
The Future of the Progressive Personal Income Tax: How High Can It Go?

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PRÉCIS

L'auteur se fonde sur la théorie économique et les données probantes pour appuyer l'idée d'examiner les taux d'imposition sur les revenus élevés. À cause des réactions comportementales aux taux plus élevés, il se crée une limite supérieure; au-dessus de cette limite, la perte de recettes découlant des réactions comportementales dépasse le gain des recettes provenant du taux plus élevé. Cependant, il est possible de hausser cette limite par une application plus rigoureuse, et cette limite peut varier en fonction de considérations autres que fiscales telles que les variations dans l'offre et la demande de travailleurs hautement qualifiés. Ce cadre de travail laisse penser que si l'on souhaite augmenter les recettes au Canada en fixant des taux plus élevés, il faudra prendre d'importantes mesures pour hausser la limite supérieure.

ABSTRACT

The author draws on economic theory and evidence to build the case for considering boundaries for the high-income tax rate. Because of behavioural responses to higher rates, an upper boundary arises; above it, the revenue loss from behavioural responses outweighs the revenue gain from the higher rate. However, this upper boundary can be pushed upward through stronger enforcement and may vary with non-tax considerations, such as shifts in the demand for and supply of highly skilled workers. This framework suggests that if higher rates are to raise revenue in Canada, serious measures must be taken to increase the upper boundary.

KEYWORDS: INCOME TAXES ■ PROGRESSIVE TAXES ■ INCOME REDISTRIBUTION

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INTRODUCTION

The progressive personal income tax is at the centre of tax progressivity. It provides the most important counterweight to regressive elements in the rest of the tax system and in market-determined pretax incomes. While the case can be made that other taxes may produce a progressive effect in some circumstances, the sheer scale of the income tax makes its impact on progressivity dominant.¹ For those who have strong redistributive tastes, the income tax is a natural tool. But even for those with more laissez-faire attitudes toward the distribution of income, the progressive income tax is vital. Those who are not predisposed to redistribute might entertain a more modest goal of fiscal proportionality—everyone paying an equal share of his or her income. To meet even this more modest goal of overall proportionality, however, a progressive personal income tax is necessary in the face of other regressive fiscal elements.

How progressive should the income tax be? While the answer to this question is best left to each citizen's own social philosophy, economists can offer useful advice to inform citizens about the likely impacts of strong progressivity. In particular, the theoretical and empirical model of Diamond and Saez provides an attractive way to frame the debate over the progressivity of the Canadian income tax.² In the Diamond-Saez framework, the tax rate for top earners is pushed as high as it can go to maximize tax revenues. With this high point as the anchor, the progressivity of the rest of the income tax then follows. The framework delivers a clear upper limit on the top personal income tax rate, which can help to guide public debate.

In this article, I apply the Diamond-Saez framework to Canada's taxation system, covering recent theoretical developments, empirical findings, and policy actions. I then discuss how the responsiveness to taxation may vary according to circumstances, concentrating on recent developments in Canada. I conclude with policy advice for those seeking either to enhance or to attenuate high-income tax rates.

Before implementing this plan, however, I begin with an empirical overview of the history and current manifestation of income tax progressivity in Canada.

1 For example, Richard Bird and Michael Smart, "Taxing Consumption in Canada: Rates, Revenues, and Redistribution" *Finances of the Nation* feature (2016) 63:2 *Canadian Tax Journal* 417-42, make the case that Canada's goods and services tax is not regressive when considered against a base of consumption rather than income. However, because of the regressivity of excise taxes, consumption taxes as a category remain regressive.

2 Peter Diamond and Emmanuel Saez, "The Case for a Progressive Tax: From Basic Research to Policy Recommendations" (2011) 25:4 *Journal of Economic Perspectives* 165-90.

EMPIRICAL CONTEXT OF INCOME TAX PROGRESSIVITY IN CANADA

The history and present state of the progressivity of the income tax in Canada is presented below in five figures to provide a context for the discussion. In these figures, the tax rates are generated using the Canadian Tax and Credit Simulator (CTaCS) on percentiles of the income distribution drawn from the 2015 Canadian income survey and adjusted for inflation in each year shown.³ The figures are focused on the case of a single resident of British Columbia, age 40, in order to avoid the complexities of spousal and retirement tax and benefits, and show the combined federal and provincial rates.

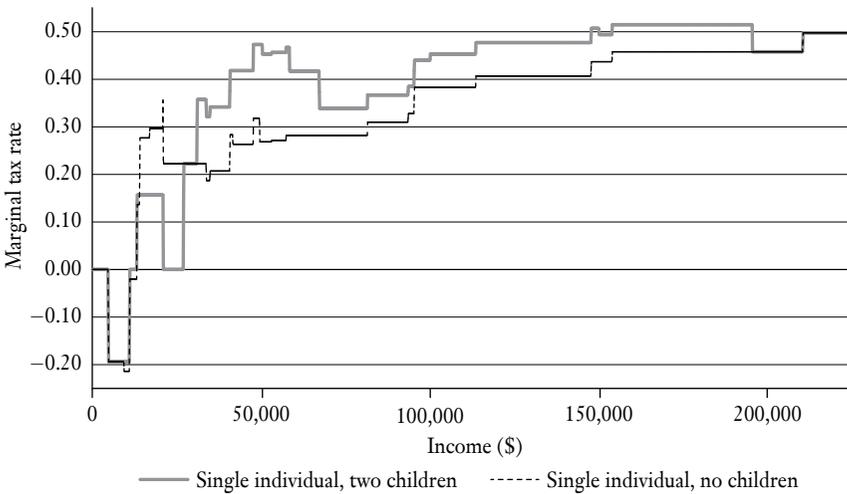
Figure 1 provides the marginal tax rate on employment income at each income level from \$0 to \$225,000 in 2019, both for an individual without children and for an individual with two children. In the case of the individual without children, the core bracket and rate structure can be seen clearly at incomes above \$50,000. At lower income levels, the phase-in and phaseout of refundable tax credits affect the marginal tax rate. For example, the initial dip and peak is driven by the Canada workers' benefit, which is phased in and then out at low income levels. Subsequent phaseouts of the goods and services tax credit and the climate action tax credit also shape the curve at lower income levels. In the case of an individual with children, the phaseouts of refundable credits with respect to children (such as the Canada child benefit) dominate the statutory brackets.

