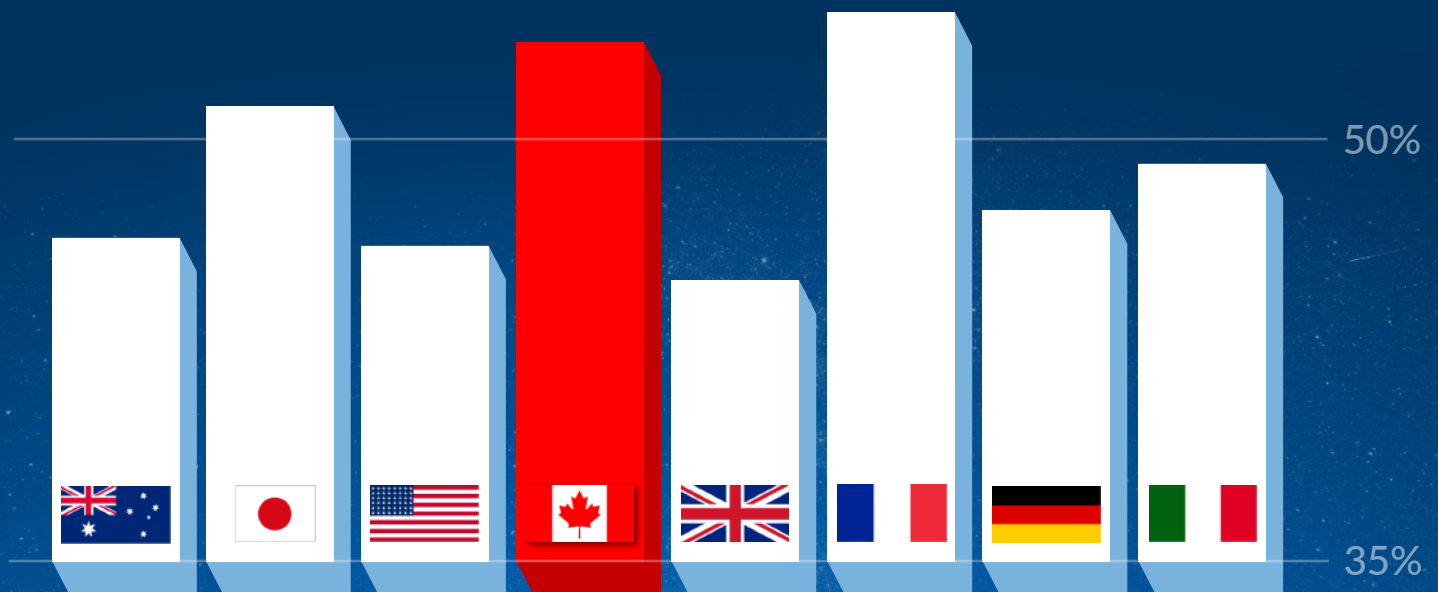


Canada's Rising Personal Tax Rates and Falling Tax Competitiveness

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Executive Summary

In December 2015, Canada's new Liberal government introduced changes to Canada's personal income-tax system. Among the changes for the 2016 tax year, the federal government added a new income-tax bracket, raising the top tax rate from 29% to 33% on incomes over \$200,000. This increase in the federal tax rate is layered on top of numerous recent provincial increases. Starting with Nova Scotia in 2010, at least one Canadian government has introduced one (or more) new personal income-tax brackets with higher tax rates in every year except 2011. Over this period, seven out of 10 governments increased tax rates on upper-income earners. As a result, the combined federal and provincial top personal income-tax rate has increased in every province since 2009.

The largest tax hike has been in Alberta, where the combined top rate increased by 23.1%, in part because the new rates were added to a relatively low initial rate. Alberta has traditionally had Canada's most competitive top tax rate but now has a higher combined top tax rate than neighbouring British Columbia. In Ontario, the combined top rate increased by 15.3%; in Quebec it increased by 10.6%.

These increases have important consequences for Canada's economy. In particular, high and increasing marginal tax rates—that is, the tax rate on the next dollar earned—discourage people from engaging in productive economic activity, ultimately hindering economic growth and prosperity. This occurs because marginal tax rates reduce the reward of earning more income and, in the case of personal income taxes, more labour income. There is general agreement in the economic literature on this point; the debate is about the magnitude of the effect.

The federal and provincial increases to Canada's marginal income-tax rates from 2009 to 2016 have put the country at a greater competitive disadvantage for attracting and retaining skilled labour and, less directly, investment and entrepreneurs. Even before the changes, the country's combined federal and provincial top marginal tax rates compared unfavourably to those in the United States and other industrialized countries.

Out of 61 Canadian and US jurisdictions (including the provinces, states, and Washington, DC), Nova Scotia currently has the highest combined top statutory marginal rate (54.00%), followed by Ontario (53.53%), and Quebec (53.31%). Six Canadian provinces occupy the list of 10 jurisdictions with the highest top combined marginal income-tax rates and all provinces are in the top 20. There are a total of 42 US jurisdictions with combined top tax rates that are lower than all Canadian provinces.

The fact that Canada's top tax rates are often applied to lower levels of income than is the case in other countries further erodes our tax competitiveness. To adjust for differences in income thresholds, we compare the combined statutory marginal tax rates at various income levels in Canadian dollars for each Canadian and US jurisdiction. At an income of CA\$300,000, the highest threshold in which a Canadian combined top rate is applied, Canadians in every province face a higher marginal income-tax rate than Americans in any US state. Results are similar at an income of CA\$150,000 and Canada's marginal tax rates are also uncompetitive at incomes of CA\$75,000 and CA\$50,000.

Taken together, Canada's personal income-tax rates are decidedly uncompetitive compared to those in the United States. And, Canada also competes with other industrialized countries for highly skilled workers and investment. To measure the competitiveness of Canada's top tax rates, the study compares the combined top statutory marginal income-tax rates with rates in 34 industrialized countries. In 2014 (latest year of available international data) Canada had the 13th-highest combined top tax rate out of 34 countries. The federal change to the top rate in 2016 has markedly worsened Canada's competitive position. The new 2016 Canadian top tax rate (53.53%) is sixth highest relative to the 2014 international rates.

Canadian governments have put the country in this uncompetitive position, in part, to raise more revenue as they grapple with persistent deficits and mounting debt. However, the tax increases are unlikely to raise as much revenue as governments expect since taxpayers—particularly upper-income earners—tend to change their behaviour in response to higher tax rates in ways that reduce the amount of tax they might pay. Federal and provincial governments would do well to consider reversing the trend towards higher marginal tax rates on upper-income earners, and lower personal income-tax rates.

Introduction

In December 2015, Canada's new Liberal government introduced changes to Canada's personal income-tax system. Specifically, for the 2016 tax year, the federal government added a new income-tax bracket, raising the top tax rate from 29% to 33% on incomes over \$200,000. It also reduced the marginal tax rate on incomes between \$45,000 and \$90,000 (from 22% to 20.5%).

The federal government's tax rate hike is part of a recent trend that has seen Canadian governments increasing personal income-tax rates on upper-income earners. Starting with Nova Scotia in 2010, at least one Canadian government has introduced one (or more) new personal income-tax brackets with higher tax rates in every year except 2011. Over this period, seven out of 10 provincial governments increased tax rates on upper-income earners. [1] The federal tax changes are therefore being layered on top of numerous recent provincial increases in tax rates. As a result, the combined federal and provincial top personal income-tax rate has increased in every province since 2009.

These increases, which are in part motivated by a desire for higher revenues and concerns over income inequality, [2] have important consequences for Canada's economy. In particular, high and increasing marginal tax rates—that is, the tax rate on the next dollar earned—discourage people from engaging in productive economic activity, ultimately hindering economic growth and prosperity. [3] This occurs because marginal tax rates reduce the reward of earning more income and, in the case of personal income taxes, more labour income. There is general agreement in the economic literature on this point; the debate is about the magnitude of the effect. [4]

[1] The government of British Columbia is among the provincial governments that increased personal income-tax rates on upper-income earners. However, unlike those in many other provinces, this tax increase was temporary. The BC government created a new temporary personal income-tax bracket with a higher top income-tax rate in 2014. It has been removed for the 2016 tax year.

[2] However, a simulation by Milligan and Smart (2015) suggests that increasing top provincial income-tax rates by five percentage points would have only a small effect on the share of income earned by the top 1% of income earners.

[3] A series of studies led by Bev Dahlby have estimated the cost to society of raising an additional dollar of government revenue, referred to as the marginal cost of public funds. In a recent study, Dahlby and Ferde (2012), using data from 1972 to 2006, estimated that the marginal cost of public funds from raising one dollar of personal income tax ranged from 1.44 in Alberta to 3.81 in Quebec.

[4] For reviews of the literature on the economic impact of taxes, see Gale and Samwick, 2014; Speer, Palacios, and Ren, 2014; Murphy, Clemens, and Veldhuis, 2013; and Palacios and Harischandra, 2008. For a text-book discussion of Canada's income-tax system and its impact on labour supply, savings, and other economic decisions, see Rosen, Wen, and Snodden, 2012.

The federal and provincial increases to Canada's personal income-tax rates from 2009 to 2016 have put Canada at a greater competitive disadvantage for attracting and retaining skilled labour and, less directly, investment and entrepreneurs. Even before the changes, the country's combined federal and provincial top marginal tax rates compared unfavourably with those in the United States and other G7 countries (Murphy, Clemens, and Veldhuis, 2013). The fact that Canada's top tax rates are often applied to lower levels of income than in other countries further eroded competitiveness. Worse still, the tax increases are unlikely to raise as much revenue as governments expect since taxpayers—particularly upper earners—tend to change their behaviour in response to higher tax rates in ways that reduce the amount of tax they pay (Lafleur, Palacios, and Emes, 2015).

This paper is divided into four sections. The first explains in more detail the changes to the top personal income-tax rates since 2009. The second section explores how Canada's top rates compare to those of the United States and the third section compares Canada to other OECD countries. The final section discusses how the tax increases are unlikely to provide as much government revenue as expected.

1 Changes to Canada's Statutory Marginal Income Tax Rates on Labour Income

The discussion in this publication focuses on three aspects of tax rates. [5] First is the statutory rate, which is the tax rate before accounting for the deductions and various tax credits that an individual tax filer claims. This can differ from the effective tax rate that people actually pay. Second, the discussion focuses on marginal tax rates, as opposed to average tax rates, because of the important role that the marginal tax rate plays in decision making (Murphy, Clemens, and Veldhuis, 2013). [6] An individual generally decides to engage in additional work based on the extra or marginal benefit that the additional work could provide. A higher marginal benefit encourages someone to engage in additional work. Those given the opportunity to work more and earn more labour income are discouraged from doing so when a significant portion of their increased income is consumed by taxes. Third, the discussion focuses on statutory and marginal tax rates applied to labour income. [7] This is opposed to corporate income or investment income from capital gains and dividends, which are taxed at different rates, although the tax rates on capital gains and dividends are affected by personal income-tax rates.

Although the entire tax structure is important for tax competitiveness, key metrics for assessing the competitiveness of a jurisdiction's personal income-tax system are middle and upper marginal rates, and particularly the top (highest) marginal tax rate. Upper-income earners tend to be highly skilled, professional, and often mobile workers, so attracting and retaining

[5] All of the tax rates are adjusted for surtaxes and the Quebec abatement where appropriate. The federal abatement means that Quebecers pay less in federal taxes than other provinces. The abatement exists as part of an arrangement that allows provincial governments to opt out of certain federal-provincial programs. For more details, see Canada, Dep't of Finance, 2015b.

[6] For example, a study by Romer and Romer (2014) found that changes to the marginal rate in the years between World War I and World War II on the those earning the highest income had a statistically significant impact on reported income and on business formation.

