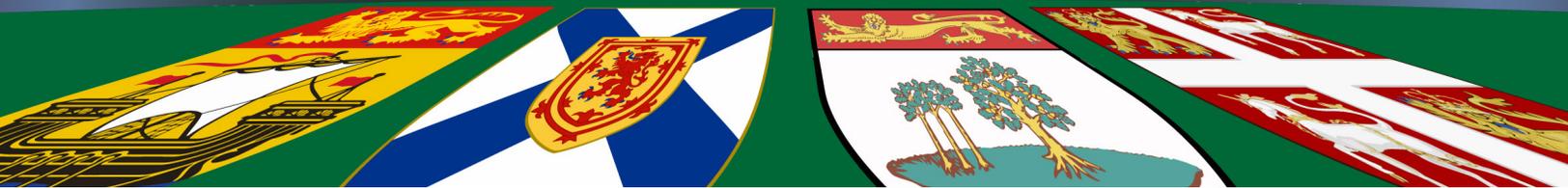


The State of Markets in Atlantic Canada

by Alex Whalen and Nathaniel Li



SUMMARY

■ For most of recent history, there has been a prosperity gap between Atlantic Canada and the rest of Canada. Given this gap, it is important to understand how Atlantic Canada's private sector (i.e., markets) is performing.

■ Government spending at all levels as a share of the economy was highest in 2019 in Nova Scotia (60.2 percent), Prince Edward Island (58.5 percent), and New Brunswick (57.4 percent), with those provinces also having the smallest private sectors.

■ Newfoundland & Labrador led the country in private sector investment in 2019, but New Brunswick ranks eighth, Prince Edward Island ninth, and Nova Scotia last among all provinces.

■ Nova Scotia ranks fifth in Canada in 2019 for (adjusted) private venture capital investment per person (at \$51.37 per person), while Newfoundland & Labrador ranks seventh (\$16.69 per

person) and New Brunswick ranks eighth (\$1.51 per person).

■ All four Atlantic Provinces had below-average shares of private sector employment as a share of total employment in 2019, with New Brunswick ranking fifth (64.0 percent), Nova Scotia sixth (63.6 percent), Newfoundland & Labrador seventh (62.3 percent), and Prince Edward Island ninth (59.7 percent).

■ Prince Edward Island led the country in the new business entry rate in 2019 (at 166 new entries per thousand businesses), but the other three Atlantic Provinces underperformed. Newfoundland & Labrador ranked fifth (127 per thousand), Nova Scotia seventh (123 per thousand), and New Brunswick ninth (117 per thousand).

■ With some exceptions in individual categories, the five measures used in this study show that in 2019, private markets in the Atlantic Provinces generally underperformed those in the rest of Canada.

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Introduction

For most of recent history, there has been a prosperity gap between Atlantic Canada and the rest of Canada. Whether looking at GDP per capita, income levels, or labour market measures, Atlantic Canada as a whole has underperformed the rest of Canada for at least the two decades leading up to the COVID-19 pandemic (Eisen et al., 2019).

Given this gap, it's important to understand how Atlantic Canada's private sector (i.e., markets) is performing compared to the rest of the country. If Atlantic Canada is to close the prosperity gap with the rest of the country, private sector economic activity will be key.

