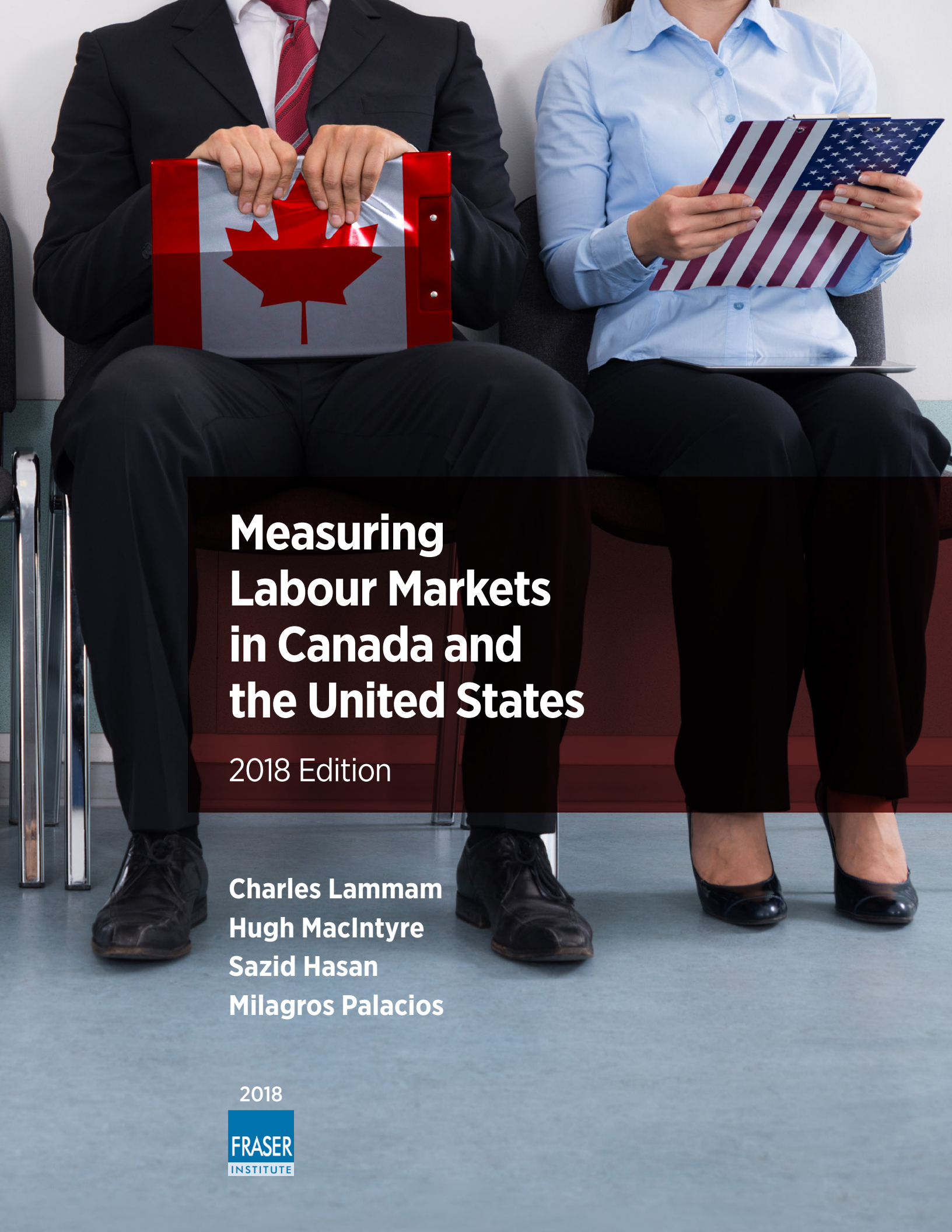


Measuring Labour Markets in Canada and the United States

2018 Edition

Charles Lammam
Hugh MacIntyre
Sazid Hasan
Milagros Palacios

2018

FRASER INSTITUTE

2018 • Fraser Institute

Measuring Labour Markets in Canada and the United States

2018 Edition

by Charles Lammam, Hugh MacIntyre,
Sazid Hasan, and Milagros Palacios

fraserinstitute.org

Contents

Introduction / 1

Index of Labour Market Performance / 2

- Indicator 1: Average total employment growth / 10
- Indicator 2: Average private-sector employment growth / 12
- Indicator 3: Average total employment rate / 14
- Indicator 4: Average private-sector employment rate / 16
- Indicator 5: Average unemployment rate / 18
- Indicator 6. Average long-term unemployment / 21
- Indicator 7: Average share of involuntary part-time workers / 23
- Indicator 8. Average output per worker / 25

Conclusion / 27

Appendix A. Methodology / 29

Appendix B. Other Important Labour Market Performance Indicators / 30

- Indicator B1: Participation rate / 30
- Indicator B2: Migration / 33
- Indicator B3: Working days lost as a result of labour disputes / 37

References / 40

- About the Authors / 45
- Acknowledgments / 46
- Publishing Information / 47
- Supporting the Fraser Institute / 48
- Purpose, Funding, and Independence / 48
- About the Fraser Institute / 49
- Editorial Advisory Board / 50

Executive Summary

Labour markets are critical components of an economy. They are the mechanism through which we allocate one of our most valuable and productive resources: human work, effort, creativity, and ingenuity. Labour markets match human skills, supplied by individuals seeking to earn a living, with the demand for labour by firms, governments, and households.

Because labour markets are important, the public is often inundated with news stories, usually about changes in employment levels or unemployment rates. However, such stories do not generally provide a clear picture of how a jurisdiction's labour market is performing. There is a need for a comprehensive measure of the performance of labour markets to allow comparisons, which is the first step toward understanding differences in labour market conditions and addressing possible problems.

Measuring Labour Markets in Canada and the United States: 2018 Edition is the latest installment in ongoing research to assess the performance of labour markets. Indicators such as job creation, unemployment, and labour output are used to assess the performance of labour markets in the Canadian provinces and US states over the three-year period from 2015 to 2017. The study calculates an Index of Labour Market Performance, which is a composite measure of labour market performance based on eight equally weighted indicators: [1] average annual total employment growth, [2] average annual private-sector employment growth, [3] average total employment rate, [4] average private-sector employment rate, [5] average unemployment rate, [6] average long-term unemployment, [7] average share of involuntary part-time workers, and [8] average output per worker. The index scores range from zero to 100. A higher score means a jurisdiction has a stronger performing labour market while a lower index score indicates a labour market with weaker performance.

Overall, Canada performed poorly on the Index of Labour Market Performance. All Canadian provinces are ranked in the bottom half of the 60 jurisdictions, including the traditional economic engines of Canada, Alberta (ranked 48th, with an index score of 48.1 out of 100) and Ontario (ranked 52nd, with a score of 44.5 out of 100).

British Columbia (ranked 35th, score of 53.6) and Saskatchewan (41st, 52.3) are the highest performing Canadian provinces, but neither is in the top half of jurisdictions on the overall index. Nine out of 10 Canadian provinces are in the bottom third (lowest 20 out of 60) of the index and four of the five lowest-ranked jurisdictions are Canadian provinces: Prince Edward Island (ranked 56th, score of 36.6), New Brunswick (57th, 35.4), Nova Scotia (59th, 31.3), and Newfoundland & Labrador (60th, 16.6).

The results for Canada's four most populous provinces (Ontario, Quebec, Alberta, and British Columbia) are not encouraging. Ontario and Quebec both ranked around the middle or in the bottom half of jurisdictions on all indicators with the exception of average long-term unemployment. British Columbia fared better, ranking in the top 10 of jurisdictions for total and private-sector employment growth, but ranking near the bottom on several measures including private-sector employment rate and output per worker. A notable result for Alberta is its low private-sector employment growth: Alberta ranked 58th out of 60 jurisdictions on this measure with average annual private-sector employment growth of negative 1.1%.

North Dakota topped the list of US states and Canadian provinces for overall labour market performance over the three-year period. The state's strong performance in total employment rate (1st out of 60 jurisdictions), private-sector employment rate (1st), unemployment rate (1st), and share of involuntary part-time workers (2nd) enabled it to achieve the highest overall index score of 80.4 out of 100. The US states in the Midwest dominated the top of the rankings. Six states from the Midwest—North Dakota, Minnesota, South Dakota, Iowa, Nebraska, and Wisconsin—are among the top 10. All of the 10 top performing jurisdictions are US states.

Introduction

Labour markets are critical components of an economy. They are the mechanism through which we allocate one of our most valuable and productive resources: human work, effort, creativity, and ingenuity. Labour markets match human skills, supplied by individuals seeking to earn a living, with the demand for labour by firms, governments, and households. Because labour markets are important, the public is often inundated with news stories, usually about changes in employment levels or unemployment rates. However, such stories do not generally provide a clear picture of how a jurisdiction's labour market is performing. There is a need for a comprehensive measure of the performance of labour markets to allow comparisons, which is the first step toward understanding differences in labour market conditions and addressing possible problems.

This study is the latest edition of *Measuring Labour Markets in Canada and the United States*, which provides an overview of labour market conditions in the two countries over the three-year period from 2015 to 2017. [1] The next section of the report presents the results for the 10 Canadian provinces and 50 US states [2] on the overall Index of Labour Market Performance. This is followed by a presentation and discussion of the results on the eight specific indicators that make up the index. Appendix A provides methodological details and Appendix B examines indicators of labour market performance not included in the Index.

[1] The most recent previous edition is Lammam, MacIntyre, Hunt, and Hasan, 2017.

[2] Throughout this study, US states are often described as belonging to a geographical region. Definitions for these geographical regions come from the United States Census Bureau's *Geographic Areas Reference Manual* (US, Dep't of Commerce, Bureau of the Census, 1994). In this manual, the United States is divided into four major regions: West, Midwest, Northeast, and South. Each of these regions is further subdivided. The West consists of the Pacific region (Alaska, Hawaii, Washington, Oregon, and California) and the Mountain region (Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, and New Mexico). The Midwest consists of the West North Central region (North Dakota, South Dakota, Minnesota, Nebraska, Iowa, Kansas, and Missouri) and the East North Central region (Wisconsin, Illinois, Indiana, Ohio, and Michigan). The East North Central group of states is often referred to as the Industrial Belt; the two terms are used interchangeably throughout the study. The Northeast region consists of the New England region (Maine, Vermont, New Hampshire, Massachusetts, Connecticut, and Rhode Island) and the Middle Atlantic region (New York, New Jersey, and Pennsylvania). The South consists of the West South Central region (Oklahoma, Texas, Arkansas, and Louisiana), the East South Central region (Kentucky, Tennessee, Mississippi, and Alabama), and the South Atlantic region (Maryland, Delaware, West Virginia, Virginia, North Carolina, South Carolina, Georgia, and Florida).

Index of Labour Market Performance

The Index of Labour Market Performance is a comprehensive measure of labour market performance in Canada and the United States (p. 3). It is based on the following eight key indicators: (1) average annual total employment growth; (2) average annual private-sector employment growth; (3) average total employment rate; (4) average private-sector employment rate; (5) average unemployment rate; (6) average long-term unemployment; (7) average share of involuntary part-time workers; and (8) average output per worker (or average labour productivity). It is important to consider all eight indicators for a complete perspective on the state of labour market performance in any of the 60 jurisdictions included in the index. Examining any one indicator in isolation can lead to incomplete conclusions.

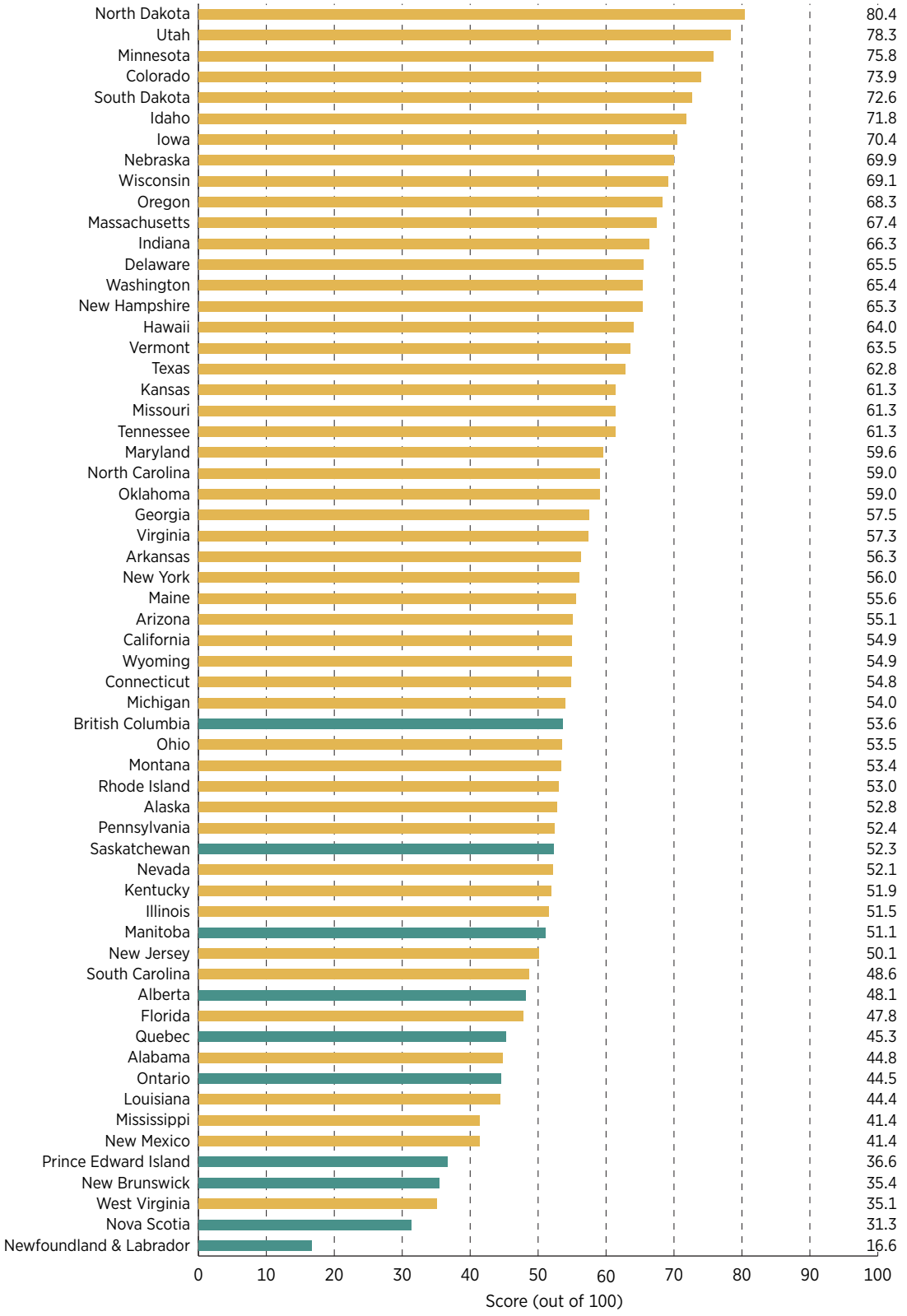
A comprehensive index is also valuable for comparisons among jurisdictions, as it allows us to rank the overall performance of jurisdictions based on a scoring system with values ranging from zero to 100. For each indicator, the lowest possible score is zero, which signals weak relative performance, and the highest possible score is 100, which signals strong relative performance. The scores of the eight indicators are averaged, with all eight indicators receiving equal weight, to obtain an overall index score. The jurisdictions are then ranked according to their final score. For a more detailed explanation of the methodology, see Appendix A. [3]

The data for the individual indicators are calculated using a three-year average (2015–2017) to measure current performance—minimizing recent anomalous data, while avoiding reliance on information that no longer reflects the performance of a given jurisdiction.

Three indicators were added to the 2018 edition of the Index of Labour Market Performance. The first two, (3) average total employment rate and (4) average private-sector employment rate, have been added to help address a growing concern over the reliability of the unemployment rate as an indicator of labour market performance

[3] For each indicator, except average output per worker, mean sample estimates were provided by Statistics Canada and the US Bureau of Labor Statistics from their respective labour force and current population surveys.

Index of Labour Market Performance (score out of 100), 2015–2017



Sources: see Indicators 1, 2, 3, 4, 5, 6, 7, and 8.

(Clemens and Palacios, 2018; Cross, 2018). The unemployment rate is the number of unemployed persons (those who do not have a job but are seeking work) divided by the level of labour force participation (employed plus unemployed). As a result, the unemployment rate is closely tied to labour force participation, which has been falling in recent years (see Appendix B). The fall in labour-force participation is partly due to demographic changes, specifically an aging population (Fields, Uppal, and LaRochelle-Cote, 2017). Thus, a structural shift in demographics has meaningfully affected the unemployment rate, weakening it as a broad measure of labour market performance. While the unemployment rate remains an important measure, it is bolstered in the index by the inclusion of the total employment rate and private-sector employment rate.