[7] It is beyond the scope of this paper to measure total tax competitiveness, which would include other forms of taxes including corporate income taxes, payroll taxes, and sales taxes.

them is important for a country's economic performance and prosperity. [8] These workers include the country's doctors, engineers, lawyers, and senior managers. [9] The rest of this section examines changes to Canadian personal income-tax rates since 2009, with a particular focus on the top tax rates.

Changes in federal and provincial marginal income-tax rates since 2009

In recent years, there have been a number of important changes to federal and provincial personal income-tax rates across Canada. The most notable trend is for provincial governments, and now the federal government, to create an additional personal income-tax bracket with a new, higher tax rate applied to upper-income earners. **Table 1** provides a summary of these changes from 2009 to 2016.

Most increases in the personal income tax since 2009 have come in the form of new income tax brackets with higher tax rates. The exception is New Brunswick, where the provincial government initially lowered, then raised, tax rates for every income-tax bracket. New Brunswick once again reduced tax rates on upper-income earners in 2016, yet each of the province's tax rates are higher than they were in 2009. [10] Some tax rates, however, have been

[8] University of Calgary professor Jack Mintz recently expressed a concern that Canada's weakening Canadian dollar and higher tax rates could contribute to a "brain drain" of highly productive Canadian workers leaving for other jurisdictions, particularly the United States (Mintz, 2016, January 13). Canada has a history of losing productive workers to the United States. A Statistics Canada study found that emigrants to the United States in the 1990s were overrepresented among Canadians who were well educated, of prime working ages, and had higher incomes (Zhao, Drew, and Murray, 2000). In addition, Wagner (2000) finds that Canadians who had the most to gain from higher income or tax savings by moving to the United States were more likely to do so. Moreover, empirical research suggests that tax rates play an important role in attracting highly skilled labour. For example, Kleven, Jacobsen, Landais, and Saez (2013) provide evidence that the average and top (marginal) personal income-tax rate and social-security tax rates play a statistically significant role in attracting foreign professional soccer players to top leagues in 14 Western European countries. The effect was particularly strong for high-quality players, defined as players who had been selected for national teams at least once in their career. In a separate study, Akcigit, Baslandze, and Stantcheva (2015) identify "superstar" inventors based on patent citation data in eight countries (including Canada and the United States) from 1977 to 2000 and find that their tendency towards international migration was significantly influenced by the effective top marginal tax rate.

[9] Of the top 1% of income earners in 2011, 10.7% are in medicine, 7.1% in law and jurisprudence, 7.1% in general business/commerce, and about 6.0% in general engineering, civil engineering, and mechanical engineering (Lemieux and Riddell, 2015).

[10] Personal income-tax rates in New Brunswick have been remarkably volatile, with changes in provincial tax rates almost every year starting in 2009.

Table 1: Summary of recent changes to Canada's personal income tax rates [1], federal and provincial, 2009–2016

Federal The federal government created a new personal income-tax bracket for 2016 with an income-tax rate that is higher than the previous top income-tax bracket. The new tax bracket has a tax rate of 33.00% and is applied to incomes over \$200,000. In 2016, the government also decreased the marginal rate applied to incomes between \$45,000 and \$90,000 to 20.5% from 22.0%.

British Columbia In 2014, the British Columbia government added a new, temporary personal income-tax bracket with a tax rate that is higher than the previous top income-tax bracket. The new tax bracket was 16.80% applied to incomes over \$150,000. This tax bracket has been eliminated for the 2016 tax year and the top tax rate returned to its previous level.

Alberta In 2015, the Alberta government eliminated the single tax rate of 10.00%, creating five rates. The new personal tax-rate structure is as follows: 10% on income between \$18,452 and \$125,000; 12% on income between \$125,000 and \$150,000; 13% on income between \$150,000 and \$200,000; 14% on income between \$200,000 and \$300,000; and 15% on income over \$300,000.

Saskatchewan No changes.

Manitoba No changes.

Ontario In 2010, the Ontario government reduced its lowest income-tax rate from 6.05% to 5.05%. In 2012, the Ontario government added a new personal income-tax bracket with a rate that is higher than the previous top personal income-tax bracket. The new top rate was 18.97% and applied to income over \$500,000. In 2014, the income threshold for this rate was lowered to \$150,000 and another personal income-tax bracket was added with a rate of 20.53% applied to income over \$220,000.

Quebec In 2013, the Quebec government added a new personal income-tax bracket with a rate that is higher than the previous top tax bracket. The new top tax rate is 25.75% applied to income over \$100,000 in 2013.

New Brunswick From 2008 [2] to 2011, the New Brunswick government lowered the personal income-tax rate for each of the income tax brackets. However, in 2013 the New Brunswick government partly reversed these tax rate cuts. For example, the top tax rate went down from 17.95% in 2008 to 14.30% in 2010 and then back to 17.84% by 2014. In 2015, the government added two new tax brackets with tax rates that are higher than the previous top tax bracket. The rates for the new tax brackets were 21.00% and 25.75% for incomes over \$150,000 and \$250,000, respectively. In the latest budget, the top tax bracket has been removed at the new top rate is 20.30% on incomes over \$150,000.

Nova Scotia In 2010, the Nova Scotia government added a new tax bracket with a tax rate that is higher than the previous top personal income-tax bracket. The new tax bracket has an income tax rate of 21.00% applied to income over \$150,000. At the same time, the Nova Scotia government removed its surtax, which effectively eliminated a tax bracket and reduced the second highest tax rate from 18.34% to 17.50%.

Prince Edward Island No changes.

Newfoundland & Labrador Starting in 2010, the government of Newfoundland & Labrador decreased the tax rates for the top and middle personal income-tax brackets from 15.50% to 13.30% and 12.80% to 12.50%, respectively. However, in 2015, the government added two new personal income-tax brackets with tax rates higher than the previous top income-tax bracket. The lower of the two new tax brackets has a personal income-tax rate of 13.80% with a threshold of \$125,000, and the higher new tax bracket has a tax rate of 14.30%, which is applied to incomes over \$175,000. In 2016, these rates increased to 14.30% and 15.30%, respectively.

Notes: [1] Personal income tax rates include surtaxes where applicable. [2] The description of changes in New Brunswick starts in 2008 to include the full extent of the decrease in personal income-tax rates from 2008 to 2011.

Source: CRA, 2016; PwC, 2009–2015a; calculations by authors.

reduced over the years. For example, Ontario's lowest rate was reduced from 6.05% to 5.05% in 2010 and the federal government enacted a reduction in 2016, decreasing the 22.0% rate to 20.5%. But most tax changes have brought new, higher tax rates.

Nova Scotia started the trend of increasing marginal tax rates on upper-income earners in 2009 when it added a provincial income-tax bracket with a tax rate of 21.00% applied to incomes over \$150,000. The previous top personal income-tax rate was 19.25% on incomes over \$93,000. Canada's two most populous provinces, Ontario and Quebec, enacted similar changes in 2012 and 2013, respectively. Ontario's top provincial income-tax rate (including surtaxes) is currently 20.53% for incomes over \$220,000, compared to the previous rate of 17.41% on incomes over \$78,370.

Although Quebec's statutory provincial tax rates are not directly comparable because of the federal abatement, the Quebec government has introduced a new rate of 25.75% for incomes over \$100,000 in 2013 and over \$103,150 in 2016 (in 2012, 24.00% on incomes over \$80,200). [11]

In 2016, the federal government created a new top federal tax rate of 33% on incomes over \$200,000, whereas the previous top rate was 29% on incomes above approximately \$140,000.

The only provinces that did not enact changes to the top provincial personal income-tax rates (or make any other changes to provincial tax rates) during this period were Saskatchewan, Manitoba, and Prince Edward Island (see table 1).

Table 2 displays the personal income-tax rates and brackets for the federal and provincial governments. The tax brackets that have been added since 2009 are marked in **green**. Alberta stands out for having added four new income-tax brackets, compared to the one or two added by other jurisdictions. Previously, Alberta had the unique advantage within Canada of a single, pro-growth tax rate of 10%. [12] The highest provincial marginal tax rate in Alberta is now 15%, 50% higher than the previous rate.

Another notable takeaway from table 2 is the variation in the threshold above which the top personal income-tax rates are applied. The thresholds range from \$67,000 in Manitoba to \$300,000 in Alberta. The federal threshold for the top income-tax rate is \$200,000. The range of thresholds is illustrated in **figure 1**.

The thresholds at which tax rates are applied are important to consider as part of assessing overall competitiveness. Simply comparing the top rate across

[11] The federal abatement results in Quebecers paying less in federal taxes than other provinces. A direct comparison between statutory provincial rates, without adjusting for the abatement, can be misleading in terms of judging the differences in tax rates paid in Quebec versus other provinces.

[12] For a discussion of the advantages of a single personal income-tax rate, see Clemens, 2008.

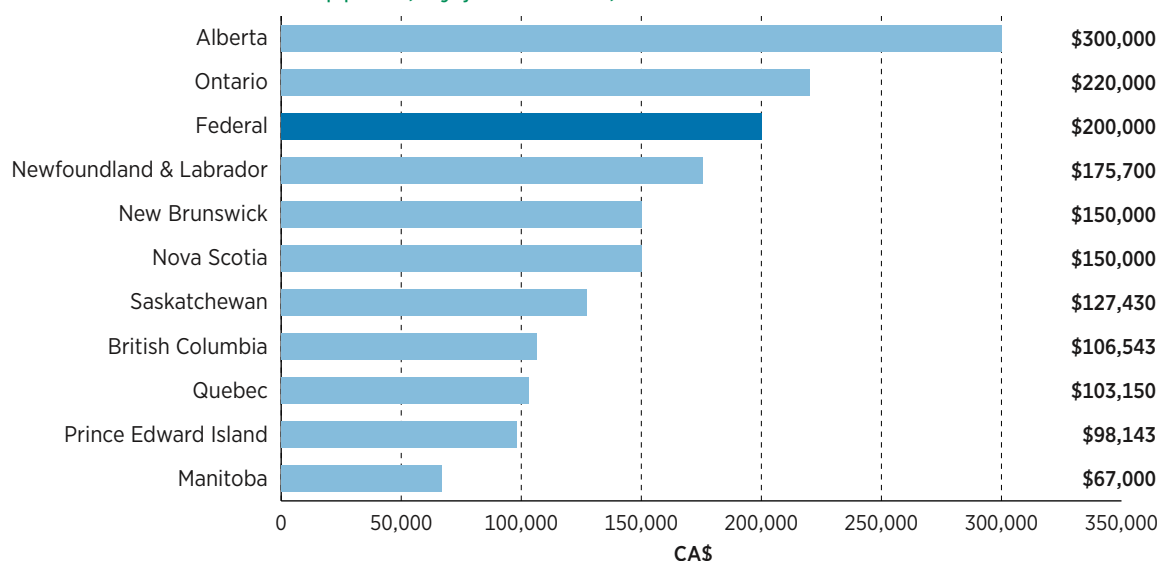
Table 2: Federal and provincial personal income-tax brackets added from 2009 to 2016 [1] (marked in green)

