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Executive summary

Measuring Labour Markets in Canada and the United States: 2008 Report is the fourth 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 2008 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 of the last five years (2003-2007) was calculated for each indicator.

Key results

1. Alberta topped the list of Canadian provinces and US states in terms of labour market performance over the last five years. The province's strong performance in total employment growth (third out of 60 jurisdictions), employment growth in the private sector (6th), low duration of unemployment (first), and average labour productivity (5th) enabled it to achieve the highest overall score of 8.6 out of a possible 10.
2. Western US states dominated the top of the rankings with seven states (Nevada, Utah, Alaska, Idaho, Arizona, Wyoming, and Hawaii) in the top 10. Alberta was the only Canadian province in the top 10. British Columbia narrowly missed the top 10, ranking 11th.
3. Michigan scored the lowest of any jurisdiction (2.4). It ranked poorly across all five measures of labour market performance: average total employment growth (60th), average private sector employment growth (57th), average unemployment rate (55th), average duration of unemployment (58th), and average labour productivity (38th).
4. Newfoundland and Labrador was the lowest-ranked Canadian province, occupying the 51st position with a score of 3.9. It recorded the worst average unemployment rate (15.2%), yet surprisingly it ranked 9th in terms of labour productivity. On the remaining indicators, Newfoundland and Labrador ranked 22nd to 39th.
5. Regionally, the western Canadian provinces outperformed the other provinces. In addition to Alberta (first) and British Columbia (11th), Saskatchewan performed relatively well, ranking 14th with a score of 6.0. Only two other provinces, Ontario and Manitoba, received a score of 5.0 or higher, placing them 25th and 28th, respectively.

Table 1: Summary of provincial and state rankings, labour market performance

	Index of Labour Market Performance, 2008		Average total employment growth, 2003-2007		Average private employment growth, 2003-2007		Average unemployment rates, 2003-2007		Average duration of unemployment, 2003-2007		Average productivity per worker, 2003-2007	
	Rank (out of 60)	Score	Rank (out of 60)	%	Rank (out of 60)	%	Rank (out of 60)	%	Rank (out of 60)	%	Rank (out of 60)	2007 CDN\$
Alberta	1	8.6	3	3.2	6	3.1	13	4.1	1	7.2	5	130,254
British Columbia	11	6.3	5	2.9	8	2.9	49	6.0	17	14.8	51	83,316
Manitoba	28	5.0	35	1.0	41	0.7	24	4.8	4	10.5	56	78,595
New Brunswick	43	4.3	33	1.1	31	1.1	58	9.2	7	11.3	59	72,365
Nfld & Labrador	51	3.9	39	0.9	22	1.6	60	15.2	25	16.1	9	124,137
Nova Scotia	45	4.2	32	1.1	33	1.0	57	8.4	11	12.9	58	73,396
Ontario	25	5.0	14	1.8	24	1.4	52	6.6	18	14.8	47	86,835
Prince Edward Is.	33	4.7	25	1.4	11	2.3	59	10.9	2	9.4	60	64,138
Quebec	50	4.0	21	1.5	30	1.2	56	8.2	38	18.4	57	76,685
Saskatchewan	14	6.0	24	1.4	14	1.9	29	5.0	6	11.2	25	101,014
Alabama	41	4.3	34	1.1	35	1.0	17	4.3	50	21.2	42	91,664
Alaska	4	7.3	18	1.6	2	3.5	54	6.9	10	12.4	2	149,447
Arizona	6	7.1	4	3.0	4	3.3	20	4.6	21	15.6	24	102,567
Arkansas	21	5.4	22	1.5	12	2.2	42	5.4	15	14.4	48	85,601
California	30	4.8	30	1.2	38	0.9	46	5.7	47	20.2	10	123,201
Colorado	17	5.8	9	2.5	26	1.2	29	5.0	32	16.9	19	108,688
Connecticut	36	4.6	41	0.9	52	0.1	26	4.9	56	22.4	3	141,747
Delaware	10	6.3	28	1.3	42	0.6	8	3.8	27	16.3	1	163,010
Florida	8	6.6	6	2.8	7	3.0	16	4.3	33	17.1	27	100,173
Georgia	22	5.3	10	2.2	19	1.7	22	4.7	54	21.6	23	102,883
Hawaii	9	6.3	19	1.6	10	2.4	1	3.0	26	16.2	16	113,193
Idaho	5	7.3	7	2.6	3	3.5	11	3.9	3	9.4	50	84,419
Illinois	53	3.8	27	1.3	53	0.0	44	5.7	59	25.2	17	112,490
Indiana	55	3.7	53	0.4	43	0.6	34	5.1	49	21.0	40	91,959
Iowa	47	4.1	54	0.4	56	-0.1	15	4.2	24	15.8	37	92,949
Kansas	32	4.7	38	1.0	39	0.9	27	4.9	29	16.5	33	95,171
Kentucky	46	4.1	37	1.0	54	0.0	47	5.8	28	16.3	39	92,504
Louisiana	26	5.0	57	0.3	15	1.8	37	5.2	37	17.9	12	120,971
Maine	44	4.2	47	0.6	40	0.8	23	4.7	30	16.7	53	82,382
Maryland	34	4.7	36	1.0	44	0.6	12	4.1	44	19.5	20	108,542

Table 1: Summary of provincial and state rankings, labour market performance

	Index of Labour Market Performance, 2008		Average total employment growth, 2003-2007		Average private employment growth, 2003-2007		Average unemployment rates, 2003-2007		Average duration of unemployment, 2003-2007		Average productivity per worker, 2003-2007	
	Rank (out of 60)	Score	Rank (out of 60)	%	Rank (out of 60)	%	Rank (out of 60)	%	Rank (out of 60)	%	Rank (out of 60)	2007 CDN\$
Massachusetts	54	3.7	59	0.1	59	-0.3	33	5.0	52	21.5	8	124,554
Michigan	60	2.4	60	-0.3	57	-0.2	55	7.0	58	23.8	38	92,868
Minnesota	29	4.9	56	0.3	29	1.2	18	4.4	20	15.5	22	103,937
Mississippi	59	2.7	58	0.3	51	0.1	53	6.7	57	22.6	55	81,280
Missouri	57	3.5	55	0.3	45	0.6	40	5.3	55	22.1	43	91,326
Montana	18	5.8	16	1.8	13	2.2	7	3.7	14	14.3	54	81,771
Nebraska	27	5.0	45	0.7	32	1.1	5	3.6	22	15.6	32	95,947
Nevada	2	8.1	1	3.6	1	3.9	19	4.6	13	14.0	11	121,044
New Hampshire	24	5.1	40	0.9	25	1.3	8	3.8	23	15.7	36	93,647
New Jersey	35	4.7	44	0.8	37	0.9	25	4.8	51	21.4	7	125,141
New Mexico	13	6.0	11	2.0	9	2.4	27	4.9	19	15.4	30	97,444
New York	42	4.3	43	0.8	46	0.4	38	5.3	60	25.5	4	140,730
North Carolina	23	5.1	12	1.9	27	1.2	41	5.3	48	20.3	18	109,692
North Dakota	16	5.9	31	1.2	18	1.7	2	3.4	8	11.4	45	90,106
Ohio	56	3.6	51	0.5	55	0.0	47	5.8	42	19.3	34	94,713
Oklahoma	37	4.4	46	0.7	36	1.0	21	4.7	39	18.5	35	94,595
Oregon	38	4.3	23	1.4	50	0.2	50	6.4	40	18.8	21	104,525
Pennsylvania	49	4.0	52	0.5	47	0.4	32	5.0	43	19.5	26	100,953
Rhode Island	31	4.8	42	0.8	20	1.7	36	5.2	36	17.7	29	98,619
South Carolina	39	4.3	15	1.8	28	1.2	51	6.5	53	21.6	46	89,189
South Dakota	20	5.5	26	1.3	34	1.0	2	3.4	12	13.2	41	91,917
Tennessee	48	4.0	29	1.3	58	-0.3	39	5.3	45	19.5	28	99,222
Texas	19	5.7	17	1.7	21	1.6	43	5.5	34	17.3	13	119,762
Utah	3	7.7	2	3.5	5	3.1	13	4.1	5	11.0	31	97,082
Vermont	40	4.3	50	0.5	49	0.2	10	3.9	16	14.6	52	83,164
Virginia	12	6.1	13	1.8	17	1.8	4	3.5	31	16.8	14	115,215
Washington	15	5.9	8	2.5	23	1.5	45	5.7	35	17.3	15	114,586
West Virginia	58	3.1	48	0.6	60	-0.8	35	5.1	46	20.0	49	84,792
Wisconsin	52	3.8	49	0.5	48	0.3	31	5.0	41	19.1	44	90,939
Wyoming	7	6.7	20	1.6	16	1.8	6	3.7	9	11.4	6	125,596

Note: These rankings are based on data that contain several decimal places. In this table, there are cases where one jurisdiction appears to rank differently from another, even though their scores are the same. This is because the underlying data for the jurisdictions are different.

6. Within the United States, the Western states performed well. In addition to having seven states in the top 10, all of the Western states other than Oregon (38th) ranked in the top half of all jurisdictions. On the other hand, five of the industrial belt states (Wisconsin, Illinois, Indiana, Ohio, and Michigan) were in the bottom 10 ranked jurisdictions, as were two Southern states (West Virginia and Mississippi).

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 vastly different institutional arrangements and incentives than the private sector, which ultimately leads to differing outcomes. In particular, the public sector tends to operate as a monopoly to a much greater extent than the private sector, leading to the anticipated outcomes associated with monopolies such as 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 problematic given that 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) (10.4%).
2. Alberta was the highest-ranked Canadian province. Unfortunately, it ranked 33rd with 15.5% of its total employment represented by the public sector. British Columbia (16.7%) and Ontario (16.8%) followed, ranking 40th and 41st, respectively.
3. Saskatchewan occupied the last position, with public sector employment representing 27.4% of total employment—over two-and-a-half times Nevada's rate. Saskatchewan's rate of public sector employment was nearly double that of neighboring Alberta.
4. Rounding out the top 10 were four Northeastern states (Massachusetts, Pennsylvania, Rhode Island, and New Hampshire), four Midwest states (Wisconsin, Indiana, Illinois, and Minnesota), and Florida.
5. In general, Canada's performance with respect to this characteristic was poor. Seven of the bottom 10 jurisdictions were Canadian provinces (Quebec, New Brunswick, Prince Edward Island, Nova Scotia, Manitoba, Newfoundland and Labrador, and Saskatchewan). Three of these provinces (Manitoba, Newfoundland and Labrador, and Saskatchewan) had public sector employment that exceeded one-quarter of all employment.

6. There is a clear difference between Canada and the United States in terms of the size of the public sector at the subnational level. From 2003 to 2007, Canadian provinces consistently maintained higher levels of public sector employment than the US states had.

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. Furthermore, high minimum wages are associated with higher school dropout rates, as the increase in the minimum wage induces teenagers 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 (Godin and Veldhuis, forthcoming). This study measures minimum wages by calculating the annual income earned by someone working at the minimum wage as a ratio of per-capita GDP. Since per-capita GDP 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 per-capita GDP (19.7%). Put differently, a resident of Delaware earning the minimum wage could earn less than one-fifth of the average per-capita GDP (income) of the state.
2. Alberta was the highest-ranked Canadian province, occupying the second position overall with a minimum wage equal to 20.7% of the province's average per-capita GDP.
3. Prince Edward Island was the lowest-ranked jurisdiction among the 60 Canadian provinces and US states. Prince Edward Island's minimum wage represented 47.1% of the province's average per-capita GDP.
4. The US states dominated the top of the rankings, holding nine of the top 10 positions.
5. The Canadian provinces generally fared poorly on this measure with six of the 10 Canadian provinces (New Brunswick, Manitoba, Nova Scotia, British Columbia, Quebec, and Prince Edward Island) occupying the bottom six rankings overall. Other than Alberta, Canada's provinces were in the bottom half of the rankings.
6. There was a clear difference between minimum wages as a percent of average GDP in Canada and those in the United States: the average Canadian province had a minimum wage equivalent to 37.9% of its average per-capita GDP, while the average US state had a minimum wage equivalent to 30.1% of its average per-capita GDP over the last five years (2003-2007).

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 3.9% of its employed workers unionized. South Carolina was a close second, with 4.6% of its employment unionized.
2. The top-ranked Canadian province was Alberta—a dismal 49th with 24.0% of its employment unionized. In this regard, Alberta performed better than only two US states: Hawaii and New York.
3. Quebec occupied last place; 40.2% of its employed workforce is unionized.
4. Southern US states occupied eight of the top 10 rankings: North Carolina, South Carolina, Virginia, Arkansas, Texas, Georgia, 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 10 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 2003 to 2007, Canada's average total unionization rate was 31.8% compared to 13.6% for the United States.

Labour relations laws

This measure is based on the Fraser Institute's 2006 study, *An Empirical Examination of Labour Relations Laws in Canada and the United States* (Godin et al., 2006). The study measures and evaluates labour relations laws in the private sector for the Canadian provinces and US states based on whether or not they facilitate flexibility and choice 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 in jurisdictional authority over labour relations laws between Canada and 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. There is, therefore, very little variance amongst US states regarding labour relations laws.

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 union dues payment as a condition of employment. The labour relations laws in these 22 Right-to-Work states best facilitate labour market flexibility amongst the 10 Canadian provinces and 50 US states; on this measure, each of the Right-to-Work states received a score of 9.2 out of a possible 10.
2. The remaining 28 US states tied for the 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 (6.0).
5. Quebec (with a score of 1.2) had the most restrictive set of labour relations laws in all of Canada and the United States, followed closely by Prince Edward Island (2.2) and Saskatchewan (2.3).