Two main lessons can be learned from figure 1. First, much of the variation in rates at lower- and middle-income levels is affected by refundable tax credits rather than statutory rates. Second, while there is some increase in rates at income levels above \$100,000, the progressivity is modest.

I next turn to the history of income tax marginal progressivity from 1962 to 2019, again with reference to a single individual resident in British Columbia. It is important to emphasize that the definition of taxable income changes substantially over this period, particularly as a result of the tax reforms of 1972 and 1988, which affected both the ability to avoid taxes and the average effective tax rate paid as a percentage of total income. However, with this caveat in mind, it is nevertheless informative to consider how income has been taxed over this 58-year period.

Figure 2 shows the marginal tax rate on earnings at different percentiles of the income distribution, ranging from the 10th percentile at the bottom to the 99.99th percentile at the top. There were substantial changes in 1972 and 1988 that broadened the tax base and allowed for lower rates for most earners. For top earners, the rate fell from a peak of 82 percent in 1970 to under 50 percent by 1988. Throughout

3 See Kevin Milligan, "Canadian Tax and Credit Simulator: CTaCS," database, software, and documentation, version 2019-1 (<http://faculty.arts.ubc.ca/kmilligan/ctacs>). The simulations use market income plus taxable government transfers as the income measure. I take individuals between the ages of 18 and 59 to avoid the special circumstances involved in the taxation of pensions and retirement income.

FIGURE 1 Marginal Tax Rate on Earned Income in British Columbia, 2019

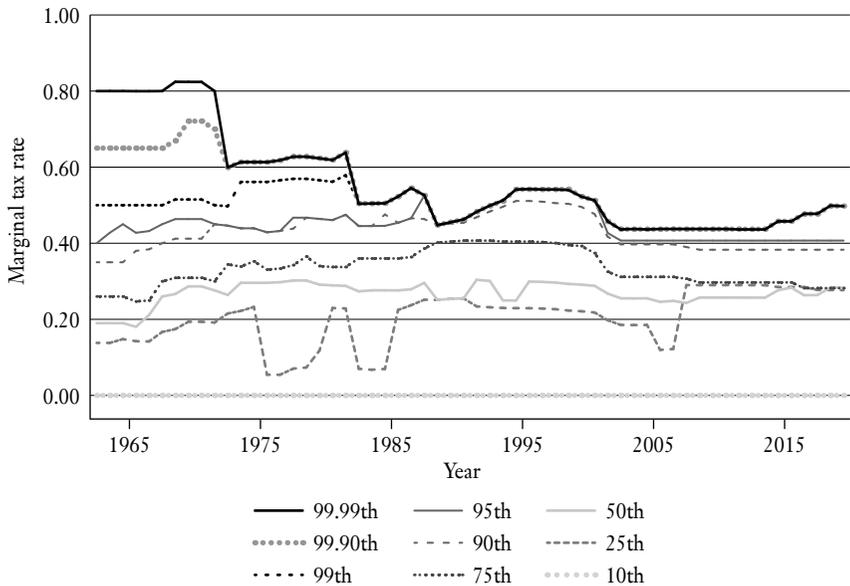
Note: Calculations use CTaCS 2019-1. The children are aged five and eight.

most of the 1990s, there was no difference between those at the highest percentiles and those at the 95th percentile. Since 2016, higher rates on the top 1 percent at both the federal and the provincial level in British Columbia have pushed the top rate back to just under 50 percent. Interestingly, the rate for the median earner has stayed relatively constant at between 24 and 29 percent since 1967.

It is important to distinguish between marginal and average rates. When the burden of a given tax regime is being assessed, what matters is the overall tax burden as a proportion of the tax base. For the personal income tax, this is best measured by comparing the income tax paid to the total income, which is a measure of the average tax rate. While the average rate is most relevant in assessing tax burdens, changes in the marginal tax rate are one of the main tools that affect average rates. Therefore, progressive marginal rates are an important means of delivering progressive average rates.

With these distinctions between average and marginal rates in mind, I examine the average rate over time for an individual who has different types of income. The denominator is formed by taking the individual's total income, at different income levels, in the following proportions: 40 percent interest, 40 percent dividends, and 20 percent capital gains. Over time, the inclusion rate for capital gains and the effective rate on dividends (net of gross-up and credit) vary considerably, and therefore differing proportions of capital gains or dividend income are taxable. In this way, the calculation provides average effective tax rates on a given basket of income as the taxable income base varies over time.

Figure 3 illustrates these average effective rates for a single taxpayer from 1962 to 2019 in British Columbia. Here, as in figure 2, the average tax burdens in terms

FIGURE 2 Marginal Tax Rates in British Columbia, 1962-2019

Note: Calculations use CTaCS 2019-1. The percentiles of the income distribution are drawn from the 2015 Canadian income survey and adjusted for inflation each year.

of marginal rates have decreased for the highest earners, but have done so less sharply. The 1972 reform, which led to the inclusion of capital gains and introduced the gross-up and credit system for dividends, had a much smaller impact on average effective rates than on marginal rates because the base was expanded at the same time as the rates dropped. Since 2006, average effective rates for the highest earners have increased.

The previous analysis pertains to British Columbia only. Figure 4 depicts the evolution of the top marginal rate from 1988 to 2019 in five selected provinces. The broad trend was toward higher top rates in the 1990s, lower rates in the 2000s, and a return to higher rates over the past few years. The magnitude of change varies, and the timing is slightly different, but the broad trends are fairly common throughout the jurisdictions.