Federal		Manitoba		Nova Scotia	
\$0 – \$11,474	0.00%	\$0 – \$9,134	0.00%	\$0 – \$8,481	0.00%
\$11,474 – \$45,282	15.00%	\$9,134 – \$31,000	10.80%	\$8,481 – \$29,590	8.79%
\$45,282 – \$90,563	20.50%	\$31,000 – \$67,000	12.75%	\$29,590 – \$59,180	14.95%
\$90,563 – \$140,388	26.00%	Over \$67,000	17.40%	\$59,180 – \$93,000	16.67%
\$140,388 – \$200,000	29.00%			\$93,000 – \$150,000	17.50%
Over \$200,000	33.00%			Over \$150,000	21.00%
		Ontario [3]			
		\$0 – \$10,011	0.00%		
		\$10,011 – \$41,536	5.05%		
		British Columbia [2]		Prince Edward Island [3]	
\$0 – \$10,027	0.00%	\$41,536 – \$73,142	9.15%	\$0 – \$7,708	0.00%
\$10,027 – \$38,210	5.06%	\$73,142 – \$83,075	10.98%	\$7,708 – \$31,984	9.80%
\$38,210 – \$76,421	7.70%	\$83,075 – \$86,177	13.39%	\$31,984 – \$63,969	13.80%
\$76,421 – \$87,741	10.50%	\$86,177 – 150,000	17.41%	\$63,969 – \$98,143	16.70%
\$87,741 – \$106,543	12.29%	\$150,000 – \$220,000	18.97%	Over \$98,143	18.37%
Over \$106,543	14.70%	Over \$220,000	20.53%		
				Newfoundland & Labrador	
		Alberta		Quebec	
		\$0 – \$18,451	0.00%	\$0 – \$11,550	0.00%
		\$18,451 – \$125,000	10.00%	\$11,550 – \$42,390	16.00%
		\$125,000 – \$150,000	12.00%	\$42,390 – \$84,780	20.00%
		\$150,000 – \$200,000	13.00%	\$84,780 – \$103,150	24.00%
		\$200,000 – \$300,000	14.00%	Over \$103,150	25.75%
		Over \$300,000	15.00%		
				New Brunswick	
		Saskatchewan			
		\$0 – \$9,758	0.00%		
		\$9,758 – \$40,492	9.68%		
		\$40,492 – \$80,985	14.82%		
		\$80,985 – \$131,664	16.52%		
		\$131,664 – \$150,000	17.84%		
		Over \$150,000	20.30%		

Notes: [1] Thresholds and rates are for the 2016 tax year. The federal and some provincial governments changed tax rates in existing tax brackets in addition to adding new tax brackets. For example, the federal reduced its second tax rate from 22.00% to 20.50%. New Brunswick is the only province that increased tax rates in tax brackets that existed in 2009. [2] The British Columbia government added a new personal income-tax bracket in 2014, but it was removed for the 2016 tax year. [3] Includes surtax.

Sources: CRA (2016); New Brunswick, Department of Finance (2016); OnPayroll (2016, Jan 15); Ontario, Ministry of Finance (2015); Revenu Quebec (2016); calculations by authors

Figure 1: Income above which the top personal income-tax rate is applied, by jurisdiction, 2016



Note: Thresholds take into account surtaxes where applicable.

Sources: CRA, 2016; Revenu Québec, 2016; calculations by authors.

jurisdictions can be misleading if the top tax rate in one jurisdiction is applied to a much lower level of income. For example, consider the case of Manitoba, where the provincial top rate is 17.40%. The rate alone suggests that Manitoba is mid-range in terms of having a competitive top tax rate among Canadian provinces but the threshold for Manitoba's top marginal rate is unusually low (\$67,000). Compare this to Nova Scotia, where the top provincial rate is considerably higher (21.00%) but the income threshold (\$150,000) is more than twice the highest threshold in Manitoba.

For this reason, top tax rates alone are not precisely comparable because they do not capture what marginal tax rate a person of equivalent income faces in the jurisdictions compared. A comparison of the marginal rates at a particular income level helps mitigate this problem, although it admittedly does not capture differences in tax credits and deductions, which can affect one's effective tax rate. Nonetheless, the point is that, when measuring the competitiveness of tax rates between jurisdictions, it is important to, as much as possible, account for differences in income thresholds when comparing marginal tax rates.

Table 3 provides a comparison of marginal income-tax rates across the provinces at different income levels—\$50,000, \$75,000, \$150,000, and \$300,000. The marginal rate at the \$300,000 income level represents the top combined marginal rate in every province (see figure 1). This comparison at different income levels allows for an assessment of the competitiveness of the various provincial income-tax systems. For example, marginal tax rates are lowest in British Columbia at the \$50,000 and \$75,000 income levels, and British

Table 3: Provincial statutory marginal tax rates [1] at various income levels, 2016

	Marginal tax rate (%) at \$50,000	Marginal tax rate (%) at \$75,000	Marginal tax rate (%) at \$150,000	Marginal tax rate (%) at \$300,000	Number of tax brackets
British Columbia	7.70	7.70	14.70	14.70	5
Alberta	10.00	10.00	13.00	15.00	5
Saskatchewan	13.00	13.00	15.00	15.00	3
Manitoba	12.75	17.40	17.40	17.40	3
Ontario	9.15	10.98	18.97	20.53	7
Quebec [2]	16.62	16.62	20.97	20.31	4
New Brunswick	14.82	14.82	20.30	20.30	5
Nova Scotia	14.95	16.67	21.00	21.00	5
Prince Edward Island	13.80	16.70	18.37	18.37	4
Newfoundland & Labrador	12.50	13.30	14.30	15.30	5

Notes: [1] Personal income-tax rates include surtaxes where applicable. [2] For comparability, the Quebec tax rates are adjusted downwards due to the federal abatement. The federal abatement results in Quebecers paying less in federal taxes than other provinces. A direct comparison between statutory provincial rates, without adjusting for the abatement, can be misleading in terms of judging the differences in tax rates paid in Quebec versus other provinces.

Sources: CRA (2016); Revenu Quebec (2016); calculations by authors

Columbia's marginal tax rate at \$150,000 is the third lowest. By contrast, the rates in Nova Scotia are among the highest at each income level. Ontario is an interesting case because the provincial marginal tax rates are relatively more competitive at incomes of \$50,000 and \$75,000 but much less so at \$150,000 and \$300,000.

Increases in combined federal and provincial marginal income-tax rates

While the federal government is responsible for administering the personal income-tax system, both the federal and provincial governments maintain their own structure of rates and thresholds for taxing personal income. [13] Indeed, Canadians pay both federal and provincial taxes, so considering the tax rates separately does not capture the full extent of the personal income taxes paid

[13] Prior to 2000, Canadian provinces other than Quebec determined the income tax owed by multiplying the provincial rate by the federal rate, a so-called tax-on-tax (Emes, 2001). After 2000, provincial governments moved to the current system of tax rates that are applied to taxable income rather than federal tax rates.

by Canadians. An analysis of tax competitiveness must account for both the federal and provincial tax rates. Since most of the increases in personal income-tax rates since 2009 have been to the top rate, the focus of the discussion will be on the combined top rate. [14]

Table 4 shows all 10 top provincial personal income-tax rates, the federal top tax rate, and the combined federal-provincial top rates for 2009 and 2016. In 2009, the highest top combined personal income-tax rate was 48.25%, in Nova Scotia, followed closely by 48.22% in Quebec. Alberta had the lowest combined rate at 39.00%. In 2016, upper-income earners in Nova Scotia face the highest marginal income-tax rate at 54.00%, an increase of 5.75 percentage points. Ontario now has the second highest marginal personal income-tax rate (53.53%), followed by Quebec (53.31%). At 47.70%, British Columbia has the lowest combined rate in 2016, slightly below Alberta and Saskatchewan (both at 48.00%).

Notably, in 2009, upper-income earners in all provinces faced marginal tax rates that were below 50.00%. However, as a result of the changes that have since been implemented, upper-income earners in six out of 10 provinces—Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, and Prince Edward Island—now face a marginal tax rate above 50.00%. Indeed, after a certain income threshold, upper-income earners in these provinces lose more than 50¢ of every extra dollar of labour income earned to taxes. [15]

Figure 2a and **figure 2b** display the percentage-point increase and percentage change, respectively, of the top combined federal-provincial personal income-tax rate by province from 2009 and 2016. The largest increase is in Alberta, where the combined top tax rate went from 39.00% to 48.00%, an increase of 9.00 percentage points (or 23.1%). In other words, Alberta had large increases that left its top rate lower than most other provinces but, even so, because it started from such a low base it also had the largest proportional increase in its top rate. Traditionally, Alberta had Canada's most competitive top tax rate but now has a higher combined top tax rate than neighbouring British Columbia. New Brunswick saw the second largest increase in combined top tax rates, 7.30 percentage points (or 15.9%). This is despite the decrease in tax rates announced by the provincial government in the 2016 budget. Newfoundland & Labrador saw the smallest percentage-point increase (3.80 percentage points) and Prince Edward Island had the smallest increase in terms of percentage change (8.4%).

[14] The combined marginal tax rates for incomes of \$50,000 and \$75,000 has decreased in every province from 2009 to 2016, largely due to the 2016 reduction in the federal income-tax rate applied to income between \$45,000 and \$90,000. The combined marginal rate at \$150,000 either increased or remained the same in each province, except for Newfoundland & Labrador, where it decreased slightly by 2.7%.

[15] To reiterate, the analysis here and throughout this publication assumes that no use is being made of tax credits or other tax mechanisms available in the tax code to reduce the effective marginal rate.

Table 4: Top statutory marginal income-tax rate, provincial, federal, and combined, 2009 and 2016

	2009			2016		
	Top provincial rate	Top federal rate	Combined top rate	Top provincial rate	Top federal rate	Combined top rate
British Columbia	14.70	29.00	43.70	14.70	33.00	47.70
Alberta	10.00	29.00	39.00	15.00	33.00	48.00
Saskatchewan	15.00	29.00	44.00	15.00	33.00	48.00
Manitoba	17.40	29.00	46.40	17.40	33.00	50.40
Ontario	17.41	29.00	46.41	20.53	33.00	53.53
Quebec [2]	24.00	24.22	48.22	25.75	27.56	53.31
New Brunswick	17.00	29.00	46.00	20.30	33.00	53.30
Nova Scotia	19.25	29.00	48.25	21.00	33.00	54.00
Prince Edward Island	18.37	29.00	47.37	18.37	33.00	51.37
Newfoundland & Labrador	15.50	29.00	44.50	15.30	33.00	48.30

Notes: [1] Personal income-tax rates include surtaxes where applicable. [2] The federal personal income-tax rate is lower in Quebec because of the Quebec Abatement, which is applied because Quebec has opted out of various federal programs. For more information, see <<http://www.fin.gc.ca/fedprov/altpay-eng.asp>>.

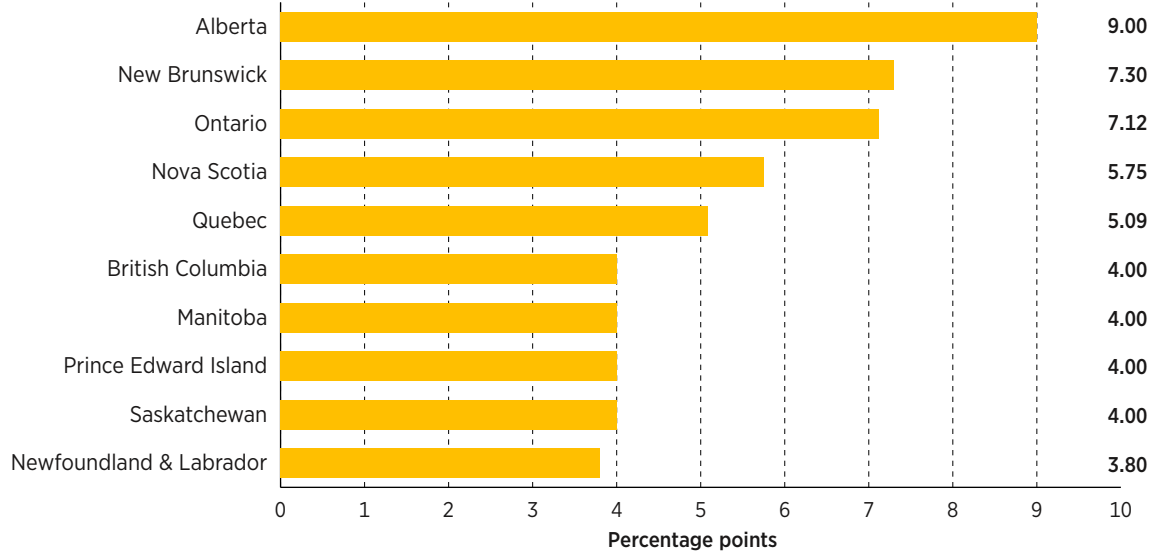
Sources: CRA, 2016; PwC, 2009; Revenu Québec, 2016; calculations by authors.

