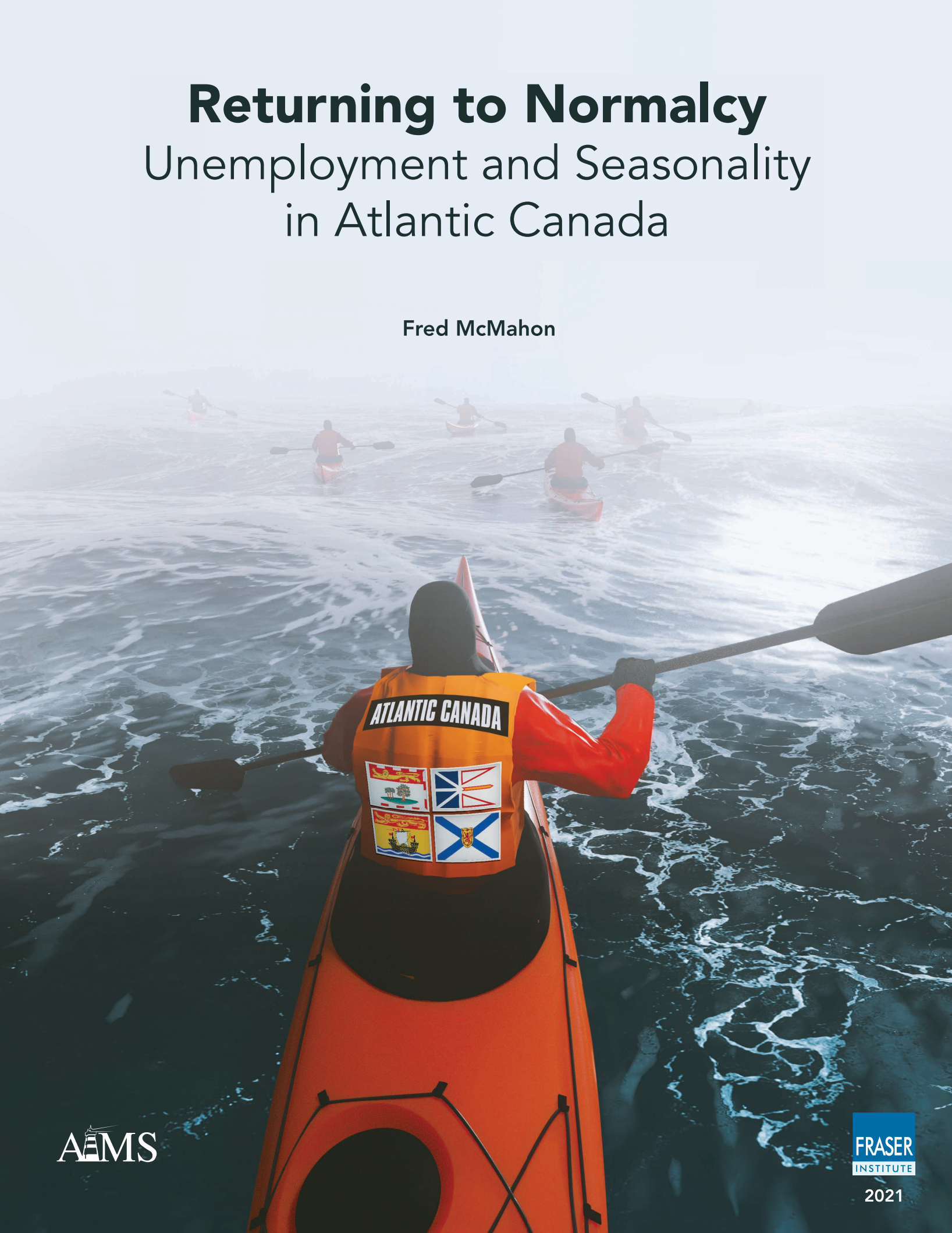


Returning to Normalcy

Unemployment and Seasonality in Atlantic Canada

Fred McMahon



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by Fred McMahon

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Executive Summary

Unemployment and seasonality declined in Atlantic Canada's labour market after the 1996/97 reform of Unemployment Insurance. Over the last 25 years, while unemployment and seasonality declined nationally as well, declines were larger in Atlantic Canada, bringing the labour market in the Atlantic provinces into closer alignment with the national labour market. Nonetheless, seasonality and unemployment in Atlantic Canada remain higher than the national average.

In 1971, Unemployment Insurance reforms made the system particularly generous and accessible in Atlantic Canada. The region was almost immediately troubled by soaring levels of unemployment compared to the Canadian average, shortages of workers despite high unemployment, increased seasonality, dependence on Unemployment Insurance, reduced private sector investment, and weak economic growth.

In 1996 and 1997 significant reforms were introduced to the Unemployment Insurance program, which was renamed Employment Insurance. While direct causality is difficult to determine in economics, several lines of evidence suggest that the UI/EI reforms contributed to positive changes in the national and regional labour markets. The focus in this publication is on the structure of the labour market before 2020 and COVID-19 to provide information relevant to “normal” times.

Among the problems that continue to afflict the Atlantic Canadian labour market and contribute to the relatively high levels of unemployment and seasonality are:

1. Despite the 1996/97 reforms, Employment Insurance continues to disproportionately reward seasonal labour and higher levels of unemployment in Atlantic Canada, particularly rural Atlantic Canada.
2. Governments are larger in Atlantic Canada than the national average. All-government expenditure equals about 54% of the regional economy compared to 40% nationally. This leaves less space for the private sector to create jobs and the region remains unusually dependent on government jobs.
3. Tax rates are higher than the Canadian average, reducing incentives for investment and skill enhancement because returns are reduced by high taxation.
4. Productivity remains well below the national average and, because of that, unit labour costs are relatively high, especially in Nova Scotia. This is the case despite lower wages in the region, which fail to compensate in full for lagging productivity.

5. The number of employment-creating firms in the region is stagnant or declining, likely as a result of high taxes, low productivity, costly labour, and government economic dominance.
6. Job creation lags the national average, for similar reasons.
7. Private-sector investment is low, limiting job creation, again for similar reasons.

The federal government has announced its intention to reform Employment Insurance and launched a consultative process. One goal is to “to provide more consistent and reliable benefits to workers in seasonal industries”. A possible danger to Atlantic Canada is that this round of reforms may re-introduce policies that led to significant problems in the region’s labour market after 1971, as documented by much research.

The Good, the Bad, and the No-Longer-So-Ugly

The good news is that unemployment has fallen in Atlantic Canada and so has seasonality in the labour force.¹ The bad news is that both remain higher in the region, with weaker employment growth, than in the rest of Canada. However, this is much removed from what might be metaphorically called the “ugly” levels of soaring unemployment of earlier decades.

A quarter century ago, in 1996/97, Unemployment Insurance (UI) was significantly reformed and renamed Employment Insurance (EI). This allows for the first comprehensive long-term assessment of the labour market in the Atlantic provinces since 1997 and may provide guidance for future labour market policies. The assessment in this publication provides a detailed examination of the labour market in Atlantic Canada today and how it got where it is. It also reveals continuing weaknesses in the Atlantic Canada’s labour market and factors that still contribute to those weaknesses.

The labour market in the Atlantic provinces has increasingly come into sync with the Canadian labour market. Both unemployment and seasonality have significantly declined in Atlantic Canada both absolutely and relative to the rest of Canada, though gaps remain with the rest of the nation. Still, Halifax and, and to a lesser extent, New Brunswick’s urban area of Fredericton-Moncton-Saint John have unemployment rates about the same as urban areas of similar population throughout Canada. However, the Atlantic labour market is far from rude health. While the urban areas are doing relatively well, the region continues to generate or attract insufficient job-creating investment. Productivity is low and labour costs high. Although in most private sectors Atlantic Canadians are on average paid less than other Canadians, the difference does not make up the productivity gap. As a result, Atlantic workers are relatively expensive. Employment and investment growth lag.

This publication is primarily a diagnostic on the state of Atlantic Canada’s labour market. The analysis does not include the abnormal times of COVID but looks at the labour market under “normal” conditions to the end of 2019, where data allows, to provide information that will be useful as the world emerges from COVID. Such a diagnostic can have important policy implications. For example, the current drive to reform the Employment Insurance system (ESDC, 2021a) has the potential to reverse the achievements of Atlantic Canada’s labour market, and even damage the national labour market, if the national EI system comes to resemble the regionally generous system that did so much damage to Atlantic Canada in the 1970s, 1980s, and into the 1990s. This is not to suggest that this is the federal government’s intention but rather to note one possible outcome.

1. Seasonality refers to a seasonal pattern in employment, where workers in the labour force take seasonal jobs (e.g., in fisheries) and may remain unemployed the remainder of the year.

A Brief History of Unemployment Insurance and Employment Insurance in Atlantic Canada

Unemployment Insurance, 1971–1996

Unemployment Insurance (UI) was dramatically altered in 1971 and a “regionally extended” system was created. “Special benefits” were introduced to cover such things as sickness, maternity, and retirement. However, the most important changes were the significantly increased generosity and accessibility of the system. Benefits were increased from roughly 60% to 75% of insured earnings for those with dependents and 66% for those without. Even more important, qualification for UI was reduced from 24 weeks, down from the previous 30 weeks, to eight weeks of work. These eight weeks of work would qualify workers for 42 weeks of UI benefits in high unemployment regions, leading to the then famous UI catch phrase, Lotto 8/42—a take-off on Lotto 6/49 (Courchene and Allan, 2009).

The impact on Atlantic Canada was almost immediate and strongly negative. The generosity and accessibility of benefits depended on the regional unemployment rate. The higher the rate, the greater the benefits and accessibility. Atlantic Canada’s unemployment rate had been nearing the national average in the 1960s though it still remained higher. Thus, UI became more generous and accessible in Atlantic Canada than elsewhere. The accessibility of UI and the generosity of payments drew workers away from the workplace and onto the UI rolls. In fact, for many UI became more remunerative than work. Seasonal work is usually highly paid so 75% of seasonal earnings was often more than workers could obtain for off-season work. This had a reinforcing effect. As workers shifted to UI, regional unemployment rates increased, making EI even more accessible and more generous (McMahon, 2000).

In 1970, unemployment in Atlantic Canada was 7.6%, 1.7 percentage points higher than the national average. By 1972, the year after regionally generous UI was introduced, unemployment in Atlantic Canada had risen to 9.0%, 2.7 percentage points above the national average. By 1973, it was 3.3 percentage points above the national average. In 1975, unemployment in Atlantic Canada was 11.6%, or 4.5 percentage points above the national average (McMahon, 2021).

This was not because there were no opportunities to work. At the same time—in the 1970s and 1980s—with unemployment in the double digits, both Statistics Canada and the Atlantic Provinces Economic Council reported labour shortages throughout the region, even of unskilled labour (APEC, 1973). Wages increased as employers vied with the UI system for workers. Rising wage costs damaged the ability of employers to compete

and invest, reduced regional private-sector investment, and priced many workers out of the labour market, adding to unemployment and further increasing the generosity of the system. The region had been catching up with the rest of Canada in per-capita GDP and private-sector investment through the 1960s but, after the 1971 UI changes, regional growth slowed dramatically and the gap with the rest of Canada widened.²

This, plus the vastly increased cost of UI, beyond all forecasts, led to a number of changes over the next couple of decades. Tightening the rules, for example, by increasing the minimum number of qualifying weeks to 10 in 1977, led to a new catch phrase for UI, Lotto 10-42. With one exception, however, most of the reforms prior to 1996/97 were more tinkering with details like the increase from eight to 10 weeks for UI qualification, than fundamental. The exception was the very significant and under-appreciated reform introduced in 1978 (CLC, undated): the number of UI regions was increased from 16 to 48.³ Unemployment Insurance became significantly more generous, both in reduced work time to collect it and longer periods of collection, as the unemployment rate increases.

When there were only 16 regions across the nation, in Atlantic Canada urban centres with relatively high employment, like Halifax, offered generous UI benefits because of high rural unemployment in other parts of the same large UI region.⁴ The increase in the number of regions meant that UI regional-eligibility rules now more accurately reflected the employment conditions where workers were located. This change made UI less accessible in urban Atlantic Canada and arguably resulted in the relatively low unemployment rates in the main Nova Scotia and New Brunswick urban areas in the period leading up to the spread of COVID.

Another key change occurred in 1994. The benefit ratio was reduced to 60% for those with dependents and 55% for those without (Lin, 1998).

Reforms to Employment Insurance, 1996/97

The most significant of the reforms of Employment Insurance (EI)—put in place on July, 1996, and January, 1997—were directed at reducing claims for seasonal work and lowering the number of frequent claimants. For example, under the “intensity rule”, the benefit rate dropped to 50% as the number of weeks received in the proceeding five years rose. A claw-back of up to 100% of earnings was introduced for repeat claimants if earnings on claim exceeded maximum insurable earnings. Entrance requirements for new entrants and re-entrants rose to 900 hours of work, and the qualifying period for special benefits was set at 700 hours (Kerr, 1998).

2. See McMahon, 2000 for a full discussion, including an analysis of alternate explanations for soaring unemployment in Atlantic Canada after 1971.)

3. There are now 62 active regions.

4. The reverse would hold true in provinces where urban populations dominated rural ones.

Qualification was shifted to hours worked. The number of hours worked to qualify for EI and the period for which payments would be made depended on the level of unemployment in each EI region, just as before the number of weeks of work needed to qualify depended on the area's unemployment rate, with fewer hours or weeks required in high unemployment areas. **Table 1a** shows the most recent matrix as it was set prior to COVID. **Table 1b** shows the unemployment in EI regions and demonstrates the generosity of the system in much of Atlantic Canada: the average number of hours worked required in Atlantic Canada is 570.5 compared to 637.4 in the rest of Canada, with payments for a minimum of 19.7 weeks and a maximum of 41.7 weeks compared to 16.8 and 39.0 weeks in the rest of Canada.

Spending EI spending is considerably higher in Atlantic Canada than across Canada. For example, the average annual payment from 2007 to 2018 per labour-force participant was \$939 across Canada compared to \$2,444 in Atlantic Canada while the average Canadian contribution was \$1,168, for a deficit per labour force participant of \$229. EI contributions in Atlantic Canada averaged \$1,229, close the national average, but the more generous payout resulted in a \$1,215 surplus between contribution and payout (McMahon, 2020).

Evidence of the effects of the reforms

The next section will review the changes to the Atlantic and Canadian labour markets following 1996/97 reforms and the state of these markets now. However, it is impossible to disentangle precisely the effects of the reforms from other economic factors. Reforms to Employment Insurance were arguably part of the wider economic reforms of Prime Minister Jean Chrétien beginning with the 1995 budget. These reforms coincided with, and likely contributed to, a period of strong economic growth in Canada. A number of studies indicate that the “Chrétien” reforms contributed to the economic gains (for example, IMF, 2012; Clemens, Lau, Palacios, and Veldhuis, 2017). As well, the employment market was strong in the period leading up to the 1996/97 reforms. The North American Free Trade Agreement (NAFTA) was implemented in 1994 and a commodity super-cycle was beginning, though it did not reach its peak until well into the 2000s. Energy prices also rose during the period to Canada's benefit.

So a number of factors, not just EI reform, were in place that might be expected to improve the Atlantic and Canadian labour market. However, several of lines of evidence suggest that EI reform contributed to labour-market changes. These include the mere magnitude of the program and of the reforms and the well-documented history of the program profoundly affecting labour market behavior: Busby and Grey, 2011; Courchene and Allan, 2009; Gray, 2006; Kerr, 1998; Macdonald, 1985; McMahon, 2000; Riddell, Kuhn, Clemens, and Palacios, 2006; Royal Commission [Newfoundland & Labrador] on Employment and Unemployment, 1986; Young, Davis, and Igloliorte, 2003, to name a few.

