

# Taxing the Rich: An Inconvenient Truth



Jonathan Deslauriers  
Robert Gagné  
Fabienne Gouba  
Jonathan Paré

**Authors**

Jonathan Deslauriers  
Robert Gagné  
Fabienne Gouba  
Jonathan Paré

**Layout**

Jérôme Boivin

**Centre for Productivity and Prosperity –  
Walter J. Somers Foundation  
HEC Montréal**

3000 chemin de la Côte-Sainte-Catherine  
Montréal, Quebec, Canada H3T 2A7  
Telephone: 514 340-6449

Legal deposit: Third quarter 2020  
ISBN: 978-2-924208-73-1

Bibliothèque et Archives nationales du Québec, 2020  
Library and Archives Canada, 2020

Cover image: iStock @hyejin kang

This publication was produced with financial support from the Ministère des Finances du Québec and the Walter J. Somers Foundation.

The texts, opinions, details and information expressed in this document are solely those of the authors and not of the Ministère des Finances. The information presented in this document does not necessarily reflect the opinions of the Ministère des Finances.

© 2020 Centre for Productivity and Prosperity –  
Walter J. Somers Foundation, HEC Montréal

# Taxing the Rich: An Inconvenient Truth

## **About the Centre for Productivity and Prosperity – Walter J. Somers Foundation**

The Centre for Productivity and Prosperity – Walter J. Somers Foundation has a twofold mission. First of all, it is devoted to research on productivity and prosperity, mainly in Quebec. The Centre then shares its research findings through knowledge transfer and educational activities.

## **About the Walter J. Somers Foundation**

The Somers family established the Walter J. Somers Foundation in tribute to the founder of Walter Surface Technologies. Through different donations, the Foundation pursues the family heritage of commitment to the community and contributes to the prosperity of Quebec society, firstly by helping to improve its productivity but also by supporting excellence in youth education.

For more information on the Centre, visit [www.hec.ca/cpp](http://www.hec.ca/cpp) or write us at [info.cpp@hec.ca](mailto:info.cpp@hec.ca)

# TABLE OF CONTENTS

INTRODUCTION	4
TAX SYSTEMS IN CANADA	6
HOW CAN WE ACCURATELY MEASURE THE IMPACT OF TAX REFORMS?	10
HOW CAN WE ESTIMATE CANADIAN TAXPAYERS' RESPONSE TO CHANGES IN TAX RATES?	15
RESULTS	17
DISCUSSION AND CONCLUSION	21
BIBLIOGRAPHY	23
DATA SOURCES	24

# INTRODUCTION

As in many developed countries, the Canadian tax system is progressive, meaning that it requires a larger contribution from those taxpayers with the highest incomes, on the one hand, and a proportionately smaller contribution, or even none, from lower-income taxpayers.

While in theory such a system guarantees a certain level of equity among the different classes of taxpayers, applying it in practice comes with a daunting challenge: how can tax brackets be structured to strike a balance favouring equity among taxpayers while allowing the government to reach its objectives in terms of tax revenue?

Offhand, one might think that increasing the tax rate for the wealthiest taxpayers would allow the government to boost its tax revenue and hence help redistribute wealth more fairly. This is in fact the approach taken by the Trudeau government when it came to power in 2015.

In keeping with an election promise, Ottawa reduced income tax rates for the middle class starting in 2016, while at the same time introducing a new tax bracket for the wealthiest taxpayers, so as to increase their contribution to national tax revenue. The tax rate applying to the portion of taxable income exceeding \$200,000 rose from 29% to 33% on January 1, 2016, while the rate applying to the portion between \$45,285 and \$90,563 fell from 22% to 20.5%.

The government was aware that this was not a zero-sum exercise, i.e. the increased tax revenue from the wealthiest taxpayers would not entirely compensate for the middle-class tax cut, and estimated that these changes in the country's tax system would translate into a \$1.4 billion decline in tax revenue, or less than 1%, in the first year,<sup>1</sup> and a further \$1.5 billion decline in the second year, 2017. These forecasts were inaccurate, to say the least.

Revenue from taxes on the wealthiest taxpayers unexpectedly plummeted by 9.4% in 2016, while that collected from taxpayers benefiting from the lower rates fell by only 0.3%. As a result, revenue from federal personal income tax dropped by \$4.97 billion following the reform, for an overall decline of 3.6% from the previous year. These losses were made good in 2017, but tax revenue from the wealthiest taxpayers did not rise any more quickly.

This example alone is enough to show how difficult it is for a government to reach its desired tax revenue while at the same time making the system fairer for all taxpayers.

On the one hand, it suggests that simply taxing the rich more heavily does not necessarily produce the expected results. Since these taxpayers have much greater flexibility in dealing with taxes, they can more easily avoid higher rates by legal means: tax planning, tax avoidance, or changes in behaviour; for instance by deferring capital gains, taking early retirement, reducing their hours of work, etc.

On the other hand, this example also illustrates how difficult it is to measure the impact of tax reforms. Since the government's tax revenue depends on the rates in effect, economic conditions and taxpayer behaviour, evaluating the impact of such reforms does not come down to a simple cause-and-effect relationship between changes in tax rates and the resulting tax revenue. In practice, all the factors that influence taxpayer revenue must be weighed simultaneously in order to isolate the effects of tax reforms. It is not enough to simply calculate tax revenues before and after a reform.

Based on the main results of an econometric study released in conjunction with this report, we offer an analysis of the impact of the tax rate changes in Canada as a whole and in the ten Canadian provinces, between 2004 and 2016. Our results very clearly show that the most affluent Canadian taxpayers, those with incomes above \$150,000, managed to avoid the higher taxes levied on them by reducing their total income, something that other classes of taxpayers could not do.

Once the effect of other factors has been eliminated, we see that the 2016 increase for the wealthiest taxpayers resulted in a 7% decline in their total income. In other words, they appear to have escaped the additional tax burden imposed by the federal government by reducing their income. The reform introduced by the Trudeau government did not produce the desired results, in short.

These findings, and those of many other previous analyses, send a clear message to politicians. At a time when public finances in Quebec and the rest of Canada have been hard hit by the pandemic, governments are inevitably going to be seeking new revenue to pay for the recovery, and there will be more popular pressure than ever to make the rich pay a greater share. However, the government must consider other ways to meet its financial needs.

The rest of this report is organized as follows. We begin with a concise description of tax systems in Canada, and then use concrete examples to show that looking at the government's tax revenue before and after a reform is not sufficient to accurately evaluate the impact of a change in tax rates. We then briefly explain the statistical method used to evaluate Canadian taxpayers' response to a change in these rates. Finally, we present our findings and their ramifications in terms of tax revenue, using Quebec as an example.

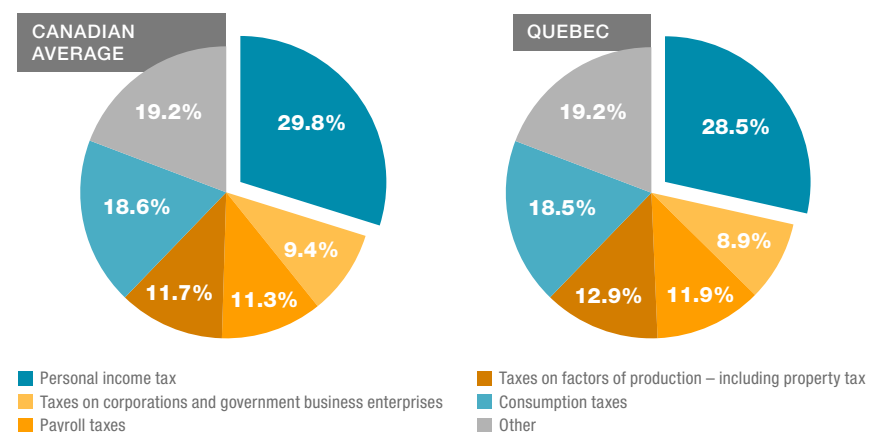
# TAX SYSTEMS IN CANADA

This section provides essential background information on personal income taxation in Canada, to help readers understand the rest of the report. To simplify things we have focused on Quebec.

