



Comparing the Economies of Atlantic Canada and New England

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Executive Summary

Comparisons between regions can be useful in determining which areas are doing well economically, which are not, and what the differences are between them. Recent research has found that Atlantic Canada lags the rest of the country on measures such as GDP per capita. This study builds on that analysis by comparing Atlantic Canada to a close geographic neighbour, the New England states.

This study compares the two regions first by presenting measures comparing their economic performance, including measures of income and the labour market. Building off this analysis, we examine similarities between the regions to establish whether there are any structural reasons for the differences we observe in economic performance.

On one measure of income, GDP per person, the top three jurisdictions are all from New England—Massachusetts, Connecticut, and New Hampshire—while the bottom three jurisdictions are the three Maritime provinces, with Prince Edward Island last and Nova Scotia and New Brunswick ranking second and third last respectively. The lowest ranked US state in the region, Maine, had GDP per person (in 2019) exceeding that of any of the three Maritime provinces by a significant extent.

On median earnings, too, there is a clear difference between the New England states and the Atlantic provinces. All six New England states have higher income levels than all four Atlantic provinces. At \$48,551 per person, Massachusetts had the highest median earnings in 2019. The Atlantic Canadian jurisdiction with the highest median earnings is Newfoundland & Labrador, at \$30,888, while the lowest jurisdiction in the group is Prince Edward Island with a median income of \$26,567.

Looking at the labour market, the data again show a clear difference between the Atlantic provinces and New England states. Of the 10 jurisdictions measured, the four Atlantic provinces maintain the highest average unemployment rates, while the six New England states experience the lowest average unemployment rates. Newfoundland & Labrador had the highest average five-year unemployment rate at 11.6 percent while New Hampshire had the lowest average five-year unemployment rate at 2.9 percent.

Despite these differences in income and employment, the structure of the economy in each region is similar. With the exception of Newfoundland & Labrador, four main industries (manufacturing, real estate, health care and social assistance, and public administration) represent between 41.1 and 49.3 percent of the economy in the other Atlantic provinces and the New England states.

There are differences in some industries, however. Education services and construction account for higher shares of GDP in all four Atlantic provinces than in any of the six New England states. Meanwhile, professional, scientific, and technical services, as well as wholesale trade account for higher shares of GDP in all six New England states than in any of the four Atlantic provinces.

The median age is similar between the Maritime provinces and Maine, New Hampshire, and Vermont. Also similar is the urban share of the population between the four Atlantic provinces and the same three New England States. These similarities exist despite the disparities revealed in income and employment. An examination of the policy factors that could be contributing to these differences offers a promising avenue for future research.

Introduction

Comparisons between regions can be useful in determining which areas are doing well economically, which are not, and what the differences are between them. Some recent research has compared Atlantic Canada with the rest of Canada and has found the region to be lagging the rest of the country on measures such as GDP per capita (McMahon, 2022; Eisen et al., 2019).

Comparisons with the rest of the country must necessarily look west, but there is also value in looking south. The six New England states not only share a geographic proximity to Atlantic Canada, but also have a similar¹ history, industrial structure, and aspects of the population. Together with Quebec, the New England states are Atlantic Canada's nearest geographic competitor for jobs, investment, and economic activity. Combined, the economies of Atlantic Canada and New England represented US\$1.58 trillion in 2019, or about 6.8 percent of combined Canada-US GDP (World Bank, 2022).

Since 1973, the six New England governors and five Eastern Canadian premiers (Atlantic Canada plus Quebec) have met annually to address shared interests such as trade, energy, and industry (Council of Atlantic Premiers, 2022). The meeting often references the common interests, historic ties, and economic integration of the two regions. The group has passed resolutions and developed plans for cooperation on topics ranging from regulatory reduction, to economic development, to the COVID-19 response, to emergency preparedness, and more (Council of Atlantic Premiers, 2021).

This study, the first in a series comparing the two regions, will evaluate Atlantic Canada and New England on several key basic economic indicators such as income and labour as well as economic characteristics. The study will proceed as follows. First, we present measures comparing the economic performance of the two regions, including measures of income and the labour market. Building off this analysis, we examine measures of similarity between the regions to establish whether there are any structural reasons for the differences we observe in economic performance.

¹ The authors are grateful for Evin Ryan's assistance in preparing background material for this section.

Economic Performance of the Atlantic Provinces and New England States

This section focuses on comparative income and labour market measures to assist in understanding the differences between how state and provincial economies are performing in each region. Specifically, we start with a broad measure of income, namely, gross domestic product (GDP) per person. In addition, we assess a narrower measure of income, individual income. Finally, we conclude by examining the comparative unemployment rates. Taken together, these three measures provide a broad sense of how the economies of the states and provinces in the region compare economically.