Figure 5, which draws on data from the Organisation for Economic Co-operation and Development (OECD), shows the top income tax rate in OECD countries in 2017. The rate for Canada used here is the rate from Ontario, 53.53 percent. In several OECD countries, social security contributions and value-added tax rates can each exceed 20 percent, and therefore income tax rates may not be indicative of the total marginal financial burden. Nevertheless, using this measure Canada has the sixth highest top marginal income tax rate of the 34 countries shown, exceeded by Sweden, Denmark, Japan, Greece, and France.

FIGURE 3 Average Effective Tax Rates in British Columbia, 1962-2019

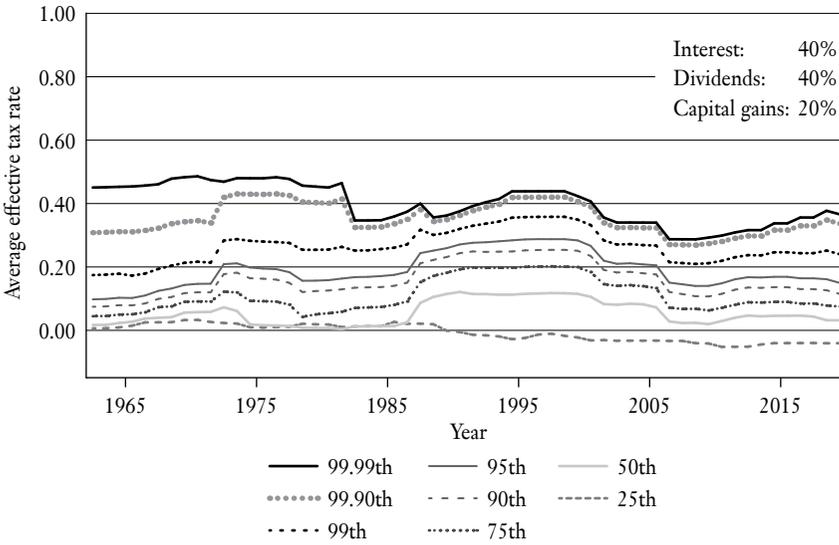
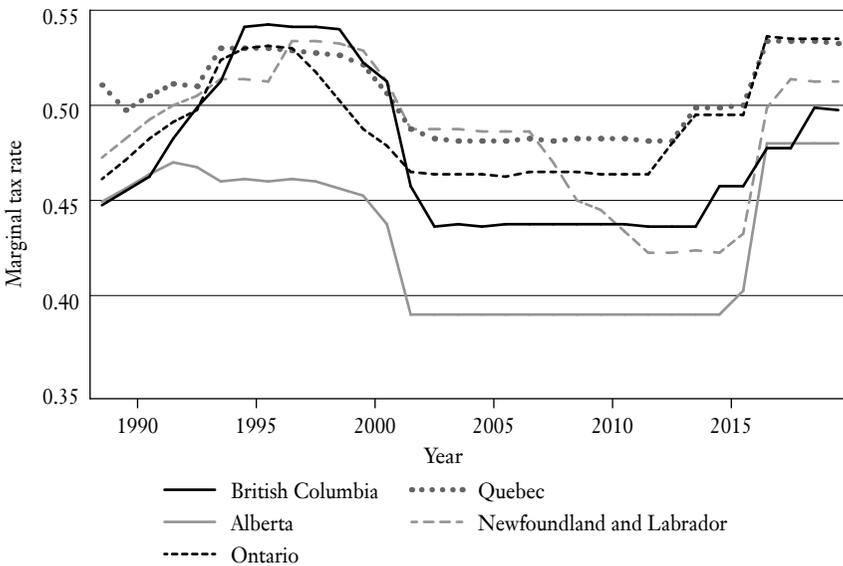
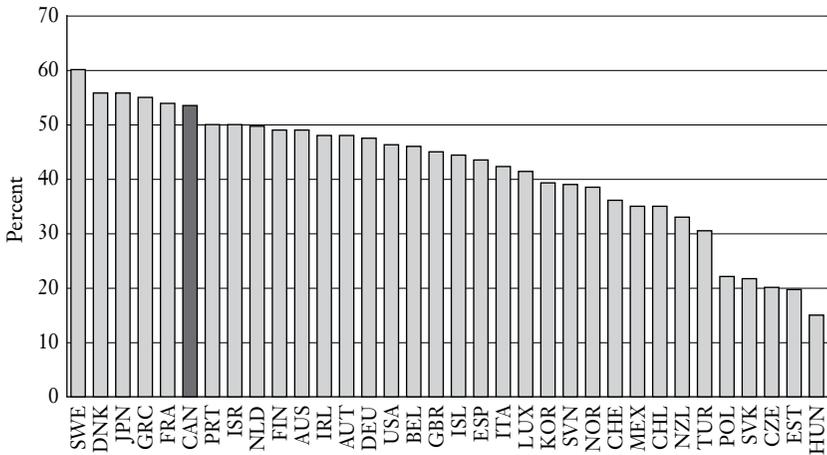


FIGURE 4 High-Earner Marginal Tax Rates in Five Selected Provinces, 1988-2019



Note: Calculations use CTaCS 2019-1.

FIGURE 5 Top Income Tax Rates in OECD Countries, 2017

Source: OECD Tax Database, table I.7 (www.oecd.org/tax/tax-policy/tax-database.htm).

Top income tax rates in Canada today are lower than those that prevailed in earlier decades, but they have risen slightly in recent years. Provincial trends have largely reinforced federal rate changes. In the international context, Canada's highest income tax rates fall within the top half of the rates for all OECD countries, but not within the five highest rates. A movement toward higher top income tax rates would defy neither historical Canadian fiscal practice nor contemporary international fiscal practice. The same can be said of a movement in the opposite direction.