Ontario and Quebec saw considerable growth in their highest combined federal-provincial marginal tax rates. Ontario's combined top tax rate grew by 7.12 percentage points, an increase of 15.3%. In Quebec, the combined top tax rate increased by 5.09 percentage points (or 10.6%). Notably, the combined top tax rates in both Quebec and Ontario were below 50.00% in 2009 but have both since climbed above the 50.00% threshold.

Figure 3 displays the combined top rates in 2009 and 2016, while illustrating how much of the change in each province has been driven by increases in the provincial rate and how much by increases in federal rate. In half the provinces, the increase in the combined top personal income-tax rate was driven entirely by changes at the federal level. Indeed, the combined top rate in 2016 would be the same as it was in 2009 in British Columbia, Saskatchewan, Manitoba, and Prince Edward Island in the absence of the federal tax changes implemented in 2016. [16] In Newfoundland & Labrador, the combined rate would have been slightly lower, as the provincial top rate decreased from

[16] The provincial top personal income-tax rate in British Columbia was higher in 2014, but it returned to its previous rate in 2016.

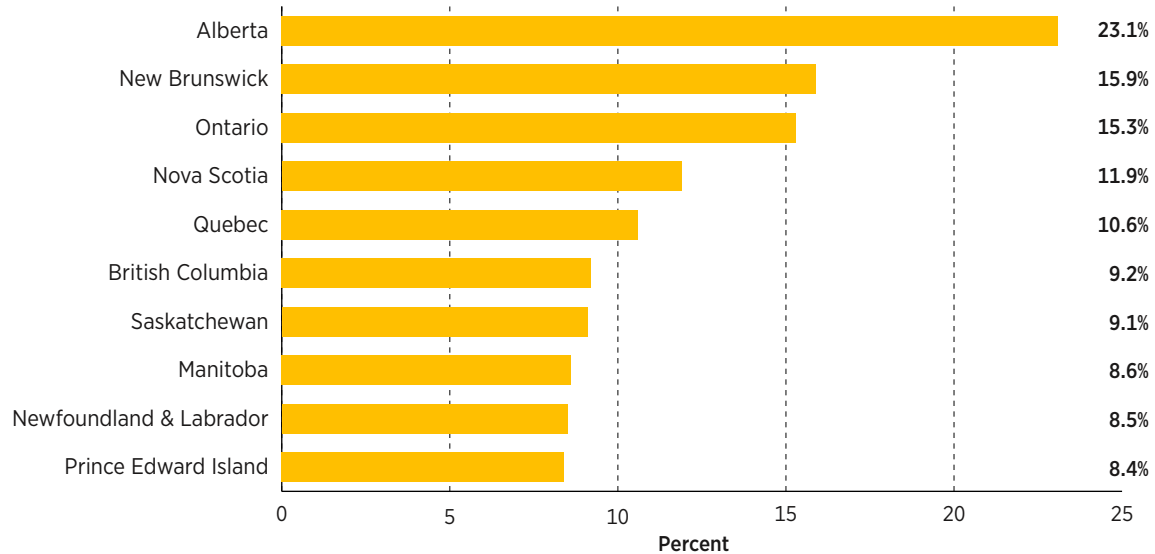
Figure 2a: Growth in top combined statutory marginal income-tax rates from 2009 to 2016 (in percentage points)



Notes: Personal income-tax rates include surtaxes where applicable. Quebec's tax rate is adjusted for the federal abatement.

Sources: CRA, 2016; PwC, 2009; Revenu Québec, 2016; calculations by authors.

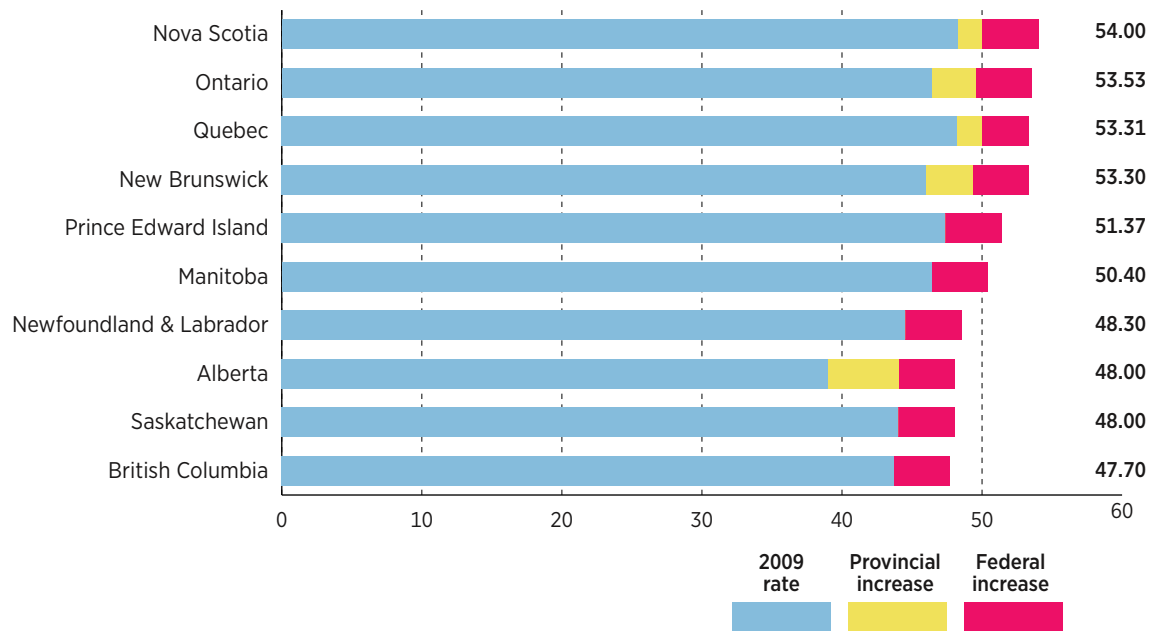
Figure 2b: Growth in top combined statutory marginal income-tax rates from 2009 to 2016 (in percent)



Notes: Personal income-tax rates include surtaxes where applicable. Quebec's tax rate is adjusted for the federal abatement.

Sources: CRA, 2016; PwC, 2009; Revenu Québec, 2016; calculations by authors.

Figure 3: Top combined statutory marginal income-tax rates in 2009 and 2016, with federal & provincial changes delineated



Notes: [1] Personal income-tax rates include surtaxes where applicable. Quebec's tax rate is adjusted for the federal abatement. [2] Newfoundland & Labrador's provincial top rate was 15.50% in 2009 and 15.30% in 2016, a decrease of 0.2 percentage points.

Sources: CRA, 2016; PwC, 2009; Revenu Québec, 2016; calculations by authors.

15.50% to 15.30% over the period. [17] Without the federal tax changes, the highest combined federal-provincial top tax rate would have been 50.00%, in Nova Scotia, followed closely by 49.97% in Quebec and 49.53% in Ontario. In other words, the combined top rate would not have exceeded 50.00% anywhere in Canada.

The federal increase in the tax rate for upper-income earners has prompted the New Brunswick government to reduce its own provincial top rate (New Brunswick, Department of Finance, 2016). Without the provincial reduction, the combined top rate would have been 58.75%, instead of 53.30%. Despite the actions of the provincial government, the combined top rate in New Brunswick has increased relative to the 2009 rate. [18]

[17] In 2010, the government of Newfoundland & Labrador lowered the top marginal tax rate from 15.50% to 13.30%. However, the government brought in a new tax bracket in 2015, which increased the top tax rate to 14.30% in 2015 and 15.30% in 2016.

[18] In addition, the New Brunswick government has increased other taxes such as the HST and corporate income taxes. The 2016 budget includes an increase in the provincial portion of HST from 8% to 10%, and corporate income taxes are to increase from 12% to 14% (New Brunswick, Department of Finance, 2016).

The trend throughout Canada in recent years has been towards higher marginal income-tax rates on upper-income earners. This has important consequences for Canada's ability to attract and retain the highly skilled workers, professionals, and entrepreneurs who are key contributors to overall economic prosperity. Even before the most recent changes to federal tax rates, Canada's tax rates compared unfavourably to rates in the United States and other G7 countries (Murphy, Clemens, and Veldhuis, 2013). In fact, the two previous governments (one Liberal and the other Conservative), in their respective economic plans, called for a reduction in personal income taxes to encourage skilled workers to work in Canada (Canada, Department of Finance, 2005, 2006). Since then, the marginal tax rates on upper-income earners have generally become less, not more, competitive. The next two sections compare Canada's current personal income-tax rates with competitive rates offered by the United States and members of the OECD.

2 Canada's Statutory Marginal Income-Tax Rates Compared to Rates in the United States

The United States is Canada's most direct competitor in attracting and retaining highly skilled labour, entrepreneurs, and investors. Like Canada, the United States has both federal and subnational (state) personal income-tax rates. [19] The combined federal and state tax rates differ across states as it differs across provinces in Canada. The combined top tax rate in the United States ranges from a high of 52.90%, in California, to a low of 39.60% in states that have no state-level personal income tax, Alaska, Florida, Nevada, South Dakota, Texas, Washington, and Wyoming. [20] To get a sense of how competitive Canada is as a result of its top personal income-tax rates, it is useful to compare the combined statutory marginal tax rates on labour income across Canadian and American subnational jurisdictions. This includes the 10 provinces, the 50 states, and Washington, DC. [21]

