

Studies in Labour Markets



September 2010

Measuring Labour Markets in Canada and the United States

2010 Edition

by Amela Karabegović, Alex Gainer, Milagros Palacios, and Niels Veldhuis





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Executive summary

Measuring Labour Markets in Canada and the United States: 2010 Edition is the sixth installment in our ongoing research to assess the performance of labour markets and explain why results differ among jurisdictions. This study provides a series of specific evaluations as well as a comprehensive measure of labour market performance. Indicators of labour performance such as job creation, unemployment, and productivity are used to assess Canadian provincial and US state labour market performance. This study also examines those characteristics and regulations of the labour market that have been shown to affect its performance. Below are some of the main findings of the 2010 edition of *Measuring Labour Markets in Canada and the United States*.

Index of Labour Market Performance

The Index of Labour Market Performance is a composite measure of labour market performance based on five equally weighted indicators: average total employment growth, average private-sector employment growth, average unemployment rates, average duration of unemployment, and average labour productivity. An average over five years (2005–2009) was calculated for each indicator¹ (exsum tables 1 and 2; exsum figure 1; pp. 8–12).

Key results

- 1 Alberta topped the list of Canadian provinces and US states for labour market performance over the last five years. The province's strong performance in total employment growth (1st out of 60 jurisdictions), employment growth in the private sector (2nd), low duration of unemployment (1st), and average labour productivity (3rd) enabled it to achieve the highest overall score of 9.0 out of 10.
- 2 Western US states dominated the top of the rankings with six states (Alaska, Utah, Wyoming, Arizona, Colorado, and Washington) in the top 13 (five states are tied for the 9th place). Three Canadian provinces besides Alberta are in the top 13, Saskatchewan, British Columbia, and Manitoba.

1 Labour productivity was measured from 2004 to 2008 due to lack of data for 2009 for both Canadian provinces and the US states.

- 3 Michigan scored the lowest of any jurisdiction (1.7). It ranked poorly across all five measures of labour market performance: average total employment growth (60th), average private-sector employment growth (60th), average unemployment rate (57th), average duration of unemployment (60th), and average labour productivity (34th).
- 4 The lowest-ranked Canadian province was Newfoundland & Labrador,² occupying the 49th position with a score of 4.2. It had the worst average unemployment rate (14.5%), yet surprisingly it ranked 8th for labour productivity. On the remaining indicators, Newfoundland & Labrador ranked 17th to 36th.
- 5 Regionally, the western Canadian provinces out-performed the other provinces. In addition to Alberta (1st), Saskatchewan (3rd), British Columbia (6th) and Manitoba (8th), performed relatively well with scores of 7.7, 6.6, and 6.5. Only one other province, New Brunswick, received a score higher than 5.0, placing it 27th.
- 6 Within the United States, the Western states performed well: there were six Western states in the top 13 and all of the Western states other than Oregon (31st) and California (44th) ranked in the top half of all jurisdictions. On the other hand, all five of the states in the Industrial Belt (Wisconsin, Illinois, Ohio, Indiana, and Michigan) ranked among the bottom 10, as did three Southern states (South Carolina, Alabama, and Mississippi), one state from the Northeast region (Rhode Island) and one state from the West North Central region (Missouri).

Recession and labour market performance

It is important to understand the economic context within which these analyses were undertaken. While both Canada and the United States enjoyed relatively strong economies at the beginning of the period, 2005 to 2007, things began to change in late 2007. Economic growth in the two countries was noticeably lower in the next couple of years, especially in 2009. Typically, weak economic growth translates into poor performances in other areas including labour markets.

Labour market performance deteriorated in both countries but the deterioration was more severe in the US. It is likely that the recession had a stronger adverse impact on the US than on the Canadian economy, especially given that the financial crisis originated in the US. Empirical evidence from OECD countries indicates that recessions coupled with financial crisis and/or housing busts have a more severe impact on labour market performance

2 The Canadian province, Newfoundland & Labrador, is a single jurisdiction; in some tables it appears as “Newfoundland” for lack of space.

(Knotek and Terry, 2009; Claessens et al., 2008). Several other possible factors include industry mix (since some industries are more sensitive to recessions than others), labour laws, and the policies countries undertake to deal with an economic downturn.

The extent to which these factors had an impact on labour market performance in Canada and the US and how they will affect the recovery process is an empirical question. Both Canada and the US seem to have begun the recovery path from the recent recession starting in mid-2009 but it is hard to tell at this point how long the recovery process will take. Measuring labour market performance over the last 12 months is, unfortunately, challenging because the monthly and quarterly data for three of the indicators of labour market performance are not available across US states and the Canadian provinces. However, data for two indicators, employment growth and unemployment, are available and, thus, these two indicators may shed some light on how different jurisdictions performing in the past 12 months. As expected, recent data on employment growth and unemployment show improvement in labour market performance across both US states and the Canadian provinces. Those jurisdictions that performed well over the past five years have, on average, also done well in the past 12 months. Specifically, the top 30 jurisdictions in the Index of Labour Market Performance have done much better on employment growth and unemployment over the past 12 months than those in the bottom half. It is true that some jurisdictions that have done well in the past have not been doing well recently but these are exceptions. Moreover, given that we have data for only two indicators, we are unable to assess fully the performance of the 60 North American jurisdictions over the past 12 months.

Labour market characteristics and regulation

The second section of this study identifies and measures four key characteristics and regulations that affect labour market performance in each of the 60 jurisdictions: public-sector employment, minimum wages, unionization, and labour relations laws. In addition to the measurement of each indicator, each section presents a review of the research into the effects of the characteristic or regulation on labour market performance.

Public-sector employment

The review of research into public-sector employment generally indicates that the public sector operates under institutional arrangements and incentives vastly different from those in the private sector, a situation that ultimately leads to differing outcomes. In particular, an institution in the public sector tends to operate as a monopoly to a much greater extent than companies

in the private sector, leading to the outcomes anticipated from monopolies: higher costs, lower average quality, and less responsiveness to customers. In addition, research shows that different institutional arrangements and incentives in the public sector result in lower productivity. Lower productivity is particularly a concern since workers in the public sector tend to receive a wage premium relative to their private-sector counterparts.

Key results

- 1 Nevada topped the list of Canadian provinces and US states with the lowest percentage of its employment in the public sector (federal, subnational, and local) (10.9%).
- 2 Alberta was the highest-ranked Canadian province. Unfortunately, it ranked 32nd with 15.7% of its total employment represented by the public sector. Following were British Columbia, 16.7% and ranking 38th and Ontario, 18.6%, ranking 46th.
- 3 The Canadian province, Newfoundland & Labrador, occupied the last position, with public-sector employment representing 28.2% of total employment—over two-and-a-half times Nevada’s rate and nearly double that of Alberta.
- 4 Rounding out the top 10 were three Northeastern states (Pennsylvania, Massachusetts, and Rhode Island) and six Midwest states (Indiana, Wisconsin, Michigan, Illinois, Missouri, and Minnesota).
- 5 In general, Canada’s performance for this characteristic was poor. Seven of the bottom 10 jurisdictions were Canadian provinces (Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Saskatchewan, Manitoba, and Newfoundland & Labrador). Five of these provinces (Nova Scotia, Prince Edward Island, Saskatchewan, Manitoba, and Newfoundland & Labrador) had public-sector employment that exceeded one-quarter of all employment.
- 6 There is a clear difference between the size of the public sector at the subnational level in Canada and in the United States. From 2005 to 2009, Canadian provinces had consistently higher levels of public-sector employment than the US states.

Minimum wages

There is a general consensus in the literature that high minimum wages have an adverse impact on the labour market. For example, the literature concludes that high minimum wages reduce employment opportunities for young and

unskilled workers and do not necessarily raise the incomes of the poor. In addition, increasing the minimum wage results in reduced fringe benefits and on-the-job training and high minimum wages are associated with higher school-dropout rates, as the increase in the minimum wage encourages teenage workers to leave school in search of employment. Finally, data indicate that those earning minimum wages are generally young, living at home, and often attending school. This study measures minimum wages by calculating the annual income earned by someone working at the minimum wage as a ratio of GDP per worker. Since GDP per worker is a proxy for the average productivity in a jurisdiction, this ratio takes into account differences in the ability to pay wages across jurisdictions based on productivity. As the minimum wage grows relative to productivity, the range of employment contracts that can be negotiated is reduced and economic performance is eroded.

Key results

- 1 Delaware topped the rankings; its minimum wage constituted the smallest percentage of average GDP per worker (9.6%): a resident of Delaware earning the minimum wage could earn less than one-tenth of the average GDP per worker of the state.
- 2 Alberta was the highest-ranked Canadian province, occupying the 4th position overall with a minimum wage equal to 11.4% of the province's average GDP per worker.
- 3 Prince Edward Island was the lowest-ranked jurisdiction among the 60 Canadian provinces and US states. Prince Edward Island's minimum wage represented 23.6% of the province's average GDP per worker.
- 4 The US states dominated the top of the rankings, holding eight of the top 10 positions.
- 5 The Canadian provinces generally fared poorly on this measure with seven of the 10 Canadian provinces (Ontario, New Brunswick, British Columbia, Nova Scotia, Manitoba, Quebec, and Prince Edward Island) occupying the bottom 10 rankings overall. Other than Alberta and Newfoundland & Labrador, Canada's provinces were in the bottom half of the rankings.
- 6 There was a clear difference between minimum wages as a percentage of average GDP per worker in Canada and those in the United States: the average Canadian province had a minimum wage equivalent to 18.4% of its average GDP per worker while the average US state had a minimum wage equivalent to 14.6% of its average GDP per worker over the period from 2004 to 2008.

Unionization

Unionization has been demonstrated to have a wide effect on economic performance. For example, a major review of academic literature on unionization showed that the evidence indicates that unions tend to reduce employment growth, profitability, and investment. There is a growing consensus that unions generally reduce labour market flexibility, productivity, and adversely affect the overall efficiency of labour markets.

Key results

- 1 North Carolina had the lowest ratio of unionized workers to total employment, with 4.3% of its employed workers unionized. South Carolina was a close second, with 4.9% of its employment unionized.
- 2 The top-ranked Canadian province was Alberta—trailing at 48th with 24.2% of its employment unionized. In this regard, Alberta performed better than only two US states: Hawaii and New York.
- 3 Quebec occupied last place; 39.9% of its employed workforce is unionized.
- 4 Southern US states occupied nine of the top 12 rankings (three states were tied for the 10th place): North Carolina, South Carolina, Virginia, Georgia, Texas, Arkansas, Louisiana, Tennessee, and Florida.
- 5 Not surprisingly, the Right-to-Work states—those that permit workers to choose whether or not they will join and financially support a union—dominated the top of the rankings. The 22 Right-to-Work states occupied all of the top 12 rankings and 19 of the top 20 rankings.
- 6 Canadian provinces performed poorly on this indicator, occupying nine of the bottom 10 positions.
- 7 The divide between Canada and the United States was evident in this measure. From 2005 to 2009, Canada's average total unionization rate was 31.6% compared to 13.5% for the United States.

Labour relations laws

This measure is based on the Fraser Institute's study, *Labour Relations Laws in Canada and the United States: An Empirical Examination (2009 Edition)* (Karabegović et al., 2009), which measures and evaluates labour relations laws in the private sector for the Canadian provinces and US states to determine the extent to which they enhance flexibility and choice in the labour market by

balancing the needs of both employers and employees. Three areas of labour relations laws are examined: certification and decertification, union security, and regulation of unionized firms.

An overall Index of Labour Relations Laws is presented for each Canadian province and US state. The overall index is based on scores for each of the three aspects of labour relations laws. It represents a measure of each jurisdiction's overall labour relations policy. Jurisdictions with labour relations laws that encourage a greater degree of labour market flexibility receive higher scores while jurisdictions with more restrictive approaches receive lower scores.

There are differences between jurisdictional authority over labour relations laws in Canada and that in the United States. In Canada, labour relations laws are largely decentralized; each province has its own set of laws. In the United States, however, private-sector labour relations laws are almost entirely centralized, regulated through federal law, and enforced under federal authority. The scores of the US states for this measure, therefore, vary very little.

Key results

- 1 In addition to being able to choose whether or not to join a union, which is a worker's right in all 50 US states, 22 states possess Right-to-Work laws, which also prohibit mandatory payment of union dues as a condition of employment. Amongst the 10 Canadian provinces and 50 US states, these 22 Right-to-Work states have the labour relations laws best suited to promoting flexibility in the labour market; on this measure, each of the Right-to-Work states received a score of 9.2 out of 10.
- 2 The remaining 28 US states tied for 23rd position with an overall score of 7.5.
- 3 The Canadian provinces occupied the last 10 positions (51st to 60th).
- 4 Alberta was the only province that scored above five (5.3).
- 5 Quebec (with a score of 1.3) had the most restrictive set of labour relations laws in Canada and the United States, followed closely by Manitoba (1.8) and Newfoundland & Labrador, New Brunswick, and British Columbia (2.8).

Exsum table 1: Summary of provincial and state rankings (out of 60), labour market performance

	Index of Labour Market Performance, 2009		Average total employment growth, 2005–2009		Average private employment growth, 2005–2009		Average unemployment rates, 2005–2009		Average duration of unemployment, 2005–2009		Average productivity per worker, 2004–2008	
	Rank	Score	Rank	%	Rank	%	Rank	%	Rank	%	Rank	CA\$2008
Alberta	1	9.0	1	2.5	2	2.1	8	4.2	1	7.3	3	148,329
British Columbia	6	6.6	2	1.9	8	1.4	26	5.4	10	12.1	53	86,523
Manitoba	8	6.5	10	1.0	9	1.1	15	4.6	2	9.0	56	81,688
New Brunswick	27	5.2	13	0.9	21	0.5	58	8.7	5	10.9	58	75,490
Newfoundland	49	4.2	36	0.1	31	0.0	60	14.5	17	14.9	8	134,494
Nova Scotia	39	4.7	25	0.5	31	0.0	56	8.2	11	12.2	59	74,462
Ontario	31	5.0	19	0.7	36	-0.1	52	7.0	16	14.8	49	88,307
Prince Edward Island	39	4.7	17	0.8	13	0.9	59	11.0	4	10.3	60	65,290
Quebec	43	4.6	13	0.9	23	0.4	55	7.8	29	17.6	57	77,278
Saskatchewan	3	7.7	3	1.7	5	1.6	15	4.6	3	9.1	14	121,578
Alabama	58	3.2	58	-1.0	58	-1.7	22	5.2	54	23.2	45	96,689
Alaska	2	8.1	9	1.1	1	2.9	47	6.8	13	13.3	2	176,581
Arizona	9	6.4	5	1.5	5	1.6	33	5.6	22	16.4	31	101,986
Arkansas	17	5.9	17	0.8	9	1.1	33	5.6	14	14.3	48	90,308
California	44	4.5	48	-0.2	42	-0.3	47	6.8	49	22.1	12	128,174
Colorado	9	6.4	13	0.9	4	1.9	22	5.2	25	17.0	19	112,762
Connecticut	27	5.2	29	0.4	36	-0.1	29	5.5	56	23.9	4	145,572
Delaware	18	5.8	53	-0.4	51	-0.7	18	4.8	39	19.9	1	177,042
Florida	31	5.0	22	0.6	27	0.2	33	5.6	46	21.6	27	104,230
Georgia	39	4.7	32	0.3	27	0.2	39	6.1	51	22.6	25	105,828
Hawaii	22	5.6	43	-0.1	31	0.0	4	3.8	24	16.7	16	120,171
Idaho	16	6.1	19	0.7	17	0.8	12	4.5	8	11.8	55	85,855
Illinois	51	4.0	43	-0.1	48	-0.5	43	6.4	59	26.5	15	120,591
Indiana	55	3.7	57	-0.9	53	-1.0	41	6.2	45	21.0	35	100,301
Iowa	20	5.7	25	0.5	21	0.5	11	4.4	18	15.7	38	98,679
Kansas	22	5.6	25	0.5	20	0.6	19	4.9	23	16.5	37	99,692
Kentucky	47	4.3	36	0.1	46	-0.4	51	6.9	37	19.6	41	97,284
Louisiana	22	5.6	41	0.0	25	0.3	21	5.1	36	19.3	7	135,621
Maine	47	4.3	48	-0.2	51	-0.7	29	5.5	31	18.0	50	88,305
Maryland	30	5.1	36	0.1	31	0.0	15	4.6	42	20.6	20	111,578

Exsum table 1 (cont'd): Summary of provincial and state rankings (out of 60), labour market performance

	Index of Labour Market Performance, 2009		Average total employment growth, 2005–2009		Average private employment growth, 2005–2009		Average unemployment rates, 2005–2009		Average duration of unemployment, 2005–2009		Average productivity per worker, 2004–2008	
	Rank	Score	Rank	%	Rank	%	Rank	%	Rank	%	Rank	CA\$2008
Massachusetts	37	4.8	43	-0.1	46	-0.4	29	5.5	46	21.6	10	129,113
Michigan	60	1.7	60	-2.0	60	-2.1	57	8.5	60	27.1	34	100,806
Minnesota	36	4.9	43	-0.1	42	-0.3	25	5.3	31	18.0	21	110,849
Mississippi	59	2.7	58	-1.0	59	-1.8	53	7.4	50	22.5	51	88,148
Missouri	51	4.0	53	-0.4	36	-0.1	39	6.1	52	22.9	39	97,932
Montana	18	5.8	25	0.5	17	0.8	8	4.2	15	14.4	54	86,258
Nebraska	26	5.3	41	0.0	42	-0.3	2	3.5	21	16.2	33	101,537
Nevada	15	6.2	6	1.4	13	0.9	43	6.4	31	18.0	13	125,576
New Hampshire	27	5.2	33	0.2	42	-0.3	8	4.2	26	17.5	36	99,704
New Jersey	37	4.8	43	-0.1	36	-0.1	33	5.6	55	23.4	9	132,795
New Mexico	20	5.7	13	0.9	31	0.0	19	4.9	18	15.7	28	104,167
New York	31	5.0	33	0.2	27	0.2	33	5.6	57	25.6	6	142,972
North Carolina	44	4.5	33	0.2	41	-0.2	42	6.3	52	22.9	22	110,546
North Dakota	9	6.4	22	0.6	13	0.9	1	3.4	9	12.0	44	96,923
Ohio	54	3.9	55	-0.5	55	-1.1	46	6.7	40	20.0	29	102,318
Oklahoma	25	5.5	19	0.7	25	0.3	12	4.5	35	18.3	32	101,774
Oregon	31	5.0	29	0.4	23	0.4	47	6.8	34	18.2	30	102,045
Pennsylvania	31	5.0	36	0.1	27	0.2	26	5.4	38	19.7	23	107,635
Rhode Island	56	3.5	56	-0.8	57	-1.3	47	6.8	46	21.6	24	106,693
South Carolina	57	3.4	29	0.4	55	-1.1	54	7.5	58	25.8	46	94,098
South Dakota	9	6.4	22	0.6	12	1.0	2	3.5	12	13.2	40	97,797
Tennessee	49	4.2	50	-0.3	48	-0.5	45	6.6	42	20.6	26	104,780
Texas	6	6.6	8	1.2	5	1.6	26	5.4	26	17.5	11	128,389
Utah	4	7.4	4	1.6	2	2.1	6	4.0	7	11.0	43	96,944
Vermont	39	4.7	36	0.1	50	-0.6	12	4.5	26	17.5	52	87,391
Virginia	14	6.3	10	1.0	13	0.9	6	4.0	29	17.6	17	119,205
Washington	9	6.4	6	1.4	9	1.1	38	5.9	20	15.9	18	115,810
West Virginia	46	4.4	50	-0.3	36	-0.1	22	5.2	41	20.3	47	93,585
Wisconsin	51	4.0	50	-0.3	53	-1.0	29	5.5	44	20.8	42	97,083
Wyoming	4	7.4	10	1.0	19	0.7	5	3.9	5	10.9	5	144,516

Source: Fraser Institute, 2010.