Table 1a: Number of hours required for regular EI benefits

Hours of insurable employment	Regional Unemployment Rate (%)											
	<6.0	6.10-7.00	7.10-8.00	8.10-9.00	9.10-10.00	10.10-11.00	11.10-12.00	12.10-13.00	13.10-14.00	14.10-15.00	15.10-16.00	>16.0
420-454	0	0	0	0	0	0	0	0	26	28	30	32
455-489	0	0	0	0	0	0	0	24	26	28	30	32
490-524	0	0	0	0	0	0	23	25	27	29	31	33
525-559	0	0	0	0	0	21	23	25	27	29	31	33
560-594	0	0	0	0	20	22	24	26	28	30	32	34
595-629	0	0	0	18	20	22	24	26	28	30	32	34
630-664	0	0	17	19	21	23	25	27	29	31	33	35
665-699	0	15	17	19	21	23	25	27	29	31	33	35
700-734	14	16	18	20	22	24	26	28	30	32	34	36
735-769	14	16	18	20	22	24	26	28	30	32	34	36
770-804	15	17	19	21	23	25	27	29	31	33	35	37
805-839	15	17	19	21	23	25	27	29	31	33	35	37
840-874	16	18	20	22	24	26	28	30	32	34	36	38
875-909	16	18	20	22	24	26	28	30	32	34	36	38
910-944	17	19	21	23	25	27	29	31	33	35	37	39
945-979	17	19	21	23	25	27	29	31	33	35	37	39
980-1,014	18	20	22	24	26	28	30	32	34	36	38	40
1,015-1,049	18	20	22	24	26	28	30	32	34	36	38	40
1,050-1,084	19	21	23	25	27	29	31	33	35	37	39	41
1,085-1,119	19	21	23	25	27	29	31	33	35	37	39	41
1,120-1,154	20	22	24	26	28	30	32	34	36	38	40	42
1,155-1,189	20	22	24	26	28	30	32	34	36	38	40	42
1,190-1,224	21	23	25	27	29	31	33	35	37	39	41	43
1,225-1,259	21	23	25	27	29	31	33	35	37	39	41	43
1,260-1,294	22	24	26	28	30	32	34	36	38	40	42	44
1,295-1,329	22	24	26	28	30	32	34	36	38	40	42	44
1,330-1,364	23	25	27	29	31	33	35	37	39	41	43	45
1,365-1,399	23	25	27	29	31	33	35	37	39	41	43	45
1,400-1,434	24	26	28	30	32	34	36	38	40	42	44	45
1,435-1,469	25	27	29	31	33	35	37	39	41	43	45	45
1,470-1,504	26	28	30	32	34	36	38	40	42	44	45	45
1,505-1,539	27	29	31	33	35	37	39	41	43	45	45	45
1,540-1,574	28	30	32	34	36	38	40	42	44	45	45	45
1,575-1,609	29	31	33	35	37	39	41	43	45	45	45	45
1,610-1,644	30	32	34	36	38	40	42	44	45	45	45	45
1,645-1,679	31	33	35	37	39	41	43	45	45	45	45	45
1,680-1,714	32	34	36	38	40	42	44	45	45	45	45	45
1,715-1,749	33	35	37	39	41	43	45	45	45	45	45	45
1,750-1,784	34	36	38	40	42	44	45	45	45	45	45	45
1,785-1,819	35	37	39	41	43	45	45	45	45	45	45	45
1,820 +	36	38	40	42	44	45	45	45	45	45	45	45

Sources: Government of Canada, 2020a.

Table 1b: Three month seasonally adjusted unemployment rate by EI region, April 12–May 9, 2020

Code	Name of economic region	Unemployment rate	Number of insured hours required to qualify for regular benefits	Minimum number of weeks payable for regular benefits	Maximum number of weeks payable for regular benefits
1	St. John's	8.2	595	18	42
2	Newfoundland & Labrador	15.1	420	30	45
4	Eastern Nova Scotia	13.8	420	26	45
5	Western Nova Scotia	8.3	595	18	42
6	Halifax	6.9	665	15	38
7	Fredericton-Moncton-Saint John	6.5	665	15	38
8	Madawaska-Charlotte	7.8	630	17	40
9	Restigouche-Albert	11.5	490	23	45
65	Charlottetown	6.1	665	15	38
66	Prince Edward Island (rural areas outside Charlottetown)	9.9	560	20	44
	Average of the Atlantic provinces	9.41	570.5	19.7	41.7
10	Gaspésie-Îles-de-la-Madeleine	14.9	420	28	45
11	Quebec	5.7	700	14	36
12	Trois-Rivières	6.2	665	15	38
13	South Central Quebec	4.2	700	14	36
14	Sherbrooke	6.2	665	15	38
15	Montérégie	4.6	700	14	36
16	Montreal	6.6	665	15	38
18	North Western Quebec	6.6	665	15	38
19	Lower Saint Lawrence and North Shore	7.0	665	15	38
20	Hull	5.5	700	14	36
21	Chicoutimi-Jonquière	6.5	665	15	38
22	Ottawa	5.0	700	14	36
23	Eastern Ontario	5.3	700	14	36
24	Kingston	5.9	700	14	36
25	Central Ontario	6.8	665	15	38
26	Oshawa	7.9	630	17	40
27	Toronto	6.0	700	14	36
28	Hamilton	5.7	700	14	36
29	St. Catharines	7.9	630	17	40
30	London	5.5	700	14	36
31	Niagara	8.4	595	18	42
32	Windsor	10.5	525	21	45
33	Kitchener	5.8	700	14	36
34	Huron	6.6	665	15	38
35	South Central Ontario	4.2	700	14	36

Code	Name of economic region	Unemployment rate	Number of insured hours required to qualify for regular benefits	Minimum number of weeks payable for regular benefits	Maximum number of weeks payable for regular benefits
36	Sudbury	5.6	700	14	36
37	Thunder Bay	6.0	700	14	36
38	Northern Ontario	10.7	525	21	45
39	Winnipeg	5.4	700	14	36
40	Southern Manitoba	7.2	630	17	40
41	Northern Manitoba	35.4	420	32	45
42	Regina	7.0	665	15	38
43	Saskatoon	7.1	630	17	40
44	Southern Saskatchewan	8.5	595	18	42
45	Northern Saskatchewan	18.5	420	32	45
46	Calgary	8.7	595	18	42
47	Edmonton	8.0	630	17	40
48	Northern Alberta	11.2	490	23	45
49	Southern Alberta	7.9	630	17	40
50	Southern Interior British Columbia	7.5	630	17	40
51	Abbotsford	4.7	700	14	36
52	Vancouver	5.4	700	14	36
53	Victoria	5.5	700	14	36
54	Southern Coastal British Columbia	7.7	630	17	40
55	Northern British Columbia	10.5	525	21	45
65	Charlottetown	6.1	665	15	38
66	Prince Edward Island (rural areas outside Charlottetown)	9.9	560	20	44
	Average for rest of Canada	7.9	637.4	16.8	39.0

Source: Government of Canada, 2020b.

Another line of evidence is that the intent of the 1996/97 reforms is reflected more or less exactly by what happened after the reforms: lower dependence on EI, reduced intensity and seasonality, and increased workforce attachment. International evidence is also supportive: Canada reduced unemployment and seasonality more than most other advanced nations. It would be odd to assume that Canadian reforms intended to produce these effects had no role in creating them.

The main purpose of this study, however, is to chart the changes in the Atlantic and Canadian labour markets after 1996/97. The claim to causality between reform of EI and changes in the labour market is a relatively weak one: only that the reforms played a role in developments in the labour market. The evidence is discussed below.

Even by the first report to Parliament on the changes (Kerr, 1998), research showed positive changes directly related to the reforms of Employment Insurance: “[T]he available information suggests that the reform has helped reduce program costs, strengthened work incentives, and extended adjustment assistance to more individuals, despite reduced expenditures on employment benefits and support measures” (Kerr, 1998).

The report of December 22, 2000, also noted positive changes, related both to workforce attachment and reduced seasonality, and attributed at least some of this to the 1996/97 reforms (CEIC, 2000). The Divisor Rule, which rewarded claimants who worked more than their minimum entrance requirement, the report said, increased workforce attachment as intended, though the report noted gains in employment opportunities also played a role. The report also argued that the intensity rule reduced seasonality, as intended:

[I]t affected 43.7% of all regular and fishing claims in 1999/00, up from 35.2% in 1998/99 ... The impact of the intensity rule was highest in the Atlantic provinces, in the Yukon and in Quebec, suggesting that its effects were greatest where seasonal employment makes up a large proportion of the local jobs ... [T]he greatest increase was in Nova Scotia (143.7%), followed by Prince Edward Island (143.1%) and New Brunswick (132.3%). (CEIC, 2000: 9)

A number of studies prior to, and after, 1996/97 had shown how seasonality and unemployment, particularly in Atlantic Canada, had risen after the 1971 reform of Unemployment Insurance: Macdonald, 1985; McMahon, 2000; Royal Commission [Newfoundland & Labrador] on Employment and Unemployment, 1986; Young, Davis, and Igloliorte, 2003; among many others. The reforms of 1996/97 were meant to reverse, at least somewhat, these effects and that happened, as the next section will demonstrate. While it may not be possible to fully disentangle various economic effects, all this strongly indicates that the 1996/97 reforms of Employment Insurance are at least in part responsible for the positive changes in the labour market that followed their introduction.

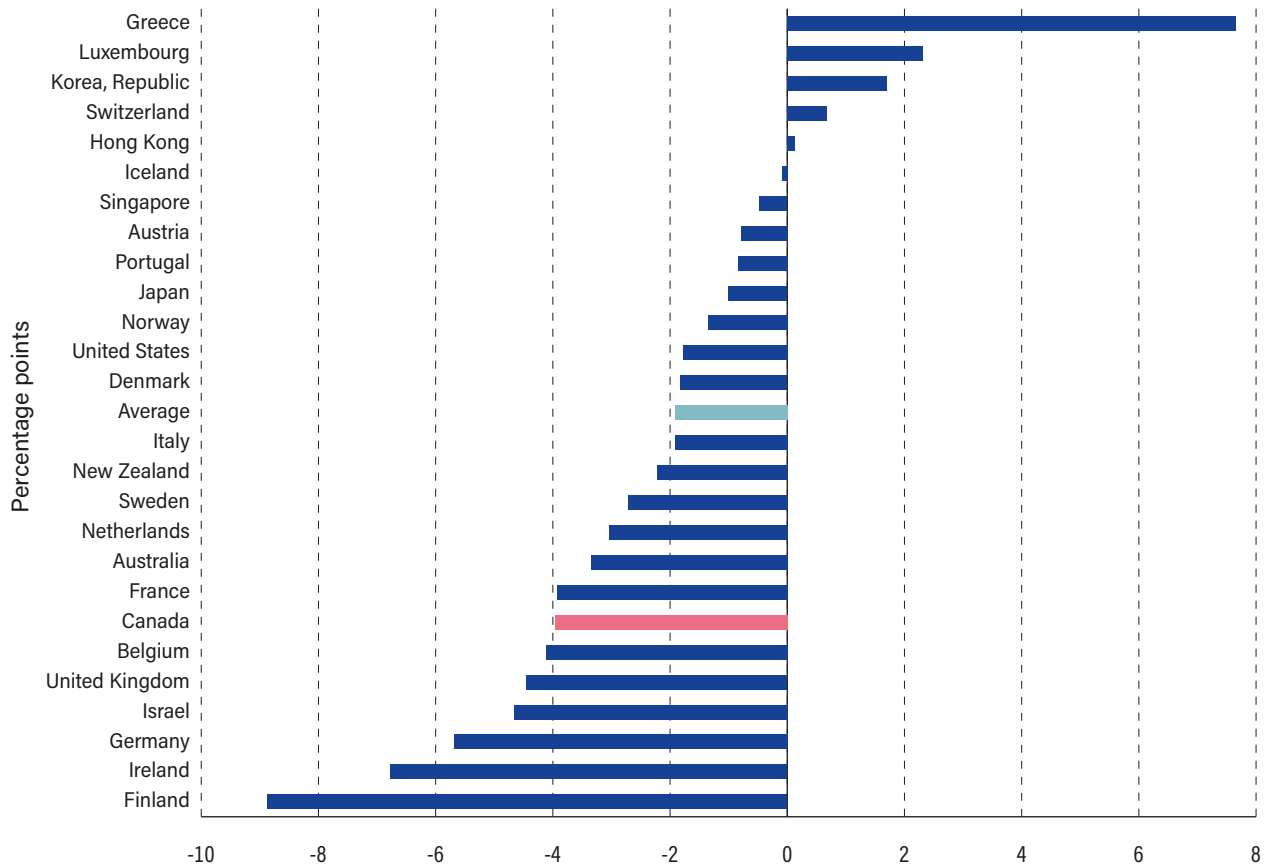
International Evidence

International evidence also suggests that the 1996/97 reforms played a role in changing the labour market in Canada. Though this evidence is suggestive rather than decisive, if Canada specifically targeted reducing unemployment and seasonality, on average it should outperform other nations in achieving these goals if the reforms were on a meaningful scale. It should do about as well as other nations that were also embarking on significant labour-market reforms.

The international evidence does indeed show that Canada significantly outpaced most other rich advanced nations in improving its labour market after 1996. Canada had one of the

largest reductions in unemployment among advanced nations between 1996 and 2019, ranking 7th out of 27 advanced rich nations.⁵ Figure 1 shows the reduction or increase in unemployment between 1996 and 2019: for example, Greece’s unemployment rate was 7.7 percentage points lower in 1996 than in 2019.

Figure 1: Change in unemployment (percentage points) between 1996 and 2019



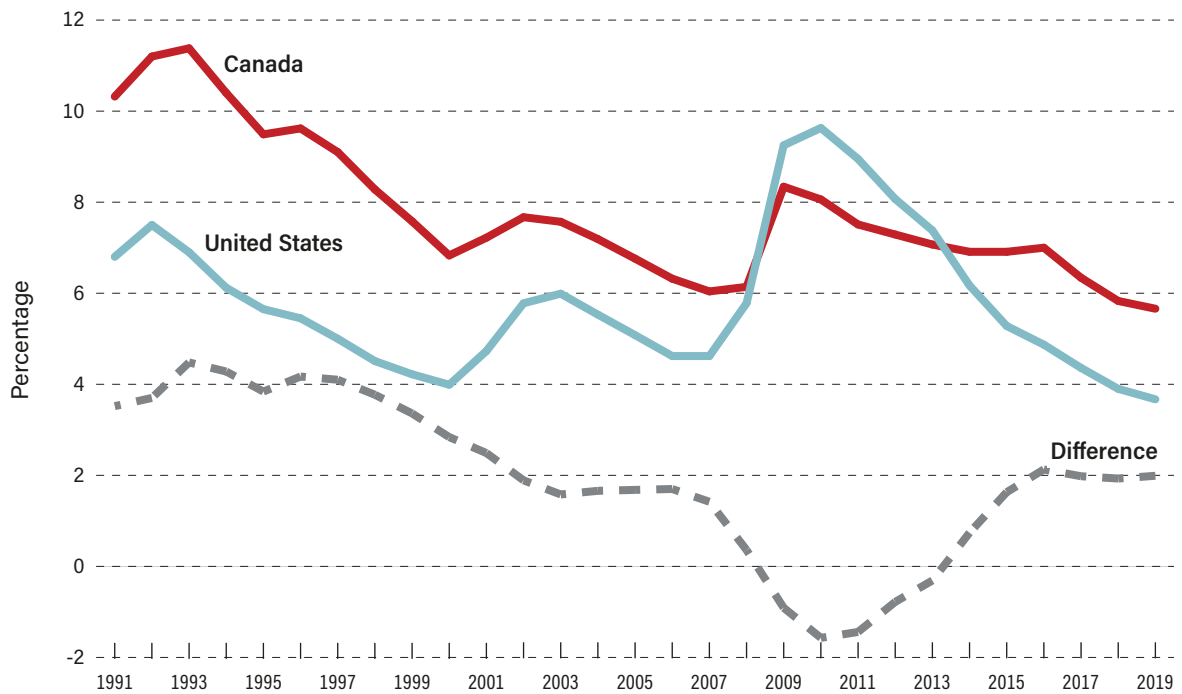
Sources: World Bank, 2021; calculations by the author.