## INCOME TAX: THE MAIN FISCAL TOOL OF PUBLIC ADMINISTRATIONS IN CANADA

In Canada, personal income tax is the largest source of revenue for public administrations.<sup>2</sup> This fiscal tool alone accounted for close to 30% of government revenue in Quebec and Canada in 2018. By way of comparison, consumption taxes – the second-largest source of revenue – represented about 18.5% of government revenue. Personal income tax is collected by the federal government and the ten provinces.<sup>3</sup>

FIGURE 1  
DISTRIBUTION OF REVENUE FOR ALL PUBLIC ADMINISTRATIONS  
IN 2018



<sup>2</sup> The federal, provincial, territorial, local and Indigenous administrations.

<sup>3</sup> Note that property taxes, commonly referred to as municipal taxes, collected by the municipal level of government, are included in the “Taxes on factors of production” category.

# THE FEDERAL PERSONAL INCOME TAX SYSTEM

As Figure 2 shows, the federal tax system is progressive, meaning that the tax burden on Canadian taxpayers increases with income.

Taxpayers are first allowed a basic personal amount, meaning that they pay no tax on the first \$12,069 of taxable income.<sup>4</sup> Rates then increase through various brackets, commonly referred to as marginal tax rates. With the exception of Quebec, where the Quebec abatement reduces federal taxes by 16.5% to account for the transfer of federal responsibilities, taxpayers in Canada are subject to the same federal tax rates in all provinces and territories.

A tax rate of 15% (12.525% in Quebec) is then applied to the taxable income bracket of \$12,070 to \$47,629, followed by a rate of 20.5% (17.118% in Quebec) on taxable income of \$47,630 to \$95,258, and so on. The final bracket, taxable income of \$210,371 or more, is subject to a rate of 33% (27.555% in Quebec).<sup>5</sup>

Since these are marginal rates, meaning that personal income is taxed at different levels, and taxpayers are allowed a basic personal amount before tax is applied, the average income tax rate on all taxable income is lower than the rate for the level corresponding to an individual's top income bracket (Figure 3).

For instance, a worker with \$75,000 in taxable income is taxed at two different levels by the federal government. He will pay 15% on the portion of his income between \$12,070 and \$47,629, and 20.5% on the remainder (or 12.525% and 17.118% if he lives in Quebec). Because of the basic personal amount, this worker will actually pay tax at an average rate of 14.6% on his overall taxable income (11.8% if he lives in Quebec). An individual with \$200,000 in annual taxable income will pay a total average effective rate of about 21.9% (18.2% in Quebec) in federal tax alone.

FIGURE 2  
MARGINAL FEDERAL PERSONAL INCOME TAX RATES, 2019

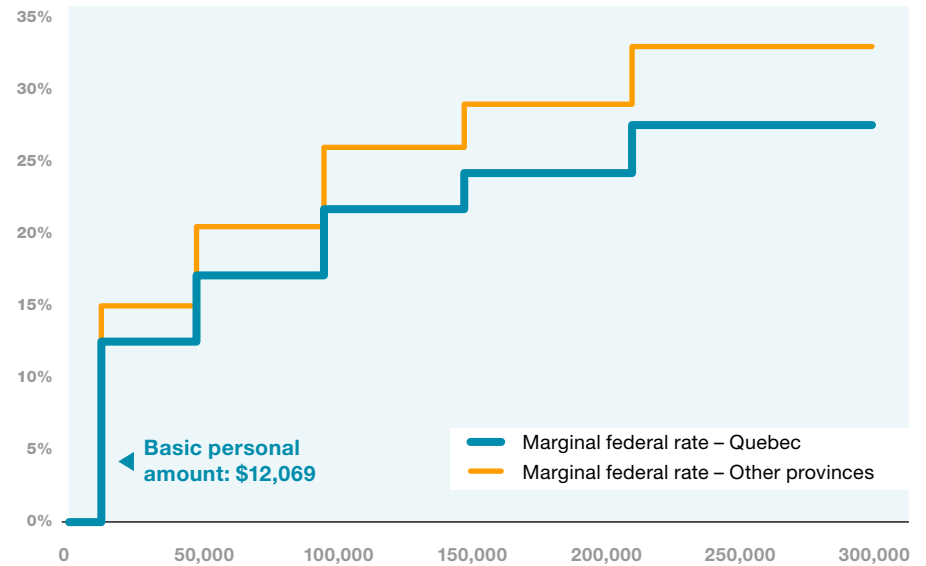
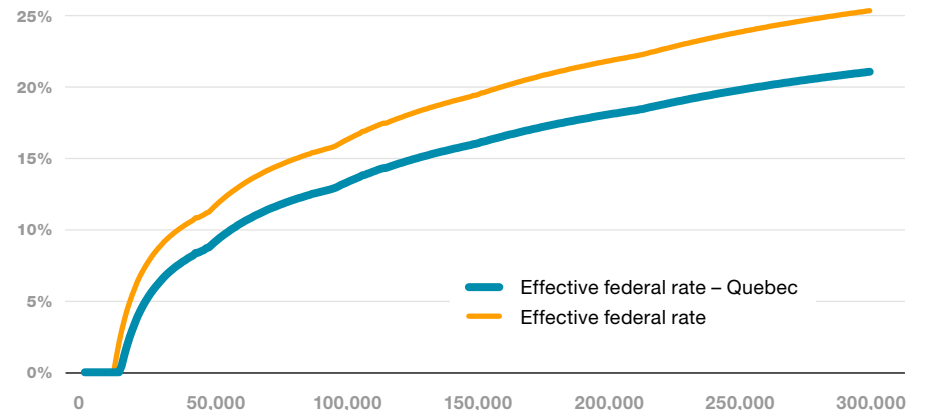


FIGURE 3  
AVERAGE FEDERAL PERSONAL INCOME TAX RATES, 2019



4 These tax data are from 2019.

5 The basic personal amount and tax brackets are regularly indexed to ensure that they reflect changes in the cost of living.

## THE QUEBEC SYSTEM

Figure 4 summarizes the tax situation for individuals in Quebec, showing the marginal rates in the province (dotted line) and then combining them with the federal rates (solid line) to give the combined marginal rate.

It is immediately apparent that the basic personal amount in the provincial system (\$15,269) is slightly higher than in the federal system (\$12,069). On the other hand, there is one fewer tax bracket in the Quebec system, and a lower top marginal rate. In 2019, the effective maximum rate (25.75%) applied to the portion of income exceeding \$106,555.

When we combine the Quebec and federal marginal rates, we can see that individuals in Quebec must contend with eight separate tax brackets. Omitting the small bracket created by the difference between the basic personal amounts, we arrive at a lowest marginal rate of 27.525%, while the highest combined marginal rate is 53.5%, applying to the portion of income above \$210,371.

If we calculate the average rate paid by Quebecers to the two levels of government (Figure 5), we see that an individual with \$210,371 in income will actually pay an average rate of about 39.5% on her total income. An individual with income of \$75,000, however, will pay an average of approximately 25.8%.