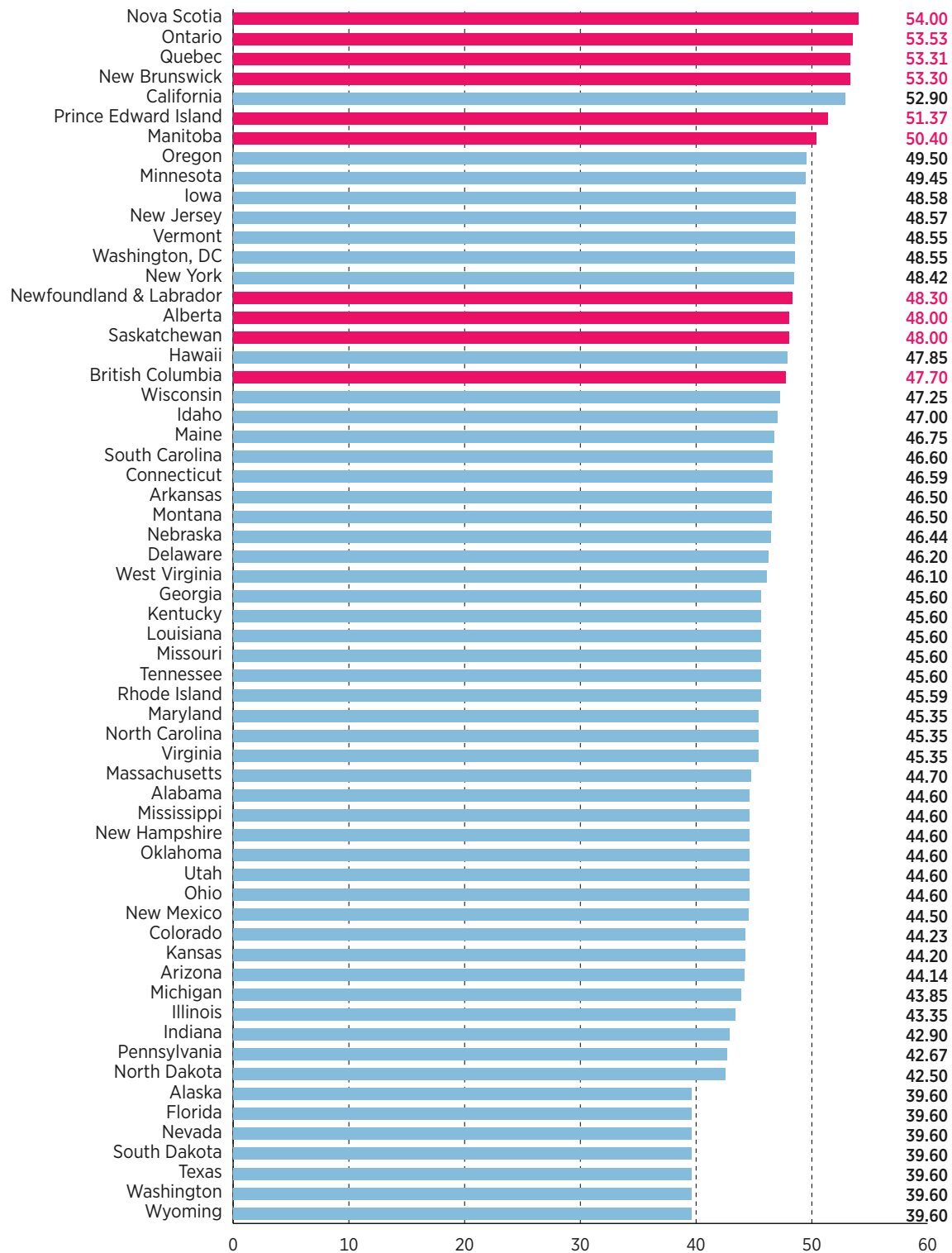
Figure 4 displays combined top personal income tax rates for the 61 Canadian and American jurisdictions. Of all the 61 jurisdictions, Nova Scotia has the highest combined top rate (54.00%), followed by Ontario (53.53%), Quebec (53.31%), and New Brunswick (53.30%). California, the state with the

[19] In the United States, there are also income taxes imposed by local governments. According to the Tax Foundation, over 23 million Americans in 17 states live in local jurisdictions with local income taxes (Henchman and Sapia, 2011). That represents about 7% of the population. Local income-tax rates are typically between 1% and 3% and can be as low as a flat charge of \$2 or \$3 per week (in West Virginia). Local income tax is not included in this report's analysis because the rates differ within a state and the number of local governments that impose an income tax is typically small. For example, again according to the Tax Foundation, San Francisco is the only local government in California with an income tax. In Pennsylvania, on the other hand, there are nearly 3,000 local governments that impose a local income tax, more than half of the national total of 4,943.

[20] Since these states have no personal income taxes at state level, the 39.60% top tax rate is solely the federal rate.

[21] This measure of US tax rates excludes the deductibility of state and local taxes from the federal personal income tax as well as other tax deductions. US taxpayers who elect to itemize deductions on their federal tax returns can deduct either state and local income taxes or sales taxes, but not both (see United States, Internal Revenue Service. 2016). In 2013, 30.4% of US federal income-tax returns had itemized deductions (United States, Internal Revenue Service, 2015).

Figure 4: Top combined statutory marginal income-tax rate in Canadian provinces and US states, 2016



Notes: [1] Personal income-tax rates include surtaxes where applicable. Quebec's tax rate is adjusted for the federal abatement. [2] For US states, local income taxes are excluded.

Sources: CRA, 2016; Revenu Québec, 2016; Kaeding, 2016; Pomerleau, 2015; calculations by authors.

highest combined top rate in the United States, falls behind all four of these Canadian jurisdictions with a combined top rate of 52.90%. Six Canadian jurisdictions occupy the list of 10 jurisdictions with the highest combined marginal income-tax rates and all 10 provinces appear in the top 20. There are a total of 42 US jurisdictions with combined top tax rates lower than all Canadian provinces. Overall, figure 4 suggests that Canada's top personal income-tax rates are generally uncompetitive with the United States.

Importantly, figure 4 does not account for the fact that Canadian top tax rates tend to apply at lower levels of income than in the United States. For example, California's top personal income-tax rate applies to income above US\$1 million. [22] Similarly, the top marginal tax rate in New York is applied to incomes above about \$1.1 million. The US federal top marginal tax rate applies to incomes over US\$415,050 in 2016 (Pomerleau, 2015). By comparison, Canada's federal top marginal tax rate applies to income over CA\$200,000 and Alberta is the province with the highest income threshold for the top marginal rate at CA\$300,000.

An individual earning the equivalent of CA\$300,000 in California or New York faces a lower marginal income-tax rate than what is implied by the combined top tax rate. To adjust for differences in income thresholds, figure 5 presents the combined statutory marginal personal income-tax rates at the equivalent income of CA\$300,000 for each Canadian and US jurisdiction since this income level is the highest threshold at which a Canadian combined top rate is applied. [23] Notably, at this income level the US federal marginal rate is 33.00%, rather than the top federal rate of 39.60%.

At an income of CA\$300,000, Canadians in every province face a higher marginal tax rate on labour income than Americans in any US state. The province with the lowest marginal tax rate is British Columbia (ranked 10th overall) with a rate of 47.70%. Oregon, ranked next below British Columbia, has a marginal tax rate of 42.90%, 11.2% lower than British Columbia's.

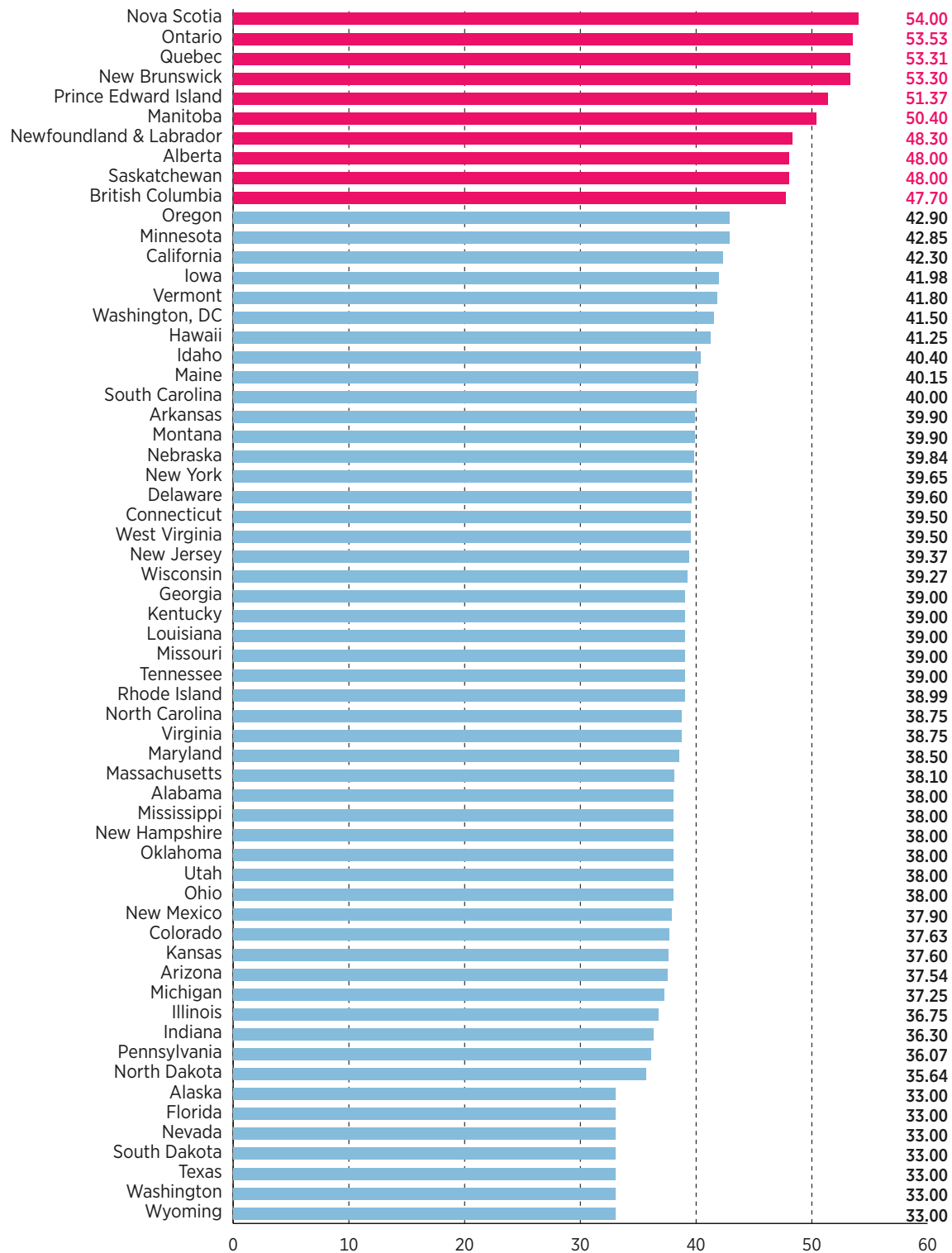
An interesting subset of jurisdictions is made up of those with large energy sectors that generally compete for a similar pool of skilled workers and investment. Three of these jurisdictions are Canadian provinces—Alberta, Newfoundland & Labrador, and Saskatchewan—and seven are US states—Alaska, Colorado, Louisiana, North Dakota, Oklahoma, Texas, and Wyoming. [24]

[22] The US tax rate thresholds are reported in terms of a single tax filer. Different thresholds are generally applied depending on whether the tax filer is a single tax filer, married and filing jointly, married but filing separately, or head of a household. For details, see US Tax Center, 2015.

[23] Canadian dollars are converted into US dollars using the average noon exchange rate. The analysis was also done using the purchasing power parity rate provided by the OECD, which produced very similar results (see OECD, 2016).

[24] This list of energy-producing jurisdictions is drawn from Di Matteo et al. (2014), where jurisdictions were selected based on the size of the energy sector (Canada) or the oil and gas sector (United States) as a percentage of the jurisdiction's GDP.

Figure 5: Combined statutory marginal income-tax rate at CA\$300,000 in Canadian provinces and US states, 2016



Notes: [1] Personal income-tax rates include surtaxes where applicable. Quebec's tax rate is adjusted for the federal abatement. [2] For US states, local income taxes are excluded. [3] The 2016 exchange rate for converting Canadian dollars to US dollars in 2016 is 1.41, which is estimated by the TD Economics (2016) average quarterly projection. At this rate, CA\$300,000 is equivalent to US\$213,144.

Sources: CRA, 2016; Revenu Québec, 2016; Kaeding, 2016; Pomerleau, 2015; TD Economics, 2016; calculations by authors.

All three energy-producing Canadian provinces have higher combined marginal tax rates than the seven energy-producing states. Among these jurisdictions, Newfoundland & Labrador has the highest combined marginal tax rate at 48.30%. The tax rates are considerably lower in Alaska, Texas, and Wyoming, where there are no state-level personal income taxes, meaning only the federal rate of 33.00% applies. The marginal rate in Alberta and Saskatchewan is 23.1% higher than Louisiana, the energy-producing US jurisdiction with the highest rate. Notably, Alberta was much more competitive prior to the recent changes to provincial and federal income tax rates. As recently as the summer of 2015, Alberta's combined marginal tax rate at CA\$300,000 was just 39.00%—the same rate as Louisiana.