It is worth noting that most of the nations that outpaced Canada had either embarked on or were about to embark on their own strong labour-market reform—Germany, Ireland, Finland (Duval, Furceri, Hu, Jalles, and Nguyen, 2018), and to some extent Israel (Israeli Ministry of Foreign Affairs, undated)—or were recovering from deep recessions—Finland and Belgium. In other words, special circumstances, as in Canada, were involved in nations that did as well or better than Canada in improving their labour markets. Canada’s record in reducing unemployment surpassed that of the United States, though they were both influenced by the same economic forces, again suggesting labour-market reform was a key engine (figure 2).⁶

5. Data definitions can vary from nation to nation. These are International Labor Organization’s “modeled estimates”, which standardize the definitions (World Bank, 2021).

6. The International Labor Organization’s “modeled estimates”.

Figure 2: Unemployment rate (%) in Canada and the United States, 1991–2019; difference (percentage points)



Source: World Bank, 2021.

Relative changes in the seasonality of work in Canada and other rich nations would also point to the impact of labour-market reform, since reducing seasonality was a key goal of the reform package. **Box 1** explains some of the difficulties in measuring seasonality and the approach taken here. For reasons discussed in the next section and in **Box 1**, the method employed should be taken as approximate rather than precise, particularly at a national level where differing regions can have different seasonal patterns. Yet, it creates important information on trends and relative levels of seasonality.

The OECD provides monthly employment data for a number of nations. Among other useful statistics, **table 2** shows the Sample Variance for unemployment rates, produced by the method discussed in the **Box 1**. Nations with higher levels of variance have higher levels of seasonality. If the 1996/97 reforms were successful, Canada, which specifically targeted seasonality, should have a better record of reducing it than other nations. An inspection of **table 2** shows that to be the case: Canada's sample variance dropped from 7.6 in the first period to 4.3 in the second. The table also contains other useful information on unemployment: the mean, the mode, the standard deviation (also derivable from the sample variance), the minimums and maximums, and the number of observations for each nation and period.

Box 1: Measuring seasonality

Many fields, not just economics, have grappled with finding a precise and simple way to measure seasonality. In fact, visual inspection of the data or simple measurement of the peaks and valleys are often the preferred methods. However, the latter can be less precise than visual inspection. Simple measurement of the average of, say, monthly unemployment can be misleading since seasonal patterns may shift from year to year as a result of weather, changes in catching seasons, other regulatory factors, or market conditions.

Anthony J. Fulford, in a paper published in *Emerging Themes in Epidemiology*, discusses the problem of measuring seasonality. “Periodic or cyclic data of known periodicity are frequently encountered in epidemiological and biomedical research: for instance, seasonality provides a useful experiment of nature while diurnal rhythms play an important role in endocrine secretion. There is, however, little consensus on how to analysis [sic] these data and less still on how to measure association or effect size for the often complex patterns seen” (2014).

Some novel and complicated solutions have been suggested but none fully adopted. Fulford proposes a statistic derived from a Fourier regression model. Kurz and Mitnik (2021) note the problem of spurious seasonality in financial data and, to eliminate this, “derive the autocorrelation function of ... sequences for a general class of weak white noise processes and for a general class of variance estimators. The problem of spurious

seasonality can be overcome by using overlapping return data for estimation of risk measures” (2021: abstract)

I employ a variation of what is perhaps the most common approach to measuring seasonality, the much simpler coefficient of variation (see, for example, Duro and Turrión-Prats, 2019). I use instead the sample variance. Both measure the same thing, though in different scales, since the coefficient of variation can be derived from the sample variance. Both also avoid the problem of seasonality shifting from year to year, discussed above.

Both statistics will pick up not just seasonal changes, however, but also non-seasonal variation; for example, a recession or a natural disaster in economic data. To at least partially adjust for this, I divide each monthly number by a 12-month rolling average, the month itself and the six months previous, and the five months after, multiplied by 100. This is also a common approach to measuring seasonality, with the sample variance providing a single number for a specific period.

These methods necessarily involve some imprecision and the sample variance may not have a clear intuitive meaning nor be appropriate for every investigation of seasonality. However, the method is well suited to comparing data series and whether seasonality has increased or decreased between two periods, and that is the sole goal of using the measure in the context of this paper.

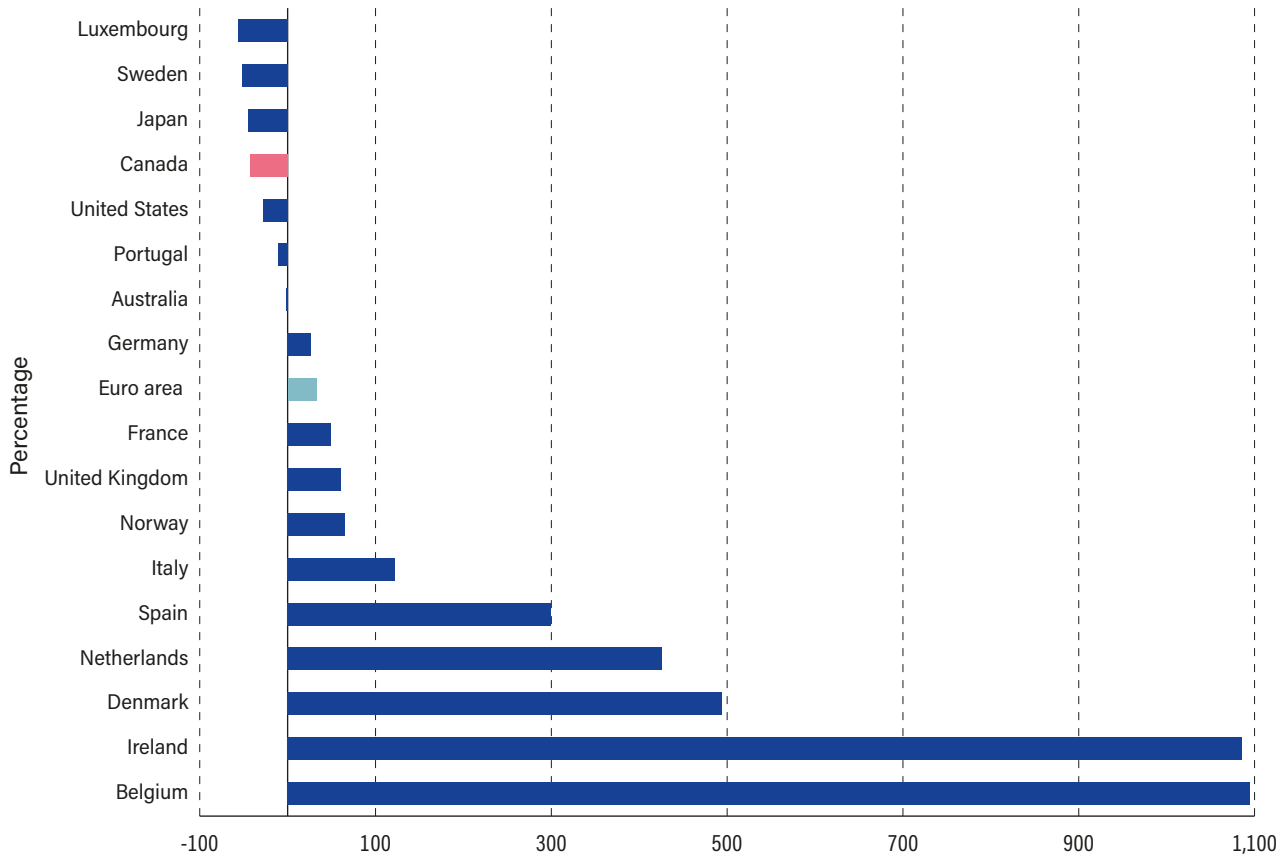
Table 2: Statistical properties—cross country unemployment

		Mean	Median	Standard Deviation	Sample Variance	Minimum	Maximum	Count
Canada	1996	99.86	100.09	2.76	7.62	89.08	110.11	305
	2019	100.02	100.11	2.08	4.34	90.62	106.35	264
Australia	1996	99.86	99.89	2.38	5.67	90.79	107.02	232
	2019	100.03	99.97	2.36	5.59	91.05	107.98	264
Belgium	1996	99.97	100.00	0.94	0.88	97.33	101.89	173
	2019	100.10	100.18	3.25	10.57	90.39	107.89	264
Denmark	1996	100.05	100.00	1.45	2.11	97.09	104.28	173
	2019	99.93	100.00	3.54	12.51	88.47	113.63	264
Euro area (19 countries)	1996	99.77	99.92	0.80	0.64	96.87	101.33	83
	2019	100.05	100.17	0.92	0.85	95.55	102.27	264
France	1996	99.85	99.92	0.93	0.86	93.63	101.55	173
	2019	100.07	100.13	1.13	1.28	95.70	103.73	264
Germany	1996	99.50	99.60	0.96	0.92	96.84	102.08	77
	2019	100.20	100.27	1.08	1.16	95.78	102.93	264
Ireland	1996	100.09	100.22	0.93	0.86	95.45	102.41	173
	2019	99.92	100.35	3.19	10.19	90.08	110.03	264
Italy	1996	99.85	99.78	1.19	1.41	95.83	102.95	173
	2019	100.01	100.04	1.77	3.13	94.77	105.35	264
Japan	1996	99.82	100.00	3.50	12.28	86.84	112.00	305
	2019	100.06	100.16	2.59	6.73	89.59	107.14	264
Luxembourg	1996	99.89	100.00	3.31	10.94	88.42	108.29	173
	2019	99.78	100.00	2.20	4.83	92.70	107.39	264
Netherlands	1996	100.13	100.31	0.78	0.61	98.06	101.74	166
	2019	99.94	100.12	1.79	3.20	94.47	104.46	264
Norway	1996	100.11	100.14	2.71	7.33	93.57	105.56	101
	2019	99.84	99.80	3.48	12.14	89.80	110.09	264
Portugal	1996	99.95	100.09	2.16	4.69	93.37	107.08	173
	2019	99.93	100.00	2.04	4.16	94.95	106.09	264
Spain	1996	100.02	100.16	0.93	0.86	97.50	102.02	134
	2019	99.94	100.09	1.85	3.42	91.43	105.05	264
Sweden	1996	99.39	99.63	4.62	21.32	84.32	114.61	173
	2019	99.98	100.11	3.20	10.25	88.55	109.43	264
United Kingdom	1996	100.09	100.23	1.18	1.40	95.95	103.70	173
	2019	100.05	100.02	1.50	2.25	94.55	104.33	264
United States	1996	99.92	100.00	2.69	7.25	89.11	107.25	305
	2019	99.95	100.18	2.29	5.24	92.02	106.19	264

Sources: OECD, 2021.

To make things visually clear, the change in sample variance between the two periods is shown in **figure 3a**. For Canada, the variance dropped by 43% in the second period compared to the first, the fourth largest reduction of variance in the sample nations and well behind the Euro-area group of 19 nations, where variance increased by about a third between the two periods.

Figure 3a: Change in variance (%) between 1972–1995 and 1997–2019



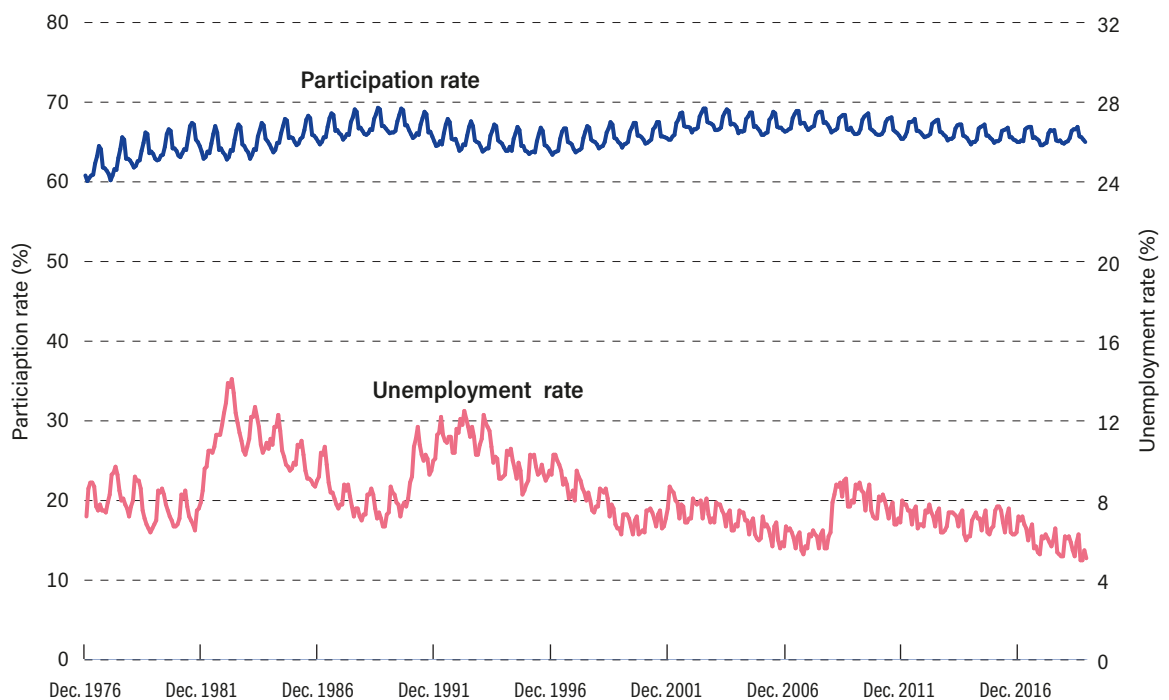
Sources: OECD, 2021; calculations by the author.

Changes in the Labour Markets of the Atlantic Provinces and across Canada since 1996/97

Reforms of Employment Insurance applied across the nation. However, many of the reforms were specifically targeted at the labour market in the Atlantic provinces, particularly those changes meant to increase workforce attachment and lower seasonality. So while program rules may be national, their impact is conditioned by the local labour market. If weak workforce attachment or seasonality are more of an issue in Atlantic Canada than elsewhere, then the reforms will affect the labour market in the Atlantic provinces more than the national market. The changes in the labour market the reform intended to create indeed happened and, as expected, more strongly in Atlantic Canada than elsewhere. However, again the claim is not that the reform is responsible for the full extent of the changes in the labour market, but only that it contributed to them.