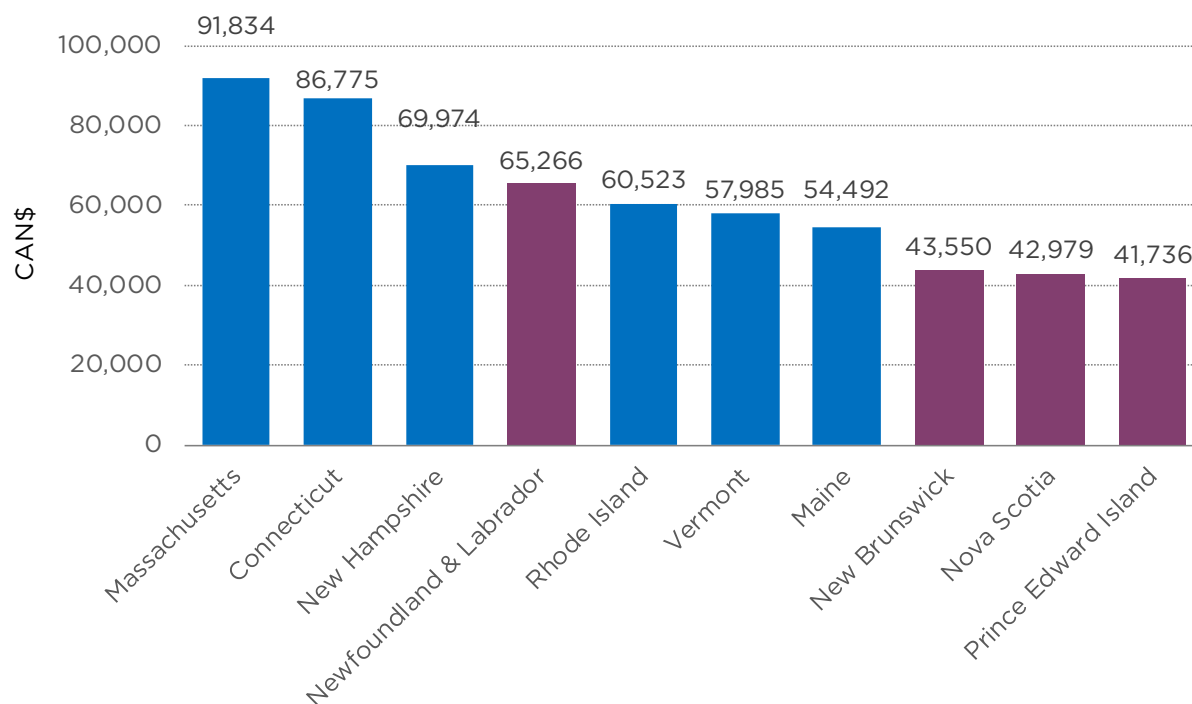
Per person GDP: Measuring income broadly

Per person gross domestic product (GDP) provides a broad-based measure of income. This calculation involves taking the overall economic output of a province or state (as measured by GDP) and dividing it by the population. Figure 1² illustrates the level of per person GDP in each jurisdiction for 2019.³ This data has been adjusted to Canadian dollars to account for differences in the value of currencies.⁴

² Data in figures one and two are presented in chained 2012 dollars.

³ In this figure and throughout the study, we use 2019 as the latest year of representative data as it is not influenced by the pandemic. In each case, unless otherwise noted, we have ensured that 2019 is also representative of the results over time, i.e., the rankings and levels of jurisdictions do not change substantially if instead we were to calculate a five- or ten-year average.

⁴ For this section, the authors have used a currency conversion method known as Purchasing Power Parity (PPP). Specific PPP values can be found in the data sources for various figures. Further, in order to ensure the results are historically representative, the authors have confirmed that the PPP value for 2019 is comparable to that for other recent years.