The third indicator added to this edition of the Index of Labour Market Performance is (7) average share of involuntary part-time workers. An involuntary part-time worker desires full-time work but cannot find it because of economic conditions. This indicator was added to capture a growing concern that some workers may be underemployed; that is, not employed to their full potential. [4]

Observations

Overall, Canadian provinces performed poorly on the Index of Labour Market Performance. All Canadian provinces are ranked in the bottom half of the 60 jurisdictions, including the traditional economic engines of Canada, Alberta (ranked 48th, with an index score of 48.1 out of 100) and Ontario (ranked 52nd, with a score of 44.5) (table 1). British Columbia, with a score of 53.6, ranked 35th and Saskatchewan, with a score of 52.3, ranked 41st are the highest performing Canadian provinces, but neither is in the top half on the overall index. In fact, British Columbia is the only Canadian province that is not in the bottom third (lowest 20 out of 60) of the index; four of the five lowest ranked jurisdictions are Canadian provinces (the lowest ranked US state is West Virginia): Prince Edward Island (scoring 36.6 and ranked 56th), New Brunswick (35.4, 57th), Nova Scotia (31.3, 59th), and Newfoundland & Labrador (16.6, 60th). The province of Newfoundland & Labrador has the lowest score on the Index of Labour Market Performance.

All of the top performing jurisdictions are from the United States. North Dakota ranked first overall with a score of 80.4 out of 100. That state performed strongly on

[4] An additional indicator was considered to measure the extent that non-workers are discouraged by labour market conditions from looking for work. However, comparable data on so-called "discouraged workers" for US and Canadian jurisdictions were not available.

total employment rate (ranked 1st out of 60 jurisdictions), the private-sector employment rate (1st), unemployment rate (1st), and share of involuntary part-time workers (2nd). North Dakota is not the only Midwest state in the top 10. In fact, including North Dakota, six of the 10 jurisdictions are from the Midwest: Minnesota (3rd, with a score of 75.8), South Dakota (5th, scoring 72.6), Iowa (7th, 70.4), Nebraska (8th, 69.9), and Wisconsin (9th, 69.1). The remaining four jurisdictions in the top 10 are from the West—Utah (2nd, 78.3), Colorado (4th, 73.9), Idaho (6th, 71.8), and Oregon (10th, 68.3).

Notably, there are marked differences in labour market conditions in energy producing jurisdictions. [5] Three energy producing jurisdictions are in the top three of all jurisdictions on the Index of Labour Market Performance, namely North Dakota (1st, 80.4), Colorado (4th, 73.9), and Texas (18th, 62.8). In contrast, the three lowest performing energy producing jurisdictions are all in the bottom third of all jurisdictions, Alberta (48th, 48.1), Louisiana (53rd, 44.4), and Newfoundland & Labrador (60th, 16.6).

[5] In this publication, "Energy producing jurisdictions" refers to the 10 Canadian and US jurisdictions identified by Di Matteo, Clemens, and Emes (2014), based on the energy sector's share of the jurisdiction's economy (for Canadian provinces) and oil and gas sector (for American states). These jurisdictions include Alaska, Alberta, Colorado, Louisiana, Newfoundland & Labrador, North Dakota, Oklahoma, Saskatchewan, Texas, and Wyoming.

Table 1: Summary of provincial and state scores (out of 100) and rankings

	Index of Labour Market Performance, 2017		Indicator 1 Average total employment growth, 2015–2017		Indicator 2 Average private employment growth, 2015–2017		Indicator 3 Average total employment rate, 2015–2017	
	Score	Rank	%	Rank	%	Rank	%	Rank
Alberta	48.1	48	0.2	46	−1.1	58	67.3	3
British Columbia	53.6	35	2.7	8	2.9	7	60.7	29
Manitoba	51.1	45	0.9	36	1.1	30	63.8	15
New Brunswick	35.4	57	−0.1	54	−0.2	54	56.5	50
Newfoundland & Labrador	16.6	60	−2.1	60	−2.2	60	52.0	59
Nova Scotia	31.3	59	0.1	47	−0.3	55	56.7	49
Ontario	44.5	52	1.2	28	1.3	28	60.8	26
Prince Edward Island	36.6	56	−0.1	54	0.9	38	59.6	35
Quebec	45.3	50	1.3	26	1.4	26	60.3	32
Saskatchewan	52.3	41	−0.2	56	0.2	50	65.6	10
Alabama	44.8	51	1.0	32	1.0	31	53.5	57
Alaska	52.8	39	−0.4	58	0.1	51	61.9	20
Arizona	55.1	30	3.1	3	2.8	8	57.0	48
Arkansas	56.3	27	1.8	16	1.9	20	55.9	54
California	54.9	31	2.0	15	1.7	23	58.8	41
Colorado	73.9	4	3.0	4	2.8	8	65.1	11
Connecticut	54.8	33	1.1	29	0.4	48	62.7	17
Delaware	65.5	13	2.2	13	2.7	10	59.6	35
Florida	47.8	49	2.5	11	2.6	11	56.2	52
Georgia	57.5	25	3.0	4	3.3	4	59.1	40
Hawaii	64.0	16	1.6	20	2.0	18	60.5	31
Idaho	71.8	6	2.9	6	3.5	3	61.7	22
Illinois	51.5	44	0.7	40	0.6	41	61.1	25
Indiana	66.3	12	1.8	16	1.4	26	61.5	23
Iowa	70.4	7	0.0	50	0.0	53	66.8	6
Kansas	61.3	19	0.0	50	0.6	41	64.4	13
Kentucky	51.9	43	1.4	25	2.1	17	55.0	55
Louisiana	44.4	53	−0.2	56	−0.7	56	56.1	53
Maine	55.6	29	1.0	32	1.3	28	60.7	29
Maryland	59.6	22	1.5	23	1.9	20	64.3	14

(out of 60), labour market performance, 2015–2017

Indicator 4 Average private-sector employment rate, 2015–2017		Indicator 5 Average unemployment rate, 2015–2017		Indicator 6 Average long-term unemployment, 2015–2017		Indicator 7 Average share of involuntary part-time workers, 2015–2017		Indicator 8 Average output per worker, 2014–2016	
%	Rank	%	Rank	%	Rank	%	Rank	CA$2016	Rank
43.8	48	6.4	54	21.4	27	4.4	45	143,467	21
38.9	54	4.8	27	18.5	13	4.7	52	109,800	54
38.9	54	4.8	27	14.5	6	4.5	49	105,341	56
36.1	57	7.7	58	17.1	9	4.1	39	95,617	57
33.3	60	11.7	60	17.6	10	5.3	58	131,078	39
35.1	58	7.1	57	17.8	11	5.2	57	92,368	59
40.0	52	5.5	45	19.8	20	5.3	58	111,634	52
34.8	59	8.4	59	12.8	1	4.8	54	85,077	60
39.1	53	5.9	52	19.1	17	4.4	45	95,167	58
37.6	56	4.9	31	15.6	8	3.8	31	132,691	34
45.3	47	5.5	45	26.9	46	3.5	19	124,135	45
46.9	46	6.9	56	21.2	25	4.1	39	191,317	3
49.9	37	5.4	43	22.6	32	4.8	54	125,338	43
47.2	44	4.2	18	22.2	31	3.0	6	118,503	48
50.8	31	5.5	45	26.5	45	5.0	56	177,646	6
56.0	10	3.3	6	21.1	24	3.4	18	144,547	20
54.0	16	5.2	39	30.7	54	4.4	45	179,660	5
51.7	26	4.7	25	27.5	49	3.7	27	199,285	2
49.5	38	4.8	27	33.5	59	4.6	50	122,288	46
51.1	29	5.4	43	32.5	58	3.7	27	141,656	24
49.3	40	3.0	2	22.1	30	3.6	21	158,066	12
53.1	19	3.7	10	12.8	1	3.5	19	108,571	55
54.1	14	5.6	48	31.6	56	4.0	36	160,244	11
54.6	13	4.3	19	18.5	13	3.1	8	136,371	28
57.0	7	3.5	9	13.3	3	2.7	4	137,710	27
55.0	12	3.9	13	21.8	29	3.1	8	131,640	37
47.0	45	5.1	35	23.7	37	3.6	21	128,288	41
47.4	43	5.8	49	24.8	42	3.6	21	145,953	17
52.8	21	3.8	12	21.4	27	4.1	39	110,447	53
50.0	36	4.6	23	32.2	57	3.1	8	155,338	14

Table 1 (cont'd): Summary of provincial and state scores (out of 100) and

	Index of Labour Market Performance, 2017		Indicator 1 Average total employment growth, 2015–2017		Indicator 2 Average private employment growth, 2015–2017		Indicator 3 Average total employment rate, 2015–2017	
	Score	Rank	%	Rank	%	Rank	%	Rank
Massachusetts	67.4	11	1.6	20	2.2	16	62.6	18
Michigan	54.0	34	1.8	16	1.6	24	58.0	45
Minnesota	75.8	3	1.3	26	1.9	20	67.7	2
Mississippi	41.4	54	1.7	19	2.0	18	52.7	58
Missouri	61.3	19	0.9	36	0.6	41	61.9	20
Montana	53.4	37	1.1	29	−0.7	56	60.8	26
Nebraska	69.9	8	0.0	50	0.1	51	66.9	5
Nevada	52.1	42	2.7	8	2.3	15	58.7	43
New Hampshire	65.3	15	0.8	38	0.5	46	66.3	8
New Jersey	50.1	46	0.7	40	0.5	46	60.3	32
New Mexico	41.4	54	0.3	45	2.4	14	53.9	56
New York	56.0	28	1.0	32	1.0	31	57.9	46
North Carolina	59.0	23	2.3	12	3.0	6	58.4	44
North Dakota	80.4	1	0.0	50	0.6	41	69.4	1
Ohio	53.5	36	0.7	40	0.4	48	59.5	38
Oklahoma	59.0	23	0.8	38	1.6	24	58.8	41
Oregon	68.3	10	3.8	1	4.5	1	59.5	38
Pennsylvania	52.4	40	0.5	44	0.6	41	59.6	35
Rhode Island	53.0	38	1.1	29	1.0	31	61.3	24
South Carolina	48.6	47	2.1	14	0.7	39	56.3	51
South Dakota	72.6	5	0.7	40	1.0	31	67.1	4
Tennessee	61.3	19	2.9	6	3.1	5	57.4	47
Texas	62.8	18	1.6	20	1.0	31	60.8	26
Utah	78.3	2	3.2	2	3.8	2	66.4	7
Vermont	63.5	17	0.1	47	0.7	39	64.8	12
Virginia	57.3	26	1.0	32	1.0	31	62.2	19
Washington	65.4	14	2.7	8	2.5	13	60.3	32
West Virginia	35.1	58	0.1	47	1.0	31	49.9	60
Wisconsin	69.1	9	1.5	23	2.6	11	65.7	9
Wyoming	54.9	31	−1.5	59	−1.9	59	63.6	16

Sources: see figure 1; Indicators 1, 2, 3, 4, 5, 6, 7, and 8.

rankings (out of 60), labour market performance, 2015–2017

Indicator 4 Average private-sector employment rate, 2015–2017		Indicator 5 Average unemployment rate, 2015–2017		Indicator 6 Average long-term unemployment, 2015–2017		Indicator 7 Average share of involuntary part-time workers, 2015–2017		Indicator 8 Average output per worker, 2014–2016	
%	Rank	%	Rank	%	Rank	%	Rank	CA$2016	Rank
55.2	11	4.1	15	27.3	48	3.3	16	180,078	4
51.8	25	5.0	33	23.4	36	4.4	45	132,225	35
58.8	2	3.7	10	14.2	5	3.2	13	143,337	22
43.1	49	5.8	49	29.1	53	4.1	39	113,275	51
54.1	14	4.4	20	19.9	21	3.0	6	127,011	42
50.7	32	4.1	15	19.4	18	3.8	31	114,546	50
57.8	3	3.0	2	18.5	13	2.6	3	147,466	16
51.5	27	5.8	49	24.4	41	5.5	60	135,298	31
57.6	4	3.0	2	22.8	34	3.2	13	131,353	38
52.0	24	5.1	35	33.8	60	3.9	34	166,248	9
42.5	50	6.5	55	25.0	43	4.7	52	133,470	33
49.1	41	4.9	31	30.7	54	3.6	21	202,931	1
50.9	30	5.1	35	27.1	47	3.6	21	141,024	25
59.2	1	2.8	1	13.5	4	2.2	2	172,371	7
52.2	22	5.0	33	23.9	39	3.8	31	142,351	23
49.4	39	4.5	22	21.2	25	2.8	5	132,216	36
52.1	23	4.8	27	19.5	19	4.6	50	145,935	18
53.4	17	5.2	39	25.5	44	4.1	39	145,809	19
53.3	18	5.2	39	28.6	52	3.9	34	136,333	29
47.7	42	5.1	35	27.7	51	3.6	21	119,787	47
57.4	5	3.1	5	20.2	22	2.0	1	136,309	30
50.1	35	4.7	25	23.7	37	3.7	27	138,193	26
52.9	20	4.4	20	22.6	32	3.3	16	157,003	13
56.9	8	3.4	8	19.0	16	3.2	13	133,507	32
56.2	9	3.3	6	18.0	12	3.1	8	115,191	49
50.2	33	4.1	15	24.1	40	4.0	36	150,142	15
51.3	28	5.2	39	20.8	23	4.0	36	169,898	8
40.9	51	6.0	53	27.5	49	4.1	39	124,332	44
57.4	5	3.9	13	23.1	35	3.1	8	129,584	40
50.2	33	4.6	23	14.9	7	3.7	27	165,889	10

Indicator 1: Average total employment growth

Indicator 1 measures the average growth rate of total employment for each jurisdiction from 2015 to 2017. Total employment includes full-time and part-time employment in the private sector (business and non-profit), public sector (government), and among the self-employed. [6] Data on the average total employment growth for all 60 jurisdictions is summarized in the figure below. [7]

Observations

Only one Canadian province ranked in the top 20 on this indicator. British Columbia, the highest ranked province, ranked 8th with an average total employment growth rate of 2.7% (tying with Washington and Nevada). [8] The next highest Canadian jurisdiction on this indictor is Quebec, with a rank of 26 and an average total employment growth rate of 1.3%. Ontario has the next highest growth rate (1.2%) among Canadian provinces but ranks only 28th out of all 60 jurisdictions. Four provinces had negative average total employment growth, including three of the four bottom ranking jurisdictions—Newfoundland & Labrador (ranked 60th at –2.1%), Saskatchewan (56th, –0.2%), Prince Edward Island (54th, –0.1%), and New Brunswick (54th, –0.1%). Three other provinces also ranked in the bottom half. Manitoba ranked 36th (0.9%), Alberta ranked 46th (0.2%), and Nova Scotia ranked 47th (0.1%).