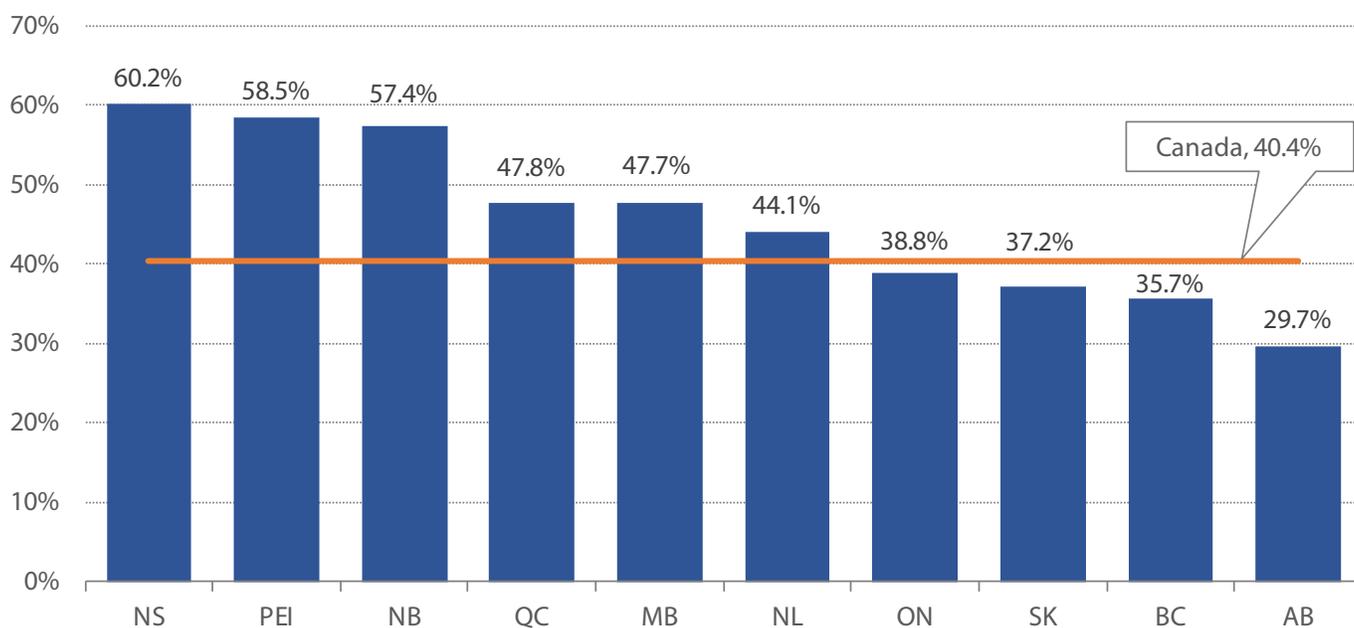
This study begins by measuring the size of government in Atlantic Canada relative to other provinces. It then presents a series of indi-

cators on the performance of Atlantic Canada's private sector. Specifically, it looks at investment, the labour market, and entrepreneurship by measuring investment per worker, venture capital investment, private sector employment, and business start-ups. Focusing on measures of both capital and labour provides a well-rounded view of the state of markets in the four Atlantic provinces and in the rest of the country.

The size of the government sector

To better understand the state of Atlantic Canada's private markets, we begin by presenting data on the size of government in each province. These data show which provinces have larger or smaller shares of government sector activity within their economies, measured by government spending as a share of GDP.

Figure 1: Total Consolidated Government Spending as a Share of GDP, 2019



Sources: Statistics Canada (2021b); Statistics Canada (2022g); Whalen and Globerman (2020).

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Throughout this study, data are presented for 2019 unless otherwise noted; 2019 is the last year of reliable data before the COVID-19 pandemic. The economic disruption the pandemic caused means that in many cases, 2020 and 2021 are not representative years.

Figure 1 shows data on government spending (consolidated to include local, provincial, and federal) as a share of GDP for each province in 2019. Government size varies widely among provincial economies, from a low of 29.7 percent in Alberta to a high of 60.2 percent in Nova Scotia. The Maritime provinces have the largest relative sizes of government in Canada by this measure, with Prince Edward Island second at 58.5 percent, and New Brunswick third at 57.4 percent.

The share of provincial GDP not represented by government spending gives us a sense of the size of the private sector. It is important to note that provincial GDP has several different components, including household consumption, imports and exports, inventories, and business investment.¹

Using this measure as an indication of the size of the private sector, we can see that the three Maritime provinces have the smallest private sectors in the country, ranging from 39.8 percent of the economy in Nova Scotia to 42.6 percent of the economy in New Brunswick. Newfoundland & Labrador is in the middle of the pack among provinces, at 55.9 percent.