Another interesting subset of jurisdictions in figure 5 is made up of Ontario and Quebec and the “rust belt” US states with large manufacturing sectors, Illinois, Indiana, Michigan, Ohio, and Pennsylvania. [25] Ontario and Quebec's combined marginal tax rates are both above 50.00%, at 53.53% and 53.31%, respectively. In contrast, each of the rust-belt states have combined rates below 40%. Of the rust-belt states, Ohio has the highest marginal tax rate at 38.00%.

Canada's marginal income-tax rates are also uncompetitive at the CA\$150,000 income level. [26] Figure 6 compares the combined marginal tax rate at this income level in Canadian provinces and US states. The results in figure 6 are similar to those shown in figure 5, except that the gap between the lowest Canadian marginal tax rate and the highest US rate is wider. At \$150,000 CAD, Alberta has the lowest Canadian combined marginal tax rate at 42.00%. California has the highest combined marginal tax rate among US states, with a rate of 37.30%. That represents a gap of 12.6% from the highest US rate to the lowest Canadian rate.

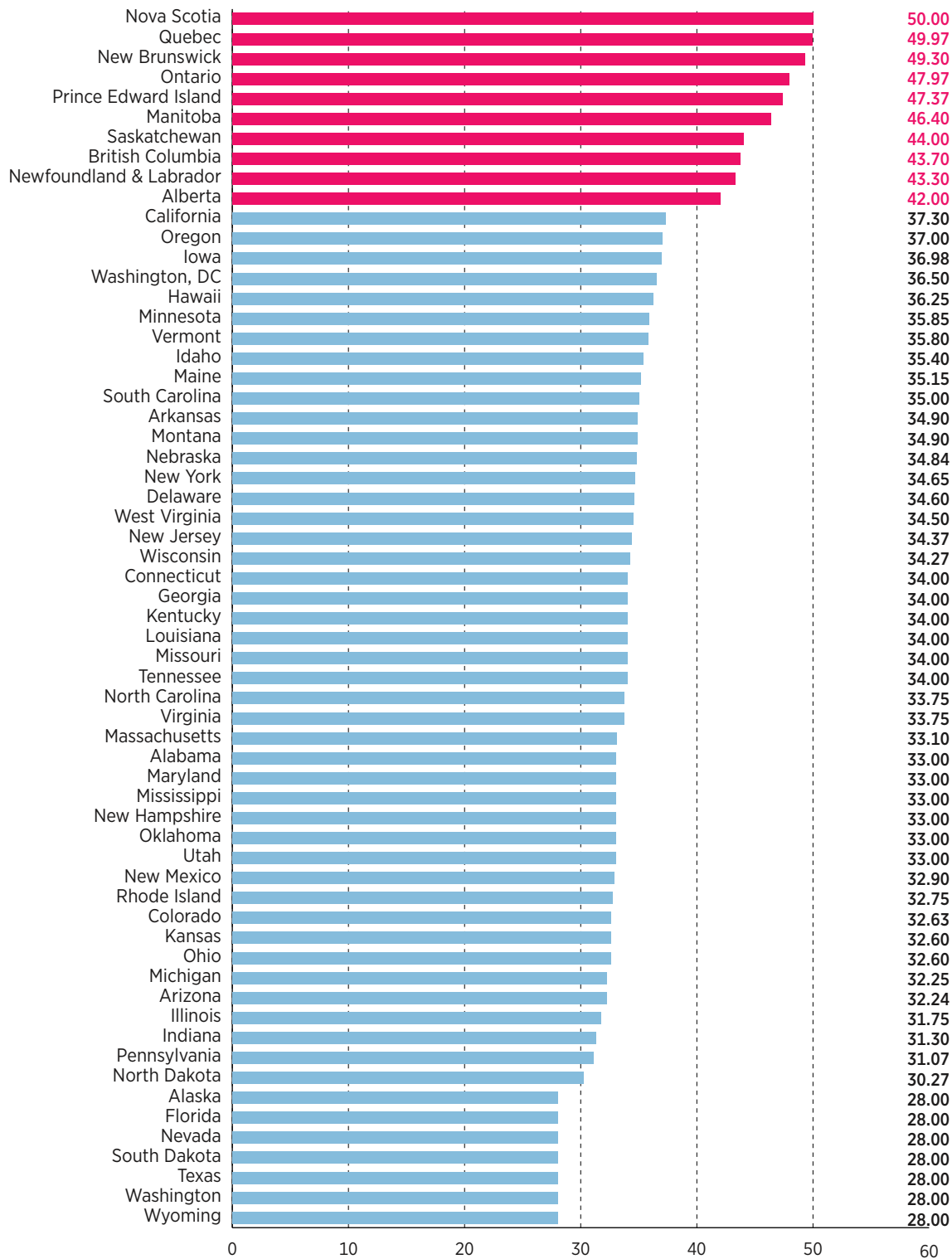
Thus far the discussion has focused on the competitiveness of Canada's personal income-tax system at income levels directly affected by the tax increases on upper-income earners since 2009. However, the federal government reduced the tax rate on incomes between \$45,000 and \$90,000 from 22.00% to 20.50%. Even at income levels in this range, Canada's marginal rates are generally uncompetitive.

Figure 7 shows the combined marginal personal income-tax rate of those earning CA\$75,000; figure 8 of those earning CA\$50,000. In both cases, Canadian provinces generally have uncompetitive combined marginal tax rates.

[25] The list of rust belt states is drawn from Murphy, Emes, Clemens, and Veldhuis (2015).

[26] The new, higher federal income-tax rate introduced in 2016 did not change the marginal rate at the \$150,000 income level. However changes to the tax rate by several provincial governments did increase the combined marginal rate in those provinces. The \$150,000 combined marginal tax rate increased in Alberta, Ontario, Quebec, New Brunswick, and Nova Scotia. The tax rate in Newfoundland & Labrador decreased slightly from 2009, by 2.7%.

Figure 6: Combined statutory marginal income-tax rate at CA\$150,000 in Canadian provinces and US states, 2016



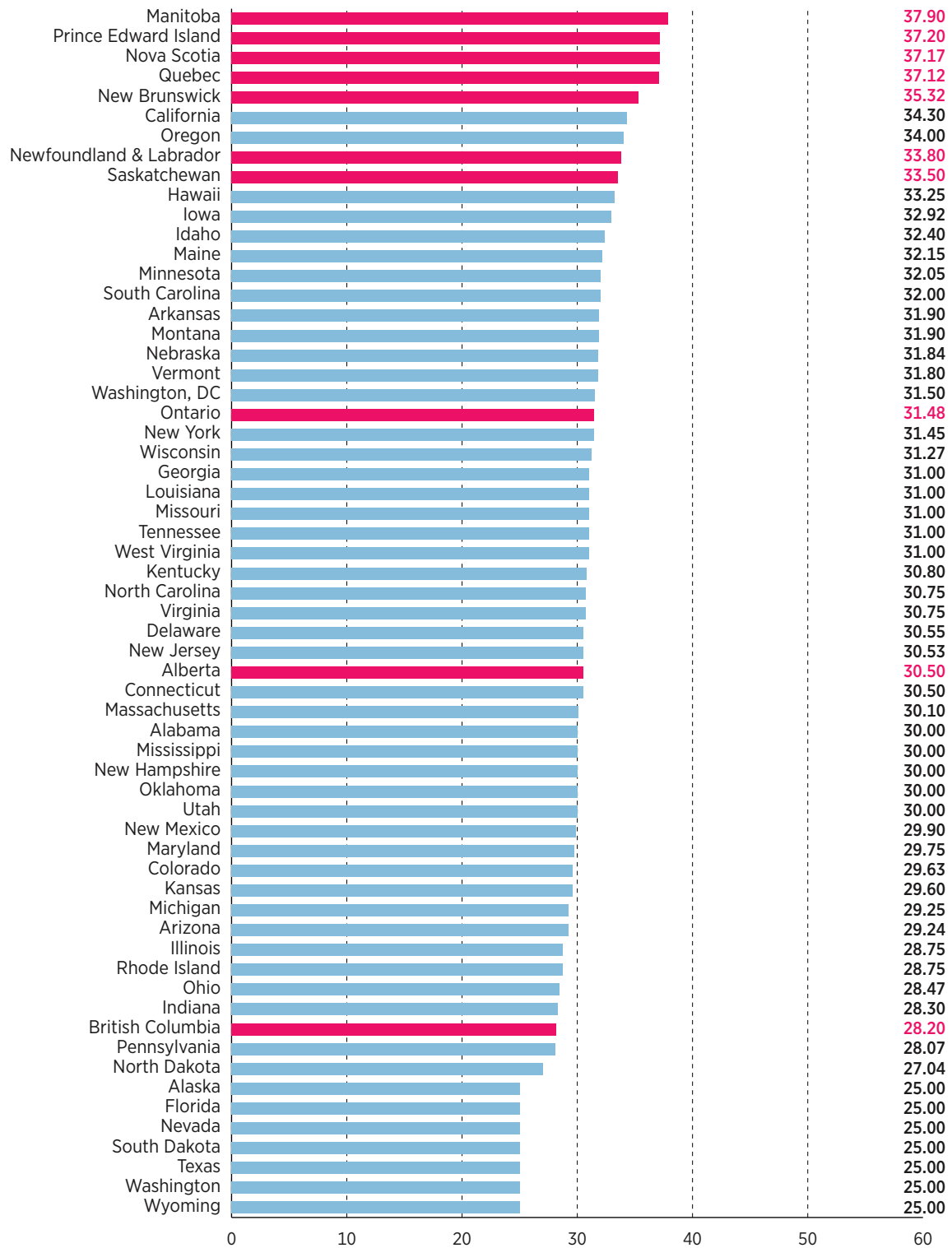
Notes: [1] Personal income-tax rates include surtaxes where applicable. Quebec's tax rate is adjusted for the federal abatement. [2] For US states, local income taxes are excluded. [3] The 2016 exchange rate for converting Canadian dollars to US dollars in 2016 is 1.41, which is estimated by the TD Economics (2016) average quarterly projection. At this rate, CA\$150,000 is equivalent to US\$106,572.

Sources: CRA, 2016; Revenu Québec, 2016; Kaeding, 2016; Pomerleau, 2015; TD Economics, 2016; calculations by authors.

British Columbia is an exception in that it has relatively competitive marginal tax rates at these income levels, while Ontario and Alberta are in the middle of the pack. In other words, despite the reduction in the federal government's second-lowest income-tax rate, Canada remains generally uncompetitive at these income levels compared to the United States.

In comparisons at multiple income levels, Canada's overall statutory marginal income tax rates are decidedly uncompetitive compared to those in the United States. This puts Canada at a disadvantage for attracting and retaining skilled and mobile workers.