Table 2: Summary of provincial and state rankings, labour market regulation and characteristics

	Average PSL public sector employment* as a % of total employment (2003-2007)		Average FPSL public sector employment* as a % of total employment (2003-2007)		Average minimum wage as a % of per-capita GDP (2003-2007)		Average unionization as a % of total employment (2003-2007)		Index of flexibility in labour relations law, 2006	
	Rank (out of 60)	%	Rank (out of 60)	%	Rank (out of 60)	%	Rank (out of 60)	%	Rank (out of 60)	Score
Alberta	40	14.1	33	15.5	2	20.7	49	24.0	51	6.0
British Columbia	46	15.0	40	16.7	58	42.4	56	32.8	55	3.2
Manitoba	58	22.1	58	25.1	56	41.8	58	37.2	57	2.7
New Brunswick	56	18.7	53	21.8	55	41.3	53	28.2	56	3.0
Nfld & Labrador	59	22.6	59	25.9	31	30.6	59	38.1	52	3.8
Nova Scotia	57	20.3	57	24.2	57	41.9	54	28.8	54	3.5
Ontario	42	14.3	41	16.8	48	36.0	52	28.2	52	3.8
Prince Edward Is.	55	18.5	56	23.8	60	47.1	55	30.9	59	2.2
Quebec	53	17.7	51	19.8	59	43.8	60	40.2	60	1.2
Saskatchewan	60	25.0	60	27.4	43	33.8	57	35.4	58	2.3
Alabama	30	12.5	34	15.7	41	33.3	22	10.7	1	9.2
Alaska	54	18.2	55	23.7	11	26.1	48	23.9	23	7.5
Arizona	21	11.7	21	13.8	34	31.6	15	8.3	1	9.2
Arkansas	28	12.4	22	14.3	49	36.5	4	6.1	1	9.2
California	24	11.9	19	13.7	37	32.0	44	17.8	23	7.5
Colorado	11	11.0	18	13.7	8	25.3	17	9.1	23	7.5
Connecticut	23	11.8	14	13.3	16	27.2	40	16.6	23	7.5
Delaware	26	12.2	25	14.6	1	19.7	26	12.6	23	7.5
Florida	9	10.7	9	12.7	40	33.0	10	7.4	1	9.2
Georgia	16	11.4	16	13.6	19	27.8	7	6.5	1	9.2
Hawaii	37	13.7	50	19.7	36	31.8	50	25.3	23	7.5
Idaho	34	12.8	26	14.6	44	34.4	8	7.3	1	9.2
Illinois	7	10.6	6	12.3	28	30.0	42	17.3	23	7.5
Indiana	4	10.4	4	11.8	26	29.3	27	12.8	23	7.5
Iowa	33	12.7	24	14.4	20	28.2	29	13.5	1	9.2
Kansas	47	15.0	44	17.5	23	28.6	19	9.7	1	9.2
Kentucky	39	14.0	37	16.6	39	32.7	24	11.5	23	7.5
Louisiana	38	13.8	35	15.9	14	26.7	13	7.7	1	9.2
Maine	19	11.6	20	13.7	54	39.7	30	13.7	23	7.5
Maryland	17	11.5	52	21.0	12	26.5	32	14.7	23	7.5

Abbreviations:

PSL: provincial/state and local

FPSL: federal, provincial/state, and local

Table 2: Summary of provincial and state rankings, labour market regulation and characteristics

	Average PSL public sector employment* as a % of total employment (2003-2007)		Average FPSL public sector employment* as a % of total employment (2003-2007)		Average minimum wage as a % of per-capita GDP (2003-2007)		Average unionization as a % of total employment (2003-2007)		Index of flexibility in labour relations law, 2006	
	Rank (out of 60)	%	Rank (out of 60)	%	Rank (out of 60)	%	Rank (out of 60)	%	Rank (out of 60)	Score
Massachusetts	3	9.8	3	11.7	24	28.8	33	14.9	23	7.5
Michigan	18	11.5	11	12.9	35	31.8	47	21.6	23	7.5
Minnesota	14	11.3	10	12.8	10	25.8	43	17.3	23	7.5
Mississippi	51	16.4	47	19.0	51	39.3	14	7.8	1	9.2
Missouri	12	11.1	13	13.3	32	30.7	28	12.9	23	7.5
Montana	43	14.4	43	17.5	46	35.1	30	13.7	23	7.5
Nebraska	35	12.8	31	15.2	13	26.6	20	9.9	1	9.2
Nevada	1	8.9	1	10.4	5	24.2	37	16.0	1	9.2
New Hampshire	8	10.7	8	12.6	15	26.7	23	11.3	23	7.5
New Jersey	31	12.7	28	14.7	6	24.5	46	21.3	23	7.5
New Mexico	50	16.2	54	22.2	33	31.1	21	10.4	23	7.5
New York	48	15.0	42	16.9	7	25.0	51	26.2	23	7.5
North Carolina	36	13.0	27	14.7	17	27.7	1	3.9	1	9.2
North Dakota	45	14.9	46	18.1	21	28.3	16	8.6	1	9.2
Ohio	15	11.4	12	13.2	27	29.9	39	16.5	23	7.5
Oklahoma	32	12.7	38	16.6	38	32.1	12	7.5	1	9.2
Oregon	22	11.7	15	13.4	53	39.5	36	15.7	23	7.5
Pennsylvania	2	9.7	5	11.8	22	28.4	35	15.7	23	7.5
Rhode Island	5	10.4	7	12.4	45	34.9	40	16.6	23	7.5
South Carolina	44	14.6	39	16.6	42	33.3	2	4.6	1	9.2
South Dakota	25	12.1	32	15.3	18	27.7	11	7.4	1	9.2
Tennessee	10	10.9	17	13.7	25	29.2	9	7.3	1	9.2
Texas	27	12.4	23	14.4	9	25.5	5	6.2	1	9.2
Utah	20	11.7	30	15.0	30	30.6	6	6.5	1	9.2
Vermont	29	12.4	29	14.8	52	39.5	25	12.2	23	7.5
Virginia	13	11.2	45	17.9	4	23.8	3	6.1	1	9.2
Washington	41	14.1	36	16.5	47	35.5	45	20.8	23	7.5
West Virginia	49	15.4	48	19.1	50	37.5	34	15.1	23	7.5
Wisconsin	6	10.5	2	11.6	29	30.5	38	16.5	23	7.5
Wyoming	52	16.6	49	19.4	3	21.1	18	9.7	1	9.2

*Including employment in government business enterprises.

Note: These rankings are based on data that contain several decimal places. In this table, there are cases where one jurisdiction appears to rank differently from another, even though their scores are the same. This is because the underlying data for the jurisdictions are different.

Introduction

Interest in labour markets ebbs and flows with the economy as a whole. Recently, tight labour market conditions in western Canada, coupled with concerns over a looming economic downturn, an aging society, 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 our performance. 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 two countries and offers potential explanations for that performance. Measuring differences in performance and examining the potential explanations for those differences enables us to understand why some regions have better labour market conditions than 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 main sections: labour market performance, and labour market characteristics and regulation. The first section 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 which 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 of firms, governments, and households. [1]

The key to a highperforming, efficient labour market characterized by strong job creation, low unemployment, short durations of unemployment, and a highly productive workforce is flexibility. Labour market flexibility refers to 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 completed by the Organisation for Economic Co-operation and Development (OECD) in 1994; it is commonly referred to as the Jobs Study. It concluded that countries with more flexible labour markets—in terms of having regulations that facilitate workers and employers being able to easily 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 OECD 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.

1 It is important to emphasize that labour markets are generally no different than any other market except that what is being traded is individual work effort, skills, ingenuity, and diligence. The labour market itself, 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.

A number of studies examining the relationship between labour market regulations (i.e., flexibility) and labour market performance corroborate the OECD 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 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 recorded better labour market outcomes including higher increases in employment and participation rates.

Some studies have specifically examined the relationship between labour market flexibility and unemployment rates, a key measure of labour market performance. A study by Kiannder and Viren (2001) explored this relationship using immigration numbers in 22 OECD countries from 1960 to 1997. They found that the United States, which maintained 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 that affect flexibility, such as employment insurance benefit levels, taxes, wage flexibility, and trade union power.

Other research has examined how specific aspects of labour market flexibility can affect labour market outcomes. One specific 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 favor of one party over another reduces labour market flexibility because the ability of one party to pursue their 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 favored one group over another led to lower output, employment, investment, and productivity.

Another specific 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 regarding 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.

2 A recent paper by Eriksson and Westergaard-Nielsen (2007), using Denmark as a case study, 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.

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.

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 (2003-2007): average total employment growth, average private sector employment growth, average unemployment rates, average duration of unemployment, and average labour productivity. This study employed five-year averages to balance the need for historical data while weighing current performance. Put differently, a five-year average helps prevent indicators from being skewed by recent anomalous data and avoids reliance on information that no longer reflects the jurisdiction. In addition, this section includes an overall Index of Labour Market Performance.

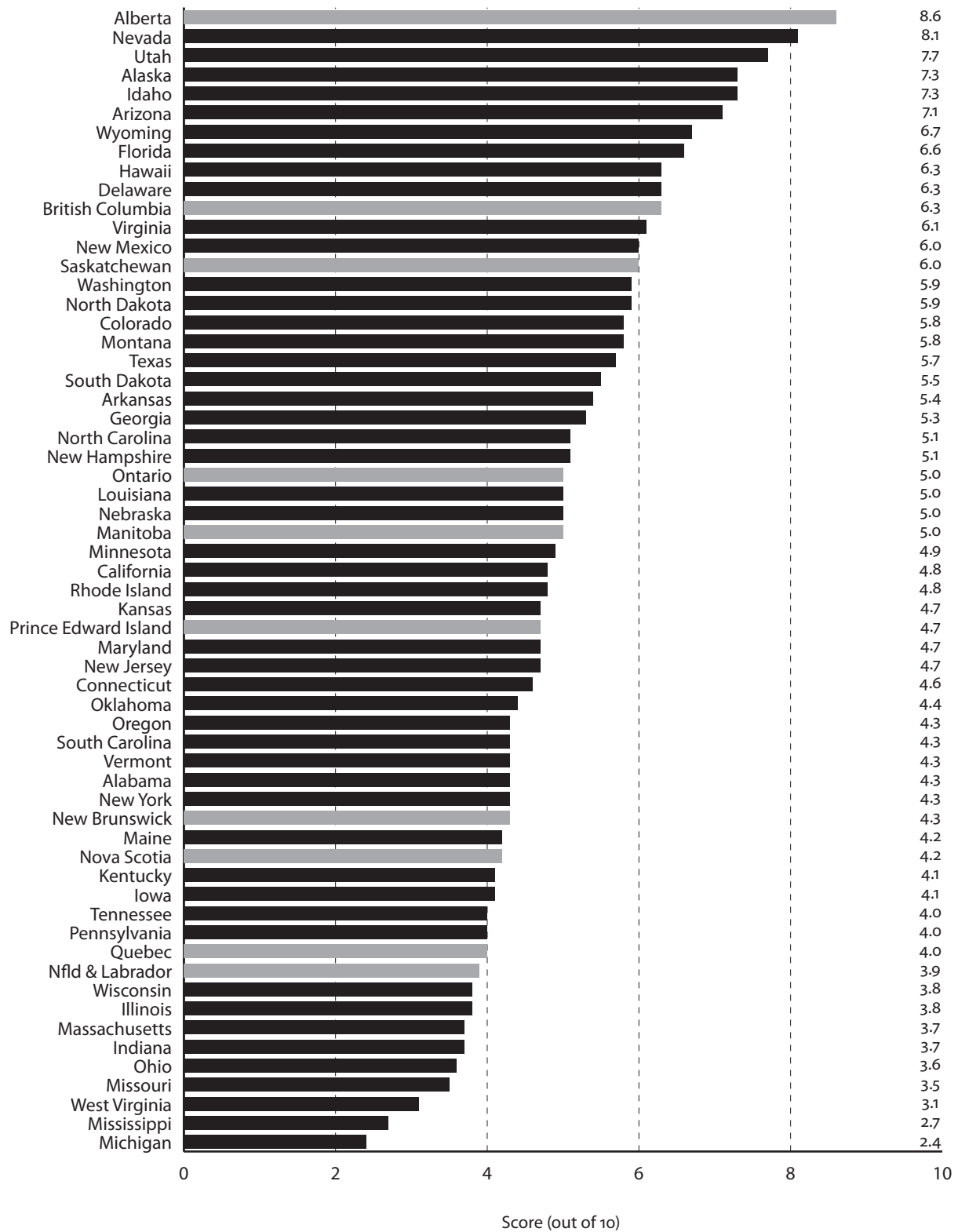
The format of this section is largely a presentation of the rankings coupled with a brief discussion. This section includes general observations for each of the indicators, a discussion of the top- and bottom-ranked jurisdictions, information specific to Canada, and general trends.

It is important to understand the larger economic context within which the following analysis was undertaken. While both Canada and the United States enjoyed relatively strong economies between 2003 and 2007 (the United States and Canada experienced average real GDP growth rates of 2.8% and 2.7% per year, respectively), there are differences between them in terms of economic growth at the subnational level. In addition, forecasts of economic growth in the two countries for 2008 and 2009 are noticeably lower than for the previous five years. Typically, strong economic growth translates into robust performances in other areas including labour markets.

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 listed above: average total employment growth, average private sector employment growth, average unemployment rates, average dura-

Figure 1: Index of Labour Market Performance, 2008



Source: Fraser Institute.

tion of unemployment, and average labour productivity. Each component was weighted equally in the index (for a discussion of this study's methodology, see Appendix A: Methodology).

General observations

Alberta's labour market performance tops the list of Canadian provinces and US states over the last five years. The province's strong performance in total employment growth (ranked third out of 60 jurisdictions), employment growth in the private sector (ranked 6th), low duration of unemployment (ranked first), and average labour productivity (ranked 5th) enabled it to achieve the highest overall score of 8.6 out of a possible 10.

The Western US states dominated the top of the rankings with seven (Nevada, Utah, Alaska, Idaho, Arizona, Wyoming, and Hawaii) in the top 10. [3] One other Canadian province, British Columbia, narrowly missed the top 10, ranking 11th.