¹ The full definition is “household consumption, non-profits serving households’ consumption, business gross fixed capital formation (as well as non-profit institutions serving households’ gross fixed capital formation), investment in inventories, exports (minus imports), less government gross fixed capital formation and general government final consumption expenditures” (Statistics Canada, 2021).

Private sector investment

To assess the state of private sector investment, the study incorporates two measures.

Private sector business investment per worker

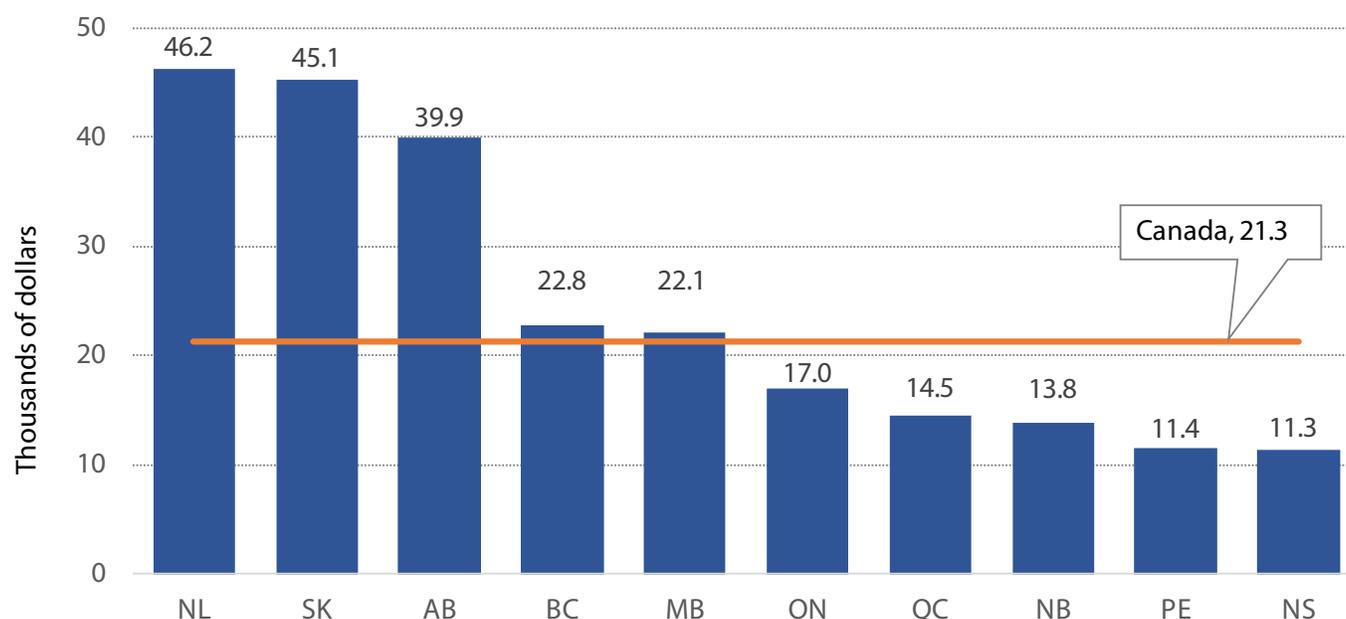
We measure non-residential business investment per worker to assess the state of private sector investment. Business investment excludes government investment, since we’re principally concerned with the private sector. Further, the measure excludes investment in residential construction in order to focus exclusively on business-related investment in factories, plants, machinery, intellectual capital, and technologies. These are the types of private sector investment that improve both total factor and labour productivity and are essential to economic prosperity. Indeed, in describing capital investment, Gliberman and Press (2018) note that it is an important contributor to economic growth because it is central to total factor productivity and therefore improved standards of living.

Figure 2 presents data on the level of private sector business investment (excluding residential construction) per worker in each of the provinces for 2019. Newfoundland & Labrador leads the country by this measure, with an investment of \$46,160 per worker. Saskatchewan ranks second at \$45,149, followed by Alberta at \$39,905.