FIGURE 4

MARGINAL RATE FOR PERSONAL INCOME TAX IN QUEBEC AND COMBINED FEDERAL/PROVINCIAL MARGINAL RATE, 2019

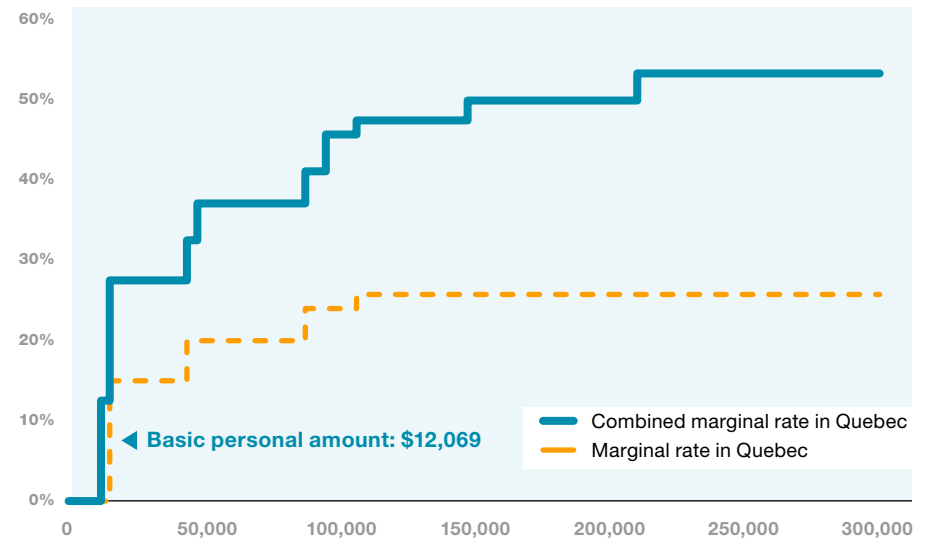
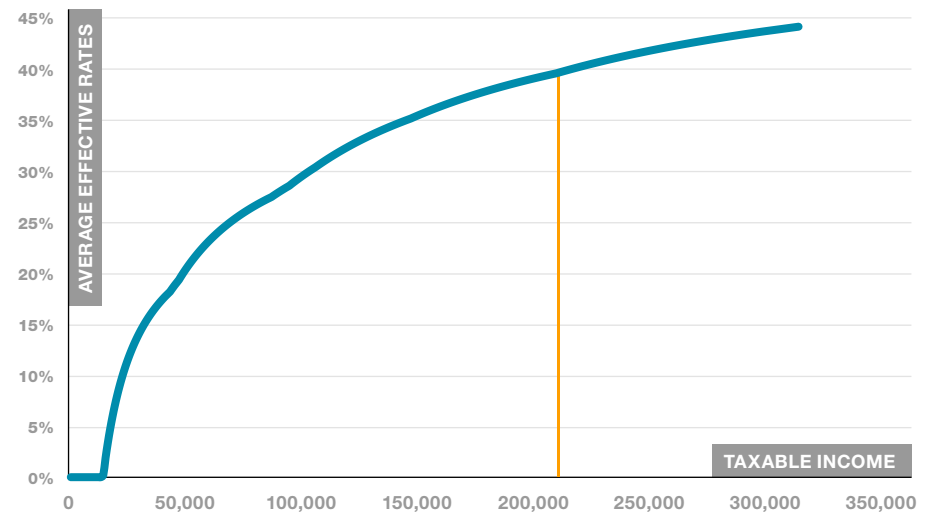


FIGURE 5

COMBINED AVERAGE FEDERAL AND PROVINCIAL PERSONAL INCOME TAX RATE, 2019

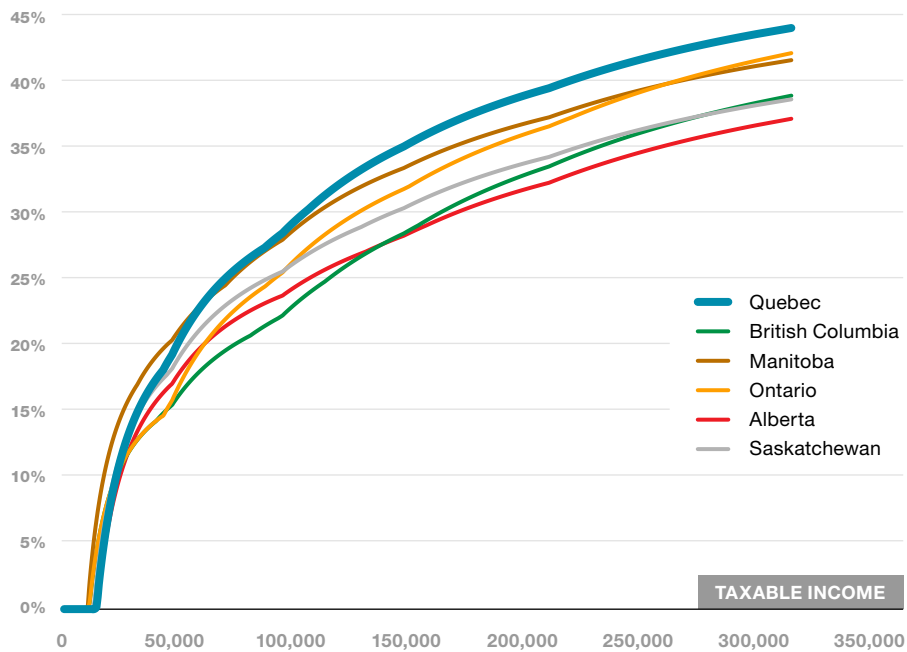




That being said, Quebec residents remain the most heavily taxed in Canada. If we compare the average rates paid by individuals in each province<sup>6</sup> to the two levels of government (Figure 6), we can see that Quebecers are generally subject to the highest rates on most of their taxable income. In fact, only taxpayers with incomes below \$24,000 are taxed at an average effective rate lower than in the majority of other provinces.<sup>7</sup>

Above \$56,000, the average rates in Quebec are among the highest in Canada. Only Manitoba rivals Quebec above this point. And once they reach \$100,000 in taxable income, Quebecers are subject to average tax rates higher than Canadians in other provinces.

FIGURE 6  
**AVERAGE COMBINED FEDERAL/PROVINCIAL PERSONAL INCOME TAX RATE, 2019**



6 These data consider the equivalent of the basic personal amount for each province and the surtaxes applicable in Ontario and Prince Edward Island on income tax paid in excess of \$4,740 and \$12,500, respectively.

7 Alberta has the lowest average effective rate for taxpayers with incomes below \$27,000.

# HOW CAN WE ACCURATELY MEASURE THE IMPACT OF TAX REFORMS?

Since a number of factors influence taxpayers' pre-tax income and the impact of these factors fluctuates over time, the effect of a tax reform cannot be determined simply by evaluating tax revenue before and after the reform.