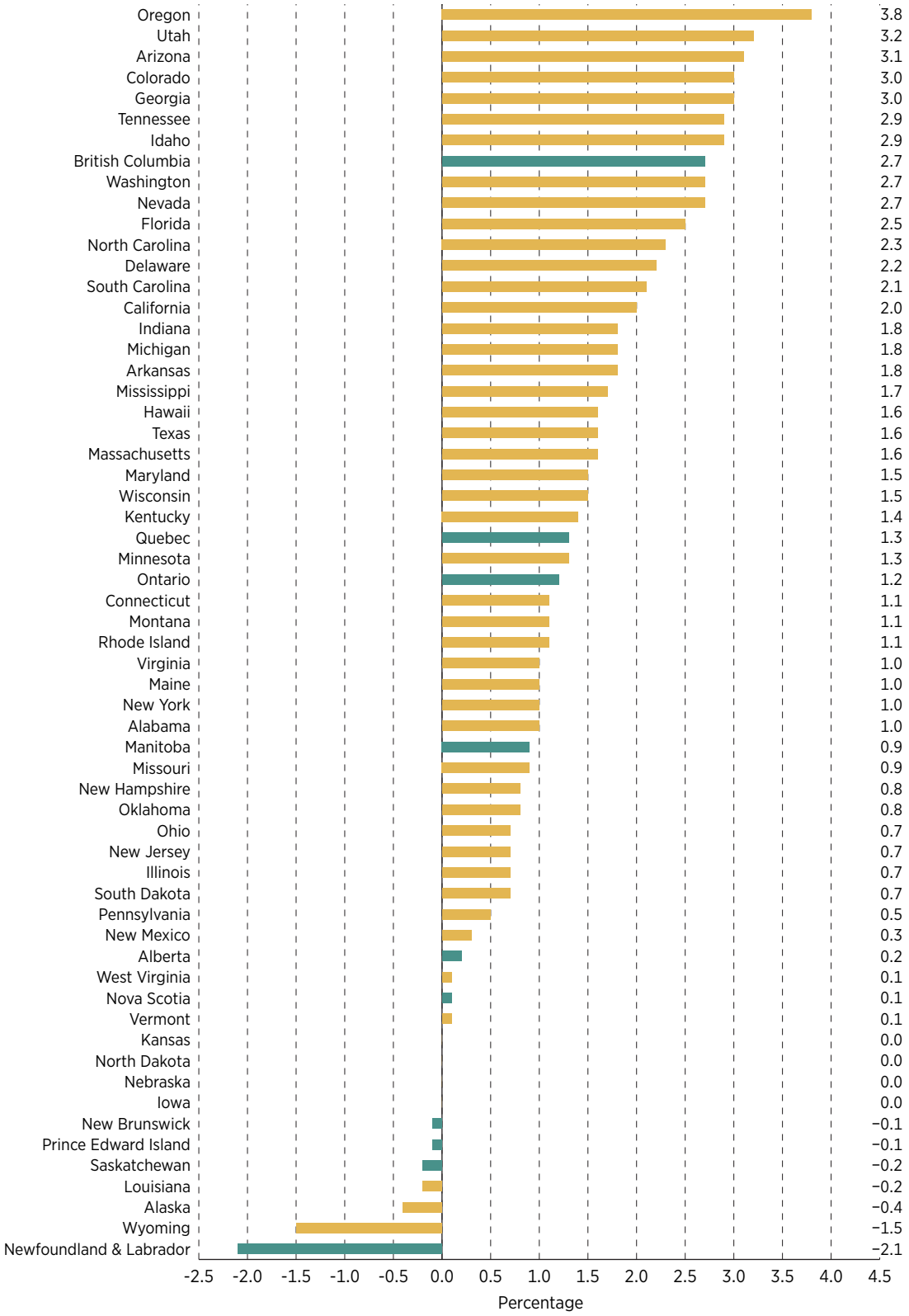
All but one of the top 10 jurisdictions for average total employment growth are from the United States. The top three are Oregon (with 3.8% growth), Utah (3.2% growth), and Arizona (3.1% growth). Including these three states, seven of the top 10 jurisdictions are states from the West—Arizona (3.1%), Colorado (3.0%), Idaho (2.9%), Washington

[6] There is a minor difference between the Canadian and US definitions of "employable": Canada tabulates employment data for those of age 15 and above while the United States does so for those aged 16 and above.

[7] One aspect of the labour market that is not reflected in the Index of Labour Market Performance is how labour market conditions can differ for different individuals depending on age and skill-set. For example, employment rates for youths (aged 15 to 24) tend to be lower and unemployment rates, higher, than those of the general population. There is an interesting contrast between the trend of the employment rate for youths in Canada and the United States. In Canada, the youth employment rate fell from 59.5% in 2008 to 55.3% in 2009 and then remained largely flat for the subsequent years (Statistics Canada, 2018d). In the United States, youth employment rates fell over a longer period from 59.7% in 2000 to 45% in 2010—with about two fifths of the overall decline taking place from 2008 to 2010. However, unlike Canada's, the United States' youth employment rate has begun to recover—although at a level still below Canada—rising to 50.4% in 2017 (US, Dep't of Labor, Bureau of Labor Statistics, 2018f).

[8] Throughout this study, rankings of individual indicators are based on rounded numbers but the index scores are derived from unrounded numbers.

Indicator 1: Average total employment growth (%), 2015–2017



Sources: Statistics Canada, 2018e; US, Dep't of Labor, Bureau of Labor Statistics, 2018a; calculations by authors.

(2.7%), and Nevada (2.7%). Two of the remaining US states in the top 10 are from the South, Georgia (3.0%) and Tennessee (2.9%). None are from the Northeast or Midwest regions. The only region that is not in the bottom 10 is the Northeast.

Indicator 2: Average private-sector employment growth

An important aspect is missing from the first indicator of labour market performance: the nature of employment growth. Total employment growth does not reveal whether employment growth was driven by growth in the public or the private sector. Strong employment growth that is largely fuelled by the public sector can have harmful economic consequences (Clemens, Karabegović, and Veldhuis, 2003; Karabegović, Gabler, and Veldhuis, 2012; and Di Matteo, 2015). The second indicator of labour market performance measures the average growth in private-sector employment for each jurisdiction from 2015 to 2017; growth is defined as new full-time and part-time private-sector employment. [9] The average private-sector employment growth for all 60 jurisdictions is summarized in the figure below.

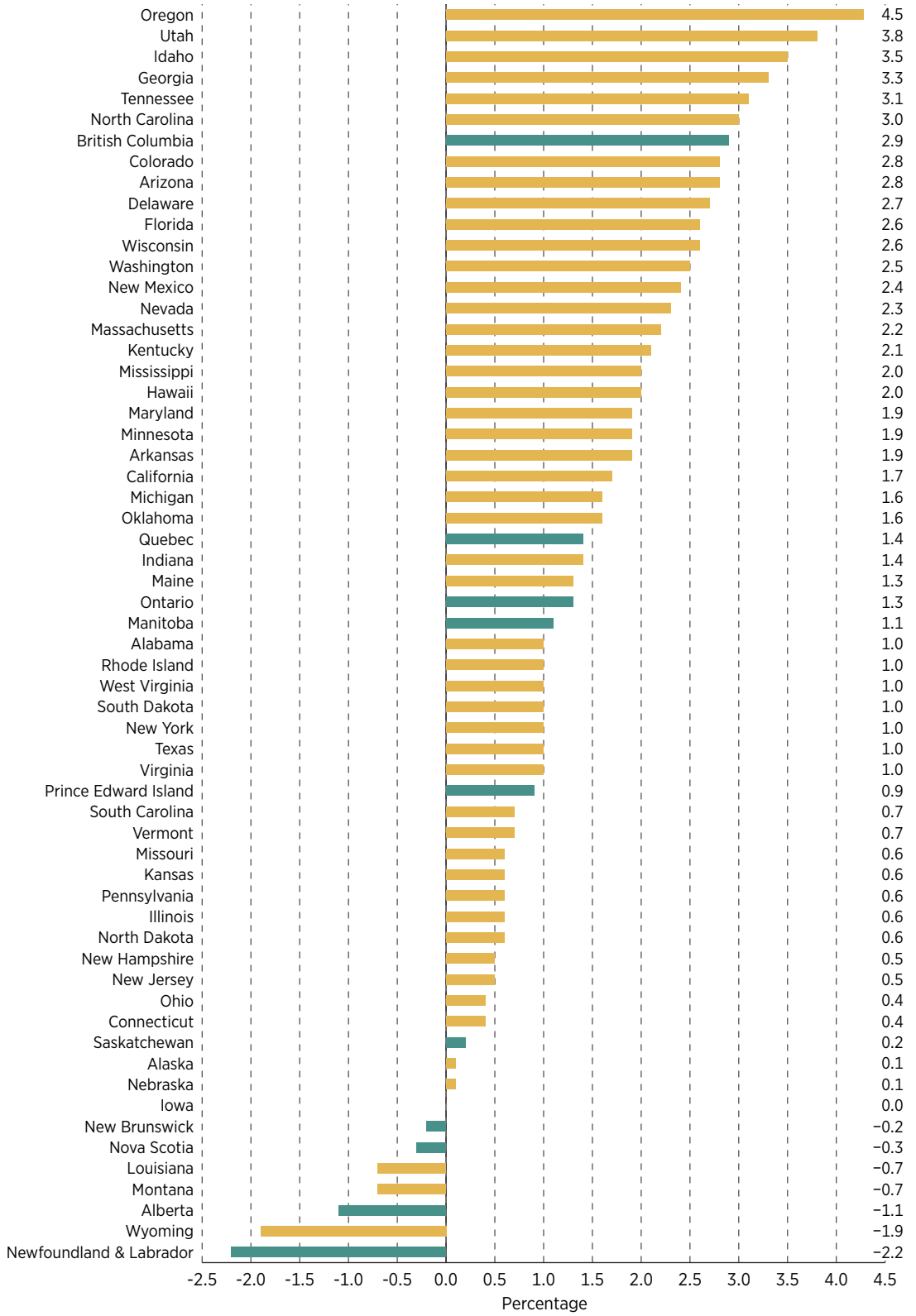
Observations

British Columbia is the only Canadian provinces in the top 10 on the rankings for average private-sector employment growth, with a growth rate of 2.9% and a rank of 7th. No other Canadian province is in the top 20 of jurisdictions. Quebec, the next highest ranked province (26th), had average private-sector employment growth of 1.4%, half British Columbia's rate. Ontario (28th, 1.3%) is the third highest ranking Canadian province on this indicator, followed closely by Manitoba (30th, 1.1%). The remaining six Canadian provinces are ranked among the bottom half of jurisdictions. Four provinces experienced an average decline in private-sector employment: New Brunswick (54th, –0.2%), Nova Scotia (55th, –0.3%), Alberta (58th, –1.1%), and Newfoundland & Labrador (60th, –2.2%). Alberta's near-bottom ranking is noteworthy, as historically it has ranked near the top on this indicator in past editions of the index.

As on the first indicator, Oregon led all jurisdictions with an average growth rate of 4.5% in private-sector employment over the three-year period. Utah is next at 3.8%, followed by Idaho (3.5%), Georgia (3.3%), and Tennessee (3.1%). Besides British Columbia, jurisdictions in the top 10 rankings were found in two census regions of the United

[9] In this instance as well, Canada tabulates employment data for those of age 15 and above while the United States does so for those age 16 and above.

Indicator 2: Average private-sector employment growth (%), 2015–2017



Sources: Statistics Canada, 2018e; US, Dep't of Labor, Bureau of Labor Statistics, 2018b; calculations by authors.

States: five are from the West—Oregon (1st), Utah (2nd), Idaho (3rd), and Colorado and Arizona (tied for 8th). Four are from the South—Georgia (4th), Tennessee (5th), North Carolina (6th), and Delaware (10th). None are from the Northeast or Midwest.

Three states experienced an average decrease in private-sector employment over the three-year period: Louisiana (56th, –0.7%); Montana (56th, –0.7%), and Wyoming (59th, –1.9%). The only US census region not represented in the bottom 10 is the Northeast; there are three from the West (Alaska, Montana, and Wyoming), two from the Midwest (Nebraska and Iowa), and one from the South (Louisiana).

Total and private-sector employment growth compared

The relationship between the results on the first indicator of labour market performance—average total employment growth—and the second indicator—average private-sector employment growth—is noteworthy. Several jurisdictions were in the midst of altering the size of their public sector during the period analyzed. There is, therefore, a stark contrast between the two indicators for those jurisdictions. For example, Alberta's average total employment growth was 0.2% but its private-sector employment growth declined by 1.1%, indicating an increase in the province's public-sector employment. Prince Edward Island shows the opposite: significant total employment declines in spite of modest private-sector gains, indicating a reduction in the public sector.

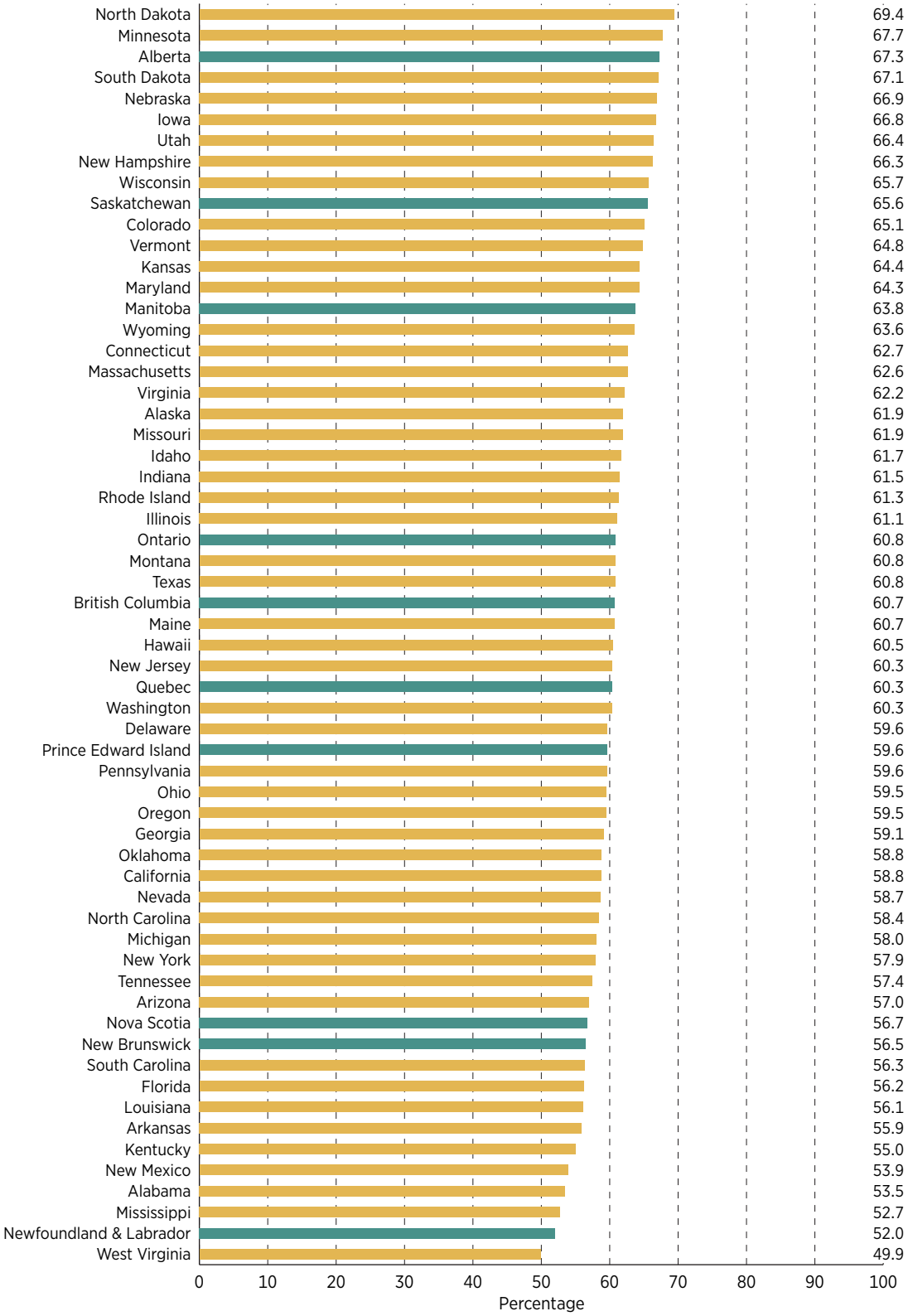
Indicator 3: Average total employment rate

It is important to consider not just the growth in employment but also the overall level of employment. For example, a jurisdiction with a relatively low level of employment may score well on the first two indicators if its growth is catching up to that of other jurisdictions, but this does not fully reflect employment conditions in that jurisdiction. This indicator measures the total employment level—which includes full-time and part-time work as well as private employees, public employees, and the self-employed—as a percentage of the working age population (15 years and above in the case of Canada and 16 years and above in the case of the United States). The employment rate is the average over the years from 2015 to 2017.

Observations

Two Canadian provinces ranked in the top 10 jurisdictions for average employment rate. Alberta, first among Canadian provinces, ranks third out of 60 jurisdictions with an average employment rate of 67.3%. Saskatchewan ranks 10th with an average

Indicator 3: Average total employment rate (%), 2015–2017



Note: Canada tabulates employment data for those of age 15 and above while the United States do so for those age 16 and above.
Sources:Statistics Canada, 2018d; US, Dep't of Labor, Bureau of Labor Statistics, 2018c; calculations by authors.

employment rate of 65.6%. Three other Canadian provinces are in the top half of jurisdictions: Manitoba (15th, 63.8%), Ontario (26th, 60.8%), and British Columbia (29th, 60.7%). Only two Canadian provinces are in the bottom 10, New Brunswick (50th, 56.5%) and Newfoundland & Labrador (59th, 52.0%).

Six of the top 10 US jurisdictions are from the Midwest, including the top two jurisdictions, North Dakota (69.4%) and Minnesota (67.7%). The other Midwest states in the top 10 are South Dakota (4th, 67.1%), Nebraska (5th, 66.9%), Iowa (6th, 66.8%), and Wisconsin (9th, 65.7%). The West is represented by Utah (7th, 66.4%) and the Northeast is represented by New Hampshire (8th, 66.3%). No jurisdiction from the South census region is in the top 10 of this indicator.