In addition to Alberta and British Columbia, Saskatchewan performed relatively well, ranking 14th with a score of 6.0. Only two other provinces, Ontario and Manitoba, scored over 5.0, placing them 25th and 28th, respectively. The remaining five Canadian provinces scored less than 5.0. Newfoundland and Labrador ranked last among the provinces with a score of 3.9, and was ranked 51st out of 60 jurisdictions.

All the industrial belt states (Wisconsin, Illinois, Indiana, Ohio, and Michigan) were in the bottom 10 ranked jurisdictions, as were two Southern states (West Virginia and Mississippi). Michigan had the worst labour market performance out of the 60 jurisdictions, having a score of 2.4.

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

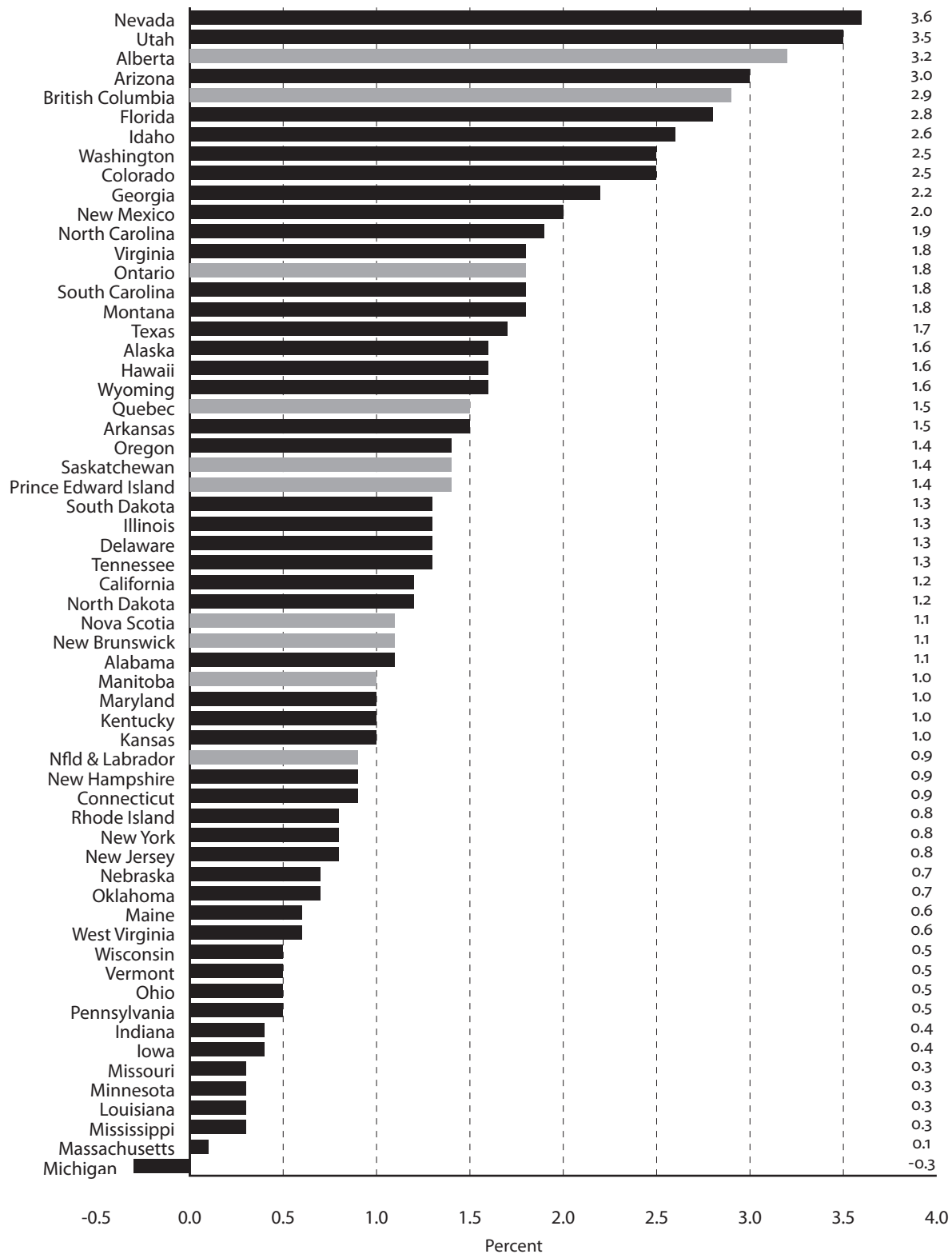
Indicator 1: Average total employment growth

Indicator 1 measures the average year-over-year growth rates of total employment for each jurisdiction from 2003 to 2007. Total employment includes full-time and part-time employment in both the public (government) and private (business and non-profit) sectors of the economy. [4] It excludes measures of self-employment.

3 Throughout this study, the US states are often grouped into geographical regions. Definitions for these geographical regions come from the United States Census Bureau (United States Department of Commerce, Bureau of the Census, 1994), *Geographic Areas Reference Manual*. In this manual, the United States is divided into four major groups: West, Midwest, Northeast, and South. Each of these regions is further subdivided. The West consists of the Pacific (Alaska, Hawaii, Washington, Oregon, and California) and the Mountain (Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, and New Mexico) groups. The Midwest consists of the West North Central (North Dakota, South Dakota, Minnesota, Nebraska, Iowa, Kansas, and Missouri) and the East North Central (Wisconsin, Illinois, Indiana, Ohio, and Michigan) groups. The East North Central group is often referred to as the industrial belt; the two terms are used interchangeably throughout the study. The Northeast consists of the New England (Maine, Vermont, New Hampshire, Massachusetts, Connecticut, and Rhode Island) and the Middle Atlantic (New York, New Jersey, and Pennsylvania) groups. The South consists of the West South Central (Oklahoma, Texas, Arkansas, and Louisiana), the East South Central (Kentucky, Tennessee, Mississippi, and Alabama), and the South Atlantic (Maryland, Delaware, West Virginia, Virginia, North Carolina, South Carolina, Georgia, and Florida) groups.

4 There is a small difference between the Canadian and American definition of "employable": Canada tabulates employment data for those over the age of 15 while the United States uses a threshold of 16 years of age.

Figure 2: Average total employment growth, 2003-2007



Sources: Statistics Canada (2008b); US Department of Labor, Bureau of Labor Statistics (2008b); calculations by authors.

Observations

Nevada tops the list of Canadian provinces and US states with an average total employment growth rate of 3.6% over the last five years, followed by Utah (3.5%) and Alberta (3.2%). British Columbia ranked 5th with average total employment growth rate of 2.9%.

The US states dominated the top 10 rankings for average total employment growth. Six states from the West (Nevada, Utah, Arizona, Idaho, Washington, and Colorado) and two states from the South (Florida and Georgia) were in the top 10 rankings.

The Canadian provinces were distributed throughout the rankings. Six provinces ranked in the top half of all jurisdictions, while four were in the bottom half. Ontario and Quebec ranked 14th and 21st, respectively. The lowest-ranked Canadian provinces were Manitoba and Newfoundland and Labrador, which scored 35th and 39th, respectively.

The bottom 10 rankings were occupied by six states from the Midwest (Ohio, Indiana, Iowa, Missouri, Minnesota, and Michigan), two states from the South (Louisiana and Mississippi), and two states from the Northeast (Pennsylvania and Massachusetts). Michigan placed last, and was the only jurisdiction to record a declining total employment rate of -0.3% 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 public or private sector growth. Strong employment growth that is largely fuelled by the public sector can have harmful economic consequences. [5]

The second indicator of labour market performance measures the average growth in private sector employment for each jurisdiction from 2003 to 2007; growth is defined as new full-time and part-time private sector employment. [6]

Observations

Nevada led all jurisdictions with an average of 3.9% private sector employment growth over the last five years. Alaska and Idaho followed closely with a 3.5% growth rate.[7] US states dominated the top of the rankings with eight states in the top 10 (Nevada, Alaska, Idaho, Arizona, Utah, Florida, New Mexico, and Hawaii).

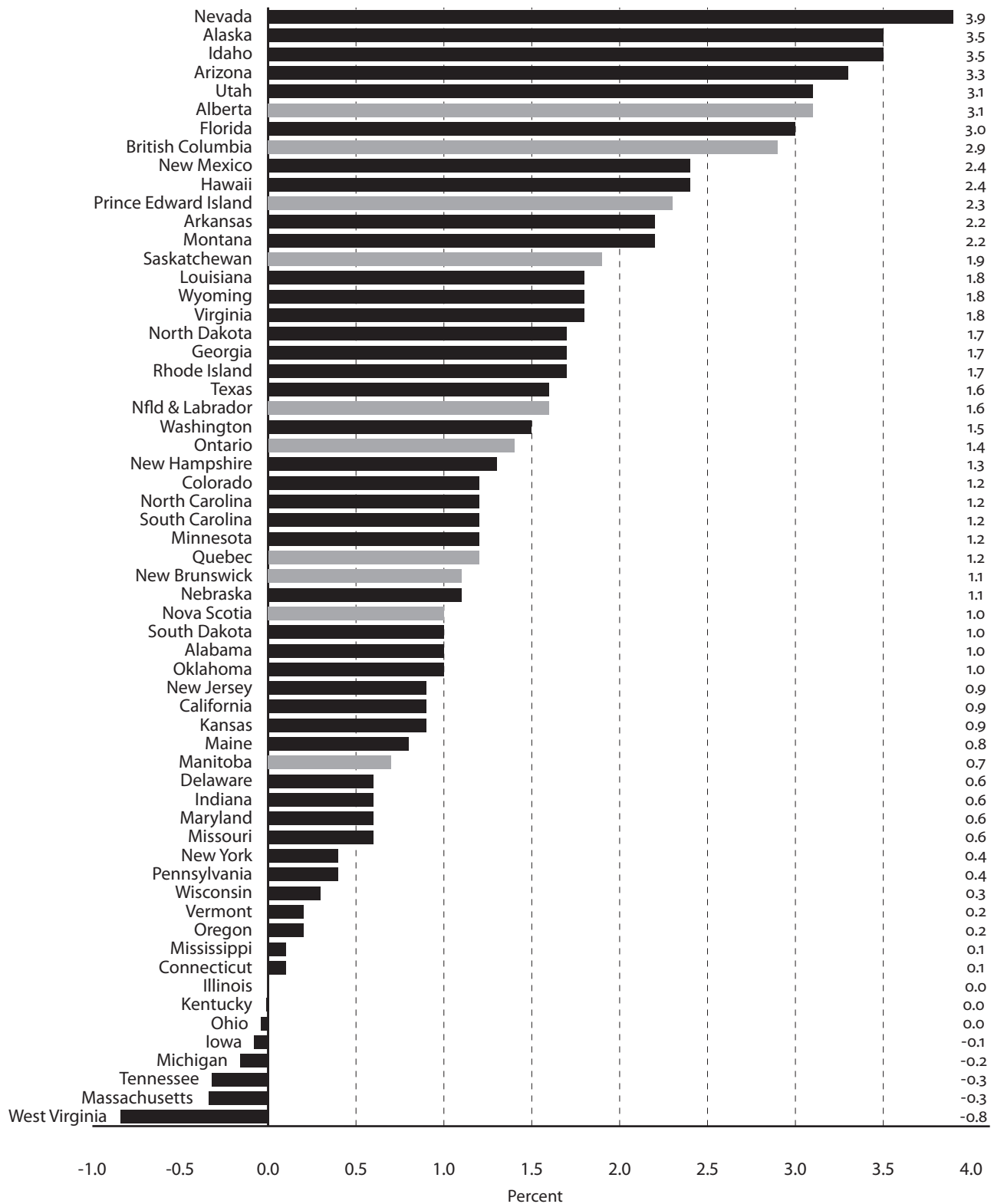
The top-ranked Canadian province was Alberta, which ranked 6th, having an average private sector employment growth rate of 3.1%, followed by British Columbia with 2.9%. Prince Edward Island and Saskatchewan performed well, ranking 11th and 14th, respectively. The bottom-ranked Canadian province was Manitoba at 0.7%, ranking 41st overall. The remaining five Canadian provinces had average growth rates ranging between 1.0% and 1.6%.

5 For further discussion, see Clemens et al. (2003). Also see the public sector employment discussion in the labour market characteristics and regulation section of this study.

6 In this instance as well, Canada tabulates employment data for those over the age of 15 while the United States uses a threshold of 16 years of age.

7 The average growth rates in Idaho and Alaska were largely driven by extraordinary growth rates in 2005; Nevada had a consistently high rate of growth over the time period.

Figure 3: Average private sector employment growth, 2003-2007



Sources: Statistics Canada (2008b); US Department of Labor, Bureau of Labor Statistics (2008a); calculations by authors.

The bottom 10 jurisdictions were four Southern states (Mississippi, Kentucky, Tennessee, and West Virginia), four Midwest states (Illinois, Ohio, Iowa, and Michigan), and two Northeast states (Connecticut and Massachusetts). West Virginia received the worst score. Its private employment decreased 0.8% on average during the five-year period. In all, seven US states recorded a decrease in average private sector employment on average over the last five years: Kentucky, Ohio, Iowa, Michigan, Tennessee, Massachusetts, and West Virginia.

The relationship between the results of the first labour market performance indicator, average total employment growth, and the second indicator, average private sector employment growth, is noteworthy. Several jurisdictions were in the process 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 1.6%, but its private sector employment growth was 3.5%, indicating a large reduction in the state's public sector employment. Similarly, Louisiana recorded an average total employment growth rate of 0.3% while averaging 1.8% private sector employment growth, again indicating a large decline in the public sector. Tennessee shows the opposite: a decline in private sector employment growth coupled with much higher positive average total employment growth, indicating an expansion in the public sector.

Indicator 3: Average unemployment rates

Indicator 3 is, to a degree, a reflection of the first two indicators, in that an economy that is unable to generate employment growth will also, to a certain extent, experience higher unemployment rates. Indicator 3 specifically measures the five-year (2003-2007) average percentage of citizens who were actively seeking work but were unable to secure employment.