Exsum table 2: Summary of provincial and state rankings (out of 60), labour market regulation and characteristics

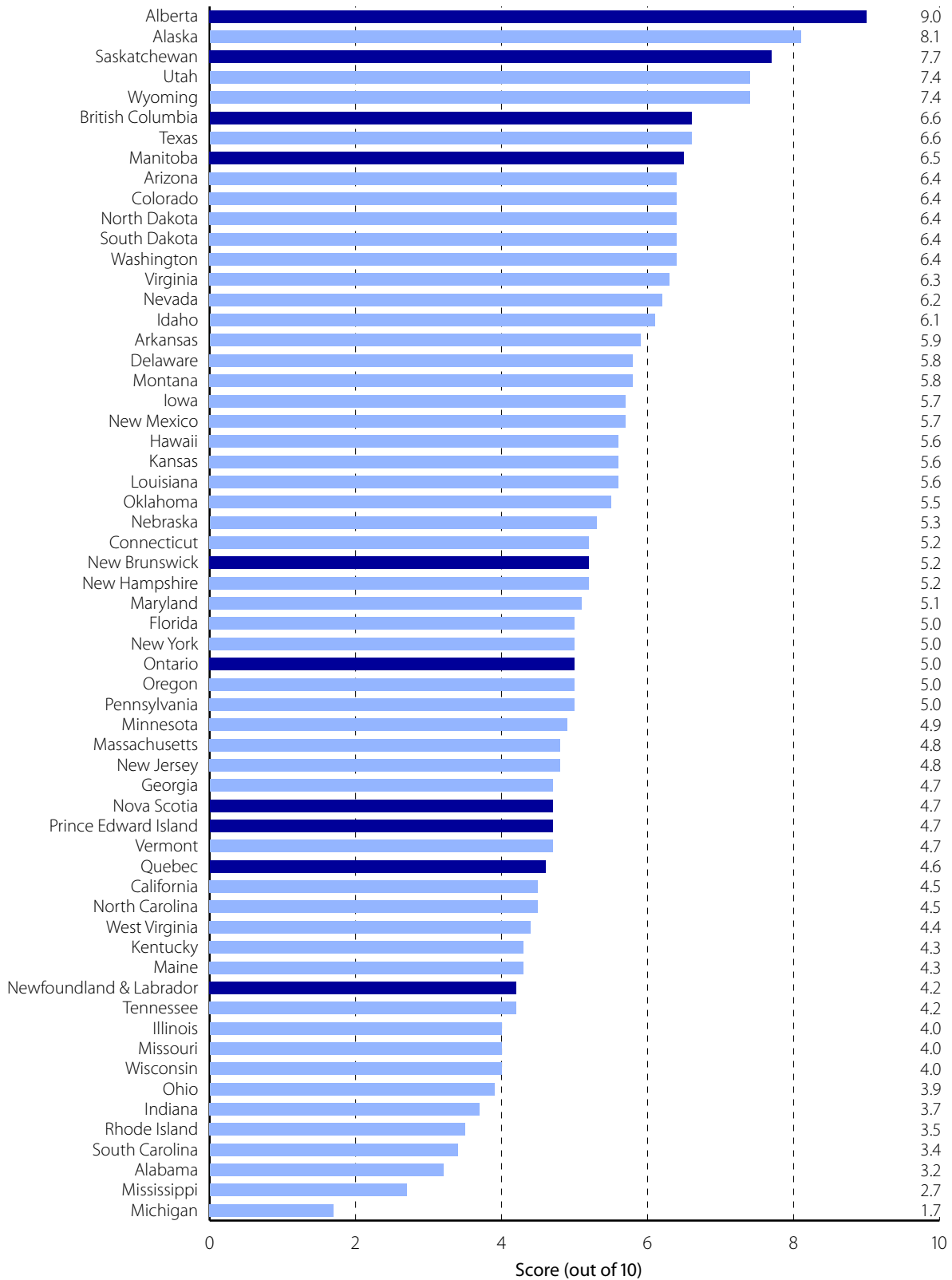
	Average provincial/state + local public sector employment as a % of total employment, 2005–2009		Average federal + provincial/state + local public sector employment as a % of total employment, 2005–2009		Average minimum wage as a percentage of per-worker GDP, 2004–2008		Average unionization as a percentage of total employment, 2005–2009		Index of Labour Relations Law, 2009	
	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Score
Alberta	43	14.6	32	15.7	4	11.4	48	24.2	51	5.3
British Columbia	45	14.9	38	16.7	55	20.4	56	31.7	56	2.8
Manitoba	58	23.2	59	27.5	57	20.6	58	36.9	59	1.8
New Brunswick	56	19.6	55	23.0	53	19.5	53	28.5	56	2.8
Newfoundland	59	24.8	60	28.2	10	12.0	59	38.0	56	2.8
Nova Scotia	57	21.0	56	25.3	56	20.5	54	29.3	53	3.3
Ontario	49	15.9	46	18.6	52	18.8	52	28.1	52	3.4
Prince Edward Island	54	18.8	57	25.5	60	23.6	55	30.9	55	3.0
Quebec	55	19.4	52	21.6	58	21.6	60	39.9	60	1.3
Saskatchewan	60	24.9	58	27.0	42	15.8	57	35.4	54	3.2
Alabama	27	12.5	35	16.5	27	14.6	22	11.0	1	9.2
Alaska	51	17.1	53	22.8	6	11.6	48	24.2	23	7.5
Arizona	14	11.4	14	13.4	32	14.9	18	9.0	1	9.2
Arkansas	33	13.1	26	14.9	47	16.5	6	6.2	1	9.2
California	20	11.8	18	13.8	27	14.6	44	18.1	23	7.5
Colorado	5	10.8	11	13.1	17	13.7	16	8.9	23	7.5
Connecticut	24	12.1	18	13.8	12	13.3	43	17.3	23	7.5
Delaware	30	13.0	27	15.1	1	9.6	26	12.9	23	7.5
Florida	9	11.1	13	13.2	42	15.7	10	7.2	1	9.2
Georgia	15	11.5	21	14.2	15	13.5	4	5.5	1	9.2
Hawaii	36	13.7	47	19.3	32	14.9	50	25.3	23	7.5
Idaho	35	13.4	30	15.3	46	16.4	10	7.2	1	9.2
Illinois	12	11.2	7	12.8	32	14.9	42	17.2	23	7.5
Indiana	4	10.6	3	12.1	22	14.2	27	13.0	23	7.5
Iowa	29	12.6	22	14.5	38	15.2	29	13.4	1	9.2
Kansas	44	14.8	41	17.1	22	14.2	16	8.9	1	9.2
Kentucky	42	14.4	35	16.5	30	14.8	21	10.6	23	7.5
Louisiana	41	14.3	34	16.0	3	11.2	7	6.6	1	9.2
Maine	21	11.9	20	14.1	54	19.7	30	13.9	23	7.5
Maryland	24	12.1	51	21.4	16	13.6	31	14.6	23	7.5

Exsum table 2 (cont'd): Summary of provincial and state rankings (of of 60), labour market regulation and characteristics

	Average provincial/state + local public sector employment as a % of total employment, 2005–2009		Average federal + provincial/state + local public sector employment as a % of total employment, 2005–2009		Average minimum wage as a percentage of per-worker GDP, 2004–2008		Average unionization as a percentage of total employment, 2005–2009		Index of Labour Relations Law, 2009	
	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Score
Massachusetts	3	10.5	4	12.2	24	14.4	34	15.8	23	7.5
Michigan	9	11.1	6	12.7	40	15.6	45	20.4	23	7.5
Minnesota	15	11.5	10	13.0	18	13.9	39	16.6	23	7.5
Mississippi	52	17.2	49	19.8	45	16.2	14	7.9	1	9.2
Missouri	7	10.9	7	12.8	39	15.4	25	12.0	23	7.5
Montana	39	13.9	40	17.0	48	17.3	32	14.9	23	7.5
Nebraska	36	13.7	32	15.7	19	14.1	20	10.2	1	9.2
Nevada	1	9.4	1	10.9	7	11.7	41	17.0	1	9.2
New Hampshire	12	11.2	11	13.1	27	14.6	24	11.7	23	7.5
New Jersey	27	12.5	24	14.6	11	12.3	46	20.6	23	7.5
New Mexico	50	16.3	53	22.8	19	14.1	23	11.1	23	7.5
New York	46	15.2	42	17.2	7	11.7	51	26.6	23	7.5
North Carolina	34	13.3	27	15.1	12	13.3	1	4.3	1	9.2
North Dakota	46	15.2	44	18.3	32	14.9	15	8.6	1	9.2
Ohio	19	11.7	16	13.6	37	15.1	34	15.8	23	7.5
Oklahoma	30	13.0	43	17.5	25	14.5	13	7.6	1	9.2
Oregon	23	12.0	14	13.4	51	18.7	38	16.3	23	7.5
Pennsylvania	2	9.5	2	11.5	19	14.1	34	15.8	23	7.5
Rhode Island	5	10.8	9	12.9	50	17.5	40	16.9	23	7.5
South Carolina	40	14.0	35	16.5	36	15.0	2	4.9	1	9.2
South Dakota	15	11.5	25	14.7	25	14.5	10	7.2	1	9.2
Tennessee	9	11.1	16	13.6	14	13.4	7	6.6	1	9.2
Texas	26	12.3	22	14.5	5	11.4	5	5.9	1	9.2
Utah	21	11.9	30	15.3	30	14.8	9	6.8	1	9.2
Vermont	30	13.0	29	15.2	58	21.6	27	13.0	23	7.5
Virginia	18	11.6	44	18.3	9	11.9	3	5.3	1	9.2
Washington	36	13.7	39	16.9	48	17.3	47	21.2	23	7.5
West Virginia	48	15.8	48	19.4	43	16.0	33	15.3	23	7.5
Wisconsin	8	11.0	4	12.2	44	16.1	37	16.1	23	7.5
Wyoming	53	17.8	49	19.8	2	10.5	19	9.2	1	9.2

Source: Fraser Institute, 2010.

Exsum figure 1: Index of Labour Market Performance, 2005–2009



Source: Fraser Institute, 2010.

Measuring Labour Markets
in Canada and the United States
2010 Edition

Introduction

Interest in labour markets ebbs and flows with the economy as a whole. Recently, concerns over an economic downturn and the economic recovery that followed, coupled with an aging population and globalization, have produced great interest in the way this country's labour market functions. Changing market conditions and demographic factors will continue to influence our labour market, which is why there is a need to measure the performance of the labour market. Measurement allows comparison, which is the first step toward understanding differences in labour market conditions and addressing potential problems.

This study provides an overview of labour market conditions in Canada and the United States. It examines the performance of labour markets in the two countries and offers explanations for that performance. Measuring differences in performance and examining explanations for those differences enables us to understand why conditions in the labour market are better in some regions than in others. As a result, we can begin to examine how public policy and other factors affect labour markets.

Organization

The study is divided into two sections: labour market performance and labour market characteristics and regulation. The first presents the performance measures for the Canadian provinces and US states across five indicators: average total employment growth, average private-sector employment growth, average unemployment rates, average duration of unemployment, and average labour productivity. This section also gives an overall score for labour market performance that combines the five indicators listed above.

The second section, labour market characteristics and regulation, examines a number of aspects of labour markets that contribute to their performance. This section includes an analysis of public-sector employment, minimum wages, unionization, and labour relations laws. Each of the four subsections reviews the research and data for each province and state as well as the overall rankings. This section concludes with an overview of other characteristics, including minimum wage exemptions, overtime requirements, and occupational licensing, each of which affect labour market performance but for which, unfortunately, there are currently no comparable empirical analyses available.

Labour market performance

Understanding the importance of labour market flexibility

Labour markets are one of the most important 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.¹

The key to a high-performing, efficient labour market characterized by strong job creation, low unemployment, short durations of unemployment, and a highly productive workforce is flexibility: the ease with which workers and employers alike are able to adjust their efforts given changes in the marketplace. For employees, flexibility allows them to supply their labour as they wish and shift their efforts to endeavours that provide the greatest return or benefit. Similarly, flexibility allows employers to adjust the mix of labour and capital to respond to market changes.

Regulation has an influential impact on labour market flexibility by restricting the ability of employees and employers to adjust their efforts. Rigid and overly prescriptive labour market regulation can impede workers' ability and incentives to change jobs. It can also limit employers' ability to change their labour inputs such as the number of workers or the nature of their work. In other words, labour regulation can impede the speed and extent to which employees and employers can react to changing market conditions.

There is a large body of research confirming that flexible labour markets lead to better labour-market performance: strong job creation, low unemployment, and relatively strong productivity. The seminal study among these was

1 It is important to emphasize that labour markets are generally no different from any other market except that what is being traded is the work effort, skills, ingenuity, and diligence of individuals. The market for labour, however, acts the same as other product or material markets. As demand for the product—in the case of labour markets, labour—increases, the price paid (wages) adjusts upwards until a new equilibrium or balance is achieved between the amount of labour demanded and the amount supplied. Again, as with other markets, the suppliers of labour respond to the new wage rates. New labour may enter the market and/or labour from other areas of the economy may be reallocated to the areas with higher demand. This natural process of reallocation and prioritization continues until a sustainable balance is achieved.

completed by the Organisation for Economic Co-operation and Development (OECD) in 1994; it is commonly referred to as the *Jobs Study* (1994a, 1994b). It concluded that countries with more flexible labour markets—those that have regulations that allow workers and employers to react to changing market conditions—enjoyed better records of job creation and higher rates of economic growth. In 2006, the OECD published a reassessment of the original *Jobs Study*. Labour market flexibility was again emphasized. The follow-up studies (2006a, 2006b) again recommended the adoption of policies that facilitate greater flexibility for workers and employers, including flexible work-time arrangements and a greater degree of wage flexibility to enhance performance.

A number of studies examining the relationship between labour market regulations (i.e., flexibility) and labour market performance corroborate the OECD's conclusions. For example, a study by Alonso et al. (2004), using data from 19 OECD countries and spanning a period of 35 years, found that countries with more flexible labour markets had lower unemployment rates and higher incomes and capital per worker. Similarly, an important study by Rafael Di Tella and Robert MacCulloch (2005) examined how more-flexible labour markets performed compared to less-flexible labour markets in 21 OECD countries from 1984 to 1990. The authors found that countries with more-flexible labour markets had better labour-market outcomes, including higher increases in employment and participation rates.

Other studies have examined the relationship between labour market flexibility and unemployment rates, a key measure of labour market performance. A study by Kiander and Viren (2001) explored this relationship using immigration numbers in 22 OECD countries from 1960 to 1997. They found that the United States, which has the most flexible labour market, responded quickly to population increases and, as a result, there was no change in the unemployment rate; the European countries, which have labour markets that are much less flexible, were slower to respond. Another study by Nickell et al. (2005) examined unemployment patterns in the OECD countries from the 1960s to the 1990s. The authors found that differences in unemployment rates across the OECD can largely be explained by labour market regulations—such as the level of employment-insurance benefits, taxes, wage flexibility, and trade union power—that affect flexibility. More recently, Bande and Karanassou (2008) examined the unemployment rate in the Spanish regions and found that low levels of labour market flexibility in some of the regions led to faster increases in their unemployment rates in times of poor economic performance (1985 to 1991) and slower decreases in their unemployment rates in times of strong economic growth (1992 to 1995).

Other research has examined how individual aspects of labour market flexibility can affect labour market outcomes. One aspect of labour market flexibility is the balance between the ability of employers to adjust their labour

inputs and employees to easily seek jobs that provide the greatest return or benefit. A regulatory environment that skews the balance of power in favour of one party over another reduces labour market flexibility because the ability of one party to pursue its best interests has been eroded. An interesting paper by Besley and Burgess (2004) examined what happens when labour regulation is unbalanced. Using data from the manufacturing sector in India between 1958 and 1992, the authors found that labour relations laws (regulations on the relationship between workers, employers, and unions) that favoured one group over another led to lower output, employment, investment, and productivity.

Another aspect of labour market flexibility is the extent to which wages can adjust to changing market conditions. If wage rates are unable to, or are impeded from, moving up and down with changing market conditions, workers receive a distorted signal about where to allocate their efforts. The result would be an imbalance between the number and type of workers and the demand for labour. Several studies have examined this effect. For example, Bierhanzl and Gwartney (1998) found that higher rates of centralized wage-setting, stricter employee-dismissal policies, and generous employment insurance led to higher unemployment rates in OECD countries.² Similarly, Bertola et al. (2002), using data for 17 OECD countries from 1960 to 1996, found that union wage-setting policies and accordant wage premiums effectively priced the young and elderly out of employment.

A final important aspect of labour market flexibility is the speed at which labour markets can react to changing market conditions. Several recent studies have shown that the ability of workers and employers to adjust quickly to market changes has a positive impact on labour market performance and more generally on economic performance. For example, a paper by Caballero et al. (2004), using data from 60 countries for the years 1980 to 1998, found that countries that increased labour regulation decreased their speed of adjustment to market changes, as well as their annual productivity growth. More recently, Cuñat and Melitz (2007) found that countries with more flexible labour markets adjusted to market shocks much faster and to a greater extent than countries with inflexible labour markets.

Overall, there is a growing consensus among economists that labour market flexibility results in better labour market outcomes. Over a wide range of countries and time, a wealth of research has shown that flexible labour markets provide for less unemployment, higher employment growth, higher productivity, and generally more economic prosperity than inflexible labour markets.

2 A case study of Denmark by Eriksson and Westergaard-Nielsen (2007) found that the shift in Denmark's wage-bargaining institutions from being highly centralized to more decentralized coincided with deregulation and increased product market competition.

Measuring labour market performance

This section of the study presents data on the performance of the 10 provincial and 50 state labour markets for five indicators over the past five years (2005–2009): average total employment growth, average private-sector employment growth, average unemployment rates, average duration of unemployment, and average labour productivity. The study employed five-year averages to balance the need for historical data while weighing current performance. A five-year average helps prevent indicators from being skewed by recent anomalous data and avoids reliance on information that no longer reflects the performance of a jurisdiction. In addition, this section includes an overall Index of Labour Market Performance.

The format of this section is largely a presentation of the rankings coupled with a brief discussion. The section includes a discussion of the current economic situation and its impact on the results published in this edition of *Measuring Labour Markets*, general observations for each of the indicators, a discussion of the top- and bottom-ranked jurisdictions, information specific to Canada, and general trends.

Recession and labour market performance

While both Canada and the United States enjoyed relatively strong economies at the beginning of the period (2005–2007)—average real (i.e., inflation-adjusted) GDP growth rates of 2.7% and 2.6% per year—things began to change in late 2007 (Statistics Canada, 2010e; Bureau of Economic Analysis, 2010).³ Economic growth in the two countries was noticeably lower the following year (0.5% in Canada and 0.4% in the United States) but the recent economic downturn was most severe in 2009 as economic activity declined by 2.5% in Canada and 2.4% in the United States.

Typically, strong economic growth translates into robust performances in other areas including labour markets and poor economic performance tends to result in poor labour market performance. The recent economic downturn was no exception. The recessions in both Canada and the United States have led to low or negative employment growth and higher unemployment rates. However, labour market performance in Canada did not deteriorate as much as it did in the United States during the recession. Employment in the United States decreased by 4.2% during 2008 and 2009, while unemployment more than doubled, from 4.6% in 2007 to 9.3% in 2009 (United States Department of Labor, 2010f). In Canada, on the other hand, employment declined only in 2009, by 1.6% (in 2008, employment had grown by 1.5%) and unemployment increased by 2.3 percentage points (from 6.0% in 2007 to 8.3% in 2009) (Statistics Canada, 2010a).

3 GDP is defined as the value of all goods and services produced in a given period of time.

There are several possible explanations for the United States' relatively poorer labour market performance during the recent recession. First, it is likely that the recession had a stronger adverse impact on the United States than on the Canadian economy, especially given that the financial crisis and the crash of the housing market originated there. Some recent studies indicate that recessions coupled with a financial crisis, declining housing-market prices, or both have a more severe impact on labour market performance. For example, Knotek and Terry (2009), using data on the banking crisis of high-income countries from 1960 to 2007, found that nations that have banking crises that occur with a recession experience more severe and persistent increases in unemployment. They argued that this could be due to the large declines in output (GDP) typically associated with a banking crisis and a recession and reduced access to credit that may make it hard for some firms to fund operating expenses, forcing them to lay off workers (Knotek and Terry, 2009). Similarly, Claessens et al. (2008) used data from 21 OECD countries over the same period and found that recessions with restricted credit and/or steeply declining house prices are typically more severe, last longer, and increase unemployment. Moreover, steeply falling house prices are also associated with sharp declines in employment (Claessens et al., 2008).

