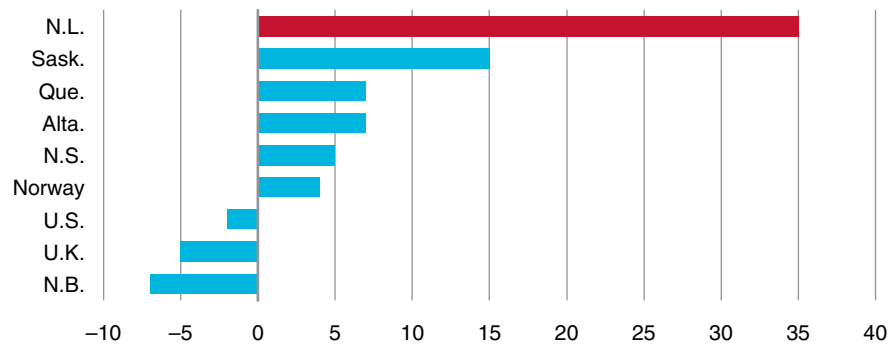
Similar to M&E investments, the province experienced a rapid rise in non-residential business investments during the years 2008 to 2012. In fact, Newfoundland and Labrador posted the fastest growth of all competitor jurisdictions. (See Chart 14.) However, the province had the lowest starting point of all jurisdictions, which inflates the growth numbers. Still, a lot of large capital-focused, non-residential investment projects took place in the province following the recession.

Inward foreign direct investment (FDI) reflects a region's attractiveness for doing business. There can be many factors that result in a decision to invest abroad, including political climate, tax rates, the workforce, and natural resource endowments.

Chart 14

Growth in Business Non-Residential Structures Investment

(average annual compound growth rate of inflation-adjusted investment, 2008–12)



Sources: Statistics Canada; OECD; The Conference Board of Canada.

The inward greenfield FDI performance index is benchmarked because it captures the relative success of a region in attracting global greenfield FDI. If a region's share of global inward greenfield FDI matches its relative share in global GDP, the region's inward greenfield FDI performance index is equal to one. A value greater than one indicates a larger share of greenfield FDI relative to GDP share, meaning the region attracts more inward FDI than its economic size would suggest. A value less than one indicates a smaller share of greenfield FDI relative to GDP share.

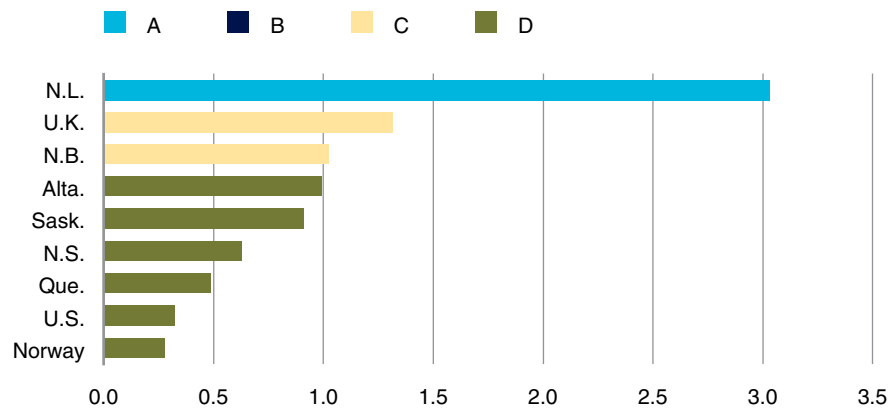
Newfoundland and Labrador is the top performer on inward greenfield FDI by a large margin, scoring an "A" and ranking first among competitors. (See Chart 15.) Newfoundland and Labrador's large mining sector and offshore oil resources have attracted inward FDI to the province, and the province's top-place ranking means that it attracts more inward greenfield FDI than its economic size would suggest. Newfoundland and Labrador's GDP is small relative to that of other provinces. So, even though its average inward FDI flows between 2008 and 2012 were lower than the FDI flows to provinces like Alberta

and Saskatchewan, Newfoundland and Labrador performs well on the index because it is attracting a higher share of greenfield FDI than its small economic size would suggest.

Chart 15

Inward Foreign Direct Investment, 2008–12 Average

(inward greenfield FDI performance index)



Sources: fDi Markets; The Conference Board of Canada.

So far, we have seen that Newfoundland and Labrador has experienced large growth in private sector investments, but that the province still needs higher levels of investment if it hopes to close the investment-gap between itself and its competitors. But investments by governments can also impact competitiveness. There are two government investment indicators included with provincial-level data in the benchmarking analysis: government investment in fixed capital formation, and the average age of public infrastructure. Due to data limitations, comparable data could not be obtained for international jurisdictions.

Government investments in fixed capital include improvements to transportation infrastructure, as well as the building of or improvements to hospitals and schools. This indicator does not include non-capital expenditures such as salaries. Generally, high levels of government investment can support the economy by allowing goods to move more efficiently to markets (in the case of transportation investments) or by strengthening human capital by providing better access to health and education institutions.

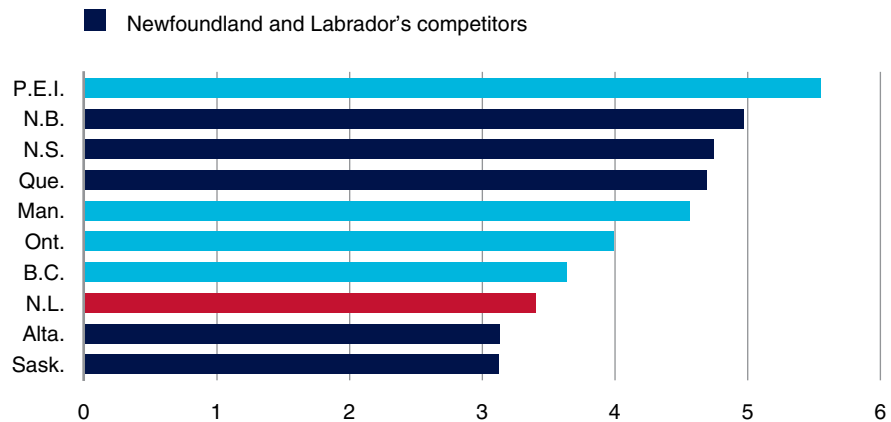
Newfoundland and Labrador does not perform very well on government investment, ranking 8th out of the 10 provinces. (See Chart 16.)

Government investments account for only 3.4 per cent of GDP in the province, while half of the provinces post shares of over 4 per cent.¹²

Chart 16

Government Investment in Gross Fixed Capital Formation, 2004–13 Average

(government investment as a percentage of GDP)



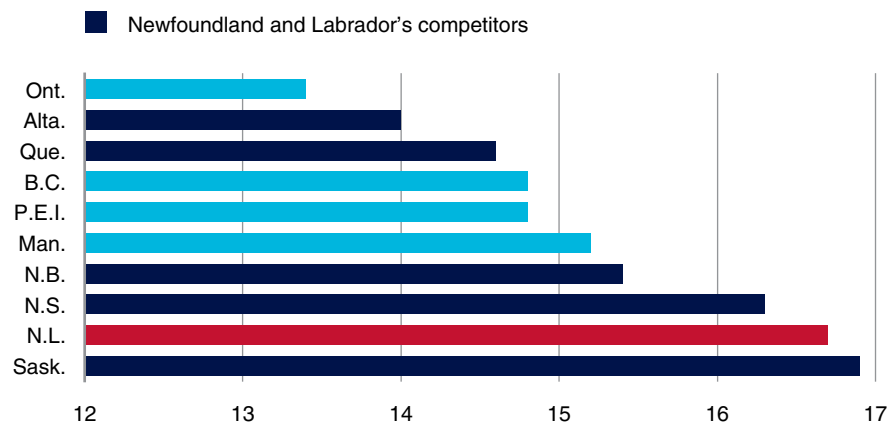
Sources: Statistics Canada; The Conference Board of Canada.

¹² A 10-year period was chosen to include a period before the recession and its associated increase in government infrastructure spending to support the economy.

Poor performance in government investment is also reflected in the average age of public infrastructure in the province. Public infrastructure consists of the following five assets: roads and highways, bridges and overpasses, water supply systems, waste water treatment facilities, and sewer systems. The average age of Newfoundland and Labrador's public infrastructure is 16.7 years, second only to Saskatchewan's. (See Chart 17.)

Chart 17

Average Age of Public Infrastructure, 2012
 (years)



Sources: Infrastructure Canada; Statistics Canada; The Conference Board of Canada.

Government investment increased substantially during the recession and in subsequent years, with the federal and provincial governments investing in infrastructure as a way to stimulate the economy. This reduced the average age of public infrastructure in all provinces. In 2007, Saskatchewan (17.6 years), Manitoba (17.7 years), and Nova Scotia (18 years) all had older public infrastructure than Newfoundland and Labrador, while Quebec was tied with the province at 17.2 years.¹³ Since 2007, Quebec, Manitoba, and Nova Scotia have increased infrastructure

13 Gagnon, Gaudreault, and Overton, *Age of Public Infrastructure*.

Regions with a well-educated and highly skilled workforce have a competitive advantage, as skilled and educated workers are able to adopt new technologies and improve processes.

spending at faster rates than Newfoundland and Labrador. By 2012, only Saskatchewan had older public infrastructure than Newfoundland and Labrador. Note that these provinces also had some of the lowest infrastructure spending, as seen in Chart 15.

Human Capital

Human capital is one of the building blocks of any society and has a substantial influence on competitiveness. Thirteen indicators are benchmarked, using international and provincial comparator regions, and are grouped into two subcategories: education and skills, and the labour market.

Education and Skills

Regions with a well-educated and highly skilled workforce have a competitive advantage, as skilled and educated workers are able to adopt new technologies and improve processes. Increased general education levels boost overall productivity in an economy, with plausible estimates showing a 5 per cent increase in labour productivity for each additional year of average school attainment.¹⁴ There are other positive benefits to society as well. Higher-education attainment is linked to many non-monetary benefits such as higher overall job satisfaction, less unemployment, improved health, lower divorce rates, lower crime rates, and a higher degree of trust in others.¹⁵

Newfoundland and Labrador scores in the middle to low end of the pack in terms of education and skills human capital indicators. (See Table 7.) The province is clearly a low performer when it comes to university completion and adult skills, but it places in the middle of the pack on the other indicators.

¹⁴ de la Fuente and Ciccone, *Human Capital*.

¹⁵ Oreopoulos and Salvanes, "Priceless."

Table 7

Part 1: Education and Skills
Human Capital Indicators Summary

Indicator	Newfoundland and Labrador's grade	Newfoundland and Labrador's rank
University completion	D	9/10
College completion	B	5/9*
Science, math, computer science, and engineering graduates per 100,000	B	3/9*
Apprenticeship completion	–	6/10 provinces
Student skills	C	5/9*
Adult skills	D	9/9*

*due to data availability, Texas and North Dakota data replaced with U.S. national data
Sources: Statistics Canada; OECD; American Community Survey; World Bank; Council of Ministers of Education Canada; U.S. Bureau of Labor Statistics; U.S. Census Bureau; Statistics Norway; UK's Office for National Statistics; The Conference Board of Canada.

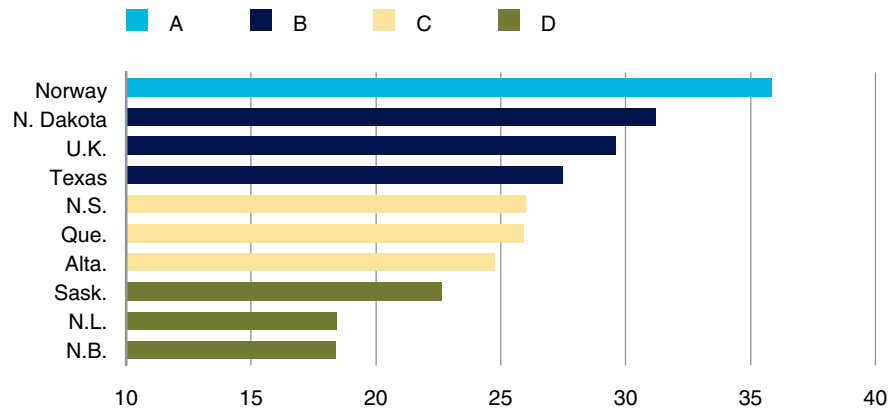
Newfoundland and Labrador is tied with New Brunswick for having the lowest university-educated population out of all its competitors, earning a “D” grade. (See Chart 18.) Some 18.4 per cent of the population aged 25–64 has a university degree compared with 35.8 per cent of the workforce in Norway, which is the top performer.

University degree attainment has been increasing around the globe and Newfoundland and Labrador has experienced this trend as well. Chart 19 shows university completion for a younger age cohort, the 25–34 year olds, compared with the older age cohort of those aged 55–64 year olds. Despite an 11 percentage point improvement in university completion from one generation to the next, Newfoundland and Labrador's 25–34 age cohort remains the lowest university-educated population of all the competitors. Less than one-quarter of the province's population aged 25–34 has a university degree compared with almost half of Norway's young adult population.

Chart 18

University Completion, 2012 (Norway and U.K., 2011)

(percentage of the population aged 25 to 64 with a university degree)

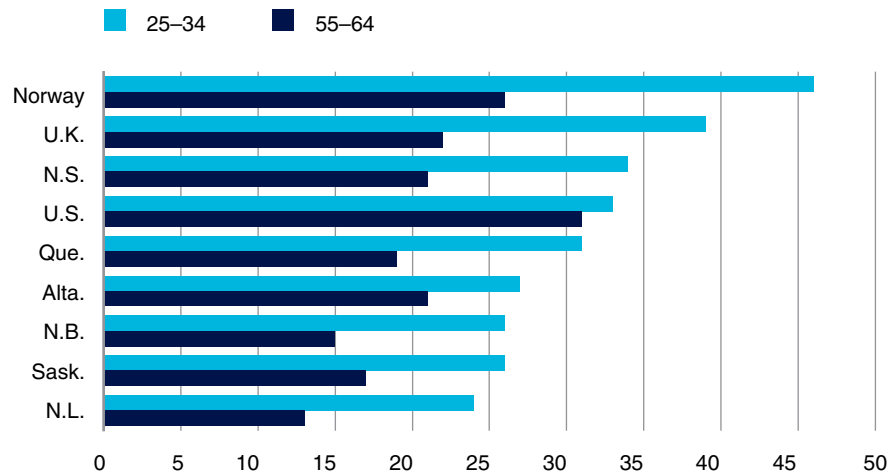


Sources: Statistics Canada; OECD; American Community Survey; The Conference Board of Canada.

Chart 19

University Completion, by Generation, 2011

(percentage of the population that has a university degree, by age)



Sources: Statistics Canada; OECD; The Conference Board of Canada.

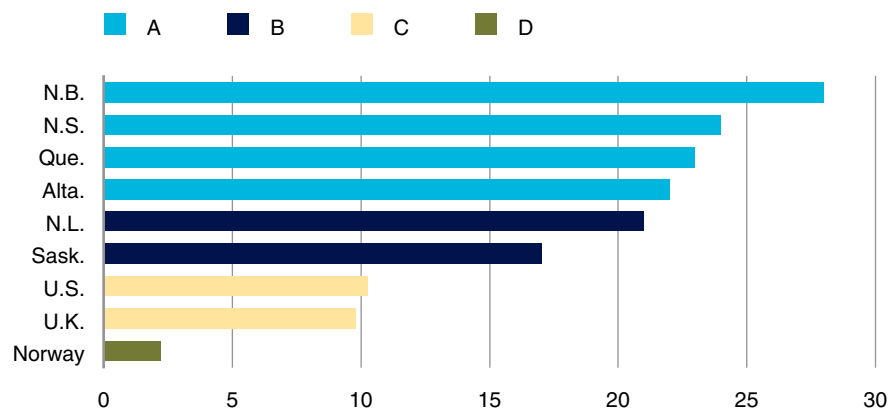
College diplomas are also an important indicator of the quality of human capital. These diplomas are often more applied in nature compared with university degrees, so they can be very beneficial to the workforce. In fact, an increasing number of university graduates are leveraging their education by completing a college diploma after university.¹⁶

Newfoundland and Labrador scores a “B” grade and ranks in the middle of the pack in terms of college completion. (See Chart 20.) This is encouraging, given the province’s low university completion rates. Note that some of the lower performers on the university completion indicators perform much better on the college completion, and vice versa. (For example, New Brunswick ranks last in university completion but first in college completion; Norway is the opposite.)

Chart 20

College Completion, 2011

(percentage of the population aged 25 to 64 with a college diploma)



Sources: Statistics Canada; OECD; The Conference Board of Canada.

In some economies, college diplomas might align better with the needs of the workforce. It has been argued that the “returns to education” are much greater for university degrees because of higher earnings,

16 Bayard and Greenlee, *Graduating in Canada*.

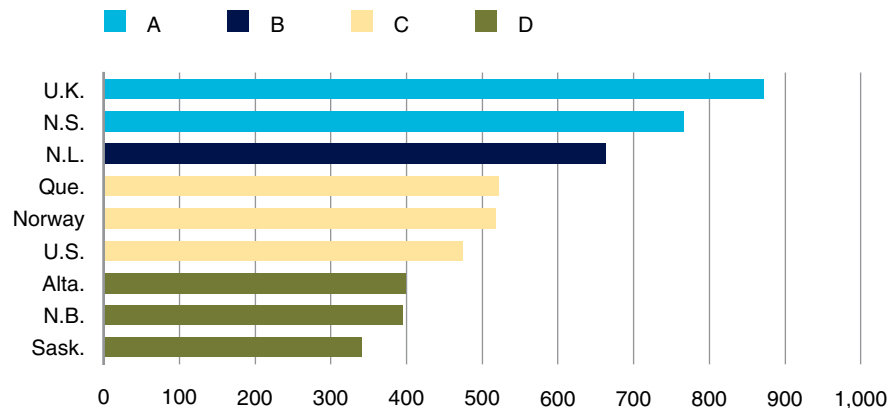
but the field of study might be more important than the type of degree obtained. It is the relevance of the degree that impacts the market price for skilled talent.

University graduates of science, mathematics, computer science, and engineering programs are linked to the innovative capacity of an economy. Newfoundland and Labrador scores well on this indicator, earning a “B” and ranking 3rd out of 9 regions. (See Chart 21.) Therefore, even though the provincial score is low for the number of university degrees its populace holds, Newfoundland and Labrador universities graduate a large number of students in fields linked to innovation.