Some of the recorded differences between the Canadian provinces and the US states are due to the differences in the two countries' employment insurance programs. [8] 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. [9]

Observations

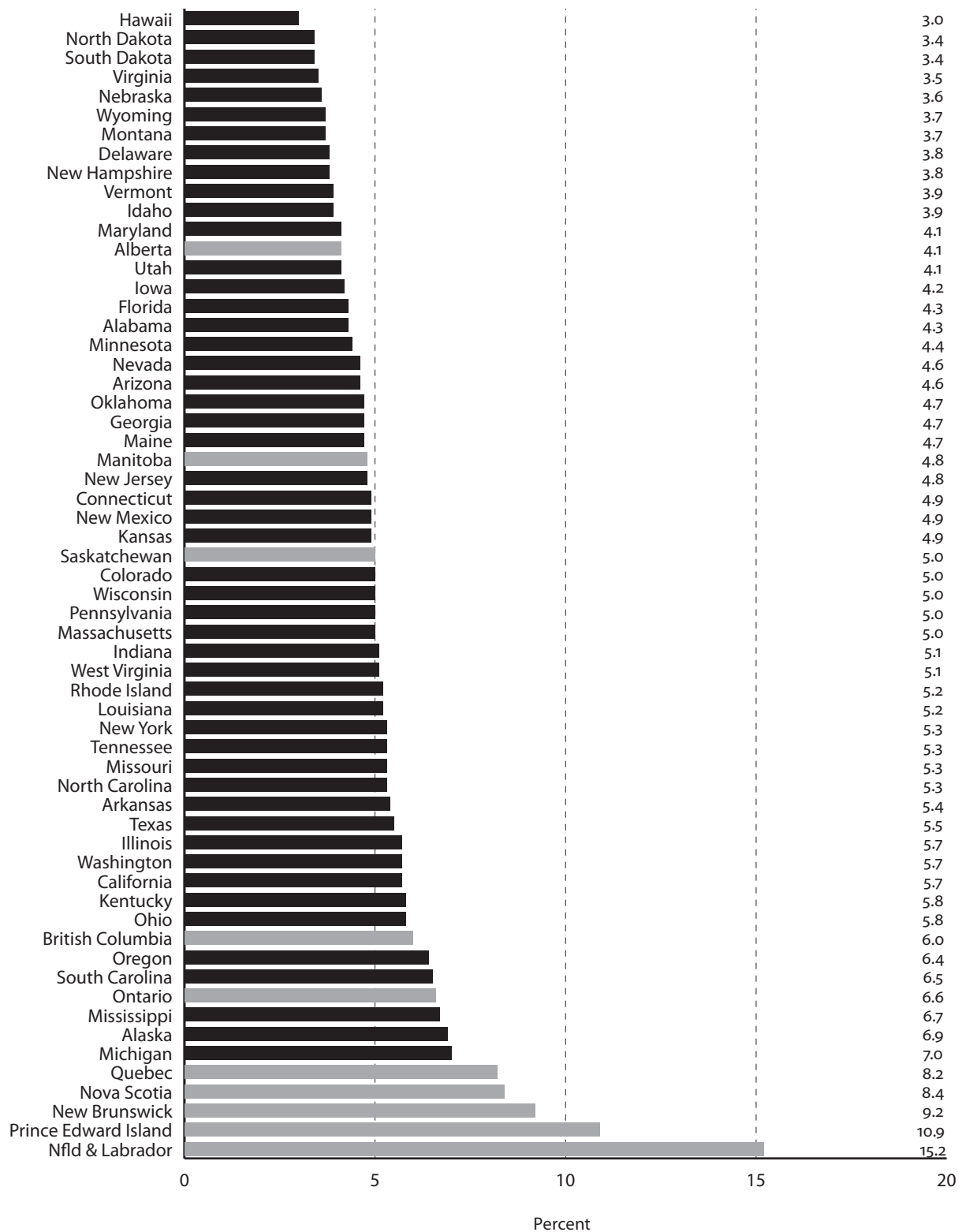
Hawaii recorded the lowest average unemployment rate (3.0%) for the last five years. All jurisdictions that ranked in the top 10 (all of which were US states) had average unemployment rates of 3.9% or less.

Alberta was the highest-ranking Canadian province, placing 13th overall with an average unemployment rate of 4.1%. Manitoba and Saskatchewan were the only other Canadian provinces

8 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>.

9 In addition, the Canadian federal 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) presented 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.

Figure 4: Average unemployment rates, 2003-2007



Sources: Statistics Canada (2008b); US Department of Labor, Bureau of Labor Statistics (2008b); calculations by authors.

to rank in the top half of all jurisdictions, occupying 24th and 29th place overall, respectively. [10] Newfoundland and Labrador ranked last, with an average unemployment rate of 15.2%. The province's average unemployment rate is over three times higher than that of the top-ranked Canadian province Alberta, and over five times higher than that of top-ranked Hawaii.

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 and Labrador). British Columbia also performed poorly, ranking 49th overall. These rankings reveal how high average unemployment rates are in Atlantic Canada. Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland and Labrador recorded average unemployment rates of 8.4%, 9.2%, 10.9%, and a startling 15.2%, respectively, over the last five years. These averages diverge significantly from the average for the top 10 jurisdictions (3.5%) and even the Canadian average (6.8%).

There is a stark contrast between the bordering Northeastern US states, all of which performed higher than the Canadian Atlantic provinces and two of which were in the top 10. The Northeastern US states generally maintained low average unemployment rates (5.3% or less), while the bordering Canadian Atlantic provinces had high average unemployment rates, relegating them to the bottom of the unemployment rate rankings.

Indicator 4: Average duration of unemployment

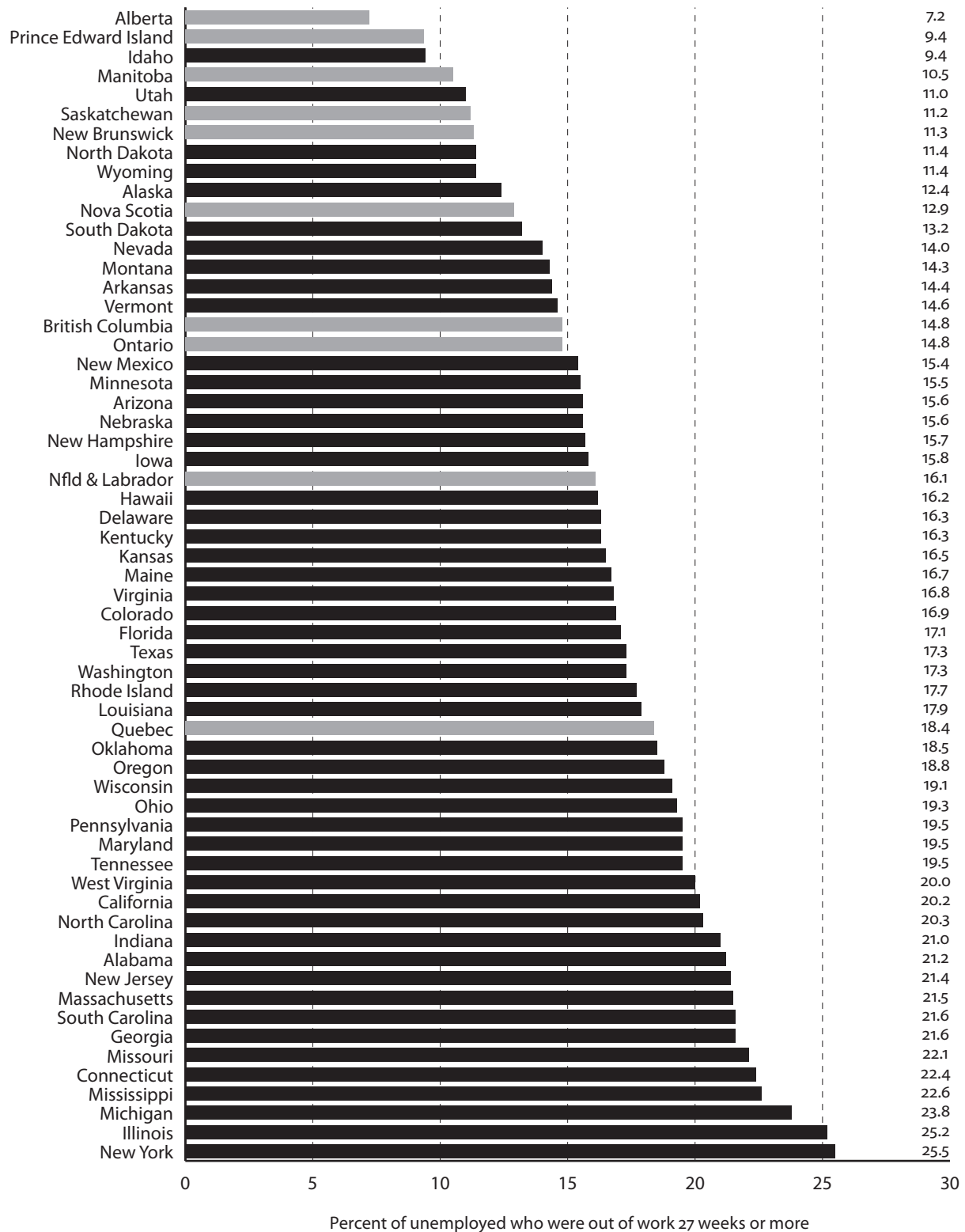
The fourth indicator of labour market performance is adjunct to the previous measure, average unemployment rates. It is intended to indicate the severity of unemployment. That is, two jurisdictions with similar unemployment rates may have differing labour market problems if the durations or spells of unemployment are drastically different. This indicator measures the percentage of the labour force experiencing unemployment for 27 weeks or longer during the years 2003 to 2007.

Observations

Alberta ranked first, with the lowest percentage of its unemployed (7.2%) experiencing unemployment in excess of 27 weeks. The second-ranked jurisdiction was Prince Edward Island with 9.4% of its unemployed experiencing unemployment in excess of 27 weeks. [11] The top-ranked US state, Idaho, was third overall with an average rate of 9.4%. [12]

-
- 10 Low unemployment rates in jurisdictions like Manitoba (24th) and Saskatchewan (29th) may be the result of the out-migration of their working-age population. Manitoba and Saskatchewan had two of the highest rates of working-age out-migration in Canada from 2003 to 2007: 4.1% and 2.6% of their populations respectively. If a significant portion of their working-age population is leaving, then their unemployment rate will appear to be improved as 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 for more detail.
- 11 Prince Edward Island has the second highest unemployment rate, yet the second lowest duration of unemployment. 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. More detailed analysis is required.
- 12 Prince Edward Island and Idaho both appear to have an average rate of 9.4% due to rounding. If taken one decimal place further, Prince Edward Island's rate is 9.37% while Idaho's rate is 9.42%.

Figure 5: Average duration of unemployment, 2003-2007



Sources: Statistics Canada (2008b); US Department of Labor, Bureau of Labor Statistics (2008c); calculations by authors.

Overall, Canadian jurisdictions performed better on the duration of unemployment than on unemployment rates, having five provinces in the top 10 ranked jurisdictions. Nova Scotia narrowly missed the top 10, ranking 11th with 12.9% of its unemployed remaining so in excess of 27 weeks. Only one province, Quebec, ranked in the lower half with a rate of 18.4%.

New York attained the dubious distinction of being last; 25.5% of its unemployed remained unemployed for more than 27 weeks. Worse still for the US, the bottom 22 jurisdictions were all US states. The bottom half of the rankings included 13 Southern states, six Northeast states, six Midwest states, and four Western states.

Indicator 5: Average GDP per worker (labour productivity)

The ultimate goal of a well-functioning labour market is high and growing labour productivity, [13] 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 last five years (2003-2007). [14]

Observations

Delaware ranked first out of the 60 jurisdictions with an average GDP per worker totaling \$163,010. [15] Alberta was the top-ranked Canadian province at 5th place, with an average GDP per worker of \$130,254. Newfoundland and Labrador was the only other Canadian province in the top 10, recording an average GDP per worker of \$124,137.

The Northeastern US states performed well on this indicator, having four states (Connecticut, New York, New Jersey, and Massachusetts) ranking in the top 10. The bottom half of the rankings consisted largely of Midwest and Southern states.