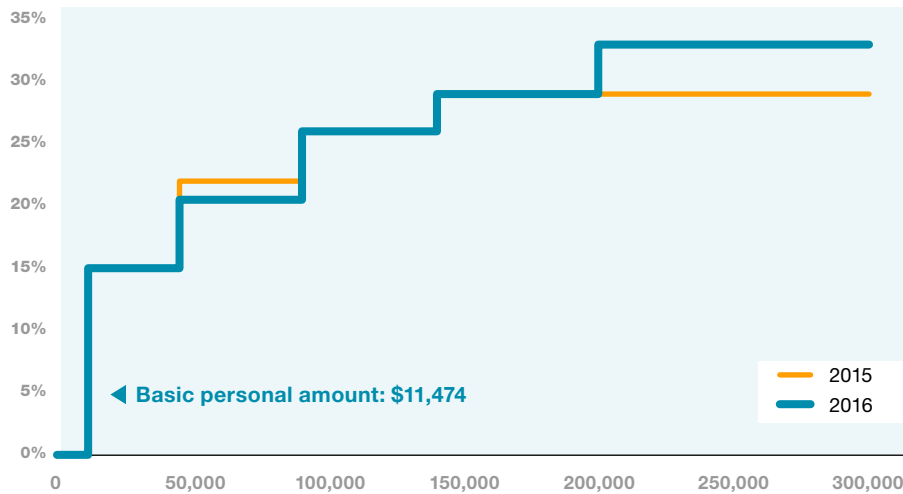
To illustrate the dynamics underlying the tax system, think of the impact of the economic situation on the government's tax base, i.e. the wealth on which it can levy taxes to raise revenue.

Generally speaking, a government's tax base tends to expand during periods of economic growth. Sales by businesses pick up, wages rise and employment is higher, and all of this naturally translates into more government revenue. Conversely, the tax base tends to shrink when the economy turns rocky, for instance during a recession. In that case, the contraction of economic activity leads to job losses and more pressure on government revenue.

A tax reform may well be implemented in either of these cases, so its impact will understandably, and necessarily, be overestimated or underestimated, depending on its nature and when it is introduced. For instance, a reform intended to lower tax rates that is brought in during an economic slowdown may lead to a faster decline in government tax revenue, whereas it could produce higher revenue if it is introduced at a time when economic growth is accelerating. In either case, it will be difficult to isolate the impact of these proposed changes in tax rates.

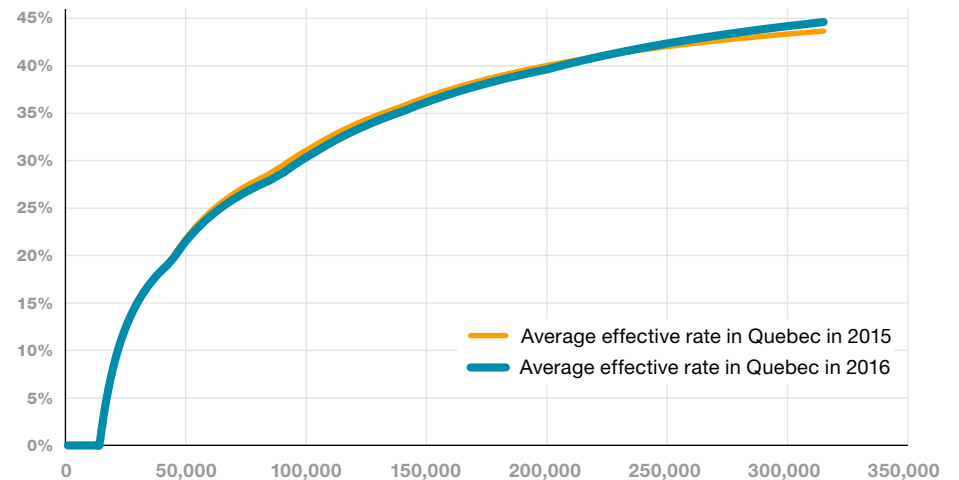
The 2016 tax reform by the federal government is a particularly eloquent example. Following up on an election promise, the Trudeau government brought in a middle-class tax cut; at the same time, it created a new tax bracket to offset this cut and raise more revenue from the wealthiest taxpayers (Figure 7). The tax rate applicable to the portion of taxable income at or above \$200,000 rose from 29% to 33% on January 1, 2016, for a 13.79% increase, while the rate on the \$45,282 to \$90,563 income bracket was lowered from 22% to 20.5%, for a 6.82% decrease.

FIGURE 7  
MARGINAL FEDERAL INCOME TAX RATES BEFORE AND AFTER 2016



With the lower rate on the portion of taxable income between \$45,282 and \$90,563, the reform reduced the average income tax rate for taxpayers with less than \$230,000 in taxable income (Figure 8) and, in the end, only those taxpayers with taxable income exceeding \$250,000 were actually affected by the addition of a new tax bracket.

FIGURE 8  
AVERAGE COMBINED PERSONAL INCOME TAX RATE IN QUEBEC BEFORE AND AFTER THE 2016 FEDERAL REFORM

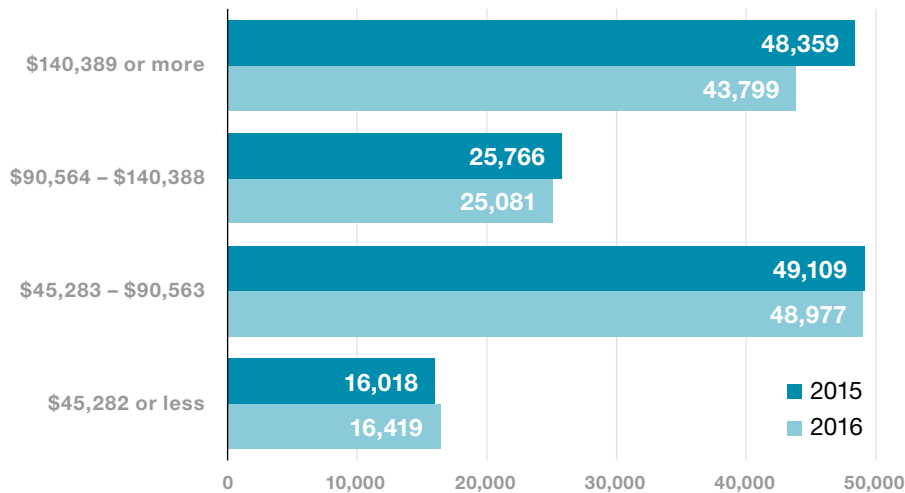


In short, “to help pay for this middle class tax cut, the Government [asked] the wealthiest one per cent of Canadians to contribute a little more.”<sup>8</sup> But the reform does not appear to have produced the desired results.

8 Department of Finance. In 2017, the wealthiest 1% of Canadians earned \$236,000 or more.

Despite the tax cut for the middle class, the revenue collected by the federal government from taxpayers in the \$45,282 to \$90,563 tax bracket fell by merely 0.3% in 2016 (Figure 9). Revenue from the wealthiest taxpayers, on the other hand, declined by 9.4% even though the income tax rate on the portion of income equal to or greater than \$200,000 was upped by 13.79%.<sup>9</sup> Clearly, the reform did not reach its objectives.

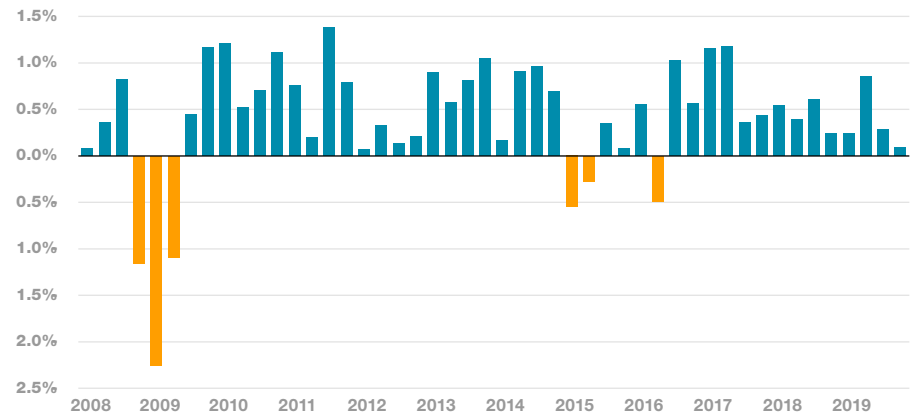
FIGURE 9  
FEDERAL INCOME TAX PAID, BY TAX BRACKET  
MILLIONS OF CURRENT DOLLARS



It must be acknowledged, nonetheless, that the shortfall between the expected and actual results can be at least partly attributed to the economic situation at the time of the reform.