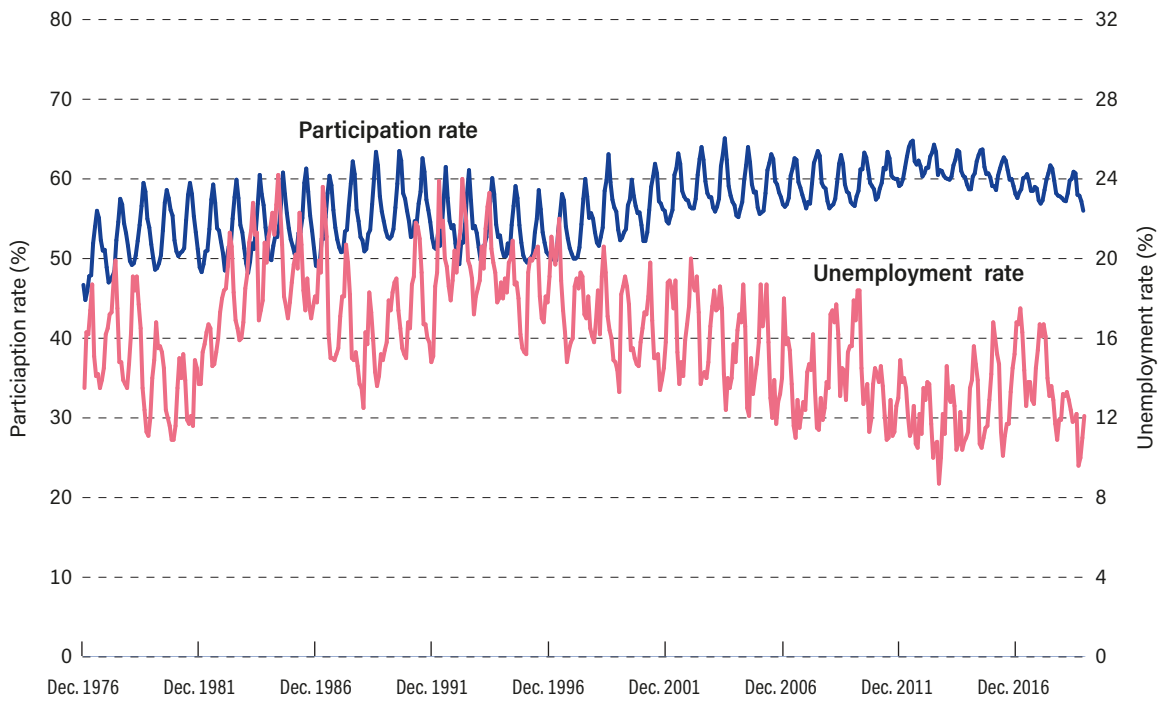
Figures 4a-4e demonstrate the profound changes in the Canadian and Atlantic labour markets after 1996/97. In all cases, the unemployment rate trended down quite significantly while the participation rate tended upwards, with the changes greater in Atlantic Canada (table 3) than nationally.

Figure 4a: Unemployment and participation rates (%), Canada, December, 1976-December, 2019



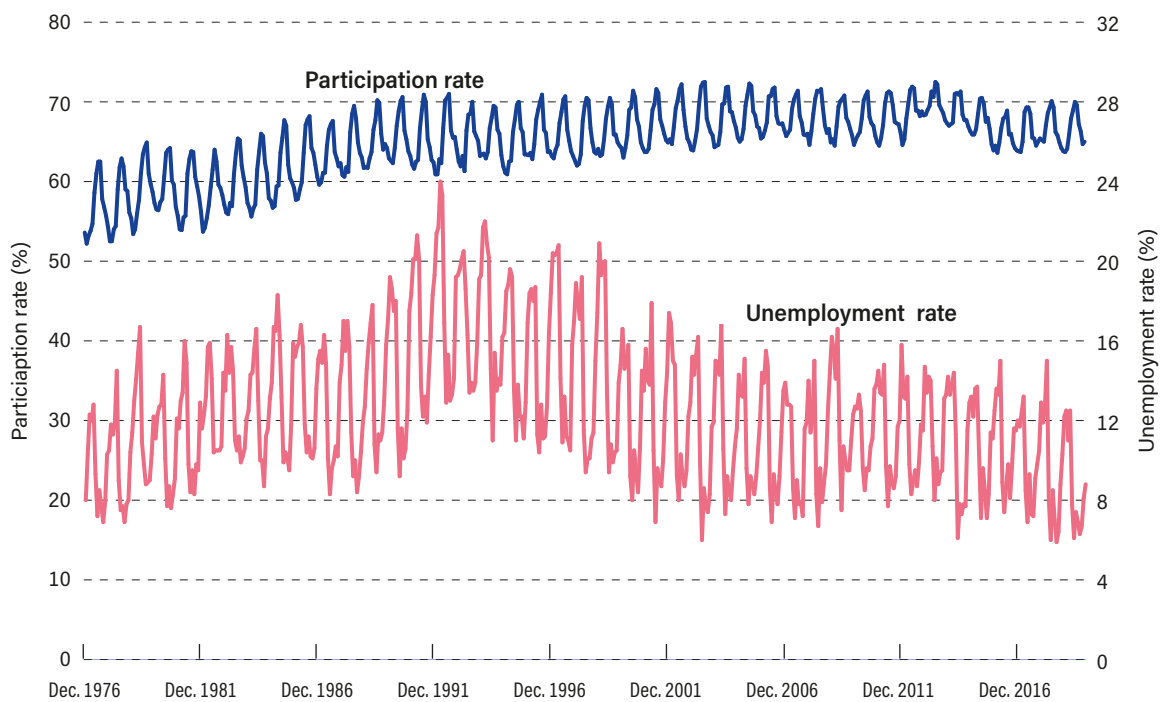
Source: Statistics Canada, 2021a: table 14-10-0017-01.

Figure 4b: Unemployment and participation rates (%), Newfoundland & Labrador, Dec. 1976–Dec. 2019



Source: Statistics Canada, 2021a: table 14-10-0017-01.

Figure 4c: Unemployment and participation rates (%), Prince Edward Island, Dec. 1976–Dec. 2019



Source: Statistics Canada, 2021a: table 14-10-0017-01.

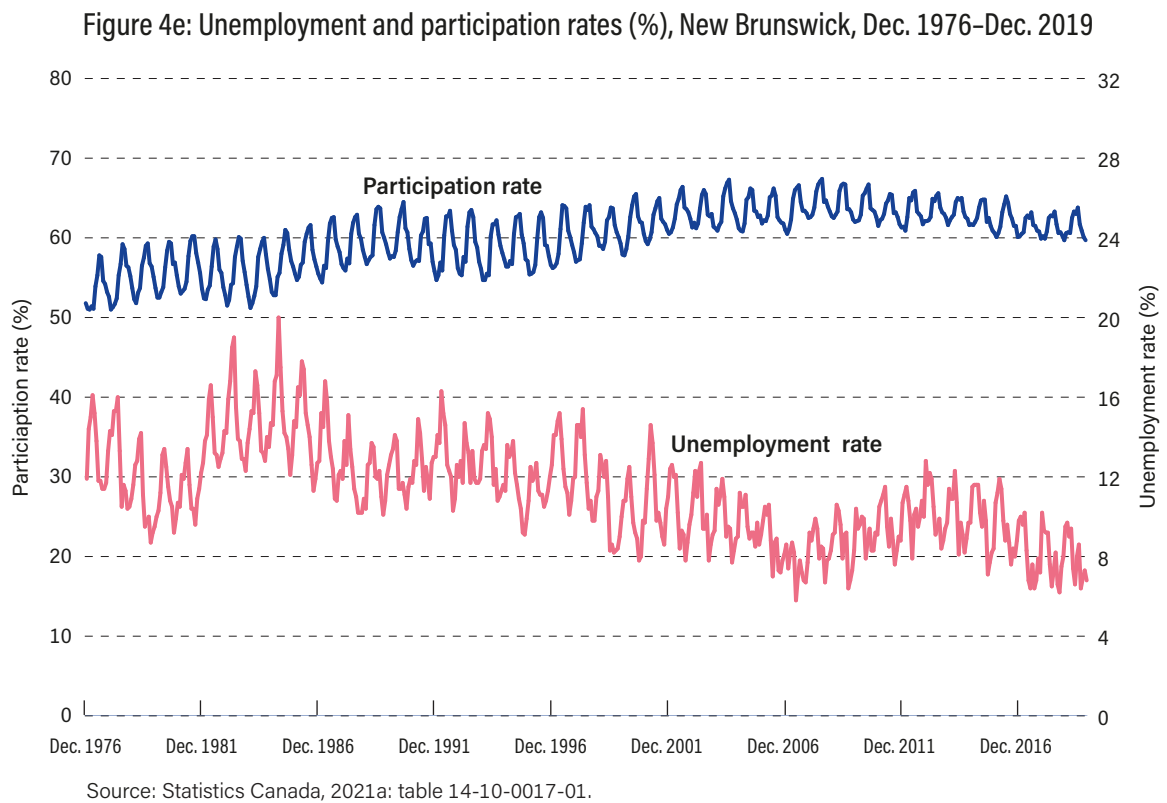
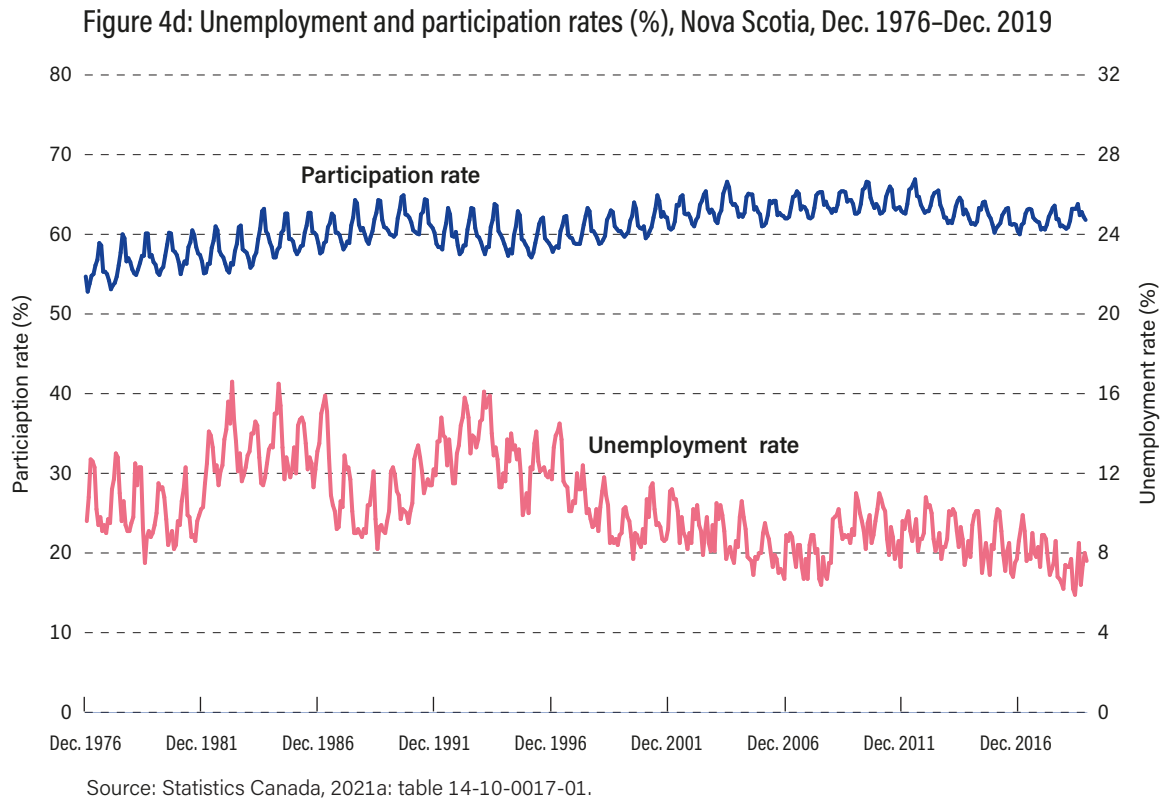
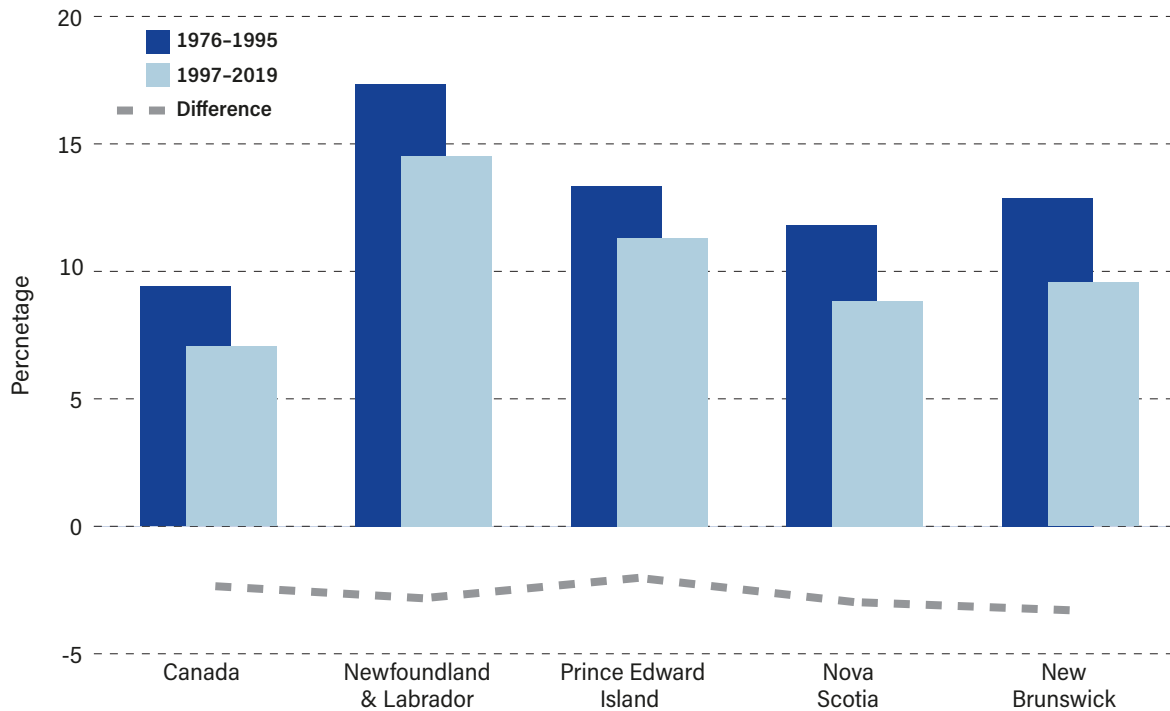


Figure 5a and **figure 5b** and **table 3** and **table 4** show the differences between the period before, and that after the 1996/97 reforms. The pre-reform period is from December 1976, the beginning of the data series, to December 1995, before the reforms were introduced. The post-reform period is from July 1997 to December 2019. The last of the reforms were introduced in January 1997, so July was set to start the latter period, giving time for the changes to be fully adsorbed by the labour market.

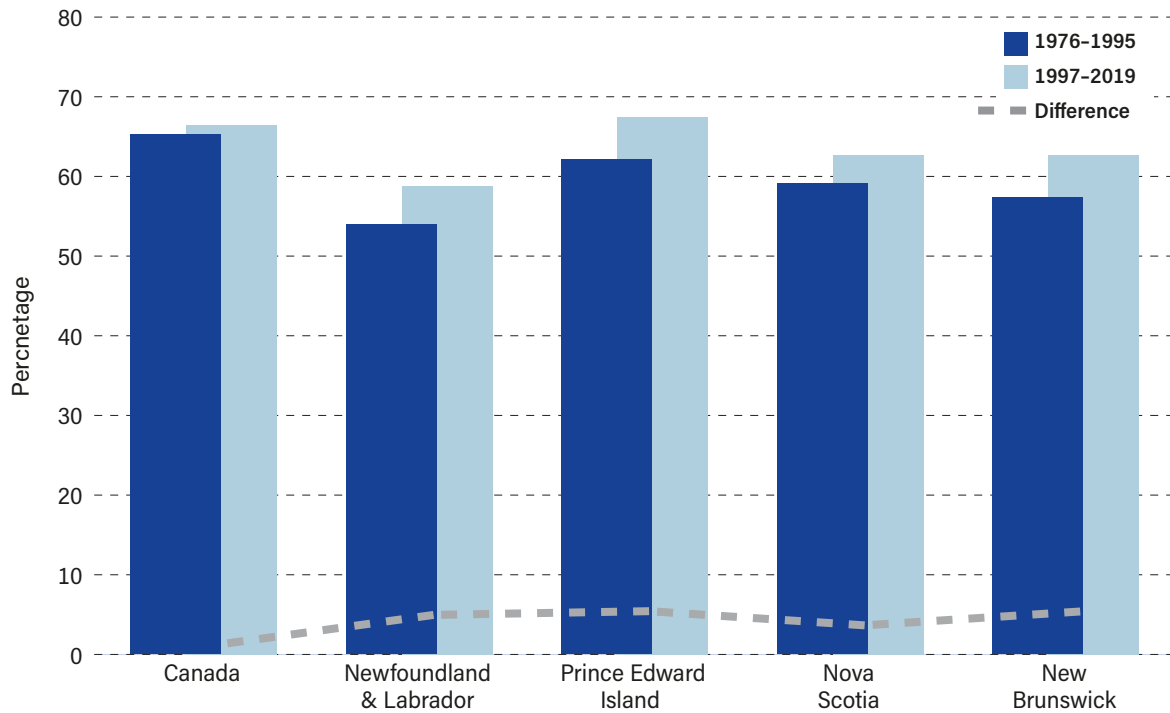
Figure 5a: Unemployment rate (%) in Canada and the Atlantic provinces, 1976–1995 and 1997–2019; and difference between the two periods



Sources: Statistics Canada, 2021a: table 14-10-0017-01.