States from the South, however, feature prominently among the bottom 10 jurisdictions for average employment rate. In fact, eight of the bottom 10 are southern states. This includes South Carolina (51st, 56.3%), Florida (52nd, 56.2%), Louisiana (53rd, 56.1%), Arkansas (54th, 55.9%), Kentucky (55th, 55%), Alabama (57th, 53.5%), Mississippi (58th, 52.7%), and the lowest ranked jurisdiction on this indicator, West Virginia (49.9%). West Virginia is also notable for being the only jurisdiction where less than half of its working age population is employed. New Mexico (56th, 53.9%) is the other American state in the bottom 10.

Indicator 4: Average private-sector employment rate

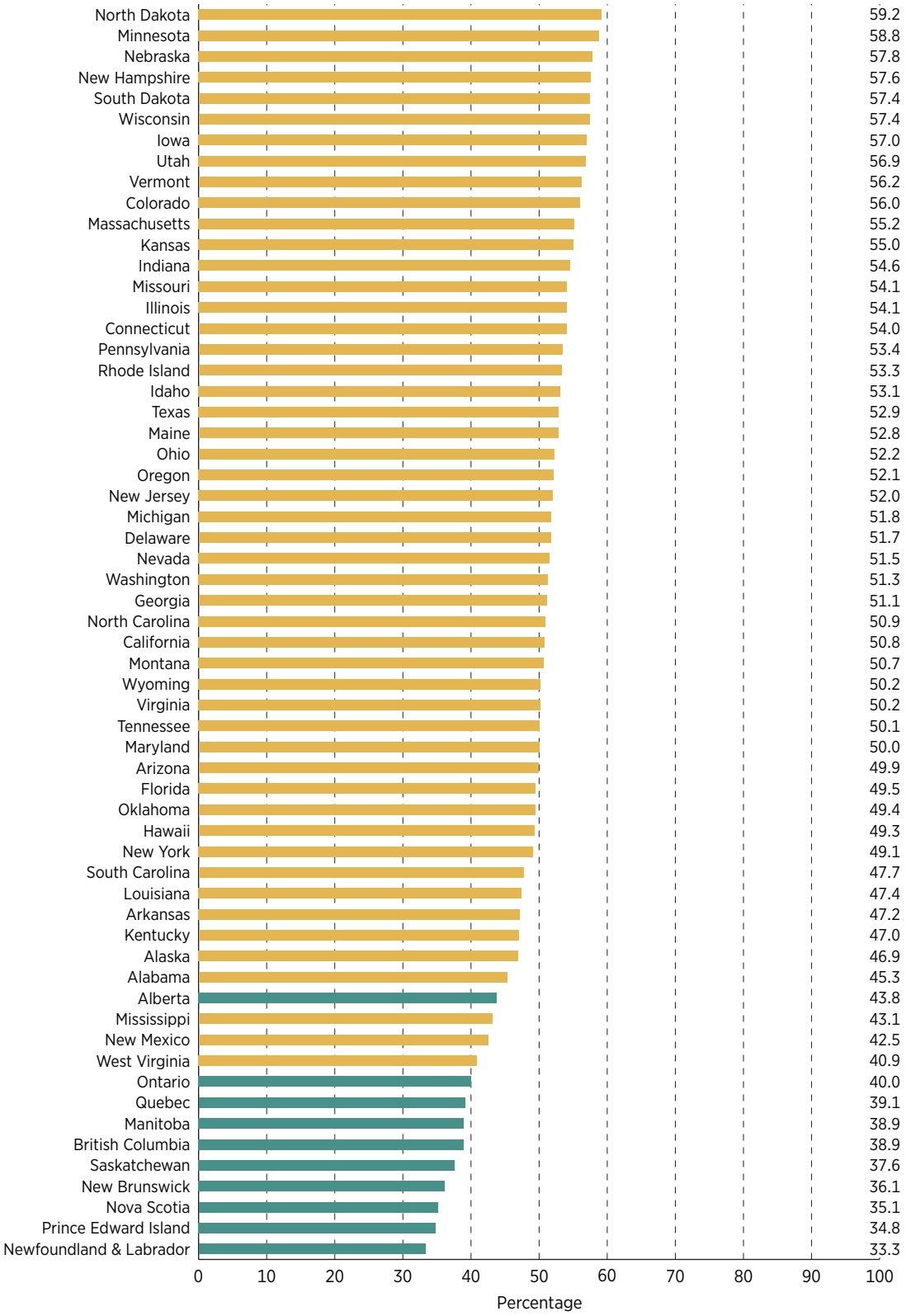
The total employment rate does not distinguish between employment in the public and private sectors, which as noted above, is important because of the different economic implications. Thus, the fourth indicator of labour market performance measures the average private-sector employment rate from 2015 to 2017; it is calculated as the total full-time and part-time employment in the private sector relative to the working age population. [10] The average private-sector employment rate for all 60 jurisdictions is summarized in the figure below.

Observations

The bottom nine jurisdictions for average private-sector employment rate are all Canadian provinces. The only province that is not in the bottom 10 is Alberta (43.8%), which places 48th—still in the bottom third of jurisdictions. The second highest ranked Canadian province in Ontario (40.0%), followed by Quebec (39.1%). The Atlantic

[10] Canada tabulates employment data for those of age 15 and above while the United States does so for those of age 16 and above..

Indicator 4: Average private-sector employment rate (%), 2015–2017



Sources: Statistics Canada, 2018e; US, Dep't of Labor, Bureau of Labor Statistics, 2018b, 2018c; calculations by authors.

Provinces all make up the bottom four jurisdictions: New Brunswick (36.1%), Nova Scotia (35.1%), Prince Edward Island (34.8%), and Newfoundland & Labrador (33.3%).

Midwestern states tend to do well on this indicator, with six of the top 10 jurisdictions coming from the Midwest. This includes the top three jurisdictions—North Dakota (59.2%), Minnesota (58.8%), and Nebraska (57.8%). The three other Midwest states in the top 10 are: South Dakota (57.4%), Wisconsin (57.4%), and Iowa (57.0%). Two states in the top 10 come from the Northeast—New Hampshire (57.6%) and Vermont (56.2%)—and two states come from the West—Utah (56.9%) and Colorado (56.0%). The only state in the bottom 10 of jurisdictions is West Virginia (40.9%).

Total and private-sector employment rate compared

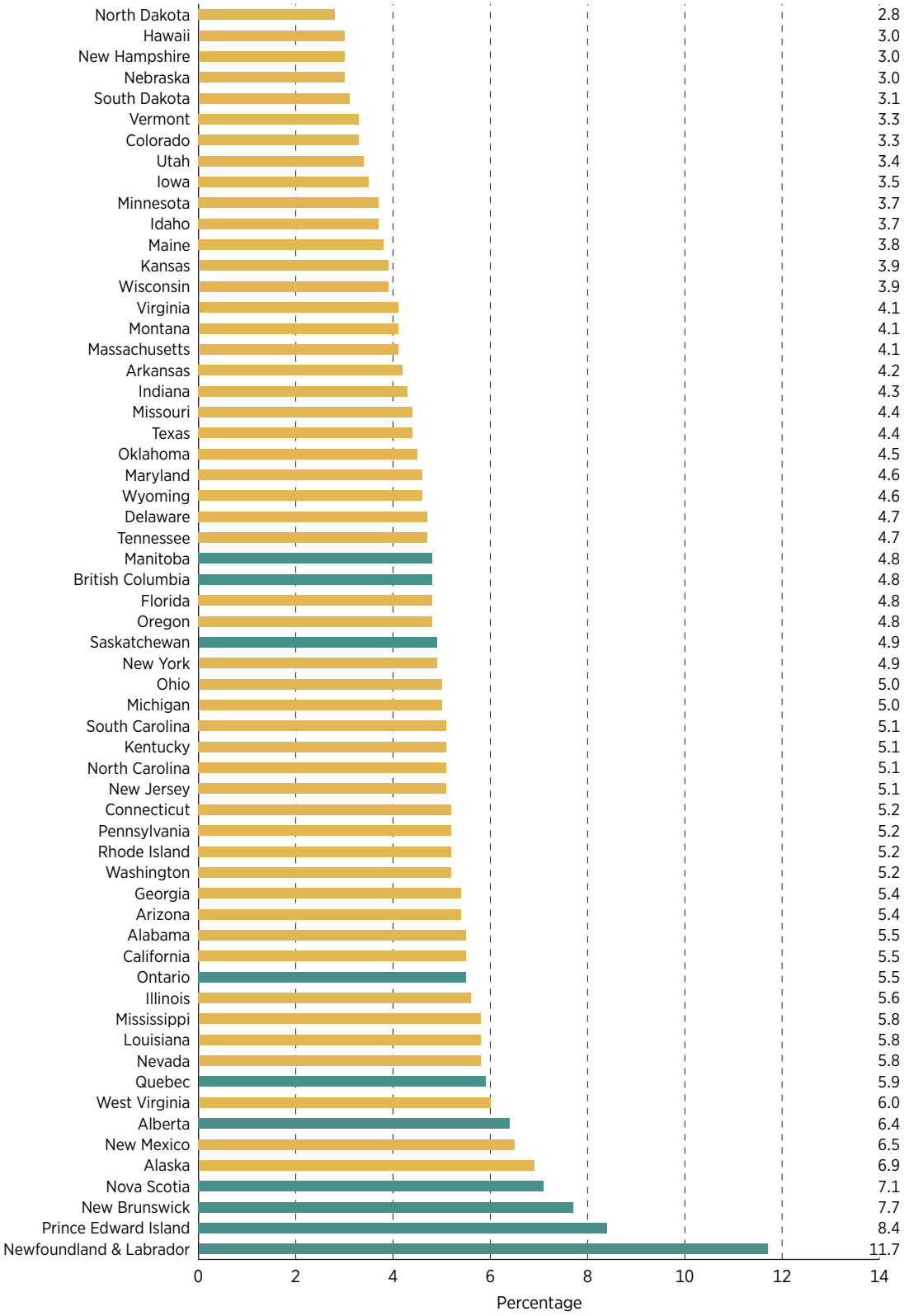
There are several noteworthy differences in the rankings for the total employment rate and the private-sector employment rate, particularly for Canadian provinces. A considerable portion of employment in many jurisdictions comes from the public sector and that explains the general lower rankings and poorer performance on the private-sector employment rate compared to the total employment rate. For example, Alberta ranks 3rd for total employment (67.3%) but ranks 48th for private-sector employment (43.8%). Saskatchewan is in the top 10 for the total employment rate but is in the bottom 10 for the private-sector employment rate. The difference in Ontario's rank is also notable—26th highest average total employment rate (60.8%) but the 52nd highest private-sector rate (40.0%). Finally, British Columbia is in the top half of jurisdictions (29th) when it comes to its average total employment rate but is in the bottom 10 for its private-sector employment rate (54th). Overall, the third and fourth indicators together suggest that Canadian provinces rely more heavily on public-sector employment than US states.

Indicator 5: Average unemployment rate

Indicator 5 reflects the first two indicators in that an economy that is unable to generate employment growth will also, to a certain extent, have a higher unemployment rate, assuming a steady flow of new entrants to the labour force. Indicator 5 measures the three-year average (2015–2017) percentage of citizens who, though actively seeking work, were unable to find it. [11]

[11] Statistic Canada's R3 unemployment rate was used for the Canadian provinces, instead of a traditional (that is, official) unemployment rate. R3 alters the official Canadian rates to make them comparable to the US unemployment rates. The R3 unemployment rates are slightly lower than the official unemployment rate but the difference is less than one percentage point, on average, for Canada (Statistics Canada, 2018g).

Indicator 5: Average unemployment rate (%), 2015–2017



Note: Statistic Canada's R3 unemployment rate was used for the Canadian provinces to ensure data comparability with the United States.
Sources: Statistics Canada, 2018g; US, Dep't of Labor, Bureau of Labor Statistics, 2018a; calculations by authors.

An important limitation of this measure is that a reduction in unemployment could occur for two reasons. First, it could be that individuals are moving from being unemployed to being employed. Second, it could be that individuals are abandoning an active search for work and leaving the labour force altogether (see the discussion of labour force participation in Appendix B). An individual may leave the labour force as a result of age (that is, retire), because they have suffered some calamity that leaves them too injured or sick to work, as a result of choosing a change in lifestyle (for instance, staying home with young children), because they feel discouraged from the lack of job opportunities, or for some other reason. In any case, the unemployment rate by itself can only reveal part of what is happening in a labour market. This is one reason that an index that has multiple measures, such as employment growth and employment rate, is used to capture labour market conditions across jurisdictions. Average unemployment rates for all 60 jurisdictions are summarized in the figure below.

Observations

Canada, again, performed poorly on this indicator. The Atlantic Provinces had the four highest average unemployment rates of all 60 jurisdictions (Newfoundland & Labrador at 11.7%, Prince Edward Island at 8.4%, New Brunswick at 7.7%, and Nova Scotia at 7.1%) and therefore ranked the lowest. Canada's two most populous provinces, Ontario and Quebec, also underperformed. Ontario ranked in the bottom 20 (45th) with an average unemployment rate of 5.5%. Quebec fared even worse, ranking in the bottom 10 (52nd) with an average unemployment rate of 5.9%. Alberta, which for decades had one of the lowest unemployment rates of any jurisdiction, is also in the bottom 10 (54th) with an average unemployment rate of 6.4%. Manitoba is the highest-ranking Canadian province on this indicator, placing 27th overall with an average unemployment rate of 4.8%, followed by British Columbia (ranked 27th at 4.8%) and Saskatchewan (ranked 31st at 4.9%).

The four Great Plain states of the US Midwest performed strongly with exceptionally low unemployment rates—North Dakota ranked 1st with the lowest average unemployment rate (2.8%), followed by Nebraska (tied at 3.0% with Hawaii and New Hampshire), and South Dakota (5th at 3.1%). Kansas ranked slightly outside the top 10 at 13th (3.9%). A total of five Midwest states are in the top 10, along with four West and two Northeast states (there are 11 states in the top 10 because Minnesota and Idaho are tied for 10th place). None are from the South, although all jurisdictions that ranked in the top 10 are from the United States.

Notably, Newfoundland & Labrador's average unemployment rate of 11.7% is nearly two and a half times greater than the rate of the top-ranked Canadian province, Manitoba, and more than four times higher than the rate of the top-ranked US state, North Dakota. And, in stark contrast, the two Northeast states bordering eastern Canada—New Hampshire (3.0%) and Vermont (3.3%)—are in the top 10, with less than half the unemployment rate of any Atlantic province.