THEORY AND EVIDENCE CONCERNING HIGH-INCOME TAXATION

To understand how high the top tax rates can and should go, I employ the framework of Diamond and Saez. This framework sets the top tax rate at the level that maximizes government revenues from high earners, exhausting all revenue potential by finding the point of balance between the mechanical increase that higher rates yield from a fixed tax base and the erosion of the base through behavioural responses. The progressivity schedule then works from that point to determine tax rates at lower income levels. In this way, the revenue-maximizing tax rate for high earners is the anchor of the progressivity of the income tax system.

In this section, I review the development of theory and empirical evidence on top-income taxation, especially over the last 20 years, describing the evolution of theory from James Mirrlees to the recent work of Emmanuel Saez and his co-authors. Following that, I discuss empirical evidence about how top earners respond to taxation, which informs the application of theory to practice.

The Theory of Top-Income Taxation

The modern optimal income tax theoretical framework derives from the Mirrlees model.⁴ In this model, the tax authority needs to raise revenue for public purposes and can tax the earnings of individuals with differing (but unobservable) abilities. Individuals choose how much to work, with an eye to ensuring that their after-tax pay is sufficiently remunerative to compensate for forgone leisure. The tax authority puts a social weight on each individual's outcomes and decides who should be taxed lightly and who should be taxed heavily to maximize society's well-being by balancing work, leisure, and trade-offs among individuals.

In this model, it might seem natural to expect high tax rates for those with the greatest ability to pay when the social weighting puts more emphasis on redistribution from low-ability to high-ability people. However, the well-known result from the Mirrlees framework defies this expectation: the model implies that the highest-ability person should be placed in a tax bracket with a zero marginal rate.

The logic is as easy to follow as the result is surprising. Imagine an equilibrium with a positive tax rate on the highest-ability person and the government's revenue need being satisfied at current tax rates. If this equilibrium were perturbed by installing a new zero-rated tax bracket starting at the top-ability individual's current income level, she might work a bit more while leaving the already-satisfied revenue requirement untouched. Assuming a positive social weighting on this individual, the perturbation is preferred to the initial equilibrium because she is better off, nobody else is worse off, and the government's coffers remain unchanged.

Peter Diamond made an important advance in the theoretical understanding of high-income taxation.⁵ Recognizing that the Mirrlees "zero at the top" result pertained only to the very highest-ability person, Diamond considered a different technical assumption about how ability may be distributed throughout the population. Instead of having a finite person with the highest ability, Diamond asked what happens if ability is not bounded, but continues to grow as the number of people moves toward infinity.⁶ With this seemingly innocuous change in the mathematical assumption, the model now yields a U-shaped optimal tax schedule, with rates rising from middle to higher incomes. This presents an intriguing reversal of the "zero at the top" result and provides an exciting path forward for linking theory to practice.

At approximately the same time, Piketty and Saez realized that a framework similar to Diamond's can yield optimal income tax rates on high earners that are

4 J.A. Mirrlees, "An Exploration in the Theory of Optimum Income Taxation" (1971) 38:2 *Review of Economic Studies* 175-208.

5 Peter A. Diamond, "Optimal Income Taxation: An Example with a U-Shaped Pattern of Optimal Marginal Tax Rates" (1998) 88:1 *American Economic Review* 83-95.

6 See N. Gregory Mankiw, Matthew Weinzierl, and Danny Yagan, "Optimal Taxation in Theory and Practice" (2009) 23:4 *Journal of Economic Perspectives* 147-74, for a critical discussion of the Pareto distribution assumption for top earnings that underlies the Diamond approach.

described fairly simply by the distribution of skills and an elasticity—the responsiveness of earnings to tax rates.⁷ Saez simulated tax schedules under differing assumptions about social weights and elasticities, finding U-shaped schedules, but with fairly flat rates once earnings exceeded \$150,000. Therefore, while firmly establishing the theoretical credibility of a progressive rate schedule, these simulations did not provide much justification for strongly progressive rates through the ranks of the highest earners.

The last piece of the Diamond-Saez economic framework for progressive taxation involves the concept of the elasticity of taxable income (ETI), which quantifies how much taxable income changes when tax rates go up or down. Previous economic modelling focused on labour supply responsiveness to taxes, whereas the ETI framework is more general and captures other forms of real response (such as investment or mobility), as well as responses of income through avoidance or evasion. The theoretical development of the ETI concept started with work by Martin Feldstein and was refined by Saez, Slemrod, and Giertz.⁸

The theoretical implication for taxes on top earners from this ETI framework emphasizes that there is a tax rate above which the reduction of tax revenue through a behavioural response (such as avoidance or labour supply) is greater than the mechanical effect of higher rates yielding extra tax revenue on declared income. The precise value of this revenue-maximizing tax rate is an important policy question, but the noteworthy advance is the theoretical grounding for a revenue-maximizing rate on high earners.

Diamond and Saez built on this point in laying out their framework. They noted that if a very small (or zero) social weight is put on the last few dollars of income received by the highest earners, then the government's task should be to push the tax rate high enough to maximize tax revenue from the highest earners. The rest of the progressive tax schedule follows from this point, anchored in the theory and empirics of the ETI. In this way, the Diamond-Saez framework provides an ETI-determined top tax rate as an upper limit to the range of top tax rates that are relevant for policy consideration.

An absence of social weight on high earners may be viewed as an unsavoury assumption. Feldstein finds it “quite amazing” that high earners should be viewed as no more than “revenue producing property of the state,” and suggests that the assumption that little social weight should be put on anyone is “repugnant.”⁹ At

7 See Thomas Piketty, “La redistribution fiscale face au chômage” (1997) 12:1 *Revue française d'économie* 157-201; and Emmanuel Saez, “Using Elasticities To Derive Optimal Income Tax Rates” (2001) 68:1 *Review of Economic Studies* 205-29.