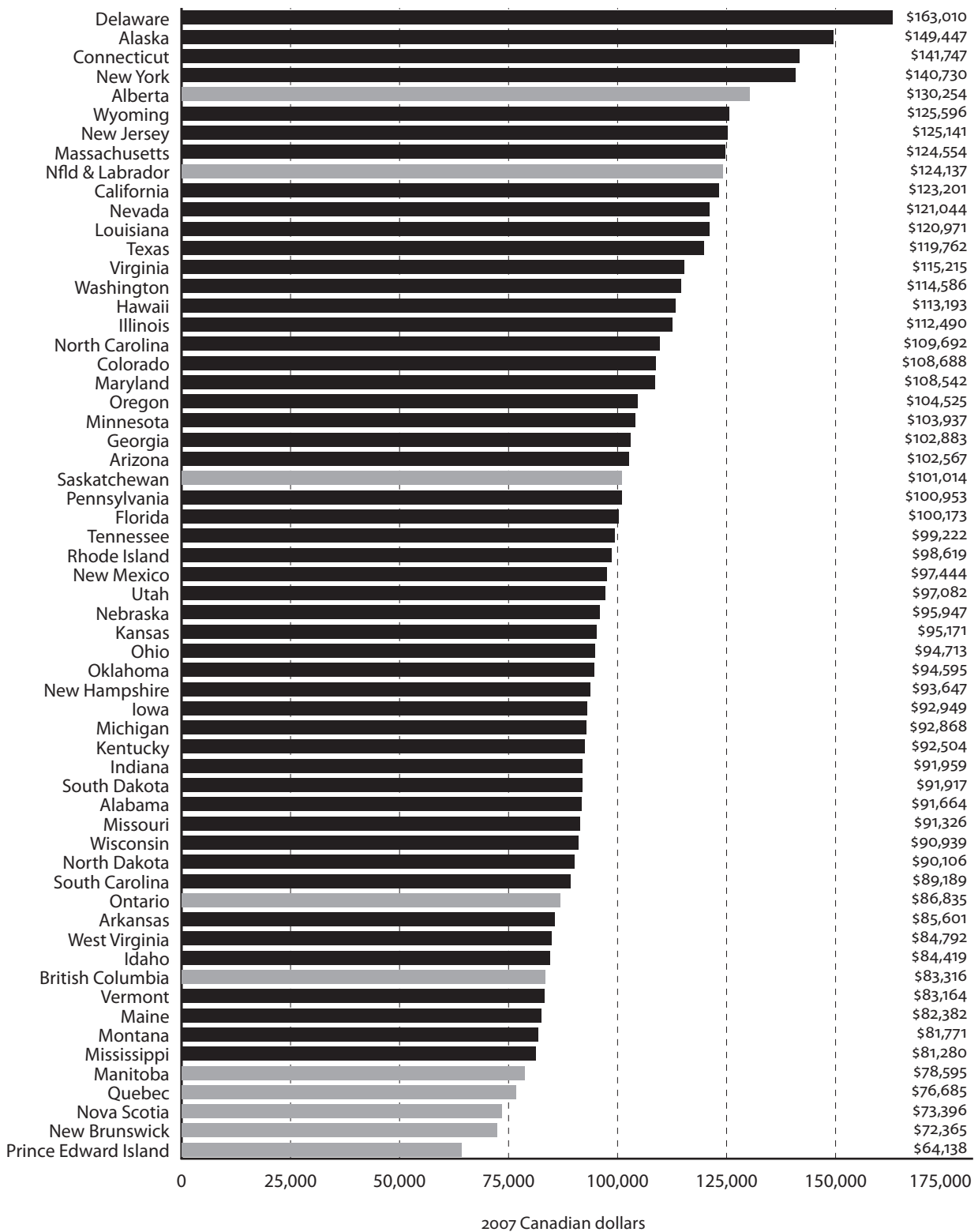
Prince Edward Island ranked last among the 60 jurisdictions with a GDP per worker of \$64,138, less than half that of top-ranked province Alberta and top-ranked Delaware. Troubling for Canada overall, six of the bottom 10 jurisdictions were Canadian provinces (British Columbia, Manitoba, Quebec, Nova Scotia, New Brunswick, and Prince Edward Island). The remaining two provinces, Saskatchewan and Ontario, ranked 25th and 47th, respectively. Overall, US states outperformed Canadian provinces in terms of GDP per worker.

13 Figures are presented in 2007 Canadian dollars.

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 in terms of this measure. See Veldhuis and Clemens (2006).

15 Purchasing power parity, a unique conversion rate calculated by Statistics Canada (2007a) to account for price differences between Canada and the United States, was used to convert US dollars to Canadian dollars.

Figure 6: Average GDP per worker, 2003-2007



Sources: Statistics Canada (2007a, 2008b, 2008c); US Department of Labor, Bureau of Labor Statistics (2008c); calculations by authors.

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: average public sector employment as a percent of total employment, average minimum wage as a percent of per-capita GDP, average unionized employment as a percent of total employment, and 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 jurisdictions with unfavorable labour market characteristics and regulations that also experience poor labour market performance.

Characteristic 1: Public sector employment

The split between private and public sector employment [16] is an important aspect of labour market performance as the incentives, productivity, and performance of labour activity in the private sector are different from that in the public sector (for a discussion of these differences, see Clemens et al., 2007; Clemens and Esmail, 2002a, 2002b; and Clemens et al., 2003). The following brief discussion outlines some of the important differences between the two sectors.

One key difference between the public and private sector is in 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 pre-occupied 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 private sector counterparts. Ehrlich et al. (1994) also found evidence that government entities tend to develop with less capital, which, in turn, 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).

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- 16 Public sector employment is specifically measured as the total number of government employees plus employees of government business enterprises (GBEs). Data for the US states excluding GBE employment is not available.
- 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 (TFP) refers to the aggregate efficiency with which people and capital are combined in the output of the economy.) 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.

Another important difference—one that particularly affects employee incentives and consumer prices—is that government entities tend to operate in a monopoly environment that precludes competition, whereas private sector businesses normally operate in highly competitive markets. The monopoly 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 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 its softer budget and no risk of bankruptcy, faces no such competitive pressure.

Research shows that a larger public sector leads to poorer labour market outcomes 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 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 labour market participation. [18]

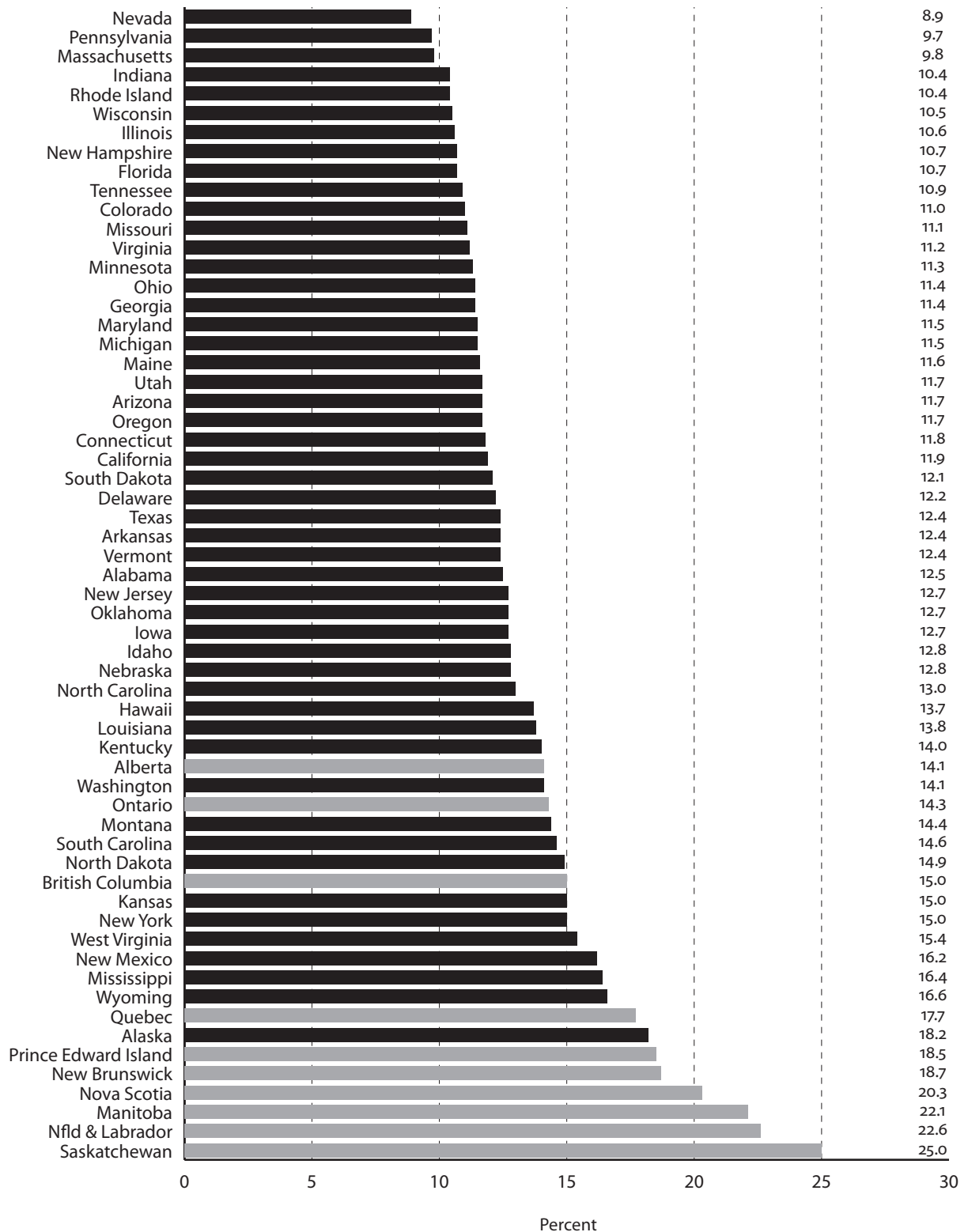
Characteristic 1 is a measure of the ratio between total employment in each province or state and public sector employment, both directly in government as well as in government business enterprises. Note that this study uses two separate measures: the first excludes federal employees (including government 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 only counts public sector employment at the provincial/state level (figure 7a), Nevada tops the list of Canadian provinces and US states with the lowest percentage of its employment in the public sector (8.9%). Rounding out the top 10 rankings are four Northeastern states (Pennsylvania, Massachusetts, Rhode Island, and

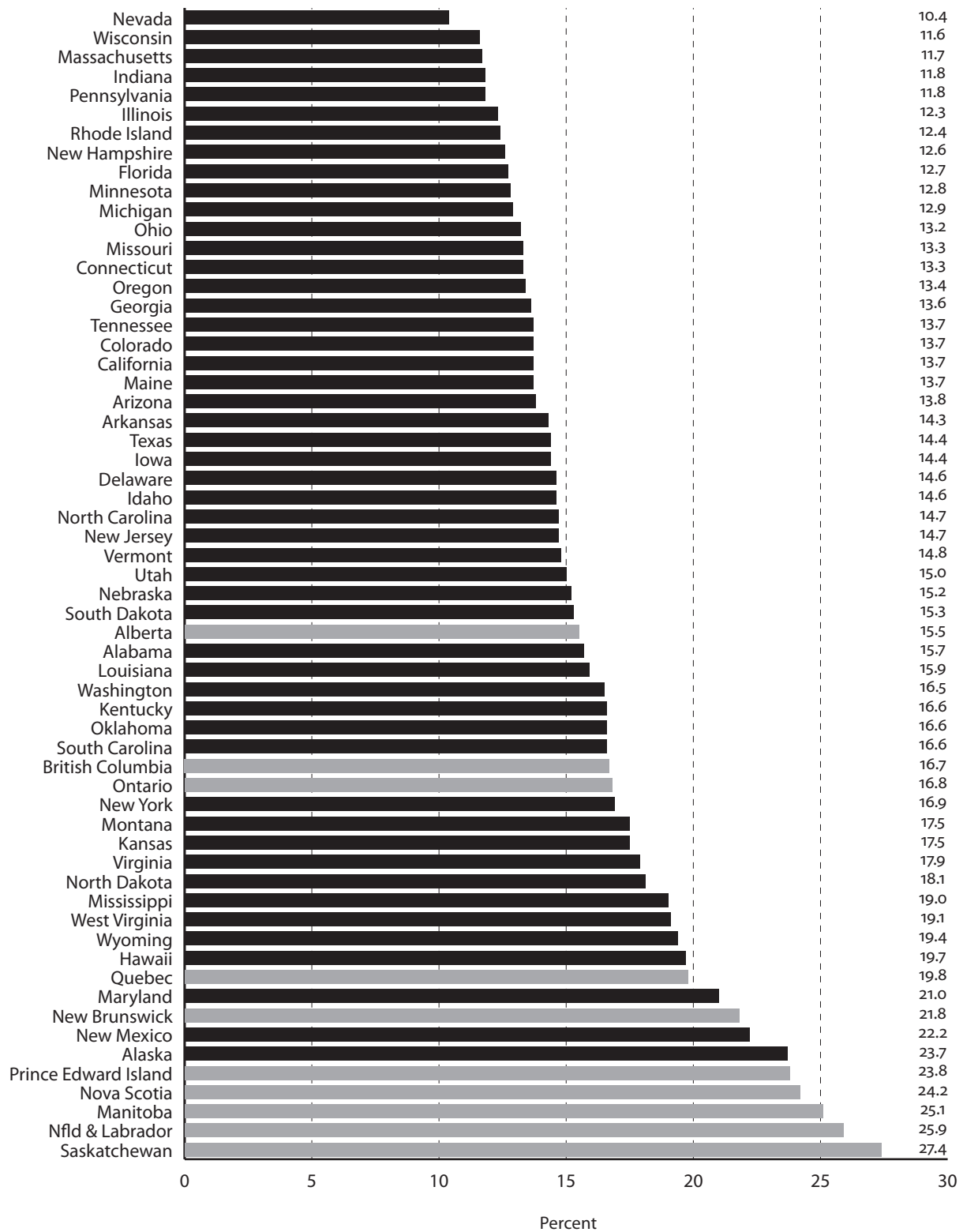
18 Demekas and Kontolemis (2000) concur. They found that Greece’s dramatic increase in public sector employment in the 1970s and 1980s was strongly associated with higher rates of unemployment. Hörner et al. (2007) found similar results for Europe.

Figure 7a: Average provincial/state and local government employment as a percent of total employment, 2003-2007



Sources: Statistics Canada, Public Institutions Division (2008); US Department of Labor, Bureau of Labor Statistics (2008a); calculations by authors.

Figure 7b: Average federal, provincial/state, and local government employment as a percent of total employment, 2003-2007



Sources: Statistics Canada, Public Institutions Division (2008); US Department of Labor, Bureau of Labor Statistics (2008a); calculations by authors.

New Hampshire), three industrial belt states (Indiana, Wisconsin, and Illinois), and two Southern states (Florida and Tennessee).

Alberta was the highest-ranked Canadian province; it ranked 40th with 14.1% of its total employment represented by the public sector. Ontario followed Alberta, taking 42nd place with 14.3% of its employment in the public sector. Saskatchewan occupied the last position, with public sector employment representing 25.0% of its total employment, nearly triple the rate of top-ranked Nevada.

Seven of the bottom 10 jurisdictions were Canadian provinces (Quebec, Prince Edward Island, New Brunswick, Nova Scotia, Manitoba, Newfoundland and Labrador, and Saskatchewan). British Columbia ranked 46th.

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 (figure 7b). Nevada retained the top position with the lowest level of employment represented by the public sector (10.4%). There was only one change to the list of jurisdictions in the top 10 and two changes to the list of the bottom 10 rankings after the inclusion of federal employees, although the rankings for several jurisdictions changed.