Indicator 6. Average long-term unemployment

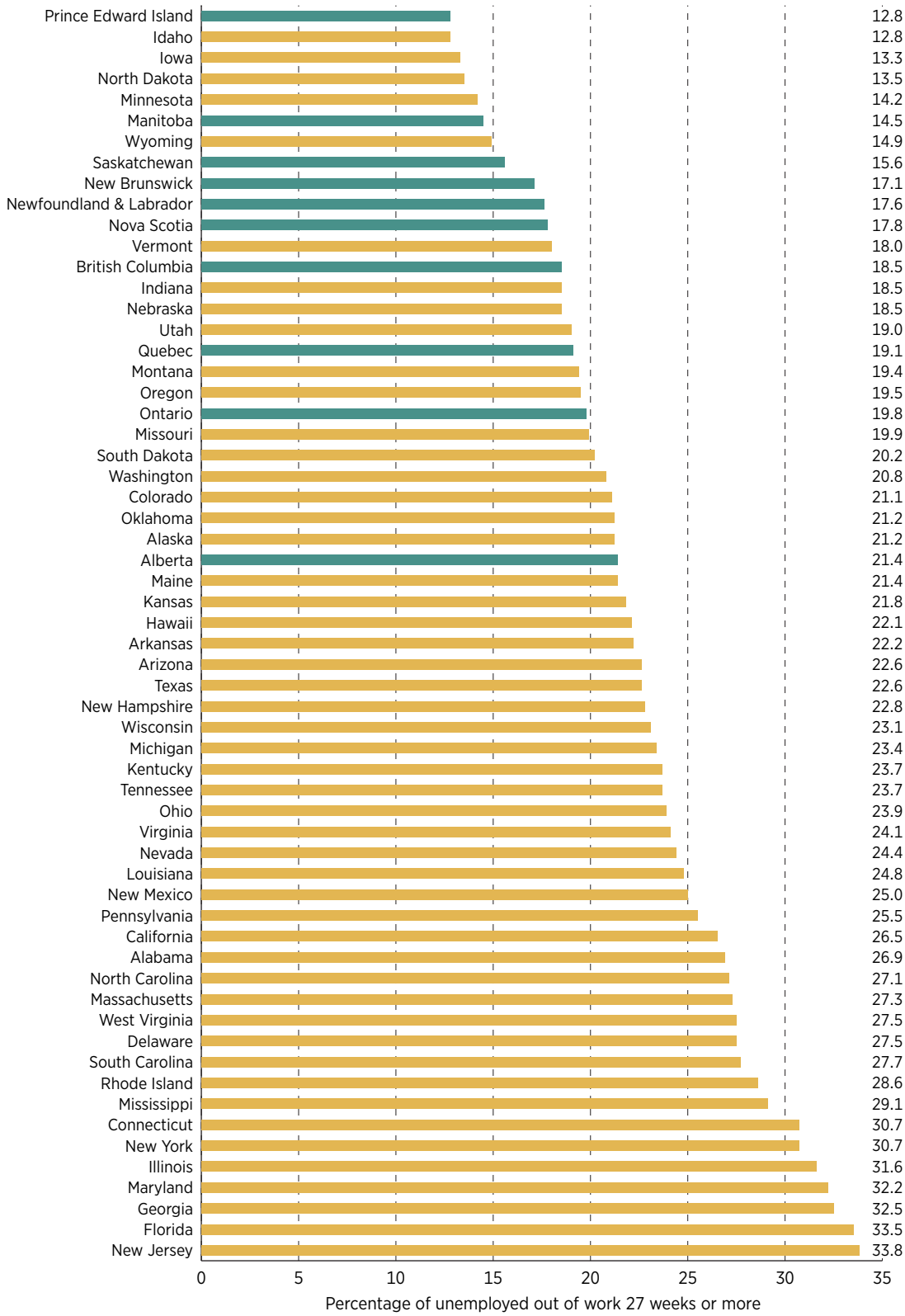
The sixth indicator of labour market performance is the average percentage of the unemployed who have been out of work for 27 weeks. It is an adjunct to the previous measure and is intended to indicate the severity (or long-term nature) of unemployment, as the labour market of two jurisdictions with similar unemployment rates may face different problems if the extent of long-term unemployment in one or the other is drastically different. This indicator measures the share of those who experience unemployment for 27 weeks or longer relative to the total unemployed, on average, from 2015 to 2017. The result for all 60 jurisdictions are summarized in the figure below.

Observations

Prince Edward Island and Idaho tied for first place: the lowest percentage of their unemployed (12.8%) were out of work for 27 weeks or longer. Overall, Canadian jurisdictions performed better on the severity of long-term unemployment than on the unemployment rate. Five provinces ranked among the top 10—Prince Edward Island (1st), Manitoba (6th), Saskatchewan (8th), New Brunswick (9th), Newfoundland & Labrador (10th). The remaining five provinces all ranked in the top 30—Nova Scotia (11th), British Columbia (13th), Quebec (17th), Ontario (20th), and Alberta (27th).

Five US states are in the top 10: three Midwest—Iowa (3rd), North Dakota (4th), Minnesota (5th)—and two from the West—Idaho (1st), Wyoming (7th). The bottom 30 jurisdictions are all US states—14 from the South, nine Northeast, five West, and three Midwest. New Jersey ranked last, with 33.8% of its unemployed out of work for 27 weeks or longer, and the situation in Florida was nearly as bad, at 33.5%.

Indicator 6: Average long-term unemployment, 2015–2017



Sources: Statistics Canada, 2018f; US, Dep't of Labor, Bureau of Labor Statistics, 2018b; calculations by authors.

Indicator 7: Average share of involuntary part-time workers

The seventh indicator captures an aspect of the labour market that is a growing concern among some observers—the quality of jobs available. Some worry that those who have jobs may be underemployed (not employed to their full potential). For instance, there are individuals working a part-time job but desire to be working full-time. However, many individuals also desire to work part-time for personal or family reasons. It is important to distinguish between voluntary part-time workers and involuntary part-time workers. Someone who is an involuntary part-time worker desires full-time work but could not find it as a result of economic conditions. The indicator measures the percentage of total employed that is involuntary part-time, on average, from 2015 to 2017. The result for all 60 jurisdictions are summarized in the figure below.

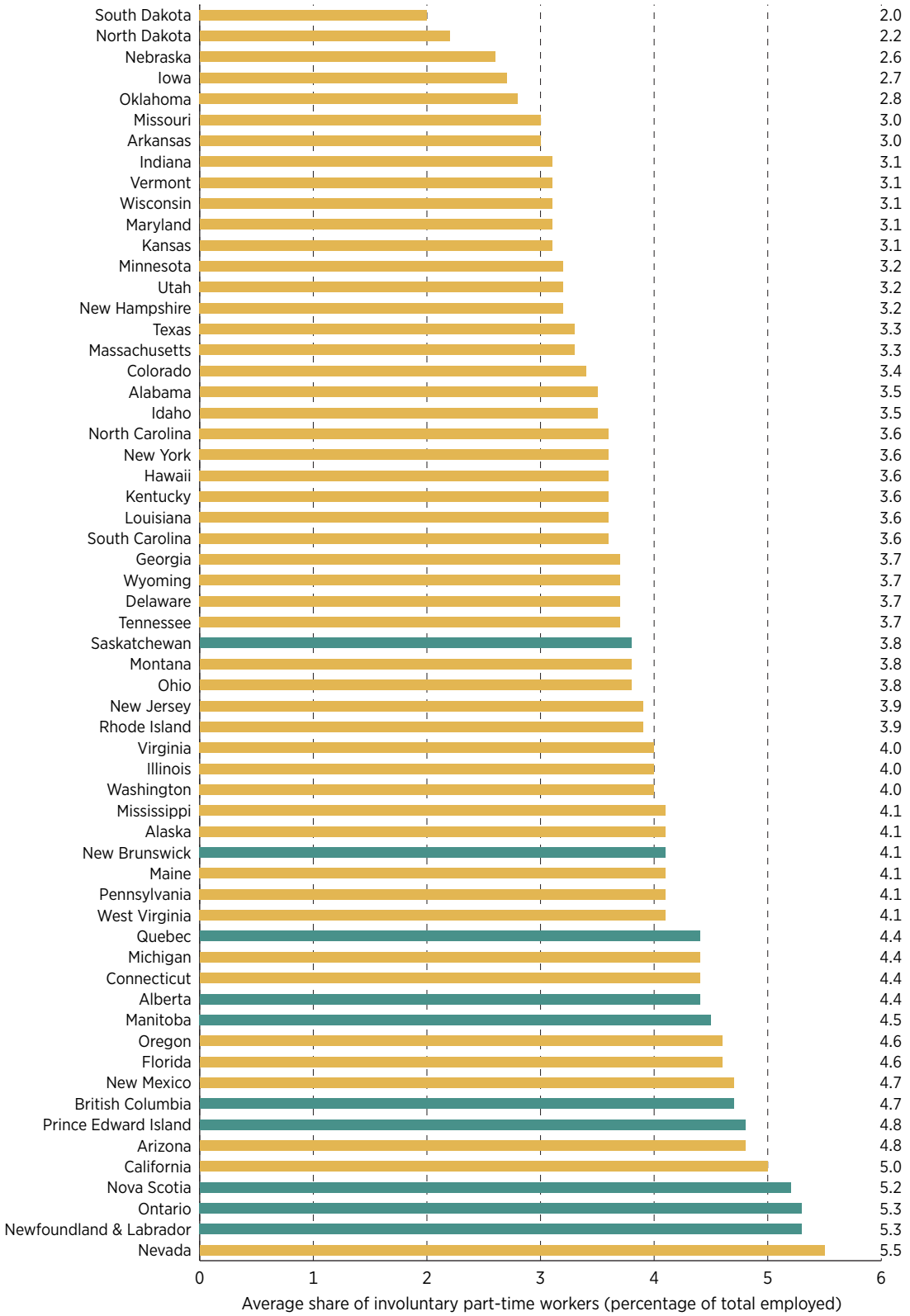
Observations

No Canadian province is in the top half of the 60 jurisdictions on this indicator, meaning all have relatively high percentages of involuntary part-time workers. Saskatchewan is the best ranked Canadian province, ranking 31st with 3.8% of the workforce involuntary part-time. New Brunswick (4.1%) is the second highest ranked Canadian province but ranks 39th overall. Five of the bottom 10 jurisdictions are Canadian: British Columbia (4.7%), Prince Edward Island (4.8%), Nova Scotia (5.2%), Ontario (5.3%), and Newfoundland & Labrador (5.3%). Notably, in Canada's most populous province, Ontario, more than one in 20 workers is involuntary part-time. That is more than two-and-a-half times the share as the highest ranking jurisdiction on this indicator (South Dakota with 2.0%).

Once again, in the United States the top 10 is dominated by states of the Midwest, with South Dakota taking the top spot with 2.0%. North Dakota has the second lowest involuntary part-time rate (2.2%), followed by Nebraska (2.6%) and Iowa (2.7%). The Midwest states of Indiana, Wisconsin, and Kansas all tie for 8th place (with a rate of 3.1%), along with Northeast states Vermont and Maryland. None of the states in the top 10 are from the West but two are from the South—Oklahoma (2.8%) and Arkansas (3.0%).

The US states that are in the bottom 10 of this indicator are mainly from the West. Nevada has the highest average involuntary part-time rate of all 60 jurisdictions, with 5.5%. California is the state with the next highest rate (5.0%), followed by Arizona (4.8%)—although both jurisdictions do better on this indicator than Nova Scotia, Ontario, and Newfoundland & Labrador. New Mexico (52nd, 4.7%) and Oregon (50th, 4.6%) are two West states that are also in the bottom 10. The only jurisdiction in the bottom 10 that is not from the West census region or a Canadian province is Florida, with a rate of 4.6%.

Indicator 7: Average share of involuntary part-time workers, 2015–2017



Sources: Statistics Canada, 2018e, 2018i; US, Dep't of Labor, Bureau of Labor Statistics, 2018a, 2018e; calculations by authors.

Indicator 8. Average output per worker

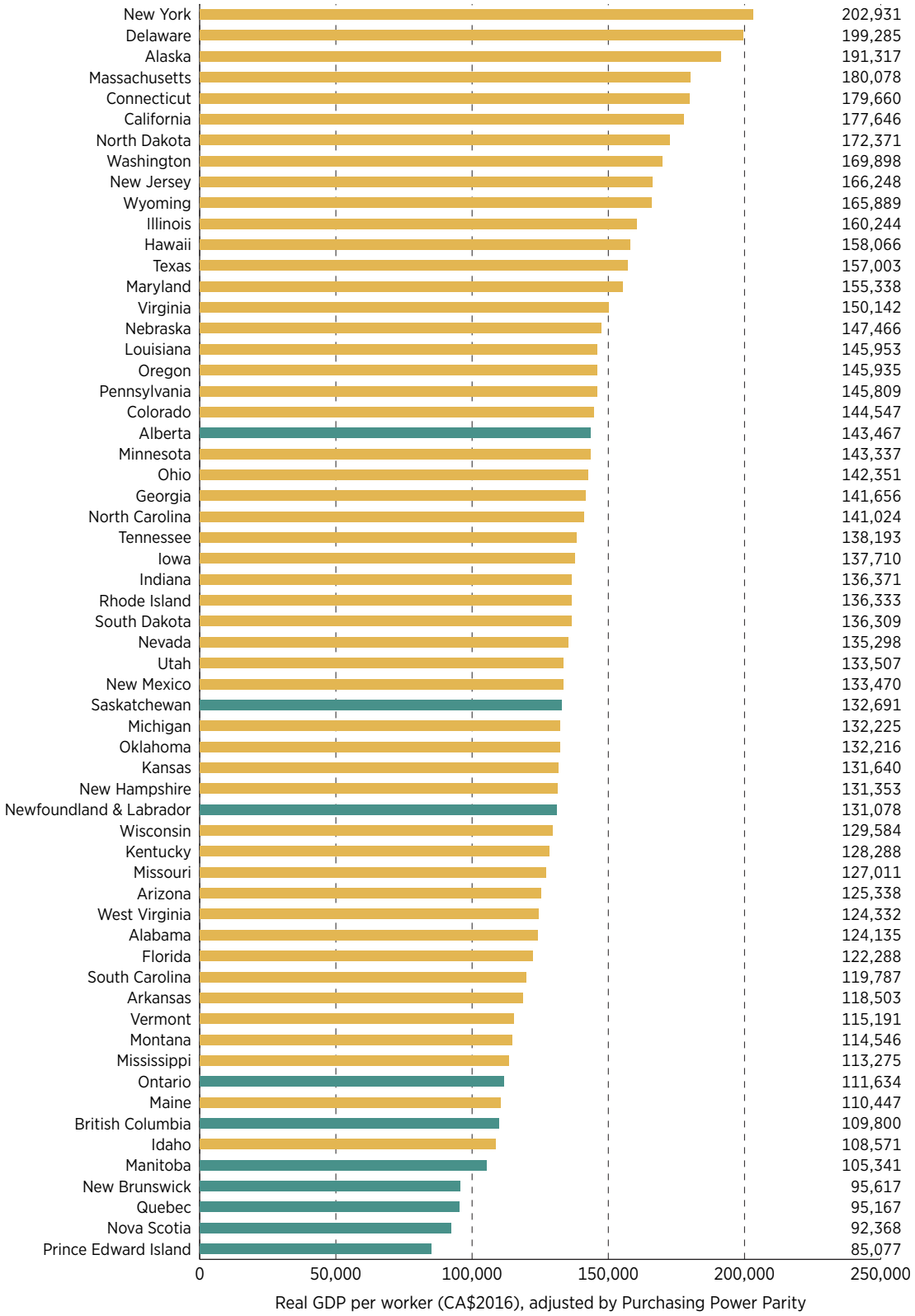
A final indicator of a well-functioning labour market is high and growing labour productivity. The ability to produce more with the same amount of labour translates into higher compensation for workers (including wages, salaries, and other benefits). A common measure of labour productivity is output per hour of labour work. However, data on the number of hours worked is not available for all US states (although it is for the Canadian provinces). In place of this preferred measure, the final indicator of labour market performance measures the average real gross domestic product (GDP) per worker from 2014 to 2016, adjusted for purchasing power parity (PPP). This indicator reveals the average total value of goods and services produced per worker over the three-year period. Average output per worker for all 60 jurisdictions is summarized in the figure below.

Observations

The five least productive jurisdictions are all Canadian provinces—Prince Edward Island (ranked 60th), Nova Scotia (59th), Quebec (58th), New Brunswick (57th), and Manitoba (56th). Quebec and the three Maritime provinces had an average GDP per worker of less than half the top ranked jurisdiction, New York ($202,931). Seven of the 10 lowest ranked jurisdictions are Canada, with Ontario ranked 52nd and British Columbia, 54th on this indicator. Alberta, in 21st place, was the top-ranked Canadian province, with an average GDP per worker of $143,467.

The Northeast US states and the Western states each have four states in the top 10 of most productive per worker. The four Northeast states are: New York ($202,931), Massachusetts ($180,078), Connecticut ($179,660), and New Jersey ($166,248). The four Western states are: Alaska ($191,317), California ($177,646), Washington ($169,898), and Wyoming ($165,889). However, the two least productive states are also from the West and Northeast: Idaho (ranked 55th) had an average GDP per worker of $108,571 and Maine (53rd) had $110,447 per worker. Overall, US states significantly outperformed Canadian provinces, with the 50 states averaging $152,668 GDP per worker compared to an average of $111,992 for the 10 Canadian provinces.

Indicator 8: Average output per worker (adjusted GDP, CA$2016), 2014–2016



Sources: OECD, 2018; Statistics Canada, 2018c, 2018d; US, Dep't of Commerce, Bureau of Economic Analysis, 2018; US, Dep't of Labor, Bureau of Labor Statistics, 2018a; calculations by authors.

Conclusion

The Index of Labour Market Performance shows that labour markets in Canadian provinces have generally under-performed compared to those in many US states. Indeed, Canadian provinces generally rank poorly on six out of the eight indicators used in the index. Given the importance of labour markets for the economy and our overall prosperity, this is a worrisome result for Canadians. The next step for research is to understand more fully what is holding back Canada's labour markets and, in particular, the extent to which the cause is external factors such as changes in commodity prices or counterproductive government policies.