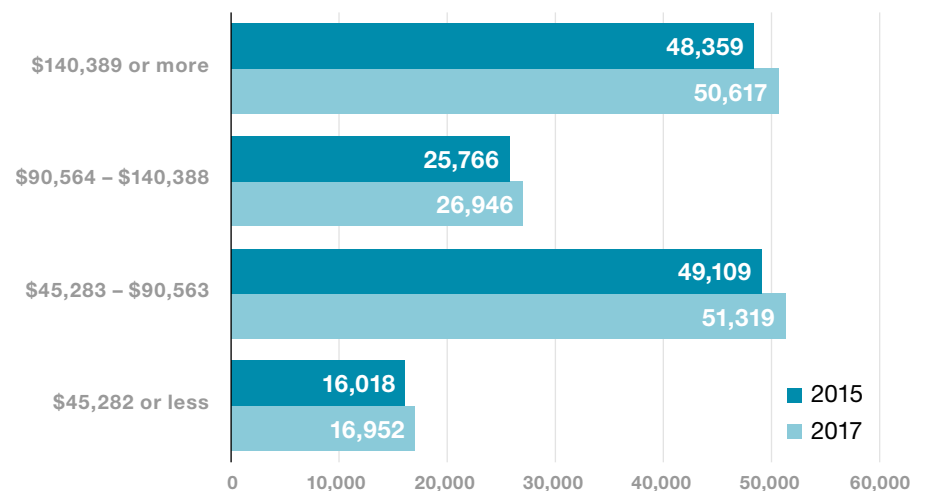
When the reform took effect, the Canadian economy was virtually stalled (Figure 10). Real Canadian GDP had fallen for three quarters – the first time since the 2008 recession – and economic growth was rather slow. In other words, the 2016 reform coincided with a shrinking tax base for the government. This makes it hard to evaluate the impact of the reform, since government revenue was most certainly dragged down by the economic slump.

FIGURE 10  
REAL QUARTERLY GDP IN CANADA



By 2017, the federal government had recovered from all its fiscal losses in the previous year (Figure 11). Revenue collected from taxpayers in the \$45,282 to \$90,563 bracket was up by 4.5% from 2015, while revenue from the brackets above \$140,388 increased by 4.6%.

FIGURE 11  
FEDERAL INCOME TAX PAID, BY TAX BRACKET  
MILLIONS OF CURRENT DOLLARS



<sup>9</sup> There is insufficient data to divide government tax revenue to reflect the new tax bracket before the reform, so our calculations are based on the former bracket, starting at \$140,388.

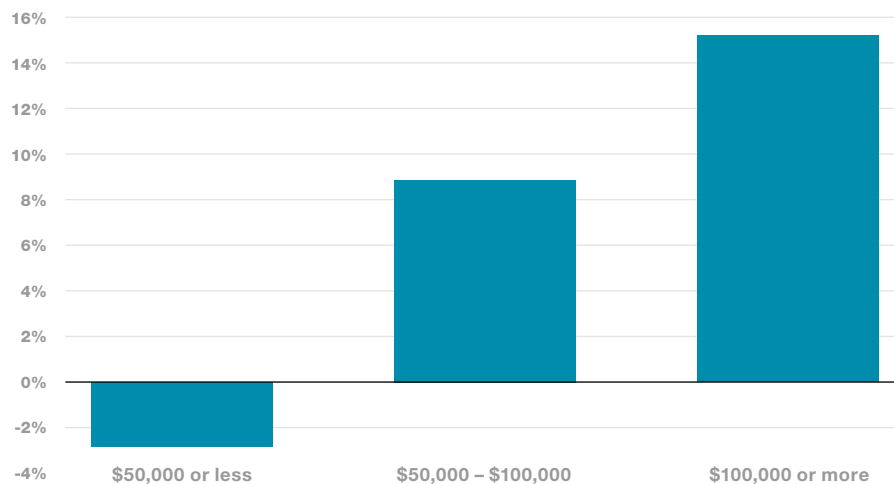
Aside from the effect of economic conditions on the reform, the fact that the revenue collected from taxpayers in the highest brackets did not rise any more quickly in the two subsequent years suggests that the reform was not a success. Whether through legal tax planning or tax avoidance measures, or more simply by changing their behaviour, the wealthiest taxpayers appear to have managed to escape the extra contribution asked of them. Does this mean that taxing the rich more heavily is not an effective fiscal solution?

Not necessarily. If we look a bit further back in time, we can see that a similar reform instituted by the Quebec government in 2013 in fact produced the results sought by the Trudeau government in 2016.

After it added a new tax bracket upping the provincial tax rate from 24.0% to 25.75% for taxable income above \$100,000, the Quebec government saw its tax revenue from this class of taxpayers rise more rapidly than from less-affluent classes (Figure 12). In the two years following this reform,<sup>10</sup> income tax payable<sup>11</sup> on the portion of income above \$100,000 increased by 15.2%, while income tax payable on the portion between \$50,000 and \$100,000 rose by only 8.9%.

FIGURE 12

**INCOME TAX PAYABLE TO THE QUEBEC GOVERNMENT BETWEEN 2012 AND 2014, BY TOTAL INCOME BRACKET**



Although this is only one of the many interactions that can affect the impact of a fiscal reform, these examples suffice to show that taxpayers' reactions to a change in the marginal tax rate cannot be reduced to a simple cause-and-effect relationship. In practice, more-sophisticated statistical methods must be used to evaluate taxpayers' response, all other things assumed to be equal.

In the next section we briefly describe a method used to estimate Canadians' response to a tax rate change. This method was already used once, in 2004,<sup>12</sup> to assess their response based on data collected between 1972 and 1996. In this case, the method is based on data from 2004 to 2016. Readers may refer to this [technical explanation](#) of the complete empirical approach.

<sup>10</sup> In 2013 and 2014.

<sup>11</sup> These data are from a different source than those used for Figures 9 and 11. The data in Figure 12 are from personal income tax statistics for the 2016 taxation year. They correspond to the income tax payable by total income bracket, calculated as the difference between income tax on taxable income and non-refundable credits.

<sup>12</sup> Gagné, R., J. Nadeau and F. Vaillancourt (2004): "Réactions des Contribuables aux Variations des Taux Marginaux d'Impôt: une Étude portant sur des Données de Panel au Canada," *L'Actualité Économique*, 80(2-3) : 383-404.

# SUPPORTING LITERATURE

Taxpayers' reactions to tax reforms have been examined in numerous studies, most of them based on US data. These include Feldstein (1995), Auten and Carroll (1994, 1995), Gruber and Saez (2002), Lindsey (1987), Kopczuk (2005), Giertz (2007), Weber (2014), and Saez, Slemrod and Giertz (2012).

In addition to confirming that individuals respond to changes in marginal rates by adjusting their incomes, these empirical studies tend to support the idea that the degree of sensitivity increases with income levels. In other words, the wealthiest classes of taxpayers react more strongly to changes in marginal rates than do their less-affluent counterparts.

Although less numerous, some studies have used Canadian data to estimate individuals' response to changes in marginal tax rates. Gagné *et al* (2004), for instance, used Canadian provincial data to gauge the sensitivity of high- (\$100,000 to \$150,000) and highest-income taxpayers (over \$150,000), and the series of studies by Milligan and Smart focused on the wealthiest Canadian taxpayers.