The second possible explanation is the different mix of industries in the two countries. For instance, data from OECD countries over the last few decades indicate that the construction industry is most sensitive to recessions, followed by durable manufacturing and business services (OECD, 2009).⁴ The construction industry in the United States produced nearly 5% of total output in 2008 (the most recent year for which the data are available) and manufacturing, nearly 20% (United States Department of Commerce, 2010c). In Canada, the construction industry produces a similar share of the total output (about 6%) but the manufacturing industry produced only about 14% (Statistics

4 Moreover, studies show that in addition to the mix of industries, some groups of employees may be at a greater risk of losing their jobs than others in an economic downturn. Elsby et al. (2010), for instance, found that males, the young, and the less educated, as well as those from ethnic minorities experienced higher rates of unemployment during recessions over the past couple of decades in United States, including the recent recession. Engemann and Wall (2010) corroborate these findings for the recent recession. The authors argued that men likely lost more jobs than women because men are concentrated in manufacturing and construction, the two industries hard hit by the recent downturn (Engemann and Wall, 2010). Evidence from OECD countries suggests, similarly, that youth are most sensitive to recessions, followed by those with a low level of educational attainment and temporary workers (OECD, 2009). The reason some workers are more affected by recessions than others is their "turnover cost," the cost of replacing current employees with new ones (OECD, 2009). The cost of replacing young workers and those with low levels of skills or education is less costly than those with high level of expertise and experience (OECD, 2009).

Canada, 2010f). It could be that a relatively larger manufacturing sector in the United States resulted in higher percentage of job losses than in Canada.

Thirdly, labour laws can in many ways affect how a country responds to an economic downturn. The severity of a recession, and how rapidly an economy recovers from it, ultimately depend on the ability of firms to restructure and reorganize in response to changes in market conditions. Of course, in a dynamic economy, market conditions are constantly changing. What makes recessions so different is that they involve drastic changes in market conditions, making the firms' ability to respond to these changes in a timely manner all the more important. The speed at which a firm can respond to such changes is determined by the flexibility of the labour market. Therefore, labour laws that encourage or restrict this flexibility play an important role in determining the labour market performance of states and provinces in an economic downturn.

Finally, the policies countries undertake to address an economic downturn can affect the labour market performance. As the global recession unfolded, many nations including Canada and the United States enacted fiscal-stimulus packages in hopes of boosting economic activity. The evidence from Canada and the United States, however, indicates that stimulus spending played a negligible role in the economic turnaround (Karabegović et al., 2010; Cogan et al., 2009, September 17; Barro, 2010, February 23). More generally, empirical evidence on stimulus spending indicates that it is not an effective tool to deal with a recession (Veldhuis and Lammam, 2010).

In the end, the extent to which the severity of the shock, the mix of industries, labour market flexibility, and governments' responses to a recession had an impact on labour market performance in Canada and the United States, and how these factors will affect the recovery process, is an empirical question. Recovery from the recent recession seems to have started in mid-2009 in both Canada and the United States but it is hard to tell at this point how long the recovery process will take. The data available so far indicate that labour market performance in both Canada and the United States has been improving in recent months. Measuring labour market performance over the last 12 months (since the beginning of the economic recovery) is, unfortunately, challenging because the monthly and quarterly data for three of the indicators of labour market performance are not available across US states and Canadian provinces. However, data are available for two indicators, employment growth and unemployment, that may shed some light on how different jurisdictions performed in the past year.

Average total employment growth and unemployment rate, July 2009 to June 2010

Before we look at the performance over the last 12 months, it is important to note that in the rest of the study we gauge labour market performance over the last five years. The reason we use five-year averages is to smooth out the fluctuations of the business cycle and, thus, make the comparison more

meaningful. In other words, even though annual and monthly fluctuations in labour market performance are important, they are likely temporary. Five-year averages smooth out these temporary ups and downs in the data. The labour market performance of the past 12 months should, indeed, be used with caution since most likely it does not represent an actual trend but rather a temporary deviation.

Both the Canadian and the US economies started recording positive economic growth in the second half of 2009 (Bureau of Economic Analysis, 2010; Statistics Canada, 2010e), signalling the end of the recession and the beginning of the economic recovery. As expected, the employment and unemployment data over the past 12 months (July 2009 to June 2010) show improvement in labour market performance across both US states and the Canadian provinces, compared to labour market performance during the recession (Statistics Canada, 2010a, 2010g; United States Department of Labor, Bureau of Labor Statistics, 2010g; tables 1a and 1b). Employment growth over the past 12 months was 0.0%, on average, for Canadian provinces and the US states. While this is lower than employment growth over the past five years (0.4%), it is substantially better than the decline in employment of 0.3% during the recession (July 2008 to June 2009). Employment growth over the past 12 months varied from -0.3% in Delaware to 0.3% in Ontario. Two-thirds of the jurisdictions recorded employment growth of 0.0% or higher in the past 12 months, compared to only four jurisdictions during the recession, July 2008 to June 2009. Similarly, the unemployment rate has started to come down in recent months (Statistics Canada, 2010a, 2010g; United States Department of Labor, Bureau of Labor Statistics, 2010g). However, the unemployment rate typically lags behind economic recovery since many people enter the labour force as the economy improves, making the unemployment rate higher rather than lower (Karabegović and Veldhuis, 2010). The average unemployment rate across all jurisdictions was 5.8% over the past five years compared to 8.8% over the past 12 months and 7.1 % during the recession.

It is important to note that those jurisdictions that performed well over the past five years have, on average, also done well in the past 12 months: the top 30 jurisdictions in the Index of Labour Market Performance, an overall index of labour market performance, have seen more growth in employment and less unemployment over the past 12 months than those in the bottom half. It is true that some jurisdictions such as Florida, Nevada and Delaware that have done well in the past have not been doing well recently but these are exceptions. Moreover, given that we have data for only two indicators, we are unable to make a full assessment of the performance of the 60 North American jurisdictions over the past 12 months.

Table 1a: Average unemployment rate (%), July 2009 to June 2010

	Percent	Rank (out of 60)		Percent	Rank (out of 60)
North Dakota	4.1	1	Connecticut	8.8	31
South Dakota	4.7	2	New Brunswick	8.8	31
Nebraska	4.8	3	Pennsylvania	8.8	31
Saskatchewan	4.9	4	West Virginia	8.9	34
Manitoba	5.4	5	Idaho	9.0	35
Iowa	6.6	6	Ontario	9.0	35
Vermont	6.6	6	Massachusetts	9.2	37
Kansas	6.7	8	Nova Scotia	9.2	37
New Hampshire	6.7	8	Washington	9.2	37
Hawaii	6.8	10	Arizona	9.4	40
Montana	6.8	10	Missouri	9.5	41
Oklahoma	6.8	10	New Jersey	9.8	42
Utah	6.9	13	Indiana	10.0	43
Alberta	7.0	14	Georgia	10.2	44
Virginia	7.0	14	Kentucky	10.6	45
Louisiana	7.2	16	Mississippi	10.7	46
Wyoming	7.2	16	Tennessee	10.7	46
Maryland	7.4	18	Alabama	10.8	48
Minnesota	7.5	19	North Carolina	10.8	48
Arkansas	7.6	20	Ohio	10.8	48
Colorado	7.7	21	Oregon	10.8	48
British Columbia	7.8	22	Illinois	10.9	52
Maine	8.1	23	Prince Edward Island	11.2	53
New Mexico	8.2	24	Florida	11.6	54
Texas	8.2	24	South Carolina	12.0	55
Alaska	8.3	26	California	12.3	56
Quebec	8.3	26	Rhode Island	12.3	56
Wisconsin	8.6	28	Nevada	13.2	58
Delaware	8.7	29	Michigan	14.1	59
New York	8.7	29	Newfoundland & Labrador	15.4	60

Sources: Statistics Canada, 2010a, 2010g; United States Department of Labor, Bureau of Labor Statistics, 2010g; calculations by authors.

Table 1b: Average total employment growth (%), July 2009 to June 2010

	Percent	Rank (out of 60)		Percent	Rank (out of 60)
Ontario	0.3	1	New Hampshire	0.0	21
British Columbia	0.2	2	New Jersey	0.0	21
Manitoba	0.2	2	New Mexico	0.0	21
Newfoundland & Labrador	0.2	2	New York	0.0	21
North Dakota	0.2	2	Ohio	0.0	21
Prince Edward Island	0.2	2	Oklahoma	0.0	21
Quebec	0.2	2	South Carolina	0.0	21
Alaska	0.1	8	South Dakota	0.0	21
Alberta	0.1	8	Virginia	0.0	21
Arizona	0.1	8	Washington	0.0	21
Louisiana	0.1	8	Alabama	-0.1	41
Minnesota	0.1	8	Arkansas	-0.1	41
North Carolina	0.1	8	California	-0.1	41
Nova Scotia	0.1	8	Colorado	-0.1	41
Oregon	0.1	8	Connecticut	-0.1	41
Rhode Island	0.1	8	Indiana	-0.1	41
Saskatchewan	0.1	8	Kansas	-0.1	41
Tennessee	0.1	8	Maryland	-0.1	41
Texas	0.1	8	Mississippi	-0.1	41
Vermont	0.1	8	Missouri	-0.1	41
Florida	0.0	21	Montana	-0.1	41
Hawaii	0.0	21	New Brunswick	-0.1	41
Idaho	0.0	21	Pennsylvania	-0.1	41
Illinois	0.0	21	Wisconsin	-0.1	41
Iowa	0.0	21	Wyoming	-0.1	41
Kentucky	0.0	21	Georgia	-0.2	56
Maine	0.0	21	Nevada	-0.2	56
Massachusetts	0.0	21	Utah	-0.2	56
Michigan	0.0	21	West Virginia	-0.2	56
Nebraska	0.0	21	Delaware	-0.3	60

Sources: Statistics Canada, 2010a, 2010g; United States Department of Labor, Bureau of Labor Statistics, 2010g; calculations by authors.

Index of Labour Market Performance

The Index of Labour Market Performance provides an overview of each jurisdiction's overall labour market performance, as measured by the five indicators: average total employment growth, average private-sector employment growth, average unemployment rates, average duration of unemployment, and average labour productivity. Each component was weighted equally in the index (for a description of the methodology, see Appendix A: Methodology, p. 59).

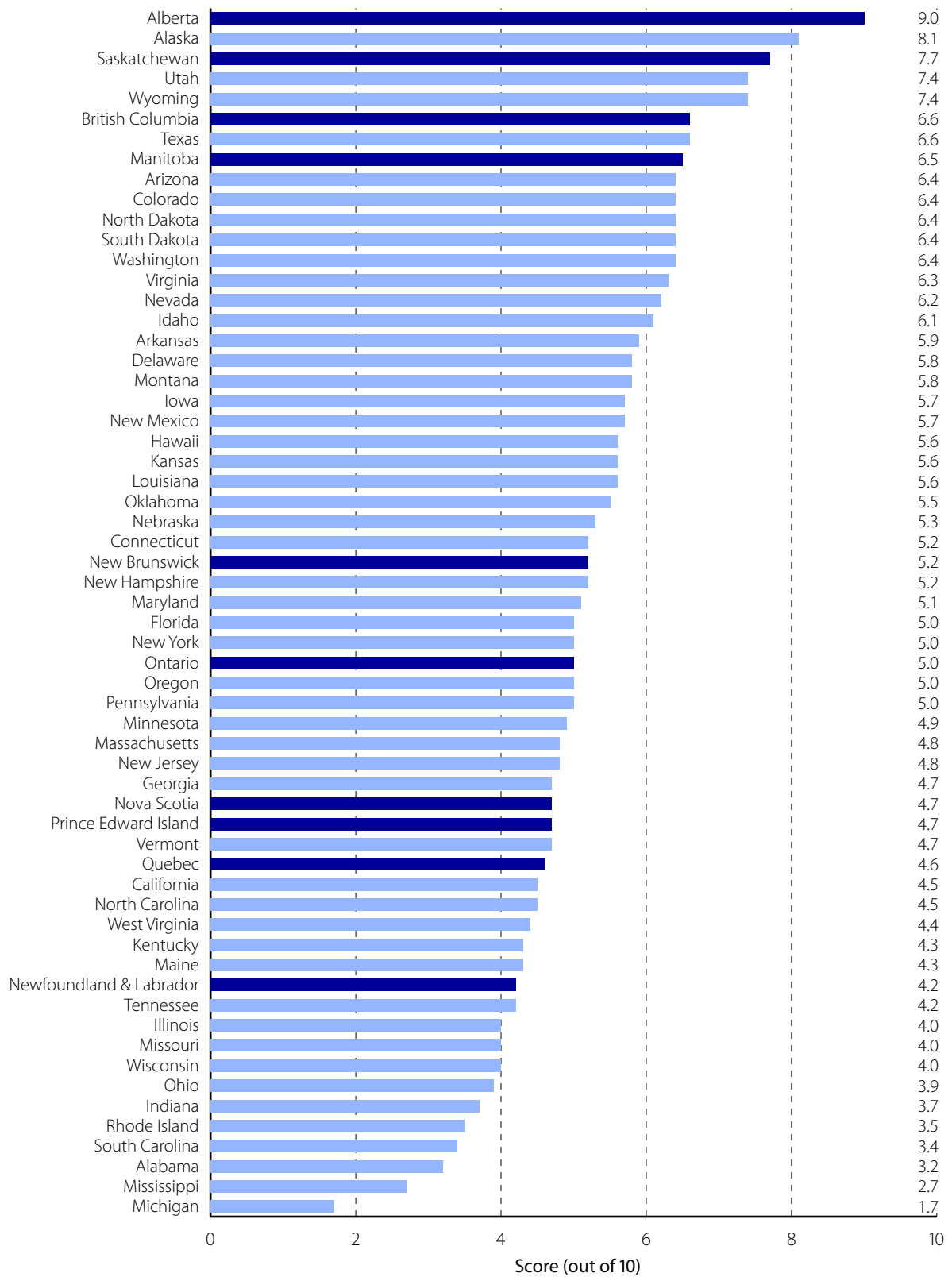
General observations

Alberta's labour market performance puts it at the top of the list of Canadian provinces and US states over the last five years (figure 1). The province's strong performance in total employment growth (ranked first out of 60 jurisdictions), employment growth in the private sector (ranked second), low duration of unemployment (ranked first), and average labour productivity (ranked third) enabled it to achieve the highest overall score of 9.0 out of 10.

The US states in the West dominated the top of the rankings: six states from this region—Alaska, Utah, Wyoming, Arizona, Colorado, and Washington—were among the top 13 (five states are tied for the 9th place).⁵

5 Throughout this study, US states are often grouped into geographical regions. Definitions for these geographical regions come from the United States Census Bureau's *Geographic Areas Reference Manual* (United States Department 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).

Figure 1: Index of Labour Market Performance, 2005–2009



Source: Fraser Institute, 2010.

Three Canadian provinces besides Alberta are in the top 13, Saskatchewan (3rd), British Columbia (tied with Texas for 6th place), and Manitoba (8th). New Brunswick is the only other province that ranked in the top half (27th) with a score of 5.2. The remaining five Canadian provinces scored 5.0 or lower. With a score of 4.2, Newfoundland & Labrador⁶ ranked last among the provinces and 49th out of 60 jurisdictions.

All the states in the Industrial Belt (Illinois, Wisconsin, Ohio, Indiana, and Michigan) were among the bottom 10 jurisdictions, as were three Southern states (South Carolina, Alabama and Mississippi), one state from the Northeast region (Rhode Island) and one state from the West North Central region (Missouri). Michigan had the worst labour market performance out of the 60 jurisdictions, having a score of 1.7.

The following section examines each of the components of the Index of Labour Market Performance in greater detail.

Indicator 1: Average total employment growth

Indicator 1 measures the average growth rates of total employment for each jurisdiction from 2005 to 2009. Total employment includes full-time and part-time employment in both the public (government), private (business and non-profit) sectors of the economy, and self employment.⁷

Observations

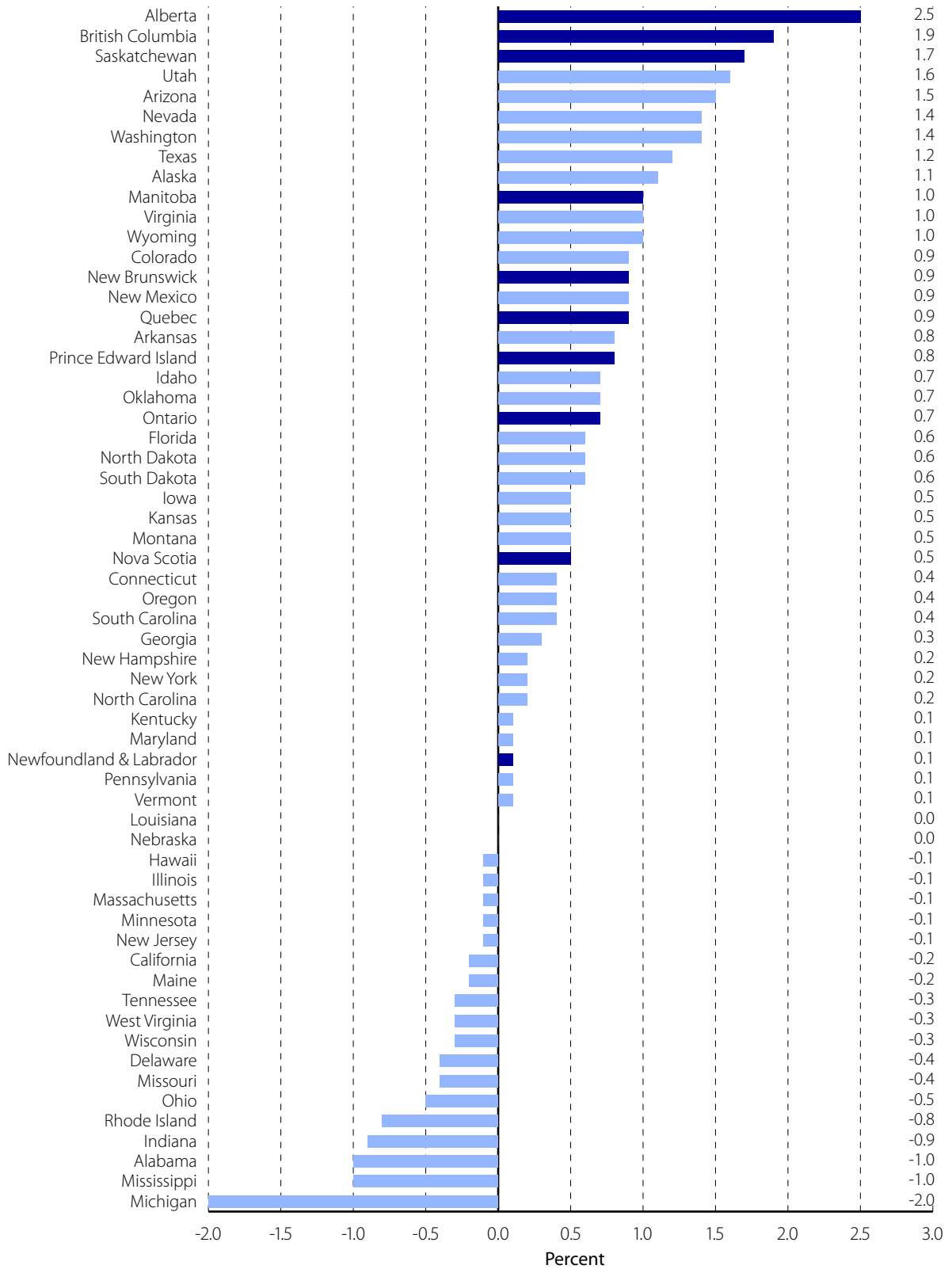
Alberta, British Columbia, and Saskatchewan top the list of Canadian provinces and US states with an average total employment growth rate ranging from 2.5% in Alberta to 1.7% in Saskatchewan over the last five years. Utah and Arizona follow with an average employment growth of 1.6% and 1.5%, respectively. Of the top 12 (three jurisdictions are tied for the 10th place), eight are US states. Six states are from the West (Utah, Arizona, Nevada, Washington, Alaska, and Wyoming) and two states are from the South (Texas and Virginia).