Appendix A. Methodology

Computing the Index of Labour Market Performance

The Index of Labour Market Performance assesses the performance of labour markets in the 10 Canadian provinces and 50 US states across eight indicators:

Indicator 1. average total employment growth (2015–2017)
Indicator 2. average private-sector employment growth (2015–2017)
Indicator 3. average total employment rate (2015–2017)
Indicator 4. average private-sector employment rate (2015–2017)
Indicator 5. average unemployment rate (2015–2017)
Indicator 6. average long-term unemployment (2015–2017)
Indicator 7. average share of involuntary part-time workers (2015–2017)
Indicator 8. average output per worker (2014–2016).

Each indicator is standardized so that the lowest possible score is zero and the highest possible score is 100. The scores of the five indicators are then averaged, with all eight indicators given equal weighting, to obtain an overall score ranging from zero to 100. The jurisdictions are then ranked according to their final score.

Depending on whether higher values are indicative of better or worse performance of the labour market, alternative formulas are used to transform the eight indicators to a zero-to-100 scale. When higher values are indicative of better labour market performance, the formula used to derive the zero-to-100 ratings is:

$$(V_i - V_{min}) / (V_{max} - V_{min}) \times 100.$$

V_i is the jurisdiction's actual value for the indicator, V_{max} is the maximum value among all of the jurisdictions, and V_{min} is the minimum value among all of the jurisdictions. A jurisdiction's rating will be 100 when its value for the indicator is the highest among all jurisdictions and zero when it is the lowest among all the jurisdictions.

When higher values are indicative of worse labour market performance, the formula used to derive the zero-to-100 ratings is:

$$(V_{max} - V_i) / (V_{max} - V_{min}) \times 100.$$

Appendix B. Other Important Labour Market Performance Indicators

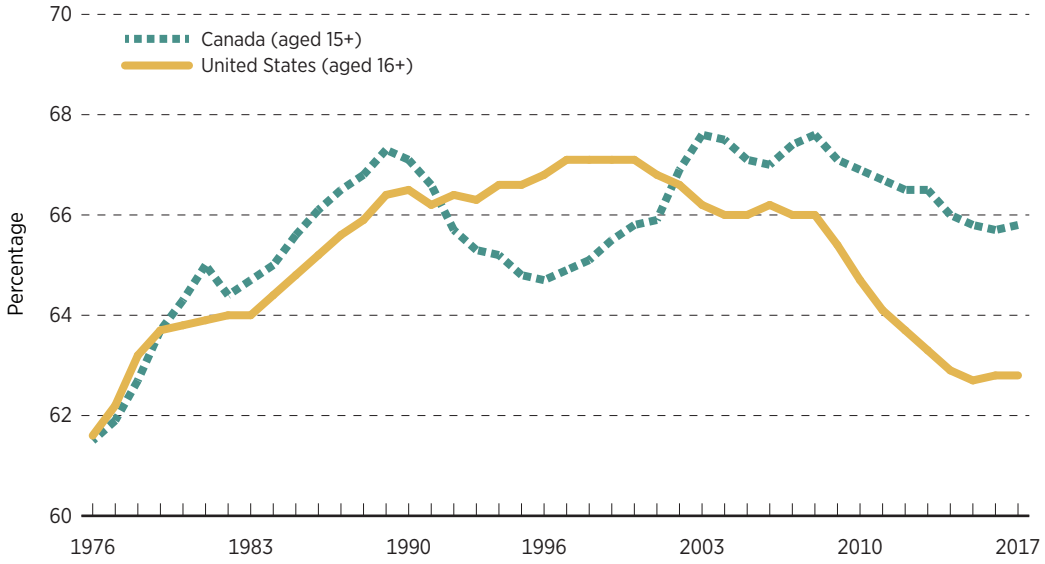
There are three other indicators of labour market performance that are noteworthy but not included in the Index of Labour Market Performance: [1] participation rate, [2] migration, and [3] working days lost as a result of labour disputes. The latter two are not part of the index because the data for Canadian provinces and US states are either not comparable or lack sufficient detail to draw accurate conclusions. Nevertheless, migration and time lost due to labour disputes are important indicators of labour market performance, so they are examined here, along with the participation rate.

Indicator B1: Participation rate

The labour force participation rate is the number of people in the labour force as a percentage of the working age population. The labour force comprises individuals who are employed or unemployed but looking for work. In other words, the participation rate is the percentage of those old enough to work that either have a job or want one. This measure is not included in the Index of Labour Market Performance because the average participation rate is highly correlated with the average employment rate ($r = 0.97$). The labour force participation rate is important, however, for understanding changes in the unemployment rate. While a declining unemployment rate can be driven by a greater proportion of individuals finding work, it can also be driven by people leaving the labour force. Examining trends in the participation rate can help clarify why the unemployment rate is changing.

It is possible for the participation rate to drop following an economic recession if workers become discouraged and stop looking for employment. The rate can also drop for structural reasons such a demographic shift in the population. For instance, a structural drop in the participation rate is likely to occur as a result of baby boomers entering retirement (Fields, Uppal, and LaRochelle-Côté, 2017). While it is beyond the scope of this study to examine the causes of shifts in the participation rate, it is notable that in recent years the overall participation rate has declined in both Canada and the United States.

Figure B1: Labour force participation rate (%) in Canada and the United States, 1976–2017

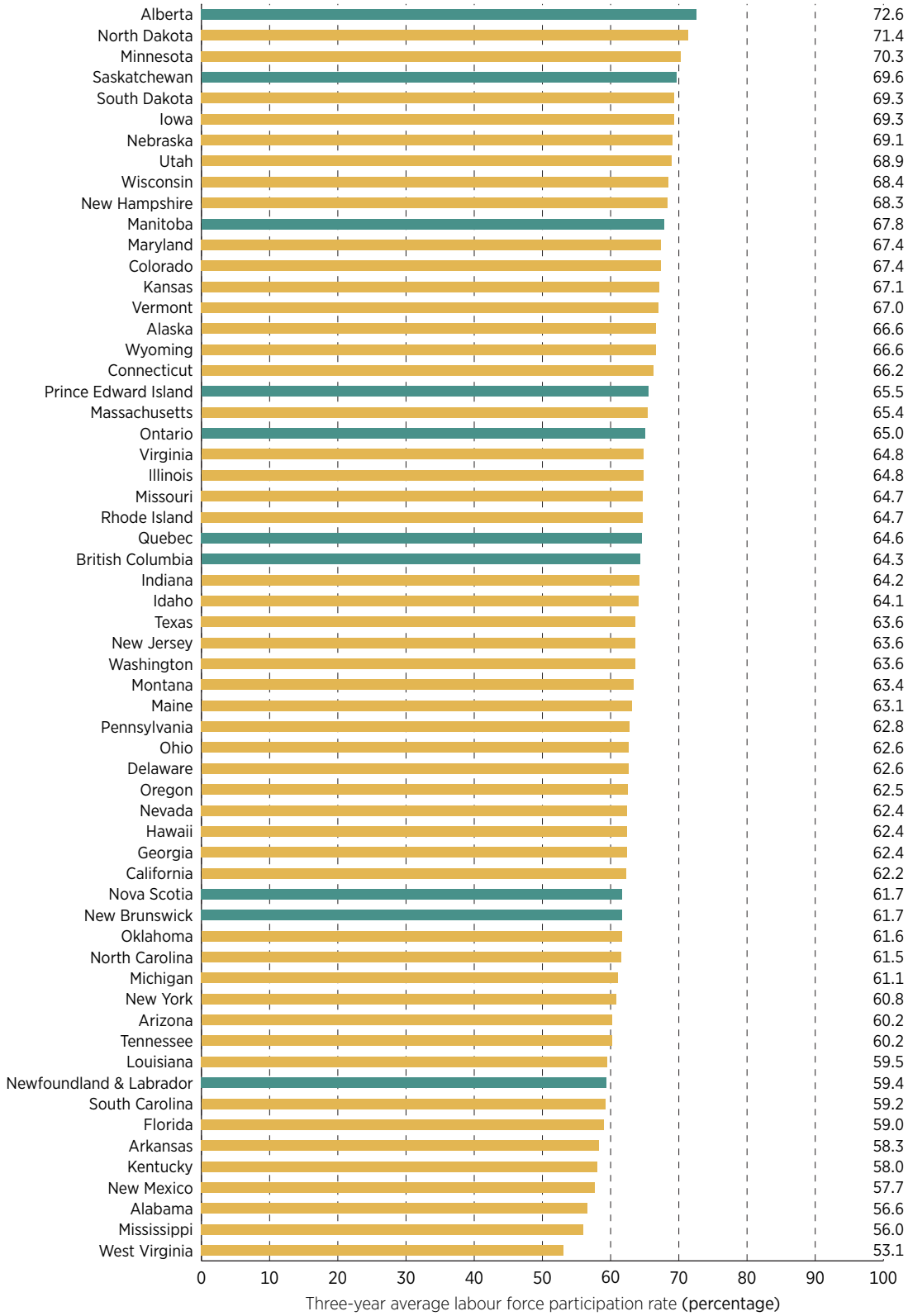


Note: The labour force participation rate in Canada is measured for ages 15 and up while in the United States it is measured for ages 16 and up.
Sources: Statistics Canada, 2018d; US, Dep't of Labor, Bureau of Labor Statistics, 2018a; calculations by authors.

Figure B1 displays the labour participation rate in both countries from 1976 to 2017. It shows a downward trend in the overall labour force participation rate since 2008. In Canada, the overall participation rate fell from 67.6% in 2008 to 65.8% in 2017. Over the same time period, the US participation rate dropped from 66.0% to 62.8%. The decline in the United States has been more pronounced, where the 3.2 percentage-point decline amounts to a 4.8% drop, compared to the 1.8 point decline in Canada, the equivalent of a 2.7% reduction. It is also notable that, unlike the situation in Canada, the labour force participation rate in the United States fell over the period from 2000 to 2004 (67.1% to 66.0%) and then remained flat until 2008. In other words, the labour force participation rate in the United States has dropped by a total of 4.2 percentage points since 2000. Partly as a result of this, since 2002 the labour force participation rate in Canada has been higher than in the United States.

However, the countrywide data masks important differences between jurisdictions within both countries; some Canadian provinces perform better, while others perform worse, than US states. Figure B2 presents the average labour force participation rate from 2015 to 2017 in the 10 Canadian provinces and 50 US states. At 72.6%, Alberta had the highest rate. The other Prairie provinces—Saskatchewan, ranking 4th (69.6%) and Manitoba, 11th (67.8%)—also performed well. One other province finished in the top 20—Prince Edward Island (ranked 19th, 65.5%). Three Canadian provinces are

Figure B2: Average labour force participation rate (%), 2015–2017



Note: The rate is calculated for ages 16 and up both for Canada and the United States.
Sources: Statistics Canada, 2018h; US, Dep't of Labor, Bureau of Labor Statistics, 2018b; calculations by authors.

ranked in the bottom 20—Nova Scotia (43rd, 61.7%) New Brunswick (43rd, 61.7%), and Newfoundland & Labrador (52nd, 59.4%). Newfoundland & Labrador is the only Canadian province that ranks in the bottom 10.

In the United States, the Midwest has the most representation in the top 10 of any census region, with five states—North Dakota (2nd, 71.4%), Minnesota (3rd, 70.3%), South Dakota (5th, 69.3%), Iowa (5th, 69.3%), and Nebraska (7th, 69.1%).. The Northeast also performed well, with two states in the top 10—Wisconsin (9th, 68.4%) and New Hampshire (10th, 68.3%).. One jurisdiction in the top 10 is from the West—Utah (8th, 68.9%)—and none are from the South.

The bottom three jurisdictions are Southern states—Alabama (56.6%), Mississippi (56.0%), and West Virginia (53.1%). Five more Southern states are in the bottom 10—Tennessee (50th, 60.2%), Louisiana (51st, 59.5%), South Carolina (53rd, 59.2%), Florida (54th, 59.0%), Arkansas (55th, 58.3%), and Kentucky (56th, 58.0%). The only other US state in the bottom 10 is New Mexico (57th, 57.7%), from the West.

Indicator B2: Migration

The flow of workers into and out of jurisdictions is an important indicator of the performance of labour markets and of economic performance generally. These flows can often be explained by a lack of labour opportunities in the worker's home province or state. For example, using data from 1982 to 1995, Ross Finnie found that interprovincial migration is generally "the route to better labour market opportunities for men, particularly for those coming from the lower income provinces and moving to higher income ones, and [is] especially the case in younger men" (1999: 259). Thus, the net addition or subtraction of workers can be an important indicator of larger economic successes or challenges.

The following section presents information on the net flow of citizens from one Canadian province to another and from one US state to another, and compares these flows with the labour market performance of these jurisdictions. The data in this section comes from census information from both countries. The measure used, net migration, is the difference between the number of people migrating out of a particular jurisdiction and the number of people migrating into the same jurisdiction. The figures throughout this section refer exclusively to domestic migration; foreign migration is excluded.

Table B1: Net interprovincial migration by province, 2014/15–2016/17

	2014/15	2015/16	2016/17	Total 2014/15–2016/17	As % of 2017 population
Alberta	21,594	−15,108	−15,131	−8,645	−0.2%
British Columbia	20,379	26,573	16,163	63,115	1.3%
Manitoba	−6,678	−4,881	−6,906	−18,465	−1.4%
New Brunswick	−2,790	−1,113	−849	−4,752	−0.6%
Newfoundland & Labrador	161	232	−1,954	−1,561	−0.3%
Nova Scotia	−2,311	754	645	−912	−0.1%
Ontario	−8,695	9,077	25,689	26,071	0.2%
Prince Edward Island	−682	30	−436	−1,088	−0.7%
Quebec	−16,142	−11,118	−10,759	−38,019	−0.5%
Saskatchewan	−4,528	−4,272	−5,615	−14,415	−1.2%

Notes: [1] Net interprovincial migration is defined as the difference between the number of incoming and outgoing migrants. The figures refer exclusively to domestic migration; foreign migration is excluded. [2] Period from July 1 to June 30.

Sources: Statistics Canada 2018a, 2018b; calculations by authors.

Canada

Table B1 contains migration data for the Canadian provinces from 2014/15 to 2016/17. British Columbia had both the highest positive number of net migrants and the highest percentage of net migration: 63,115 people or 1.3% of British Columbia's population. Ontario was the only other province to have positive net migration during the time period considered, with a net inflow of 26,071 people, equalling 0.2% of its population. Quebec (38,019 leaving) and Manitoba (18,465 leaving) had the highest negative net migration. And Manitoba (–1.4%) had the highest negative net migration as a percentage of population, followed by Saskatchewan (–1.2%).

United States

Nevada ranked first for positive net migration rates. It attracted 100,761 net migrants over the past three years (2014/15–2016/17), or 3.4% of its population (table B2). Oregon (122,837 net migrants) and Idaho (48,620) followed, attracting about 3.0% and 2.8% of their population, respectively. On the other hand, Alaska had the greatest negative net migration rate in the United States, –3.0%. The second and third most negative net migration rates belong to New York (–2.7%, 539,867 people) and Illinois (–2.6%, 334,140).