Figure I: State and Provincial GDP Per Person, 2019

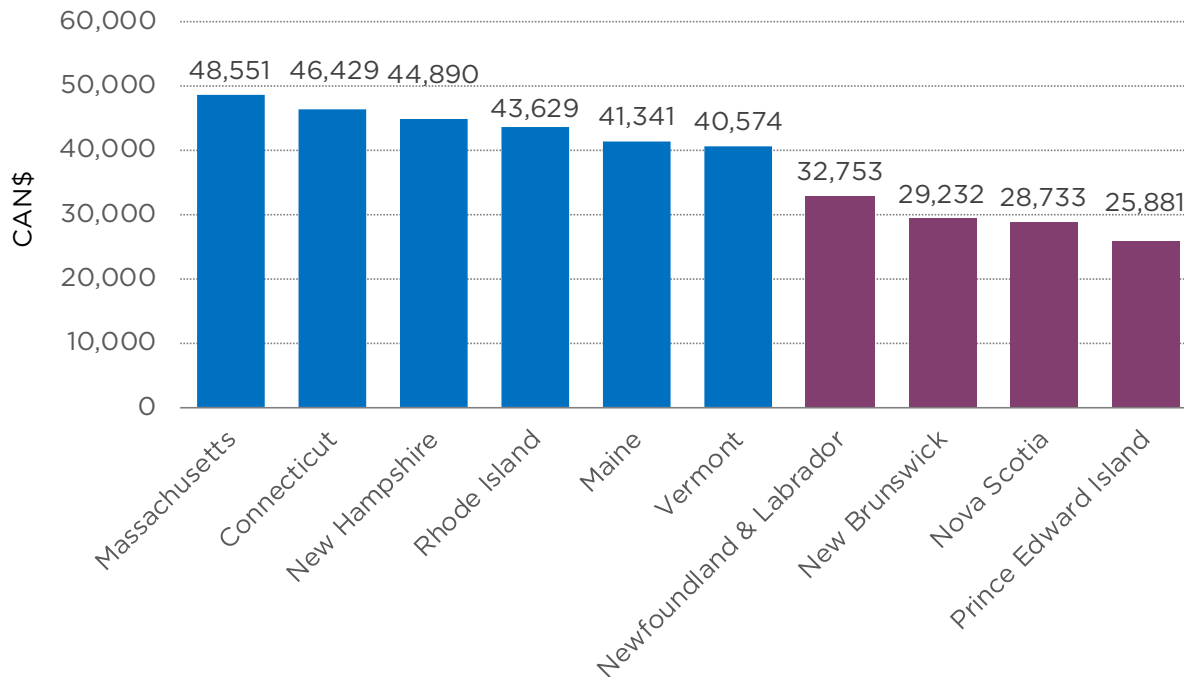
Source: Statistics Canada (2021a), Statistics Canada (2021b), BEA (2022a), BEA (2022b), OECD (2022).

Massachusetts has the highest level of GDP per person, at \$91,834. This is more than double that of the lowest-income jurisdiction, Prince Edward Island, where GDP per person is \$41,736. It is also substantially higher than the highest Atlantic Canadian jurisdiction, Newfoundland & Labrador, at \$65,266.

The top three jurisdictions as measured by GDP per person are all from New England (Connecticut and New Hampshire rank second and third), while the bottom three jurisdictions are the three Maritime provinces (Nova Scotia and New Brunswick rank second and third last respectively). Put differently, consider that in the lowest-ranked US state in the region, Maine, GDP per person in 2019 exceeded that in all three Maritime provinces by a significant extent: New Brunswick by 25.1 percent, Nova Scotia by 26.8 percent, and Prince Edward Island by 30.6 percent.

Figure 1 demonstrates an income gap between the two regions as measured by per person GDP. While GDP per person in Newfoundland & Labrador is at a level comparable to several New England states, the Maritime provinces trail the states. Even the middle-income New England states have a notable income gap with the three Maritime provinces. The

Figure 2: Median Employment Income (Provinces) and Median Earnings (States), 2019



Source: Statistics Canada (2022a), Statistics Canada (2021c), Census Bureau (2022a), Census Bureau (2022b), BEA (2022d), OECD (2022).

income gap between these states (Rhode Island, Vermont, and Maine) and the three Maritime provinces ranges from \$18,788 to \$10,942.

**Median income and employment earnings:
Narrower measure of income**

This section uses a narrower measure of income than per person GDP. Specifically, we present data on median employment income for the Atlantic provinces, and median earnings for the New England states. In both cases, we look at the median level of personal income for individuals. We present a median value as opposed to an average because average incomes can be heavily influenced by a small number of outliers, making median income a more helpful measure in assessing overall economic performance. As with figure 1, this data has been adjusted to ensure comparability across currencies.

Figure 2 presents data on median income and median earnings. There is a clear difference between the New England states and Atlantic provinces. All six New England states have higher levels of income as measured by median employment income (Canada) and median earnings (United States), than all four Atlantic provinces. The jurisdiction with the highest median earnings in 2019 is Massachusetts at \$48,551 per person. The highest earning Atlantic Canadian jurisdiction is again Newfoundland & Labrador, at \$32,753, while the lowest earning jurisdiction overall is Prince Edward Island with a median income of \$25,881.