Table 3 shows that the unemployment rate declined significantly between the two periods both nationally and regionally, with three of the four Atlantic provinces experiencing significantly larger declines than the national average. Only the relatively small labour market of Prince Edward Island saw a lower decline in unemployment than the Canadian average. Equally important, though sometimes neglected, are the very significant changes in the participation rate (**table 4**). What is particularly striking is that, while the national participation rate moved upward, the upward movement of participation rate was considerably larger in the Atlantic provinces. EI reforms to increase workforce attachment likely played a role. Newfoundland & Labrador's increase was over four times the national average, that of Prince Edward Island and New Brunswick nearly four-and-a-half times greater, and that of Nova Scotia three times greater. This means two things. Firstly, that the reforms and reduced generosity of the system did not drive people out of the labour market but, if anything, encouraged an increased number of entrants. Secondly, the decline in unemployment was not the result of a lower participation rate.

Figure 5b: Participation rate (%) in Canada and the Atlantic provinces, 1976–1995 and 1997–2019; and difference between the two periods



Sources: Statistics Canada, 2021a: table 14-10-0017-01.

Table 3: Unemployment rate (%), 1976–1995 and 1997–2019, and difference (percentage points)

	Average, 1976-1995	Average, 1997-2019	Difference
Canada	9.40	7.06	-2.35
Newfoundland & Labrador	17.35	14.52	-2.84
Prince Edward Island	13.35	11.31	-2.04
Nova Scotia	11.83	8.84	-2.99
New Brunswick	12.88	9.56	-3.31

Source: Statistics Canada, 2021a.

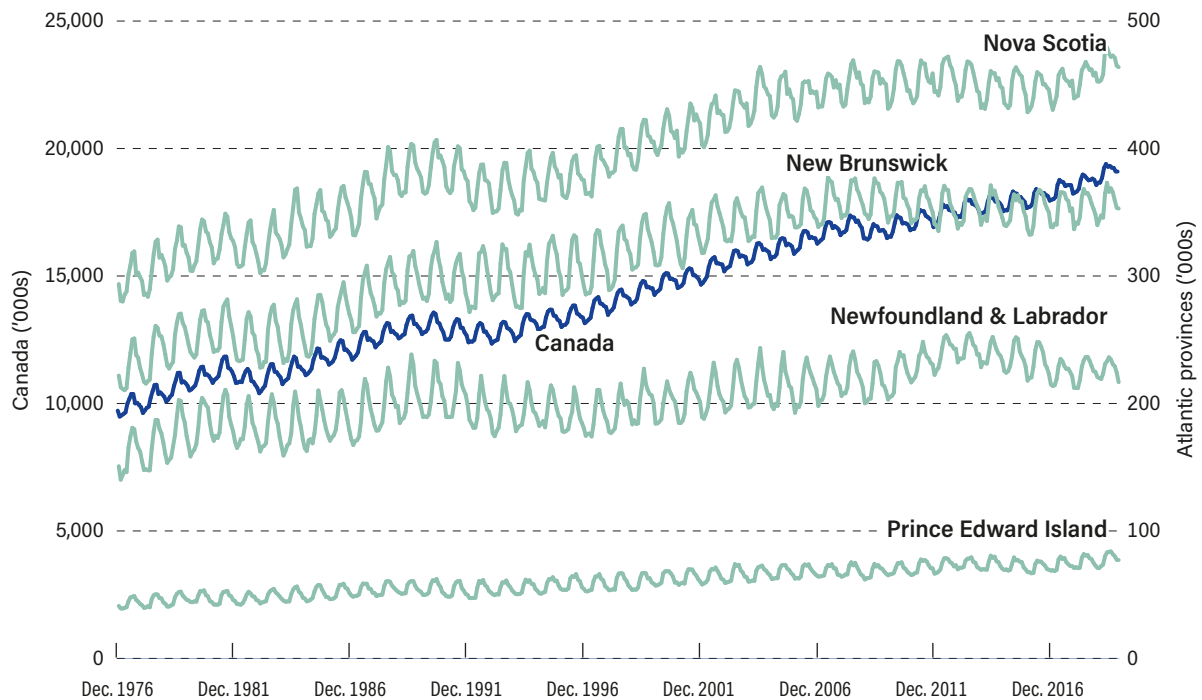
Table 4: Participation rate (%), 1976–1995 and 1997–2019, and difference (percentage points)

	Average, 1976-1995	Average, 1997-2019	Difference
Canada	65.18	66.41	1.23
Newfoundland & Labrador	53.88	58.85	4.96
Prince Edward Island	62.01	67.44	5.43
Nova Scotia	59.05	62.70	3.65
New Brunswick	57.30	62.69	5.39

Source: Statistics Canada, 2021a.

Seasonality also declined. Perhaps the best way to check for seasonality is visual, as discussed earlier. For Atlantic Canada and the rest of Canada, the visual evidence of declining seasonality between the two periods is unmistakable. It is easy to see in figures 4a–4e that the peaks and valleys of the first period are much greater than the second period for both employment and participation rate. This is also reflected by overall employment in **figure 6**.

Figure 6: Employment ('000s), Canada and the Atlantic provinces December, 1976–December, 2019



Source: Statistics Canada, 2021a: table 14-10-0017-01.

The sample variance provides a measure of seasonality, as discussed earlier. An examination of **table 5**, based on raw data, shows that the sample variance declined for Canada and each of the Atlantic provinces for both participation rate and unemployment rate between the two periods. This table also provides information on comparing the mode (average) of unemployment and participation to the median; the number of observations in each time period, and the minimum and maximum.

However, sample variance also captures long-term as well as seasonal variation. As discussed in Box 1 (p. 11), a common method that goes a long way to solving this problem is to divide each month by a 12-month moving average. This means that the variation in any given month is measured against the surrounding 12 months, cancelling out long-term changes. **Table 6** is calculated using this method.

Tables 5 and 6 show the expected results—that sample variance is greater in the first period than in the second in all cases.

Table 5: Statistical properties—Canadian unemployment

		Mean	Median	Sample Variance	Minimum	Maximum	Count
Canada							
Unemployment rate	before 1996	65.2	65.3	3.64	60.1	69.3	229
	after 1997	66.4	66.4	1.41	63.7	69.2	270
Participation rate	before 1996	9.4	9.2	3.05	6.4	14.1	229
	after 1997	7.1	7.1	0.86	5.0	9.5	270
Newfoundland & Labrador							
Unemployment rate	before 1996	17.4	17.4	8.64	10.9	24.2	229
	after 1997	14.5	14.3	6.37	8.7	20.6	270
Participation rate	before 1996	53.9	53.5	13.78	44.8	63.5	229
	after 1997	58.8	59.05	9.28	50.0	65.1	270
Prince Edward Island							
Unemployment rate	before 1996	62.0	62.4	19.74	52.2	71.0	229
	after 1997	67.4	67.2	6.45	62.0	72.5	270
Participation rate	before 1996	13.3	12.9	13.57	6.9	24.0	229
	after 1997	11.3	11.0	9.51	5.9	20.9	270
Nova Scotia							
Unemployment rate	before 1996	59.1	59	6.43	52.8	64.9	229
	after 1997	62.7	62.7	2.92	58.8	66.9	270
Participation rate	before 1996	11.8	11.9	4.10	7.5	16.6	229
	after 1997	8.8	8.8	1.54	5.9	12.4	270
New Brunswick							
Unemployment rate	before 1996	57.3	57.1	10.48	51	64.5	229
	after 1997	62.7	62.6	4.24	57	67.4	270
Participation rate	before 1996	12.9	12.7	4.08	8.7	20.0	229
	after 1997	9.6	9.4	3.03	5.8	15.4	270

Sources: Statistics Canada, 2021a: table 14-10-0017-01.

Table 6: Statistical properties—Canadian unemployment (adjusted)

		Mean	Median	Sample Variance	Minimum	Maximum	Count
Canada							
Unemployment rate	to 1995	100.04	99.56	3.69	96.88	104.56	223
	after 1997	100.01	99.59	1.82	98.01	103.00	270
Participation rate	to 1995	100.01	99.51	3.62	96.91	104.48	223
	after 1997	100.00	99.58	1.83	98.00	102.99	270
Newfoundland & Labrador							
Unemployment rate	to 1995	100.10	98.93	38.97	90.79	113.46	223
	after 1997	100.04	99.28	15.15	92.61	112.24	270
Participation rate	to 1995	100.03	98.95	38.39	90.73	113.70	223
	after 1997	100.02	99.36	15.27	92.16	112.02	270
Prince Edward Island							
Unemployment rate	to 1995	100.11	99.10	26.13	91.60	110.10	223
	after 1997	100.01	99.17	11.95	94.45	107.52	270
Participation rate	to 1995	100.04	99.05	25.58	91.43	109.97	223
	after 1997	100.01	99.22	12.09	94.31	107.74	270
Nova Scotia							
Unemployment rate	to 1995	100.06	99.78	8.82	95.47	106.78	223
	after 1997	100.02	99.52	3.83	96.54	104.64	270
Participation rate	to 1995	100.03	99.80	8.69	95.32	106.73	223
	after 1997	100.01	99.56	3.85	96.37	104.47	270
New Brunswick							
Unemployment rate	to 1995	100.10	98.93	38.97	90.79	113.46	223
	after 1997	100.04	99.28	15.15	92.61	112.24	270
Participation rate	to 1995	100.03	98.95	38.39	90.73	113.70	223
	after 1997	100.02	99.36	15.27	92.16	112.02	270

Note: Data are adjusted by dividing each month by a 12-month rolling average.

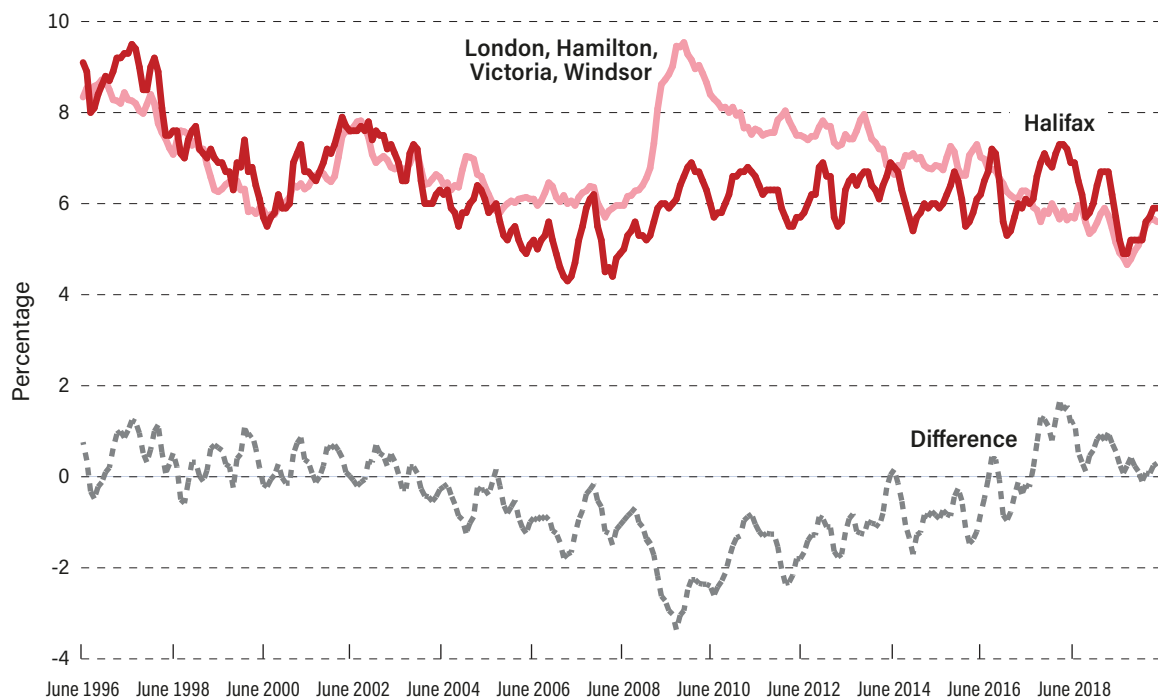
Sources: Statistics Canada, 2021a: table 14-10-0017-01.

Urban and rural labour markets

We now turn to the evolution of urban and rural labour markets. Halifax and the urban area of New Brunswick—Fredericton, Moncton, and Saint John—are now pacing similarly sized cities in unemployment.⁷ EI Economic Region data is used for this comparison since it breaks out cities and rural areas (Gov't of Canada, 2020b). This data reports unemployment levels, but, because it is based on a three-month moving average, the seasonal signal is muted.

In **figure 7**, unemployment in Halifax is compared to the average unemployment of London, Hamilton, Victoria, and Windsor, Canadian cities of about the same size (from the EI Economic Region data; Gov't of Canada, 2020b). Halifax's unemployment rate is comparable to these cities though Halifax suffered less from the recession following the 2007/08 financial crisis than the average of the other cities and, in particular, Hamilton and London. Halifax and Victoria were shielded to some extent by their high level of government employment.

Figure 7: Unemployment rate (%) in Halifax compared to the average unemployment of London, Hamilton, Victoria, and Windsor, June, 1996–April, 2020; and difference (percentage points)

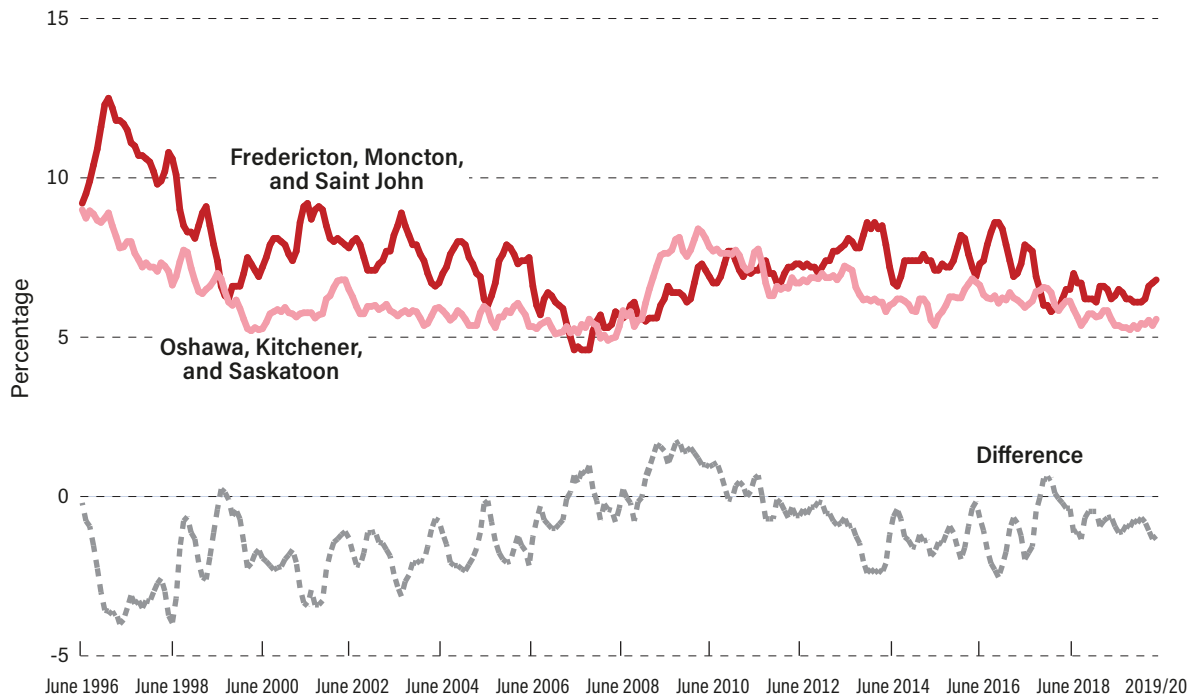


Source: Government of Canada, 2020b; calculations by author.