8 Martin Feldstein, “Tax Avoidance and the Deadweight Loss of the Income Tax” (1999) 81:4 *Review of Economics and Statistics* 674-80; and Emmanuel Saez, Joel B. Slemrod, and Seth H. Giertz, “The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review” (2012) 50:1 *Journal of Economic Literature* 3-50.

9 See Martin Feldstein, “The Mirrlees Review” (2012) 50:3 *Journal of Economic Literature* 781-90, at 783.

its root, this is a return to the age-old debates about any kind of utilitarian social calculus that involves interpersonal comparisons of well-being. I cannot resolve this debate, but I note that tastes and views do vary across the population.

Others argue that the ETI-determined maximum may be too low. Lockwood, Nathanson, and Weyl argue that high-earning professions produce negative externalities, and low-earning ones tend to produce positive externalities.¹⁰ High tax rates therefore act as a Pigouvian correction. Saez and Zucman argue that there are negative democratic externalities of plutocratic income concentration, professing that leaving such a concentration unaddressed will “risk killing democracy.”¹¹ Again, the argument is Pigouvian. Finally, Piketty, Saez, and Stantcheva show that salary bargaining by top corporate executives may be influenced by top tax rates since the return to bargaining is low if tax rates are high.¹² Their model suggests that the more bargaining matters, the higher the top tax rate should be. Any of these three reasons could justify top tax rates that exceed the ETI-determined maximum.

To summarize, the Diamond-Saez framework is supported by two main pillars. The first is an empirically determined top tax rate, derived from evidence about the ETI to maximize the revenue haul from top earners. The second is a values-driven assumption about the social weighting placed on the marginal consumption of high earners. If this weight is very low, there is minimal social cost to taxing high earners with only revenue maximization in mind.

The benefit of this framework comes from the boundaries that it provides for public debate on the contentious issue of income tax progressivity. If there were an agreed-on best estimate of the appropriate ETI, then the Diamond-Saez top rate provides a starting place from which people can adjust the top tax rate according to their views about the proper social weight to put on high earners.

The Empirics of Top-Income Taxation

The ETI is the centrepiece of the Diamond-Saez theoretical framework for top-income taxation. Do we have good estimates of the ETI for Canada? The important starting place for this brief review of the empirical evidence comes from work by Slemrod and Kopczuk.¹³ They emphasize that the ETI is not an immutable constant

10 See Benjamin B. Lockwood, Charles G. Nathanson, and E. Glen Weyl, “Taxation and the Allocation of Talent” (2017) 125:5 *Journal of Political Economy* 1635-82.

11 See Emmanuel Saez and Gabriel Zucman, “Alexandria Ocasio-Cortez’s Tax Hike Idea Is Not About Soaking the Rich: It’s About Curtailing Inequality and Saving Democracy,” *New York Times*, January 22, 2019 (www.nytimes.com/2019/01/22/opinion/ocasio-cortez-taxes.html).

12 See Thomas Piketty, Emmanuel Saez, and Stefanie Stantcheva, “Optimal Taxation of Top Labor Incomes: A Tale of Three Elasticities” (2014) 6:1 *American Economic Journal: Economic Policy* 230-71.

13 See Joel B. Slemrod and Wojciech Kopczuk, “The Optimal Elasticity of Taxable Income” (2002) 84:1 *Journal of Public Economics* 91-112; and Wojciech Kopczuk, “Tax Bases, Tax Rates and the Elasticity of Reported Income” (2005) 89:11-12 *Journal of Public Economics* 2093-2119.

but instead a partial reflection of the availability and ease of avoidance and evasion opportunities. For this reason, we should not expect the ETI to be the same across time, place, and fiscal institutions. These important caveats are considered in detail in the next section. Nevertheless, it is useful to understand the range of potential values for the ETI to inform the discussion.

Saez, Slemrod, and Giertz provide a thorough review of the methodologies and estimates found by researchers in the United States. They emphasize the importance of considering long-run responses and settle on a central estimate for the ETI of 0.25. This estimate means that a 1 percent increase in the top tax rate leads to approximately a 0.25 percent decrease in taxable income. It is this estimate that forms the basis of Diamond and Saez's calculation of a top tax rate of 73 percent in the United States. I return to this calculation below.

For Canada, Milligan and Smart use aggregated tax filer data to estimate the responsiveness of the shares of income received by high-income tax filers to tax rates that vary by province and year from 1988 to 2011.¹⁴ Their main estimate for the top 1 percent income share is an elasticity of 0.69, meaning that a 1 percent increase in the top tax rate leads to a 0.69 percent drop in the share of income received by tax filers in the top 1 percent.

Several caveats should be considered when one is interpreting this result. First, the result is relevant from the point of view of provincial tax rates because the estimated responsiveness may reflect interprovincial income shifting, which means that the federal elasticity may be much lower.¹⁵ Second, the estimate reflects the tax avoidance (and real responsiveness) of that period, which may or may not be relevant in other periods when the economic environment and institutions may be different. Third, the elasticity of total income, not taxable income, is estimated. Kopczuk's results imply that the ETI would likely be higher than the Milligan-Smart estimate of the total income elasticity. Finally, the estimated elasticity of the more exclusive top 0.1 percent of the population is higher still, suggesting that higher tax rates aimed at the very highest earners may face stronger headwinds. There are of course other Canadian estimates of the ETI, as surveyed by Alexandre Laurin.¹⁶ The Milligan-Smart estimates are in the same range as others, although methodologies and time periods vary.

14 See Kevin Milligan and Michael Smart, "Taxation and Top Incomes in Canada" (2015) 48:2 *Canadian Journal of Economics* 655-81.

15 This point is emphasized further in Kevin Milligan and Michael Smart, "An Estimable Model of Income Redistribution in a Federation: Musgrave Meets Oates" (2019) 11:1 *American Economic Journal: Economic Policy* 406-34, who build a model of interjurisdictional shifting and tax avoidance.