The Canadian provinces were mainly distributed in the top half of the rankings: nine provinces ranked in the top half of all jurisdictions, while one was in the bottom half. Manitoba ranked 10th, Quebec and New Brunswick are tied for 13th place and Prince Edward Island and Ontario ranked 17th and 19th, respectively. The lowest-ranked Canadian provinces were Nova Scotia (25th) and Newfoundland & Labrador (36th).

6 The Canadian province, Newfoundland & Labrador, is a single jurisdiction; in some tables it appears as “Newfoundland” for lack of space.

7 There is a small difference between the Canadian and US definition of “employable”: Canada tabulates employment data for those of age 15 and above while the United States compiles employment data for those age 16 and above.

Indicator 1: Average total employment growth (%), 2005–2009



Sources: Statistics Canada, 2010a; US Department of Labor, Bureau of Labor Statistics, 2010c; calculations by authors.

The bottom 11 rankings (three states were tied for 50th place) were occupied by five states from the Midwest (Wisconsin, Missouri, Ohio, Indiana, and Michigan), five states from the South (Tennessee, West Virginia, Delaware, Alabama, and Mississippi), and one state from the Northeast (Rhode Island). Michigan placed last, and recorded a declining total employment rate of -2.0% on average over the last five years.

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.⁸ The second indicator of labour market performance measures the average growth in private-sector employment for each jurisdiction from 2005 to 2009; growth is defined as new full-time and part-time private-sector employment.⁹

Observations

Alaska led all jurisdictions with an average of 2.9% growth in private-sector employment over the last five years. Alberta (2.1%), Utah (2.1%), and Colorado (1.9%) followed. Of the top 11 rankings (three jurisdictions are tied for the 9th place), seven are US states (Alaska, Utah, Colorado, Arizona, Texas, Arkansas, and Washington).

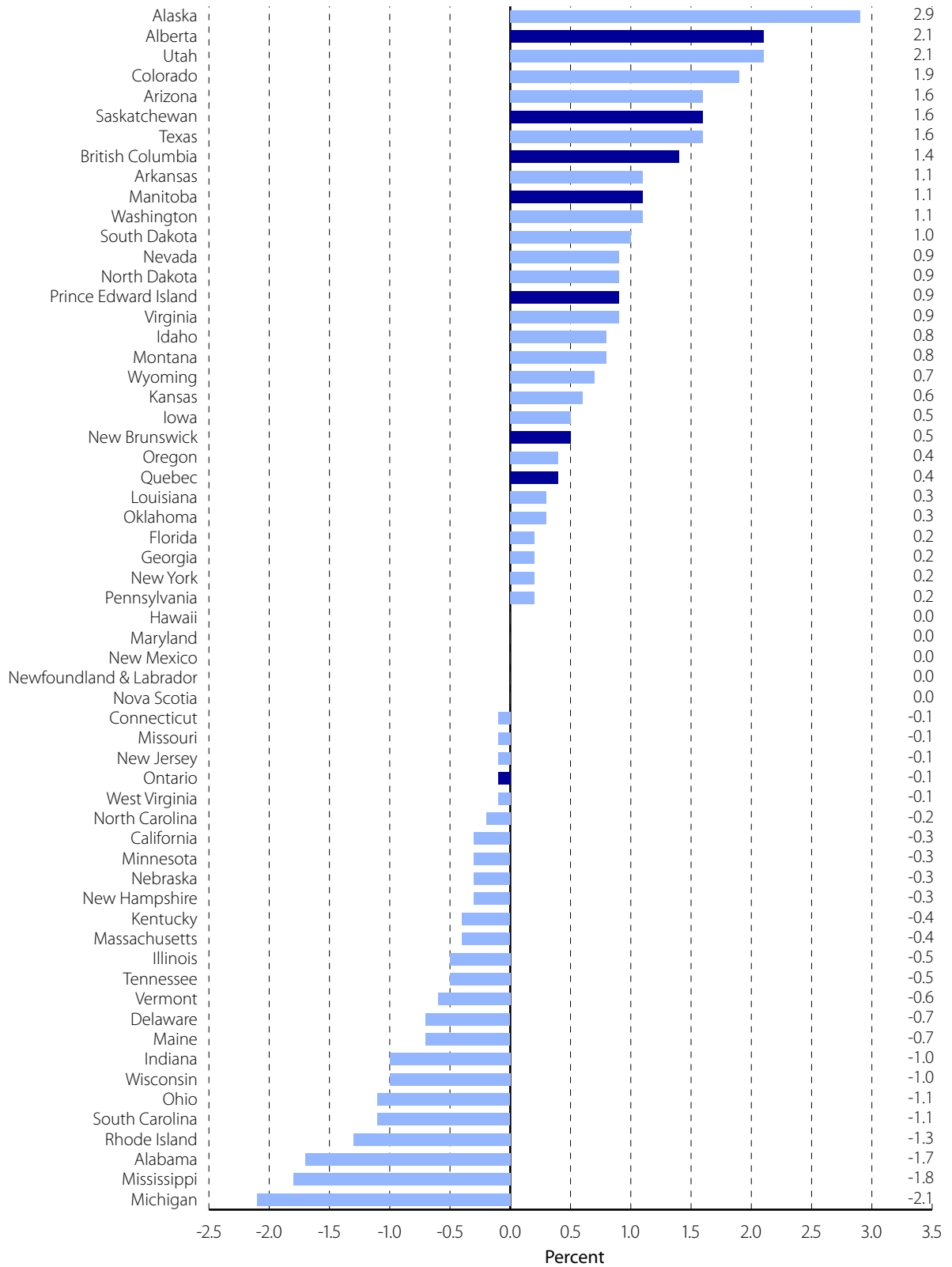
Besides Alberta, six other Canadian provinces were in the top half of the rankings (Saskatchewan, British Columbia, Manitoba, Prince Edward Island, New Brunswick, and Quebec). Saskatchewan (1.6%), British Columbia (1.4%) and Manitoba (1.1%) did well, ranking in the top 11. The bottom-ranked Canadian province was Ontario at -0.1%, ranking 36th overall. The remaining five Canadian provinces had average growth rates ranging between 0.0% and 0.9%.

The bottom 10 jurisdictions were four Southern states (Delaware, South Carolina, Alabama, and Mississippi), four Midwest states (Indiana, Wisconsin, Ohio, and Michigan), and two from the Northeast (Maine and Rhode Island). Michigan was last, with a reduction in private employment of 2.1% on average during the five-year period. Each of the bottom 10 jurisdictions saw a

8 See Clemens et al., 2003 as well as the discussion of public-sector employment in the section, Labour market characteristics and regulation, in this study (p. 37).

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

Indicator 2: Average private-sector employment growth (%), 2005–2009



Sources: Statistics Canada, 2010a; US Department of Labor, Bureau of Labor Statistics, 2010a; calculations by authors.

decrease in average private-sector employment ranging from -0.7% to -2.1% , on average, over the last five years.

The relationship between the results of 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, Alaska's average total employment growth was 1.1% but its private-sector employment growth was 2.9% , indicating a large reduction in the state's public-sector employment. Similarly, Colorado recorded an average total employment growth rate of 0.9% while averaging 1.9% private-sector employment growth, again indicating a large reduction in the public sector. South Carolina and New Mexico show the opposite: declining or no growth in private-sector employment coupled with higher average total employment growth, indicating an expansion in the public sector.

Indicator 3: Average unemployment rates

Indicator 3 reflects the first two indicators in that an economy that is unable to generate employment growth will also, to a certain extent, have higher unemployment rates, assuming a steady flow of the new entrants to the workforce. Indicator 3 measures the five-year (2005–2009) average percentage of citizens who, though actively seeking work, were unable to find it.

Some of the differences recorded between the Canadian provinces and the US states are due to the differences in the two countries' employment insurance programs.¹⁰ In general, Canada has a more generous employment insurance program than the United States because it provides higher benefits, for longer periods, for a greater percentage of its unemployed. The result, not surprisingly, is that Canada tends to have higher average unemployment rates.¹¹

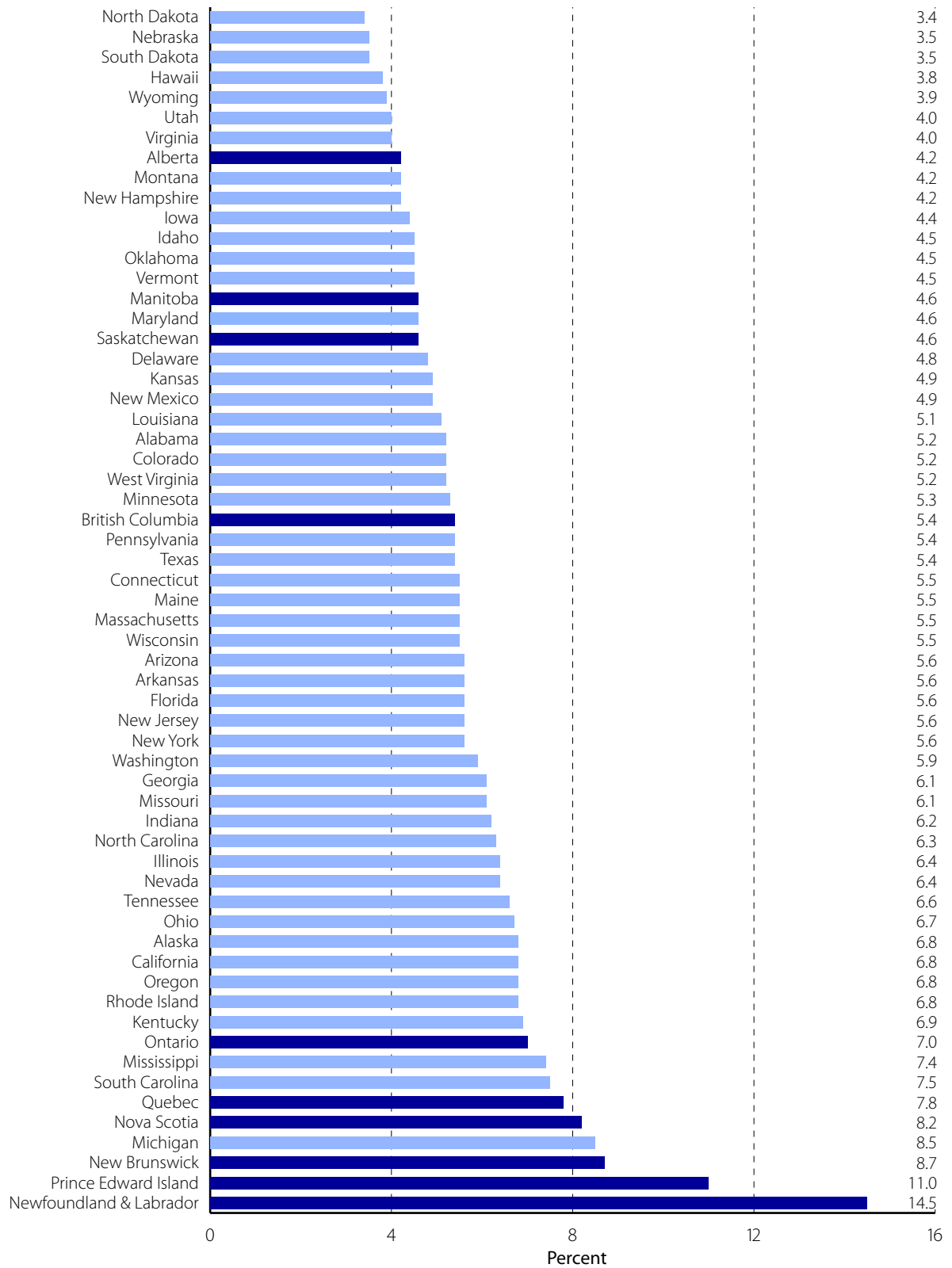
Observations

North Dakota recorded the lowest average unemployment rate (3.4%) for the last five years. All jurisdictions that ranked in the top 10 (all of which were US

10 For more information on the two countries' employment insurance systems, see, for Canada, <http://www.hrsdc.gc.ca/en/ei/menu/eihome.shtml> and, for the United States, <http://www.dol.gov/dol/topic/unemployment-insurance/index.htm>.

11 In addition, the Canadian government made changes to the Employment Insurance system in 2000 that benefit workers in Atlantic Canada. An interesting case study done by Kuhn and Riddell (2006) presents the long-term effects of generous unemployment insurance in New Brunswick and Maine. See Riddell et al., 2006 for a summary of this technical study.

Indicator 3: Average unemployment rates (%), 2005–2009



Sources: Statistics Canada, 2010a; US Department of Labor, Bureau of Labor Statistics, 2010c; calculations by authors.

states except Alberta) had average unemployment rates of 4.2% or less. Alberta was the highest-ranking Canadian province, placing 8th overall (and tied with two other US states) with an average unemployment rate of 4.2%. Manitoba (15th), Saskatchewan (15th), and British Columbia (26th) were the only other Canadian provinces to rank in the top half of all jurisdictions.¹² Newfoundland & Labrador ranked last, with an average unemployment rate of 14.5%, a rate over three times higher than that of the top-ranked Canadian province, Alberta, and over four times higher than that of top-ranked North Dakota.

Further evidence of Canada's poor performance on this indicator is that six of the bottom 10 jurisdictions were Canadian provinces (Ontario, Quebec, Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland & Labrador). These rankings reveal how high average unemployment rates have been in Atlantic Canada over the last five years: Nova Scotia, an average rate of 8.2%; New Brunswick, 8.7%; Prince Edward Island, 11.0%; and Newfoundland & Labrador, a startling 14.5%. These averages diverge significantly from the average for the top 10 jurisdictions (3.9%) and even the Canadian average (7.6%). There is a stark contrast between the Northeastern US states bordering Atlantic Canada, all of which performed higher than the Canadian Atlantic provinces and one of which, New Hampshire, was in the top 10, and generally had low average unemployment rates (6.8% or less).

Indicator 4: Average duration of unemployment

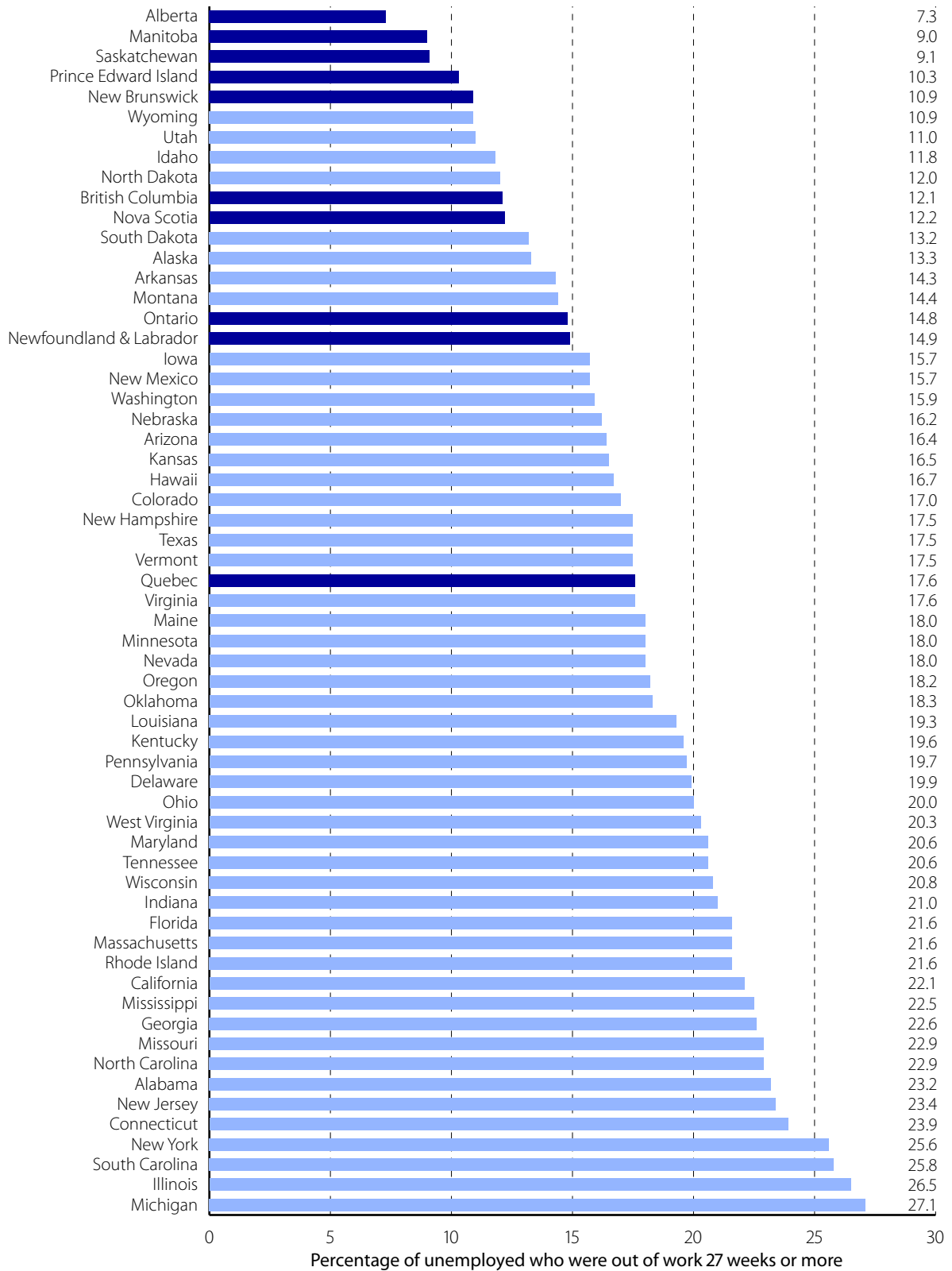
The fourth indicator of labour market performance, average duration of unemployment, is an adjunct to the previous measure. It is intended to indicate the severity of unemployment: the labour market of two jurisdictions with similar unemployment rates may suffer different problems if the duration of unemployment is drastically different. This indicator measures the percentage of the labour force experiencing unemployment for 27 weeks or longer from 2005 to 2009.

Observations

Alberta ranked first, with the lowest percentage of its unemployed (7.3%) experiencing unemployment for 27 weeks or longer. The jurisdiction ranking second highest was Manitoba, where 9.0% of the unemployed were out of

12 Low unemployment rates in jurisdictions like Manitoba (15th) may be the result of the emigration of their working-age populations. Manitoba (2.1%) had the highest negative rate of net migration in Canada from 2004 to 2008. If a significant portion of a province's working-age population is leaving, then its unemployment rate will appear to be improved since unemployment is measured as the number of people looking for work relative to the total labour force. See the discussion on migration in Appendix B (p. 61) for more details.

Indicator 4: Average duration of unemployment (%), 2005–2009



Sources: Statistics Canada, 2010a; US Department of Labor, Bureau of Labor Statistics, 2010d; calculations by authors.

work 27 weeks or more, followed by Saskatchewan with 9.1%. Overall, Canadian jurisdictions performed better on the duration of unemployment than on unemployment rates, having six provinces ranked among the top 10. Nova Scotia narrowly missed the top 10, ranking 11th with 12.2% of the unemployed remaining out of work for 27 weeks or longer. Quebec ranked the lowest of all Canadian provinces (29th) with a rate of 17.6%.¹³

Michigan attained the dubious distinction of being last: 27.1% of its unemployed were out of work for 27 weeks or longer. Worse still for the United States, the bottom 30 jurisdictions were all US states. The bottom half of the rankings included 13 Southern states, seven Northeast states, seven Midwest states, and three Western states.