With the inclusion of federal employees, Alberta remained the top-ranked Canadian province but moved up to the 33rd position overall with 15.5% of its employment in the public sector. British Columbia moved ahead of Ontario as the second-ranked Canadian jurisdiction, moving up six positions to 40th overall with 16.7% of its employment in the public sector. Canadian provinces again dominated the bottom rankings, occupying seven positions (Quebec, New Brunswick, Prince Edward Island, Nova Scotia, Manitoba, Newfoundland and Labrador, and Saskatchewan). Three Canadian provinces—Manitoba, Newfoundland and Labrador, and Saskatchewan—had public sectors that constituted over one-quarter of their employment.

Characteristic 2: Minimum wages

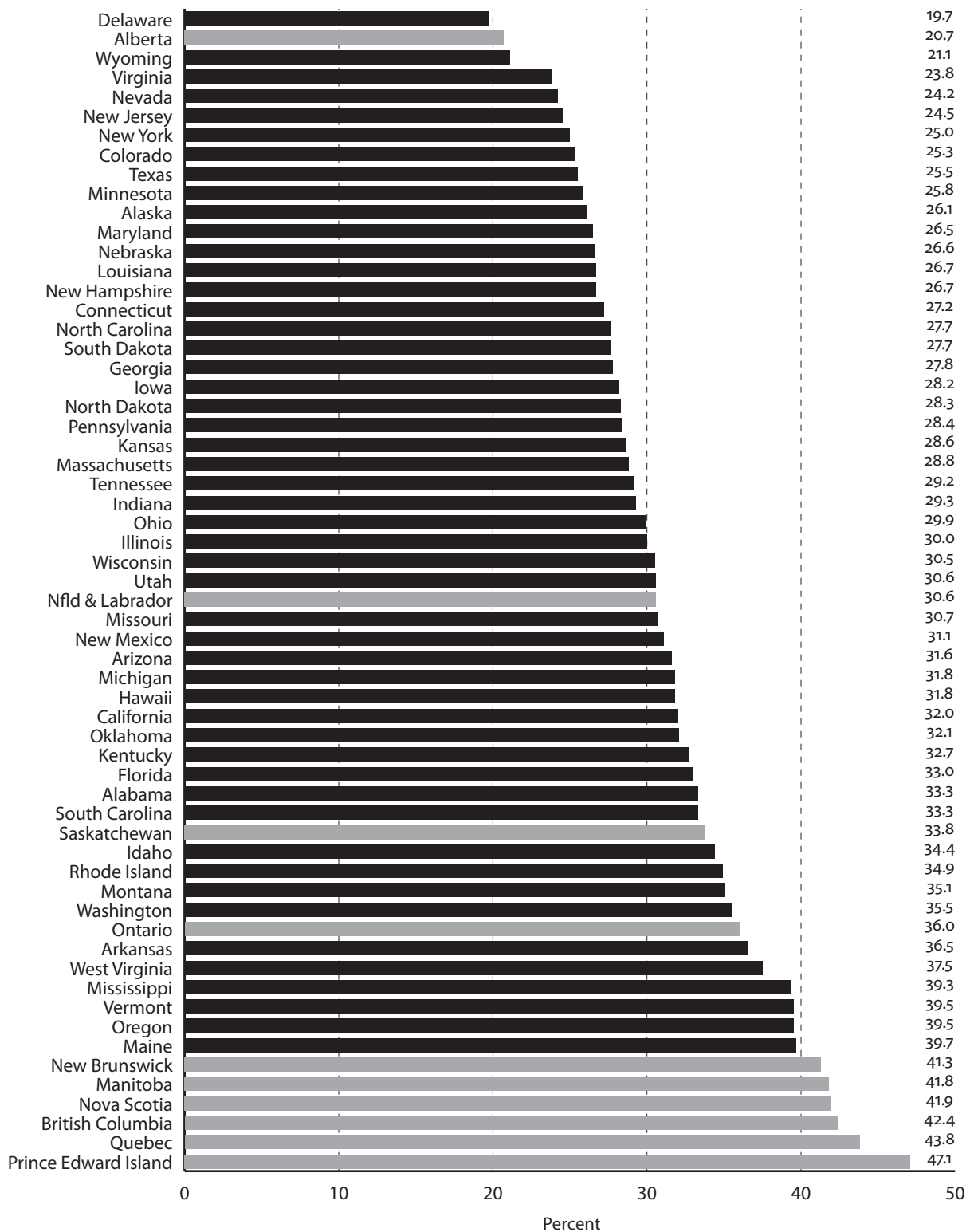
Minimum-wage laws establish the lowest level of hourly pay that employers must legally pay workers. Minimum wages have been shown to reduce employment opportunities for young and unskilled workers by restricting the ability of employers and employees to negotiate mutually beneficial contracts. In particular, minimum-wage legislation hinders low-skilled workers and new entrants from negotiating for employment they might otherwise accept (for a more in-depth discussion, see Law, 1998, and 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 minimum wage increases have negative employment effects, particularly for younger workers. Another study

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 (forthcoming).

Figure 8: Average minimum wage as a percent of per-capita GDP, 2003-2007



Sources: Human Resources and Social Development Canada (2008a); Statistics Canada (2008c); US Department of Labor, Employment Standards Administration, Wage and Hour Division (2008); US Department of Commerce, Bureau of Economic Analysis (2008); calculations by authors.

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]

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 particularly problematic, given that research shows that this type of skills development is an important driver of young and low-skilled workers making the transition to higher wages in the future (Even and Macpherson, 2003).

Furthermore, high minimum wage rates are associated with higher school dropout rates, as the increase in the minimum wage induces 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]

Another factor concerning minimum wages that is often overlooked is the age of minimum-wage workers. Data from Statistics Canada (2008a) reveals that in 2007, 62.4% of all minimum-wage workers in Canada were between the age of 15 and 24, and 87.0% of them lived at home with family.

Another important factor concerning minimum wages is the fact 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 and/or are working while attending school. Research shows there are very few workers who actually 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. They found that almost one-half (47.2%) of minimum-wage workers reported earning more than the minimum wage after one year. [24]

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 per-capita GDP (the average value of all goods and services produced per person in a jurisdiction over a specific time

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- 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, forthcoming).
- 22 Neumark and Wascher (2001: 591) specifically 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.”
- 23 These findings are buttressed by a series of studies from Neumark and Wascher (1995a, 1995b, 1996, and 2003) for the United States, and by Landon (1997) for Canada.
- 24 These findings are corroborated 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.

period). Since per-capita GDP 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 capita) 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 constitutes 19.7% of average per-capita GDP in the state. In other words, a citizen of Delaware earning the minimum wage could earn less than one-fifth of the average per-capita GDP (income) of the state. Alberta ranks second with a minimum wage equivalent to 20.7% of the province's average per-capita GDP. The remaining jurisdictions in the top 10 were all US states.

Prince Edward Island held the last position, ranking 60th out of the 60 Canadian provinces and US states. Prince Edwards Island's minimum wage represented 47.1% of the province's average per-capita GDP. Worse still for Canada, six of the bottom 10 jurisdictions were Canadian: New Brunswick, Manitoba, Nova Scotia, British Columbia, Quebec, and Prince Edward Island. Saskatchewan and Ontario ranked 43rd and 48th, respectively.

Characteristic 3: Unionization

Another important structural attribute of labour markets is unionization. [25] Unionization has been demonstrated to impede labour market flexibility, a key factor of 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 perform worse in terms of 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, 2002b; Menezes-Filho, 1997). 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 lower employment growth. [27] Hirsch described the wage premium as a tax on capital, which effectively lowers the net rate of return on investment.

25 Note that self-employment is excluded.

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).

There is a large body of research on unions and 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. Specifically, they found that when an industry moves from having less unionization (25th percentile) to more (75th percentile), 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.

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 labour market performance (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 (2002b) 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.

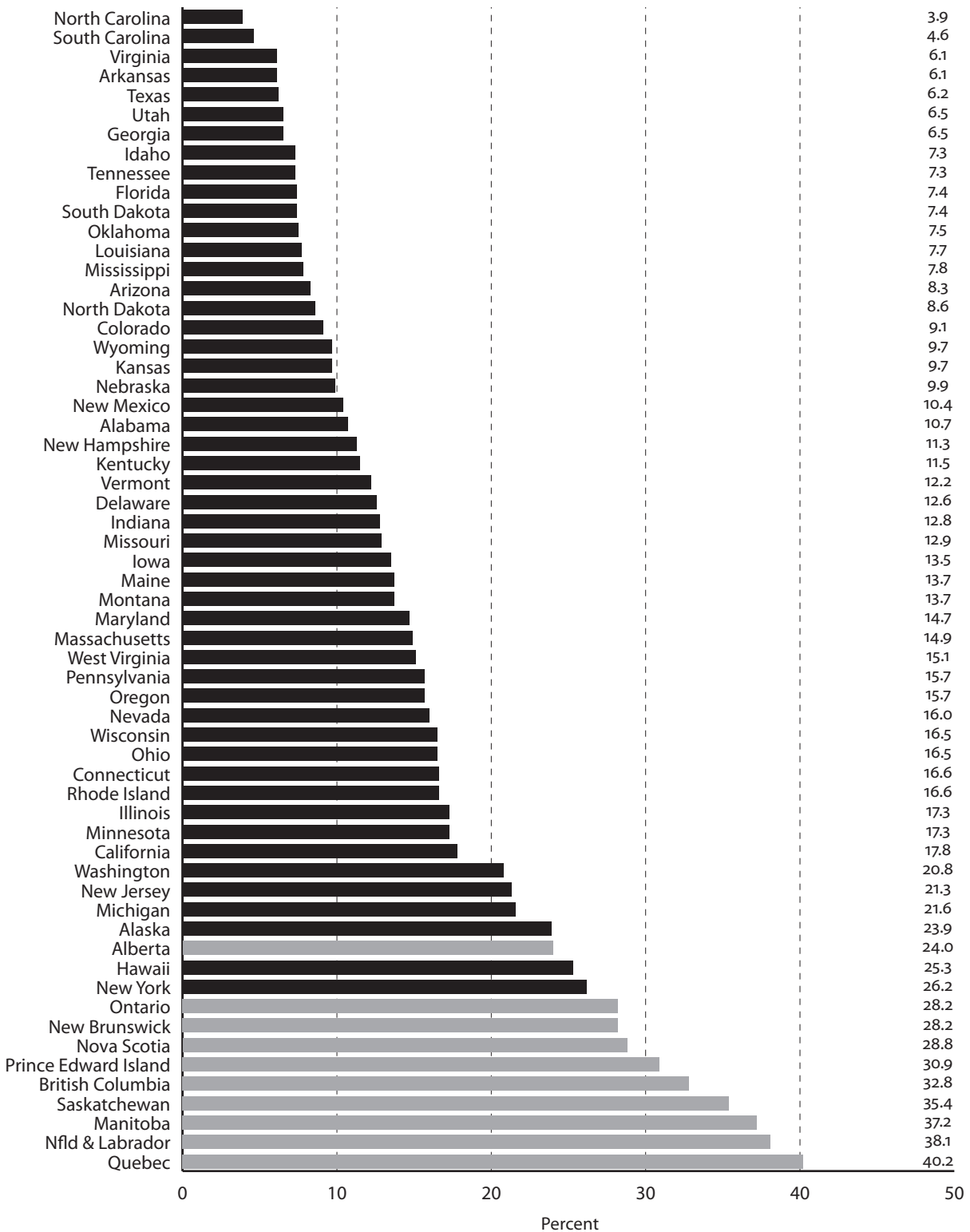
This labour market characteristic measures the percentage of total employment represented by unionized employment, on average, between 2003 and 2007.

Observations

North Carolina maintains the lowest ratio of unionized workers to total employment; 3.9% of its employed workers are unionized. South Carolina ranks a close second, with 4.6% of its employment unionized.

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.

Figure 9: Average unionized employment as a percent of total employment, 2003-2007



Sources: Statistics Canada (2008b); Hirsch and Macpherson (2008); calculations by authors.

The top-ranked Canadian province was Alberta—a dismal 49th with 24.0% of its employment unionized. In this regard, Alberta performed better than only two US states: Hawaii and New York. Canadian provinces occupied the bottom nine positions. Quebec was in last place: 40.2% of its employment is unionized.

Southern US states (North Carolina, South Carolina, Virginia, Arkansas, Texas, Georgia, Tennessee, and Florida) occupied eight of the top 10 rankings. The Right-to-Work states were at the top of the rankings, occupying all 10 of the top 10 positions and 19 of the top 20 rankings.

Part of the explanation for the Canadian provinces' poor showing is contained in the first labour market characteristic: the percent 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. [29] For example, in 2007, 18.6% of the private sector in Canada was unionized while 74.5% of the public sector was unionized. [30] In contrast, in the United States, 8.2% of the private sector was unionized while 39.8% of the public sector was unionized. The fact that Canada generally maintains a larger public sector than the United States is, therefore, an important explanation of the higher rates of unionization observed in Canada. [31]

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 unionism refers to 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: Labour Relations Laws" 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 (see Clemens et al., 2005).

Characteristic 4: Labour relations laws

The final characteristic of labour markets is the extent to which labour relations laws facilitate balance in the labour relations environment and more broadly enhance labour market flexibility. This indicator is based on the Fraser Institute's larger study, *An Empirical Examination of Labour Relations Laws in Canada and the United States* (Godin et al., 2006). [32] This measure is intricately

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- 29 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).
- 30 Private sector unionization ranged from a low of 10.0% in Prince Edward Island to a high of 26.3% in Quebec in 2007. For the same year, public sector unionization ranged from a low of 68.0% in Alberta to 81.5% in Quebec.
- 31 Canada's overall unionization rate in 2007 was 31.5% compared to 13.3% in the United States. For the same year, the size of the public sector (measured as public sector employment as a percentage of total employment) was 18.4% in Canada and 14.4% in the United States. See Clemens et al. (2005) for a discussion of the factors explaining the differences in unionization between the two countries.
- 32 The labour relations laws covered in this study remained unchanged and thus are up to date as of July 2008.

related to the previous measure, since the extent of labour market flexibility facilitated by labour relations laws is highly correlated with unionization levels.