Chart 21

**Science, Math, Computer Science, and Engineering
University Graduates, 2011**

(graduates in specified subjects per 100,000 people, aged 20–39)



Sources: OECD; Statistics Canada; The Conference Board of Canada.

Apprenticeships are another type of skills qualification that is important in a resource-based economy such as Newfoundland and Labrador's. It is difficult to discern objectively whether or not there is a skills shortage in the province. But there is some anecdotal evidence from job sites,¹⁷

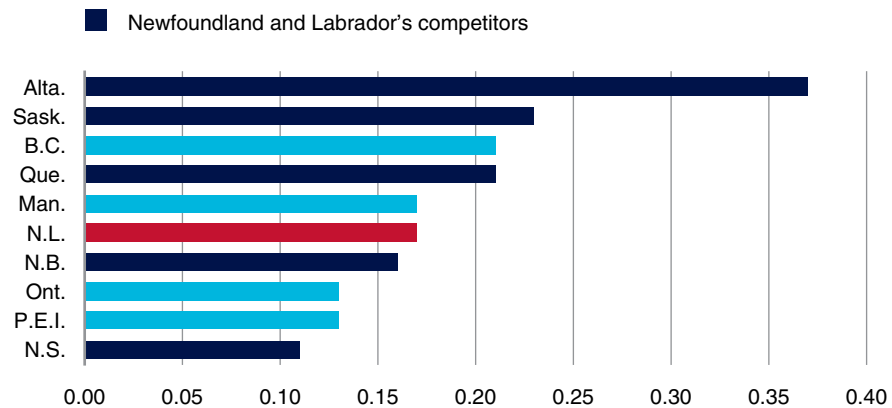
17 Ballingall, “Economic Boom Brings a Labour Shortage to Newfoundland.”

and rapidly rising wages are one indicator of a shortage. The aging population will exacerbate the shortages in the future. Newfoundland and Labrador ranks in the middle of the pack against provincial comparators. (Due to data constraints and differing definitions, international comparisons cannot be made on this indicator.) (See Chart 22.) The province completes less than half the number of apprenticeships as a share of the labour force than does the top province, Alberta.

Chart 22

**Apprenticeship Completions as a Share of the Labour Force,
2008–12 Average**

(per cent)

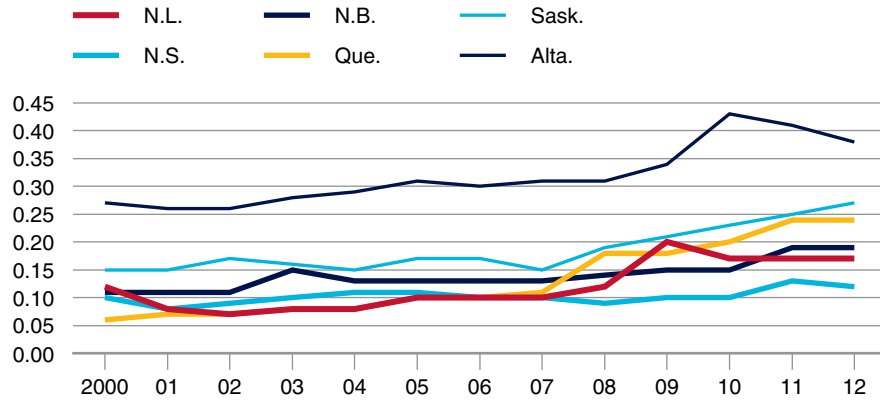


Sources: Statistics Canada; The Conference Board of Canada.

Newfoundland and Labrador is making some gains when it comes to apprenticeship completions. In 2002, apprenticeship completions made up only 0.07 per cent of the labour force but, by 2012, this proportion had grown to 0.17 per cent. (See Chart 23.) This is, however, a decrease from its 2009 peak. Meanwhile, other competitors have continued to increase apprenticeship completions.

Chart 23**Apprenticeship Completions as a Share of the Labour Force, 2002–12**

(per cent)



Sources: Statistics Canada; The Conference Board of Canada.

So far, this report has looked at educational attainment as a contributor to human capital and therefore competition. But it is important to determine the degree to which a workforce has the skills to generate valued products and services, regardless of educational qualifications. The next two indicators benchmark the skills of students and adults.

The OECD evaluates the skill levels of 15 year olds by administering tests in reading, science, and math. The results of these tests are used to benchmark student skills in each jurisdiction. Newfoundland and Labrador's students earned a "C" grade for student skills, ranking 5th out of 9 against its competitors. (See Table 8.) The top-performing students reside in Alberta, Quebec, and Nova Scotia.

Table 8
Student Skills Summary, 2012

1	Alberta	A	6	United Kingdom	C
2	Quebec	A	7	New Brunswick	C
3	Nova Scotia	B	8	Norway	D
4	Saskatchewan	B	9	United States	D
5	Newfoundland and Labrador	C			

Sources: OECD; Council of Ministers of Education Canada; The Conference Board of Canada.

The breakdown by type of skill shows where Newfoundland and Labrador can make improvements. Newfoundland and Labrador's students earn a "B" in science skills but rank 5th out of 9 on the indicator. (See Chart 24.) The indicator evaluates students' ability to "make decisions based on scientific knowledge" and "interpret and use scientific concepts from different disciplines."¹⁸ At 73 per cent, Alberta has a higher proportion of students performing at this level than all other competitors. In comparison, less than 65 per cent of students in Newfoundland and Labrador achieved this level of competency.

Reading skills are highly valued in any economy. Students with medium to high levels of reading are "capable of reading tasks of moderate complexity, such as locating multiple pieces of information, making links between different parts of a text, and relating it to familiar everyday knowledge."¹⁹

Newfoundland and Labrador scores a "C" on reading skills and ranks 6th out of 9. (See Chart 25.) Some 61 per cent of students had adequate reading skills (i.e., achieving a level 3 or higher out of 6 on the OECD test), compared with 70 per cent in Alberta, the top performer. New Brunswick ranked the lowest, with 58 per cent achieving adequate reading skills.

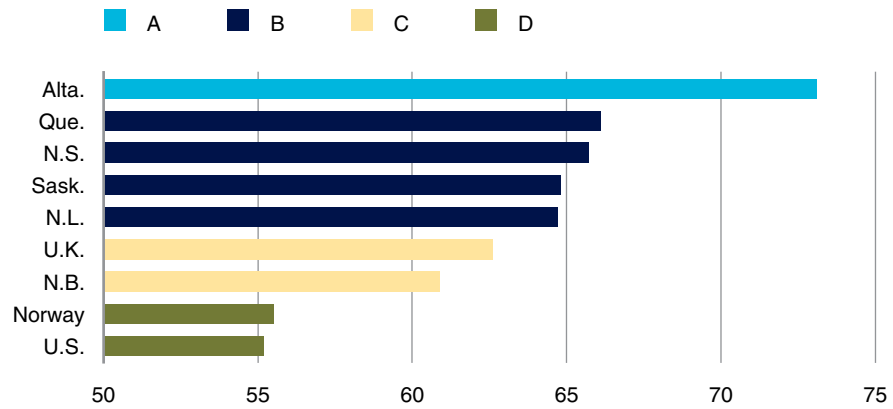
¹⁸ OECD, *PISA 2009 Results*.

¹⁹ Ibid.

Chart 24

Students With Medium- to High-Level Science Skills, 2012

(percentage of 15-year-old students, level 3 or higher out of 6)

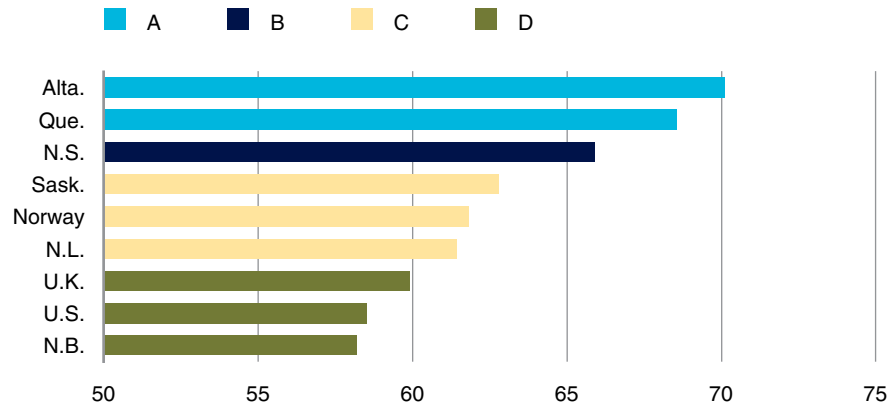


Sources: OECD; Council of Ministers of Education Canada; The Conference Board of Canada.

Chart 25

Students With Medium- to High-Level Reading Skills, 2012

(percentage of 15-year-old students, level 3 or higher out of 6)



Sources: OECD; Council of Ministers of Education Canada; The Conference Board of Canada.

Mathematics is the third skill in which students were tested. The OECD emphasizes the importance of these skills in modern society and points out that “a growing proportion of problems and situations

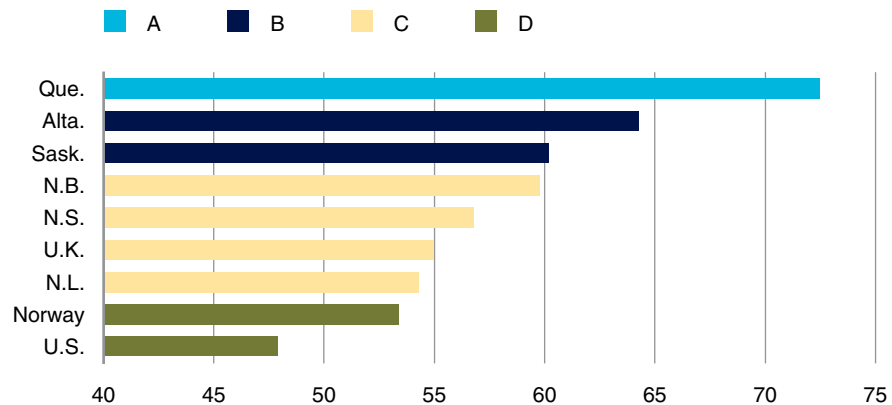
encountered in daily life, including in professional contexts, requires some level of understanding of mathematics, mathematical reasoning, and mathematical tools, before they can be fully understood and addressed.”²⁰

Newfoundland and Labrador students do not perform very well in math. The province earns a “C” grade and ranks 7th out of 9. (See Chart 26.) Quebec ranks first and is the only jurisdiction with an “A” grade. Quebec instituted major educational reforms in the early 2000s, and the philosophy behind math instruction was overhauled. The philosophy is grounded more in problem-solving and “discovery learning” and less in memorizing equations.²¹ Newfoundland and Labrador has recently instituted a similar approach to teaching math (phased in over 2008–13), but it is too soon to say whether the new approach is leading to improved student math outcomes.

Chart 26

Students With Medium- to High-Level Math Skills, 2012

(percentage of 15-year-old students, level 3 or higher out of 6)



Sources: OECD; Council of Ministers of Education Canada; The Conference Board of Canada.

20 OECD, *PISA 2012 Assessment and Analytical Framework*.

21 Peritz, “Quebec Might Hold the Formula.”

While student skills are an indicator of future prosperity and competitiveness, adult skills are indicative of the current quality of the workforce. Firms consistently rate employee skills as one of the top four factors needed for innovation success.²² The OECD evaluates the numeracy, literacy, and problem-solving skills of the working-age population (aged 16–65). The summary of the benchmarking results for this indicator are in Table 9. Norway’s and Alberta’s working-age populations have the highest overall skills in the workforce, while Newfoundland and Labrador places last on the list.

Table 9
Adult Skills Summary, 2012

1	Norway	A	6	Quebec	C
2	Alberta	A	7	United States	D
3	Nova Scotia	B	8	New Brunswick	D
4	United Kingdom	C	9	Newfoundland and Labrador	D
5	Saskatchewan	C			

Sources: OECD; Statistics Canada; The Conference Board of Canada.

Adult literacy determines a worker’s ability to find and keep a job as well as a worker’s wages.²³ Newfoundland and Labrador earns a “D” and ranks last in literacy proficiency. (See Chart 27.) Some 43 per cent of the province’s working-age population achieved a medium to high level of literacy, compared with 57 per cent of Norwegians.

Numeracy skills are another contributor to workforce success. On average, a one-standard-deviation increase in numeracy skills is associated with a 19 per cent wage increase among prime-age workers in Canada.²⁴ Newfoundland and Labrador earns a “D” on this measure and again ranks last. (See Chart 28.)

22 Watt and Munro, *Skills for Business Innovation Success*.

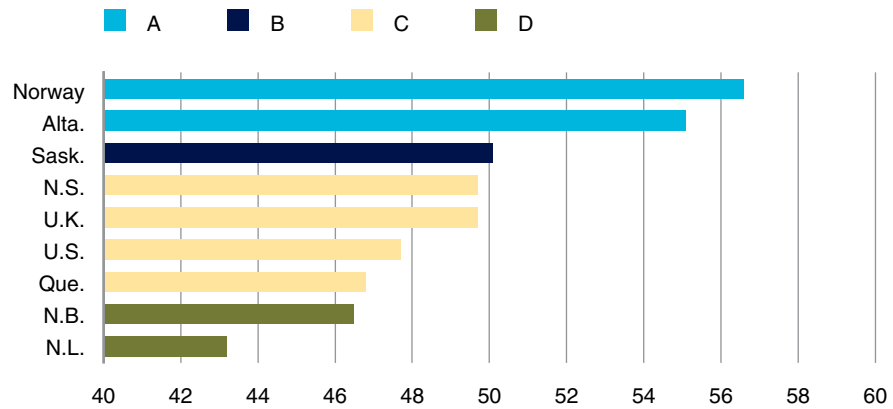
23 OECD, *OECD Skills Outlook 2013*.

24 Hanushek and others, “Returns to Skills Around the World.”

Chart 27

Adults With Medium- to High-Level Literacy Skills, 2012

(percentage of adults aged 16–65, level 3 or higher out of 5)

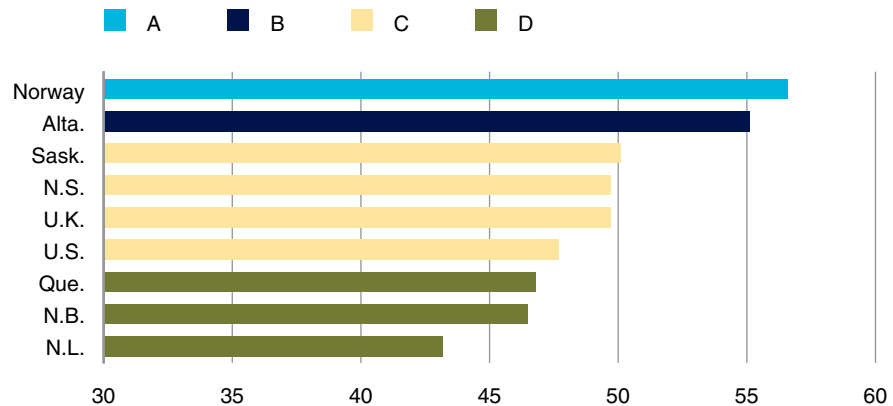


Sources: OECD; Statistics Canada; The Conference Board of Canada.

Chart 28

Adults With Medium- to High-Level Numeracy Skills, 2012

(percentage of adults aged 16–65, level 3 or higher out of 5)



Sources: OECD; Statistics Canada; The Conference Board of Canada.

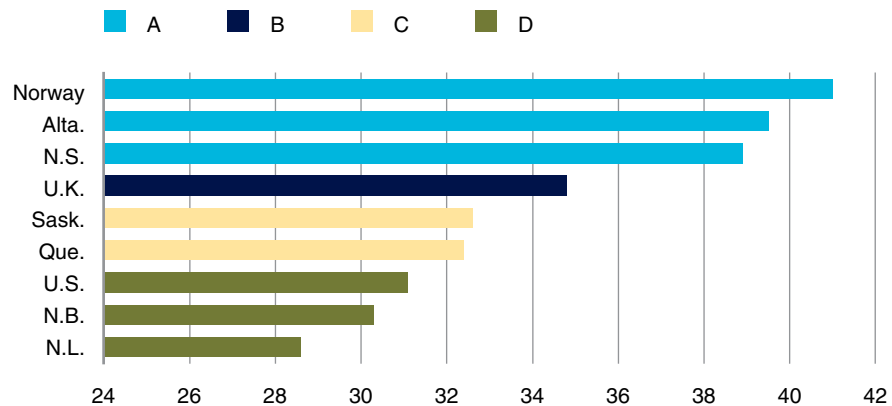
The third type of adult skill measured is problem-solving skills in technology-rich environments. This skill is defined as the “ability to use digital technology, communication tools and networks to acquire and

evaluate information, communicate with others and perform practical tasks.”²⁵ Less than 30 per cent of Newfoundland and Labrador’s working-age population scored 2 or higher out of 3 on the problem-solving exercise, compared with more than 40 per cent in Norway, the best performer. (See Chart 29.) The province ranked last out of its competitors and earned a “D” grade.

Chart 29

Adults With High-Level Problem-Solving Skills, 2012

(percentage of adults aged 16–65, level 2 or higher out of 3)



Sources: Employment and Social Development Canada; OECD; Statistics Canada; The Conference Board of Canada.

Labour Market

The second grouping within the Human Capital category relates to the labour market. Seven labour market indicators have been benchmarked. The indicators aim to draw an overall picture of the current and future labour force. Newfoundland and Labrador scores poorly on labour market indicators, despite the boom in the resources sector. (See Table 10.)

²⁵ Ibid.

Table 10

Part 2: Labour Market
Human Capital Indicators Summary

Indicator	Newfoundland and Labrador's grade	Newfoundland and Labrador's rank
Labour force participation	D	9/10
Employment growth	C	4/10
Unemployment rate	D	10/10
Unit labour cost growth	D	9/9*
Work stoppages due to strikes and lockouts	C	8/9*
Population aging	D	9/9*
Net migration	D	8/10

*due to data availability, Texas and North Dakota data replaced with U.S. national data
Sources: Statistics Canada; OECD; American Community Survey; World Bank; Council of Ministers of Education Canada; U.S. Bureau of Labor Statistics; U.S. Census Bureau; Statistics Norway; UK's Office for National Statistics; The Conference Board of Canada.