Indicator 5: Average GDP per worker

The ultimate goal of a well-functioning labour market is high and growing labour productivity,¹⁴ which in turn translates into higher wages and salaries for workers. The final indicator of labour market performance measures the average total value of goods and services (GDP) per worker over the five-year period from 2004 to 2008.¹⁵

Observations

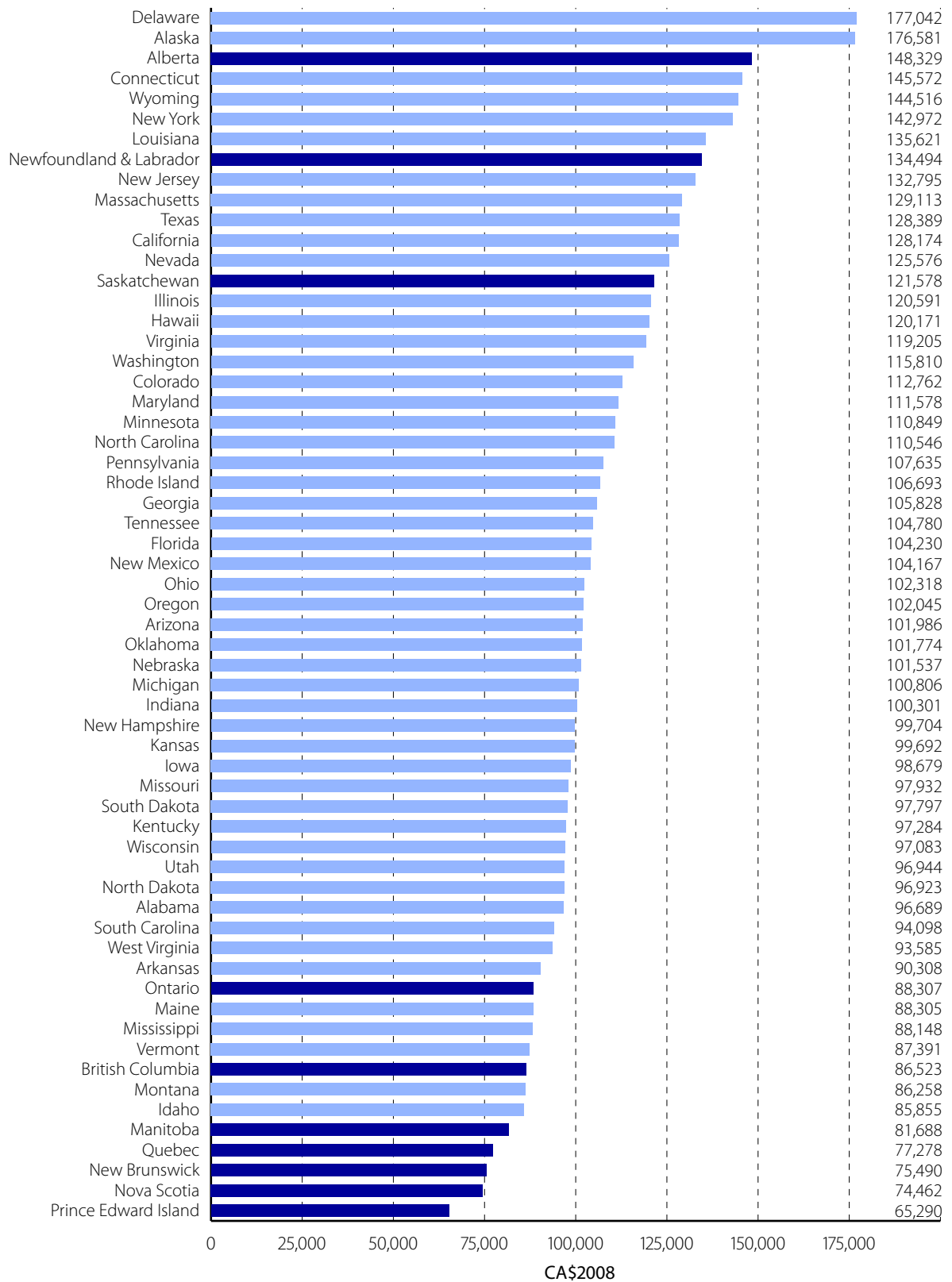
Delaware ranked first out of the 60 jurisdictions with an average GDP per worker totaling \$177,042. Alberta was the top-ranked Canadian province at third place, with an average GDP per worker of \$148,329. Newfoundland & Labrador was the only other Canadian province in the top 10, with an average GDP per worker of \$134,494. The Northeastern US states performed well on this indicator: four states (Connecticut, New York, New

13 Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland & Labrador have the one of the highest unemployment rates (occupying four of the bottom five spots) yet periods of unemployment in those jurisdictions are of relatively short duration. This could be explained by the presence of seasonal workers, such as those in the fishing industry, who are unemployed for a significant portion of the year but not more than the 27-week threshold of this measure. Needless to say, more detailed analysis is required to support this hypothesis.

14 A more accurate measure of labour productivity is GDP divided by the total number of hours worked by all employees and self-employed individuals in each jurisdiction. Unfortunately, the number of hours worked is not currently available by US state (but is available by Canadian province). Research shows that on a national level, Canada trails the United States on this measure (see Veldhuis and Clemens, 2006).

15 Labour productivity is the only one of the five labour-market performance indicators for which an average from 2004 to 2008 was used. This is due to the lack of provincial and state GDP data for 2009.

Indicator 5: Average GDP per worker (CA\$ 2008), 2004–2008



Sources: Statistics Canada, 2010b; 2007a; US Department of Commerce, Bureau of Economic Analysis, 2010a; US Department of Labor, Bureau of Labor Statistics, 2010c; calculations by authors.

Jersey, and Massachusetts) ranked in the top 10. The bottom half of the rankings consisted largely of Midwest and Southern states.

Prince Edward Island ranked last among the 60 jurisdictions with a GDP per worker of \$65,290, less than half that of top-ranked province Alberta and top-ranked jurisdiction, Delaware. Troubling for Canada overall, six of the bottom 10 jurisdictions were Canadian provinces: British Columbia, Manitoba, Quebec, New Brunswick, Nova Scotia, and Prince Edward Island. Saskatchewan ranked 14th and Ontario, 49th. Overall, US states outperformed Canadian provinces in terms of GDP per worker.

Labour market characteristics and regulation

The second section of this study identifies and measures key characteristics and regulations that affect labour market performance in each of the 60 jurisdictions: (1) average public-sector employment as a percentage of total employment; (2) average minimum wage as a percentage of per-capita GDP; (3) average unionized employment as a percentage of total employment; and (4) an empirical comparison of labour relations laws. There is substantial evidence, as we will show in this section, that each of these characteristics influences the performance of labour markets. It is not surprising, therefore, to find that jurisdictions with unfavourable labour market characteristics and regulations also have a labour market that performs poorly.

Characteristic 1: Public-sector employment

The split between private-sector and public-sector employment¹⁶ is an important aspect of labour market performance as the incentives, productivity, and performance of labour in the private sector are different from that in the public sector (Clemens et al., 2007; Clemens and Esmail, 2002a, 2002b; and Clemens et al., 2003). One key difference between the public and private sectors is their objectives. In a critical study published in the prestigious *Journal of Economic Literature*, professors Megginson and Netter (2001) found that a key difference between the two sectors is that governments are preoccupied with fulfilling social goals and objectives rather than pursuing economic or business objectives. In the public sector, political pressures often result in resources going to projects that are not in the best interest of most workers. In addition, Megginson and Netter found that government businesses tend to develop with less capital and thus are more labour-intensive than their counterparts in the private sector. Ehrlich et al. (1994) also found evidence that government entities tend to develop with less capital, which, in turn,

16 Public-sector employment is measured as the total number of government employees plus employees of government business enterprises (GBEs). Data for the US states excluding GBE employment are not available.

leads to lower productivity.¹⁷ Lower labour productivity is of particular concern as research shows that public-sector employees tend to be paid a wage premium relative to their private-sector counterparts (for further discussion, see Borjas, 2002; Bender, 2003; Edwards, 2006; and Treasury Board of Canada, 2007).

Another important difference—one that particularly affects firms' incentives and consumer prices—is that government entities tend to operate in a monopoly environment that precludes competition, whereas the businesses of the private sector normally operate in highly competitive markets. The monopolistic environment within which the public sector generally operates results in significantly diminished pressure to serve consumers, react to market demands, and offer competitive prices. In fact, the general characteristics of a monopoly are poor customer service, lower quality products, and higher prices.

Another difference between the two sectors is budget constraints, which Harvard economist Jonas Kornai (1992) identified as one of the major and unchangeable differences between private-sector business enterprises and government. Government's budget constraints are "soft," since it is impossible for the government to go bankrupt, whereas budget constraints in the private sector are "hard" since losses lead to a decrease in capital and ultimately to bankruptcy. The real risks of failure and bankruptcy force the private sector to react to consumers' demands and preferences and to allocate capital efficiently to maximize returns. The public sector, with a softer budget and no risk of bankruptcy, faces no such competitive pressure.

Research shows that a larger public sector leads to poorer outcomes in the labour market and, more broadly, to poorer economic performance. For example, Gylfason et al. (2001), who examined 34 countries from 1972 to 1992, found that investment (a key driver of productivity) and economic growth were inversely related to the size of the state-enterprise sector (measured by government employment as a share of total employment). A study by Yann Algan and his colleagues (2002) measured the impact of public-sector employment on unemployment in 17 OECD countries from 1960 to 2000. The authors found that, on average, the creation of 100 public-sector jobs may

17 Ehrlich et al. (1994) found that a shift from state to full private ownership can increase the long-term annual rate of total factor productivity (TFP) by 1.6% to 2.0% and reduce the rate of unit cost by 1.7% to 1.9%. (Total Factor Productivity refers to the aggregate efficiency with which people and capital are combined to produce output.) In addition, Jones and Mygind (2002) found that, in Estonia, private ownership is 13% to 22% more efficient than state ownership. Hernandez de Cos et al. (2004) found, using data for Spanish manufacturing firms from 1983 to 1996, that public ownership has a negative impact on efficiency and that competition has a positive impact on a firm's performance. Similarly, Boubakri et al. (2004) found that privatization increases productivity, efficiency, and output in former state-owned firms in Asia.

have eliminated about 150 private-sector jobs and increased by about 33 the number of unemployed workers. They also found evidence that public-sector employment decreased participation in the labour market.¹⁸ More recently, Feldmann (2006) examined the relationship between the size of the government more broadly and the unemployment rate for 19 industrial countries for the period 1985 to 2002. He found that an increase in the size of government leads to an increase in unemployment rate.

Characteristic 1 is a measure of the ratio between total employment in each province or state and public-sector employment, both directly in government as well as in government business enterprises. Note that this study uses two measures: the first excludes federal employees (including government business enterprises at the federal level) while the second includes them. The reason for the two measures is that provincial and state governments have little, if any, control over the location of federal employees but the presence of such employees, and thus of the larger public sector in the jurisdiction, will influence the performance of the labour market.

Observations

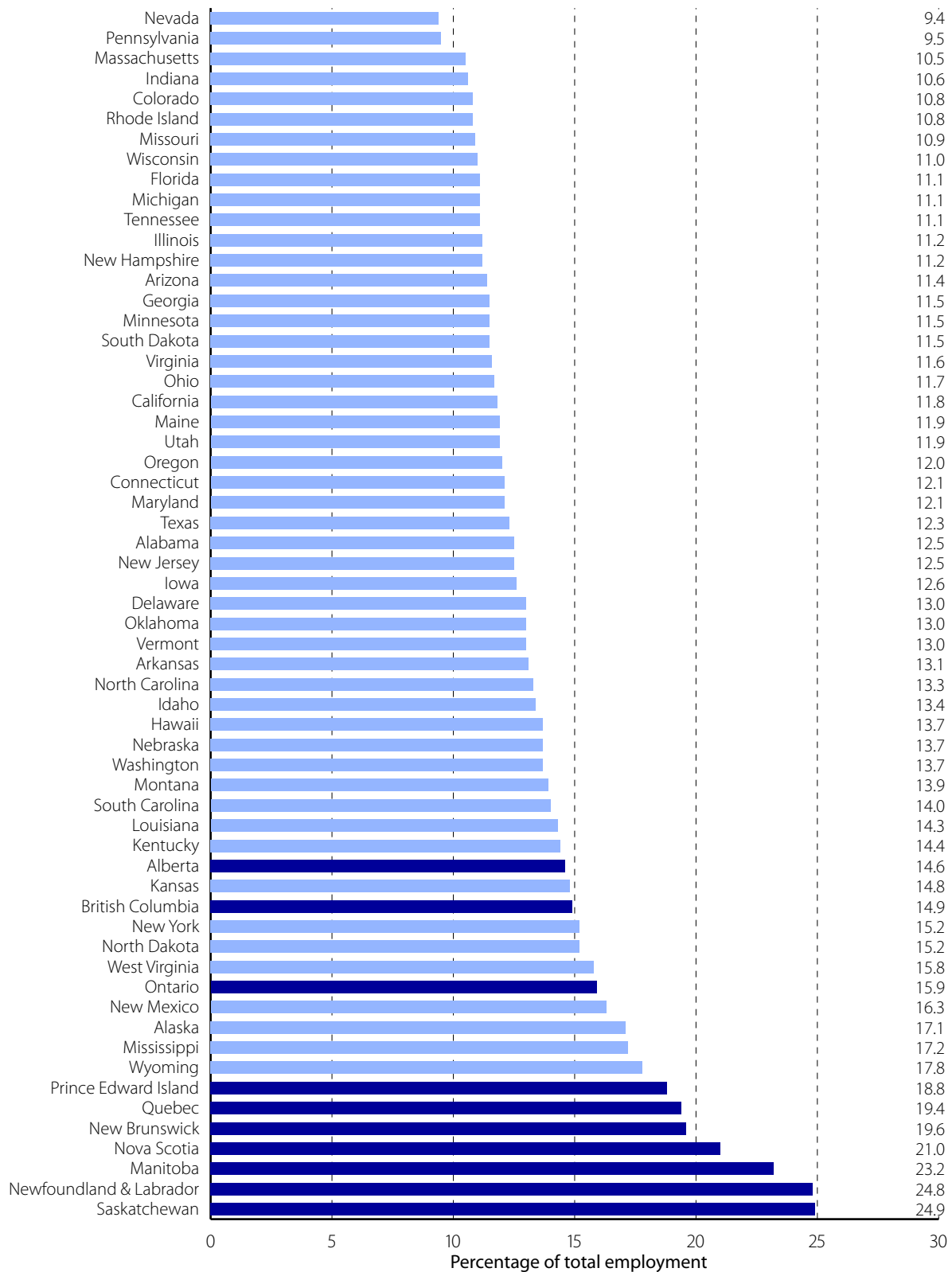
On the first measure, which excludes federal employees and counts only public-sector employment at the provincial/state level (characteristic 1a), Nevada tops the list of Canadian provinces and US states with the lowest percentage of its employment in the public sector (9.4%). Rounding out the top 11 rankings (three states were tied for 9th place) are three Northeastern states (Pennsylvania, Massachusetts, and Rhode Island), four Midwestern states (Indiana, Missouri, Wisconsin, and Michigan), two Southern states (Florida and Tennessee), and two Western states (Nevada and Colorado).

Alberta was the highest-ranked Canadian province: it ranked 43st with 14.6% of its total employment represented by the public sector. British Columbia followed Alberta, taking 45th place with 14.9% of its employment in the public sector. Saskatchewan occupied the last position, with public-sector employment representing 24.9% of its total employment, nearly triple the rate of top-ranked Nevada. Seven of the bottom 10 jurisdictions were Canadian provinces (Prince Edward Island, Quebec, New Brunswick, Nova Scotia, Manitoba, Newfoundland & Labrador, and Saskatchewan). Ontario ranked 49th.

The inclusion of federal employees did not, generally, influence the rankings to any great extent, although there are some interesting changes when they are added (characteristic 1b). Nevada retained the top position with the lowest level of employment in the public sector (10.9%). There were

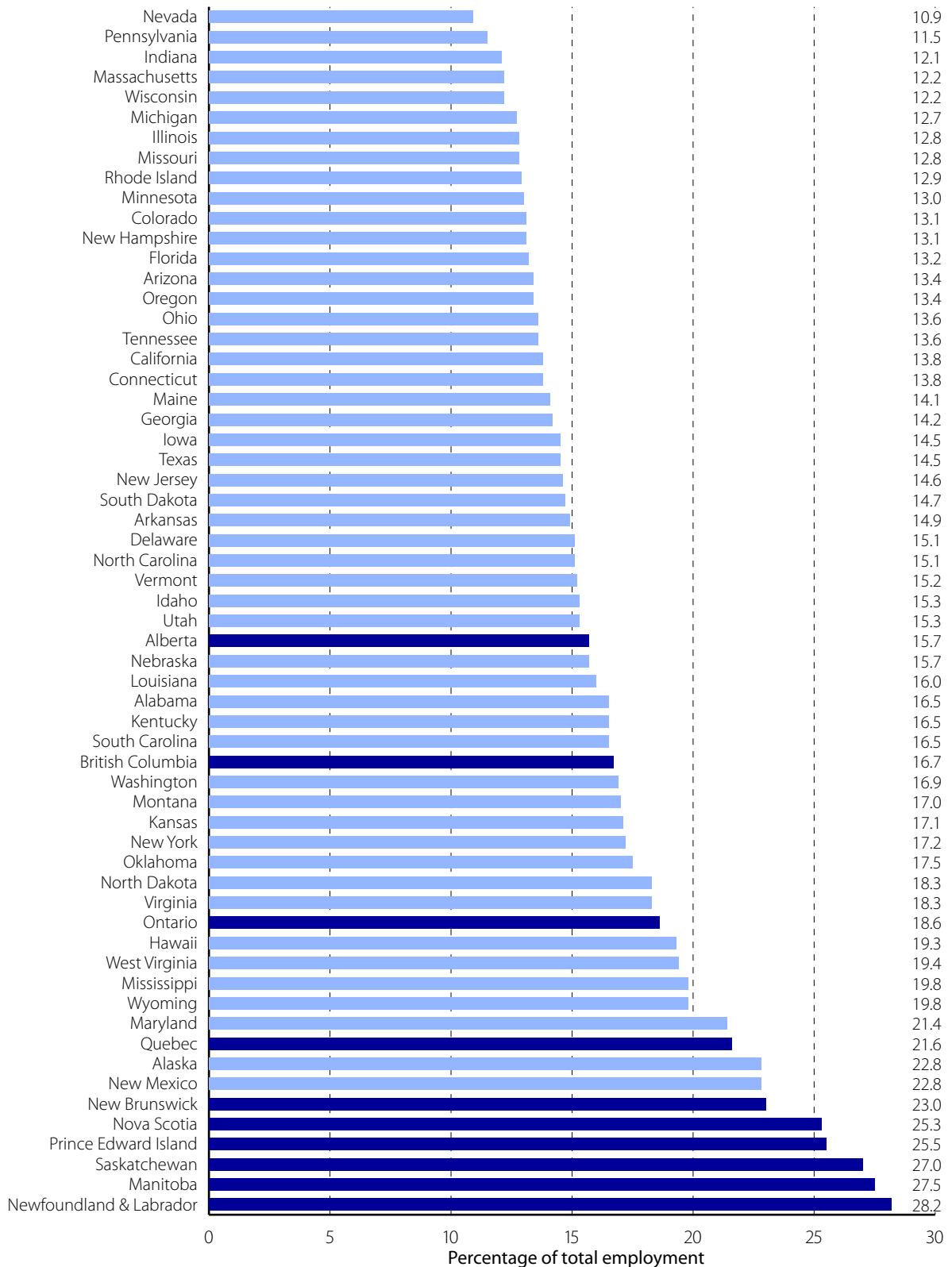
18 Demekas and Kontolemis (2000) concur. They found that Greece's dramatic increase in public-sector employment in the 1970s and 1980s was strongly associated with higher rates of unemployment. Hörner et al. (2007) found similar results for Europe.

Characteristic 1a: Average provincial/state and local government employment as a percentage of total employment, 2005–2009



Sources: Statistics Canada, 2010d; US Department of Labor, Bureau of Labor Statistics, 2010a; calculations by authors.

Characteristic 1b: Average federal, provincial/state, and local government employment as a percentage of total employment, 2005–2009



Sources: Statistics Canada, 2010d; US Department of Labor, Bureau of Labor Statistics, 2010a; calculations by authors.

only two changes to the list of jurisdictions in the top 11 and two changes to the list of jurisdictions in the bottom 10 rankings after the inclusion of federal employees, although the rankings for most jurisdictions changed slightly.