Also notable is the gap between the group of New England states and the group of Atlantic provinces. Vermont is the lowest ranked state, at \$40,574 in median earnings. The highest earning Atlantic province, Newfoundland & Labrador, has median employment income of \$32,753, for a difference of \$7,821 between the lowest-ranked New England jurisdiction and the highest-ranked Atlantic Canadian jurisdiction.

The top three highest earning jurisdictions and the bottom three lowest earning jurisdictions are the same as in figure 1. One notable change is Newfoundland & Labrador, which ranked fourth in GDP per person, but fell to seventh on the narrower measure of income.

Unemployment rate: Assessing labour market differences

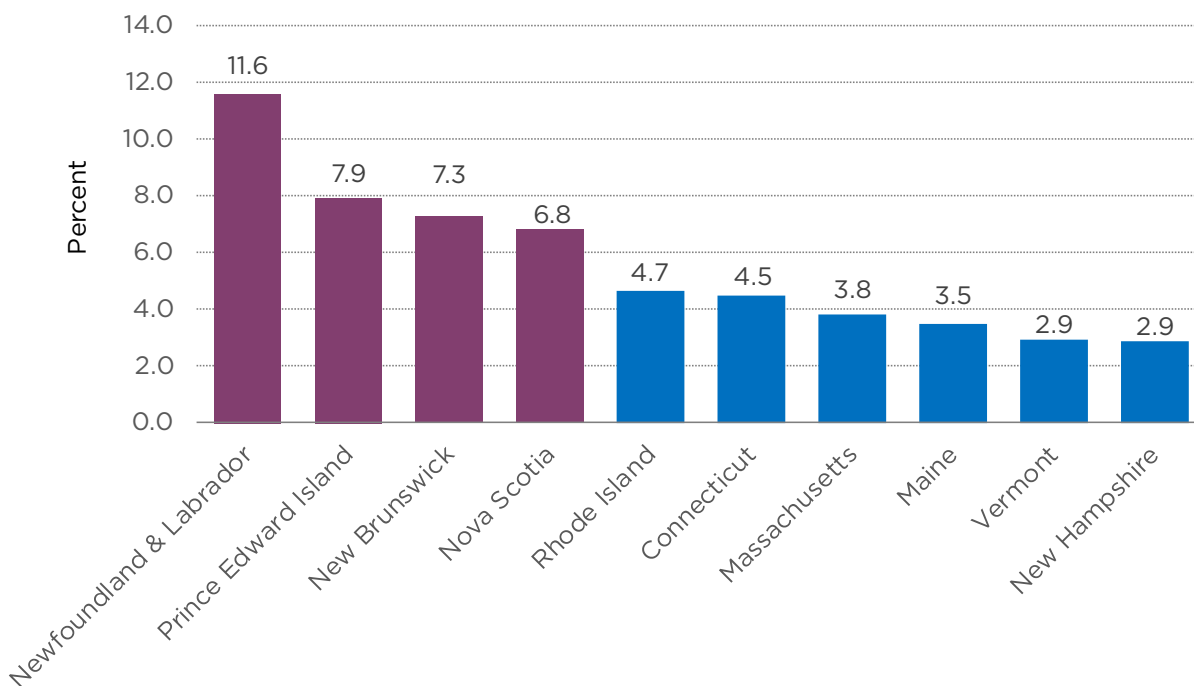
To better understand the differences in the labour markets in the two regions, this section presents data on the unemployment rate in each. While there are many ways to measure the labour market, we've used the unemployment rate because it is important for at least two reasons. First, larger shares of unemployed people could point to a reason for the income gaps discussed in the previous section. Second, significant policy differences exist between Canadian and US jurisdictions when it comes to unemployment insurance.⁵

Figure 3 shows the five-year average unemployment⁶ rates across the New England states and Atlantic provinces from 2015 to 2019. In this sec-

⁵ While a full discussion of these differences is beyond the scope of this paper, other research has examined differences in generosity between the Canadian unemployment insurance system and that which exists in individual US states. One analysis comparing New Brunswick and Maine showed that increases in the generosity of New Brunswick's system were followed by increases in unemployment rates, and prevailing unemployment rates are substantially higher than nearby Maine. Interested readers can consult Riddell, et al. (2006).

⁶ In figure 3, we use Statistics Canada's "R3" unemployment rate, which the agency

Figure 3: 5-Year Average Unemployment Rates, States and Provinces, 2015 to 2019



Note: This figure uses Statistics Canada’s “R3” unemployment rate, which the agency describes as comparable to the unemployment rate in the United States.