Milligan and Smart (2015a) analyzed Canadian individuals' response to variations in marginal rates, and found that it depended on income level, with the strongest reaction by the top 0.1% earners. Milligan and Smart (2015b) looked at the effects of an increase in provincial marginal rates on the wealthiest individuals in terms of potential revenue gains for governments, and found that these gains depended on the province. Those with a greater concentration of income at the top of the distribution and lower prevailing tax rates stood to gain the most. Provinces with high taxation levels and a low proportion of wealthy residents, however, would benefit the least. This is the case for Quebec.

# HOW CAN WE ESTIMATE CANADIAN TAXPAYERS' RESPONSE TO CHANGES IN TAX RATES?

The econometric model developed to estimate Canadian taxpayers' response to changes in marginal tax rates<sup>13</sup> divides them into three income classes:

- medium, taxpayers with incomes of \$50,000 to \$99,999
- high, taxpayers with incomes of \$100,000 to \$149,999
- highest, taxpayers with incomes of \$150,000 or more

<sup>13</sup> Gagné, R., J. Nadeau and F. Vaillancourt (2004): "Réactions des Contribuables aux Variations des Taux Marginaux d'Impôt: une Étude portant sur des Données de Panel au Canada," *L'Actualité Économique*, 80(2-3) : 383–404.

Taxpayers with incomes below \$50,000 are not included in the analysis, since they are assumed to not be very sensitive to tax rate changes. Their income is derived mainly from employment earnings, and they can avoid tax hikes only by reducing their hours of work.

Since we assume that the wealthiest taxpayers will react to higher tax rates by reducing their taxable income, we thought it necessary to define "income" as broadly as possible. Hence the model measures taxpayers' response on the basis of total income, i.e. considering all types of income,<sup>14</sup> regardless of any tax deductions<sup>15</sup> to which they are entitled. This means that we take account of taxpayers' response whether or not they attempt to escape a tax increase by using tax planning or avoidance to reduce their income or, more simply, by changing their behaviour.

<sup>14</sup> Employment income, the taxable amount of dividends, rental income, interest and other investment income, taxable capital gains, net partnership income, government benefits, etc.

<sup>15</sup> Legal deductions include contributions to registered pension plans (RPPs) or registered retirement savings plans (RRSPs), union dues, childcare expenses, stock options deductions, capital gains deductions, etc.

The model first applies different economic variables to the total income of the three taxpayer classes,<sup>16</sup> to determine the influence of as many income determinants as possible and so isolate these taxpayers' response to a tax rate change.

Aside from the average combined marginal tax rates specific to each class,<sup>17</sup> the model uses a number of provincial variables: economic growth, trends in the unemployment rate, the Gini coefficient (a measurement of inequality in income distribution), and control variables to determine influences specific to the time and the province.

While the number of economic variables may seem limited at first glance, it must be noted that the control variables related to the time and province take account of most of the fluctuations in taxpayers' income. On the one hand, the time variables take account of the influence of all the factors that affect all the provinces, for each of the years covered in the analysis. On the other hand, the province variables take account of the influence of all the factors that affect a specific province over the entire period. Since the income of each class is measured as a function of its weight in all the incomes rather than in dollars, the model manages to control for most influences affecting income.

By controlling for the main factors influencing income, the model allows us to adequately measure the response by each taxpayer class to a tax rate change. If an increase in the average marginal rate for a particular class results in a statistically significant decline in its income, we can conclude that these taxpayers probably managed to elude the increase by excluding part of their income, for instance by deferring the reporting of capital gains, using lawful tax avoidance tools or, for some, hiding some of their income in tax havens. Conversely, we can assume that these taxpayers were unable to escape the additional tax burden if the total income of a class remained stable following a rate change.

To support these findings, the model then allows us to estimate the response of the three taxpayer classes by measuring the trend in the number of taxpayers in a class following a tax rate change. If higher rates led to a statistically significant drop in the number of taxpayers, this is statistical evidence that taxpayers in this class managed to elude a tax increase by reducing their incomes, on the assumption that they moved down a class by doing so. Conversely, if the number of taxpayers in a class remained unchanged following a tax increase, this indicates a lack of such fiscal flexibility.

---

16 The sum of the incomes of all taxpayers in the class. The income of a class is measured as a share of total income – this also makes it possible to eliminate differences owing to variations in the sizes of classes from one province to another.

17 A note on methodology, indicating the source but also the fact that the variable has been squared in order to test for the presence of a non-linear relationship with income or the number of taxpayers.



# RESULTS

The results of our analysis of the response of Canadian taxpayers to tax rate changes are not only consistent with the results of the main studies in this area, but very similar to the 2004 findings.

First of all, the analysis confirms that taxpayers with the highest incomes react strongly to tax increases (Table I). The results clearly show that taxpayers in the highest-income class manage to elude increases by reducing their total income.

As expected, the response is not as strong among taxpayers in lower income classes. Taxpayers in the high-income class (\$100,000 to \$149,999) also manage to elude tax increases by reducing their total income, but their response is four times weaker than among highest-income taxpayers. The impact on their incomes is limited, overall, and tax rate increases appear to have no significant effect on the number of taxpayers in the class. No reaction can be seen in the medium-income group (\$50,000 to \$99,999). Since they cannot adjust their incomes, these taxpayers are vulnerable to tax rate changes.

TABLE I  
SUMMARY OF RESULTS

	RESPONSE TO TAX INCREASES, IN TERMS OF	
	TOTAL INCOME	NUMBER OF TAXPAYERS
Highest income (\$150,000+)	↓↓	↓
High income (\$100,000 to \$150,000)	↓	No significant effect
Medium income (\$50,000 to \$100,000)	No significant effect	No significant effect

**N.B.:** Two arrows mean that the estimated coefficients are significant at a 1% confidence level; in other words there is a 1% chance that there is no relationship between the two variables even though the estimate shows a statistically significant relationship. One arrow means that the estimated coefficients are significant at a 5% confidence level, or that there is a 5% chance that there is no relationship between the two variables even though the estimate shows a statistically significant relationship.

# BRIEF ECONOMETRIC RESULTS

The estimates show a negative and statistically significant response by taxpayers in the highest-income class (over \$150,000). The results suggest that a 10% increase in the marginal tax rate for this class of taxpayers will lead to a 10% decline in their total income, as well as a drop of approximately 5% in the number of taxpayers in the class. In other words, the wealthiest taxpayers manage to elude a tax rate increase by reducing their total income, to such an extent that some of them move to a lower income class.