With the inclusion of federal employees, Alberta remained the top-ranked Canadian province but moved up to the 32nd position overall with 15.7% of its employment in the public sector. The second-ranked Canadian jurisdiction, British Columbia, moved up as well to 38th overall with 16.7% of its employment in the public sector. Seven Canadian provinces were again found among the bottom 10 (Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Saskatchewan, Manitoba, and Newfoundland & Labrador). Five Canadian provinces—Nova Scotia, Prince Edward Island, Saskatchewan, Manitoba, and Newfoundland & Labrador—had public sectors that constituted over one-quarter of their employment.

Characteristic 2: Minimum wages

Minimum-wage laws establish the lowest level of hourly pay that employers must legally pay workers. Minimum wages have been shown to reduce employment opportunities for young and unskilled workers by restricting the ability of employers and employees to negotiate mutually beneficial contracts. In particular, minimum-wage legislation hinders low-skilled workers and new workforce entrants from negotiating for employment they might otherwise accept (Law, 1998; Palda, 2000).¹⁹ A large body of empirical research documents the adverse effects of high and increasing minimum wages, which include a reduction in employment.²⁰ Neumark and Wascher (2007) reviewed over 100 studies covering 20 countries over the past 15 years and concluded that the vast majority of studies, especially the most credible, consistently show that increases in the minimum wage have negative employment effects, particularly for younger workers. Another study by Morley Gunderson (2005) reviewed 23 Canadian studies on the effects of the minimum wage and concluded that overall, the Canadian studies—especially the most credible and recent—found that a 10% increase in the minimum wage leads to a 3% to 6% reduction in the employment of teens.²¹

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- 19 Many jurisdictions differentiate between minimum wages for younger, unskilled workers and minimum wages for older, more skilled workers.
 - 20 For a review of this research and other economic effects of minimum wages, see Godin and Veldhuis, 2009.
 - 21 Teens generally refer to workers aged 15 to 19. However, numerous studies have also found a similar relationship exists with workers aged 20 to 24 and, more broadly, those aged 15 to 24 (Godin and Veldhuis, 2009).

Increases in the minimum wage have other unpleasant economic impacts. Research shows that when minimum wages rise, employers offer fewer fringe benefits and reduce on-the-job training (Neumark and Wascher, 2001; Baker, 2005).²² In other words, an increase in income from higher minimum wages may be offset by reductions in other types of incomes such as benefits and training. Decreasing on-the-job training is a serious problem given that research shows that this type of skills development is an important driver for young and low-skilled workers making the transition to higher wages in the future (Even and Macpherson, 2003).

Furthermore, high minimum wages are associated with higher school-dropout rates, as the increase in the minimum wage encourages teenage workers to leave school in search of employment. For example, Chaplin et al. (2003) concluded that higher minimum wages were related to reduced school enrollment among teenagers, particularly among students making the transition from grade nine to grade 10.²³ A fact about minimum wages that is often overlooked is the age of minimum-wage workers. Data from Statistics Canada (2009) reveal that in 2008, 63.4% of all minimum-wage workers in Canada were between the age of 15 and 24, and 87.3% of them lived at home with family.

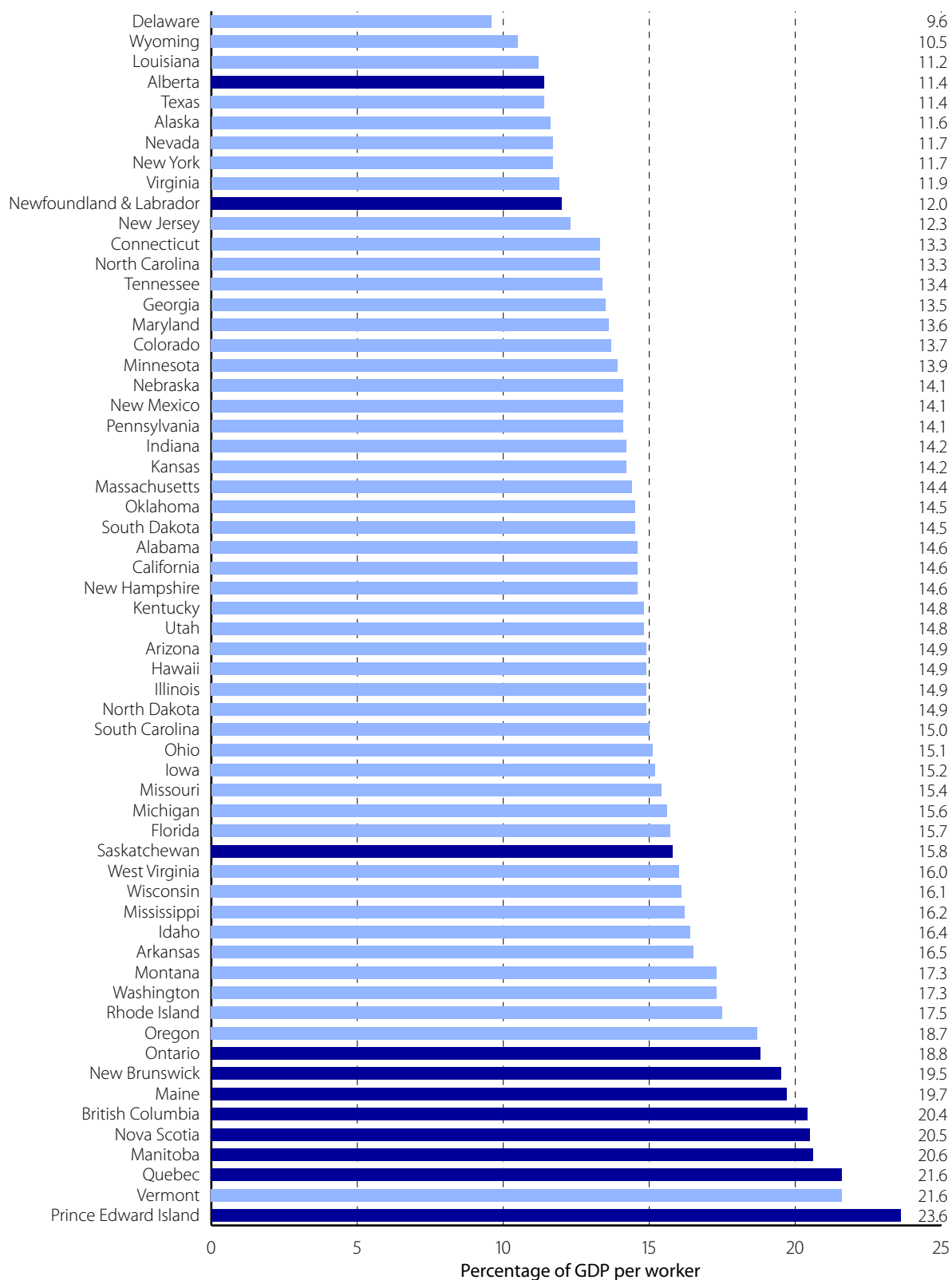
Another important factor is that, for the vast majority of workers, earning the minimum wage is a temporary experience. Most minimum-wage earners are new entrants to the labour force who are trying to gain skills in order to earn higher wages or are working while attending school. Research shows there are very few workers who remain in minimum-wage jobs year over year. For example, Even and Macpherson (2003) examined the mobility of minimum-wage earners in the United States from 1979 to 1999 and found that almost one-half (47.2%) of minimum-wage workers reported earning more than the minimum wage after one year.²⁴

In the end, minimum wages do not appear to reduce poverty. For example, Sabia and Burkhauser (2010) investigate the widely held perception that increases in the minimum wage helped the working poor. They used US

22 Neumark and Wascher found that “for young workers in their early 20s, the estimated effects indicate elasticity of the incidence of formal training with respect to the minimum wage from about -1 to -2, implying sizable deleterious effects of minimum wages. Moreover, there is little or no evidence that minimum wages raise the amount of training obtained by workers” (2001: 591).

23 These findings are confirmed by a series of studies from Neumark and Wascher (1995a, 1995b, 1996, 2003) for the United States, and by Landon (1997) for Canada.

24 These findings are confirmed by Smith and Vavrichek (1992), Schiller (1994), and Long (1999). For example, Long (1999), examining minimum-wage workers in the US from 1991 to 1995, found that the majority (69.4%) of workers earning minimum wage earned more than the minimum wage after one year of work. After two years of work, 80.2% of these workers earned more than the minimum wage.

Characteristic 2: Average minimum wage as a percentage of GDP per worker, 2004–2008

Sources: Human Resources and Skills Development Canada, 2010b; Statistics Canada, 2010a, 2010b; US Dept't of Commerce, Bureau of Economic Analysis, 2010b; US Dept't of Labor, Employment Standards Administration, Wage and Hour Division, 2010; US Dept't of Labor, Bureau of Labor Statistics, 2010c; calculations by authors.

data from 2003 to 2007 during which 28 US states increased their minimum wages to a level above the federal minimum wage, which also increased during this period. The authors find that increases in state and federal minimum wages did not reduce the state poverty rates. In addition, they estimate that the proposed federal increase in the minimum wage from \$7.25 to \$9.50 per hour contained in Senate Bill 2514 would not decrease poverty since the majority of workers affected by the minimum wage increase are not poor, many poor workers earn more than the proposed minimum wage, and the proposed minimum wage will likely reduce employment opportunities for the working poor.

Average minimum wage as a percentage of GDP is obtained by calculating the annual income earned by someone working at the minimum wage as a ratio of GDP per worker (the average value of all goods and services produced per worker in a jurisdiction over a specific time period).²⁵ Since GDP per worker is a proxy for the average productivity in a jurisdiction, this ratio takes into account differences in the ability to pay wages across jurisdictions based on productivity. In other words, comparing minimum-wage income to the average income (GDP per worker) provides a relative measure of how high minimum wages are relative to other jurisdictions. As the minimum wage grows relative to productivity, the range of employment contracts that can be negotiated is reduced and economic performance is eroded.

Observations

Delaware ranks first: its minimum wage is 9.6% of average GDP per worker in the state. In other words, a citizen of Delaware earning the minimum wage could earn less than one-tenth of the average GDP per worker of the state. Wyoming ranks second, followed by Louisiana with a minimum wage equivalent to 11.2% of the province's average GDP per worker. The remaining jurisdictions in the top 10 were all US states except Alberta and Newfoundland & Labrador.

Prince Edward Island held the last position, ranking 60th out of the 60 Canadian and American jurisdictions. Prince Edwards Island's minimum wage represented 23.6% of the province's average GDP per worker. Worse still for Canada, seven of the bottom 10 jurisdictions were Canadian: Ontario, New Brunswick, British Columbia, Nova Scotia, Manitoba, Quebec, and Prince Edward Island. Saskatchewan ranked 42nd.

25 The 2009 GDP data were not available for the Canadian provinces and the US states at the time of the writing and thus this indicator is assessed from the period 2004 to 2008.

Characteristic 3: Unionization

Another important structural element of labour markets is unionization. Unionization has been demonstrated to impede the flexibility of labour markets, a key factor necessary for good labour market performance.²⁶ For example, a study by Elisabetta Magnani and David Prentice (2006) in the *Industrial and Labour Relations Review* found that unionization impedes labour market flexibility by restricting the ability of employers to adjust inputs of their business to changing market conditions.

Unionization has also been shown to affect a number of economic variables, including productivity. A large body of empirical research has concluded that unionized firms show lower productivity growth, employment creation, and profitability than non-unionized firms (Becker and Olsen, 1989; Maki and Meredith, 1986; Long, 1993; Addison and Wagner, 1993; Laporta and Jenkins, 1996; Hirsch, 1997; Maki, 1983; Freeman and Kleiner, 1999; Vedder and Gallaway, 2002a; Menezes-Filho, 1997).²⁷ For example, Hirsch (1997), in a major review of research on unionization, noted that the evidence indicates that unions tend to increase wages, reduce profitability, and reduce investment in physical capital and research and development; they also reduce the growth of employment. Hirsch described the wage premium as a tax on capital, which effectively lowers the net rate of return on investment. In a recent study, Lee and Mas (2009) estimated the impact of new unionization (i.e., election wins) on firms' equity value using US data from 1961 to 1999. They found that the effect of unionization (i.e., election wins) on stock market returns is about negative 10 percent or about \$40,500 per unionized worker.

There is a large body of research on the effect of unions on investment, a critical factor in increasing labour productivity and, ultimately, workers' wages. For example, Betts et al. (2001), using data from 1968 to 1986 for 13 Canadian industries, found that unionization rates had an adverse impact on research and development spending: when an industry moves from being less (25th percentile) to more (75th percentile) unionized, research and development spending is predicted to fall by about 40%. Connolly et al. (1986) also found that unionization reduces returns and thus spending on research and development. Similarly, Metcalf (2003) compared the productivity of unionized labour in the United States, Canada, United Kingdom, Japan, Germany, and Australia. He found that unionization reduced investment by one fifth compared to the investment rate in a non-union workplace in North America and parts of Europe. More recently, Fang and Heywood (2006) examined the impact unionization has on

26 As defined in the study's introduction, labour market flexibility refers to the ease with which workers and employers alike are able to adjust their efforts given changes in the marketplace.

27 In fact, some studies have concluded that unionization negatively affects productivity (Clark, 1984; Hirsch, 1991a).

plant closure in Canada from 1999 to 2001. They found that higher plant level unionization rates led to higher probability of a plant closing over this period.

In a large review of the scholarly research, Aidt and Tzannatos (2002) corroborated the findings of other studies. The authors concluded that union members and other workers covered by collective agreements receive, on average, wage premiums over their non-unionized counterparts in developed and developing countries. Furthermore, the researchers noted that net profits, investment rates (physical capital), and spending on research and development tend to be lower in unionized than in non-unionized firms, even though unionized firms tend to adopt new technology as fast as non-unionized firms.

Empirical research also indicates that high rates of unionization are associated with poorer performance of the labour market (Rama, 2003). Krol and Svorny (2007) examined the relationship between labour market performance and unionization in the five years after the 1982 and 1991 recessions in the United States. The authors found that the US states with high levels of unionization had lower levels of employment growth after recessions. They also found that the US Right-to-Work states—those that permit workers to choose whether or not they will join and financially support a union—recovered faster.²⁸ Similarly, Vedder and Gallaway (2002a) found that unemployment and the ratio of employment to population are adversely affected by unions. They also noted that, while it is true that some individual workers have benefited from unions, the aggregate impact of unions is strongly negative. It is clear that unions generally reduce labour market flexibility and productivity, and adversely affect the overall efficiency of labour markets. It is critical, therefore, to measure the extent of unionization, in both the public and private sectors.

Characteristic 3 of labour markets, unionization, measures the percentage of total employment represented by unionized employment, on average, between 2005 and 2009.²⁹

Observations

North Carolina has the lowest ratio of unionized workers to total employment: 4.3% of its employed workers are unionized. South Carolina ranks a close second, with 4.9% of its employment unionized. Southern US states

28 Right-to-Work (RTW) refers to labour legislation that essentially precludes mandatory union membership and mandatory payment of union dues. There are 22 RTW states: Alabama, Arizona, Arkansas, Florida, Georgia, Idaho, Iowa, Kansas, Louisiana, Mississippi, Nebraska, Nevada, North Carolina, North Dakota, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, and Wyoming. RTW states are generally located in the South, the Midwest, and the Southwest excluding California. There are no RTW states in the Northeast or in the industrial belt surrounding Michigan.

29 Note that total employment is measured as the sum of private and public employment but that self-employment is excluded.

(North Carolina, South Carolina, Virginia, Georgia, Texas, Arkansas, Louisiana, Tennessee, and Florida) occupied nine of the top 12 rankings (three states are tied for the 10th place). The Right-to-Work states were at the top of the rankings, occupying all 12 of the top 10 positions and 19 of the top 20 rankings.

The top-ranked Canadian province was Alberta—trailing at 48th with 24.2% of its employment unionized. Alberta performed better than only two US states: Hawaii and New York. Canadian provinces occupied the bottom nine positions. Quebec was in last place: 39.9% of its employment is unionized. Part of the explanation for the Canadian provinces' poor showing is contained in the first labour-market characteristic: the percentage of workers employed by the public sector. There is a much stronger inclination toward unionization in the public sector than there is in the private sector.³⁰ For example, in 2009, 74.5% of the public sector was unionized in Canada but only 17.8% of the private sector (Statistics Canada, 2010a).³¹ In contrast, in the United States, 41.1% of the public sector was unionized but only 8.0% of the private sector (Hirsch and Macpherson, 2010). The fact that Canada generally has a proportionally larger public sector than the United States is, therefore, an important explanation of the higher rates of unionization observed in Canada.³²

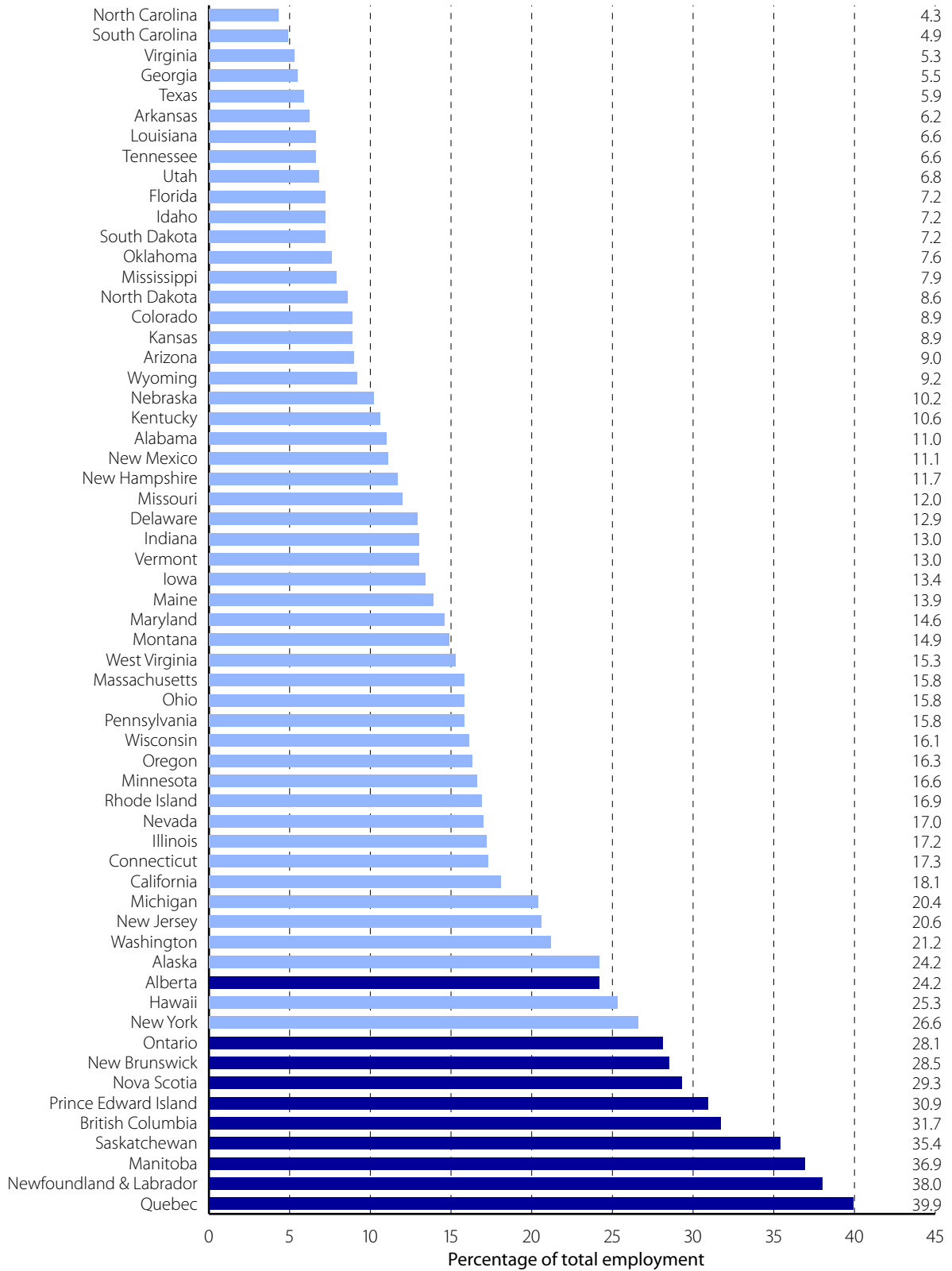
Another important explanation of the difference between Canadian and American unionization rates is that closed-shop unions are allowed in all Canadian provinces but in none of the US states. Closed-shop unions are created by collective bargaining agreements that require workers to join a union or bargaining agent and pay full union dues as a condition of employment (see Characteristic 4 for further information). In other words, individuals wishing to work at a unionized company in Canadian provinces can be required to join the union and pay full union dues. A number of studies have suggested that the differences in the choice afforded workers in the two countries account for some of the observed differences in unionization (Clemens et al., 2005).