Participation in the labour force gauges the attractiveness of the employment opportunities available and the matching of skills and qualifications of the population and the economy. This measure is called the labour force participation rate and is the proportion of the population aged 15 and older who are either employed or unemployed but actively looking for work. Newfoundland and Labrador ranks second to last, earning a “D” grade. (See Chart 30.) Alberta scores the highest on this indicator, with 73 per cent of its population engaged in the labour force; this is 12 percentage points higher than Newfoundland and Labrador's participation rate.

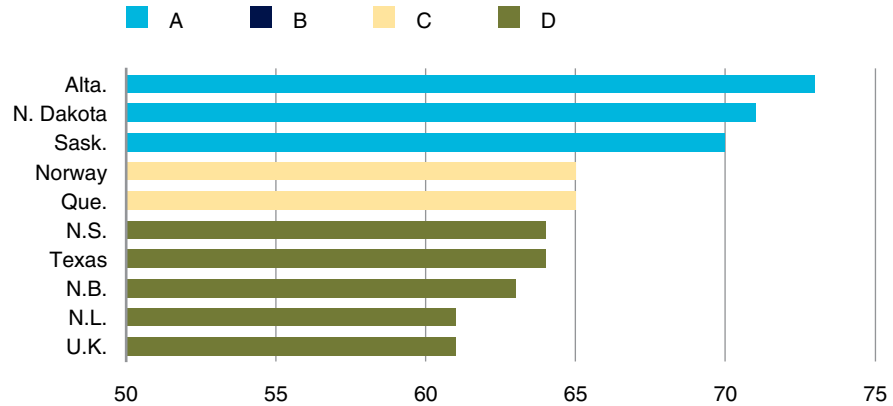
Newfoundland and Labrador added 44,000 jobs over the years 1997–2013, fuelled by the development of the oil and gas industry and mining investments. This is impressive considering that the population shrank by 33,200 during the same period. (See Chart 31.)

Although the province was successful in generating thousands of jobs, the average annual employment growth rate is middle of the pack compared with the province's competitors. Over the past five years,

Chart 30

Labour Force Participation Rate, 2013

(percentage of population aged 15+ that is either employed or unemployed but actively looking for work)

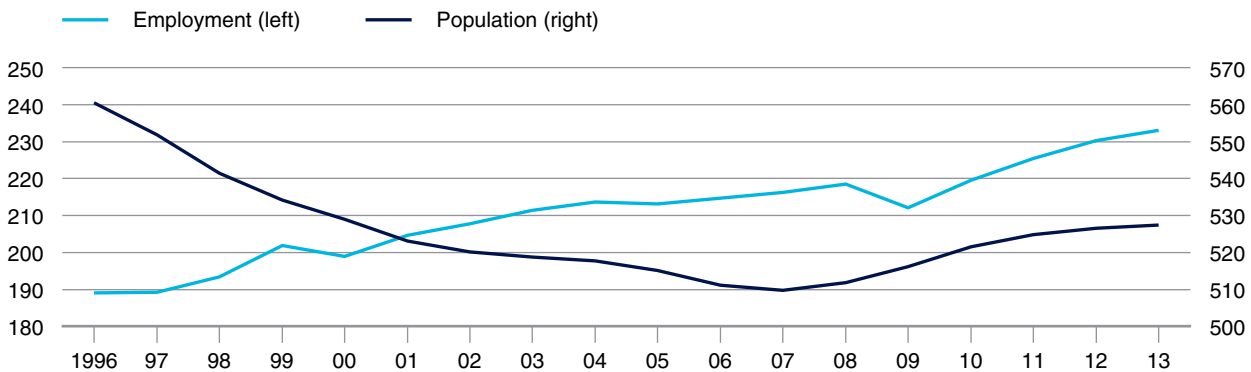


Sources: Statistics Canada; OECD; The Conference Board of Canada.

Chart 31

Newfoundland and Labrador's Employment and Population Change

(000s)



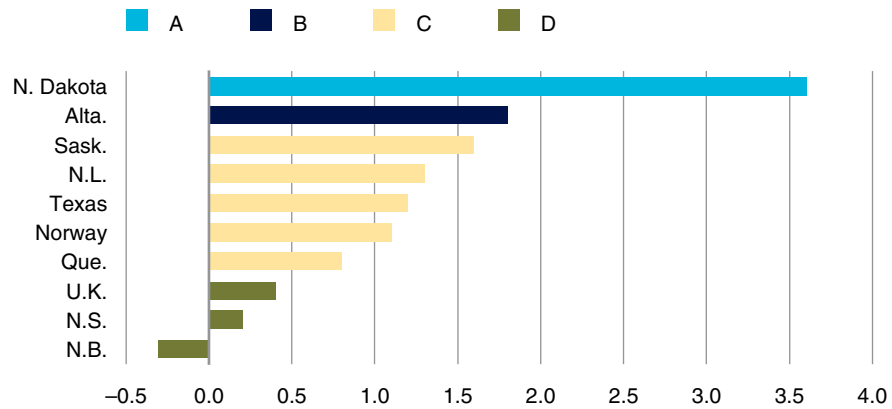
Sources: Statistics Canada; The Conference Board of Canada.

Newfoundland and Labrador's employment has grown by 1.3 per cent on average. This rate is the 4th-fastest of the 10 competitors and earns the province a "C" grade. (See Chart 32.)

Chart 32

Employment Growth, 2008–13

(average annual compound growth rate, per cent)



Sources: Statistics Canada; OECD; U.S. Bureau of Labor Statistics; The Conference Board of Canada.

North Dakota experienced the fastest employment growth over the last five years, growing 3.6 per cent on average. In fact, the state is experiencing large-scale labour shortages and officials estimate that unfilled positions totalled 25,000 in early 2014.²⁶

The offshore oil production and metal mining boom in Newfoundland and Labrador has pushed the unemployment rate to its lowest on record. (See Chart 33.) However, there are many seasonal industries, including fishing, hunting, and food processing, which results in structurally higher rates of unemployment. Moreover, the economy has had many mega-projects that require large numbers of workers for short periods of time, so tradespeople can spend more time looking for work between projects.

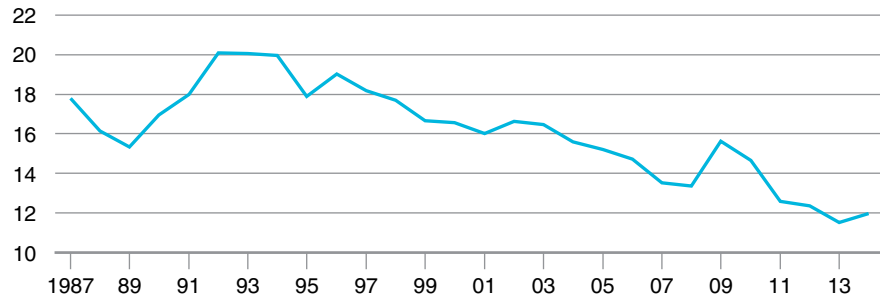
Newfoundland and Labrador has the highest unemployment rate compared with its competitors, earning it a “D” grade. (See Chart 34.) The province’s unemployment rate was 11.5 per cent in 2013, compared with 2.9 per cent in North Dakota. The Western provinces had unemployment rates under 5 per cent.

26 MacPherson, “North Dakota Desperate for Workers.”

Chart 33

Newfoundland and Labrador's Unemployment Rate

(per cent)

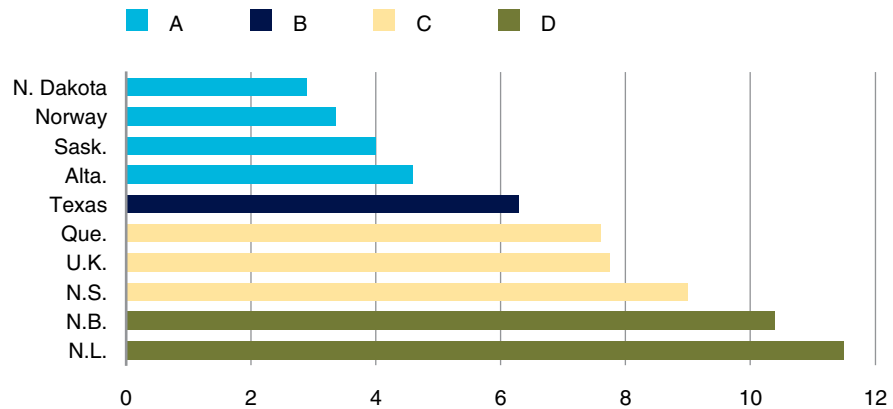


Sources: Statistics Canada; The Conference Board of Canada.

Chart 34

Unemployment Rate, 2013

(percentage of the labour force that is unemployed)



Sources: OECD; Statistics Canada; U.S. Bureau of Labor Statistics; The Conference Board of Canada.

Unit labour cost growth has long been an indicator of competitiveness. The indicator measures the labour costs to the firm (including wages, salaries, and employers' payroll contributions) per unit of production. Therefore, an increase in unit labour costs means that the labour costs are growing faster than labour productivity, that it is becoming more costly for firms to produce their goods or services. A country

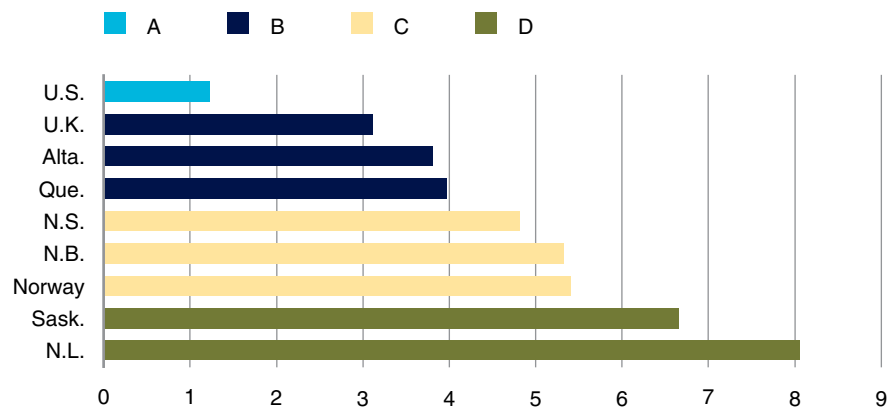
can improve its unit labour cost competitiveness by either decreasing its labour costs or raising the productivity performance, or by some combination of both.

Newfoundland and Labrador had the fastest growing unit labour costs compared with its competitors (see Chart 35), meaning that wage inflation is outpacing labour productivity. The U.S. has the lowest unit labour cost growth, largely reflective of the impacts of the recession. Alberta's labour productivity has kept pace with wage inflation despite skilled labour shortages.

Chart 35

Growth in Unit Labour Costs, 2008–12

(average annual compound growth rate, per cent)



Sources: OECD; Statistics Canada; The Conference Board of Canada.

Unit labour cost *levels* are less used than unit labour cost *growth* as an indicator of competitiveness. Levels are not as reliable, since using exchange rates for comparability does not fully capture the price-quantity differences.²⁷ But comparisons within Canada can be made, and Newfoundland and Labrador has the lowest levels of unit labour costs. This has two implications. First, low unit labour cost levels

27 Turner and Van 't dack, "Measuring International Price and Cost Competitiveness."

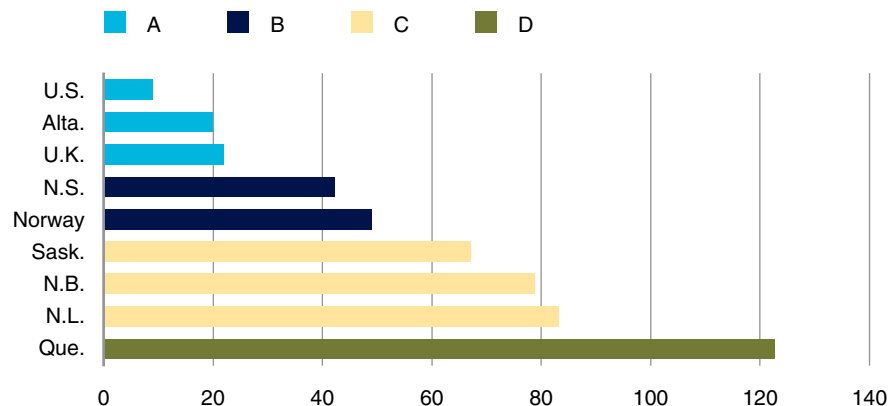
imply a competitive advantage because labour costs less per unit of output in the province. Two, it means that the high levels of growth in unit labour costs (as observed in N.L. in Chart 35) need to be taken with caution because costs could be simply converging with those of competitors. Therefore, right now, unit labour costs as they stand should not be considered a problem. But the current high levels of growth mean that wage inflation is outpacing productivity, and this can be a red flag for attracting businesses to the province in the future if this growth continues.

Work stoppages due to strikes and lockouts are an indicator of the health of labour and business relationships. Work stoppages affect economic competitiveness, since firms struggle in the short term to produce products and services during these periods. In the long term, the province may struggle to attract investment when there is instability in labour relations. Newfoundland and Labrador has high levels of work stoppages and earns a “C” grade, ranking 8th out of 9 on the indicator; only Quebec experienced longer work stoppages. (See Chart 36.)

Chart 36

**Working Days Not Worked Due to Strikes and Lockouts,
per 1,000 Employees, 2005–13**

(annual average number of days, per 1,000 employees, 2005–13 [2005–12 in U.S.])



Sources: Employment and Social Development Canada; UN International Labour Organization; UK Office for National Statistics; Statistics Norway; The Conference Board of Canada.

By 2025, Newfoundland and Labrador will have the highest proportion of the population aged 65 and older compared to its competitors.

Unions are a prevalent component of the labour force in Newfoundland and Labrador. The unionization rate, 38 per cent, was the highest in the country in 2013.²⁸ But higher unionization rates do not necessarily result in a greater incidence of strikes. At 55 per cent, the unionization rate in Norway is higher than in Newfoundland and Labrador,²⁹ yet Norway experiences fewer days not worked due to strikes and lockouts. Norway's labour system model is "characterised by strong employers' and workers' organizations and by close cooperation between the government, employers' associations and trade unions, as well as by strong co-determination and participation at the company level."³⁰ There are strict rules regarding industrial action and most disputes are resolved through mediation. Therefore, unionization alone does not necessarily impact competitiveness.

The age structure of a population largely determines the current and future availability of workers. Additionally, an aging population can result in high levels of retirement and, with it, a loss of knowledgeable and skilled workers. Population aging is a significant challenge for Newfoundland and Labrador; the province currently has the highest proportion of people aged 65 and older in the country. The indicator, "proportion of the population aged 65 and older by 2025," was chosen to benchmark the stress that aging will put on the labour market over the next 10 years.

By 2025, Newfoundland and Labrador will have the highest proportion of the population (compared to its competitors) aged 65 and older, earning the province a "D" on the indicator. (See Chart 37.) Almost 27 per cent of the province's population will be 65 and older within the next 10 years. This could make it much more difficult to compete with Alberta and Saskatchewan, which have much younger populations. Tapping into Newfoundland and Labrador's existing labour force for skilled workers will be an ongoing challenge.

28 Statistics Canada, CANSIM table 282-0220.

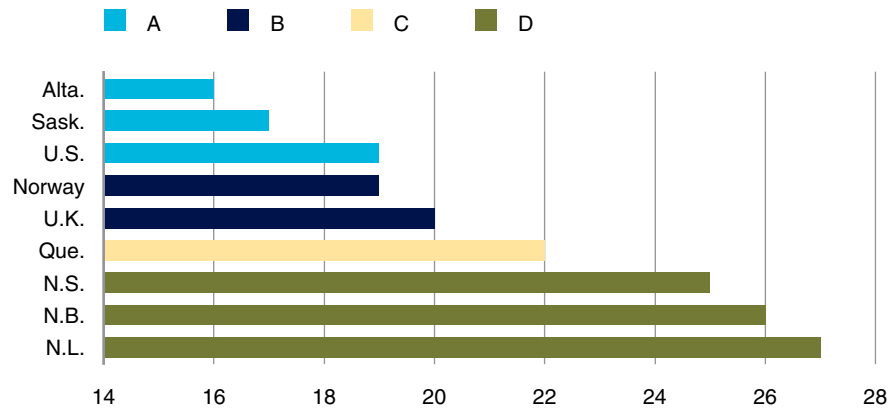
29 OECD, StatExtracts.

30 Løken and Stokke, *Labour Relations in Norway*.

Chart 37

Population Aged 65+ by 2025

(percentage of the population aged 65 and over in 2025)



Sources: World Bank Health, Nutrition and Population Statistics for international forecasts; The Conference Board of Canada for provincial forecasts.

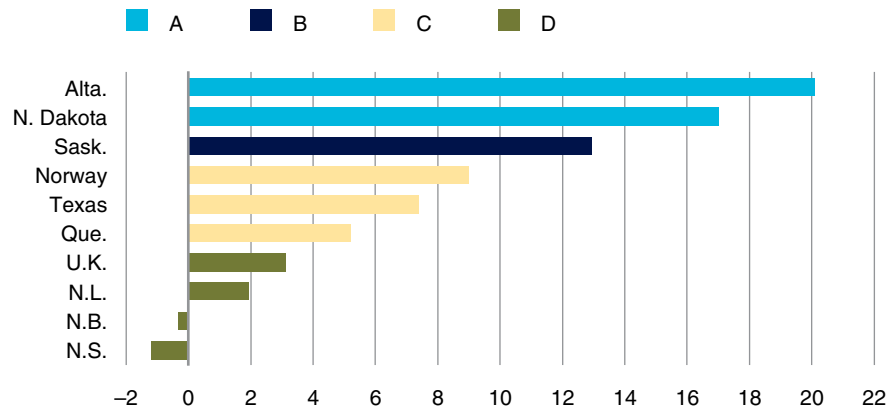
When there is a lack of people to draw from to meet the needs of the economy, migration can be a good source to make up the difference. Net migration, both international and interprovincial, was chosen as a benchmark indicator to gauge a region's ability to attract and retain people.

Newfoundland and Labrador has a long history of negative net migration, with thousands of people leaving the province every year, mostly for other provinces within Canada. The province has recently become more successful in stemming these losses and has even been able to attract back residents who had previously left. Despite these successes, the province ranks low on the migration indicator, earning a "D" grade and placing 8th out of 10 on the list of competitors. (See Chart 38.)