Table B2: Net domestic migration by state, 2014/15–2016/17

	2014/15	2015/16	2016/17	Total (2014/15-2016/17)	As % of 2017 population
Alabama	−2,268	−864	3,840	708	0.0%
Alaska	−7,678	−4,587	−9,938	−22,203	−3.0%
Arizona	45,934	61,544	63,111	170,589	2.4%
Arkansas	−1,212	195	4,718	3,701	0.1%
California	−77,219	−109,023	−138,195	−324,437	−0.8%
Colorado	54,459	50,216	36,653	141,328	2.5%
Connecticut	−27,619	−29,880	−22,270	−79,769	−2.2%
Delaware	4,225	3,027	4,484	11,736	1.2%
Florida	202,510	207,155	160,854	570,519	2.7%
Georgia	34,013	36,781	41,107	111,901	1.1%
Hawaii	−7,026	−10,021	−13,537	−30,584	−2.1%
Idaho	6,880	17,143	24,597	48,620	2.8%
Illinois	−105,217	−114,144	−114,779	−334,140	−2.6%
Indiana	−14,881	−12,135	−976	−27,992	−0.4%
Iowa	−3,949	−3,392	−2,724	−10,065	−0.3%
Kansas	−13,030	−18,595	−14,150	−45,775	−1.6%
Kentucky	−7,441	−3,429	1,024	−9,846	−0.2%
Louisiana	−7,358	−12,243	−27,515	−47,116	−1.0%
Maine	−1,718	2,169	5,376	5,827	0.4%
Maryland	−24,738	−26,232	−23,984	−74,954	−1.2%
Massachusetts	−21,805	−25,606	−23,089	−70,500	−1.0%
Michigan	−38,911	−27,839	−12,698	−79,448	−0.8%
Minnesota	−12,242	−1,762	7,941	−6,063	−0.1%
Mississippi	−12,230	−9,690	−9,885	−31,805	−1.1%
Missouri	−8,744	−6,250	−1,050	−16,044	−0.3%
Montana	5,268	6,853	8,666	20,787	2.0%

Table B2 (cont'd): Net domestic migration by state, 2014/15–2016/17

	2014/15	2015/16	2016/17	Total (2014/15-2016/17)	As % of 2017 population
Nebraska	−2,775	−2,144	−3,493	−8,412	−0.4%
Nevada	27,959	34,575	38,227	100,761	3.4%
New Hampshire	−1,167	2,187	4,687	5,707	0.4%
New Jersey	−65,254	−66,791	−57,274	−189,319	−2.1%
New Mexico	−13,352	−9,748	−7,437	−30,537	−1.5%
New York	−157,992	−191,367	−190,508	−539,867	−2.7%
North Carolina	38,197	59,584	66,051	163,832	1.6%
North Dakota	9,966	−6,259	−6,653	−2,946	−0.4%
Ohio	−31,297	−27,558	−8,205	−67,060	−0.6%
Oklahoma	8,199	−3,822	−10,470	−6,093	−0.2%
Oregon	34,824	50,038	37,975	122,837	3.0%
Pennsylvania	−41,607	−45,565	−25,793	−112,965	−0.9%
Rhode Island	−4,693	−3,784	−3,854	−12,331	−1.2%
South Carolina	45,582	47,084	49,015	141,681	2.8%
South Dakota	−1,780	941	1,976	1,137	0.1%
Tennessee	21,425	30,519	40,232	92,176	1.4%
Texas	170,103	125,703	79,163	374,969	1.3%
Utah	9,303	19,778	17,568	46,649	1.5%
Vermont	−2,223	−2,865	−918	−6,006	−1.0%
Virginia	−23,813	−25,343	−12,395	−61,551	−0.7%
Washington	40,799	67,571	64,579	172,949	2.3%
West Virginia	−4,685	−7,659	−10,507	−22,851	−1.3%
Wisconsin	−15,568	−12,395	−2,086	−30,049	−0.5%
Wyoming	−1,885	−4,347	−8,613	−14,845	−2.6%

Notes: [1] This data is collected from July to July. [2] A negative value for net migration is indicative of net out-migration, meaning that more migrants left an area than entered it. Positive values reflect net in-migration to an area. The figures refer exclusively to domestic migration; foreign migration is excluded.

Sources: US, Dep't of Commerce, Bureau of the Census, 2015, 2016, 2017a, 2017b; calculations by authors.

Indicator B3: Working days lost as a result of labour disputes

Labour disputes are an indicator of labour market performance as they help to explain differences in employment opportunities for workers. Labour disputes affect employment opportunities adversely by decreasing investment and business activity. They also discourage investment and negatively affect business activity because labour disputes can cause profits and market share to decline. Investment and business activity are critical to workers as they have a positive effect on high and growing wages and, ultimately, on living standards.

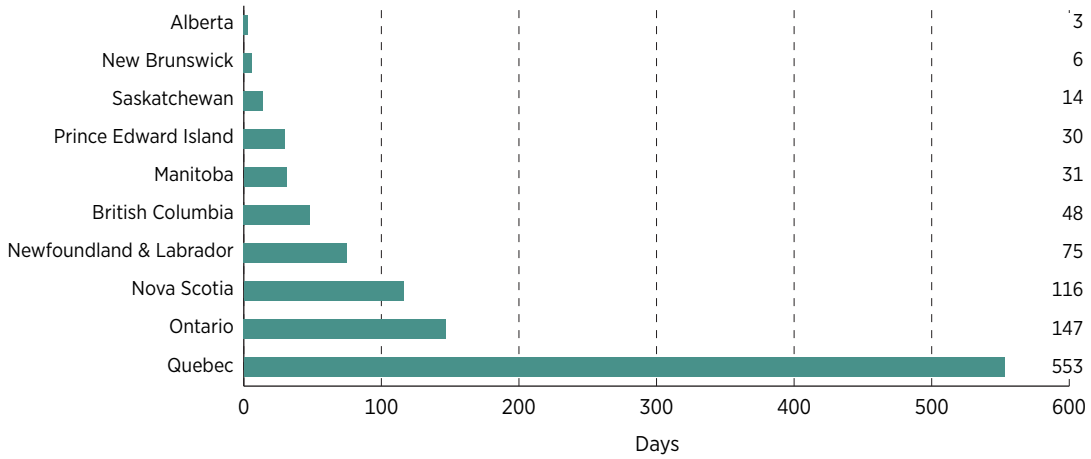
Research shows that the primary way in which labour disputes discourage investment and business activity is by lowering the value of firms. They do so because they tend to reduce the rate of return to potential investors. A study by Hanrahan, Kushner, Martinello, and Masse (1997) in the *Review of Financial Economics* examined the impact of labour disputes on the expected profitability of Canadian firms listed on the Toronto Stock Exchange. The authors found that disputes during collective bargaining decreased returns by 4.5%. Moreover, the main findings suggest that the longer the dispute, the greater the harmful impact on returns. There is similar evidence from the United States. A study in *Industrial Relations* by Jonathan Kramer and Thomas Hyclak (2002) examined the reaction of the stock market to labour disputes in US manufacturing industries from January 1982 to July 1999. They found that strikes had negative effects on the cumulative stock-market returns of firms involved in those strikes: such firms saw a decrease in their returns of –0.7% to –0.8%.

Lower rates of return caused by labour disputes have been shown to discourage investors. A study by Morris Kleiner and Hwikwon Ham (2002) examined the impact of national levels of unionization, strike levels, public policies toward labour, and the structure of collective bargaining within a nation on a country's foreign direct investment (FDI). Examining 20 OECD nations from 1985 to 1995 and all US states from 1990 to 1999, the authors found that strikes indeed have a direct effect on FDI: jurisdictions with more days lost from strikes (per 1,000 employees, per year) are associated with lower levels of FDI. A study by Paroma Sanyal and Nidhiya Menon (2005), using data on investment and business activity (defined as the place where an employer chooses to conduct business) from India for the period from 1997 to 1999, found that jurisdictions that suffer frequent labour disputes have less investment and less business activity than jurisdictions with fewer work stoppages.

Canada

Figure B3 displays the number of working days lost per 1,000 workers as a result of labour disputes in Canada from 2015 to 2017. Quebec (553 days) had the most working days lost per 1,000 workers. Ontario is in distant second with 147 days lost per 1,000 workers. Alberta has the fewest days lost per 1,000 workers (only three) among all the provinces.

Figure B3: Canada—working days lost per 1,000 workers as a result of labour disputes, 2015–2017



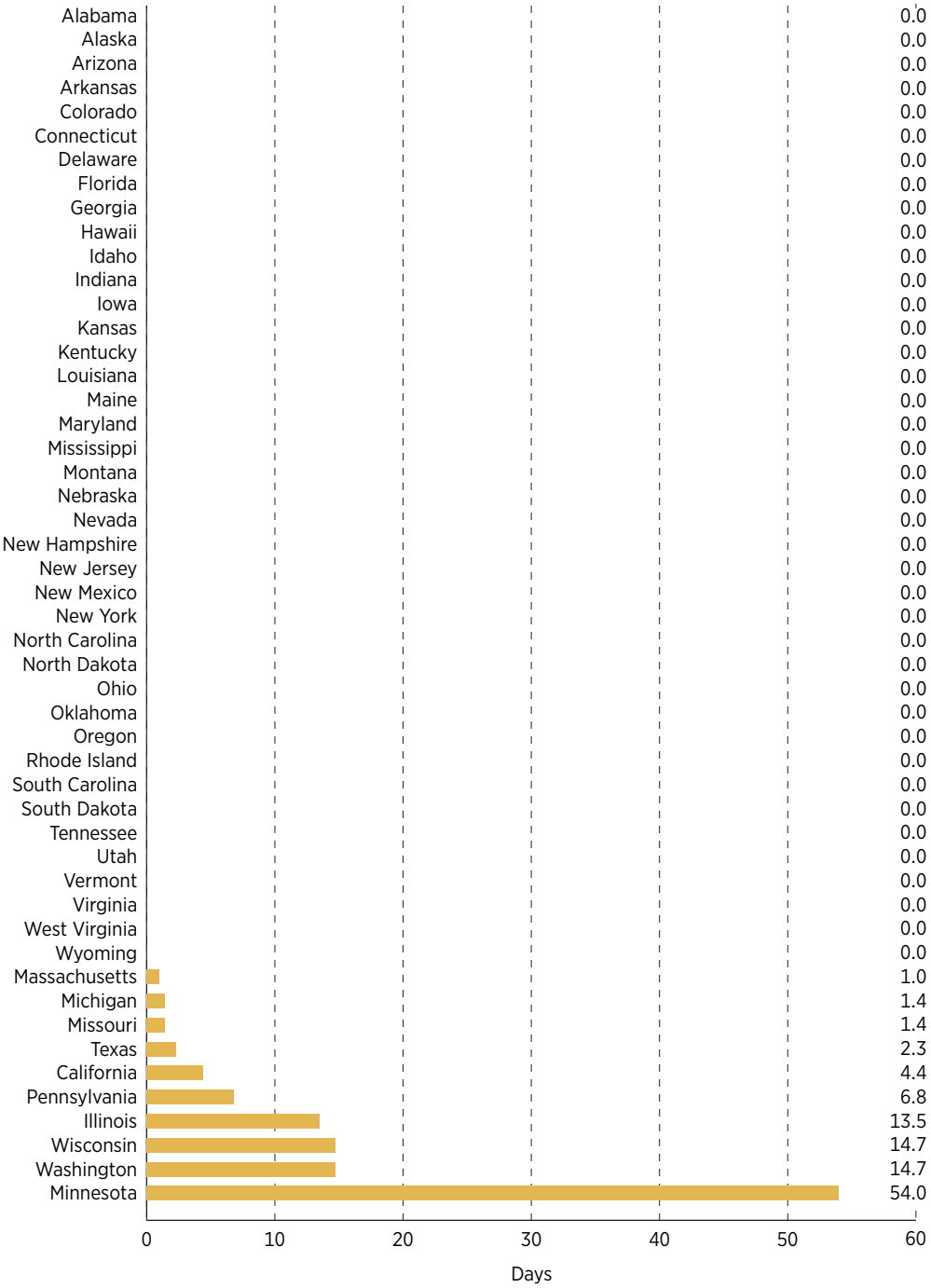
Note: This graph shows work stoppages where 10 or more person days were lost. Figures B3 and B4 are not directly comparable because data is only readily available in the United States for strikes involving 1,000 or more workers.

Sources: Canada, Employment and Social Development, 2018; Statistics Canada, 2018e; calculations by authors.

United States

Figure B4 displays the results using a similar measure for the United States. However, figures B3 and B4 are not directly comparable because data is only readily available in the United States for strikes involving 1,000 or more workers. In figure B4, 40 states did not have a strike that involved 1,000 workers or more, which likely explains why they had zero work days lost. Minnesota stands out as having the most work days lost, with 54 days lost per 1,000 workers. Washington has the second most days lost per 1,000 workers (15 days).

Figure B4: United States—working days lost per 1,000 workers as a result of labour disputes, 2015–2017



Note: Figures B3 and B4 are not directly comparable because data is only readily available in the United States for strikes involving 1,000 or more workers.
Sources: US, Dep't of Labor, Bureau of Labor Statistics, 2018a, 2018d; calculations by authors.

References

Agnello, Luca, Vitor Castro, João Tovar Jalles, and Ricardo M. Sousa (2014). Fiscal Adjustments, Labour Market Flexibility and Unemployment. *Economics Letters* 124: 231–235.

Alonso, Alberto, Cristina Eschevarria, and Kien Tran (2004). Long-Run Economic Peformance and the Labor Market. *Southern Economic Journal* 70, 4: 905–919.

Baldwin, John R., Danny Leung, and Luke Rispoli (2014). *Canada-United States Labour Productivity Gap across Firm Size Classes*. Statistics Canada. <http://www.statcan.gc.ca/pub/15-206-x/15-206-x2014033-eng.pdf>.

Bande, Roberto, and Marika Karanassou (2008). Labour Market Flexibility and Regional Unemployment Rate Dynamics: Spain 1980–1995. *Papers in Regional Science* 88, 1 (July): 181–207.

Bartelsman, Eric, Pieter A. Gautier, and Joris de Wind (2011). *Employment Protection, Technology Choice, and Worker Allocation*. DNB Working Paper No. 295. De Nederlandsche Bank. <http://www.dnb.nl/en/binaries/working%20paper%20295_tcm47-253008.pdf>.

Becker, Brian E., and Craig A. Olson (1986). The Impact of Strikes on Shareholder Equity. *Industrial and Labor Relations Review* 39, 3: 425–438.

Bernal-Verdugo, Lorenzo E., Davide Furceri, and Dominique Guillaume (2012a). *Labor Market Flexibility and Unemployment: New Empirical Evidence of Static and Dynamic Effects*. IMF Working Paper, No. WP12/64. International Monetary Fund.

Bernal-Verdugo, Lorenzo E., Davide Furceri, and Dominique Guillaume (2012b). *Crises, Labor Market Policy, and Unemployment*. IMF Working Paper, No. WP12/65. International Monetary Fund.

Bertola, Giuseppe, Francine D. Blau, and Lawrence M. Khan (2002). *Labor Market Institutions and Demographic Employment Patterns*. NBER Working Paper No. 9043. National Bureau of Economic Research.

Besley, Timothy, and Robin Burgess (2004). Can Labor Regulation Hinder Economic Performance? Evidence from India. *Quarterly Journal of Economics* 119, 1 (February): 91–134.

Bierhanzl, Edward, and James Gwartney (1998). Regulation, Unions, and Labor Markets. *Regulation* 21, 3: 40–53.

Caballero, Ricardo, Kevin Cowan, Eduardo Engel, and Alejandro Micco (2004). *Effective Labor Regulation and Microeconomic Flexibility*. NBER Working Paper No. 10744. National Bureau of Economic Research.

Campolieti, Michele, Robert Hebdon, and Benjamin Dachis (2014). The Impact of Collective Bargaining Legislation on Strike Activity and Wage Settlements. *Industrial Relations* 53, 3 (July): 394–429.

Canada, Employment and Social Development (2018). *Work Stoppage by Sector and Year*. Government of Canada. <https://www.canada.ca/en/employment-social-development/services/collective-bargaining-data/work-stoppages/work-stoppages-year-sector.html>, as of June 29, 2018.

Cette, Gilbert, Jimmy Lopez, and Jacques Mairesse (2014). *Product and Labor Market Regulations, Production Prices, Wages and Productivity*. NBER Working Paper No. 20563. National Bureau of Economic Research.

Clemens, Jason, Amela Karabegović, and Niels Veldhuis (2003). *Ontario Prosperity: Is Best of Second Best Good Enough?* Studies in Economic Prosperity No. 1. Fraser Institute. <https://www.fraserinstitute.org/studies/ontario-prosperity-is-best-of-second-best-good-enough>.

Clemens, Jason, and Milagros Palacios (2018). *Why the Unemployment Rate Is No Longer a Reliable Gauge of Labour Market Performance*. Fraser Institute. <https://www.fraserinstitute.org/studies/why-the-unemployment-rate-is-no-longer-a-reliable-gauge-of-labour-market-performance>.

Craig, Alton W.J. (1990). *The System of Industrial Relations in Canada*. Prentice-Hall.

Cramton, Peter, Morley Gunderson, and Joseph Tracy (1999). The Effect of Collective Bargaining Legislation on Strikes and Wages. *Review of Economics and Statistics* 81, 3 (August): 475–487.

Cross, Philip (2018). *The Truth about the Unemployment Rate: Why We Put Too Much Faith in One Measure of the Economy and How to Better Understand What Labour Statistics Tell Us*. Macdonald-Laurier Institute. <https://macdonaldlaurier.ca/files/pdf/MLILabourmarkets_F_webFinal.pdf>.

Cuñat, Alejandro, and Marc Melitz (2007). *Volatility, Labor Market Flexibility, and the Pattern of Comparative Advantage*. NBER Working Paper No. 13062. National Bureau of Economic Research.

D'Amuri, Francesco, and Giovanni Peri (2011). *Immigration, Jobs, and Employment Protection: Evidence from Europe*. NBER Working Paper No. 17139. National Bureau of Economic Research.

Dachis, Benjamin, and Robert Hebdon (2010). *The Laws of Unintended Consequence: The Effect of Labour Legislation on Wages and Strikes*. C.D. Howe Institute Commentary, No. 304. <https://www.cdhowe.org/laws-unintended-consequence-effect-labour-legislation-wages-and-strikes>.