7. These are based on EI regions, which include four urban areas in Atlantic Canada though I discuss only two. I do not include Charlottetown and St. John's for a couple of reasons. Because of their small size, it is not possible to find similarly sized cities among the EI regions. Further, it may be that their small size deprives them of advantages of urban amalgamations, as suggested by the large unemployment gap between these two cities and Halifax and urban New Brunswick.

In **figure 8**, urban New Brunswick—the average of Fredericton, Moncton, and Saint John—is compared to Oshawa, Kitchener, and Saskatoon. Again, the unemployment rates are comparable.

Figure 8: Average unemployment rate (%) in urban New Brunswick—Fredericton, Moncton, and Saint John—compared to the average unemployment of Oshawa, Kitchener, and Saskatoon, 1996-2019/20; and difference (percentage points)

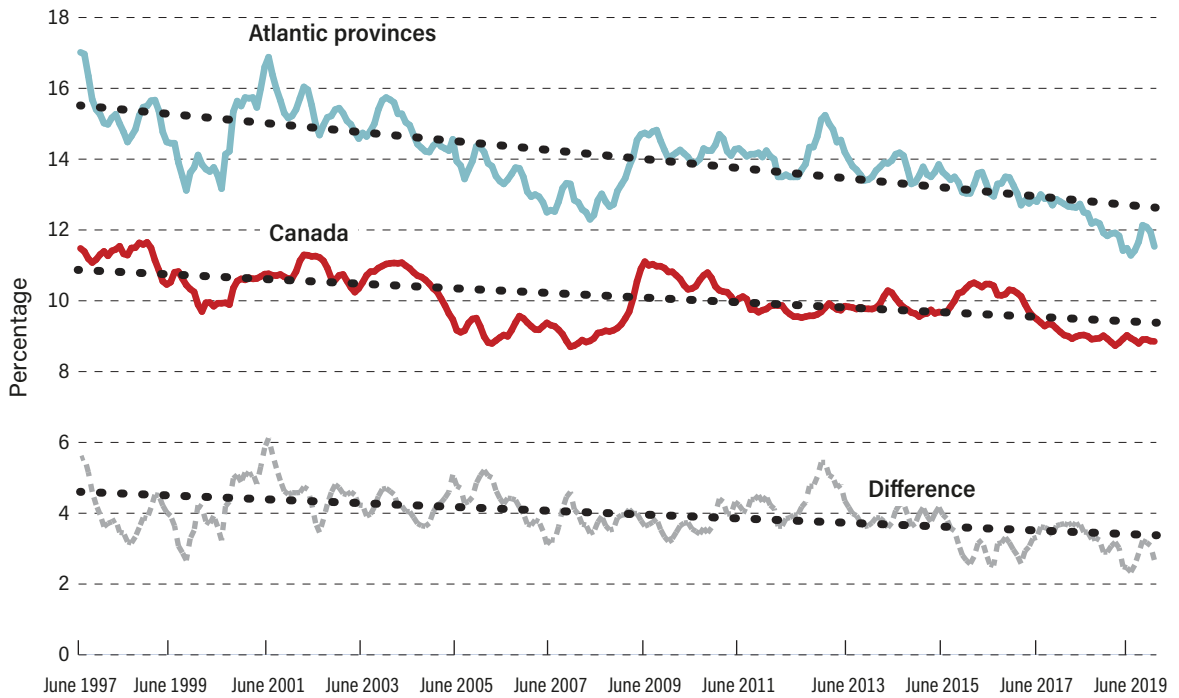


Source: Government of Canada, 2020b; calculations by author.

Figure 9 looks at rural unemployment, again though the lens of EI regions. Rural unemployment both across Canada and in the Atlantic provinces declined during this period and the gap between the two regions narrowed somewhat. I included trend lines to help make this visually easier. (Note again that this set of figures are based on a rolling three-month average, which disguises seasonal variations.)

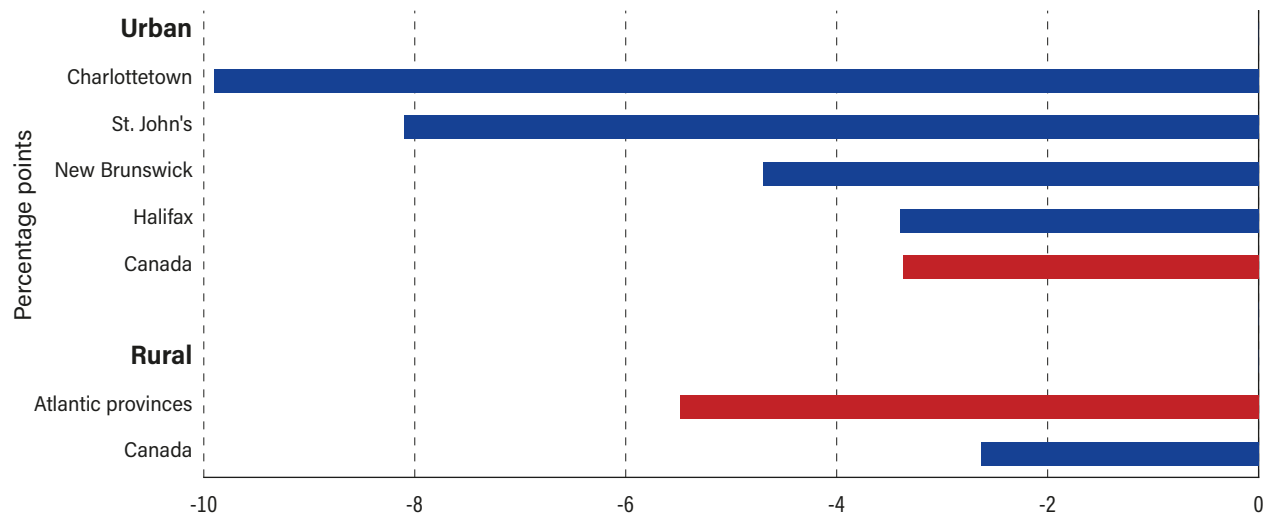
Figure 10 sums up the data. Unemployment significantly declined for all urban areas in the Atlantic provinces and urban Canada, as well as rural areas of the Atlantic provinces and across Canada. Although a large gap remains between unemployment in urban areas across Canada and in the Atlantic region, it is worth noting that unemployment in the Atlantic provinces declined more than twice as much as the national average, 5.5 percentage points compared to 2.6 percentage points. Unfortunately, data are not available for the same periods for all measures of unemployment and related factors. Statistics Canada from time to time changes what it measures or the technical definitions of what it is measuring, making it difficult to compare even related time series.

Figure 9: Unemployment rate (%) in rural Canada and the Atlantic provinces, June, 1997–January, 2020; and difference (percentage points)



Source: Government of Canada, 2020b; calculations by author.

Figure 10: Decline (percentage points) in unemployment in urban and rural Canada and Atlantic provinces, from June 8, 1996 to Dec. 6, 2019-Jan. 9, 2020

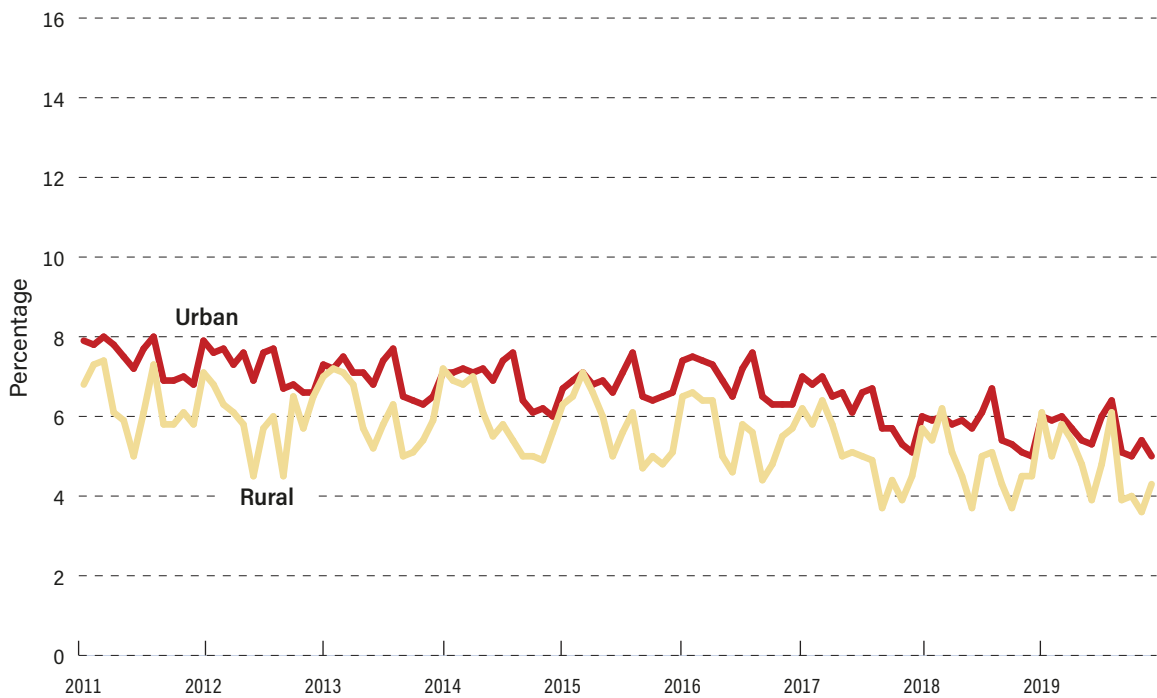


Sources: Government of Canada, 2020b; calculations by the author.

One valuable data stream provides information monthly for urban and rural areas, but only from 2011. This is not directly comparable to the EI regional data, as noted below, but the message is consistent. **Figures 11a-11e** show higher levels of unemployment and seasonal variation in rural than in urban areas in Atlantic Canada. However, the gap between Canadian and Atlantic urban unemployment is greater than it is when Halifax and Fredericton-Moncton-Saint John are compared with urban areas of similar size. This is because included in the province-wide urban data are Census Agglomerations of population centres down to 10,000. These small agglomerations typically have higher levels of unemployment than larger agglomerations.

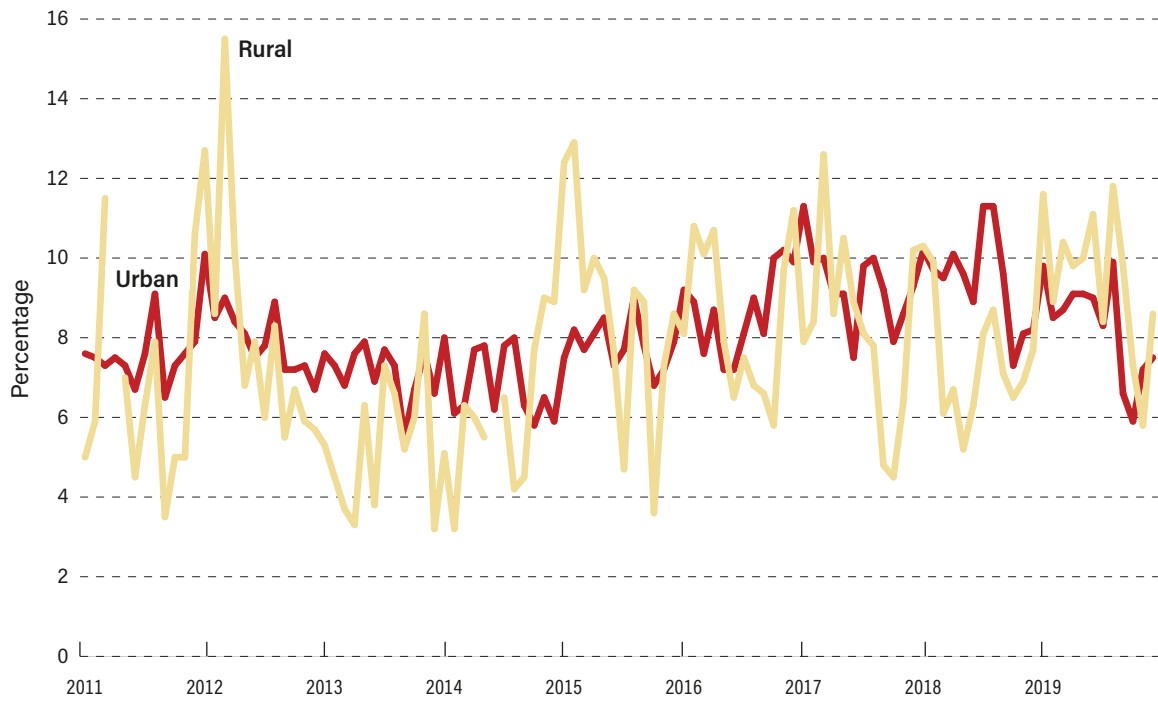
Although the unemployment and participation rates examined so far demonstrate the downward trend in both since 1996/97 and that the gap between Canada and the Atlantic provinces is closing, they also demonstrate the gap remains. This is particularly evident in figures 11a-11e, which only record the period from 2011, well after the initiation of the reforms.

Figure 11a: Unemployment rate (%) in urban and rural Canada, 2011-2019



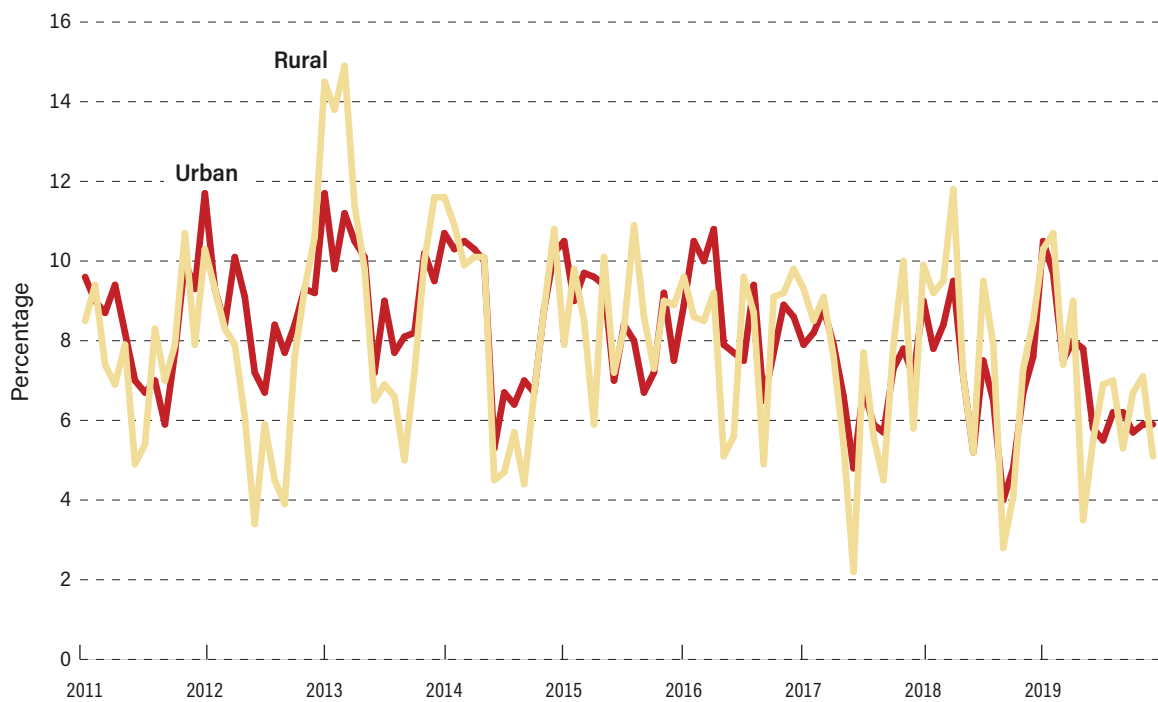
Source: Statistics Canada, 2021c: table 14-10-0105-01.