Chart 38

Newfoundland and Labrador Attracts Fewer Migrants, 2011–13 Average

(net migration per 1,000 residents, 2011–13 average)



Sources: Statistics Canada; U.S. Census Bureau; Statistics Norway; UK Office for National Statistics; The Conference Board of Canada.

Newfoundland and Labrador attracted 1.9 net new migrants for every 1,000 residents, on average, over the latest three years (2011–13). Meanwhile, Alberta attracted tenfold that number of migrants, earning top spot on the list of competitors. Only two regions ranked lower than Newfoundland and Labrador on the indicator—Nova Scotia and New Brunswick; they experienced negative net migration over the same period.

Business and Policy Environment

The availability and efficiency of human and physical capital affects labour productivity, but so do national and provincial business policy environments in which firms operate. There are seven indicators benchmarked to evaluate the business and policy competitiveness. (See Table 11.)

Table 11

Business and Policy Environment Indicators Summary

Indicator	Newfoundland and Labrador's grade	Newfoundland and Labrador's rank
Provincial corporate income taxes	–	8/10 provinces
Marginal effective tax rate on capital	A	3/9*
Taxes levied on businesses	A	3/9**
Statutory labour costs	B	5/9**
Transportation costs	D	9/9**
Utility costs	D	7/9**
Net provincial debt	–	5/10 provinces

*due to data availability, Texas and North Dakota data replaced with U.S. national data

**no Norwegian data available for four indicators

Sources: OECD; Canada Revenue Agency; KPMG; Statistics Canada; U.S. Bureau of Economic Accounts; Employment and Social Development Canada; UN International Labour Organization; UK Office for National Statistics; Statistics Norway; University of Calgary School of Public Policy; The Conference Board of Canada.

Tax rates are one of the many factors that businesses consider when choosing where to set up operations. Tax competitiveness is increasingly relevant given capital mobility in a globalized economy. This report finds that, while published tax rates are high in Newfoundland and Labrador, the tax burden of businesses in the province is actually low when tax credits are taken into account. A tax system rife with credits can lead to unwanted market distortions and inefficiencies that are discussed in the next chapter.

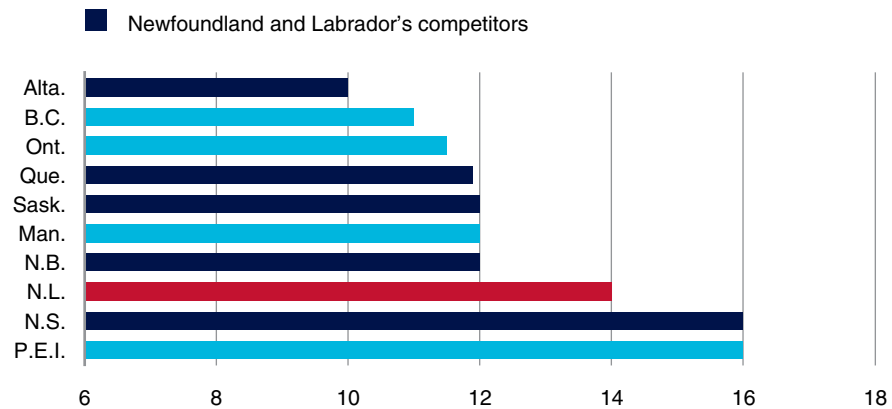
To assess business competitiveness, this report focuses on taxes paid by businesses. Personal taxes do not affect investment.³¹ A natural indicator choice for benchmarking competitiveness is the published provincial corporate income tax rates. Newfoundland and Labrador has a general corporate tax rate of 14 per cent, placing 8th out of 10 provinces in terms of competitiveness. (See Chart 39.)

31 Chen and Mintz, "2013 Annual Global Tax Competitiveness Ranking."

Chart 39

Posted Corporate Income Taxes, 2014

(tax rate for large corporations)



Sources: KPMG; The Conference Board of Canada.

However, posted tax rates are only a small part of the story. Tax credits and subsidies play a large role in attracting and promoting businesses, and Statistics Canada data on actual taxes and transfers paid in Newfoundland and Labrador showed a very different story. The calculations in Chart 40 estimate an implicit corporate tax rate by taking the direct taxes paid by corporations, net of transfers to businesses, as a percentage of pre-tax corporate profits. This is based on actual amounts paid over 2005–09 (the latest years of data available), not on posted rates. When government transfers and credits are taken into account, Newfoundland and Labrador has competitive tax rates, but these are achieved in a very inefficient way.

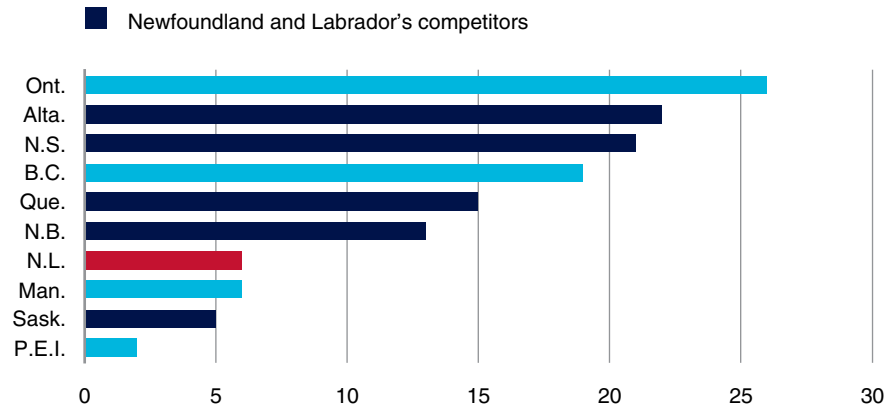
Corporate taxes are an important determinant of competitiveness, but there are many other taxes that businesses pay. University of Calgary researchers publish an annual study on the marginal effective tax rate (METR) on corporate investment across provinces and nations.³² The authors focus on corporate investment (i.e., tax impact of capital investment as a portion of the cost of capital) because they identify it

³² Ibid.

Chart 40

Implicit Corporate Income Tax Rates, 2005–09 Average

(net transfers from businesses to government as a percentage of pre-tax business profits)



Sources: Statistics Canada; The Conference Board of Canada.

as an important contributor to productivity enhancements and global competitiveness: “When all non-tax considerations are equal, an investor will invest in the sector or geographic location where the METR is lowest. It is to this extent that METR provides a gauge for business tax competitiveness among different tax jurisdictions.”³³ Research shows that a 1 per cent increase in the METR results in a 1.18 per cent decrease in foreign direct investment as a share of GDP.³⁴ This measure of METR includes corporate income taxes, sales taxes on capital purchases, and other capital-related taxes. Importantly, the METR takes into account all tax credits and deductions.

Newfoundland and Labrador ranks 3rd and scores an “A” on the METR on capital. (See Chart 41.) A value-added provincial sales tax (i.e., the harmonized sales tax, or HST) and the elimination of capital taxes have both contributed positively to the province’s competitive METR position.

33 Ibid.

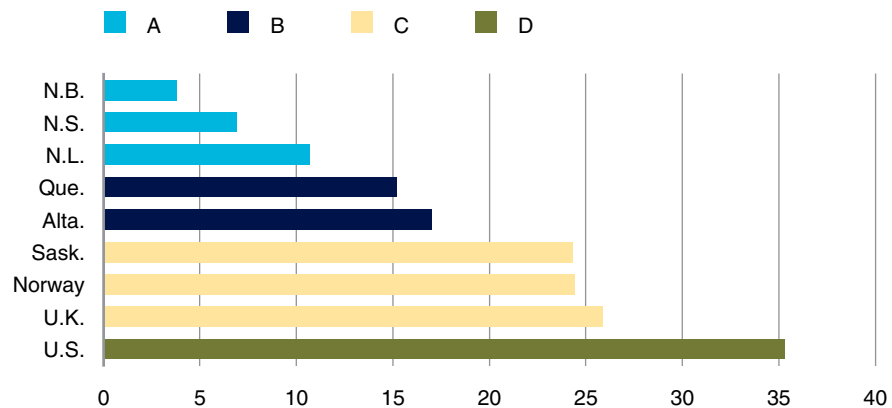
34 Krzepkowski, “Marginal Versus Average Effective Tax Rates.”

But the largest determinant of the province's competitive position is the Atlantic Investment Tax Credit (AITC), implemented by the federal government in 2010.

Chart 41

Marginal Effective Tax Rate on Capital, 2013

(per cent)



Sources: University of Calgary School of Public Policy; The Conference Board of Canada.

The AITC supports investments in new buildings, machinery, and equipment in Atlantic Canada within the farming, fishing, logging, manufacturing, and processing sectors (oil, gas, and mining activities were initially eligible for the credit but are being phased out).³⁵ Chen and Mintz found that the four Atlantic provinces had the most distorted tax structures due to the combined effects of the AITC and higher-than-average corporate income taxes.³⁶

Along with the AITC, Newfoundland and Labrador's corporate tax base is further distorted by its two-tiered corporate income tax rates of 5 per cent for manufacturing industries and 14 per cent for all other industries. Distortions in the tax system can lead to a misallocation of resources

35 Canada Revenue Agency, *Atlantic Investment Tax Credit*.

36 Chen and Mintz, "2013 Annual Global Tax Competitiveness Ranking."

All Canadian provinces earn an “A” on the Total Tax Index indicator.

within the economy, potentially reducing productivity by allocating resources to sectors that are not necessarily the most productive or profitable.

The next indicator allows us to broaden our analysis to include all taxes paid by businesses (including property, payroll, and other taxes). Again, this indicator captures the actual taxes paid, not posted rates; therefore, they take into account government subsidies and tax credits. KPMG’s Total Tax Index (TTI) creates hypothetical standardized businesses in jurisdictions around the world and calculates the amount of taxes that would be paid in each region based on local tax rates and local business costs as of January 1, 2014. Taxes used in the calculation are national, regional, and local taxes including corporate income taxes, other corporate taxes (including capital taxes, sales taxes, property taxes, miscellaneous local business taxes), and statutory labour costs (representing the employer portion of required pension, unemployment, medical, workplace injury, and other payroll-based taxes).³⁷ KPMG’s TTI measure estimates taxes faced by businesses located in major cities. The regional indices used in the TTI benchmarking indicator use an average of all major cities within the specified jurisdiction. For Newfoundland and Labrador, only one city—St. John’s—has a reported TTI. Therefore, the TTI represents all taxes paid by a typical business based in St. John’s.

The TTI is indexed against the U.S., whose TTI is equal to 100. Values lower than 100 are interpreted as lower taxes paid than are paid in the United States. TTI calculations by province and state take an unweighted average of the cities within the regions included in the KPMG study.³⁸

All Canadian provinces earn an “A” on the TTI indicator. (See Chart 42.) In fact, Canada as a whole had the lowest TTI out of the 10 countries studied in the KPMG report, with the lowest corporate income taxes and the lowest statutory labour costs.³⁹ Newfoundland and Labrador ranks

37 KPMG, *Competitive Alternatives Special Report*.

38 For the list of participating cities in each region, see the KPMG report.

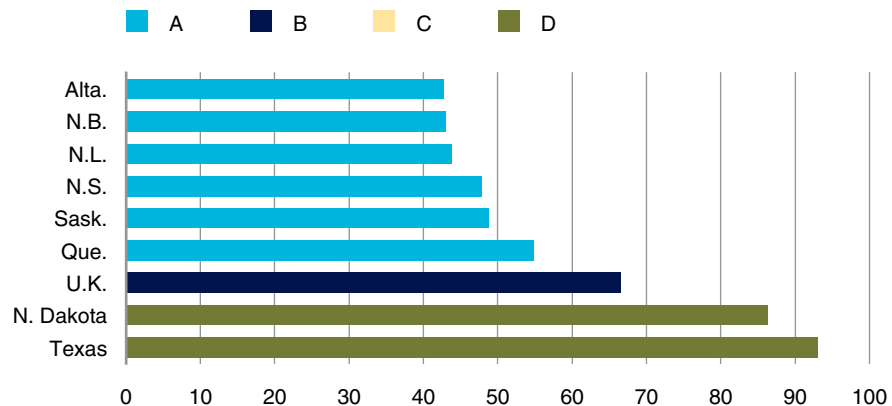
39 KPMG, *Competitive Alternatives Special Report*.

3rd out of the 9 competitors, behind only Alberta and New Brunswick. The low corporate income taxes paid in Newfoundland and Labrador are due to the large tax credits and subsidies, despite high posted corporate tax rates.

Chart 42

Total Tax Index, 2014

(total taxes paid by corporations, net of subsidies and credits; U.S. = 100)



Sources: KPMG; The Conference Board of Canada.

Employer labour cost considerations are an important factor for businesses when they are deciding where to locate.⁴⁰ Some 60 per cent of Newfoundland and Labrador's taxes paid go to statutory labour costs (payroll taxes and other payroll charges). Only Quebec has a higher proportion of its TTI (66 per cent) going to statutory labour costs.⁴¹ (See Chart 43.) Because such a high proportion of the taxes paid by Newfoundland and Labrador's businesses go to statutory labour costs, there is little room for the government to adjust other corporate taxes without impacting the province's total tax competitiveness.

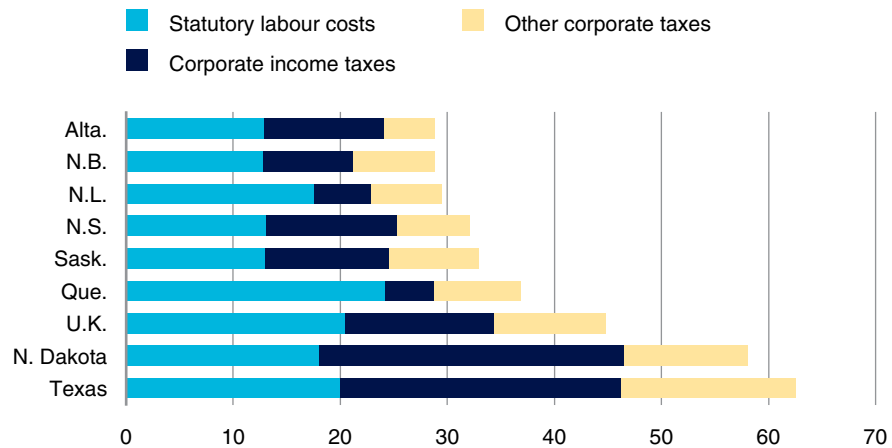
40 Gunderson, "The Impact of High Workers' Compensation Premiums."

41 KPMG, *Competitive Alternatives Special Report*.

Chart 43

Total Effective Tax Rate, by Type of Tax Paid, 2014

(total effective tax rate as a proportion of standardized net income, per cent)



Sources: KPMG; The Conference Board of Canada.

High statutory labour costs (i.e., payroll taxes) contribute negatively to these cost considerations. Newfoundland and Labrador ranks 5th out of 9 on the next indicator, statutory labour costs for major cities in each region, and earns a “B.” (See Chart 44.) The province has the highest effective statutory cost rates of all the provinces except for Quebec. While the breakdowns between types of employer-paid labour costs are not available, Dr. Gunderson calculated that Newfoundland and Labrador has had the highest workers’ compensation assessment rates of all the provinces since 1993.⁴² He found that Alberta’s workers’ compensation assessment rate was less than half of Newfoundland and Labrador’s rate.

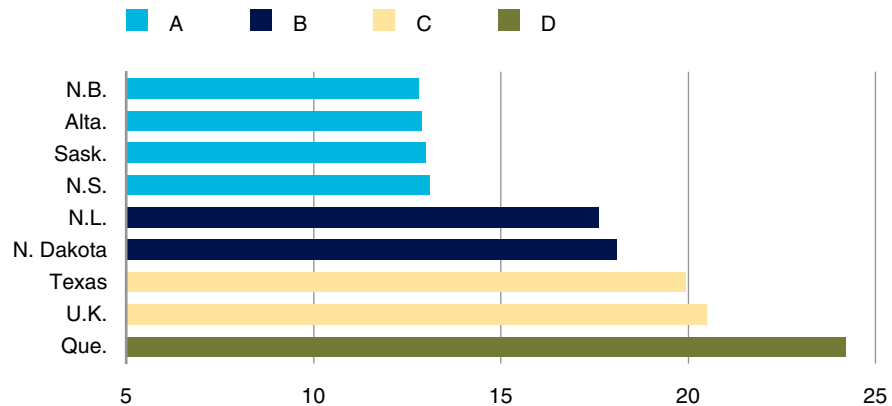
Payroll costs and taxes are an important determinant of business competitiveness, but there are other costs that impact competitiveness. Transportation and utility costs are the next indicators benchmarked in this report. They are based on the same KPMG study as the TTI and statutory labour costs described above.

42 Gunderson, “The Impact of High Workers’ Compensation Premiums.”

Chart 44

Employer-Paid Statutory Labour Cost Rates, 2014

(statutory labour costs as a percentage of standardized net income before income taxes)



Sources: KPMG; The Conference Board of Canada.

Transportation costs can account for a substantial portion of business costs. We have seen that Newfoundland and Labrador has aging transportation infrastructure, but the province is also remote and far from markets. These factors result in Newfoundland and Labrador's having the highest transportation costs of its competitors. (Transportation costs are calculated for typical corporations in major cities, St. John's in the case of Newfoundland and Labrador.) (See Chart 45.)

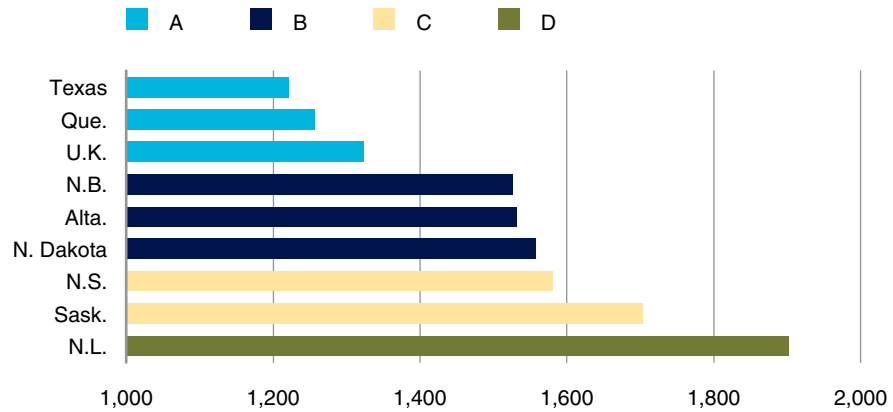
The second (non-tax) business cost benchmarked is electric and gas utilities. Newfoundland and Labrador ranks 7th out of 9 competitors and scores a "D." (See Chart 46.) Spending on gas utilities in particular is much higher in Newfoundland and Labrador, while spending on electricity is in line with the average spending among competitors.