Source: Bureau of Labour Statistics (2021), Statistics Canada (2022b).

tion we focus on a five-year average rather than data from a single year to smooth out the year-to-year variability in the unemployment data.

The data show a clear difference between the Atlantic provinces and New England states. Of the 10 jurisdictions measured, the four Atlantic provinces have the highest average unemployment rates and the six New England states the lowest.

Newfoundland & Labrador maintained the highest average five-year unemployment rate at 11.6 percent while New Hampshire possessed the lowest at 2.9 percent. The best performing Atlantic province, Nova Scotia, had an average five-year unemployment of 6.8 percent, substantially higher than the worst performing New England State, Rhode Island, at 4.7 percent—a gap of 2.1 percentage points.

describes as comparable to the unemployment rate in the United States. For more information on comparability between US and Canadian unemployment rates, readers can consult <https://www150.statcan.gc.ca/n1/pub/75-005-m/75-005-m2015002-eng.htm>.

Similarities Between Atlantic Canada and New England

The first section of this study established that there is both an income gap and unemployment differences between Atlantic Canada and New England. Scholars and policymakers have often argued that Atlantic Canada is poorer than other jurisdictions due to the region's geography, population structure, size, or some other structural disadvantage (ACOA, 1994; Garlick, et al., 2007; Diekmeyer, 2020).

With this in mind, this section examines the similarities between the two regions. If it is true, for example, that Atlantic Canada is poorer due to its geography or population structure, then those differences should be measurable and quantifiable. If the data show that these factors are similar between the two regions, it undermines the argument that they have led to the income gap between Atlantic Canada and New England that we established in the first section. Similarity in geography and population structure between the two regions would suggest that other factors, such as government policy, may be the reason for the income gap.

The following section addresses this question by looking at measures that compare both the industrial composition of the Atlantic provinces and New England states and the age and geography of the population of the two regions.

Industrial composition

This section examines the economies of each jurisdiction by looking at the share of gross domestic product (GDP) across 20 industry categories. These categories are based on the North American Industry Classification System (NAICS), which helps ensure comparability across the two countries. Table 1 contains share-of-GDP data for these categories across the 10 sub-national jurisdictions. There is some similarity among the major industries in the New England states and Atlantic provinces, namely, manufacturing, real estate and leasing, health care and social assistance, and public administration.

Table 1: Share of GDP By Industry, States and Provinces, 2019

	CT	ME	MA	NH	RI	VT	NL	PE	NS	NB
Agriculture, forestry, fishing and hunting	0.2	1.6	0.2	0.3	0.2	2.0	1.3	6.8	3.3	3.5
Mining, quarrying, and oil and gas extraction	0.1	0.1	0.1	0.2	0.1	0.4	27.8	0.1	0.8	0.7
Utilities	1.6	1.4	1.4	1.5	1.5	1.9	2.0	1.5	2.0	3.2
Construction	2.3	2.9	3.3	2.6	3.3	2.9	9.0	6.9	6.0	6.2
Manufacturing	12.1	10.1	10.1	11.5	8.0	9.7	3.3	11.5	7.4	10.1
Wholesale trade	5.0	5.4	4.7	6.5	5.6	5.0	2.0	1.9	2.9	3.2
Retail trade	5.4	8.7	4.5	7.2	6.3	8.1	5.0	6.4	6.4	6.2
Transportation and warehousing	1.8	2.0	1.8	1.4	1.7	1.6	3.5	3.7	3.5	5.4
Information and cultural industries	7.2	2.3	6.8	5.1	3.0	3.2	2.3	2.4	3.2	3.0
Finance and insurance	13.7	6.0	8.1	7.7	8.9	5.1	3.2	5.2	5.7	5.7
Real estate and rental and leasing	13.4	14.6	12.4	13.2	12.9	12.9	9.4	12.8	16.0	12.5
Professional, scientific and technical services	7.3	6.1	14.4	8.6	6.6	7.3	3.7	3.4	4.6	3.5
Management of companies and enterprises	2.9	2.6	2.8	1.9	3.9	1.1	0.1	0.2	0.1	0.2
Administrative and support, waste management and remediation services	2.6	3.0	2.8	3.5	3.3	2.9	1.5	2.0	2.2	3.8
Educational services	2.3	1.7	2.9	2.3	3.3	2.7	5.7	6.9	6.8	6.0
Health care and social assistance	8.3	11.9	9.3	9.6	10.6	11.3	8.9	10.5	11.2	10.4
Arts, entertainment and recreation	0.9	1.0	1.2	1.7	1.0	1.1	0.3	0.9	0.6	0.5
Accommodation and food services	2.3	4.1	2.8	3.4	3.9	5.1	1.9	3.2	2.7	2.3
Other services (except public administration)	1.8	2.0	1.8	2.1	2.0	2.2	1.7	2.1	2.0	2.0
Public administration	9.2	12.6	9.4	9.9	13.6	13.7	7.6	11.8	12.7	11.7

Note: Based on the North American Industry Classification System (NAICS); industry descriptors vary between the Canadian and US sources and we use the Canadian descriptors here.