Figure 11b: Unemployment rate (%) in urban and rural Newfoundland & Labrador, 2011-2019



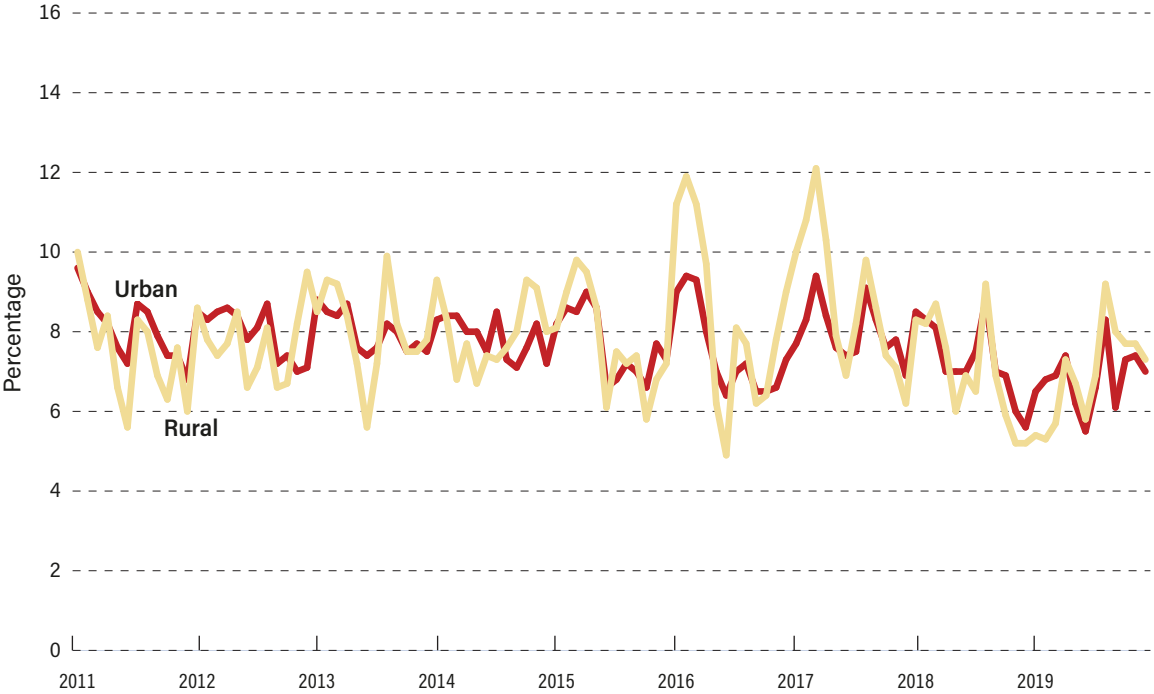
Source: Statistics Canada, 2021c: table 14-10-0105-01.

Figure 11c: Unemployment rate (%) in urban and rural Prince Edward Island, 2011-2019



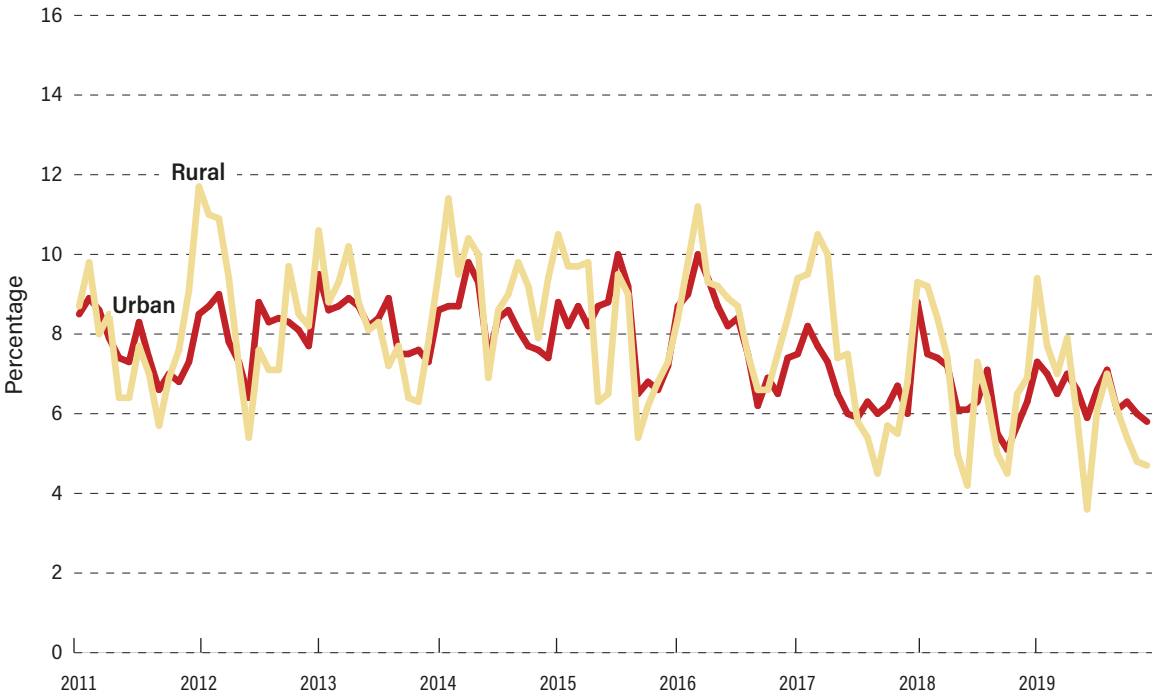
Source: Statistics Canada, 2021c: table 14-10-0105-01.

Figure 11d: Unemployment rate (%) in urban and rural Nova Scotia, 2011-2019



Source: Statistics Canada, 2021c: table 14-10-0105-01.

Figure 11e: Unemployment rate (%) in urban and rural New Brunswick, 2011-2019



Source: Statistics Canada, 2021c: table 14-10-0105-01.

Finally, in this section, **table 7** shows the duration of unemployment. If the EI reforms were successful, an increase in short-term unemployment and decrease in long-term unemployment would be expected, with changes larger in Atlantic Canada. That is exactly what occurs. The percentage of those unemployed for a short term—one-to-four weeks—increases in Canada and the Atlantic provinces from the early to the latter period by about the same amount. Long-term unemployment—26 weeks and more—decreases in both Canada and the Atlantic provinces, but by a greater amount in the Atlantic region.

Table 7: Change in duration of unemployment (%) in the Atlantic provinces and across Canada, 1976–1995 and 1997–2019, and difference (percentage points)

	Atlantic provinces			Canada		
	1976–1995	1997–2019	Difference	1976–1995	1997–2019	Difference
1–4 weeks (x 1,000)	26	33	7	28	35	7
5–13 weeks (x 1,000)	27	28	1	28	27	–1
14–25 weeks (x 1,000)	20	17	–3	18	15	–4
26 weeks* (x 1,000)	1	1	0	1	1	0
27 weeks or more (x 1,000)	23	16	–7	22	18	–4
27–51 weeks (x 1,000)	14	8	–6	12	8	–5
52 weeks* (x 1,000)	2	3	2	2	4	2
53 weeks or more (x 1,000)	7	5	–2	8	6	–1

Note *: Statistics Canada includes data on those out of work for exactly 26 and 52 weeks. These data are relatively uninformative but have been included so table 7 does not have a gap in the periods of duration shown.

Source: Statistics Canada, 2021b: table 14-10-0057-01.

Recent Developments and Warning Signs

COVID prompted extensive changes in various support programs and the development of new ones, such as Canada Emergency Response Benefit (CERB), now discontinued. To replace CERB, the federal government rolled out a number of changes in the Employment Insurance program that made it more generous. These include a one-time credit of 300 hours for regular benefit claims, or 480-hour credit for special benefit claims, meaning workers need only 120 insurable hours to receive EI benefits. The earnings thresholds for fishers and for self-employed workers were reduced. These temporary measures ended in September 2021.

In their place, a common national 420-hour entrance requirement was established for one year, starting September 2021, for both regular and special benefits. Workers require the same number of insurable hours to be eligible for EI benefits no matter where they live. However, the number of weeks of support for which they qualify and their benefit rate varies depending on the local unemployment rate (ESDC, undated). All this means that, until September 2022, the EI system nationally will feature something like the accessibility and generosity of the “regionally extended” Unemployment Insurance program in the 1970s, which did so much damage to the Atlantic Canadian economy and workers, as discussed above.

The federal government has also launched a \$5-million-dollar consultation program to reform EI. Among the goals listed by Employment and Social Development Canada (ESDC, undated) are: improve EI access, increase the reliability of seasonal benefits, and include self-employed and gig workers in the EI program. This echoes intentions stated in the media release announcing the consultations. “The immediate focus of the consultations will be on improving access to EI by examining systemic gaps exposed by COVID-19. These include the need for income support for self-employed and gig workers; how best to support Canadians through different life events, such as adoption; and how to provide more consistent and reliable benefits to workers in seasonal industries” (ESDC, 2021a). The changes to EI that will arise from the consultation process are, of course, unknown.

Returning to anything like the “Unemployment Insurance” system would have negative consequences for both the Atlantic and Canadian economies. The problems created by UI are discussed earlier in this paper. And there may be one warning sign. David Grey (2006) shows that changes to EI after 1996/97 rolled back some of the reforms, particularly those meant to reduce seasonality.

Instead, policy makers should look at further reforms to reduce dependency and unemployment, while increasing the participation rate and number of jobs. A number of studies have suggested reform structures to meet this goals. One of the most intriguing is Gliberman and Fuss (2021), which proposes Employment Insurance savings accounts. Over the years as problems, still unsolved, with UI/EI became ever more apparent, many publications have offered other ideas: Macdonald, 1985; Royal Commission [Newfoundland & Labrador] on Employment and Unemployment, 1986; Young, Davis, and Igloliorte, 2003; Courchene and Allan, 2009; and Busby and Grey, 2011, to name a few.

What Is Still Wrong with the Labour Market in Canada's Atlantic Provinces

The main purpose of this paper has been to provide a diagnostic of the labour market in the Atlantic provinces relative to the market in the rest of Canada. This has provided much good news. Unemployment and seasonality have decreased in the Atlantic region and moved closer to the Canadian average. The region's two largest urban areas have rates of unemployment similar to those of other urban areas of about the same size. But, despite these improvements, overall unemployment and seasonality remain higher in the region than the Canadian average. Although the region's largest urban areas have unemployment similar to urban areas of the same size in the rest of Canada, urban unemployment in the Atlantic provinces also remains higher than the national average.

EI remains easier to collect in Atlantic Canada than in the rest of the nation.⁸ As McMahon (2018) reports, between 2011 and 2018, Canadian employers and employees paid \$194.4 billion into the system but collected only \$242.9 billion. Atlantic Canadians on the other hand got twice their money back, contributing \$16.7 billion and receiving \$33.0 billion back.

The region's problems with generating enough jobs for its workforce go beyond EI. McMahon (2000) provides a comprehensive overview of the job and growth suppressing policies that hobbled the region at the time of the book's publication. Many or most of these policies have remained in place though reforms have mitigated some of the worst effects. This limits the room for the private sector to create jobs; encourages low productivity and high labour costs; imposes elevated tax rates that reduce the incentive for entrepreneurship to create jobs or enhance skills; and, partly as a result of all these factors, attracts low levels of investment. Investment increases jobs not only directly but also indirectly by boosting productivity as workers become more skilled and the capital-to-labour ratio increases.

Size of government

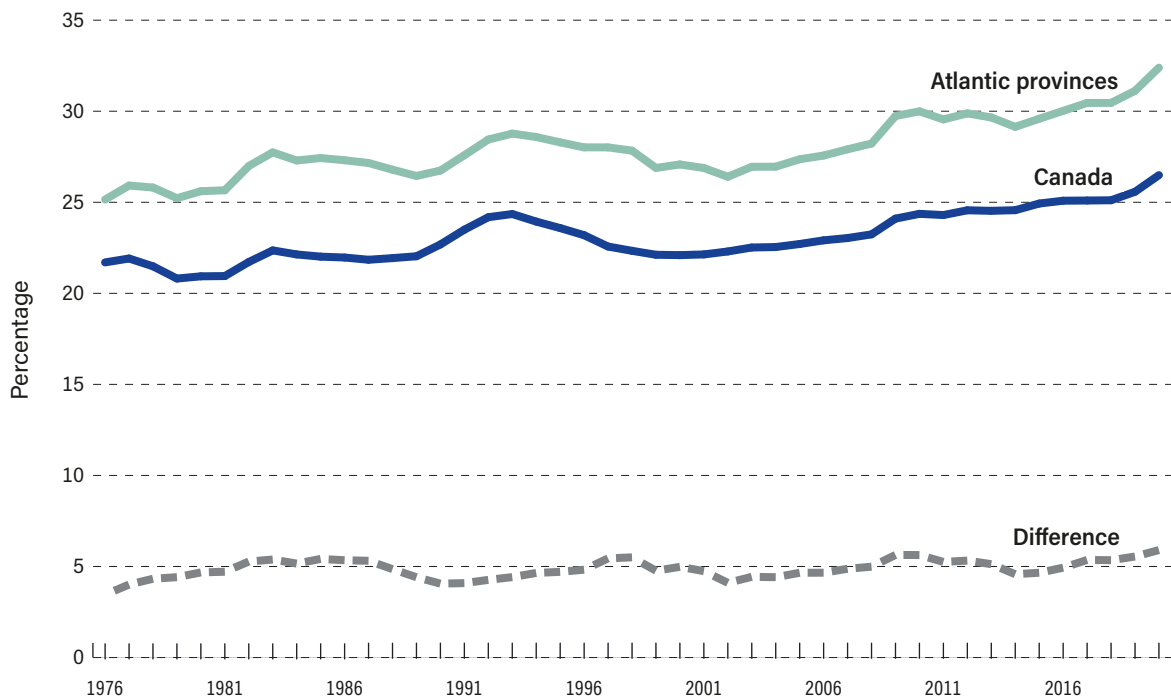
In 2019, government expenditures at all levels—federal, provincial, and local—equalled about 40% of the national economy, compared to 54% in Atlantic Canada. Federal policy has a lot to do with this. Federal expenditures in Atlantic Canada, by themselves, equal 28% of the regional economy compared to a national average of 15%. This looks

8. See the earlier discussion of table 1a and table 2b. See also Grey (2006), who argues that post-1996/97 changes rolled back reforms reducing seasonality, making the system more generous for seasonal workers.

even more stark when looking at net transfers to the region, the difference between all federal monies collected and spent in the region. While federal spending equals 28% of the economy in the Atlantic region, federal revenues are only 15%. So money that, from the perspective of the Atlantic provinces, appears to be gift money equals about 13% of the economy or about one in eight dollars spent in Atlantic Canada (McMahon, 2021).

Not only does this reduce the size of the private sector and thus private-sector job creation, it creates dependency on government for contracts, sales, and jobs. This dampens competitiveness and politicizes the economy since factors other than cost and quality are a large part of government decisions about who gets contracts and jobs.⁹ Atlantic Canada remains more dependent on the public sector for employment than the rest of Canada. In fact, the difference in public employment between Canada as a whole and the Atlantic region has remained largely stable since the mid-1980s though it has drifted upward somewhat over the last five years (figure 12).

Figure 12: Percentage of workforce in Canada and Atlantic Canada employed in public administration, education, health, and social services, 1976–2020; and difference (percentage points)



Source: Statistics Canada, 2021c: table 14-10-0105-01; calculations by author.