The extent to which labour relations laws facilitate balance and flexibility is crucial in providing an environment that encourages productive economic activity. Labour relations laws that are biased in favor 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 Hwiwon 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.

This indicator 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: 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 worker-employer relations. It represents a measure of each jurisdiction's overall labour relations policy. Jurisdictions with labour relations laws that facilitate a greater degree of labour market flexibility 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 helps flexibility across the 10 Canadian provinces and 50 US states.

There are stark differences in jurisdictional authority over the regulation of labour relations among employers, unions, and employees in Canada and 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 relations laws are almost entirely centralized, regulated through federal law and enforced under federal authority by the National Labour Relations Board (NLRB).

Since US labour relations laws are largely federal, the only difference among US states with respect to labour relations laws is whether or not a state maintains 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 6.0. Quebec (with a score of 1.2) maintains the most rigid set of labour relations laws of any jurisdiction in Canada and the United States, followed closely by Prince Edward Island (2.2).

Below are a brief description and overview of the results for each of the areas covered by the Index of Labour Relations Laws (also summarized in table 4). (For a thorough analysis of

Table 3: Index of Labour Relations Laws, 2006

	Index of Labour Relations Laws	Rank
Right-to-Work States	9.2	tied for 1st place
Non-Right-to-Work States	7.5	tied for 23rd place
Alberta	6.0	51
Newfoundland and Labrador	3.8	52
Ontario	3.8	52
Nova Scotia	3.5	54
British Columbia	3.2	55
New Brunswick	3.0	56
Manitoba	2.7	57
Saskatchewan	2.3	58
Prince Edward Island	2.2	59
Quebec	1.2	60

Source: Godin et al. (2006).

the results for each of the areas covered by the Index of Labour Relations Laws, see Godin et al., 2006.)

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, this study examined a number of aspects of certification and decertification, including the use of mandatory secret ballot elections, balanced voting thresholds, and remedial certification (see table 4).

2. Union security

Union security refers to regulations governing union membership and the payment of union dues by covered workers. Specifically, union security relates to 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 of becoming a union member 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 4). The first group are American Right-to-Work states, in which workers are permitted to choose whether or not to join a union and pay union dues. The second group are the 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.

Table 4: Areas covered by the Index of Labour Relations Laws, 2006

	Certification/Decertification				Union security	
	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	Is mandatory union membership prohibited?	Are mandatory union dues allowed?
British Columbia	Yes	Yes	Yes	0	No	Yes
Alberta	Yes	Yes	No	0	No	Yes
Saskatchewan	No	Yes	No	25	No	Yes
Manitoba	No	Yes	Yes	10	No	Yes
Ontario	Yes	Yes	Yes	0	No	Yes
Quebec	No	No	No	15	No	Yes
New Brunswick	No	Yes	Yes	0	No	Yes
Nova Scotia	Yes	Yes	Yes	10	No	Yes
Prince Edward Island	No	No	Yes	0	No	Yes
Newfoundland and Labrador	Yes	Yes	Yes	0	No	Yes
Right-to-Work States	Yes	Yes	Yes	0	Yes	No
Non Right-to-Work States	Yes	Yes	Yes	0	Yes	Yes

	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	Is immediate binding arbitration the only option?	Are temporary replacement workers allowed?	Is third-party picketing allowed?
British Columbia	Yes	Yes	60 days	Yes	No	No
Alberta	Yes	No	n/a	No	Yes	No
Saskatchewan	Yes	Yes	90 days	Yes	Yes	Yes
Manitoba	Yes	Yes	90 days	No	Yes	Yes
Ontario	Yes	No	n/a	Yes	Yes	Yes
Quebec	Yes	Yes	not specified	Yes	No	Yes
New Brunswick	Yes	Yes	not specified	No	Yes	Yes
Nova Scotia	Yes	No	n/a	No	No	Yes
Prince Edward Island	Yes	No	n/a	Yes	Yes	Yes
Newfoundland and Labrador	Yes	No	n/a	No	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: Godin et al. (2006).

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.

Successor rights

Successor rights provisions determine whether and how collective bargaining agreements survive the transfer from one employer (owner) to another. [33] 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. That is, if a business or portion of a business is struggling, stringent successor laws will impede its reorganization 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

Technological change provisions in labour relations laws require that the employer give notice of technological investment and change to the union (and in some provinces to the minister of labour). These provisions are a barrier to technological change and could have serious and adverse effects on productivity.

Arbitration of disputes

An important component of labour market flexibility is how disputes regarding a collective agreement, its meaning, application, and alleged violations are resolved when both parties cannot or no longer wish to negotiate a solution. 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.

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 terms of 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. Similar to labour relations laws, research shows these also have an impact on labour market performance by helping to explain the degree of labour market flexibility. [34] Below are just a few Canadian examples of other aspects of labour regulation that decrease labour market flexibility and thus performance. Unfortunately, there is currently a dearth of 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 provinces have some measure in their employment standards acts that requires overtime pay. [35] 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.

British Columbia, Saskatchewan, Manitoba, Quebec, and Newfoundland and Labrador maintain the lowest weekly threshold for the number of hours worked that are required for an employee to receive overtime pay: 40 hours. In addition, British Columbia is the only province to impose a tiered system of overtime pay. In that province, an employee who works in excess of eight hours a day is to earn 1.5 times the normal pay for the extra hours. Should the employee work in excess of 12 hours a day, he or she requires twice the regular pay for that extra time. Nova Scotia and Prince Edward Island have the highest number of hours in a week required to trigger overtime pay: 48.

34 For example, a recent study for the World Bank by Giorgio Calcagnini and Germana Giobini (2006) found that stringent employment protection legislation (EPL)—which makes it costly to hire and fire workers—is associated with lower levels of investment in European countries. The authors concluded, “we find that current EPL has a negative impact on current investment” (2006: 35). See also the OECD’s study *OECD Employment Outlook* for a discussion of how employment protection legislation and other aspects of labour market regulation compare among the 30 OECD countries (OECD, 2006a; OECD, 2007).

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

Minimum wage exemptions

Another important aspect of the various provincial employment standards acts is the minimum wage exemptions they provide. Several provinces, such as Saskatchewan, New Brunswick, and Newfoundland and Labrador, 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 workers such as farm and ranch employees, commissioned salespeople, students, apprentices, and interns, educational or recreational camp employees, extras in film production, and fishing boat employees. 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

Occupational licensing regulation affects labour market performance by potentially impeding worker mobility. [36] 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 trades such as millwrights, pipe-fitters, and welders. The key to labour market flexibility is to ensure occupational licensing is easily transferable across jurisdictions. When occupational licenses are easily transferable, it increases the ability of workers to find jobs that provide them with the greatest return by allowing them to work inter-provincially. 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, it is far from the case that workers can move freely around the country (see Knox and Karabegović, forthcoming). In 1995, the Canada-wide Agreement on Internal Trade (AIT) made several professional occupations and 65 trades accepted across Canadian provinces. However, workers in those fields are still subject to examinations in their destination province.

Recently, there have been two major improvements to labour mobility in Canada. The first is the Trade, Investment, and Labour Mobility Agreement (TILMA) between British Columbia and Alberta, which will be fully implemented in 2009. The overarching goal of the TILMA is to create a seamless economic region between the two provinces. Of importance to occupational licensing and labour mobility, the TILMA includes a list of mutually recognized occupations and trades (ones that do not require any further examination or regulation to practice in either province); this list now includes 86 occupations and trades. [37] The TILMA will likely have a beneficial impact on worker mobility between Alberta and British Columbia and could help initiate strong labour market performance in the years to come.

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

37 There are an additional 132 occupations and trades for which certifications to practice are required in one of the two provinces. Employees moving from the province where certification is not available to the province in which certification is required have to obtain certification from the appropriate provincial authority (British Columbia, 2007).

The second major advance is a recent agreement signed by the 13 Canadian provincial and territorial premiers on labour mobility. In July 2008, the premiers agreed to have a working plan in place by August 2009 that ensures mutual recognition of occupational licenses across all provinces. [38]

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

Appendix A: Methodology

For those wanting more detail, a technical discussion of the methodology is included here.

Methodology for computing the Index of Labour Market Performance

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

- Average total employment growth (2003-2007)
- Average private sector employment growth (2003-2007)
- Average unemployment rates (2003-2007)
- Average duration of unemployment (2003-2007)
- Average productivity (2003-2007)

Each indicator is standardized such 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 transfer 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: $(V_i - V_{\min}) / (V_{\max} - V_{\min})$ multiplied by 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 of 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 $(V_{\max} - V_i) / (V_{\max} - V_{\min})$ multiplied by 10.

For details explaining how the Index of Labour Relations Laws is computed, see Godin et al. (2006).

US employment calculations

Official data for public employment and private employment are available for the US states up to and including 2005. To match this data with data for the Canadian provinces, which is available up to and including 2007, estimations were made for the US states for 2006 and 2007 in order to provide comparable data among jurisdictions. The five-year average growth rate between 2001 and 2005 was used to generate 2006 and 2007 estimates for total private and public employment.

To calculate 2006 and 2007 figures for state and local employment, this study's authors used the five-year average of state and local employment as a percentage of total public employment. These data were then multiplied by the total public employment estimates for 2006 and 2007.

Appendix B: Other important factors

This appendix presents information on two other indicators of labour market performance that are not included in the Index of Labour Market Performance due to compatibility issues: migration and time lost due to work stoppages. Migration is not comparable across Canadian provinces and US states because the data is collected differently. Canadian data is collected on a calendar-year basis while US data is collected on a July-to-July basis. Time lost due to work stoppages is not comparable because US data does not include enough detail to make accurate conclusions. Despite the comparability issues, migration and work stoppages are important indicators of labour market performance. Each is discussed below.

Migration

Although not specifically included in the Index of Labour Market Performance, the flow of workers into and out of jurisdictions is an important indicator of the performance of labour markets specifically, and of economic performance generally. A key explanation for these flows is the existence or lack of labour opportunities that exist in the worker's home province or state. For example, using data from 1982 to 1995, Finnie (1999: 259) found that inter-provincial 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." 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, excluding immigration, 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. Unfortunately, Canadian and US data are not directly comparable because Canadian data are collected on a calendar-year basis (January to December) while US data are collected on a July-to-July basis. For this reason, data for Canadian provinces and US states are presented separately in tables below.

The measure used, net migration, refers to the difference between the number of people migrating out of a particular jurisdiction relative to the number of people migrating into the same jurisdiction. Net migration is normally presented as a percentage of the base year's population. The tables give working-age net migration figures for Canadian provinces, whereas they present total net migration figures for US states. The figures throughout this section refer exclusively to domestic migration; foreign migration is excluded.

Table B-1 contains working age migration data for the Canadian provinces for 2003 to 2007. Alberta recorded both the highest positive number of net migrants and the highest percentage of net migration of working-age people from 2003 to 2007: 143,361 people or 7.3% of Alberta's population. Alberta was well ahead of the second-ranked province—and only other province to have positive net migration—British Columbia, which recorded a net inflow of 42,646 people, 1.9% of British Columbia's population. Ontario and Quebec recorded the highest negative net

Table B-1: Net interprovincial migration (in thousands) and net migration rates by province, 2003-2007^{ab}

	2003	2004	2005	2006	2007	Total, 2003-2007	Percentage of population, 2007
Newfoundland and Labrador	(1,103)	(2,651)	(4,497)	(3,964)	(694)	(12,909)	-5.9%
Prince Edward Island	224	(259)	(237)	(591)	(237)	(1,100)	-1.6%
Nova Scotia	142	(1,594)	(3,679)	(3,060)	(546)	(8,737)	-2.0%
New Brunswick	(1,277)	(867)	(2,708)	(3,574)	1,100	(7,326)	-2.0%
Quebec	218	(3,297)	(6,834)	(12,915)	(14,444)	(37,272)	-1.0%
Ontario	(5,074)	(8,222)	(14,500)	(32,318)	(17,762)	(77,876)	-1.2%
Manitoba	(3,162)	(3,153)	(9,298)	(7,658)	(1,390)	(24,661)	-4.1%
Saskatchewan	(4,590)	(6,027)	(9,737)	(2,856)	10,174	(13,036)	-2.6%
Alberta	10,254	19,348	44,968	58,166	10,625	143,361	7.3%
British Columbia	4,055	7,551	7,434	10,221	13,385	42,646	1.9%

^a Net interprovincial migration is defined as the difference between the number of incoming and outgoing migrants.

^b Net migration rates were calculated based on each year's population in a given jurisdiction.

Sources: Statistics Canada (2008c, 2008d); calculations by authors.

migration, with 77,876 and 37,272 people leaving those provinces, respectively. Newfoundland and Labrador and Manitoba recorded the highest negative net migration as a percentage of their populations, with rates of -5.9% and -4.1%, respectively. Also of note is the recent dramatic swing in net migration in Saskatchewan. The province had significant out-migration in every year from 2003 to 2006, and then experienced a significant positive net migration in 2007.

In Canada, the net movement of people between 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 8.6 (out of a possible 10). British Columbia ranked second among Canadian provinces with a score of 6.3. Newfoundland and Labrador and Manitoba, which recorded two of the highest rates of negative out-migration, recorded scores of 3.9 and 5.0 on the Index of Labour Market Performance, respectively.