In contrast, the Maritime provinces had the lowest per-worker levels of business investment in the country in 2019. Nova Scotia was the lowest-ranking province at \$11,313 per worker, followed by Prince Edward Island at \$11,438, and New Brunswick at \$13,759. The average among all provinces for 2019 was \$21,254, which means Nova Scotia’s per-worker investment was just 53.2 percent of the national av-

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Figure 2: Per-Worker Business Investment (Excluding Residential Construction), 2019



Sources: Statistics Canada (2021c); Statistics Canada (2022d); calculations by authors.

erage, Prince Edward Island 53.8 percent, and New Brunswick 64.7 percent. Viewed differently, the average level of investment in the three Maritime provinces was just 27.8 percent of the average level of investment in the three best performing provinces.

Venture capital

Venture capital investment is a subset of overall business investment and relates to higher risk capital invested in start-ups and emerging businesses. It is also highly connected to entrepreneurship and innovation, which are essential to economic growth (Globerman and Clemens, 2018). A 2014 study, for instance, using data from 14 industrialized countries, showed that successful venture capital has a pronounced impact on GDP per capita (Cumming, Johan, and Zhang, 2013). Other studies focused on US

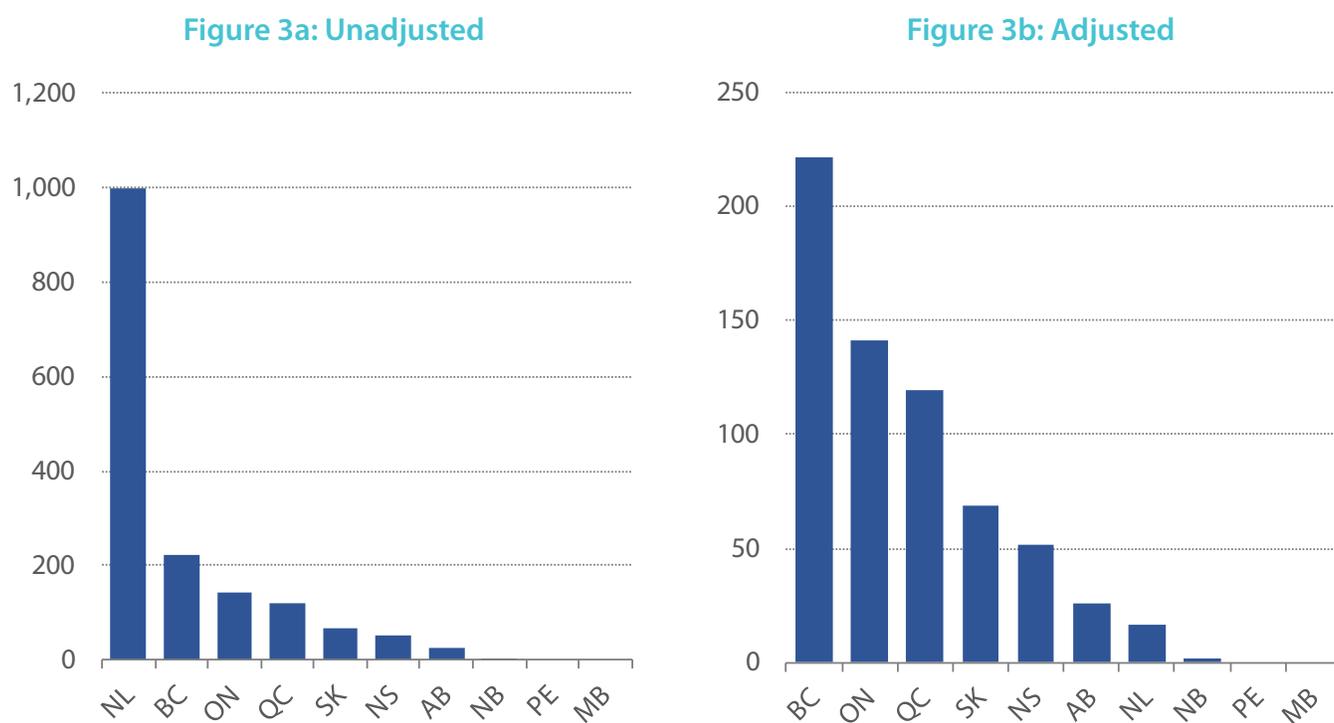
data have shown that increases in the supply of venture capital have a positive effect on business starts, employment, and aggregate income (Samila and Sorenson, 2011).