Government fiscal policies can impact economic growth. High net government debt as a proportion of GDP can result in less money being available for the government to support productivity- and growth-enhancing programs and investments. (The government's ability to take on more debt or pay down debt is more heavily influenced by GDP than population, hence the choice of the debt-to-GDP indicator over debt

Chart 45

Transportation Costs, 2014

(surface and air transportation costs for a representative corporation in major cities, US\$ millions)

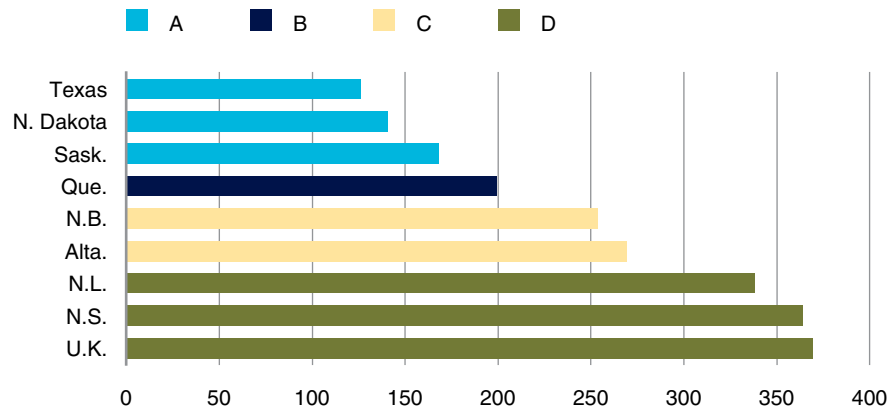


Sources: KPMG; The Conference Board of Canada.

Chart 46

Utility Costs, 2014

(electricity and gas costs for a representative corporation in major cities, 10-year horizon starting in 2014, US\$ 000s)



Sources: KPMG; The Conference Board of Canada.

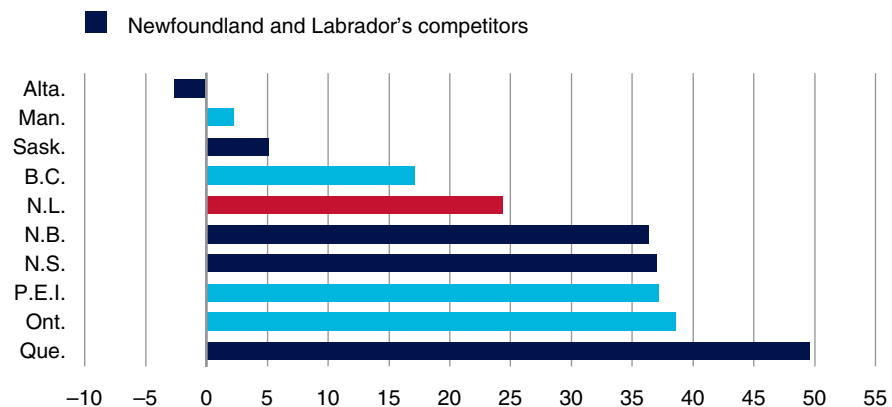
per capita.) Moreover, high debt levels can be viewed as a future tax burden by businesses and households. Several studies have drawn a link between government debt and economic growth. An International Monetary Fund study estimates that a 10 per cent increase in the debt-to-GDP ratio results in a slowdown in annual GDP of around 0.2 percentage points per year.⁴³

Newfoundland and Labrador's provincial net debt as a proportion of GDP ranks in the middle of the pack, 5th out of 10. (See Chart 47.) (Public debt is difficult to compare across provinces, states, and nations, so the analysis was limited to the provinces.) The province's net debt accounts for almost one-quarter of GDP; compare this with the resource-rich Prairie provinces that have close to no debt.

Chart 47

Provincial Net Debt to GDP, 2013–14

(net provincial debt as a percentage of GDP)



Sources: Finance Canada; provincial budgets; Statistics Canada; The Conference Board of Canada.

43 Kumar and Woo, "Public Debt and Growth."

CHAPTER 4

Challenges and Opportunities

Chapter Summary

- Innovation is a key factor in the province's future prosperity. Increased competitive forces lead to new ideas, improved business organization, and innovative production procedures. Lowering interprovincial barriers can increase opportunities in new markets and government procurement with an innovation focus can support local business innovation.
- Fiscal policies need to be efficient and less distortive. Local businesses face hundreds of "boutique" tax credits that increase compliance time and lead to inefficient allocation of investments.
- The labour shortages in the province will worsen as the population ages rapidly. Policies to boost immigration would help broaden the labour pool, as would retaining older workers and better aligning education and skills development with labour market needs.
- The current fiscal situation is not sustainable in the longer term. Day-to-day program spending should rely more on other sources of revenue than on volatile resource royalties and therefore should be reduced, especially in provincial public administration. In the future, more resource revenues need to be used to pay down debt and to contribute to a sovereign wealth fund instead of being used to meet the day-to-day requirements of government programs.

An effective productivity strategy for Newfoundland and Labrador must focus on policy levers that governments and businesses can control or influence. The Newfoundland and Labrador economy is reliant on the resource sector and is a price taker on international markets; it must recognize global risks and be prepared to mitigate or adapt to developments as they occur.

Newfoundland and Labrador has experienced tremendous economic and productivity growth over the past 15 years. But, when oil production peaked in 2007, labour productivity and GDP growth peaked along with it. The challenge now is to regain the momentum by broadening the economic focus to other sectors of the economy and by strengthening the building blocks of business competitiveness:

- innovation—enhancing the development and adoption of new products and processes;
- investment—building the stock and quality of physical capital;
- human capital—enriching the province’s labour force;
- business and policy environment—developing competitive, efficient, and fiscally prudent policies.

Policies to Boost Innovation

The results of the benchmarking analysis indicated a poor performance in innovation by Newfoundland and Labrador. Compared with its competitors, the organizations within the province do not file many patents or spend as much money on research and development (R&D). But innovation is not just implementing radical new ideas and breakthroughs. Innovation includes incrementally improving processes to add to or sustain the value of products and services, or to enhance

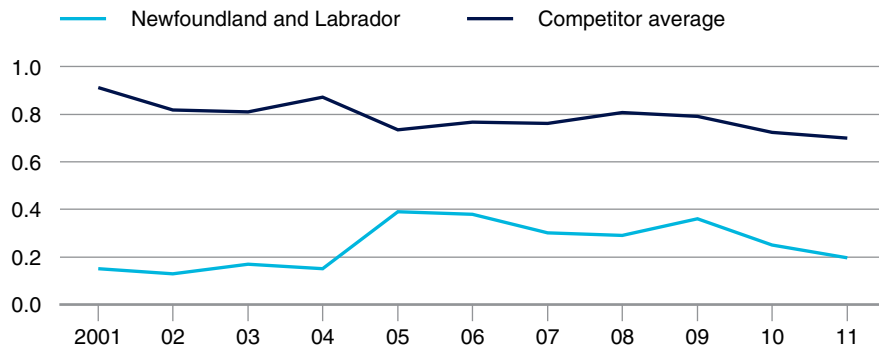
the efficiency and effectiveness of existing business processes.¹ These incremental changes are difficult to measure, but they are no less important. (See “Definition of Innovation.”) Newfoundland and Labrador’s industries would benefit from improvements to support all types of innovation, whether big or small.

Despite many years of vouchers and tax credit policies to stimulate R&D spending, Newfoundland and Labrador’s R&D spending as a share of the economy is lagging compared with its competitors. (See Chart 48.) It is time for the province to take a broader and more holistic approach to innovation since tax credits alone do not appear to boost innovation to desired levels.

Chart 48

Business Sector R&D Spending as a Proportion of GDP

(per cent; competitor average is unweighted)



Sources: OECD; Statistics Canada; The Conference Board of Canada.

1 Watt and Munro, *Skills for Business Innovation Success*.

Definition of Innovation

“A process through which economic or social value is extracted from knowledge—through the creation, diffusion, and transformation of ideas—to produce new or improved products, services, processes, strategies, or capabilities.”²

Canadian business leaders seem to take on activities and investment decisions that are too narrow and miss out on other opportunities to broaden their presence on international value chains (e.g., production, marketing, design, sales, and distribution).³ Canadian businesses must move up the value chains and specialize in knowledge-intensive, high-value-added goods and services. For example, a study on Alberta’s oil extraction industry identified opportunities for businesses in the province to leverage their experience and become international leaders in the oilfield services industry.⁴ Canada is already a net exporter of oilfield services capital and could build on other areas of innovation. Newfoundland and Labrador businesses have developed specialized ocean technology knowledge and have begun tapping into international offshore developments, defence systems, and other functions, in countries ranging from Brazil to South Korea to Australia.⁵ This may be an area to explore to move Newfoundland and Labrador farther up global value chains.

Enhance Innovation Traits in the School Systems

Innovation starts with skills, attitudes, and behaviours of individuals and teams within the workforce, and innovation policies should start with enhancing these traits. Research by the Conference Board has

2 The Conference Board of Canada, *How Canada Performs 2013*.

3 Watt and Edge, *Business Leaders’ Perspectives*.

4 Arcand, Burt, and Crawford, *Fuel for Thought*.

5 Fitzpatrick, “Rutter Receives Federal Support for Tech Export.”

Newfoundland and Labrador universities and colleges already conduct applied research for commercial purposes, and some funding is available for these collaborations.

recommended starting with children, youth, and educators in the primary, secondary, and tertiary (college and university) school systems. Experimental and applied learning is encouraged because innovation is best learned by hands-on experiences, not just instruction. This may involve problem-solving across disciplines or supporting public-private partnerships.⁶ Tertiary schools are in the right position to connect students with successful entrepreneurs, innovators, and leaders. This would allow students to take the theoretical knowledge they have learned and apply it in real-world contexts. Students are not the only ones to benefit from learning how theory can be applied; business leaders can benefit from new innovations and ideas coming from the students, as well as from access to technologies, facilities and equipment, and funding.⁷

In fact, forming a link between universities and businesses has been identified as a key determinant for the commercialization of innovation in an economy. A survey of 29 businesses and organizations that had worked with one or more Ontario colleges on applied research projects found that 69 per cent of all collaborations led to the development of new products or services (or were expected to in the future).⁸ Other benefits to collaboration included reductions in the time to market of new or improved products, observable improvements to a good or service, infiltrating new markets and connecting to new customers, and improved strategic and business planning. Moreover, nearly 80 per cent of these collaborations experienced (or expected to experience) increased sales and revenues for the firm.

With only modest resources and within a short time, Ontario colleges demonstrated that their applied research services can stimulate and accelerate the innovation activities of Ontario-based firms. Newfoundland and Labrador universities and colleges already conduct applied research for commercial purposes, and some funding is available for these

6 Watt and Munro, *Skills for Business Innovation Success*.

7 Haimowitz and Munro, *Innovation Catalysts and Accelerators*.

8 Ibid.

collaborations under the Atlantic Canada Opportunities Agency's (ACOA) Atlantic Innovation Fund (AIT). But more can be done to link individual businesses, including small and medium-sized enterprises (SMEs), with innovators at public research institutions. A federal review of government programs that promote these links (including, but not limited to, ACOA's AIT) identified several gaps in the programming and made recommendations. These include framing objectives around a "demand pull" model that emphasizes business innovation objectives rather than a "research push" from public institutions, and helping companies acquire the risk capital they need to embark on such programs.⁹

Increase Competition to Foster Innovation

Much of the innovation policy literature focuses on the link between competition and innovation.¹⁰ The thinking is that greater competition will force innovation, which in turn increases productivity. A report from the Council of Canadian Academies' Expert Panel on Business Innovation found that Canadian sectors with exposure to international markets had the same levels of R&D intensity and innovation as their international counterparts.¹¹ Meanwhile, sectors in which competition is curtailed and foreign entrants impeded had much lower levels of innovation. Empirical research on trade barriers by The Conference Board of Canada found that tariff and non-tariff barriers to competition have a negative effect on productivity for a core group of 16 industries in the primary and manufacturing sectors of the economy; it recommends lowering barriers in the tradable goods sector to narrow the productivity gap with the U.S.¹² The Institute for Competitiveness & Prosperity found that protected industries do not generally produce global leaders

9 Expert Review Panel on Research and Development, *Innovation Canada*.

10 Jenkins, "A Simple Solution to Canada's Innovation Problem."

11 Council of Canadian Academies, *Innovation and Business Strategy*.

12 Darby and others, *Death by a Thousand Paper Cuts*.

Industry Canada's Expert Review Panel on Research and Development recommended making business innovation one of the core objectives of government procurement.

(companies that generate more than \$100 million in annual revenue).¹³ The Institute also recommends innovation policies that balance support with competitive pressure.

Increasing competition comes in many forms and does not have to cause undue strain on Newfoundland and Labrador businesses. Increasing government procurement for innovative products and services is one way to increase competition. Industry Canada's Expert Review Panel on Research and Development recommended making business innovation one of the core objectives of government procurement—a big change from the current focus on lowest cost.¹⁴ Indeed, this idea is not revolutionary and many other governments aim to promote value-added to procurement; the lack of government innovation procurement strategies has been identified as a major contributor to the Canada–U.S. productivity gap because the U.S. government has a larger appetite and budget for technological innovations and regularly promotes product innovation through procurement.¹⁵ The World Economic Forum also identified this as an area of current shortcoming for Canada, ranking the country 48th on fostering innovation through government procurement.¹⁶ Norway and the U.S.—two of Newfoundland and Labrador's competitors—ranked in the top 15 on the indicator, while the U.K. also ranked ahead of Canada.

Lowering interprovincial and international trade barriers would not only breed more competition; it would also allow the province's industries to integrate into global and national supply chains and expand their market reach for goods and services. Several international trade deals are currently being negotiated by the federal and provincial governments (including the Comprehensive Economic and Trade Agreement [CETA] with the European Union) and these will help broaden competition outside of North America. One of the key provisions in these

13 Institute for Competitiveness & Prosperity, *Canada's Innovation Imperative*.

14 Expert Review Panel on Research and Development, *Innovation Canada*.

15 Munro, *From Perception to Performance*.

16 Schwab, *The Global Competitiveness Report 2014–15*.

Having one national standard for regulations may attract more international investment to the country and to Newfoundland and Labrador.

next-generation trade deals is labour mobility and investment protection. This deal would facilitate increased opportunities for Newfoundland and Labrador businesses in Europe, including engineering, marine, and oil and gas extraction sectors.

Interprovincial trade barriers reduce competition across Canada, create inefficient labour markets, and limit the size and reach of businesses. Sometimes the barriers are so severe that it is easier to integrate into global supply chains than supply chains in different provinces. Barriers include overlapping regulations, licensing, and government procurement preferences that favour regional players. Research by The Conference Board of Canada noted that “supply chains across provincial borders face obstacles that global supply chains have eliminated. In the age of global mobility, it makes no sense to add degrees of difficulty to the movement of people, goods, and services from one province to another.”¹⁷ Many organizations have repeatedly recommended fully implementing the 1995 Agreement on Internal Trade, which aims “to reduce and eliminate, to the extent possible, barriers to the free movement of persons, goods, services, and investment within Canada and to establish an open, efficient, and stable domestic market.”¹⁸ Reducing regulatory barriers and increasing labour mobility and credential recognition among Newfoundland and Labrador and other provinces would not only open up the province to increased competition and, with it, productivity-enhancing benefits; it would also allow firms to focus on better ways to conduct business rather than on how to comply with overlapping regulations in different provinces. Businesses could then scale up their operations because they could reach new markets, and scaling up would result in increased investments and supply chains across provincial boundaries.¹⁹ Moreover, having one national standard for regulations may attract more international investment to the country and to Newfoundland and Labrador.

17 The Conference Board of Canada, *Mission Possible Executive Summary*.

18 Agreement on Internal Trade.

19 The Conference Board of Canada, *Western Canada*.

Policies to Support and Expand Investment

We have seen that competitiveness and labour productivity go hand in hand. Investment in structures, machinery and equipment, and public infrastructure enables workers to produce more output for each hour of work; strategic investments therefore contribute directly to labour productivity. Investing in structures and machinery and equipment can also lower unit labour costs as firms become more productive. This allows goods sold on international markets to be more competitive and the businesses more sustainable.

The main driver of investment is the expected return on capital. Several factors influence returns on capital (global demand and supply, interest rates, economic stability, exchange rates, etc.), many of which are outside the control of policy-makers. However, there are a few policy levers that can help support and attract investment. Moreover, a fair and efficient tax system with competitive rates will help to allocate investment to the most productive uses within the economy.

Provincial and federal governments have made a tremendous effort to reduce their taxes on capital in Newfoundland and Labrador. The province was an early adopter of the harmonized sales tax (HST), which is a value-added tax like the federal general sales tax (GST). The HST supports investment by allowing for tax deductions on capital purchases so businesses can put more money toward purchasing the latest technologies that spur innovation and productivity gains. The province also charges no capital taxes on non-financial corporations; capital taxes are deemed one of the most damaging taxes to investment and prosperity so it is important they are not charged in any province. While acknowledging these encouraging reductions to capital taxes, more improvements can be made to the tax system in Newfoundland and Labrador to encourage investment.

Create an Equitable and Efficient Tax System for Capital

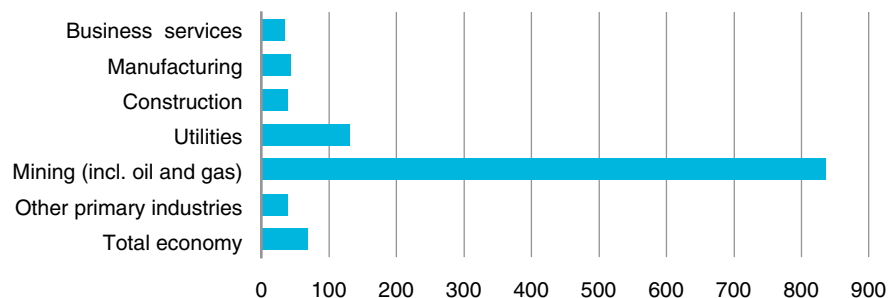
The economic literature has long supported the idea that a larger tax base that is taxed at a lower overall rate is better for economic growth than a smaller tax base with targeted tax relief for certain industries or sectors.²⁰ Not only are the administration and compliance costs more efficient since the same rate applies to every sector but, more importantly, a broader tax base lessens distortions because firms will place investments in areas where they will get the biggest returns, i.e., they will invest in the most productive areas of the economy.