Sources: Statistics Canada (2022c), BEA (2022c).

Table 2: Summary Total of Four Industries

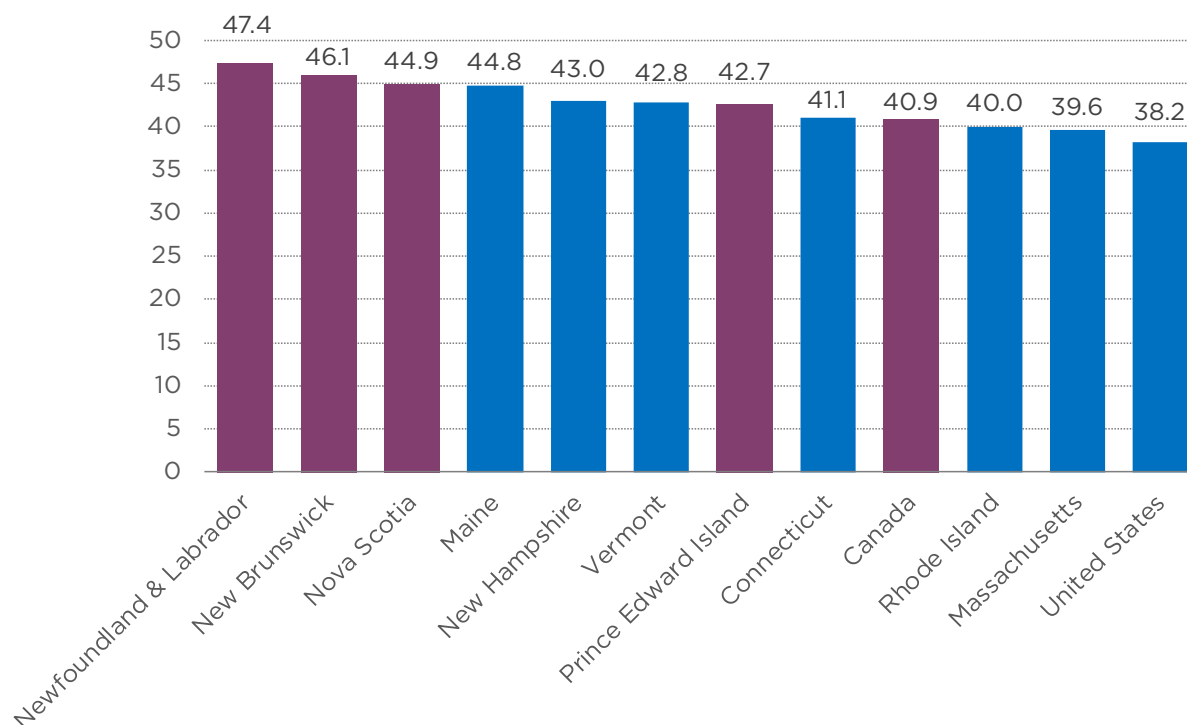
Jurisdiction	Total (Percent of GDP)
Maine	49.3
Vermont	47.6
Nova Scotia	47.3
Prince Edward Island	46.5
Rhode Island	45.2
New Brunswick	44.6
New Hampshire	44.2
Connecticut	43.0
Massachusetts	41.1
Newfoundland and Labrador	29.3

Source: Table 1.

We observe similarities across some key industries in the two regions. In nine of the 10 jurisdictions, manufacturing composes between 7.4 percent of GDP (Nova Scotia) and 12.1 percent of GDP (Connecticut). (The exception is Newfoundland & Labrador, where it composes only 3.3 percent.) Real estate, rental, and leasing composes between 9.4 percent of GDP in Newfoundland & Labrador and 16.0 percent of GDP in Nova Scotia, the jurisdiction where it comprises the highest proportion of GDP. Health care and social assistance ranges from 8.3 percent of GDP in Connecticut to 11.9 percent in Maine. Lastly, public administration composes between 7.6 percent of GDP in Newfoundland & Labrador to 13.7 percent of GDP in Vermont.