Figures 3a and 3b present total disclosed² non-government venture capital invested per person in 2019 based on data provided by the Canadian Venture Capital Association (CVCA, 2019). Given that this study is interested in measuring private markets, we specifically excluded venture capital investments where government is the only partner, focusing instead

² Within the data supplied by CVCA, some venture capital investments were reported with an undisclosed dollar amount. Undisclosed investments represent 21 of 299 investments in the 2019 dataset. For the purposes of this paper we consider the disclosed portion to be representative.

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Figure 3: Private Venture Capital Investment Per Population, 2019



Note: total venture capital invested per province is provided by CVCA (2022), with government-only deals excluded in the calculation.

Sources: CVCA (2022); Statistics Canada (2022e); calculations by authors.

on private sector transactions. We then compare the total amount of disclosed venture capital investment per capita in all provinces.³

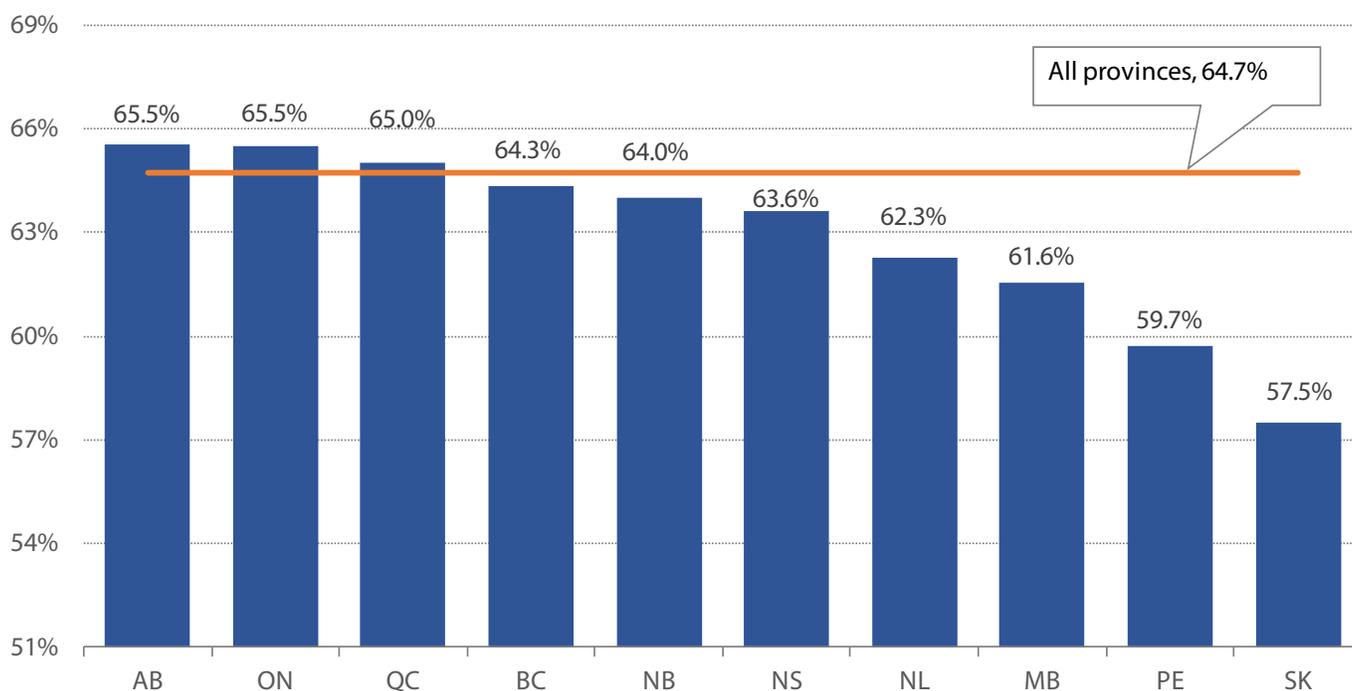
Figure 3a shows the unadjusted rankings and amounts for each province and figure 3b shows