Di Matteo, Livio (2015). *An Analysis of Public and Private Sector Employment Trends in Canada: 1990–2013*. Fraser Institute. <https://www.fraserinstitute.org/sites/default/files/analysis-of-public-and-private-sector-employment-trends-in-canada.pdf>.

Di Matteo, Livio, Jason Clemens, and Joel Emes (2014). *An Economic and Fiscal Comparison of Alberta and Other North American Energy Producing Provinces and States*. Fraser Institute. <https://www.fraserinstitute.org/sites/default/files/economic-and-fiscal-comparison-of-alberta-and-other-north-american-energy-producing-provinces-and-states.pdf>.

Di Tella, Rafael, and Robert MacCulloch (2005). The Consequences of Labor Market Flexibility: Panel Evidence Based on Survey Data. *European Economic Review* 49: 1225–1259.

Eriksson, Tor, and Niels Westergaard-Nielsen (2007). *Wage and Labor Mobility in Denmark, 1980–2000*. NBER Working Paper No. 13064. National Bureau of Economic Research.

Fields, Andrew, Sharnjit Uppal, and Sebastien LaRochelle-Côté (2017). *The Impact of Aging on Labour Market Participation Rates*. Statistics Canada. <http://www.statcan.gc.ca/pub/75-006-x/2017001/article/14826-eng.pdf>.

Finnie, Ross (1999). Inter-Provincial Migration in Canada: A Longitudinal Analysis of Movers and Stayers and the Associated Income Dynamics. *Canadian Journal of Regional Science* 22, 3 (Autumn): 228–262.

Gunderson, Morley, and Angelo Melino (1990). The Effects of Public Policy on Strike Duration. *Journal of Labor Economics* 8, 3: 295–316.

Gunderson, Morley, John Kervin, and Frank Reid (1989). The Effect of Labour Relations Legislation on Strike Incidence. *Canadian Journal of Economics* 22, 4: 779–794.

Hanrahan, Robert, Joseph Kushner, Felice Martinello, and Isidore Masse (1997). The Effect of Work Stoppages on the Value of Firms in Canada. *Review of Financial Economics* 6, 2: 151–166.

Karabegović, Amela, Nachum Gabler, and Niels Veldhuis (2012). *Measuring Labour Markets in Canada and the United States: 2012 Edition*. Fraser Institute. <https://www.fraserinstitute.org/sites/default/files/Measuring-Labour-Markets-2012.pdf>.

Kiander, Jaakko, and Matti Viren (2001). Measuring Labor Market Flexibility in the OECD Countries. *Empirica* 28: 187–201.

Kleiner, Morris, and Hwikwon Ham (2002). *Do Industrial Relations Institutions Impact Economic Outcomes? International and U.S. State-Level Evidence*. NBER Working Paper No. 8729. National Bureau of Economic Research.

Kramer, Jonathan K., and Thomas Hyclak (2002). Why Strikes Occur: Evidence from the Capital Markets. *Industrial Relations* 41, 1: 80–93.

Lammam, Charles, Hugh MacIntyre, David Hunt, and Sazid Hasan (2017). *Measuring Labour Markets in Canada and the United States: 2017 Edition*. Fraser Institute. <https://www.fraserinstitute.org/sites/default/files/measuring-labour-markets-in-canada-and-united-states-2017.pdf>.

MacIntyre, Hugh and Charles Lammam (2014). *Labour Relations Laws in Canada and the United States (2014 Edition)*. Fraser Institute. <https://www.fraserinstitute.org/sites/default/files/labour-relations-laws-in-canada-and-the-united-states-2014-rev.pdf>.

Nickell, Stephen, L. Nunziata, and W. Ochel (2005). Unemployment in the OECD since the 1960s. What Do We Know? *Economic Journal* 115, 500: 1–27.

Organisation for Economic Co-operation and Development [OECD] (1994a). *OECD Jobs Study: Facts, Analysis, Strategies*. OECD.

Organisation for Economic Co-operation and Development [OECD] (1994b). *OECD Jobs Study: Part 1*. OECD.

Organisation for Economic Co-operation and Development [OECD] (2006a). *Boosting Jobs and Incomes: Policy Lessons from Reassessing the OECD Jobs Strategy*. OECD.

Organisation for Economic Co-operation and Development [OECD] (2006b). *OECD Employment Outlook: Boosting Jobs and Incomes*. OECD.

Organization for Economic Cooperation and Development [OECD] (2018). *Purchasing Power Parities (PPP)*. <https://data.oecd.org/conversion/purchasing-power-parities-ppp.htm>, as of April 11, 2018.

Persons, Obeua S. (1995). The Effects of Automobile Strikes on the Stock Value of Steel Suppliers. *Industrial and Labor Relations Review* 49, 1: 78–87.

Sanyal, Paroma, and Nidhiya Menon (2005). Labor Disputes and the Economics of Firm Geography: A Study of Domestic Investment in India. *Economic Development and Cultural Change* 53: 825–854.

Statistics Canada (2018a). Table 17-10-0005-01. *Population estimates on July 1st, by age and sex*. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000501>, as of January 25, 2018.

Statistics Canada (2018b). Table 17-10-0021-01. *Estimates of the components of interprovincial migration*. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710002101>, as of June 26, 2018.

Statistics Canada (2018c). Table 36-10-0222-01. *Gross domestic product, expenditure-based, provincial and territorial*. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610022201>, as of May 1, 2018.

Statistics Canada (2018d). Table 14-10-0018-01. *Labour force survey estimates (LFS), by sex and detailed age group*. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410001801>, as of June 28, 2018.

Statistics Canada (2018e). Table 14-10-0027-01. *Employment by class of worker, annual*. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410002701>, as of April 30, 2018.

Statistics Canada (2018f). Table 14-10-0057-01. *Duration of unemployment, annual*. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410005701>, as of May 1, 2018.

Statistics Canada (2018g). Table 14-10-0078-01. *Supplementary unemployment rates, annual*. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410007801>, as of April 30, 2018.

Statistics Canada (2018h). Labour force participation rate by province for selected age groups (comparable that of in the U.S. states). Special Tabulation. Received May 2, 2018.

Statistics Canada (2018i). Table 14-10-0029-01. *Part-time employment by reason, annual*. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410002901>, as of May 24, 2018.

United States, Department of Commerce, Bureau of the Census (1994). *Geographic Areas Reference Manual*.

United States, Department of Commerce, Bureau of the Census (2015). Table 5. *Estimates of the Components of Resident Population Change for the United States, Regions, States, and Puerto Rico: July 1, 2014 to July 1, 2015*.

United States, Department of Commerce, Bureau of the Census (2016). Table 5. *Estimates of the Components of Resident Population Change for the United States, Regions, States, and Puerto Rico: July 1, 2015 to July 1, 2016*.

United States, Department of Commerce, Bureau of the Census (2017a). Table 5. *Estimates of the Components of Resident Population Change for the United States, Regions, States, and Puerto Rico: July 1, 2015 to July 1, 2016*.

United States, Department of Commerce, Bureau of the Census (2017b). Table 1. *Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2017*.

United States, Department of Commerce, Bureau of Economic Analysis (2018). *Regional Economic Accounts*. <https://www.bea.gov/regional/downloadzip.cfm>.

United States, Department of Labor, Bureau of Labor Statistics (2018a). *States and Selected Areas: Employment Status of the Civilian Non-Institutional Population, 1976 to 2017 Annual Averages*.

United States, Department of Labor, Bureau of Labor Statistics (2018b). State level employment data from the Current Population Survey. Special Request. Received April 29, 2018.

United States, Department of Labor, Bureau of Labor Statistics (2018c). Employment status of the civilian non-institutional population by sex and intermediate age, 2011–2017, annual averages. Special Request. Received May 2, 2018.

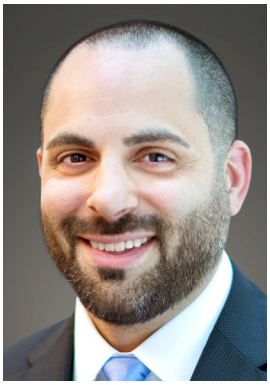
United States, Department of Labor, Bureau of Labor Statistics (2018d). *Work Stoppages Involving 1,000 or More Workers, 1993–2017*. <https://www.bls.gov/wsp/monthly_listing.htm>.

United States, Department of Labor, Bureau of Labor Statistics (2018e). *State Alternative Measures of Labor Underutilization Dataset*. <https://www.bls.gov/lau/stalt_moave.xlsx>, as of May 22, 2018.

United States, Department of Labor, Bureau of Labor Statistics (2018f). *Employment-Population Ratio - 16-24 yrs*. <https://beta.bls.gov/dataViewer/view/timeseries/LNS12324887>, as of July 6, 2018.

About the Authors

Charles Lammam



Charles Lammam is Director of Fiscal Studies at the Fraser Institute. He holds an M.A. in public policy and a B.A. in economics with a minor in business administration from Simon Fraser University. Since joining the Institute, Mr. Lammam has published over 100 studies and 400 original articles on a wide range of economic policy issues including taxation, public finances, pensions, investment, income inequality, poverty, labour, entrepreneurship, public-private partnerships, and charitable giving. His articles have appeared in every major national and regional newspaper in Canada as well as several prominent US-based publications. Mr. Lammam's career in public policy spans over a decade. He regularly gives presentations to various groups, comments in print media, and appears on radio and television broadcasts across the country to discuss the Institute's research. He also frequently receives invitations to provide expert testimony for various federal and provincial government panels and committees.

Hugh MacIntyre

Hugh MacIntyre is a Senior Policy Analyst at the Fraser Institute. He holds an M.Sc. in Political Science from the University of Edinburgh, a Post Baccalaureate Diploma in Economics from Simon Fraser University, and an Honours B.A. from the University of Toronto. Mr. MacIntyre has published over 30 studies and has written over 80 original commentaries appearing in national and regional media outlets including the *Globe & Mai*l and *National Post*. His research covers a wide range of economic policy issues including taxation, government finances, government performance, public-private partnerships, labour policy, income mobility, poverty, and charitable giving.

Sazid Hasan

Sazid Hasan is an economist at the Fraser Institute working on fiscal, health, and education policy. He received his M.A. in economics from Simon Fraser University. He also holds an M.S.S. and B.S.S. (honours), both in economics, from the University of Dhaka. He worked on his graduate project at the Research Data Centre of Statistics Canada, where he examined the impact of a tax credit on labour supply. He has presented his academic research at the annual conferences of Canadian Economics Association. His commentaries have appeared in the *Vancouver Sun*, *Winnipeg Sun*, and *La Presse*.

Milagros Palacios

Milagros Palacios is the Associate Director for the Addington Centre for Measurement at the Fraser Institute. She holds a B.S. in Industrial Engineering from the Pontifical Catholic University of Peru and a M.Sc. in Economics from the University of Concepcion, Chile. Since joining the Institute, Ms. Palacios has authored or coauthored over 100 comprehensive research studies, 80 commentaries and four books. Her recent commentaries have appeared in major Canadian newspapers such as the *National Post*, *Toronto Sun*, *Windsor Star*, and *Vancouver Sun*.

Acknowledgments

The authors would like to acknowledge the contributions of authors from past editions of *Measuring Labour Markets in Canada and the United States*, including Jason Clemens, Niels Veldhuis, and Amela Karabegović, among others. The authors of this edition take full responsibility for any errors or omissions. As the researchers have worked independently, the views and conclusions expressed in this paper do not necessarily reflect those of the Board of Directors of the Fraser Institute, the staff, or supporters.

Publishing Information

Distribution

These publications are available from <http://www.fraserinstitute.org> in Portable Document Format (PDF) and can be read with Adobe Acrobat® or Adobe Reader®, versions 7 or later. Adobe Reader® DC, the most recent version, is available free of charge from Adobe Systems Inc. at <http://get.adobe.com/reader/>.

Ordering publications

To order printed publications from the Fraser Institute, please contact us via e-mail: sales@fraserinstitute.org; telephone: 604.688.0221, ext. 580 or, toll free, 1.800.665.3558, ext. 580.

Media

For media enquiries, please contact our communications department via e-mail: communications@fraserinstitute.org; telephone: 604.714.4582. In Toronto, contact our media specialist via telephone at 416.363.6575, ext. 238.

Copyright

Copyright © 2017 by the Fraser Institute. All rights reserved. No part of this publication may be reproduced in any manner whatsoever without written permission except in the case of brief passages quoted in critical articles and reviews.

Date of issue

2018

ISBN

978-0-88975-507-9

Citation

Charles Lammam, Hugh MacIntyre, Sazid Hasan, and Milagros Palacios (2018). *Measuring Labour Markets in Canada and the United States: 2018 Edition*. Fraser Institute. <www. fraserinstitute.org>.

Supporting the Fraser Institute

To learn how to support the Fraser Institute, please contact us via post: Development Department, Fraser Institute, Fourth Floor, 1770 Burrard Street, Vancouver, British Columbia, V6J 3G7, Canada; telephone: toll-free to 1.800.665.3558, ext. 548; e-mail: development@fraserinstitute.org; or visit our web page: <http://www.fraserinstitute.org/support-us/overview.aspx>.

Purpose, Funding, and Independence

The Fraser Institute provides a useful public service. We report objective information about the economic and social effects of current public policies, and we offer evidence-based research and education about policy options that can improve the quality of life.

The Institute is a non-profit organization. Our activities are funded by charitable donations, unrestricted grants, ticket sales, and sponsorships from events, the licensing of products for public distribution, and the sale of publications.

All research is subject to rigorous review by external experts, and is conducted and published separately from the Institute's Board of Trustees and its donors.

The opinions expressed by authors are their own, and do not necessarily reflect those of the Institute, its Board of Directors, its donors and supporters, or its staff. This publication in no way implies that the Fraser Institute, its directors, or staff are in favour of, or oppose the passage of, any bill; or that they support or oppose any particular political party or candidate.

As a healthy part of public discussion among fellow citizens who desire to improve the lives of people through better public policy, the Institute welcomes evidence-focused scrutiny of the research we publish, including verification of data sources, replication of analytical methods, and intelligent debate about the practical effects of policy recommendations.

About the Fraser Institute

Our vision is a free and prosperous world where individuals benefit from greater choice, competitive markets, and personal responsibility. Our mission is to measure, study, and communicate the impact of competitive markets and government interventions on the welfare of individuals.

Founded in 1974, we are an independent Canadian research and educational organization with locations throughout North America and international partners in over 85 countries. Our work is financed by tax-deductible contributions from thousands of individuals, organizations, and foundations. In order to protect its independence, the Institute does not accept grants from government or contracts for research.

Nous envisageons un monde libre et prospère, où chaque personne bénéficie d'un plus grand choix, de marchés concurrentiels et de responsabilités individuelles. Notre mission consiste à mesurer, à étudier et à communiquer l'effet des marchés concurrentiels et des interventions gouvernementales sur le bien-être des individus.

Peer review—validating the accuracy of our research

The Fraser Institute maintains a rigorous peer review process for its research. New research, major research projects, and substantively modified research conducted by the Fraser Institute are reviewed by experts with a recognized expertise in the topic area being addressed. Whenever possible, external review is a blind process. Updates to previously reviewed research or new editions of previously reviewed research are not reviewed unless the update includes substantive or material changes in the methodology.

The review process is overseen by the directors of the Institute's research departments who are responsible for ensuring all research published by the Institute passes through the appropriate peer review. If a dispute about the recommendations of the reviewers should arise during the Institute's peer review process, the Institute has an Editorial Advisory Board, a panel of scholars from Canada, the United States, and Europe to whom it can turn for help in resolving the dispute.

Editorial Advisory Board

Members

Prof. Terry L. Anderson

Prof. Robert Barro

Prof. Jean-Pierre Centi

Prof. John Chant

Prof. Bev Dahlby

Prof. Erwin Diewert

Prof. Stephen Easton

Prof. J.C. Herbert Emery

Prof. Jack L. Granatstein

Prof. Herbert G. Grubel

Prof. James Gwartney

Prof. Ronald W. Jones

Dr. Jerry Jordan

Prof. Ross McKitrick

Prof. Michael Parkin

Prof. Friedrich Schneider

Prof. Lawrence B. Smith

Dr. Vito Tanzi

Past members

Prof. Armen Alchian*

Prof. Michael Bliss*

Prof. James M. Buchanan* †

Prof. Friedrich A. Hayek* †

Prof. H.G. Johnson*

Prof. F.G. Pennance*

Prof. George Stigler* †

Sir Alan Walters*

Prof. Edwin G. West*

* deceased; † Nobel Laureate