30 Public-sector unions tend to be structured with different rules and thus behave differently from their private-sector counterparts. For further information, see Christensen, 1980. Also, private-sector unions, particularly in the United States, have experienced a decline in the last 30 years; for a discussion of this decline and its impacts, see Hirsch, 2008.

31 Private-sector unionization ranged from a low of 9.0% in Prince Edward Island to a high of 26.1% in Quebec in 2009. For the same year, public-sector unionization ranged from a low of 69.5% in Alberta to 82.2% in Quebec.

32 Canada's overall unionization rate in 2009 was 31.4% compared to 13.6% in the United States. For the same year, public-sector employment as a percentage of total employment was 21.1% in Canada and 15.9% in the United States. See Clemens et al., 2005 for a discussion of the factors explaining the differences in unionization between the two countries.

Characteristic 3: Average unionized employment as a percentage of total employment, 2005–2009



Sources: Statistics Canada, 2010a; Hirsch and Macpherson, 2010; calculations by authors.

Characteristic 4: Labour relations laws

The final characteristic of labour markets is the extent to which labour relations laws create balance in the labour relations environment and, more broadly, enhance the flexibility of the labour market. This indicator is based on the Fraser Institute's larger study, *Labour Relations Laws in Canada and the United States: An Empirical Comparison (2009 Edition)* (Karabegović et al., 2009). This measure is intricately related to the previous measure, since the extent to which labour market flexibility is enhanced by labour relations laws is highly correlated with unionization levels.

Balance and flexibility in a labour market is crucial in providing an environment that encourages productive economic activity. Labour relations laws that are biased in favour of one group at the expense of another, or are overly prescriptive, inhibit the proper functioning of a labour market and thus reduce its performance. Empirical research indicates that rigid labour relations laws increase unemployment and reduce the participation rates of the young and elderly (see Bierhanzl and Gwartney, 1998; Bertola et al., 2002; Salvanes, 1997). Labour relations laws have also been shown to affect investment. For example, one study by Morris Kleiner and Hwikwon Ham (2002), using data from 20 OECD countries from 1985 to 1995 and all US states from 1990 to 1999, found that more prescriptive labour relations laws were associated with lower levels of foreign direct investment and slower economic growth for the US states.

Characteristic 4 evaluates labour relations laws in the private sector for the 10 Canadian provinces and 50 US states based on whether or not they encourage flexibility and choice by balancing the needs of employers and employees. Labour relations laws are grouped into three areas: organizing a union (certification and decertification), union security, and regulation of unionized firms. This section also presents the Index of Labour Relations Laws, a composite measure of labour relations laws for each Canadian province and US state. This overall index is based on the scores for each of the three areas of labour relations laws and provides a general assessment of a jurisdiction's approach to relations between workers and employers. It represents a measure of each jurisdiction's overall labour relations policy. Jurisdictions with labour relations laws that produce a more flexible labour market receive higher scores, while jurisdictions with more restrictive approaches receive lower scores. A score of 10 does not necessarily indicate an optimal set of labour relations laws, as it is a relative measure of the degree to which labour relations legislation enhances flexibility across the 10 Canadian provinces and 50 US states.

Jurisdictional authority over the regulation of labour relations among employers, unions, and employees in Canada differs greatly from that in the United States. In Canada, regulation and enforcement of labour relations are largely decentralized; each province maintains its own set of labour relations laws. In the United States, on the other hand, private-sector labour

Characteristic 4: Index of Labour Relations Laws (scores out of 10; ranks out of 60)

	Index of Labour Relations Laws		Organizing a Union		Union Security		Regulation of Unionized Firms	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Alberta	5.3	51	10.0	1	0	51	6.0	51
British Columbia	2.8	56	6.3	53	0	51	2.0	55
Manitoba	1.8	59	3.3	60	0	51	2.0	55
New Brunswick	2.8	56	6.3	53	0	51	2.0	55
Newfoundland & Labrador	2.8	56	6.3	53	0	51	2.0	55
Nova Scotia	3.3	53	5.8	57	0	51	4.0	52
Ontario	3.4	52	6.3	53	0	51	4.0	52
Prince Edward Island	3.0	55	5.0	58	0	51	4.0	52
Quebec	1.3	60	3.8	59	0	51	0.0	60
Saskatchewan	3.2	54	7.5	2 ^c	0	51	2.0	55
US Right-to-Work States ^a	9.2	1 ^b	7.5	2 ^c	10	1 ^b	10.0	1 ^b
US Non Right-to-Work States	7.5	23 ^d	7.5	2 ^c	5	23 ^d	10.0	1 ^b

^a Right-to-Work States include Alabama, Arizona, Arkansas, Florida, Georgia, Idaho, Iowa, Kansas, Louisiana, Mississippi, Nebraska, Nevada, North Carolina, North Dakota, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, and Wyoming (National Institute for Labor Relations Research, 2005; <http://www.nilrr.org/>).

^b Tied for first place. ^c Tied for second place. ^d Tied for 23rd place.

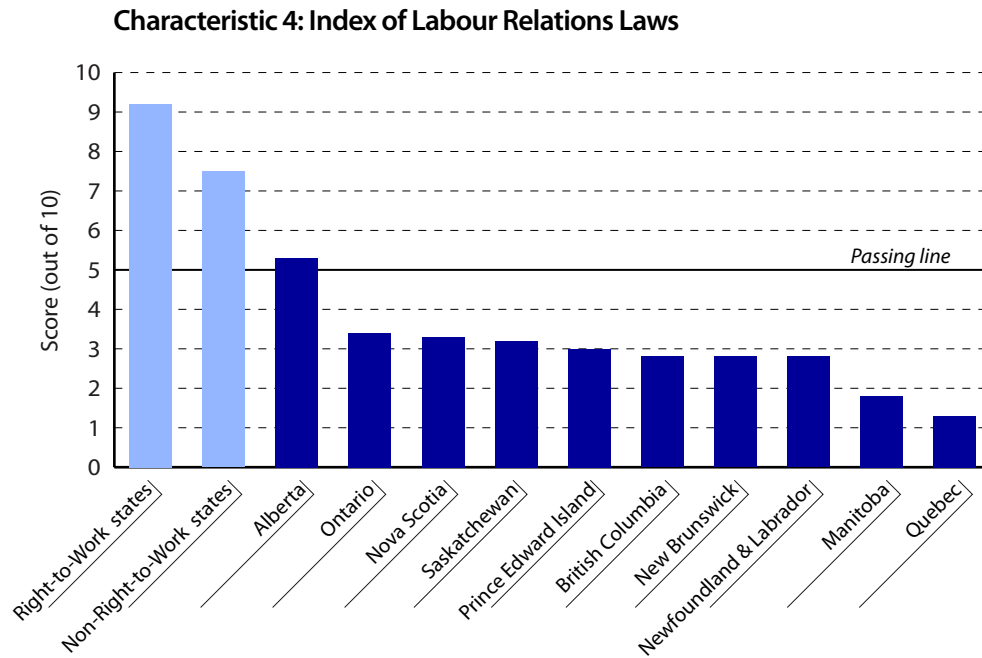
Source: Karabegović et al., 2009.

relations laws are almost entirely centralized, regulated through federal law and enforced under federal authority by the National Labor Relations Board (NLRB). Since US labour relations laws are largely federal, US states differ in their regulation of labour relations only in having or not having worker-choice laws, otherwise known as Right-to-Work laws.

The 22 Right-to-Work states have the highest score (9.2 out of 10) among the 10 Canadian provinces and 50 US states, indicating that they create a labour relations environment with the most flexibility among all the jurisdictions. The remaining 28 US states tied for the 23rd position with an overall score of 7.5. The Canadian provinces occupied the bottom ten positions (51st to 60th). The only province with a passing score (higher than five) was Alberta, which had an overall score of 5.3. Quebec (with a score of 1.3) has the most rigid set of labour relations laws of any jurisdiction in Canada and the United States, followed closely by Manitoba (1.8).

Below are a brief description and an overview of the results for each of the areas covered by the Index of Labour Relations Laws.³³

33 For a thorough analysis of the results for each of the areas covered by the Index of Labour Relations Laws, see Karabegović et al., 2009.



Source: Karabegović et al., 2009.

1 Certification and decertification

Certification and decertification refer to the processes through which a union acquires and loses its power to be the exclusive bargaining agent for a group of employees. To determine how well a jurisdiction balanced the needs of workers and employers, the authors of *Labour Relations Laws in Canada and the United States* examined a number of aspects of certification and decertification, including the use of mandatory secret ballot elections, balanced voting thresholds, and remedial certification (table 2a).

2 Union security

Union security refers to regulations governing union membership and the payment of union dues by workers covered by a union agreement: whether or not provisions regarding mandatory union membership and dues payment can be included in a collective agreement. These provisions range from restrictive, where every worker must be a union member and pay full dues as a condition of employment, to flexible, where employees have the choice to become a union member or not and do not have to pay union dues.

The results for this measure of labour relations laws indicate that there are three distinct groups of jurisdictions (table 2b). The first group includes American Right-to-Work states, in which workers are permitted to choose whether or not to join a union and pay union dues. The

Table 2a: Areas covered by the Index of Labour Relations Laws—Certification/Decertification

	Is vote by secret ballot required for certification?	Is vote by secret ballot required for decertification?	Is remedial certification allowed?	Certification/Decertification differential (percentage points)	Can Labour Relations Board force binding arbitration on the two parties?	Can Labour Relations Board impose the terms & conditions of a first agreement directly?
British Columbia	Yes	Yes	Yes	0	Yes	No
Alberta	Yes	Yes	No	0	No	No
Saskatchewan	Yes	Yes	No	0	Yes	Yes
Manitoba	No	Yes	Yes	10	No	Yes
Ontario	Yes	Yes	Yes	0	Yes	No
Quebec	No	No	No	15	Yes	No
New Brunswick	No	Yes	Yes	0	No	No
Nova Scotia	Yes	Yes	Yes	10	No	No
Prince Edward Island	No	No	Yes	0	No	No
Newfoundland & Labrador	Yes	Yes	Yes	0	No	Yes
Right-to-Work States	Yes	Yes	Yes	0	No	No
Non Right-to-Work States	Yes	Yes	Yes	0	No	No

Source: Karabegović et al., 2009.

Table 2b: Areas covered by the Index of Labour Relations Laws—Union security

	Is mandatory union membership prohibited?	Are mandatory union dues allowed?
British Columbia	No	Yes
Alberta	No	Yes
Saskatchewan	No	Yes
Manitoba	No	Yes
Ontario	No	Yes
Quebec	No	Yes
New Brunswick	No	Yes
Nova Scotia	No	Yes
Prince Edward Island	No	Yes
Newfoundland & Labrador	No	Yes
Right-to-Work States	Yes	No
Non Right-to-Work States	Yes	Yes

Source: Karabegović et al., 2009.

second group consists of American states without Right-to-Work legislation. Workers in these states are permitted to choose whether or not to join a union but must remit at least a portion of the union dues to cover costs associated with negotiating and maintaining the collective agreement. The final group, the one that scores poorly on this measure, are the Canadian provinces. All 10 Canadian provinces, in one way or another, permit clauses in collective agreements that make union membership mandatory and require payment of dues in full.

3 Regulation of unionized firms

The regulation of unionized firms examines components of labour relations laws that come into effect once a firm is unionized; these include successor rights, provisions for technological changes, arbitration of disputes, replacement workers, and third-party picketing (table 2c).

Successor rights

Provisions governing successor rights determine whether and how collective bargaining agreements survive the transfer, by sale, consolidation, or other means, of a business from one employer (owner) to another. Successor rights are important to investment because they may deter potential investors from purchasing a business if an existing collective agreement (which they had no part in negotiating) prevents them from reorganizing the business to improve its performance. Stringent successor laws will impede the reorganization of a business or portion of a business that is struggling and the reallocation of its capital. Consequently, workers will not be provided with capital to improve their productivity and business performance will continue to suffer.

Technological change provisions

Provisions in labour relations laws that govern technological change require that employers give notice of technological investment and change to the union (and in some Canadian provinces to the minister of labour). Such provisions are barriers to technological change and could have serious adverse effects on productivity.

Arbitration of disputes

An important component of labour market flexibility is how disputes about a collective agreement, its meaning, application, and alleged violations are resolved when both parties cannot negotiate a solution or no longer wish to do so. Laws that force parties into immediate binding arbitration, without allowing voluntary efforts such as mediation or conciliation, may not only impose costs on both parties (for the arbitrator's fee and time from work) but may also create hostility between management and the union.

Table 2c: Areas covered by the Index of Labour Relations Laws—Regulation of Unionized Firms

	Successor Rights: Is the existing collective agreement binding?	Is mandatory notice required for introduction of technological change?	Advanced notice of technological change	Must every collective bargaining agreement include a mechanism for the final and binding settlement of a grievance (i.e. arbitration)?	Are temporary replacement workers allowed?	Is third-party picketing allowed?
British Columbia	Yes	Yes	60 days	Yes	No	No
Alberta	Yes	No	n/a	Yes	Yes	No
Saskatchewan	Yes	Yes	90 days	Yes	Yes	Yes
Manitoba	Yes	Yes	90 days	Yes	Yes	Yes
Ontario	Yes	No	n/a	Yes	Yes	Yes
Quebec	Yes	Yes	not specified	Yes	No	Yes
New Brunswick	Yes	Yes	not specified	Yes	Yes	Yes
Nova Scotia	Yes	No	n/a	Yes	Yes	Yes
Prince Edward Island	Yes	No	n/a	Yes	Yes	Yes
Newfoundland & Labrador	Yes	No	n/a	Yes	No	Yes
Right-to-Work States	No	No	n/a	No	Yes	No
Non Right-to-Work States	No	No	n/a	No	Yes	No

Source: Karabegović et al., 2009.

Replacement workers

In the event of a legal strike or lockout, an employer may wish to hire replacement workers. Employers can then continue partial business operations, maintain market share, and secure investor confidence while addressing reasons for the strike.

Third-party picketing

Third-party (or second-site) picketing refers to the ability of unions to picket and, therefore, disrupt the operations of enterprises not covered by the collective agreement.

Conclusion

Canadian provinces generally lag behind their US counterparts in the level of flexibility afforded to workers through labour relations laws. Such flexibility has been proven to provide great benefits to citizens not just in the United States but also around the world. Canadian provinces would be well advised to pursue balanced and less prescriptive labour laws in order to promote greater labour market flexibility.

Other areas of concern

In addition to labour relations laws, all of the Canadian provinces and US states have a number of other labour regulations including employment standards, occupational licensing, workers' compensation, and many others. Research shows these also have an impact on the flexibility of the labour market.³⁴ Below are just a few Canadian examples of other aspects of labour regulation that decrease the flexibility and, thus, the performance of labour market. Unfortunately, there is currently very little empirical measurement of these factors, which prevents sound comparisons between Canada and the United States.

1 Employment standards acts

The various employment standards acts of the provincial governments are another component of labour law. These acts cover areas such as mandatory overtime pay and exemptions from minimum wages. The following summarizes two of the core features of provincial employment labour standards laws and codes.

Overtime requirements

All 10 Canadian provinces have some measure in their employment standards acts that requires overtime pay. The four western provinces (British Columbia, Alberta, Saskatchewan, and Manitoba) have requirements for overtime pay based on both the number of hours worked within a day as well as within a week. The remaining six provinces prescribe mandatory overtime payments based on a certain number of hours worked in a week.

The provinces of British Columbia, Saskatchewan, Manitoba, Quebec, and Newfoundland & Labrador have the lowest weekly threshold for the number of hours worked before an employee must receive overtime pay: 40 hours. British Columbia imposes, in addition, a tiered system of overtime pay: an employee who works more than eight hours a day is to earn 1.5 times the normal pay for the extra hours; an employee who works more than 12 hours a day must earn twice the regular pay for that extra time. Nova Scotia and Prince Edward Island have the highest number of hours per week (48) as a threshold for overtime pay.

Minimum wage exemptions

Another important aspect of the various provincial employment standards acts is the minimum wage exemptions they provide. Several Canadian provinces, such as Saskatchewan, New Brunswick, and Newfoundland & Labrador,

34 See Jolls (2007) for a discussion of the theory and a review of empirical research on overtime requirements and other labour standards.

offer few or no exemptions from the minimum wage for certain types of employment. Alberta and Nova Scotia, on the other hand, provide no fewer than nine job-classification exemptions, including those for workers such as farm and ranch employees, commissioned salespeople, students, apprentices and interns, educational or recreational camp employees, extras in film production, and those working on fishing boats. Ontario, Quebec, and Manitoba include a number of broad job-category exemptions. Interestingly, British Columbia's *Employment Standards Act* includes one of the broadest exemptions: inexperienced employees.

2 Occupational licensing

Regulation of occupational licensing affects labour market performance by potentially impeding worker mobility.³⁵ Occupational licensing refers to the entry requirements needed to hold job titles or to practice in such professions as medicine, law, accounting, and engineering. Occupational licensing regulations extend to numerous professional occupations and trades such as millwrights, pipe-fitters, and welders. The key to labour market flexibility is to ensure occupational licensing does not act as a barrier to labour mobility. When those who are in professional occupations or trades in one jurisdiction are easily recognized as qualified in other jurisdictions, this increases the ability of workers to find jobs that provide them with the greatest return by allowing them to work interprovincially. It also allows employers to search for qualified people from a larger pool of workers.

While there has been some movement towards mutual recognition of trades and professional occupations across the provinces in recent decades, there are still barriers to labour mobility. In 1995, the Canada-wide Agreement on Internal Trade (AIT) attempted to eliminate barriers to labour mobility but without much success (Knox and Karabegović, 2009).³⁶ However, recently, there have been two major improvements in labour mobility across Canada. The first is the Trade, Investment, and Labour Mobility Agreement (TILMA) between British Columbia and Alberta, which came into effect in 2009. The overarching goal of the TILMA is to create a seamless economic region covering the two provinces by eliminating barriers to trade, investment, and labour mobility. The TILMA will likely increase the mobility of workers in Alberta and British Columbia and could help initiate strong labour market performance in the years to come.

The second major advance is a recent agreement signed by the 13 Canadian provincial and territorial premiers on labour mobility. In July 2008,

35 Pashigian found that “occupational licensing has had a quantitatively large effect in reducing the interstate mobility of professionals” (1979: 24).

36 Press releases and details of the agreement can be found at the web site of the Council of the Federation, <http://www.councilofthefederation.ca/>, as of July 23, 2008.

the premiers agreed on mutual recognition of occupational licenses across all provinces. This means that anyone who is recognized as qualified for an occupation by a regulatory authority in one province will be recognized as qualified in the rest of Canada.³⁷ The agreement is without doubt a step in the right direction. However, as Knox (2010) points out, there are still some issues that need to be addressed by the provincial and territorial governments in order for this agreement to work effectively.

37 There are two standards associated with occupations: (a) the occupational standard that defines the occupation, and (b) the qualification or entry standards that establish the education, training, and experience that is necessary to be qualified for an occupation. Mutual recognition allows the entry standards to be different across Canadian jurisdictions as long as they produce the necessary competencies. On the other hand, occupational standards should be substantially similar across Canada; otherwise, they will result in effectively different occupations. The Canadian governments have agreed to reconcile differences in occupational standards in cases where there are significant differences. As for trades, the Red Seal program is the primary vehicle through which regulated trades are mutually recognized (Human Resources and Skills Development Canada, 2010a, 2010c; Industry Canada, 2010).

Appendix A

Methodology

Computing the Index of Labour Market Performance

The Index of Labour Market Performance assesses the performance of the 10 provincial and 50 US state labour markets across five indicators:

- 1 average total employment growth (2005–2009)
- 2 average private-sector employment growth (2005–2009)
- 3 average unemployment rates (2005–2009)
- 4 average duration of unemployment (2005–2009)
- 5 average productivity (2004–2008).³⁸

Each indicator is standardized so that the lowest possible score is zero and the highest possible score is 10. The scores of the five indicators are then averaged, with all five indicators given equal weighting, to obtain an overall score from ranging from zero to 10. The jurisdictions are then ranked according to their final score.