16 See Alexandre Laurin, "Shifting the Federal Tax Burden on One-Percenters: A Losing Proposition," C.D. Howe Institute e-brief 222 (Toronto: C.D. Howe Institute, December 3, 2015).

These estimates can be transformed into revenue-maximizing tax rates using a simple formula.¹⁷ The formula depends on only two parameters. The first parameter is the ETI, which reflects the responsiveness of reported income to the tax rate, and therefore a higher ETI means a lower revenue-maximizing top tax rate. The second parameter is alpha, which depends on how concentrated income is among top earners. If income is concentrated, the yield from a higher top tax rate is greater. The higher alpha is, the less concentrated income is. Therefore, with higher alpha comes a lower revenue-maximizing top tax rate.

Table 1 reveals how these two parameters affect the revenue-maximizing tax rate. For the United States, the appropriate alpha derived from income statistics is approximately 1.5. Using the Saez, Slemrod, and Giertz preferred long-run estimate of 0.25 yields the top tax rate of 72.7 percent that is featured in the article by Diamond and Saez. For Canada, the appropriate alpha is approximately 1.8. The Milligan-Smart elasticity estimate of 0.69 reflects provincial tax rate changes over short-run periods. However, table 1 indicates that if the actual long-run ETI in Canada were 0.5, the revenue-maximizing tax rate would be 52.6 percent—not far from the prevailing top tax rate in most provinces.

These calculations may not be greeted warmly by enthusiasts for higher top rates in Canada. However, the cautions and caveats discussed above must be taken seriously, and determining the relevant elasticity to use for a contemporary policy change is not straightforward. In the next section, I advance this argument by examining the overall responsiveness of income to tax rates and considering evidence and policy developments with respect to each potential response and its place in contemporary debate.

WHAT INFLUENCES THE DIAMOND-SAEZ UPPER LIMIT?

The responsiveness of income to tax rates is at the core of the Diamond-Saez framework. If the elasticity is relatively low, the progressivity of the tax system is anchored at a high rate. In contrast, if the elasticity is high, the revenue-maximizing top rate decreases. While a range of empirical estimates are available, understanding the influences and context that inform the relevant elasticity is of critical importance. Some factors may push the revenue-maximizing rate higher; others may push it lower. Some factors are under the direct control of government; others are not.

In this section, I discuss empirical evidence and contemporary policy developments that affect the responsiveness of income to tax rates, with specific reference to Canada. The section is organized into two parts, the first concerning real economic responses, and the second addressing avoidance responses.

17 See Kevin Milligan, “The Progressivity of the Canadian Personal Income Tax,” in Bev Dahlby, ed., *Reform of the Personal Income Tax in Canada* (Toronto: Canadian Tax Foundation, 2016), 97-141, for the derivation of this formula. The revenue-maximizing tax rate (τ^*) is a function of the ETI (e) and the income distribution parameter alpha (α). These are combined as follows:

$$\tau^* = \frac{1}{1 + e\alpha}.$$

TABLE 1 Revenue-Maximizing Top Tax Rates (Percent)

ETI	Alpha						
	1.4	1.5	1.6	1.7	1.8	1.9	2.0
0.10	87.7	87.0	86.2	85.5	84.7	84.0	83.3
0.25	74.1	72.7	71.4	70.2	69.0	67.8	66.7
0.50	58.8	57.1	55.6	54.1	52.6	51.3	50.0
0.75	48.8	47.1	45.5	44.0	42.6	41.2	40.0

Real Responses to Top Tax Rates

The responses to higher taxes that affect real underlying economics behaviour have the most direct impact on efficiency. Here, I consider labour supply along with mobility and residence.

The core choice in the Mirrlees model and much of the theoretical literature on optimal taxation is between labour and leisure. Therefore, how top income tax rates affect the labour supply choices of high earners is clearly an important question. To the extent that high earners are engaged in positional competition—to be the best in their field and vanquish others—taxes may have little impact on labour supply. Everyone may want the trophy no matter its size. However, other top professionals who contemplate accepting a new client or embarking on a new project may reject the work if it is insufficiently remunerative after taxes are taken into account.

Evidence that directly addresses the labour supply of top earners is scarce. Moffitt and Wilhelm examined high-earning men before and after the US Tax Reform Act of 1986, which substantially lowered their tax rates.¹⁸ They found no evidence of an increase in hours worked.

Another potential dimension of real response is mobility and residence. When taxes rise, news reports and anecdotes fill with stories of people who consider leaving the country because of the fiscal affront.¹⁹ For the mobility decision, it is average tax

18 Robert A. Moffitt and Mark O. Wilhelm, “Taxation and the Labor Supply Decisions of the Affluent,” in Joel B. Slemrod, ed., *Does Atlas Shrug? The Economic Consequences of Taxing the Rich* (Cambridge, MA: Harvard University Press, 2000), 193–239.

19 See, for example, Kevin Libin, “How High-Tax Canada Is Driving Away Billionaire Entrepreneurs Like Murray Edwards,” *Financial Post*, March 28, 2016 (<https://business.financialpost.com/opinion/the-tax-climate-refugee-murray-edwards>), who tells of a Canadian billionaire who immigrated to London from Calgary, reportedly because of new higher taxes at the provincial and federal levels. Similar tales arose in France in 2013–14 in response to a temporary 75 percent top tax rate, with actor Gérard Depardieu famously taking up residence in Russia. However, see Hannah Murphy and Mark John, “France Waves Discreet Goodbye to 75 Percent Super-Tax,” *Reuters Business News*, December 23, 2014 (www.reuters.com/article/us-france-supertax-idUSKBN0K11CC20141223). Murphy and John report that there was in fact no large exodus of people from France.

burdens rather than marginal ones that matter because all of the taxable dollars move with the person who migrates. Moreover, mobility depends not just on the overall tax burden but also on public services and life's amenities in different jurisdictions. Taxes are therefore only one consideration.