Table 2 presents a brief summary of this data by showing what shares of each sub-national economy are composed by these four industries, again as measured as a share of GDP. With the exception of Newfoundland & Labrador,⁷ these four industries represent a range of 49.3

⁷ The industrial composition data shows that Newfoundland & Labrador has an economy that is differently structured than the other jurisdictions we are examining, largely due to the oil and gas sector. That sector represents 27.8 percent of GDP in the province, a far larger share than all other jurisdictions examined (Nova Scotia is second-highest at 0.8 percent of GDP).

Figure 4: Median Age by State, Province, and Country, 2020

Source: Census Bureau (2022c), Statistics Canada (2021b).

percent of GDP (in Maine) to 41.1 percent of GDP (in Massachusetts). This relatively narrow range helps illustrate the similarity between the regions, as does the fact that just four industries compose nearly half of each economy (again, with the exception of Newfoundland & Labrador).

Table 1 also indicates that the two regions are somewhat similar for the industries that are *not* present in each. At least nine of the 10 jurisdictions showed shares of GDP of less than five percent for nine⁸ of 20 industries examined. Differences do emerge among some industries. For instance, the shares of GDP contributed by education services and construction in all four Atlantic provinces are higher than in all six New England states. Meanwhile, the shares of GDP contributed by professional,

⁸ The nine are agriculture, forestry, fishing, and hunting; mining, quarrying, and oil and gas extraction; utilities; transportation and warehousing; management of companies and enterprises; administrative and support, waste management and remediation; arts, entertainment, and recreation; accommodation and services; and other services (except public administration).

scientific, and technical services, and by wholesale trade in all six New England states are higher than in all four Atlantic provinces.

Age structure of the population

The age structure of the population is of interest given its relationship to economic output. All else equal, jurisdictions with lower shares of the population of working age (ie., with an older demographic) are generally expected to have lower incomes.

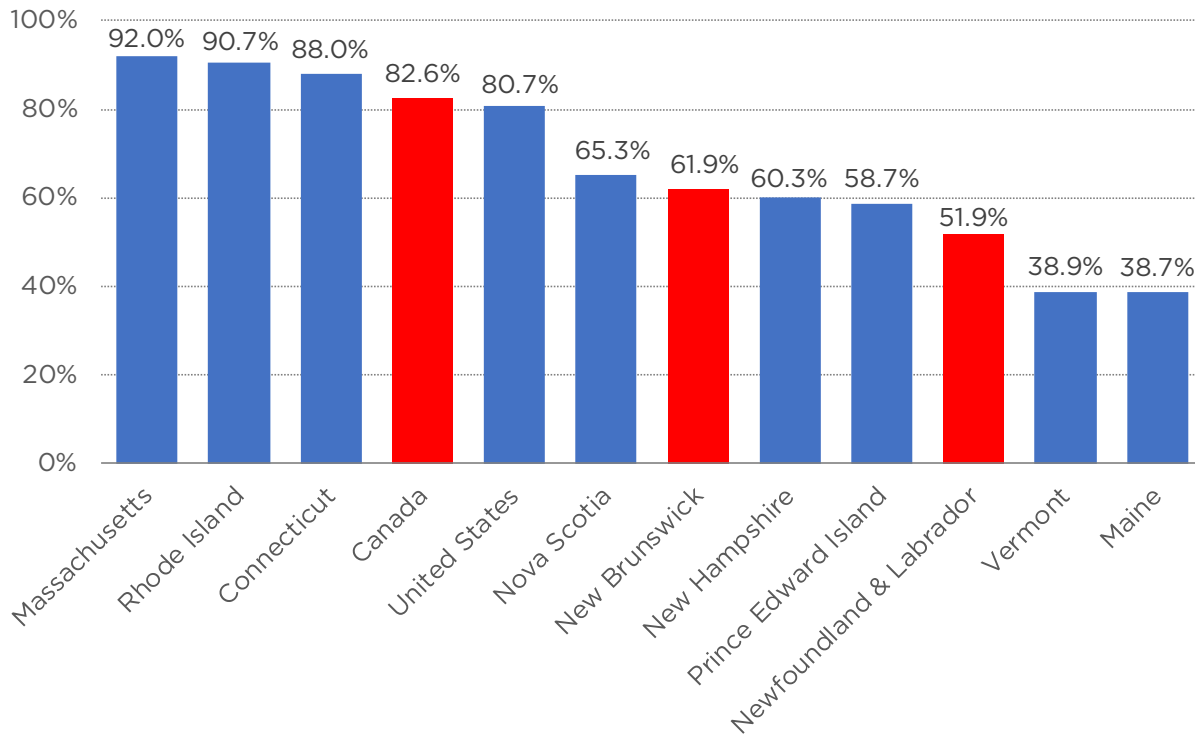
Figure 4 presents data on the median age for jurisdictions in Atlantic Canada and New England and compares it with the median age for Canada and the United States. All ten states and provinces in question have median ages higher than that of their country as a whole.