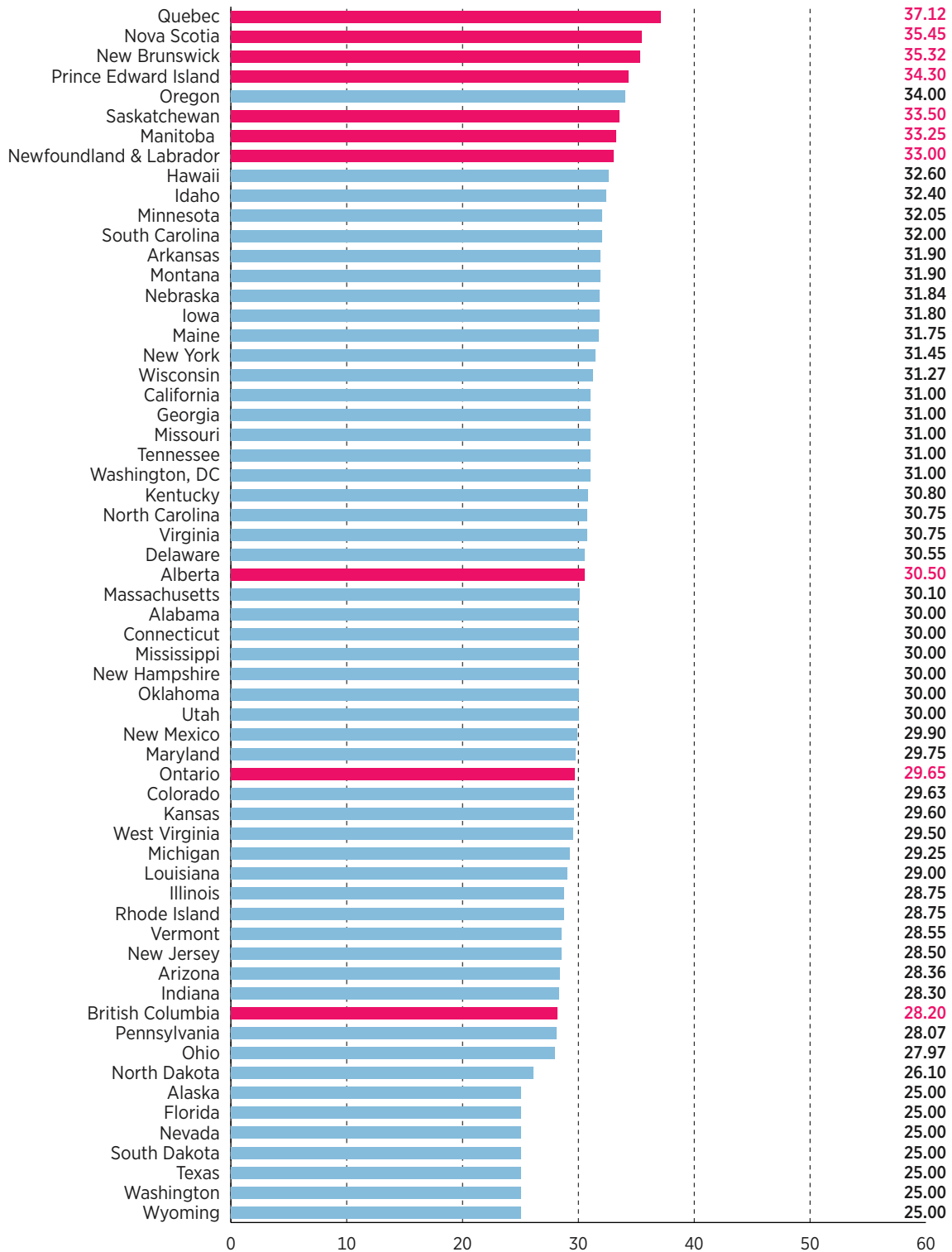
Figure 7: Combined statutory marginal income-tax rate at CA\$75,000 in Canadian provinces and US states, 2016



Notes: [1] Personal income-tax rates include surtaxes where applicable. Quebec's tax rate is adjusted for the federal abatement. [2] For US states, local income taxes are excluded. [3] The 2016 exchange rate for converting Canadian dollars to US dollars in 2016 is 1.41, which is estimated by the TD Economics (2016) average quarterly projection. At this rate, CA\$75,000 is equivalent to US\$53,286.

Sources: CRA, 2016; Revenu Québec, 2016; Kaeding, 2016; Pomerleau, 2015; TD Economics, 2016; calculations by authors.

Figure 8: Combined statutory marginal income-tax rate at CA\$50,000 in Canadian provinces and US states, 2016



Notes: [1] Personal income-tax rates include surtaxes where applicable. Quebec's tax rate is adjusted for the federal abatement. [2] For US states, local income taxes are excluded. [3] The 2016 exchange rate for converting Canadian dollars to US dollars in 2016 is 1.41, which is estimated by the TD Economics (2016) average quarterly projection. At this rate, CA\$50,000 is equivalent to US\$35,524.

Sources: CRA, 2016; Revenu Québec, 2016; Kaeding, 2016; Pomerleau, 2015; TD Economics, 2016; calculations by authors.

3 Canada's Statutory Marginal Income-Tax Rates Compared to Rates in OECD countries

Taken together, Canada's personal income-tax rates are decidedly uncompetitive compared to those of the United States. This is particularly true after accounting for the important fact that Canada's combined top tax rates generally apply to lower income levels than those in the United States. Canada also competes with other industrialized countries for highly skilled workers and investment. To measure the competitiveness of Canada's top tax rates, in this section the combined top marginal income-tax rates on labour income are compared with the rates in the 34 industrialized countries making up the Organisation for Economic Co-operation and Development (OECD). The available data for this section comes from the OECD and is limited to the combined top rates for 2014. To capture the changes in Canada's income-tax rates up to 2016, the 2016 Canadian tax rates are compared to the available OECD rates for 2014. Although some countries have changed their income-tax rates since 2014, this comparison provides a general sense of how Canada compares to other industrialized countries. [27]

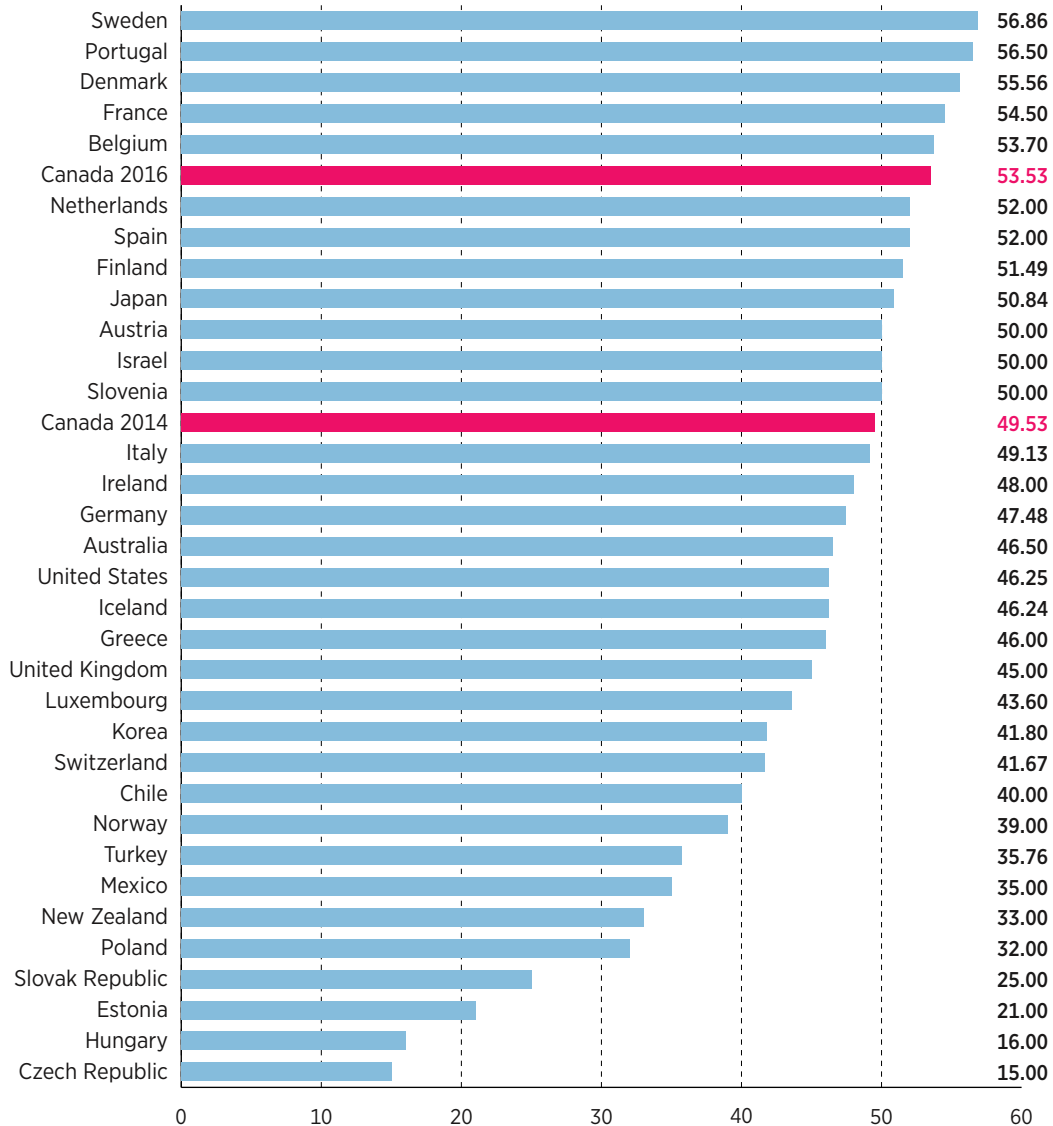
Figure 9 displays the Canadian combined top tax rate for 2014 and other industrialized countries. The figure also includes the 2016 Canadian tax rate, using the OECD's method of calculation. [28] Of the 34 OECD countries, Canada had the thirteenth-highest combined tax rate in 2014 (49.53%). This indicates that in 2014, while Canada's top tax rate was more competitive than some countries, it was uncompetitive compared to most OECD countries including the United States, the United Kingdom, and other English-speaking countries such as Australia.

The federal change to the top rate in 2016 has markedly worsened Canada's competitive position. The new 2016 Canadian top tax rate (53.53%)

[27] A search of OECD countries revealed few changes to the top tax rate among countries with the highest top tax rates. One exception is Spain, where the top tax rate was reduced in 2015 and 2016 to 45.00% (Ernst and Young, 2014). Another exception is Austria, which increased its top rate from 50.00% to 55.00% in 2016 (PwC, 2016).

[28] For countries with subnational and/or local personal income-tax rates, the OECD calculates the combined rate either by taking an average of the subnational/local rates or by selecting a jurisdiction that the OECD considers representative. In Canada's case, the "representative" jurisdiction is Ontario; for the United States, it is Detroit, Michigan.

Figure 9: Top combined statutory marginal income-tax rates in OECD countries, 2014