9. See O'Farrell, 1990 for a detailed empirical study (commissioned by the Nova Scotia Department of Industry, Trade and Technology, and Atlantic Canada Opportunities Agency) of dependence upon government and its negative consequences for competitiveness; also see McMahon, 2000.

Taxes

This is not the place for a full-scale discussion on the high taxation level in Atlantic Canada. Whalen, Lafleur, and Palacios (2021b) show how high taxes suppress economic growth and how reducing taxes can spur growth.¹⁰ Here, briefly and by way of illustration, it is worth comparing the personal income-tax rates for the Atlantic provinces to those in other provinces. For sake of simplicity, I use two annual income levels, \$75,000 and \$150,000, for 2020 with all income coming from employment. Also for simplicity, I use the Ernst and Young tax calculator.¹¹

As can be seen from **table 8**, tax rates in Atlantic Canada are substantially higher than in all other provinces, save Quebec and Manitoba, in 2021. In fact, depending on income level, Nova Scotia vies with Quebec for the highest taxes of any state or province in North America (table 8; Stansel, Torra, and McMahon, 2020). Someone in Nova Scotia earning \$75,000 pays federal and provincial income tax of \$19,524 compared to \$15,070 paid by a someone in Ontario with the same income. In other words, a Nova Scotian earning \$75,000 a year pays \$4,454 more in taxes—30% more—each year than a Ontarian earning the same amount. This means a difference in income that is actually larger as no taxes are paid on tax savings so, obviously, the \$4,454 is untaxed. The marginal tax rate in Nova Scotia at this income level is 37%. This means the Nova Scotian would have to earn about \$7,000 more than an Ontarian to have the same after-tax, take-home pay.

Table 8: Income tax (\$) in Canadian provinces at income levels of \$75,000 and \$150,000, 2021

	Employment income: \$75,000			Employment income: \$150,000		
	Tax payable	After-tax income	Average tax rate	Tax payable	After-tax income	Average tax rate
Newfoundland & Labrador	\$18,444	\$56,557	25%	\$48,722	\$101,278	32%
Prince Edward Island	\$18,969	\$56,031	25%	\$50,556	\$99,444	34%
Nova Scotia	\$19,524	\$55,476	26%	\$50,732	\$99,268	34%
New Brunswick	\$18,354	\$56,646	24%	\$48,860	\$101,140	33%
Quebec	\$19,244	\$55,756	26%	\$52,564	\$97,436	35%
Ontario	\$15,070	\$59,930	20%	\$45,159	\$104,841	30%
Manitoba	\$18,537	\$56,463	25%	\$49,820	\$100,180	33%
Saskatchewan	\$17,365	\$57,635	23%	\$45,363	\$104,637	30%
Alberta	\$16,171	\$58,829	22%	\$42,279	\$107,721	28%
British Columbia	\$14,709	\$60,291	20%	\$42,285	\$107,715	28%

Source: Ernst & Young, undated.

10. Future publications from the Fraser Institute's Atlantic Canada Prosperity Initiative will examine the region's taxation structure in more detail.

11. Ernst & Young Global Limited, undated. I compared the results from the Ernst & Young calculator with other calculators on the internet. The results were all consistent, though they differed slightly.

The same pattern of relatively high taxes in the Atlantic provinces holds for an income of \$150,000 but the tax gap hits the lower income level harder. The gap between Nova Scotia and Ontario at \$75,000 is \$4,454 compared to \$5,573 for annual earnings of \$150,000. In other words, double the income and the tax gap increases by only by about 20%. A similar pattern when one compares the other Atlantic provinces with Ontario.

High income taxes reduce the monetary incentive for entrepreneurship and skill enhancement as some of the gains are simply taxed away. As well, income taxes, like other taxes, may have a destructive effect on job creation. For example, OECD (2011) finds that high taxes reduce both employment and labour-market participation. Zidar (2019) finds that tax cuts generate employment growth, but that cuts for low-income groups are most effective in generating employment. Interestingly, the tax gap between the Atlantic provinces and the Canadian average is largest at relatively low income levels.

Carroll, Holtz-Eakin, Rinder, and Rosen find that higher levels of taxation “exert a statistically and quantitatively significant [negative] influence on the probability that an entrepreneur hires workers (2000: Abstract). Ergete Ferde argues that his “empirical analysis ... shows that income taxes have significant adverse effects on private-sector employment” (2021: 2).

Productivity

The discussion of productivity and unit labour costs is descriptive and its causes will be investigated by further work. For example, at least some part of lower productivity is likely the result of an aging population.

Table 9 shows that productivity in Atlantic Canada, averaged over 1997 to 2020, is well below the national average, except in Newfoundland & Labrador, where it is bolstered by the high productivity of the oil industry. To read the table, see Newfoundland & Labrador, all industries: the productivity of the province is 133% of the Canadian average. In Prince Edward Island, that falls to 74%; to 78% in Nova Scotia; and to 82% in New Brunswick.

Productivity would likely be enhanced by a smaller government sector and thus a larger private sector and by lower taxes to increase incentives for investment and skill enhancement, as discussed above. Quality of education and training also play an important role.

The region will be unable to offer competitive jobs, paying as well as elsewhere in the nation, unless productivity is improved. Doubtless, the lower wages necessitated by lower productivity, combined with the region’s high tax rate and weak job creation, contribute to the outflow of people from the region (Whalen, Li, and Eisen, 2021).

Table 9: Labour productivity as a percentage of national average; average level 1997-2020

Sector	Percentage of national average	Sector	Percentage of national average
Newfoundland & Labrador		Nova Scotia	
All industries	133%	All industries	78%
Business sector industries	150%	Business sector industries	72%
Government sector [GS00]	97%	Government sector [GS00]	87%
Prince Edward Island		New Brunswick	
All industries	74%	All industries	82%
Business sector industries	67%	Business sector industries	79%
Government sector [GS00]	87%	Government sector [GS00]	93%

Source: Statistics Canada, 2021g: table 36-10-0480-01..

Unit labour costs

Unit labour costs (ULC) are the cost to an employer of producing a unit of output. Lower wages in Prince Edward Island and New Brunswick bring their ULCs to about the Canadian level. Nova Scotia, however, is 9% costlier than the Canadian average. ULCs in Newfoundland & Labrador are less costly than the Canadian average, again likely the result of the high productivity in the oil industry (**table 10**). Nonetheless, it may be that to create more nationally competitive businesses, the ULC in even New Brunswick and Prince Edward Island need to come down further to compensate for increased taxation rates and transportation costs.

Table 10: Unit labour costs as a percentage of national average

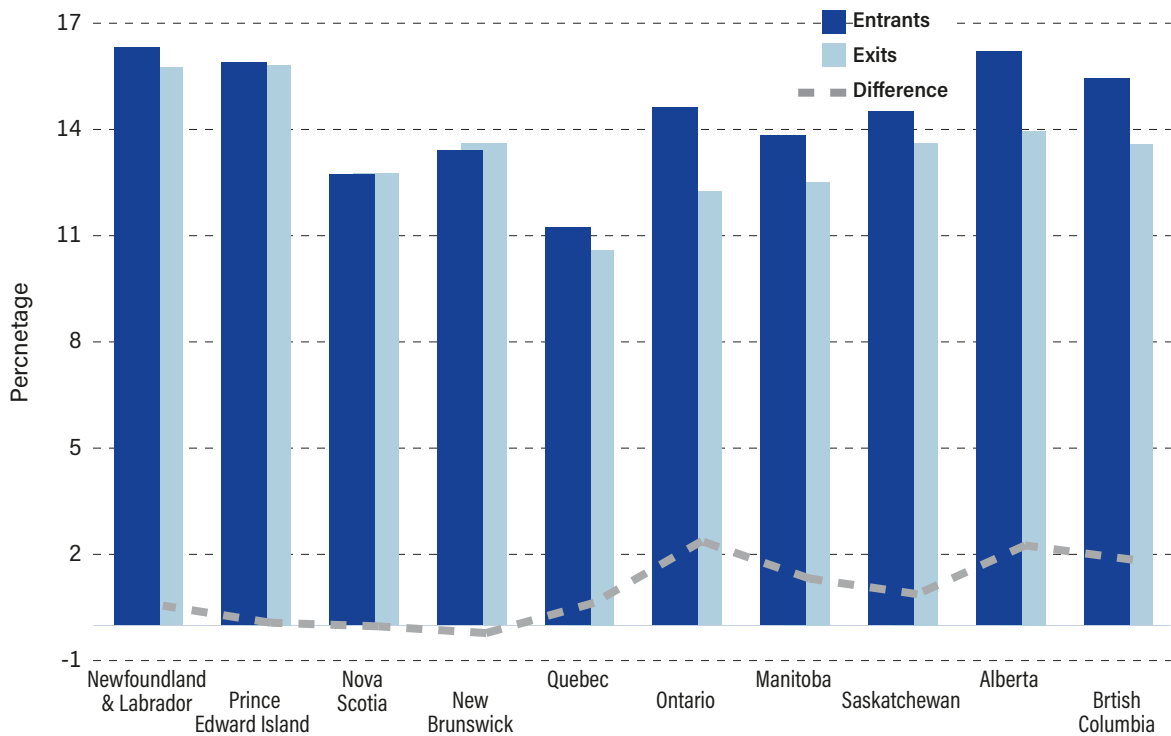
Sector	Percentage of national average	Sector	Percentage of national average
Newfoundland & Labrador		Nova Scotia	
All industries	0.697895301	All industries	1.089124413
Business sector industries	0.593635556	Business sector industries	1.114075045
Government sector [GS00]	0.961669468	Government sector [GS00]	1.031046973
Prince Edward Island		New Brunswick	
All industries	1.030491611	All industries	1.005058406
Business sector industries	0.994428847	Business sector industries	0.982714598
Government sector [GS00]	1.033904071	Government sector [GS00]	0.989175126

Source: Statistics Canada, 2021g: table 36-10-0480-01.

Job creation and destruction

Figure 13 looks at the birth and death of job-creating businesses as a percentage of the total number of businesses with employees in the province. For instance, in Newfoundland & Labrador, the number of new business in the provinces equaled 16.3% of the existing stock of businesses averaged from 2001 to 2018 while exits equaled 15.7% of existing businesses for a net growth of 0.6%, compared to 2.4% growth of businesses in Ontario’s. All the Atlantic provinces are at close to zero for net growth of businesses with employees; New Brunswick and Nova Scotia are below zero.

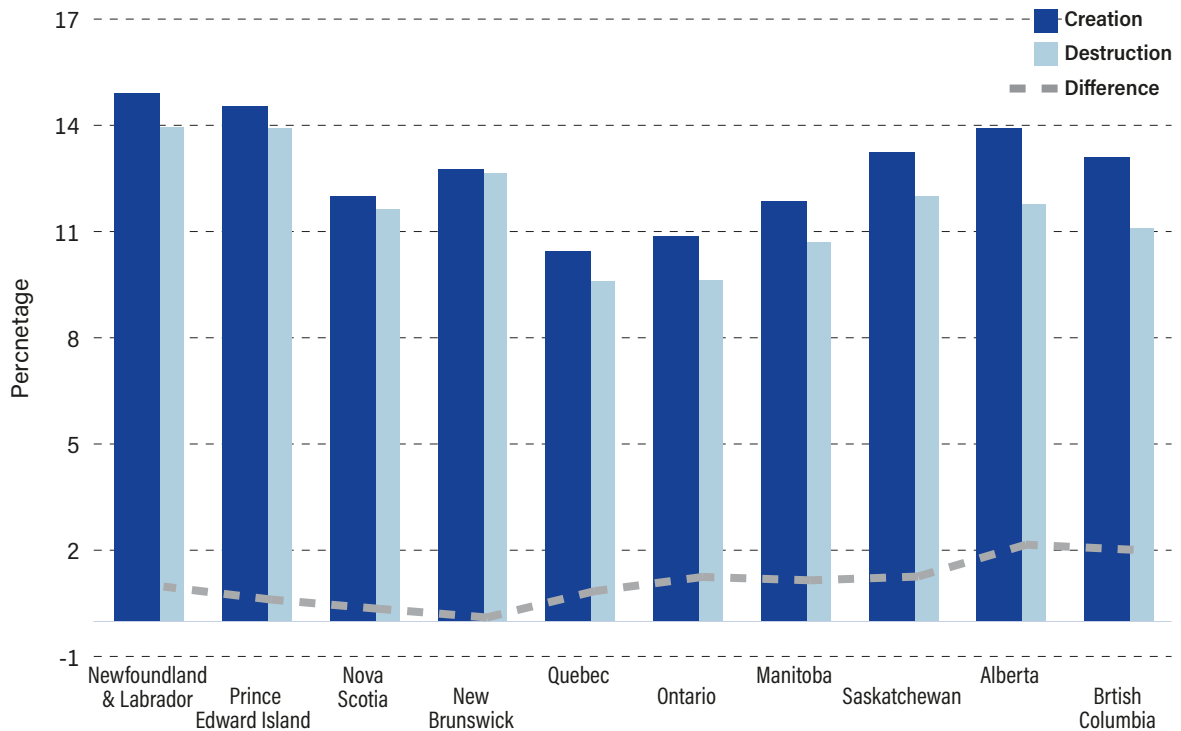
Figure 13: Entry and exit (%) of job-creating businesses in Canadian provinces, 2011–2018; and difference (percentage points) between the two



Sources: Statistics Canada, 2021d: table 33-10-0088-01.

As would be expected, the destruction and creation of private-sector jobs shows a similar pattern (**figure 14**). Here again, job creation and destruction are shown as a percentage of the total jobs in the province. And, here again, despite some competition from Quebec, overall the Atlantic provinces have the worst record in the nation. Uncompetitive wages, high taxes, and a relatively small private sector are likely at least partly responsible for the weak job creation.

Figure 14: Job creation and destruction (%) in Canadian provinces, 2011–2018; and difference (percentage points) between the two



Sources: Statistics Canada, 2021e: table 33-10-0089-01.

Investment

Job-creating investment in Atlantic Canada lags the nation. **Table 11** shows per-capita investment in each of the Atlantic provinces as a percentage of the national average in both the pre- and post-1996/97 periods. Although Newfoundland & Labrador saw investment soar because of offshore oil, the record of the other provinces is very weak. Prince Edward Island saw a slight increase, albeit from the lowest level of the four provinces, while New Brunswick saw a slight decrease. Nova Scotia, on the other hand, experienced a large decrease relative to the national average, from 78% of the national average to 70%. This may be related both to the province’s high labour costs and its high level of taxation, both of which will suppress investment.

Table 11: Investment per capita as a percentage of the national average, to 1995 and 1998–2019

	to 1995	1998–2019		to 1995	1998–2019
Newfoundland & Labrador	87%	138%	Nova Scotia	78%	70%
Prince Edward Island	53%	56%	New Brunswick	74%	72%

Source: Statistics Canada, 2021f: table 36-10-0096-01.

Conclusion

The first part of this publication was largely an investigation of the current state of the labour market in Canada's Atlantic provinces following EI/UI reforms of 1996/97. The paper found huge improvements in reduced unemployment and seasonality and increased participation rates.

Not all the time series stretched far enough back in time to provide comparisons between the state of the labour market in the Atlantic provinces before and after the 1996/97 reforms, but the available national and international evidence point to these reforms as playing a role in improving the regional labour market. Nonetheless, the region continues to have higher unemployment rates and lower participation rates than the rest of the nation, and seasonality continues to be stronger. Part of this is related to the relatively larger rural population in Atlantic Canada and higher rural unemployment.

There are, however, other factors at play in explaining the gap between the labour markets in the Atlantic provinces and in the rest of Canada. Despite the changes to EI, the system remains more accessible and generous in Atlantic Canada, reducing labour market incentives in the region. Additional factors detrimental to job creation are high taxation, dominant government, low productivity, high labour costs, dependence on government employment, and the slow growth of employment and employment-creating firms.

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