Newfoundland and Labrador currently has one of the most distortive tax systems in Canada.²¹ To start with, the province has separate corporate income tax rates for the manufacturing sector (5 per cent) and a much higher rate for the other sectors (14 per cent) that is one of the highest in the country. (See “Newfoundland and Labrador’s Manufacturing Industry.”) In theory, under this system, there is incentive for capital allocation to be distorted toward the manufacturing industry, which is less productive than the overall economy. (See Chart 49.)

Chart 49

Labour Productivity by Sector, 2007–13 Average

(output per hour worked, 2007 \$)



Sources: Statistics Canada; The Conference Board of Canada.

20 OECD, *Tax Policy Reform and Economic Growth*.

21 Chen and Mintz, “2013 Annual Global Tax Competitiveness Ranking.”

OECD empirical research found that removing targeted sector-specific tax relief (with the exception of R&D credits) and levelling the tax rates across sectors can increase investment in various ways: by providing greater certainty and predictability for firms; by leaving more money available for firms to purchase productive-enhancing machinery and equipment; and by attracting inbound foreign direct investment (FDI).²² Attracting inbound FDI has also been found to increase the productivity of resident firms, since there is increased competition and innovation.

But businesses in Newfoundland and Labrador face a complex tax system. This increases costs for both governments and the businesses that must spend time and resources to comply with the complicated structure. These resources could instead be put toward more productive uses under a streamlined tax system.

Newfoundland and Labrador's Manufacturing Industry

Newfoundland and Labrador manufactures a variety of goods, with manufacturing shipments totalling more than \$500 million each month. More than 90 per cent of all the province's manufacturing shipments are non-durable goods, mainly petroleum and paper products. However, data are suppressed by Statistics Canada for these two sectors due to data confidentiality, so it is not possible to track the performance of each sector on a monthly basis.

Food manufacturing is the largest subsector where data are available; it has accounted for one-quarter of all manufacturing shipments since the recession. Food manufacturing includes seafood, fruit and vegetables, grain, meat, and others.

To get an idea of the breadth of distortions that these preferential tax treatments have on the economy, a study by the University of Calgary examined the current marginal effective tax rates on capital (METRs)

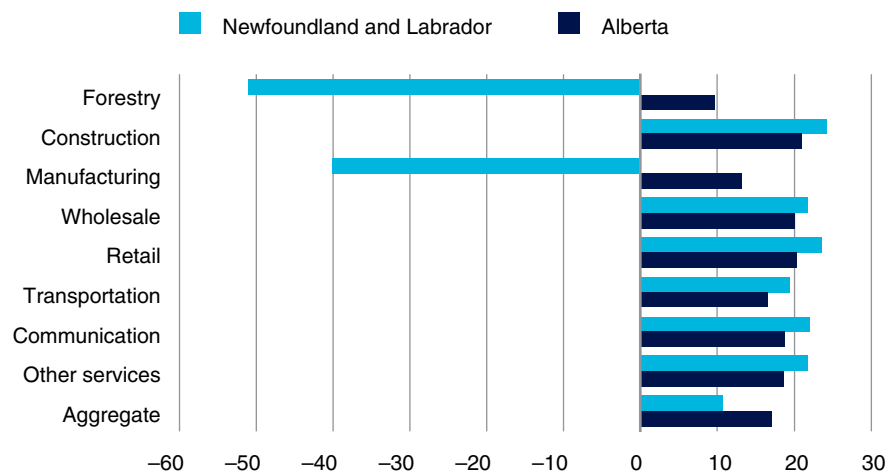
22 OECD, *Tax Policy Reform and Economic Growth*.

by industry and by province.²³ The study found that the most distortive tax systems were found in the four Atlantic provinces, while the least distortive was Alberta's. This was evidenced by negative METRs for some Newfoundland and Labrador industries while other industries have high rates. (See Chart 50.)

Chart 50

METR on Capital Investment, by Industry, 2013

(marginal effective tax rates on capital, per cent)



Sources: University of Calgary School of Public Policy; The Conference Board of Canada.

The results show preferential tax treatment for forestry and manufacturing industries. (A negative METR indicates a tax savings that can be used to offset tax liability associated with investment.) Authors of the University of Calgary study attribute most of Newfoundland and Labrador's tax distortion to the federal government's Atlantic Investment Tax Credit (AITC). The AITC was introduced during the recession to support investment in new buildings, machinery, and equipment in Atlantic Canada in the farming, fishing, logging, manufacturing, and processing sectors (oil, gas, and mining activities were initially eligible

23 Chen and Mintz, "2013 Annual Global Tax Competitiveness Ranking."

for the credit but are being phased out).²⁴ Deductions under AITC distort Newfoundland and Labrador's tax base by favouring some sectors over others. Notice in Chart 50 that the METRs are higher in Newfoundland and Labrador than in Alberta in all industries with the notable exceptions of forestry and manufacturing.

In summary, Newfoundland and Labrador and the federal government can level the playing field by creating an equitable and efficient tax system. This means broadening the tax base by eliminating or reducing preferential tax treatment for certain sectors of the economy and then using these additional revenues to reduce the overall corporate tax rate. Compliance costs would decrease and investments would be allocated to more efficient uses.

Boost Productivity by Investing in Public Infrastructure

The link between public infrastructure and productivity has been studied extensively. Enhanced transportation networks (highways, bridges, ports, rail, air, etc.) can shorten the time it takes to move goods to markets. These networks also allow people to access employment in other communities with shorter commute times. Quality health and education facilities support the development and maintenance of human capital. Utilities, including electricity, water, and sewage, all support business activities, making it less costly to open a plant in a location where these services are available. An extensive telecommunications network connects people between communities and with the world, ensuring businesses have access to all information required to make decisions and to coordinate logistical needs in a timely manner.

Several studies have attempted to quantify the link between infrastructure and productivity in Canada. A study published in the *Canadian Journal of Economics* found that a 1 per cent increase in Canadian public infrastructure investment could boost private output by

24 Canada Revenue Agency, *Atlantic Investment Tax Credit*.

Given the connection between public capital and productivity, these lower levels of government investment in infrastructure put the province at a disadvantage.

0.4 per cent.²⁵ More recently, research by Statistics Canada found that public capital contributed 0.2 percentage points to labour productivity per year over 1962–2006.²⁶

The World Economic Forum ranked infrastructure second only to legal and administrative institutions in its pillars of competitiveness.²⁷ Its 2014–15 report on global competitiveness describes the importance of infrastructure:

Extensive and efficient infrastructure is critical for ensuring the effective functioning of the economy, as it is an important factor in determining the location of economic activity and the kinds of activities or sectors that can develop within a country. Well-developed infrastructure reduces the effect of distance between regions, integrating the national market and connecting it at low cost to markets in other countries and regions. In addition, the quality and extensiveness of infrastructure networks significantly impact economic growth and reduce income inequalities and poverty in a variety of ways.²⁸

From the benchmarking results, we have seen that Newfoundland and Labrador has some of the oldest public infrastructure in the country (16.7 years on average). Moreover, the proportion of GDP that goes toward investments in public infrastructure is one of the lowest in the country. Given that the connection between public capital and productivity has been empirically documented, these lower levels of government investment in infrastructure put the province at a disadvantage. If government capital investment in Newfoundland and Labrador as a proportion of GDP had matched the national average over 2004–13, the province would have invested an additional \$145 million per year. This would have amounted to \$1.5 billion of additional investment.

25 Wylie, “Infrastructure and Canadian Economic Growth 1946–1991.”

26 Gu and Macdonald, “The Impact of Public Infrastructure.”

27 Schwab, *The Global Competitiveness Report 2014–15*.

28 Ibid.

The timing for infrastructure investment is important. In areas where current needs are directly hindering economic advancement, projects addressing these needs should be considered in a timely way. However, large-scale public infrastructure projects can compete for labour in an already tight market for construction-related trades and this must be considered in the planning process. It is preferable to align large-scale infrastructure developments with periods of low demand in the private sector.

Policies to Strengthen the Labour Force

Human capital is one of the most important building blocks of productivity and competitiveness. A region's resource endowment alone cannot boost wealth unless its labour force is educated and skilled enough to extract the resources effectively, and the labour market is flexible enough to attract labour and match employers and employees efficiently. We have seen from the benchmarking analysis that Newfoundland and Labrador has a mixed performance on education and skills and is not a top performer on labour market indicators.

The good news is that Newfoundland and Labrador's secondary students have adequate skills and complete community college programs at rates similar to competitor averages. The province even has an above-average number of graduates in science, math, computer science, and engineering fields.

But labour market indicators in Newfoundland and Labrador underperformed peer competitors. While there has been decent employment growth (and with it, labour shortages²⁹), the province paradoxically still has low labour force participation and high unemployment. Moreover, the population is aging rapidly and immigration is low and not meeting labour market needs.

29 Ballingall, "Economic Boom Brings a Labour Shortage to Newfoundland."

We learned from our benchmarking results that Newfoundland and Labrador has the oldest population of all competitors. The proportion of the population aged 65 and older is expected to increase from its current 17 per cent to 27 per cent by 2025 and then to continue increasing to reach 30 per cent by 2035.³⁰ This phenomenon will squeeze the working-age population economically, socially, and fiscally. Moreover, current skills shortages in the province will worsen as a large portion of the labour force retires. The province must have a multi-pronged approach to supporting the labour market during this transition period. Policies should be implemented that:

- boost immigration and corresponding credential recognition;
- increase education levels and match skills training with labour force needs;
- retain older workers in the workforce longer and engage under-represented groups in the tightening labour force.

Boost Immigration and Corresponding Recognition of Credentials

While increasing the skills and qualifications of the resident labour force is effective, it can take many years to see tangible results. A more timely option to get the needed workers is through immigration. The province can attract people from other provinces and other countries to fill immediate labour skills gaps but also to help mitigate the long-term effects of a rapidly aging population.

Despite labour pressures and accelerating wage growth in Newfoundland and Labrador, its net migration has remained relatively low. The province earned a “D” on the net migration indicator in the benchmarking analysis, gaining only 2 migrants for every 1,000 residents in contrast to Alberta’s 20 migrants per 1,000 residents on average over 2011–13.

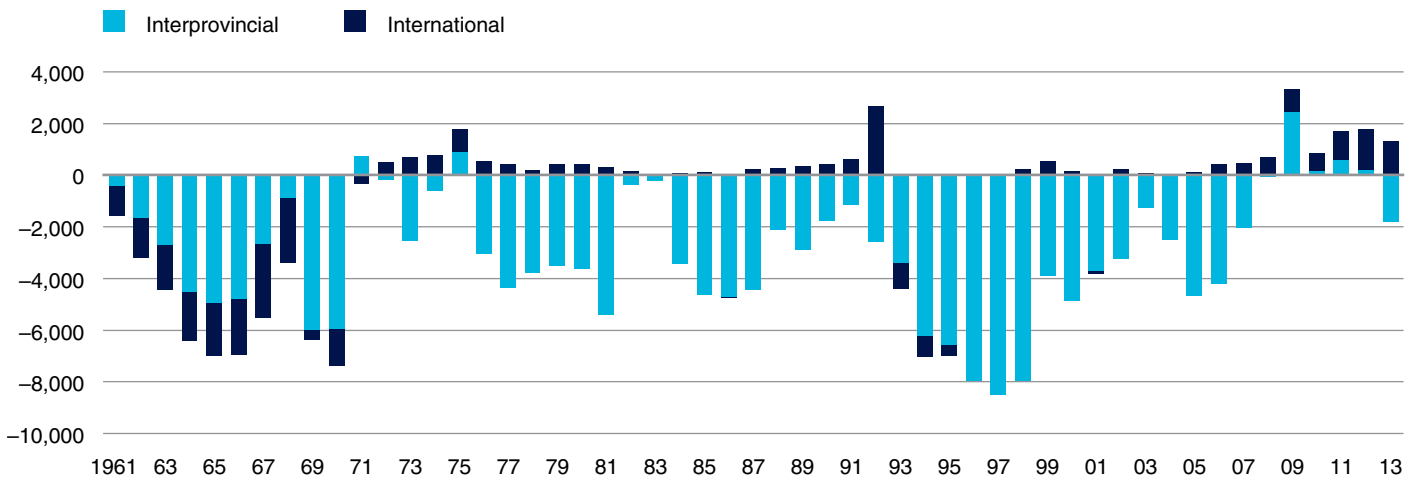
30 Cooke, “Newfoundland and Labrador.”

However, even this low performance is a big improvement for a province that has spent much of its history losing more people than it gains through immigration. (See Chart 51.) The province sustained five years of positive net migration (more people moved to the province than left the province) for the first time in recorded history over 2008–12. Still, Newfoundlanders and Labradoreans—along with most other Canadians—continue to be lured westward to Alberta. Half of all out-migrants from Newfoundland and Labrador in 2012 went to Alberta, and one-quarter to Ontario.³¹

Chart 51

Newfoundland and Labrador's Net International and Interprovincial Migration

(net migrants)



Sources: Statistics Canada; The Conference Board of Canada.

Better employment prospects have lured some residents to Newfoundland and Labrador in recent years, but migration needs to be stronger to meet the employment and skills needs of the province. Recognizing training and certification across provinces is strongly recommended. The provinces have made some progress on that front,

31 Bendiner, *Interprovincial Migration Shifts in Canada*.

Historically, international migration has contributed very little to population growth in Newfoundland and Labrador.

including mutual recognition of qualifications for several trades under the Red Seal program, which sets common standards to assess the skills of tradespeople across Canada. The 2009 strengthening of the Agreement on Internal Trade (AIT) to recognize occupational credentials was also another sign of progress toward greater recognition. However, the OECD has highlighted the need for further work to be done in the implementation of the AIT, stating that the dispute resolution mechanism needs to be more accessible and timely.³² While agreements to recognize apprenticeship training in Alberta and Newfoundland are an important first step, it would be preferable to streamline the process across the country.

Historically, international migration has contributed very little to population growth in Newfoundland and Labrador. However, the province has been more successful in attracting international migrants in recent years. Since 2008, the province has gained between 500 and 1,500 net new international residents per year. This compares with an average of 200 during the earlier years of the resource boom, during 1997 to 2007. A 2009 survey of newcomers to Newfoundland and Labrador listed a high quality of life as the main reason why they settle in the province, along with being close to family and friends. However, there were several reasons why people decided not to stay, including lack of job opportunities, difficult climate, discrimination, and the lack of a multicultural environment.³³

The Conference Board of Canada's latest *City Magnets* study identified St. John's as one of the top-ranking six cities in Canada in terms of characteristics that attract immigrants.³⁴ The city was a top performer in health care with a high ratio of doctors and specialists per person, and was also a high performer in the environment section. However, the city ranked low on the "society" category due to its lack of foreign-born population, diversity, and multiculturalism. While St. John's has

32 OECD, *Economic Surveys: Canada*.

33 Gien and Law, *Attracting and Retaining Immigrants*.

34 The Conference Board of Canada, *City Magnets III*.

some of the best draws for immigrants, the province has not attracted many immigrants. This implies the province could do better in selling the attributes of the city that were rated highly in the *City Magnets* study.

Attracting migrants with diverse backgrounds can build a rich society, and migrants with specific skills and qualifications matter most for business competitiveness. The federal government's immigration policies have been targeting educated, wealthy immigrants, with about 60 per cent of immigrants selected based on economic criteria.³⁵ However, these immigrants often struggle to have their credentials recognized in Canadian society and end up working in jobs that require lower skill levels than what they possess.

Regardless of skill levels, migration policies to date have not fully taken into consideration the economic needs of Canada. That is, while they have attracted wealthy, educated immigrants, they have not effectively matched immigration specifically with labour market needs. Canada's new "Express Entry" immigration system, implemented in 2015, acts as a type of job bank of workers possessing the qualifications identified by government and businesses needed for positions facing the highest labour pressures in Canada. If a company cannot find a qualifying resident worker for a given position, they can hire directly from this job bank. Unlike the Temporary Foreign Worker Program, the hiring of a foreign worker through the Express Entry system will put that worker on the track to full Canadian citizenship. In theory, this system may better meet Newfoundland and Labrador's skilled labour needs. Engagement by the provincial government and local business organizations will be crucial to the success of the program.

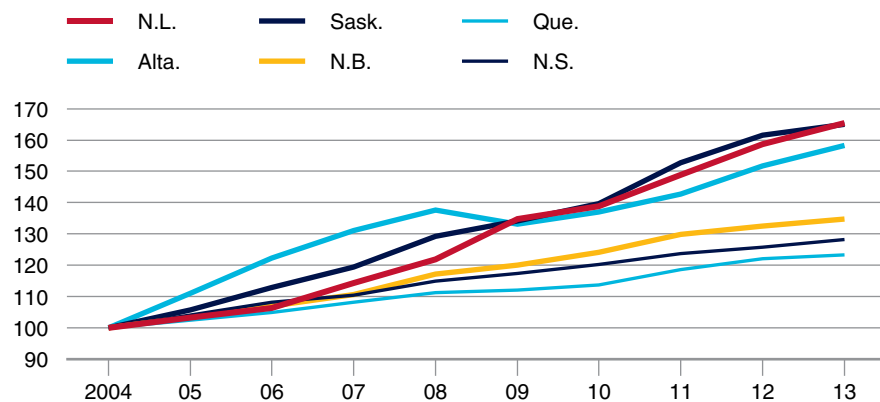
Increase Education Levels and Match Skills and Education With Labour Market Needs

There has been much anecdotal evidence confirming the presence of a skills shortage in Newfoundland and Labrador. Wages have been climbing at rates comparable with labour-crunched Alberta and

35 OECD, *Economic Surveys: Canada*.

Saskatchewan over the past 10 years. (See Chart 52.) Skilled trades are in high demand and companies are working hard and spending significant sums of money to lure the labour they require.³⁶

Chart 52
Wages and Salaries
(Index; 2004 = 100)



Sources: Statistics Canada; The Conference Board of Canada.