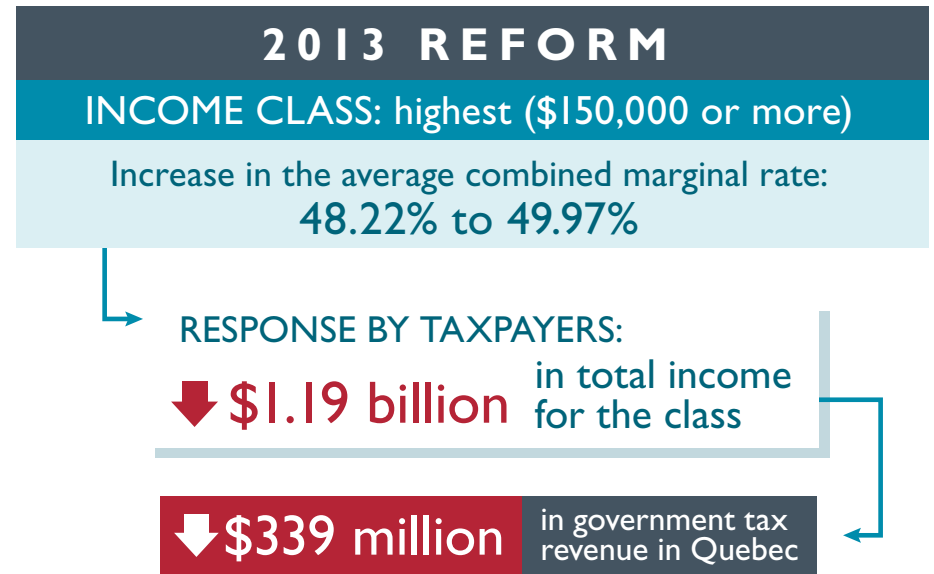
These effects are less visible in the lower income classes, and these taxpayers do not react so strongly. The results suggest that a 10% increase in the marginal income tax rate for high-income taxpayers (\$100,000 to \$150,000) will lead to a decline of about 2.2% in total income for the class. The effect on income seems limited, overall, and this tax increase apparently has no significant impact on the number of taxpayers in the class. No statistically significant effect can be seen for middle-income taxpayers (\$50,000 to \$100,000).

In short, the results are consistent with the expected effects. The wealthiest taxpayers manage to elude a tax increase by reducing their income, to the point that some of them move to a lower class, but this is not true of taxpayers in lower income classes.

Now that we have examined the main results, we can take a closer look at what they mean, by applying them to the provincial reform of 2013 and the federal reform of 2016. By entering the data from these reforms in the model, we can evaluate taxpayers' response and, by extension, measure the impact of the reforms on the tax revenue of the Quebec government of the time.<sup>18</sup>

Adding a new tax bracket in Quebec in 2013 shifted the average combined marginal rate for the highest-income class<sup>19</sup> from 48.22% to 49.97%, for a 3.63% increase (Figure 13). The first estimate shows that taxpayers in this class reduced their total income by \$1.19 billion by attempting to avoid the increase. Everything else being considered equal, their reaction ultimately resulted in a decline in government tax revenue in Quebec of about \$339 million.<sup>20</sup> Moreover, the second estimate reveals that 2,109 taxpayers moved down an income class, representing a 2% drop from before the reform. It seems likely that this downward movement resulted from their efforts to escape the higher tax rates on their income.

FIGURE 13



18 Estimates apply only to Quebec. Revenues include those of the Quebec and federal governments.

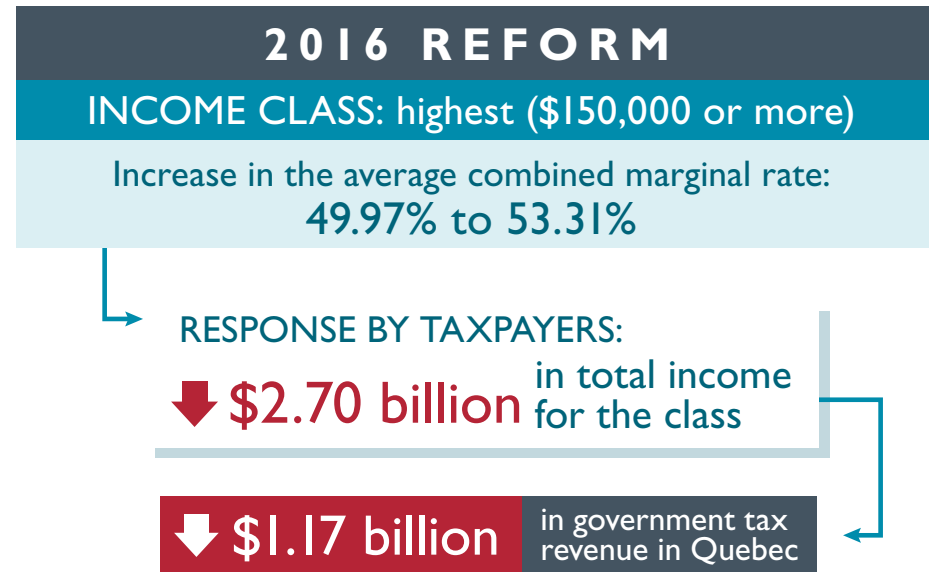
19 These rates correspond to simple growth in the combined statutory marginal rate (federal and provincial) for the highest-income class in 2016, when the tax reform took effect.

20 A 0.724% decline, all else being equal.

The federal income tax reform in 2016 (Figure 14) seems to have had an even greater impact on Quebec government revenue. The addition of a new tax bracket led to a 6.68% increase in the average combined marginal rate for the highest-income class, from 49.97% to 53.31%.<sup>21</sup> These taxpayers reacted by reducing their total income by \$2.7 billion to escape the additional fiscal contribution Ottawa was seeking. As a result, the reform led to a drop of \$1.17 billion in tax revenue in Quebec<sup>22</sup> and 4,711 taxpayers moved to a lower income class in an effort to reduce their total income.<sup>23</sup>

Although these results do not take account of the longer-term impact of these tax increases, one conclusion is clear: everything else considered equal, these reforms definitely did not reach their objectives. In other words, governments should not depend on the wealthiest taxpayers to balance their budgets in the short term.

FIGURE 14



21 The increase is lower than that for the federal statutory rate because it represents the percentage variation in the combined statutory marginal tax rate (federal and provincial).

22 A 2.278% decline.

23 A 3.587% decline.

# DISCUSSION AND CONCLUSION

Now that the pandemic has pushed public spending to record levels, governments will undoubtedly be looking for more revenue. The temptation to ask the wealthiest taxpayers to contribute more will be stronger than ever. But other solutions should be considered.

Like many other studies, this analysis clearly shows that the wealthiest taxpayers manage to elude tax increases. Not only can they reduce their incomes to escape the increase, but in some cases they do so to such an extent that they end up in a lower income class.

The results show that such fiscal flexibility is unique to this class of taxpayers, since those with incomes below \$100,000 do not manage to dodge tax increases, even partially. Different factors can explain this situation.

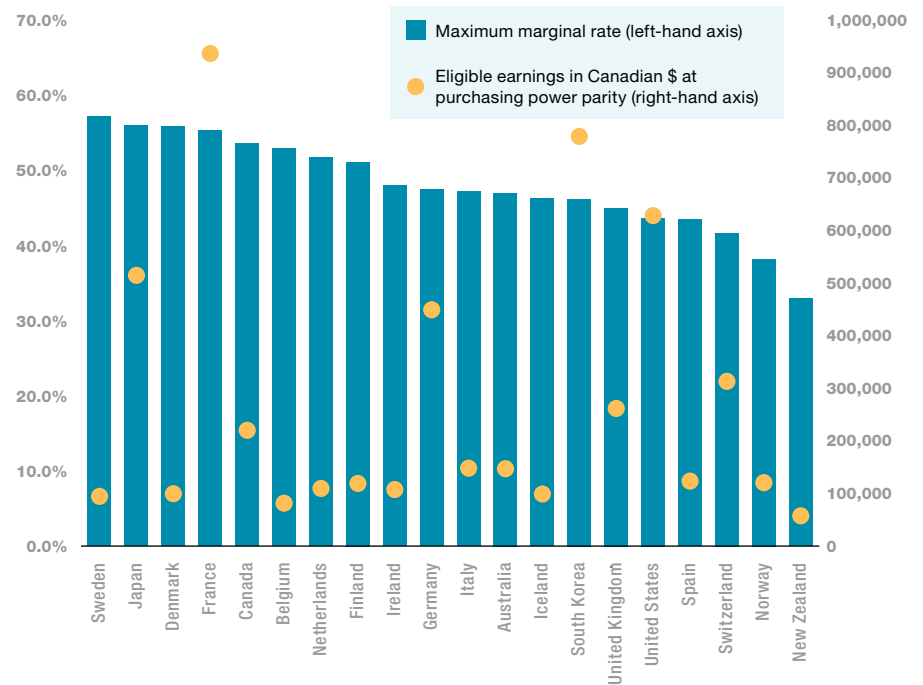
First of all, the incomes of middle-income taxpayers generally consist of employment earnings, a fact that considerably limits their options. In short, the only way for them to reduce their incomes and escape tax increases is to cut their hours of work or to work under the table.