The evidence on taxes and mobility is mixed. Kleven, Landais, and Saez found that European football stars are affected by tax when choosing to migrate, although it seems likely that professional athletes are more mobile and tax-sensitive than other professions.²⁰ Young et al. found only weak evidence of millionaire migration between US states in response to tax differences.²¹ When it comes to innovators, however, the evidence is stronger. Moretti and Wilson, and Akcigit, Baslandze, and Stantcheva showed that state taxes affect the mobility of star scientists and inventors in the United States, while Akcigit et al. found that the international mobility of inventors depends on taxes as well.²² However, Bell et al. presented evidence that top inventors are more influenced by childhood exposure to innovation and that tax incentives are unlikely to matter.²³

For Canada, two additional factors might be considered when this international evidence on migration and taxes is being weighed. Both of these factors relate to Canada's proximity to the United States. First, in the market for executive talent, it may be necessary to match US salaries in US dollars, if potential talent is concerned about the price of consumption in US dollars. Stephen Gordon has presented evidence that Canadian top income shares align very closely with US top income shares when exchange rates are taken into account.²⁴ This suggests that higher Canadian taxes may lead to higher Canadian pre-tax incomes if matching US offers is important. Second, the recent trajectory of immigration policy in Canada and the United States has gone in opposite directions, with Canada taking a more open stance and

20 See Henrik Jacobsen Kleven, Camille Landais, and Emmanuel Saez, "Taxation and the International Migration of Superstars: Evidence from the European Football Market" (2013) 103:5 *American Economic Review* 1892-1924.

21 See Cristobal Young, Charles Varner, Ithai Z. Lurie, and Richard Prisinzano, "Millionaire Migration and Taxation of the Elite: Evidence from Administrative Data" (2016) 81:3 *American Sociological Review* 421-46.

22 See Enrico Moretti and Daniel J. Wilson, "The Effect of State Taxes on the Geographical Location of Top Earners: Evidence from Star Scientists" (2017) 107:7 *American Economic Review* 1858-1903; Ufuk Akcigit, Salomé Baslandze, and Stefanie Stantcheva, "Taxation and the International Mobility of Inventors" (2016) 106:10 *American Economic Review* 2930-81; and Ufuk Akcigit, John Grigsby, Tom Nicholas, and Stefanie Stantcheva, *Taxation and Innovation in the 20th Century*, NBER Working Paper no. 24982 (Cambridge, MA: National Bureau of Economic Research, 2018).

23 See Alexander M. Bell, Raj Chetty, Xavier Jaravel, Neviana Petkova, and John Van Reenen, *Do Tax Cuts Produce More Einsteins? The Impacts of Financial Incentives vs. Exposure to Innovation on the Supply of Inventors*, NBER Working Paper no. 25493 (Cambridge, MA: National Bureau of Economic Research, 2019).

24 See Stephen Gordon, "The Incidence of Income Taxes on High Earners in Canada," *Canadian Journal of Economics* (forthcoming).

the United States attempting to put up a literal wall. In particular, initiatives such as Canada's global skills strategy, which offers a two-week window for visa processing, have led to a surge in the immigration of highly skilled individuals.²⁵ These stark differences in the openness to immigration may temper the tax sensitivity of migration decisions.

Avoidance Responses to Top Tax Rates

Beyond responses through real economics choices, higher tax rates on top earners can elicit an increased propensity to explore avoidance and evasion opportunities. One type of avoidance is tax shifting, meaning that income is shifted from a higher-tax to a lower-tax channel through accounting or financial transactions that have minimal bearing on the actual underlying economic nature of the activity generating the income. I begin here by discussing tax shifting with reference to international evidence and recent Canadian policy changes.

Differing tax rates across provincial borders provide one such opportunity to shift income. Milligan and Smart have developed a theoretical and empirical framework to study income shifting, finding that higher interprovincial shifting increases the desirability of federal government control of income taxation.²⁶ Trusts, whose residence can be established in low-tax provinces, are commonly used as a mechanism to shift income. However, both court rulings and government policy have tightened the residence requirements for trusts in recent years, making trusts less easily accessible for the purpose of income shifting.²⁷

Income can also be shifted among tax bases within a given jurisdiction, a technique most easily seen in shifts that occur between individual and corporate tax bases. In Canada, Wolfson and Legree and Wolfson et al. provide evidence of substantial shifts from the personal income tax base to private corporations.²⁸ This evidence coincides with evidence from Norway, where Alstadsæter et al. found that

25 See Natalie Wong, Theophilos Argitis, Natalie Obiko Pearson, and Erik Hertzberg, "Canada Says 'Give Me Your MBAs, Your Entrepreneurs,'" *Bloomberg Businessweek*, January 2, 2019, for stories and data on the wave of technology-sector and student migration into Canada.

26 See Kevin Milligan and Michael Smart, *supra* note 14.

27 In 2012, the Supreme Court of Canada decision in *Fundy Settlement v. Canada*, 2012 SCC 14, reaffirmed the importance of management and control in determining trust residence. In 2015, these principles were applied in *Discovery Trust v. Canada (National Revenue)*, 2015 CanLII 34016 (NLSC), a case concerning provincial trust residence in which the court approved the tax residence of the trust in Alberta, a low-tax jurisdiction. With respect to policy, the Canada Revenue Agency published a new income tax folio in 2016 that incorporates the recent court rulings on trust residence. See *Income Tax Folio S6-F1-C1*, "Residence of a Trust or Estate," November 24, 2015.