High levels of unemployment in the face of labour shortages can in part be explained by the historical economic structure of the province. The prominence of fishing and seafood processing industries has resulted in a high proportion of seasonal workers. However, incremental efforts should be made to engage the seasonal workforce in other areas of the economy.

Two of Newfoundland and Labrador's high-needs sectors—mining and construction—require skilled tradespeople to meet labour demands. Unfortunately, the results of the benchmarking analysis revealed that the apprenticeship completion in the province has been mediocre at best. There have been some policy reforms in recent years but more

36 Ballingall, "Economic Boom Brings a Labour Shortage to Newfoundland."

In 2007, the Alberta and Newfoundland and Labrador governments agreed that apprenticeship hours logged in one province would be recognized in another.

improvements can be made. Specifically, barriers exist when apprentices move between provinces, and financial barriers are present during the in-class portions of apprenticeship training.

In 2007, the Alberta and Newfoundland and Labrador governments acknowledged the importance of transferability between provinces and agreed that apprenticeship hours logged in one province would be recognized in another. This agreement gives more flexibility for apprentices training in Alberta who may want to relocate to Newfoundland and Labrador. The next step is to have apprenticeship training recognized nationwide as is the case in many other developed nations.

The federal government has recognized the importance of providing financial support to encourage apprenticeship training and completion. They administer the Apprenticeship Job Creation Tax Credit for businesses to claim 10 per cent of that apprentice's salary (up to \$2,000) for every apprentice hired. Moreover, the apprentices themselves are eligible for up to \$4,000, which includes grants during their training and a cash grant of \$2,000 upon completion.³⁷ Loans are also available for apprentices during the unpaid in-class portions of their programs.

Increasing the pace at which apprentices are trained has also been on the policy radar in Newfoundland and Labrador. In 2012, it was announced that each journey person in the province will be able to train two apprentices at a time—up from one—in several construction trades.³⁸ But more could be done to engage potential apprentices to get them interested in a career in the skilled trades. Alberta has programs aimed at connecting high school students with potential apprenticeship opportunities through scholarships and has also instituted an Aboriginal apprenticeship program to engage this under-represented group.

37 Service Canada, *Apprenticeship Grants*.

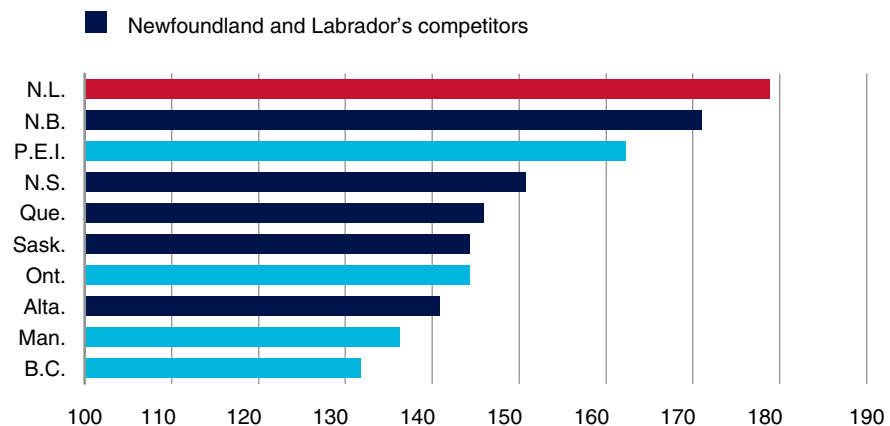
38 CBC News, "New N.L. Apprentice Rules Target Worker Shortage."

Although the lack of skilled tradespeople has been prominently reported in the media, higher education is also important for Newfoundland and Labrador's competitiveness. There has been growing evidence that a university-educated workforce is associated with increased innovation and ideas, as well as the capability of taking on risks and venturing into new markets. The university completion rate in Newfoundland and Labrador is the lowest across competitors. The province, despite increasing university completion rates by 11 percentage points over 30 years, is still graduating the lowest proportion of university students of all the competitors. It is somewhat puzzling that more potential students are not entering university programs, given that the province has the highest university earning premiums in the country and some of the lowest tuition fees. In Newfoundland and Labrador, for every \$100 in wages that a high school graduate earns, a university graduate earns \$179. (See Chart 53.) (College graduates earn \$129 for every \$100 that a high school graduate earns—also the highest in the country.) This indicates a high demand for university graduates in the workforce.

Chart 53

University Graduate Earnings for Every \$100 Earned by High School Graduates, 2013

(\$)



Sources: Statistics Canada; The Conference Board of Canada.

Students need accurate and timely information on current labour market needs to make informed decisions about their career futures. While labour market information in Canada is detailed using international standards, there is generally no requirement in Canada to provide this information in schools, and career guidance is chronically underfunded.³⁹ Getting this information to students is critical in a province that is experiencing such rapid transformation. The structural shift of the economy means that parents and other citizens did not require these same skill sets when they were entering the labour force. They therefore may not have a complete understanding of the opportunities available in the economy and of the skills and education required to succeed in the province's transformed economy.

Employers can upgrade the existing skills of the workforce by investing in learning and development for their workers. Conference Board research has shown that spending on training and development peaked in 1993 at \$1,207 on average per employee.⁴⁰ Spending has been gradually declining since then; businesses spent only \$705 per employee on training and development in 2012–13. Meanwhile, businesses in the U.S. spend almost \$400 more per employee and they do not suffer from the same aging population pressures that Canada needs to address.

Retain and Engage Older Workers and Under-Represented Groups

While immigration may be the most viable long-term solution for Newfoundland and Labrador's aging demographic and labour shortage, there are in the meantime some potential benefits from engaging older and under-represented groups in the labour force. Having older workers remain in the labour force benefits not only the employers who need workers, but also the province's fiscal situation by prolonging workers' payment of income tax and by shortening the time frame over which retirement benefits will have to be paid.

39 Sharpe and Qiao, *The Role of Labour Market Information*.

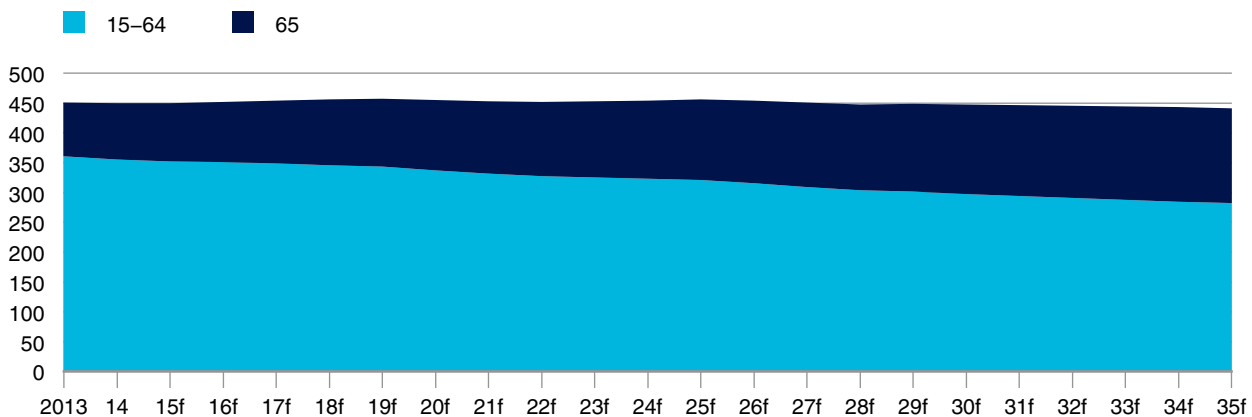
40 Hall, *Learning and Development Outlook 2014*.

We have seen in the benchmarking exercise that Newfoundland and Labrador currently has the most rapidly aging population of all its competitor regions, with almost one-third of its population forecast to be age 65 or older by 2035.⁴¹ Right now, there are four working-aged people (aged 15–64) for every retired-aged person (aged 65+). This ratio will decline to just 1.8 working-age persons per retired-age person by 2035. (See Chart 54.)

Chart 54

Newfoundland and Labrador's Population Age Groups,*2013–35

(population, 000s)



f = forecast

*forecast includes positive net migration of 385 people on average per year

Sources: Statistics Canada; The Conference Board of Canada.

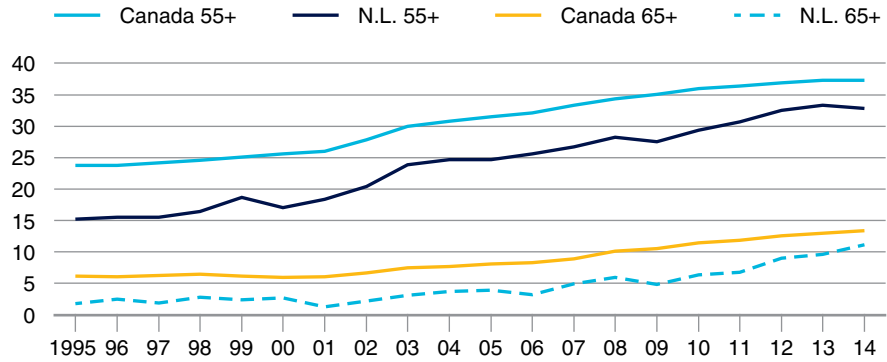
Moreover, the labour force participation rate of older workers is currently the lowest in Canada. This means that the population aged 55 and older participates less in the labour force than in any other province in Canada. One-third of Newfoundland and Labrador's population aged 55 and older is in the workforce compared with 37 per cent nationwide. A similar difference is reflected in the participation rates of workers aged 65 and older. (See Chart 55.)

41 Cooke, "Newfoundland and Labrador."

Chart 55

Newfoundland and Labrador's Labour Force Participation of Older Age Cohorts

(percentage of population engaged in the labour force, by age group)



Sources: Statistics Canada; The Conference Board of Canada.

Different types of incentives can be used to engage the older workforce. Financial incentives such as changing the retirement age at which retirement benefits can be collected is one such example. The federal government recently increased the retirement age to 67 to collect old age security, but these changes will not come into effect until 2029. The OECD and other research organizations have recommended linking retirement ages to life expectancy so that, as people live longer, they remain in the workforce longer and are retired for a similar number of years.⁴² However, Newfoundland and Labrador is already experiencing some of the negative effects of population aging so a more timely solution may be in order.

Workplaces can encourage part-time or casual working arrangements as a replacement for traditional notions of retirement. A policy that allows for phased-in retirement benefits for defined-benefit public pension plans would set a standard. This would encourage older workers to stay in the workforce a little longer and has already been implemented for

⁴² de la Maisonnette and others, "The Economic Consequences of Ageing."

Engaging underrepresented workers like women could boost competitiveness in Newfoundland and Labrador.

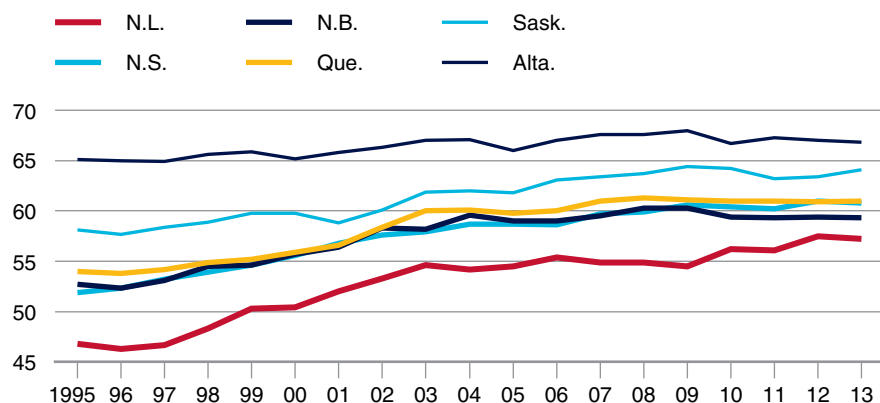
federal public servants and in most provincial governments, including all of Newfoundland and Labrador's comparator jurisdictions except Nova Scotia.⁴³

We have seen that participation in the labour force is very low in Newfoundland and Labrador compared with its competitors. The benchmarking analysis gave the province a "D" grade and ranked it second to last after the United Kingdom. Engaging underrepresented workers like women could boost human capital and competitiveness in Newfoundland and Labrador. Similar to the total workforce participation, female workforce participation is the lowest in the country. (See Chart 56.) Government apprenticeship incentive programs aimed at attracting more women into skilled trades could be expanded and enhanced. Quebec's universal early childhood care and education program, which subsidizes child care costs, has been credited with increased participation by women in the labour force and increased incomes of families as a result.⁴⁴ Other ways to enhance child care include improving access, especially in rural areas.

Chart 56

Female Labour Force Participation Rate

(percentage of female population engaged in the labour force)



Sources: Statistics Canada; The Conference Board of Canada.

43 Mercer, *Benefits Legislation in Canada 2013*.

44 Gignac, "Quebec's Child Care Program."

The benchmarking measure indicates that labour relations in Newfoundland and Labrador could be improved. A higher-than-average number of days are lost to strikes and lockouts in the province. Again, the province's higher unionization rates do not tell the full story, since there are other jurisdictions with high unionization rates but healthier labour relations. Many European models—including Norway's—engage all players (government, industry, and organized labour) continuously, not just during the bargaining time. Alberta, Saskatchewan, and British Columbia operate under different labour relations environments that create more competition in the supply of labour than in Newfoundland and Labrador. In Newfoundland and Labrador, employers generally work with one umbrella union that represents all trades, reducing flexibility in the supply of labour that may have implications for both productivity and wages.

Policies for a More Competitive and Sustainable Fiscal Environment

After decades of deficits, reliance on equalization transfers from the rest of Canada, and climbing debt levels, Newfoundland and Labrador's fiscal situation recently enjoyed a period of relative prosperity. The development of the oil extraction industry brought billions of dollars in revenues to the government, which in turn, lowered the net debt and increased spending. However, debt levels began to climb again in 2012–13 and the current environment of lower-priced oil is having a negative impact on provincial coffers.

So where do we go from here? Oil is a finite resource and the revenues associated with it are just that—finite. Oil extraction likely has already peaked, but government expenditures keep growing. The province's fiscal health is already showing some weakness as the province slid into a deficit position in 2012–13 and net debt began to climb. Additionally, the fiscal balance will be gravely affected by the current environment of lower oil prices. This situation is expected to become more serious in the near future as the aging population will be increasingly dependent on the government for health care services and pension incomes.

The provincial government, therefore, needs to embark on a plan to prioritize spending, lower debt, and plan for future fiscal sustainability. Equally important is the need for a collection of tax policies that together lay the foundation of competitive prosperity and economic diversification.

Keep Debt in Check

The benchmarking analysis showed the net debt position of Newfoundland and Labrador (at 24 per cent of GDP) is in the middle of the pack compared with provincial counterparts. However, many of the comparator provinces, such as Quebec and Ontario, are facing dire fiscal pressures so this comparison is not necessarily encouraging. Moreover, recent trends can affect competitiveness just as much as debt levels—and net debt has recently begun to rise in the province.

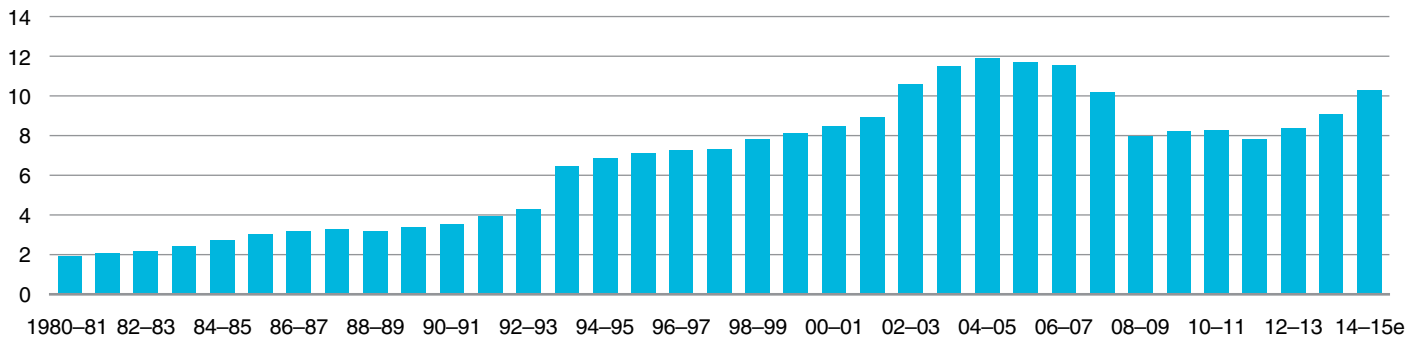
Ten years ago, the province's net debt stood at \$12 billion, but the government managed to bring the debt down below \$8 billion using oil revenues and \$2 billion from the Atlantic Accord. (See Chart 57.) (The Atlantic Accord was an agreement regarding temporary annual transfers from the federal government over 2004–05 to 2011–12 to offset reductions in provincial equalization payments due to increased offshore resource revenues.) However, debt resumed its upward trajectory in 2012–13 and the situation is expected to worsen over the short term due to the low price of oil and the provincial government's dependence on resource revenues plus unabated increases in program spending. In fact, net debt is expected to reach \$10.3 billion by the end of 2014–15 and the government is forecasting deficits for the next five years.⁴⁵

45 The Canadian Press, "Deficit in Newfoundland and Labrador Soars."

Chart 57

Newfoundland and Labrador's Net Public Debt

(\$ billions)



e = estimate

Sources: Newfoundland and Labrador Department of Finance; Canada Department of Finance; The Conference Board of Canada.