³ There are various ways to ensure comparability of venture capital data across jurisdictions, including as a share of GDP, as a share of the labour force, and others. In this study, we chose to measure venture capital as a share of population, because population does not change population. Other measures such as GDP are affected by venture capital, i.e., increased venture capital investment increases GDP. Cumming (2010) discusses the appropriate measures of venture capital.

adjusted rankings. The adjustment applies only to Newfoundland & Labrador, which is the result of an outlier: One company in that province, Verafin, received a \$515 million investment in 2019, which happened to be the largest venture capital investment in the country that year. While this was one of six disclosed deals in that province in 2019, it represented 98.3 percent of the province's total venture capital investment. Therefore, figure 3a shows Newfoundland & Labrador with this investment included, and figure 3b without. With the Verafin deal included, Newfoundland & Labrador ranks first in the country with \$1,000.59 per person invested in venture capital that year. Without the deal in-

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Figure 4: Private Sector Employment as a Share of Total Employment, 2019



Note: Total employment includes public sector employment, private sector employment and self-employment.

Sources: Statistics Canada (2021 c); calculations by authors.

cluded, the province ranks seventh, at \$16.69 in venture capital per person.

Figure 3b ranks all the provinces with Newfoundland & Labrador's outlier investment removed. In 2019, British Columbia attracted the highest per capita level of private sector venture capital at \$221.44. Ontario followed BC at \$141.52 per person, and then Quebec at \$119.03 per person.

Nova Scotia's level of venture capital investment was the highest among the Maritime Provinces in 2019, ranking fifth in the country at \$51.37 per person. New Brunswick ranks eighth at \$1.51 per person, while Prince Edward Island (and Manitoba) disclosed no private sector venture capital investments in 2019.

An international perspective can help put these results into further context. While the Atlantic provinces trail the rest of Canada in venture capital performance (if we use the adjusted Newfoundland & Labrador data), Canada itself performs poorly compared to the United States. For example, one study looking at the 2014-2016 period showed venture capital investment in the United States to be 0.346 percent of GDP, compared to 0.137 percent for Canada (Conference Board of Canada, 2018). Another analysis from 2017 showed Canada's per-capita rate of venture capital investment to be less than half that of the United States (Tingle and Pandes, 2021). While the United States is the world leader in venture capital investment, Canada's

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relative underperformance should be a cause for concern.⁴

Labour markets

This section focuses on the labour market. Specifically, we look at the share of private sector employment relative to total employment. This provides insight on the relative size of the workforces in the private sector and the government sector.

Private sector employment

Figure 4 illustrates private sector employment as a share of total employment. Total employment refers to the total number of employed persons and private sector employment means those workers employed directly by a private sector firm.

Figure 4 shows that Alberta and Ontario have the largest share of private sector employment relative to total employment, at 65.5 percent. Next is Quebec at 65.0 percent.

The four Atlantic provinces all perform below the national average on this measure, with New Brunswick ranking fifth (64.0 percent), Nova Scotia sixth (63.6 percent), Newfoundland & Labrador seventh (62.3 percent), and Prince Edward Island ninth (59.7 percent). The province with the lowest share of private sector employment is Saskatchewan⁵ at 57.5 percent.

⁴ One of the issues related to Canada's underperformance is the presence of Labour-Sponsored Venture Capital Corporations (essentially tax-subsidized mutual funds), one of the most prevalent forms of venture capital in Canada. These funds have been shown to be both relatively high-cost and low-return. These issues are beyond the scope of this study, but interested readers can consult Cumming (2010).