One interesting insight gained from combining the information in table B-1 and the results of the labour market performance indicators is that a high rate of net out-migration can actually improve a jurisdiction's score and ranking in the Index of Labour Market Performance. For example, Manitoba recorded the second worst net migration rate for the period from 2003 to 2007, with 4.1% of its population (24,661) leaving the province. The outflow of its population results 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) buttresses the findings discussed above; jurisdictions with strong labour markets (and with strong economies in general) tend to attract migrants. The opposite also holds. For example, Nevada and Arizona rank first and second in terms of positive net migration rates. Nevada attracted 259,130 net migrants in the period from 2003 to 2007, or 10.1% of its population. Arizona welcomed 513,183 migrants over the same period, representing 8.1% of its population. Both states performed well in the Index of Labour Market Performance:

Table B-2: Net domestic migration (number) and net migration rates (%) by state, 2003-2007^{abc}

	Number	Percent of population		Number	Percent of population
Alabama	78,548	1.7%	Montana	29,212	3.0%
Alaska	(2,526)	-0.4%	Nebraska	(21,161)	-1.2%
Arizona	513,183	8.1%	Nevada	259,130	10.1%
Arkansas	61,521	2.2%	New Hampshire	13,562	1.0%
California	(1,051,184)	-2.9%	New Jersey	(305,904)	-3.5%
Colorado	63,346	1.3%	New Mexico	32,848	1.7%
Connecticut	(66,280)	-1.9%	New York	(1,066,358)	-5.5%
Delaware	30,915	3.6%	North Carolina	389,389	4.3%
Florida	913,873	5.0%	North Dakota	(7,017)	-1.1%
Georgia	369,605	3.9%	Ohio	(219,768)	-1.9%
Hawaii	(9,263)	-0.7%	Oklahoma	23,189	0.6%
Idaho	84,136	5.6%	Oregon	98,034	2.6%
Illinois	(385,049)	-3.0%	Pennsylvania	(7,009)	-0.1%
Indiana	2,591	0.0%	Rhode Island	(36,023)	-3.4%
Iowa	(21,289)	-0.7%	South Carolina	189,700	4.3%
Kansas	(41,837)	-1.5%	South Dakota	5,994	0.8%
Kentucky	59,564	1.4%	Tennessee	188,764	3.1%
Louisiana	(275,137)	-6.4%	Texas	482,988	2.0%
Maine	14,954	1.1%	Utah	41,694	1.6%
Maryland	(76,234)	-1.4%	Vermont	(2,831)	-0.5%
Massachusetts	(248,615)	-3.9%	Virginia	103,783	1.3%
Michigan	(296,492)	-2.9%	Washington	124,151	1.9%
Minnesota	(40,301)	-0.8%	West Virginia	14,458	0.8%
Mississippi	(13,187)	-0.5%	Wisconsin	(12,095)	-0.2%
Missouri	35,152	0.6%	Wyoming	11,107	2.1%

^a This data is collected from July to July.

^b A negative value for net migration is indicative of net out-migration, meaning that more migrants left an area than entered it. Positive values reflect net in-migration to an area.

^c Net migration rates were calculated based on each year's population in a given jurisdiction.

Source: US Department of Labor, Bureau of Labor Statistics (2008b); calculations by authors.

Nevada ranking second and Arizona ranking 6th. On the other hand, New York and Massachusetts recorded two of the worst net migration rates in the US, with 5.5% and 3.9% of their residents leaving each state between 2003 and 2007. These states also performed poorly in the Index of Labour Market Performance, receiving scores of 4.3 (42nd) and 3.7 (54th).

One area of the US results deserves special attention. Table B-2 shows that there has been a significant amount of interstate migration in the Southern US states; particularly, there has been a large recent out-migration of people from Louisiana to neighboring states. This movement is most likely the result of the devastation caused by Hurricane Katrina, which struck Louisiana in August 2005. While Louisiana experienced a consistent outflow of people from 2003 to 2005, it dramatically increased in 2006. From 2003 to 2005, the rate of out-migration was -0.2%, -0.2%,

and -0.3%; in 2006, it was -6.4%, or 269,650 people. 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 from 2005 to 2006. Interestingly, Louisiana experienced a positive net migration in 2007 (28,854 people), perhaps indicating that the state is on the path to recovery.

The relationship between migration and 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 working-age 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.

Work days lost due to labour disputes

Labour disputes [39] 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.

Research shows that the primary way in which labour disputes discourage investment and business activity is by lowering the value of firms. In other words, research shows that labour disputes 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 negative effects of

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- 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).
- 41 Becker and Olson found similar results in 1986. The authors used data for 1962 to 1982 and found that strikes substantially affected shareholder equity. Specifically, the average strike involving 1,000 or more workers resulted in a 4.1% drop in shareholder equity.

strikes on the cumulative stock market returns on firms involved in those strikes. Specifically, firms involved in strikes saw their returns decrease by -0.7% to -0.8%. [42]

Lower rates of return due to 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. Specifically, jurisdictions with more days lost due to 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 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 27 jurisdictions, including two Canadian provinces (New Brunswick and Prince Edward Island), that tied for first place among all 60 jurisdictions with an average of zero work days lost per 1,000 workers from 2002 to 2006 (figure B-1). [43] (This measure only captures days lost from labour disputes involving 1,000 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 record few work days lost.) [44]

The bottom-ranked jurisdiction was Newfoundland and Labrador, with an average of 439.9 work days lost per 1,000 workers. [45] This was far worse than the second-last ranked jurisdiction, British Columbia, which recorded an average of 90.8 work days lost per 1,000 workers.

Canadian provinces tended to have a higher average number of work days lost from labour disputes than US states. Six of the bottom 10 jurisdictions were Canadian provinces: Alberta, Saskatchewan, Ontario, Quebec, British Columbia, and Newfoundland and Labrador. Manitoba (38th) and Nova Scotia (45th) ranked in the bottom half of all jurisdictions.

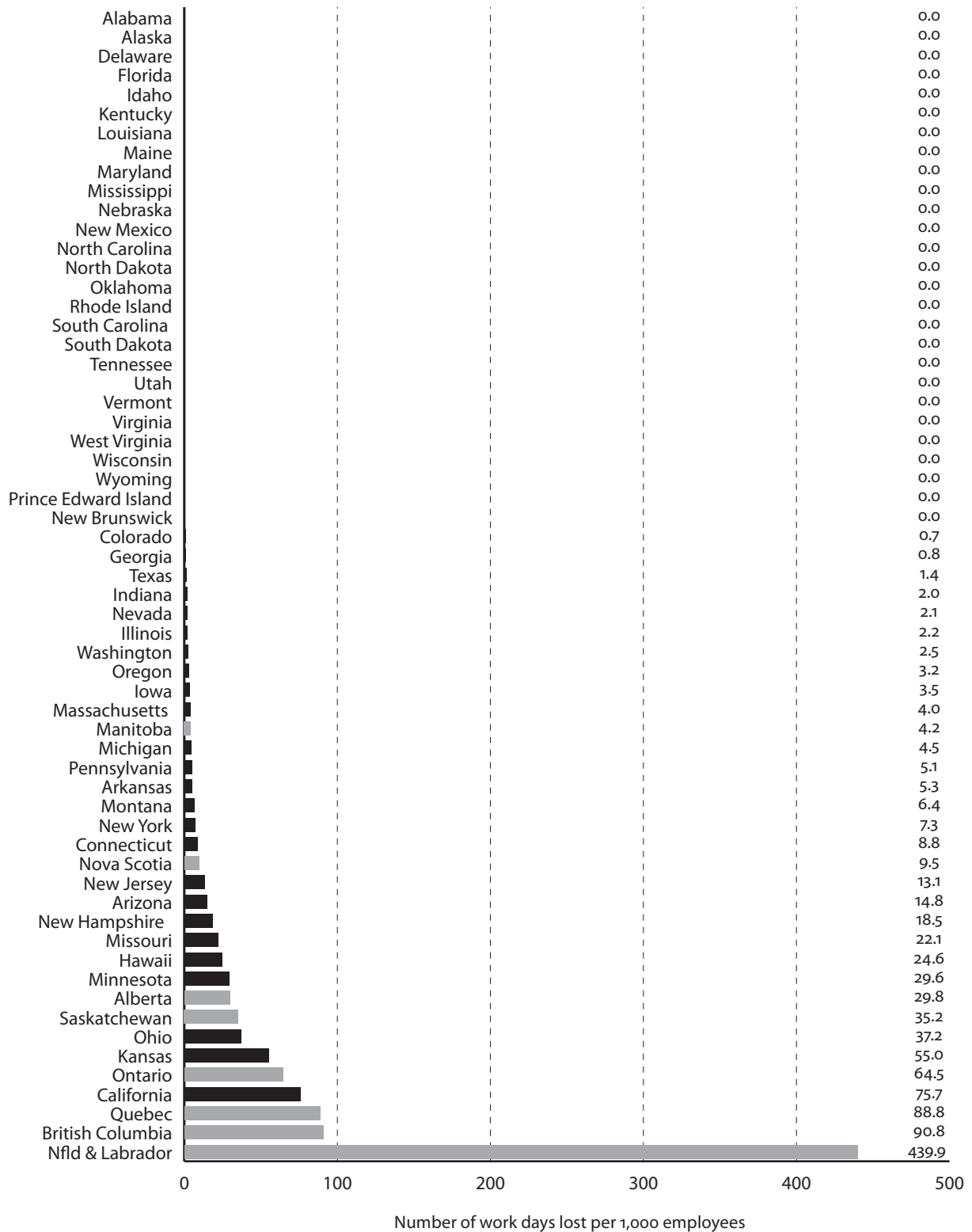
42 Strikes do not only affect the value of struck firms; they also can affect the value of third-party firms. For instance, Persons (1995) used stock market data for the years 1965 to 1990 to estimate the effects of strikes against US automobile producers on the stock value of their steel suppliers.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

43 Data for 2002 to 2006 were the latest available at time of publication (August 2008). Canadian data for 2007 were available; corresponding US data were not.

44 According to Statistics Canada (2007b), Prince Edward Island had only five firms with 1,000 or more workers in 2004. New Brunswick had 21 such firms. In comparison, Ontario had 494 of these firms.

45 In 2004, Newfoundland and Labrador had only 23 firms with 1,000 or more employees. It has a serious problem compared to the other jurisdictions in terms of the number of large firms relative to how many work stoppages occurred. The inclusion of work stoppages for all firms may only serve to exacerbate this difference.

Figure B-1: Average work days lost due to labour disputes, per 1,000 employees, 2002-2006



Sources: Human Resources and Social Development Canada (2008b); Statistics Canada (2008b); US Department of Labor, Bureau of Labor Statistics (2008b, 2008d); calculations by authors.

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, 17 were in the top half of all jurisdictions; 15 of those recorded an average of no person-days lost from 2002 to 2006. [46]

46 The differences in work stoppages may be driven by the public sector, which has a much higher rate of unionization. In order to evaluate this issue, more detailed data was 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. For Canada, the average number of work days lost in the public sector due to labour disputes from 2002 to 2006 ranged from 6.3 in Manitoba to 1,239.5 in Newfoundland and Labrador (as mentioned, Prince Edward Island and New Brunswick recorded zero average work days lost per 1,000 workers.) In contrast, the number of work days lost in the private sector is substantially lower. For instance, Manitoba registers an average of 4.5 working days lost, while Newfoundland and Labrador loses an average of 179.5 work days due to labour disputes. Prince Edward Island, Nova Scotia, and New Brunswick had no labour disputes in the private sector between 2002 and 2006. These results show that among Canadian provinces, work days losses are higher in the public sector than in the private sector.

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About the authors

Keith Godin is a Senior Policy Analyst in the Fiscal Studies Department at the Fraser Institute. He has published numerous major studies on a range of policy issues including labour regulation and performance, entrepreneurship, taxation, banking, and investment. Most recently, he authored or co-authored *Measuring Entrepreneurship: Conceptual Frameworks and Empirical Indicators* (2008), *Bank Lending and Entrepreneurial Finance: The Performance of Canadian Banks* (2008), *Measuring Business Creation in Canada and the United States* (2007), *Crowding Out Private Equity: Canadian Evidence* (2007), *The Economic Costs of Capital Gains Taxes* (2007), and *Measuring Labour Markets in Canada and the United States: 2007 Edition* (2007). He has also written shorter articles on fiscal policy and government failure, as well as commentaries in newspapers across the country including the *National Post*, *Toronto Sun*, *Ottawa Citizen*, *Vancouver Sun*, and *Business in Vancouver*. Mr. Godin holds a Bachelor's degree in Economics and a Master's degree in Public Policy from Simon Fraser University.

Milagros Palacios is a Senior Research Economist in the Fiscal Studies Department at the Fraser Institute. She holds a Bachelor's degree in Industrial Engineering from the Pontifical Catholic University of Peru and a MSc in Economics from the University of Concepción, Chile. She is co-author of *Tax Freedom Day* (2008), *The Impact and Cost of Taxation in Canada: The Case for Flat Tax Reform* (2008), *Tax Facts 15* (2008), *Canadian Government Debt* (2008), *Measuring Labour Markets in Canada and the United States: 2007 Edition* (2007), *Fiscal Performance Index* (2007), *Canadian Provincial Investment Climate Report* (2007), *An Empirical Comparison of Labour Relations Laws in Canada and the United States* (2006), *Union Disclosure in Canada and the United States* (2006), and *Transparency of Labour Relations Boards in Canada and the United States* (2005). Her recent commentaries have appeared in such newspapers as the *National Post* and *Windsor Star*. Since joining the Institute, Ms. Palacios has written regularly for *Fraser Forum* on a wide range of topics including labour regulation, fiscal issues, taxation, charitable giving, and a host of environmental issues such as air quality, the Kyoto Protocol, and water transfers.

Niels Veldhuis is the Director of Fiscal Studies and a Senior Economist at the Fraser Institute. Since joining the Institute in 2002, Mr. Veldhuis has authored or co-authored four books and 36 comprehensive studies on a wide range of topics including taxation, productivity, entrepreneurship, labour markets, and government performance. He has written more than 125 articles, which have appeared in over 50 newspapers including the *National Post*, *Globe and Mail*, and *Wall Street Journal*. Mr. Veldhuis appears regularly on radio and television programs across the country and has appeared before committees of both the House of Commons and the Senate as an expert witness. He has a Bachelor's degree in Business Administration, with joint majors in business and economics, and a Master's Degree in Economics from Simon Fraser University.

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