Unfunded public sector pension liabilities currently account for the bulk of net debt, but recent pension reforms are expected to help alleviate the problem. In recent years, public sector employment has risen tremendously and, combined with the impacts of an aging population, will place additional demands on public sector pensions. Whether the problem of unfunded pension liabilities is resolved remains to be seen, but at least the burden will be shared between the government and public servant pension plan members.⁴⁶

Despite fairly strong economic growth, Newfoundland and Labrador has been running deficits lately as program spending has increased sharply. The province now has the highest per capita expenditures on programs in the country, at \$13,200 per person in 2014–15. These costs have ballooned since the recession, and the province has managed to balance the books by using royalty revenues. (See Chart 58.) But oil production has peaked⁴⁷ (and lost value in the short term) and large federal transfers including the Atlantic Accord and equalization have come to an end,

46 CBC News, "Pension Reform Deal Targets 'Sustainable' Future for Plan."

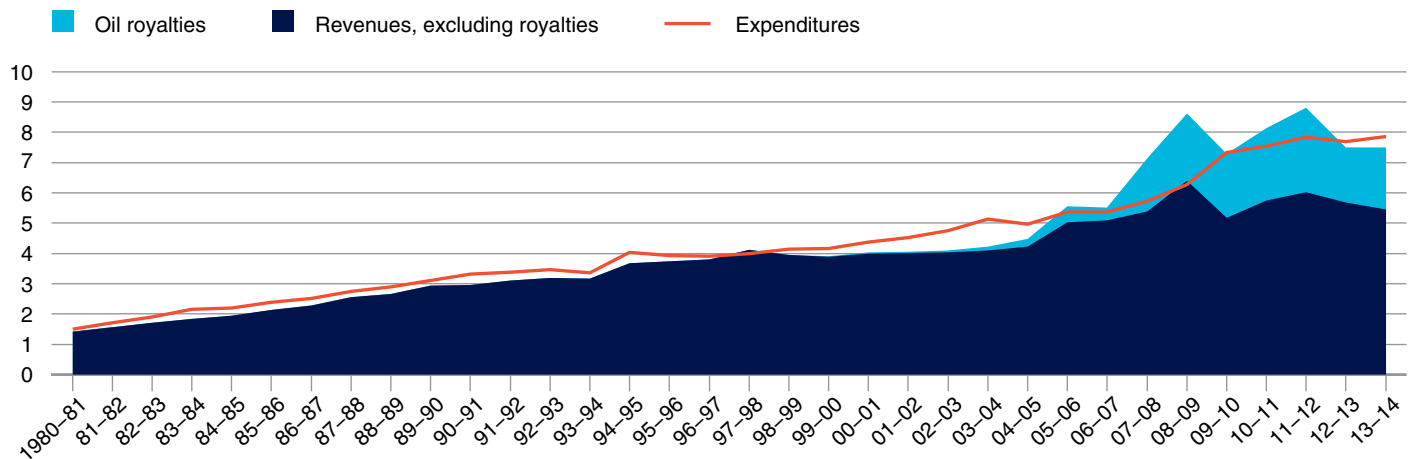
47 The development of new basins will only partially offset the declines expected at existing fields; the sector will eventually face an inevitable decline.

making it harder for the province to balance its books. Expenditures will face additional pressures due to the aging population, pressures that include increased pension and health care needs. Therefore, the current situation of rapidly climbing expenditures is not sustainable in the long term, especially at a time when government revenues will be growing at a more restrained pace.

Chart 58

Newfoundland and Labrador Depends on Oil Royalties to Balance Its Books

(\$ billions)



Sources: Newfoundland and Labrador Department of Finance; Canada Department of Finance; The Conference Board of Canada.

Curb Spending, Especially in Public Administration

What is driving all of this increase in expenditures? The government has raised its spending significantly on developing infrastructure. But, despite this increase, we saw from the benchmarking exercise that infrastructure spending is still less than the national average. These types of investments can have productivity enhancements if they are targeted effectively. For these reasons, this analysis does not identify infrastructure as priority area for reducing spending.

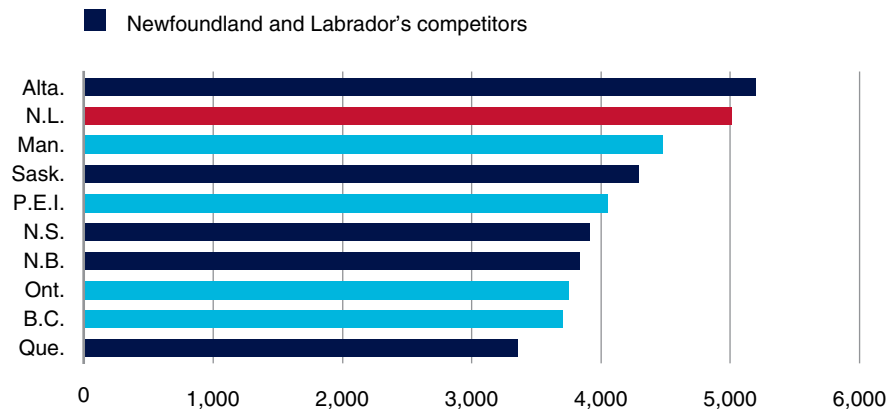
Newfoundland and Labrador's education spending was the fastest growing in the country over the five-year period 2006–07 to 2010–11.

Health care spending is another area that has grown tremendously in recent years. However, Newfoundland and Labrador also has the oldest population in Canada and aging demographics require more resources. We compare health care spending across the provinces, adjusted for age; that is, we adjust each province's health care spending as though they had had the same age/sex distribution profile as the Canadian average. The result is that Newfoundland and Labrador's age-adjusted health care spending is higher than average. (See Chart 59.)

Chart 59

Newfoundland and Labrador's Health Care Spending Is High, 2012

(health expenditures standardized by age and sex; \$ per capita)



Sources: Canadian Institute for Health Information; The Conference Board of Canada.

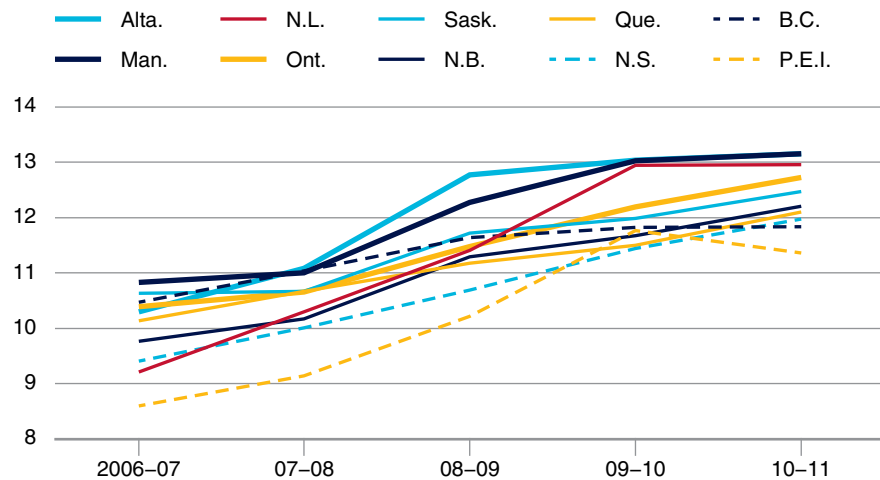
Education spending is more difficult to compare due to the different models and mix of public and private schools from province to province. A quick proxy to compare education spending across provinces is to look at education spending per student (full-time equivalent) in public elementary and secondary schools. Newfoundland and Labrador's spending was the fastest growing in the country over the five-year period 2006–07 to 2010–11. Newfoundland and Labrador went from having the second-lowest spending in the country in 2006–07 to the third-highest in

2010–11. (See Chart 60.) Since 2010–11, Newfoundland and Labrador’s elementary and secondary education spending has continued its growth and was 20 per cent higher in 2013–14.

Chart 60

Newfoundland and Labrador Has the Fastest Growing Education Spending

(total expenditures per student in public elementary and secondary schools, \$)



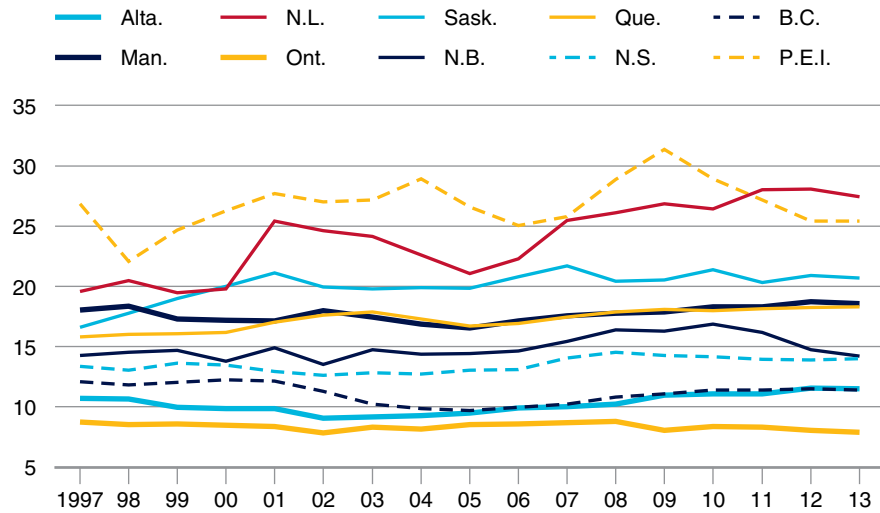
Sources: Statistics Canada; The Conference Board of Canada.

The province’s public administration sector (excluding health and education) is another area that is expanding at a rapid pace in Newfoundland and Labrador. While the province has had one of the highest ratios of public administration employees to residents for decades, this already high rate experienced the fastest growth in the country. In 2013, the province’s public sector employed over 27.4 workers for every 1,000 residents, up from 19.6 in 1997, a figure even then the second highest in the country after Prince Edward Island. Meanwhile, the rates were mostly stable in the other provinces, with several provinces even reducing public sector employment rates. (See Chart 61.)

Chart 61

Provincial Public Administration Employment per 1,000 Residents

(employment in provincial government services, excluding health and education)



Note: Federal public administration is excluded from this total.

Sources: Statistics Canada; The Conference Board of Canada.

To summarize, Newfoundland and Labrador needs to fund a larger proportion of its program spending from revenue sources other than oil. A reduction in spending could leave more royalty revenues for other uses such as debt reduction or savings, whereas day-to-day program expenditures such as health and education would have more stable sources of funding. To accomplish this, program spending should be reduced. Provincial public administration is the most pertinent area of focus, given that employment has risen tremendously in recent years and is the highest in the country as a share of population. Health care spending also needs to be kept in check. Education spending should be examined to find out what is driving the recent increases. Noting that the province has relatively low levels of infrastructure investment, infrastructure does not need to be the focus for a reduction in spending.

Create a Sovereign Wealth Fund

Relying on oil revenues to pay everyday expenses is troubling for two reasons:

1. Oil price and market volatility can cause unforeseen budgetary swings and unpredictability in revenues.
2. Oil is a non-renewable resource, so the province will receive the revenue for only a limited time. Once the oil has been extracted, future generations will not see any gains from that resource and will have to find other ways to prosper.

Sovereign wealth funds can mitigate both of these troubling realities. Several of Newfoundland and Labrador's competitor regions, by setting up these funds, have attempted to lessen volatility risks and ensure that future generations benefit from current extraction. (See "Sovereign Wealth Funds.") These funds set aside a portion or the entirety of natural resource extraction revenues in a fund that is then invested in order to sustain itself. The region spends only the interest made on the fund, so each generation thereafter benefits from the resource extraction and the region is less exposed to fluctuations in resource prices. This concept is often referred to as "Hartwick's rule," devised in 1997 by John M. Hartwick.⁴⁸ Hartwick's rule states that all non-renewable resource revenues should be invested so that future generations can benefit from the same quality of life made possible by the resource long after the resource is depleted.

Sovereign Wealth Funds in Newfoundland and Labrador's Competitor Regions

Norway's sovereign wealth fund (called "Government Pension Fund Global") is one of the world's most successful funds. The entirety of the government's income from resources is placed in the Fund each year and invested. Investment interest revenues from the fund are phased into the economy at approximately

48 Hartwick, "Intergenerational Equity and the Investing of Rents."

the future expected rate of return on the investments. This minimizes price volatility and secures wealth for future generations. The fund currently holds over \$800 billion, or \$176,000 for every citizen.⁴⁹ Each year, the fund contributes \$15 billion to the government's books through interest income.

Texas has sovereign wealth funds, valued at \$47 billion, that are funded by oil and gas royalties; this money is used to fund primary, secondary, and university education in the state. More recently, North Dakota set up a Legacy Fund to which one-third of all resource revenues is automatically contributed each year. In just three years, the fund's value has climbed to \$2 billion and no funds (including interest) can be withdrawn until 2017.

Given the abundance of natural resources, it is somewhat of an anomaly that sovereign wealth funds are not more common in Canada. Alberta is currently the only province with such a fund, although British Columbia and Saskatchewan hope to start up their own funds in the near future. Alberta's Heritage Fund was initially created in the 1970s, with one-third of all oil revenues transferred to it each year. In the mid-1980s, the government stopped revenue from the fund being reinvested and also put an end to the automatic transfers of resource royalties. As of June 2014 the fund held \$17.5 billion⁵⁰—only slightly more than the \$12-billion valuation in 1984, 30 years previous.

49 Norway, Royal Ministry of Finance, *The National Budget 2014*.

50 Alberta Treasury Board and Finance, *Alberta Heritage Savings Trust Fund*.

CHAPTER 5

Conclusion

Chapter Summary

- Newfoundland and Labrador has experienced unprecedented economic growth that has brought many economic, employment, and fiscal benefits.
- Despite these gains, there are several current and future areas that will present major challenges to individuals, companies, and governments.
- Oil brought an economic boom that will eventually level off. Now is the time to take on the challenges so that the province remains competitive and attractive to businesses long after the oil dries up.

Newfoundland and Labrador has experienced unprecedented economic, employment, and wealth growth in the last 15 years, thanks to the development of the oil extraction industry and increased metal mining activity. These developments have resulted in strong employment gains, labour productivity improvements, and significant increases in the wealth of its citizens, in companies' profits, and in government revenues.

Several challenges on the horizon will affect competitiveness:

- Oil is a finite resource and oil extraction may have already peaked.¹ Its decline will slow income gains and reduce government revenues.
- The province has the oldest population in Canada and is not attracting enough immigrants to replace retiring workers.
- Government spending is too reliant on revenues from the oil sector.

These current and future challenges present some opportunities for citizens, companies, and the government and there are several policies that would help meet these challenges. This report includes the following recommendations:

Innovation:

- strengthen links between higher-education institutions and the private sector;
- increase competition by lowering trade barriers and through government procurement.

¹ Even if additional oil extraction projects go ahead, they will only prolong the eventual decline of the industry.

Investment:

- create an equitable and efficient tax system for capital;
- increase investment in public infrastructure.

Human capital:

- boost immigration and corresponding recognition of credentials;
- increase education levels and match skills training with labour force needs;
- retain and engage older workers and under-represented groups.

Fiscal policies:

- reduce government programs' reliance on funding coming from oil revenues;
- keep net debt in check by reducing spending, especially in public administration;
- create a sovereign wealth fund so future programming can rely more on interest and less on oil prices.

It is not only the governments that have to take action. Citizens will need to upgrade their skills and education to reap the full benefits of this prosperous time. Companies will need to play a role by investing both in the training of new employees and in the capital and machinery to increase productivity and competitiveness. It is the government's responsibility to prioritize spending, reduce debt, and create a competitive and efficient taxation environment to attract new business and ensure all future generations benefit from the oil wealth. Together, with the support of the government, citizens and companies can meet the challenges ahead and prosper for generations to come. Action should be taken soon so that businesses and citizens will be left in a competitive and prosperous environment when the resources extraction slows for good.

APPENDIX A

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APPENDIX B

Jurisdiction Selection Methodology

The first step in the jurisdiction selection process was to identify direct competitors. Petroleum and iron ore comprise more than 80 per cent of the value of all Newfoundland and Labrador's merchandise exports. (The exports of other products such as other metals, pulp and paper, and seafood were taken into account once the list was first determined, based on the two top export products.) The export destinations were identified and a list of other jurisdictions that export the same mix of goods to the same destinations was compiled.

For example, Pennsylvania is one of the top destinations for Newfoundland and Labrador's oil. Therefore, a list of the top 10 Pennsylvanian import sources of oil was created. Canada, Norway, and eight African and Middle Eastern countries comprised the list. So Norway became a contender for the final list at this stage in the selection process.

A similar approach was used to identify competitor U.S. states. Countries were identified to which Newfoundland and Labrador exports crude oil, petroleum refined products, and iron ore. Next, the U.S. states from which these countries also import those same products were identified. This indicated the U.S. states that are direct competitors to Newfoundland and Labrador. To identify competitor provinces, we identified other provinces that export a similar mix of goods to the same states and countries.

From this exercise, a list of competitor countries, states, and provinces was drawn up and then the list was pared down to include only the jurisdictions appearing most frequently in the competitor lists. For example, Norway exports oil to seven of the top eight U.S. states to which Newfoundland and Labrador also exports oil. In comparison, the Netherlands exports oil to only two of Newfoundland and Labrador's top eight U.S. state destinations. Therefore, the Netherlands was cut from the list at this stage.

Next, this short list of competing jurisdictions was whittled down again, based on the similarity of the competitor's challenges and business operating environment to the challenges faced by Newfoundland and Labrador. This was determined by a number of factors, including the size of the population and economy, the proportion of the population considered rural, the political operating environment, and the industrial structure of the jurisdiction. This step ruled out many developing nations (for example, Brazil and Nigeria) and many oil-producing Middle Eastern countries (for example, Saudi Arabia and Iraq). This left a list of 14 contending jurisdictions (in addition to Newfoundland and Labrador) for the benchmarking analysis.

Finally, the authors and the funding client (the Newfoundland and Labrador Employers' Council) cut the list from 14 to 9 jurisdictions, based on knowledge of the jurisdictions and qualitative weighting of some determining factors, including population aging and urbanization.

One of the metrics used to establish a list of competitor jurisdictions is the aging population of Newfoundland and Labrador. An older population will require more government services and programs. The population over the age of 65 in Newfoundland and Labrador has increased rapidly over the past 10 years and currently accounts for 18 per cent of the provincial population. The aging of Canada's population accelerated over the same period, but at a slower pace. Currently, 16 per cent of Canada's population is aged 65 or older. Only Nova Scotia and New Brunswick have experienced more rapid increases in population aging over the same time period. The Conference Board forecasts that the proportion of Newfoundland and Labrador's elderly population will account for 30 per

cent of the province's total by 2030. This will be the highest proportion in the country and will present a notable challenge for competitiveness. In comparison, Canada's elderly population as a whole will account for 23 per cent of the total by 2030.

A second metric, the level of urbanization—or lack thereof—of the population, is also a notable element of Newfoundland and Labrador's operating environment. Only 59 per cent of the province's population lives in urban areas, which is a much lower percentage than the national average of 80 per cent. It was difficult to find jurisdictions with as large a rural population as Newfoundland and Labrador, but this metric helped to identify North Dakota as a strong contender since it has a similar level of urbanization.



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