28 See Michael Wolfson and Scott Legree, "Private Companies, Professionals, and Income Splitting—Recent Canadian Experience" Policy Forum (2015) 63:3 *Canadian Tax Journal* 717-37; and Michael Wolfson, Mike Veall, Neil Brooks, and Brian Murphy, "Piercing the Veil: Private Corporations and the Income of the Affluent" (2016) 64:1 *Canadian Tax Journal* 1-30.

accounting for income accruing within closely held firms has a substantial impact on the measured incomes of high earners.²⁹ Clarke and Kopczuk, however, determined that part of the surge in US individual top incomes can be attributed to flowthrough business income shifting from corporate to personal tax returns as the tax incentives change over time.³⁰

The Canadian government's private corporation tax proposals in 2017 aimed to lower the attractiveness of shifting income from one tax base to another by limiting income splitting to family members (through curtailing the availability of income sprinkling) and by decreasing access to tax-favoured retained earnings inside private corporations. However, by further lowering the small business tax rate, the incentive to find new ways to shift income from individuals to private corporations may have increased.

A third form of shifting occurs in an international context. Gabriel Zucman documented the extent of global personal and corporate income and wealth held through tax havens.³¹ Using data from leaked banking records, Alstadsæter, Johannesen, and Zucman estimated that those in the top 0.01 percent of Scandinavian households evade 25 percent of their tax bill by making use of tax havens.³² Canadian evidence concerning offshore tax shifting is scarce, however.

Slemrod and Kopczuk emphasize that governments have some power to control and influence the extent of these three forms of tax shifting.³³ To some degree, the elasticity of avoidance is a choice variable of the tax authority, which can be affected by changes in legislation and improvements in enforcement.

For example, in the 2016 budget, the Canadian government announced an increase in funding for the Canada Revenue Agency of \$444 million over five years with the object of preventing tax avoidance and evasion; an additional \$524 million was announced in the 2017 budget. Extra revenue from the 2016 spending was booked at \$2.6 billion and from the 2017 spending was booked at \$2.5 billion.³⁴ If

29 See Annette Alstadsæter, Martin Jacob, Wojciech Kopczuk, and Kjetil Telle, *Accounting for Business Income in Measuring Top Income Shares: Integrated Accrual Approach Using Individual and Firm Data from Norway*, NBER Working Paper no. 22888 (Cambridge, MA: National Bureau of Economic Research, December 2016).

30 See Conor Clarke and Wojciech Kopczuk, "Business Income and Business Taxation in the United States Since the 1950s," in Robert A. Moffitt, ed., *Tax Policy and the Economy*, vol. 31 (Chicago: University of Chicago Press, 2017), 121-59.

31 See Gabriel Zucman, "Taxing Across Borders: Tracking Personal Wealth and Corporate Profits" (2014) 28:4 *Journal of Economic Perspectives* 121-48.

32 See Annette Alstadsæter, Niels Johannesen, and Gabriel Zucman, "Tax Evasion and Inequality" (2019) 109:6 *American Economic Review* 2073-2103.

33 See Slemrod and Kopczuk, *supra* note 13.

34 See the Canada, Department of Finance, 2016 Budget, March 22, 2016; and Canada, Department of Finance, 2017 Budget, March 22, 2017.

these revenue projections are accurate, it appears that there was considerable scope for the government to increase enforcement with respect to high earners in Canada.

Is extra revenue from enforcement likely? Alstadsæter, Johannesen, and Zucman report evidence from Norway suggesting that anti-evasion efforts raised extra revenue and did not result in the substitution of legal forms of tax avoidance.³⁵ This finding is consistent with Joel Slemrod's argument that increased enforcement informs delinquent taxpayers that they are being monitored by the tax authority and leads to increasing compliance across all the taxpayers' activities.³⁶

Assessment

From looking at either real responses or avoidance responses, it is clear that ETIs estimated before 2015 may need to be updated to accord with recent events. The evidence of increased immigration by highly skilled individuals, particularly in the technology sector, is strong. In addition, the increase in resources flowing into tax administrations and focusing on high earners, along with tax measures that diminish the opportunity for tax avoidance, mean that it may now be more difficult to shift income than it was in the past. Both of these factors create a lower sensitivity of taxable income to tax rates.

How much to discount or update estimated parameters is a matter of judgment. However, there is arguably still room to increase top tax rates in Canada beyond the prevailing levels. Reviewing table 1, it would be necessary to argue that changes in the economy and tax administration have decreased the ETI all the way to 0.25 to justify a top rate as high as 69 percent. Such an argument may be stretching the point, but a more moderate ETI estimate of 0.4 does justify a top rate of 58 percent.

The value of the Diamond-Saez framework in this assessment is to provide concrete numbers for the top-rate debate. That is, if someone wants to propose a 58 percent top rate for Canada, it is easy to point to the necessary ETI (0.4) and ask the proposer to justify why in 2019 such an ETI is appropriate.

CONCLUSION

In this paper, I have made the case for considering the progressivity of the personal income tax within the Diamond-Saez framework. I have reviewed the path to the development of the theory and the manner in which empirical evidence about the ETI is fed into the model to deliver an upper limit on the high-earner tax rate. I have then discussed empirical evidence concerning the ETI from the United States and Canada and showed the range of estimates.

35 See Annette Alstadsæter, Niels Johannesen, and Gabriel Zucman, *Tax Evasion and Tax Avoidance*, Working Paper (Berkeley, CA: UC Berkeley, 2018) (<http://gabriel-zucman.eu/files/AJZ2018b.pdf>).

36 See Joel B. Slemrod, "Tax Compliance and Enforcement," *Journal of Economic Literature* (forthcoming).

Finally, I have examined potential responses to higher tax rates, ranging from labour supply and migration to tax avoidance through income shifting. An important conclusion arising from this analysis is that the ETI—and thus the top marginal tax rate delivered by the Diamond-Saez framework—is not an immutable parameter; rather, the ETI changes with circumstances and can be affected by a government's choices about tax legislation and enforcement.

There are lessons here for those who favour more progressivity of income taxes for high earners. Any proposal to further increase high-income progressivity should be accompanied by a credible plan to improve tax policy legislation and enforcement with an eye to lowering the effective ETI. Equally, it is important for the high-income taxation skeptics to reasonably acknowledge the impact of efforts to shut down tax shelters, increase enforcement, and facilitate more effective high-income taxation.