⁵ The prevalence of crown corporations in Saskatchewan may provide a partial explanation for the

Broader measures of the labour market have suggested that the Atlantic provinces possess some of the worst-performing labour markets in North America. One analysis that looked at eight labour market variables for the years 2016–2018 (inclusive) ranked Newfoundland & Labrador as having the worst performing labour market in North America, followed by Nova Scotia and New Brunswick. (Prince Edward Island ranked 9th of 60.) (Palacios, Emes, and LaFleur, 2019).

Our narrower measure used here, private sector employment as a share of total employment, reveals similar findings. Compared to other Canadian provinces, the four Atlantic Provinces occupy four of the bottom six rankings with all four Atlantic Provinces performing below the national average.

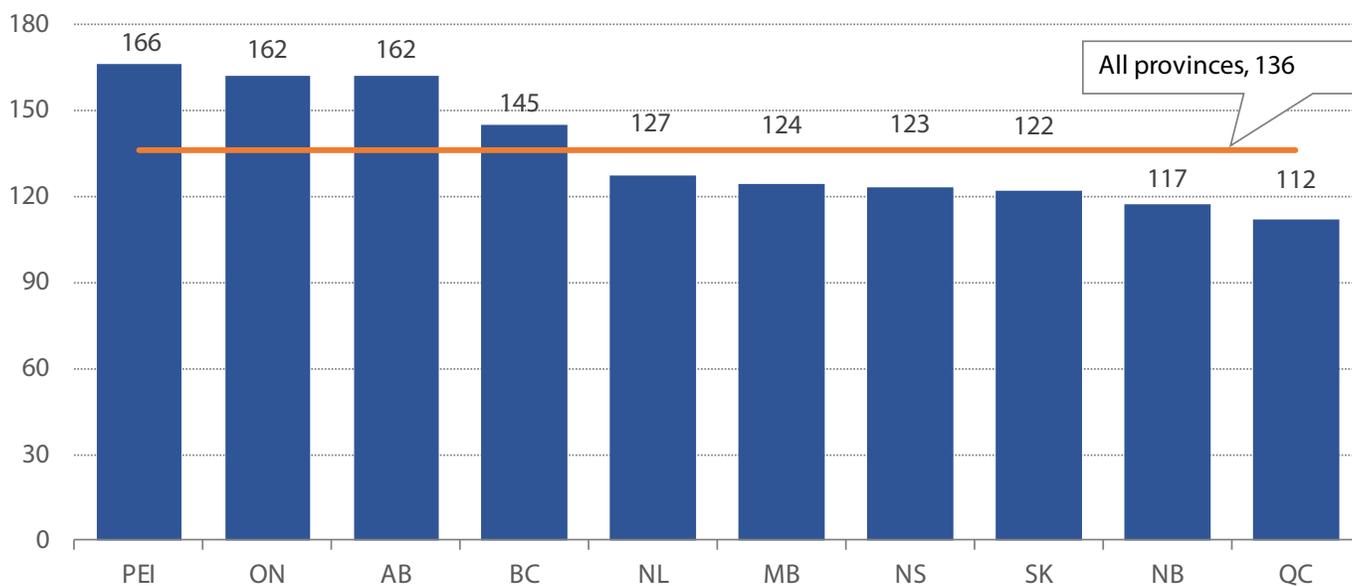
Entrepreneurship: Business starts

Our final measure focuses on entrepreneurship. Measuring entrepreneurship is an important element in assessing the state of the private sector. Academic research has demonstrated a relationship between the level of entrepreneurship (as measured by business start-up rates) in a given economy and GDP growth. For example, one study with data from 125 countries from the

province's ranking in private sector employment as a share of total employment. For the purpose of our data here, crown corporation employment is considered government employment. One analysis from 2013 showed that the number employees of crown corporations in Saskatchewan measured as a share of population was the highest in Canada (Crisan and MacKenzie, 2013). Other research has noted an "unusually high concentration of government business enterprises (crown corporations) in the province, recommending privatization of these assets as an important policy action for greater prosperity and investment in the province (Veldhuis et al., 2009).