The number of tax options available to taxpayers increases as their incomes rise and come from more sources. For instance, a professional can reduce her hours of work to shift her income to a lower tax bracket and elude a tax increase; a business owner can sell his business; a professional can take earlier retirement, etc. The wealthiest taxpayers can also call on tax planners and use legal tax planning and avoidance methods to escape tax increases.

Does this mean that taxing the rich more heavily is not a long-term solution? Not necessarily. In fact, our model confirms that there is a non-linear relationship between marginal tax rates and total income. In other words, when marginal tax rates are low, it is possible to increase the tax revenue from the highest-income class even by raising these rates. However, there is a threshold beyond which any additional increases in tax rates lead to reductions in tax revenue. And this threshold seems to have been exceeded in Quebec and the rest of Canada.

As Figure 15 shows, the increases in 2013 and 2016 pushed the tax rates for the wealthiest taxpayers to almost-unequalled levels. In the OECD20 group of countries,<sup>24</sup> only Sweden, Japan, Denmark and France have statutory rates higher than those in Canada,<sup>25</sup> and in fact the earnings subject to these rates in Japan and France are much higher than here. Consequently the provincial and federal governments have little room to manoeuvre, and would be ill advised to fall back once more on taxing the wealthy to finance their response to the COVID-19 pandemic.

FIGURE 15  
MAXIMUM MARGINAL PERSONAL INCOME TAX RATE, 2018



24 These are the OECD countries with which the CPP compares Quebec in its annual *Productivity and Prosperity in Quebec – Overview*. The countries in the OECD20 group were originally selected because historical data were available for them. Out of the 35 OECD member countries, 20 were selected for analytical purposes. Greece, Austria, Portugal, Slovenia, the Czech Republic, Hungary, Estonia, Lithuania, the Slovak Republic, Poland, Turkey, Luxembourg, Chile, Mexico and Israel were excluded from this list.

25 Corresponding to the maximum combined marginal rate in Quebec.

# BIBLIOGRAPHY

**Auten, G. and R. Carroll (1994):** "Tax Rates, Taxpayer Behavior and the 1993 Act," *Proceedings of the Eighty-Sixth Annual Conference of the National Tax Association*, Columbus, Ohio, p. 6-12.

**Auten, G. and R. Carroll (1995):** "Behavior of the Affluent and the 1986 Tax Reform Act," *Proceedings of the Eighty-Seventh Annual Conference of the National Tax Association*, Columbus, Ohio, p. 70-76.

**Feldstein, M. (1995):** "The Effect of Marginal Tax Rates on Taxable Income: A Panel Study of the 1986 Tax Reform Act," *Journal of Political Economy*, 103(3): 551-572.

**Gagné, R., J. Nadeau and F. Vaillancourt (2004):** "Réactions des Contribuables aux Variations des Taux Marginaux d'Impôt: une Étude portant sur des Données de Panel au Canada," *L'Actualité Économique*, 80(2-3) : 383-404.

**Giertz, S. (2007):** "The Elasticity of Taxable Income over the 1980s and 1990s," *National Tax Journal*, 60(4): 743-768.

**Gruber, J. and E. Saez (2002):** "The elasticity of taxable income: evidence and implications," *Journal of Public Economics*, 84: 1-32.

**Kopczuk, W. (2005):** "Tax Bases, Tax Rates and the Elasticity of Reported Income," *Journal of Public Economics*, 89(11-12): 2093-2119.

**Lindsey, L. B (1987):** "Individual Taxpayer Response to Tax Cuts: 1982-1984, with Implications for the Revenue Maximizing Tax Rate," *Journal of Public Economics*, 33: 173-206.

**Milligan, K. and M. Smart (2015a):** "Taxation and Top Incomes in Canada," *Canadian Journal of Economics*, 48(2): 655-81.

**Milligan, K. and M. Smart (2015b):** "Provincial Taxation of High Incomes: The Effects on Progressivity and Tax Revenue," in David A. Green, W. Craig Riddell, and France St-Hilaire, eds., *Income Inequality: The Canadian Story* (Montreal: Institute for Research on Public Policy, 2015), 479-507.

**Saez, E, J. Slemrod and S. Giertz (2012):** "The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review," *Journal of Economic Literature*, 50(1): 3-50.

**Weber, C. (2014):** "Toward Obtaining a Consistent Estimate of the Elasticity of Taxable Income using Difference-in-Differences," *Journal of Public Economics*, 117: 90-103.

# DATA SOURCES

## FIGURE 1

Statistics Canada. Revenue, expenditure and budgetary balance – General governments, provincial and territorial economic accounts.

Table CANSIM 36-10-0450-01 (formerly CANSIM 384-0047).

## FIGURE 2

Deloitte. Canadian tax rates archive. Personal income tax. PwC.

Tax information – Canada 2019.

Revenu Québec. Tax rates for 2019.

## FIGURE 3

Deloitte. Canadian tax rates archive. Personal income tax. PwC.

Tax information – Canada 2019.

## FIGURE 4

Deloitte. Canadian tax rates archive. Personal income tax. PwC. Tax information.

## FIGURE 5

Deloitte. Canadian tax rates archive. Personal income tax. PwC.

Tax information – Canada 2019.

Revenu Québec. Tax rates for 2019.

## FIGURE 6

Canada Revenue Agency. Income tax package for 2019.

Revenu Québec. Tax rates for 2019.

## FIGURE 7

Deloitte. Canadian tax rates archive. Personal income tax for 2015 and 2016.

Canada Revenue Agency. General income tax and benefit package for 2015 and 2016.

## FIGURE 8

Revenu Québec. Tax rates and income thresholds for 2015 and 2016.

Canada Revenue Agency. 5005-SI T1 General 2015 and 2016 – Appendix I – Federal income tax.

## FIGURE 9

Canada Revenue Agency. Individual Tax Statistics by Tax Bracket (2015 and 2016 tax years).

Table 3: Net federal tax by province or territory and tax bracket.

## FIGURE 10

Statistics Canada. Gross domestic product, expenditure-based, Canada, quarterly.

Table CANSIM 36-10-0104-01 (formerly CANSIM 380-0064).

## FIGURE 11

Canada Revenue Agency. Individual Tax Statistics by Tax Bracket (2015, 2016 and 2017 tax years).

Table 3: Net federal tax by province or territory and tax bracket.

## FIGURE 12

Ministère des finances and Revenu Québec. Individual Tax Statistics – 2016 tax year.

Table 1: Number of taxpayers, total income and income tax payable by total income bracket – 1980–2016.

## TABLE 1

Authors' calculations in the technical document explaining the empirical approach.

Table 5: Elasticities of total income and number of taxpayers.

## FIGURE 13

Authors' calculations.

## FIGURE 14

Authors' calculations.

## FIGURE 15

OECD.Stat. Table I.7. Top statutory personal income tax rates (2019).