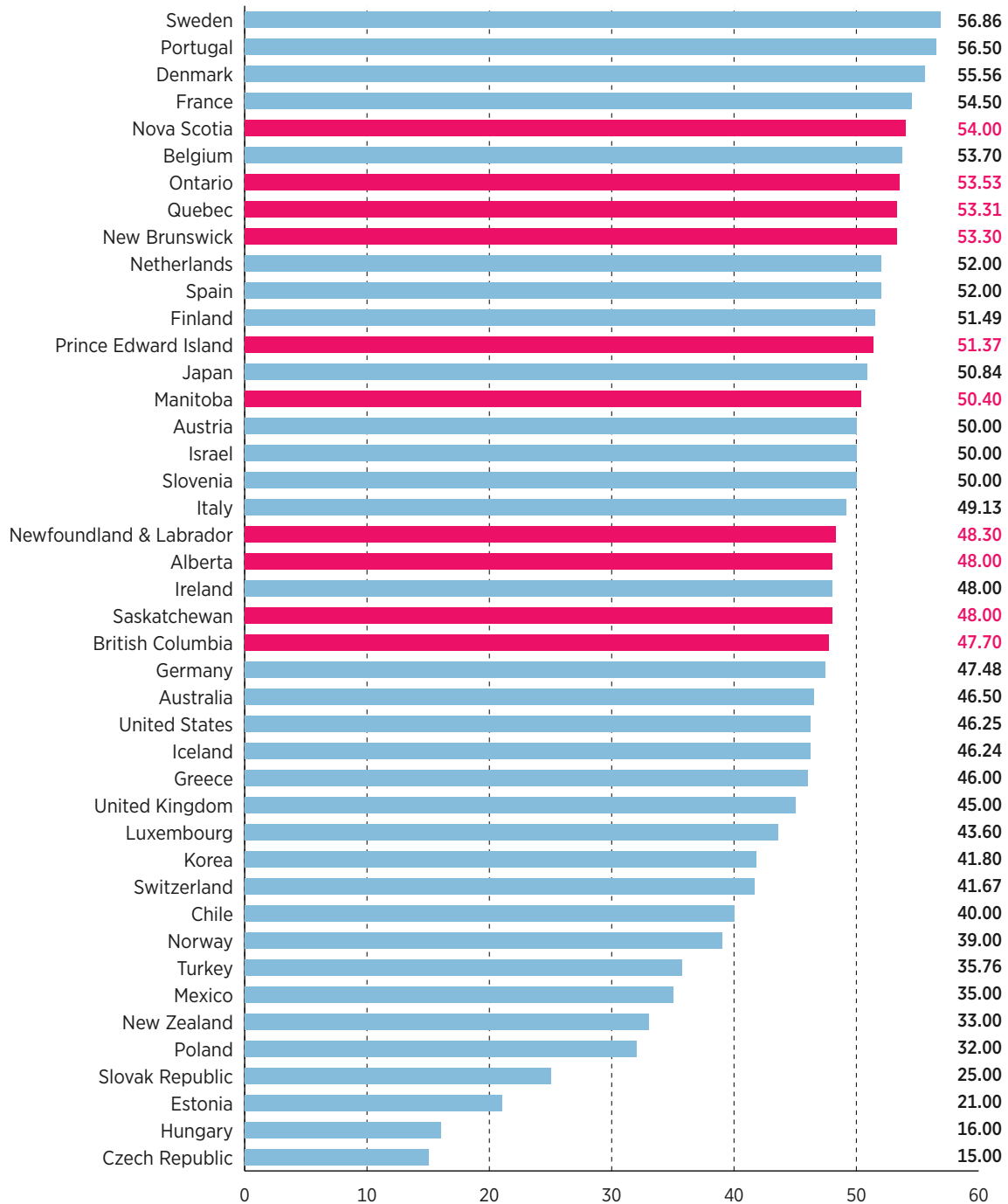
Notes: [1] The graph shows the highest combined statutory personal income-tax rate that is applied on earned income, taking into account that some personal income taxes may be deductible from the base of other personal income taxes, but before any other tax deductions. The top statutory tax rates are the combined rates of the national and subnational governments. [2] For countries with subnational and/or local personal income tax rates, the OECD calculates the combined rate by either taking an average of the subnational/local rates or selecting a jurisdiction that OECD considers representative. In Canada's case, the "representative" jurisdiction is Ontario; in the case of the United States, it is Detroit, Michigan.

Sources: CRA, 2016; OECD, 2016; calculations by authors.

is sixth highest relative to 2014 OECD tax rates. Canada's top statutory rate is now lower than the top rate in just five countries, Sweden (56.86%), Portugal (56.50%), Denmark (55.56%), France (54.50%), and Belgium (53.70%). Canada's 2016 tax rate is 19.0% higher than the 2014 top rate in the United Kingdom and 15.7% higher than the top US rate.

We have seen, however, that personal income-tax rates vary considerably across Canada and that the top combined tax rate in some provinces is significantly less competitive than in others. **Figure 10** illustrates this by displaying the 2016 combined top tax rate for each province and the 2014 rate for each OECD country. Out of 43 jurisdictions, Canadian provinces occupy four of the top 10 spots for highest top tax rates: Nova Scotia (54.00%), Ontario (53.53%), Quebec (53.31%), and New Brunswick (53.30%) all have among the highest combined top personal income-tax rates in the OECD. Newfoundland & Labrador (48.30), Saskatchewan (48.00), Alberta (48.00%), and British Columbia (47.70%) have rates that are in the middle range. These rates are higher than those of the United States (46.25%) and the United Kingdom (45.00%). Overall, Canada's top personal income-tax rates are generally uncompetitive. It is particularly notable that the two most populous Canadian provinces, Ontario and Quebec, are among the top 10 jurisdictions with the highest personal income-tax rates. Among industrialized countries, Canada generally has relatively high marginal tax rates on upper-income earners, and this diminishes Canada's attractiveness as a destination for highly skilled workers and investment.

Figure 10: Top combined statutory marginal income-tax rates in Canadian provinces (2016) and OECD countries (2014)



Notes: [1] The Canadian tax rates are for the 2016 tax year and the OECD rates are for 2014. [2] The graph shows the highest combined statutory personal income-tax rate that is applied on earned income, taking into account that some personal income taxes may be deductible from the base of other personal income taxes, but before any other tax deductions. The top statutory tax rates are the combined rates of the national and subnational governments. [3] For countries with subnational and/or local personal income tax rates, the OECD calculates the combined rate by either taking an average of the subnational/local rates or selecting a jurisdiction that OECD considers representative. In Canada's case, the "representative" jurisdiction is Ontario; in the case of the United States, it is Detroit, Michigan.

Sources: CRA, 2016; OECD, 2016; PwC, 2009; Revenu Québec, 2016; calculations by authors.

4 Tax Rate Increases Do Not Generate the Expected Government Revenue

A primary reason that various governments have increased the top personal income-tax rate since 2009 is to bring in more government revenue, either to reduce their budget deficit, to partly pay for a reduction in other tax rates, or to finance new spending. [29] However, governments often overestimate how much revenue will be gained from an increase in the tax rate when they fail to take into account the various ways that taxpayers respond to such increases. As a result, government finances often do not gain as much new revenue as initially expected.

The level of revenue collected from a specific tax depends not just on the tax rate but on the base, or the total income that is subject to the tax. Multiplying the tax rate with the tax base results in the amount of revenue that a government receives from a particular tax. When governments increase tax rates, taxpayers often respond by changing their behaviour in ways that shrink the tax base. This often results in governments collecting significantly less revenue than they expect as a result of new tax increases, especially if they assume that tax rate increases will induce no behavioural responses that will shrink the tax base.

There are a number of ways that taxpayers can respond to a tax increase that would reduce the tax base (Lafleur, Palacios, and Emes, 2015). First, a higher tax rate can encourage some taxpayers to work less and report less taxable income. Second, higher income taxes could lead taxpayers to negotiate with employers to substitute away from taxable income to more tax-favourable forms of compensation such as fringe benefits. Third, a taxpayer can take advantage of lower small-business tax rates by channelling income through a small business. Fourth, a taxpayer could make use of other legal means to avoid taxes via various rules in Canada's complex tax code. [30] Finally, some taxpayers can shift income to other jurisdictions with lower tax rates. Upper-income earners tend to be more responsive to tax increases. [31]

[29] Addressing concerns over income inequality is another stated motivation.

[30] For a discussion on the complexity of Canada's tax code, see Vaillancourt, Roy, and Lamnam, 2015. For a measure of the cost of tax complexity in Canada, see Vaillancourt, Roy-César, and Silvia Barros, 2013.

[31] Milligan and Smart (2015) examine provincial tax-rate changes in Canada from 1982 to 2011 and find that the top 1% and top 0.1% of income earners had a stronger behavioural response than other income earners. Similarly, a Department of Finance (2010) study finds a stronger behavioural response in terms of taxable income for upper-income earners.

A series of recent tax changes in the United Kingdom provides an illustration of a tax increase that took in less revenue than expected due to the response in taxpayers' behaviour (HM Revenues and Customs, 2012). Specifically, the government of the United Kingdom introduced a 50.00% income-tax rate on upper-income earners in 2010. The tax increase was expected to bring in £2.5 billion but a government report estimated that it brought in £1 billion or less. The United Kingdom's top rate has since been reduced to 45.00%.

Another illustrative example, this one from Canada, is the evolving estimates of how much revenue will be brought in by the new, higher federal marginal income-tax rate. During the recent election, the federal Liberal Party estimated that the proposed tax hike on upper-income earners would bring in \$2.8 billion in 2016/17 (Liberal Party of Canada, 2015). This estimate included a \$600 million "prudence factor," which reduced the estimate from \$3.4 billion. These estimates, however, did not appropriately account for the likely responses of taxpayers to a higher marginal income-tax rate. Once the Liberal Party formed the government after the election, the estimate provided by the Department of Finance, which now included behavioural responses, was \$2.0 billion (Canada, Department of Finance, 2015a).

Other organizations have produced their own estimates of how much revenue will be gained by the federal government's increase of income taxes paid by upper-income earners. For example, the Parliamentary Budget Office estimated that taxpayers responding to the tax hike by reducing taxable income would decrease the amount of revenue taken in by \$8.6 billion from \$19.1 billion, over the period from 2015/16 to 2020/21 (PBO, 2016). An earlier estimate by the C.D. Howe Institute showed that the federal tax increase on upper-income earners will bring in \$2.3 billion in 2016 before behavioural responses and less than \$1 billion after adjusting for how taxpayers will likely respond (Laurin, 2015). [32] The C.D. Howe Institute also estimated that, because taxpayers' responses would also likely reduce the provincial income-tax base, provincial governments will lose \$1.4 billion in revenue, more than the amount the federal government is estimated to gain. [33]

[32] Estimates from the Parliamentary Budget Office (2016) and Laurin (2015) are based on an assumption about the "elasticity of taxable income", which is the percentage change in taxable income after a one percentage-point change in the "net-of-tax" rate (1 minus the tax rate). The elasticity of taxable income for individuals earning more than \$200,000 assumed by PBO (2016) is 0.38 and the preferred assumption by Laurin (2015) is 0.62. The Department of Finance examined the elasticity of taxable income based on Canada's experience reducing marginal income-tax rates in the late 1990s and early 2000s (Canada, Department of Finance, 2010). That study estimated an elasticity of 0.72 for individuals earning \$150,000 and over (\$2006).

[33] A similar point was made by Milligan and Smart (2015) regarding the negative effect on federal government revenue from a reduction in the tax base due to provincial tax increases. That is, taxpayers that respond to provincial tax increases by reducing their provincial taxable income will also be reducing their federal taxable income, which negatively impacts federal government revenue. The same likely applies to federal tax increases that erode the provincial base.

Furthermore, in a recent Fraser Institute study, Lafleur, Palacios, and Emes (2015) estimated the impact on government revenues of Alberta's new provincial income-tax rates. They estimated that between 2016 and 2020, behavioural responses resulting from the tax increases will reduce the amount of revenue generated by the tax increase by 25.8% compared to what would be generated in the absence of a behavioural response. [34]

[34] This estimate assumes an “elasticity of taxable income” of 0.762 in the short run and 2.89 in the long run (Lafleur, Palacios, and Emes, 2015).

Conclusion

Since 2009, the federal government and most provincial governments have created new, higher top personal income-tax rates. These increases have led to considerable increases in the marginal tax rates paid by upper-income earners across Canada. This has important economic consequences because higher income taxes discourage productive economic activity. It also puts Canada at a competitive disadvantage in attracting and retaining highly skilled workers, ultimately hurting the country's economic prospects.

Canada has traditionally had a relatively uncompetitive personal income-tax system, particularly compared to the United States. This situation has recently worsened and Canada now has among the highest marginal tax rates on upper-income earners among industrialized countries. A comparison of tax rates with those in the United States, in particular, highlights Canada's lack of competitiveness, particularly after differences in income thresholds are accounted for. Someone making CA\$300,000 or CA\$150,000 anywhere in Canada would face a higher marginal income-tax rate on labour income than a person with the same income anywhere in the United States.

Canadian governments have put the country in this uncompetitive position, in part, to raise more revenue. However, taxpayers, especially upper-income earners, respond to tax increases in ways that reduce the amount of revenue that governments would otherwise collect. For this reason, Canadian governments are unlikely to receive as much of a revenue boost from increasing the top personal income-tax rate as expected. Federal and provincial governments would do well to consider reversing the trend towards higher marginal tax rates on upper-income earners, and lower personal income-tax rates.

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