Depending on whether higher values are indicative of better or worse labour market performance, alternative formulas are used to transform the five indicators to a zero-to-10 scale.

When higher values are indicative of *better* labour market performance, the formula used to derive the zero-to-10 ratings is:

$$(V_i - V_{\min}) / (V_{\max} - V_{\min}) \times 10.$$

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 10 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-10 ratings is:

$$(V_{\max} - V_i) / (V_{\max} - V_{\min}) \times 10.$$

38 The GDP data for US states and the Canadian provinces are not available for 2009 at this time and thus the data for the period 2004 to 2008 had to be used.

Index of Labour Relations Laws

For an explanation of how the Index of Labour Relations Laws is computed, see Karabegović et al., 2009.

US employment calculations

Official data for public employment and private employment are not available for the US states for the year 2006 and 2007; data for the Canadian provinces are available up to and including 2009. To provide data that could be compared among all jurisdictions, estimates were made for the US states for 2006 and 2007. The five-year average growth rate of private employment between 2001 and 2005 was used to generate the 2006 and 2007 estimates.

Appendix B

Other important factors

This appendix presents information on two indicators of labour market performance that are not included in the Index of Labour Market Performance: (1) migration and (2) time lost due to labour disputes. Data for the Canadian provinces and US states on time lost due to labour disputes are not comparable because the US data does not include enough detail to draw accurate conclusions. Nevertheless, migration and time lost due to labour disputes are important indicators of labour market performance.

1 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. A key explanation for these flows is whether or not labour opportunities exist in the worker's home province or state. For example, using data from 1982 to 1995, Finnie found that interprovincial migration is generally "the route to better labor 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 come 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 relative to the number of people migrating into the same jurisdiction. The figures throughout this section refer exclusively to domestic migration; foreign migration is excluded.

Table B-1 contains migration data for the Canadian provinces from 2004/05 to 2008/09. Alberta recorded both the highest positive number of net migrants and the highest percentage of net migration from 2004/05 to 2008/09: 152,350 people or 4.1% of Alberta's population. Alberta was well ahead of the second-ranked province—and only other province to have positive net migration during the time period considered—British Columbia, which had a net inflow of 51,335 people, 1.2% of its population. Ontario

Table B1: Net interprovincial migration by province, 2004/05–2008/09

	2004/05	2005/06	2006/07	2007/08	2008/09	Total	Percentage of Population, 2009
Alberta	34,423	45,795	33,809	15,317	23,006	152,350	4.1%
British Columbia	8,214	8,800	15,005	14,643	4,673	51,335	1.2%
Manitoba	-7,227	-7,881	-5,500	-3,703	-1,541	-25,852	-2.1%
New Brunswick	-2,074	-3,487	-2,632	-908	-537	-9,638	-1.3%
Newfoundland & Labrador	-3,710	-4,342	-4,067	-528	2,332	-10,315	-2.0%
Nova Scotia	-3,041	-3,024	-4,126	-1,794	-1,255	-13,240	-1.4%
Ontario	-11,172	-17,501	-20,047	-14,750	-18,738	-82,208	-0.6%
Prince Edward Island	-139	-639	-849	-291	-559	-2,477	-1.8%
Quebec	-4,963	-9,411	-12,865	-11,682	-10,666	-49,587	-0.6%
Saskatchewan	-9,515	-7,083	1,549	4,171	4,108	-6,770	-0.7%

Notes: [1] Net interprovincial migration is defined as the difference between the number of incoming and outgoing migrants. [2] Annual period is from July 1 to June 30.

Sources: Statistics Canada, 2010c; calculations by authors.

(82,208 leaving) and Quebec (49,587 leaving) had the highest negative net migration. Manitoba (-2.1%) and Newfoundland & Labrador (-2.0%) had the highest negative net migration as a percentage of their populations. Also of note is the recent dramatic swing in net migration in Saskatchewan: there was significant migration out of the province in 2004/05 and 2005/06 but significant positive net migration from 2006/07 to 2008/09.

In Canada, the net movement of people among provinces seems to be positively associated with the results of the Index of Labour Market Performance. Alberta ranked the highest among the Canadian provinces in the Index of Labour Market Performance, with a score of 9.0 (out of 10). Saskatchewan (7.7) and British Columbia (6.6) ranked second and third among Canadian provinces. Newfoundland & Labrador and Manitoba, which had two of the highest rates of negative net migration, had scores of 4.2 and 6.5 on the Index of Labour Market Performance.

One interesting insight gained from combining the information in table B-1 and the results of the indicators of labour market performance is that a high rate of net migration out of a province can actually improve a jurisdiction's score and ranking in the Index of Labour Market Performance. For example, Manitoba recorded the most negative net migration rate for the period from 2004/05 to 2008/09, with 2.1% of its population (25,852) leaving the province. The outflow of its population resulted in an unemployment rate that is lower than it would otherwise have been, which improves the province's overall score in the Index of Labour Market Performance.

The data for the US states (table B-2) show similar results: jurisdictions with strong labour markets (and with strong economies in general) tend to attract migrants; the opposite also holds. For example, Arizona and Nevada rank first and second for positive net migration rates. Arizona attracted 435,156 net migrants in the period from 2004/05 to 2008/09, or 6.6% of its population. Nevada welcomed 158,985 migrants over the same period, 6.0% of its population. Both states performed relatively well in the Index of Labour Market Performance: Arizona ranking 9th and Nevada, 15th. On the other hand, Louisiana and Rhode Island had two of the most negative net migration rates in the United States, with 5.1% and 4.7% of their residents leaving between 2004/05 to 2008/09. These states also performed relatively poorly in the Index of Labour Market Performance, receiving scores of 5.6 (22nd) and 3.5 (56th).

One area of the results from the United States deserves special attention. Table B-2 shows that there has been a significant degree of interstate migration in the Southern US states; particularly, there has been a large recent migration of people from Louisiana to neighbouring states. This movement is most likely the result of the devastation caused by Hurricane Katrina, which struck Louisiana in August 2005. While Louisiana experienced an outflow of people in 2004/05, this dramatically increased in 2005/06 to 271,330. As might be expected, nearby states such as Georgia, Alabama, and especially Texas experienced positive rates of interstate migration. The large outflow of people likely explains Louisiana's decline in performance in 2005/06. Interestingly, Louisiana experienced a positive net migration from 2006/07 to 2008/09 (27,500, 13,555, and 14,647 people), perhaps indicating that the state is on the path to recovery.

The relationship of migration to labour market performance—and, in particular, to the Index of Labour Market Performance—requires more detailed statistical analysis. That said, the preliminary results outlined above indicate some positive relationship between the two measures. Additional information about the demographics of workers moving into and out of jurisdictions as well as more detailed economic data are required to make a more definitive statement about the relationship between the movement of the population and labour market performance. However, preliminary data confirm the economic intuition that the working-age population appears to pursue labour opportunities by leaving jurisdictions with poorly performing labour markets for areas with better performing labour markets.

Table B2: Net domestic migration by state, 2004/05–2008/09

	2004/05	2005/06	2006/07	2007/08	2008/09	Total	Percentage of population, 2009
Alabama	16,248	32,945	18,496	15,118	11,044	93,851	2.0%
Alaska	-868	-1,981	-3,909	-3,732	979	-9,511	-1.4%
Arizona	132,123	137,697	87,245	62,980	15,111	435,156	6.6%
Arkansas	15,405	21,361	7,946	6,934	5,298	56,944	2.0%
California	-250,028	-285,494	-268,809	-144,061	-98,798	-1,047,190	-2.8%
Colorado	8,600	31,864	33,021	36,878	35,591	145,954	2.9%
Connecticut	-17,357	-15,125	-24,218	-14,985	-7,824	-79,509	-2.3%
Delaware	7,813	5,792	4,615	4,126	2,580	24,926	2.8%
Florida	266,850	174,416	37,650	-9,286	-31,179	438,451	2.4%
Georgia	62,318	120,420	98,666	56,674	26,604	364,682	3.7%
Hawaii	1,058	-3,461	-11,849	-3,752	-5,298	-23,302	-1.8%
Idaho	20,215	22,049	19,975	12,767	1,555	76,561	5.0%
Illinois	-85,236	-72,434	-56,984	-52,349	-48,249	-315,252	-2.4%
Indiana	3,423	6,530	628	-1,979	-6,805	1,797	0.0%
Iowa	-5,533	-598	-2,491	411	-2,135	-10,346	-0.3%
Kansas	-10,937	-6,743	-3,280	284	-1,242	-21,918	-0.8%
Kentucky	13,606	10,464	17,044	11,828	6,268	59,210	1.4%
Louisiana	-14,335	-271,330	27,500	13,555	14,647	-229,963	-5.1%
Maine	2,586	395	-963	-2,063	-2,937	-2,982	-0.2%
Maryland	-12,488	-25,890	-33,716	-32,161	-11,163	-115,418	-2.0%
Massachusetts	-55,443	-44,064	-32,607	-18,675	3,614	-147,175	-2.2%
Michigan	-57,267	-73,991	-95,787	-109,257	-87,339	-423,641	-4.2%
Minnesota	-12,513	-5,269	-5,028	-7,136	-8,813	-38,759	-0.7%
Mississippi	553	-16,819	3,833	-753	-5,529	-18,715	-0.6%
Missouri	7,804	11,302	4,501	-2,384	-124	21,099	0.4%
Montana	5,731	6,568	6,308	5,986	2,410	27,003	2.8%
Nebraska	-3,515	-5,168	-5,367	-1,491	-956	-16,497	-0.9%
Nevada	52,331	53,827	40,312	16,316	-3,801	158,985	6.0%
New Hampshire	2,722	1,790	-2,374	-2,473	-2,602	-2,937	-0.2%
New Jersey	-67,340	-77,639	-72,370	-56,208	-31,690	-305,247	-3.5%
New Mexico	6,981	7,703	8,082	1,032	3,366	27,164	1.4%
New York	-248,647	-233,306	-185,638	-126,209	-98,178	-891,978	-4.6%
North Carolina	73,418	110,632	116,245	98,074	59,108	457,477	4.9%
North Dakota	-3,390	-2,087	-2,251	-381	1,375	-6,734	-1.0%
Ohio	-45,033	-50,275	-47,350	-49,752	-36,278	-228,688	-2.0%

Table B2: continued Net domestic migration by state, 2004/05–2008/09

	2004/05	2005/06	2006/07	2007/08	2008/09	Total	Percentage of population, 2009
Oklahoma	–531	15,688	14,736	7,954	18,345	56,192	1.5%
Oregon	22,821	33,735	25,297	24,756	16,173	122,782	3.2%
Pennsylvania	–3,334	3,312	–5,056	–11,462	1,346	–15,194	–0.1%
Rhode Island	–10,937	–11,100	–12,013	–8,816	–6,172	–49,038	–4.7%
South Carolina	30,133	48,538	54,115	49,736	31,480	214,002	4.7%
SouthDakota	160	1,988	2,146	2,194	1,619	8,107	1.0%
Tennessee	42,720	50,821	47,193	31,198	20,605	192,537	3.1%
Texas	53,582	219,742	138,088	140,862	143,423	695,697	2.8%
Utah	9,373	18,428	23,846	17,605	8,623	77,875	2.8%
Vermont	–556	–654	–1,767	–1,703	–975	–5,655	–0.9%
Virginia	29,335	10,184	3,796	2,678	18,238	64,231	0.8%
Washington	23,579	47,614	31,774	40,588	38,201	181,756	2.7%
WestVirginia	2,283	2,614	2,449	3,788	4,510	15,644	0.9%
Wisconsin	–2,042	–5,560	–4,995	–7,022	–5,672	–25,291	–0.4%
Wyoming	325	3,207	6,638	5,390	7,192	22,752	4.2%

Notes: [1] This data is collected from July 1 to June 30. [2] A negative value for net migration is indicative of net migration out of a state; more migrants left an area than entered it. Positive values reflect net migration into an area.

Sources: US Census Bureau, 2010; calculations by authors.

2 Working days lost due to labour disputes

Labour disputes³⁹ are an indicator of labour market performance as they help to explain differences in employment opportunities for workers. Labour disputes adversely affect employment opportunities by decreasing investment and business activity.⁴⁰ 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.

39 Labour disputes include strikes and lock-outs. In a strike, employees cease working in order to compel the employer to accept certain working conditions. In a lock-out, an employer closes the place of employment, suspends work, or refuses to continue to employ a number of his employees in order to compel workers to accept certain employment conditions (Craig, 1990).

40 Several factors explain why some jurisdictions have more labour disputes than others. See Gunderson and Melino, 1990; Gunderson et al., 1989; and Cramton et al., 1999.

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 Robert Hanrahan and his colleagues (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%.⁴¹ 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 stock market reaction 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 their returns decrease by -0.7% to -0.8%.⁴²

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.

More recently, 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.

Observations

There are 30 jurisdictions, including three Canadian provinces (Manitoba, New Brunswick, and Prince Edward Island), tied for first place among the 60 jurisdictions, with an average of zero work days lost per 1,000 workers from

41 Becker and Olson (1986) found similar results. Using data from 1962 to 1982, they found that strikes substantially affected shareholder equity: the average strike involving 1,000 or more workers resulted in a 4.1% drop in shareholder equity.

42 Strikes do not only affect the value of struck firms; they also can affect the value of third-party firms. For instance, Persons (1995) used stock market data for the years 1965 to 1990 to estimate the effects of strikes against US automobile producers on the stock value of their steel suppliers. Persons found that steel suppliers experienced returns ranging from -1.6% to -2.5% upon announcements of automobile strikes.

2004 to 2008 (figure B-1).⁴³ The bottom-ranked jurisdiction was Newfoundland & Labrador, with an average of 390.0 work days lost per 1,000 workers. This was far worse than the jurisdiction ranked second-last, British Columbia, which lost an average of 127.4 work days per 1,000 workers.⁴⁴

Canadian provinces tended to have a higher average number of work days lost from labour disputes than US states. Five of the bottom 10 jurisdictions were Canadian provinces: Ontario, Saskatchewan, Quebec, British Columbia, and Newfoundland & Labrador. Alberta (42nd) and Nova Scotia (45th) ranked in the bottom half of all jurisdictions.

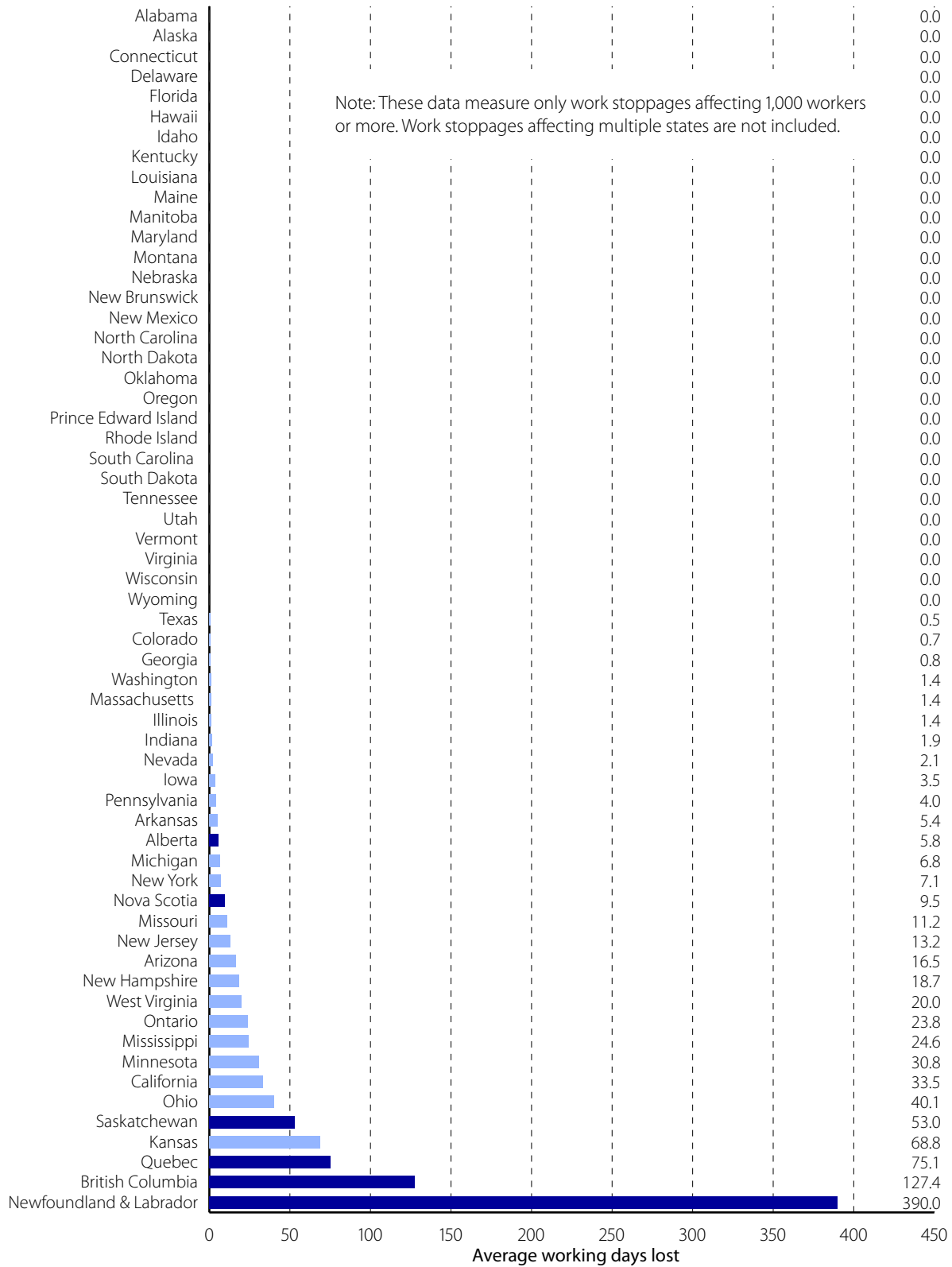
Within the United States, Right-to-Work states tended to rank higher than any other group of jurisdictions. Of the 22 Right-to-Work states, 14 were in the top half of all jurisdictions: all 14 recorded an average of zero person-days lost from 2004 to 2008.⁴⁵

43 Data for 2004 to 2008 were the latest available at time of publication (August 2010). Canadian data for 2009 were available; corresponding US data were not. This measure only captures days lost from labour disputes involving 1,000 or more workers. The fact that some of the smaller jurisdictions have few businesses with 1,000 or more workers may help explain, at least in part, why they show few work days lost. According to Statistics Canada (2007b), Prince Edward Island, for example, had only five firms with 1,000 or more workers in 2004; New Brunswick had only 21. In comparison, Ontario had 494 firms of this size. Strikes affecting multiple states are not included.

44 Further, in 2004, Newfoundland & Labrador had only 23 firms with 1,000 or more employees. In light of this small number of large firms and the relatively large number of work stoppages, the province can be seen to have a serious problem compared to the other jurisdictions.

45 The differences in the number of days lost from work stoppages may also be driven by the public sector, which has a much higher rate of unionization. In order to evaluate this issue, more detailed data were used to compare work days lost in the public sector with those lost in the private sector. The breakdown of work stoppages in the private and public sector is only available for the Canadian provinces: the average number of work days lost in the public sector due to labour disputes from 2004 to 2008 ranged from zero in three provinces (Prince Edward Island, New Brunswick, and Ontario) to 1,180.1 in Newfoundland & Labrador. In contrast, the number of work days lost in the private sector is substantially lower, with five provinces recording zero days lost in the private sector. For the remaining five provinces, the days lost per 1,000 employees range from 1.5 in Quebec to 96.8 in Newfoundland and Labrador. These results show that among Canadian provinces, work days lost are higher in the public sector than in the private sector.

Figure B1: Working days lost per 1,000 employees due to labour disputes, 2004–2008



Sources: Gratton, 2010, June 23; Statistics Canada, 2010a; US Department of Labor, Bureau of Labor Statistics, 2010c, 2010e.

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Measuring Labour Markets in Canada and the United States

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