The data reveal both similarities and differences between the regions. The median age range in Canada's three Maritime provinces and in Maine, New Hampshire, and Vermont is relatively narrow. Among these, New Brunswick has the highest median age, at 46.1 years, while Prince Edward Island has the lowest, at 42.7 years. Newfoundland & Labrador has the highest median age of all the jurisdictions, at 47.4 years. Connecticut, Rhode Island, and Massachusetts have the lowest median ages, at 41.1 years, 40.0 years, and 39.6 years, respectively.

The comparison of the three Maritime provinces with Maine, New Hampshire, and Vermont is interesting in the context of the GDP per person and market earnings data presented in figures 1 and 2. Despite all six jurisdictions having median ages within a relatively similar range, the three New England States have much higher incomes than the three Maritime provinces, suggesting that age is not a particularly strong factor in explaining the differences between them.

Urban share of the population

Research has shown an income gap between urban and rural residents in developed countries. For example, evidence from the United States suggests there is an income difference of 33 percent between people in large metropolitan areas and their rural counterparts (Glaeser and Maré, 2001). In Canada, Statistics Canada (2015) estimates incomes in large metropolitan areas to be 25 percent higher than in rural areas. These urban-rural income differences show why the urban-rural share of the population in Atlantic Canada and New England is of interest. Large differences in the shares of urban and rural populations in each region might be a factor contributing to the income differences.

Figure 5: Urban Share of the Population, by State and Province

Source: Iowa State University (2022), Statistics Canada (2022d).

Figure 5 illustrates the urban share of the population. Specifically, it shows the share of the total population of the province or state living in a Census Metropolitan Area or Census Agglomeration (Canada), or those living in Urbanized Areas or Urban Clusters (United States). The US data is presented for 2010, while the Canadian data is for 2011, representing different census years between the countries. We consider the data to be comparable in that it gives general sense of the urban share of the population in each region.⁹

⁹ There are also differences between Canada and the United States in the definition of urban populations. In Canada, Census Metropolitan Areas (CMAs) include areas of population of at least 100,000 people with 50,000 in an urban core, while Census Agglomerations have a core population of 10,000 or more (Statistics Canada, 2018). In the United States, the Census Bureau defines Urbanized Areas as having a population of more than 50,000, while Urban Clusters have between 2,500 and 50,000 people (Census Bureau, 2010). While these differences could make specific comparisons more difficult, the data here is sufficient for our goal of getting a general sense of the geographic structure of the population.

As figure 5 shows, across the 10 jurisdictions there is considerable variability in the share of the population that lives in urban regions. In particular, Massachusetts (92.0 percent), Rhode Island (90.7 percent), and Connecticut (88.0 percent) have high shares of the population that live in urban areas. The proportion of urban dwellers in each of these states exceeds the US average of 80.7 percent.

Of the three remaining New England States and four Atlantic provinces, five have urban shares of population between 65 percent and 52 percent. Two jurisdictions (Maine and Vermont) have barely 39 percent of their residents living in urban areas.

This urban-rural divide is an important part of the discussion about income differences examined in the first section. Despite their more rural populations, in both Maine and Vermont GDP per person as well as the narrower measure of income per person, and unemployment rates all outperformed those measures in the three Maritime provinces. New Hampshire has a similar urban/rural split to the Maritime provinces, but has a substantially higher level of income (both GDP per person and employment earnings per person) and lower unemployment rates.

A key insight from this data is that differing levels of urbanization cannot provide a full explanation for the income and unemployment rate differences between New England and Atlantic Canada. While it is true that there is a high urban share of the population in three of the six New England states, the remaining three are either comparable to Atlantic Canada or have higher rural shares of the population.

Discussion and Conclusion

This study has identified a gap across several measures of income and unemployment between the New England states and Atlantic provinces. On other measures such as industrial composition, age structure of the population, and the urban share of the population, the data suggest similarities between Atlantic Canada and New England. This is particularly true in comparisons between Maine, New Hampshire, Vermont, and the three Maritime provinces.

Despite commonly circulated myths about how Atlantic Canada's economic underperformance is due to geographic or other structural disadvantages, we have established that a similarly-situated region (New England) is able to outperform Atlantic Canada. Given that this study has focused on simply measuring the economic gap and establishing similarities between the two regions, evaluating the policy differences between them is a promising avenue for future research.

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