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Figure 5: Business Entry Rate Per Thousand Businesses, 2019



Note: The denominator used in the calculation of the entry rates is the average number of active businesses in the previous and current years.

Sources: Statistics Canada (2021d); calculations by authors.

years 2004 to 2011 found that the business entry rate had a positive impact on GDP per capita (as well as on other variables such as increased patents per population and reduced unemployment) (Cumming, Johan, and Zhang, 2013).

In this section, we present data on entrepreneurship by province, as measured by the rate of business start-ups (also known as the entry rate). Though it has limitations,⁶ the business

⁶ Experts have noted the difficulty in measuring entrepreneurship. One limitation involves the difference between business owners and entrepreneurs. In analyzing the concept of entrepreneurship advanced by Joseph Schumpeter, Sobel and Clemens (2020: 11) note that “Schumpeter stressed the function of entrepreneurs as disruptive innovators that propel economic growth and prosperity through

start-up rate is generally accepted as a good proxy for measuring entrepreneurship.

Figure 5 shows that Prince Edward Island led the country with a business entry rate of 166 per thousand businesses in 2019. Ontario and

time,” a concept distinct from simply being a business owner. Further, Audretsch and Keilbach (2003) note that “creating a measure of entrepreneurship presents a challenge... many of the elements of entrepreneurship defy quantification,” but concluded that the creation of new firms is a workable measure. Smith (2010) explains that the business entry rate (business starts) can estimate the level of entrepreneurship in an economy, citing several studies that use this measure as an approximation for entrepreneurship. For further discussion, interested readers can consult Godin, Clemens, and Veldhuis (2008).

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Table 1: Summary Rankings for Atlantic Provinces

	Size of Government	Per Worker Business Investment	Venture Capital Per Population	Private Sector Employment	Business Entry Rate
New Brunswick	8th	8th	8th	5th	9th
Nova Scotia	10th	10th	5th	6th	7th
Prince Edward Island	9th	9th	9th	9th	1st
Newfoundland & Labrador	6th	1st	7th	7th	5th

Note: This table presents rankings from best to worst on each measure. For example, the province with the largest size of government is ranked 10th.

Alberta are tied for second, with 162 business entries per thousand. The simple average across all provinces is 136 business entries per thousand.

All Atlantic provinces except Prince Edward Island rank below the average. Newfoundland & Labrador ranks fifth in the country at 127 business entries per thousand. Nova Scotia ranks seventh at 123, while New Brunswick ranks ninth at 117.

Discussion and conclusion

As table 1 shows, the five measures reviewed here show that private markets in Atlantic Canada are generally underperforming those in the rest of the country. This is especially true for the three Maritime provinces. The private sectors in these provinces are the smallest (in relative size) among all 10 provinces, and these three provinces have the lowest per-worker levels of private business investment (excluding residential). In venture capital investment, Prince Edward Island is last (tied with Manitoba) and New Brunswick second last, while Nova Scotia ranks sixth. In private sector employ-

ment, Prince Edward Island again ranks second-lowest, while Nova Scotia and New Brunswick (fifth and sixth) rank in the middle of the pack. New Brunswick and Nova Scotia rank second and fourth lowest in business entries.

Newfoundland & Labrador outperforms the Maritime provinces in some measures, such as the size of government (ranking fifth-best) and investment per worker (ranking first). The province lags on the remaining measures, however, ranking fourth-worst in adjusted venture capital, fourth-worst on the ratio of private sector employment, and sixth lowest in the rate of business entry.

The region's private markets are not without some good news. For example, Newfoundland & Labrador's per-worker business investment performance and Prince Edward Island's business entry rate performance both lead the country. On other measures such as private sector employment in New Brunswick, or venture capital in Nova Scotia, these provinces rank in the middle of the pack. When looking across all five measures, however, the Atlantic Provinces tend to underperform.

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Improving the state of private markets in Atlantic Canada should be a key concern for policy-makers and the general public as the region aspires to close its prosperity gap with the rest of Canada.

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