



GOING FOR GOLD

Time for a Tune Up: Personal Income Taxation in Western Canada

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GOING FOR GOLD

The Western Canadian Economy
in the International Arena

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GOING FOR GOLD

Western Canada's economic prosperity is not only good for the West, but for Canada as a whole. But the West cannot rest on its laurels. Like the athletes training for the forthcoming Winter Olympics in Vancouver, western Canada needs to be at the top of its game if it is to continue to compete successfully in the international economic arena, especially as its competitors step up their games. If we are not successful, our standard of living will fall.

The GOING FOR GOLD Project is examining how best to position western Canada in the global economy through a series of research papers, consultations and a seminal economic conference in Vancouver in the fall of 2009.

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Leading the Way: The GOING FOR GOLD Project Research Paper Series

The primary goal of the Canada West Foundation's GOING FOR GOLD Project is to ensure that Canadians make the right public policy decisions for improving the ability of the country and its regions to compete in the upper echelon of the global economy. The ultimate goal, however, is to ensure that Canada experiences the long-term economic prosperity that underpins a high quality of life and an inclusive and caring society in which all citizens can participate and thrive.

The GOING FOR GOLD Project's Research Paper Series helps achieve these goals by providing thoughtful and timely information combined with practical options for improving public policy's role in fostering Canada's economic competitiveness. The diversity of topics covered by the series is intentional and highlights the many facets of public policy that will need to be working in concert if western Canada—and by extension Canada—are to succeed in the global economy in the decades ahead.

We cannot rest on our laurels and we cannot be reactive. We must take proactive steps today to ensure a prosperous tomorrow. The countries that fumble the public policy ball will fall behind in the global economy and see the opportunities available to their citizens shrink. Much of what must be done is beyond the scope of public policy; it is just one factor, but it is a critical factor. Bad economic policy will hamstring us just as good public policy will propel us forward.

It is important to note that winning in the global economy does not mean that other regions and other countries must lose. Even though only one competitor can rank first, healthy competition can bring out the best in all countries. There is much that Canadians can achieve by working with international partners. This, in turn, will improve economic outcomes both at home and abroad. There is also much that Canada can learn from the experiences of other jurisdictions and this is a key element of the research papers.

There is much to discuss and there is much to be done. Ask any Olympic athlete if their training is ever complete and they will say that they are always training, preparing, and searching for the competitive edge. The same is true of public policy aimed at improving our economic competitiveness—it will always be a work in progress.

The authors of the papers were given the freedom to explore key topics as they saw fit. As a result, the series does not provide a complete set of policy recommendations or a master plan for global economic dominance. Nor does it represent the "top 10" things that must be done to make western Canada more competitive. Rather, it provides a set of useful examples of what can and should be done combined with provocative recommendations across a broad range of relevant policy files.

For more information about the GOING FOR GOLD Project, please do not hesitate to contact me at roach@cwf.ca.



Robert Roach
Director of Research

Executive Summary

Personal income taxation brings in between 18-21% of provincial revenues in western Canada, and has a substantial effect on the incentives for families to work, save, and invest as well as being a direct determinant of the economic standing of each household. Personal income is taxed both by the federal and provincial governments, which has generated a legacy of co-operation. The most recent innovation in 2000-01 devolved to the provinces the ability to set their own rates, brackets, and credits, using a federally-defined taxable income base.

Through simulations, I show that the different choices made by the four western Canadian provinces have yielded substantially different tax systems, each with unique attributes. British Columbians have a relatively progressive system, with much higher rates at the top than the bottom. Albertans have the lowest marginal tax rates at top incomes, but higher for lower incomes. In Saskatchewan, average tax rates are high, but sizeable work incentives at lower incomes are provided by refundable child credits. Finally, Manitoba features high average and marginal tax rates, but a strong degree of progressivity. In common across the provinces, there is very little progressivity at higher incomes; the marginal tax rate is the same at \$125,000 as at \$125 million.

Internationally, these results are compared to the systems of the United States, the United Kingdom, Japan, China, and Hong Kong. Both the United States and Japan feature much greater progressivity. In contrast, the United Kingdom and Hong Kong have low and fairly flat tax structures.

The paper concludes with five recommendations, supported by the evidence and analysis gathered here.

Remain in the Tax Collection Agreements. The benefits to all Canadians from sharing the same tax platform are large. The advent of the tax on income system since 2001 has given the provinces ample flexibility to design and create their own systems.

All provinces should index tax credits and brackets to inflation. Inadequate indexation leads to stealth tax increases. Tax increases should be transparent.

Stop expanding non-refundable credits. Non-refundable tax credits add complexity and costs to the tax system.

Consolidate some existing non-refundable credits. Some non-refundable credits have dubious social or economic value and address problems better taken on elsewhere.

Consider increasing progressivity at the top. Market incomes have been growing more unequal at a fast pace. Increased progressivity would help to slow down this upward inequality trend.

Abstract

Personal income taxation brings in between 18-21% of provincial revenues in western Canada. It has a substantial effect on the incentives for families to work, save, and invest as well as being a direct determinant of the economic standing of each household. Through simulations, this paper shows that the different tax policy choices made by the four western Canadian provinces have yielded substantially different tax systems, each with unique attributes. British Columbians have a relatively progressive system, with much higher rates at the top than the bottom. Albertans have the lowest marginal tax rates at top incomes, but higher for lower incomes. In Saskatchewan, average tax rates are high, but sizeable work incentives at lower incomes are provided by refundable child credits. Finally, Manitoba features high average and marginal tax rates, but a strong degree of progressivity. Internationally, these results are compared to the systems of the United States, the United Kingdom, Japan, China, and Hong Kong. Both the United States and Japan feature much greater progressivity. In contrast, the United Kingdom and Hong Kong have low and fairly flat tax structures.

1. Introduction and Overview

In most countries in the world, personal income taxation remains a vital and stable source of government revenues. This statement holds true in Canada—and in western Canada specifically. Even with great differences in resource revenues, political cultures, and economic structures, all four western Canadian provinces make use of the flexibility of personal income taxation to raise a substantial and very similar portion of their revenues.

Income taxes are an important determinant of economic outcomes. Not only do they affect how people work, save, and invest, they can also influence decisions on where to live and also play a leading role in the fairness of our overall fiscal system. This suggests that a thorough understanding of the personal income tax system in western Canada can help to position the economies of western Canada for growth and prosperity in the years to come.

The relationship between the federal and provincial income taxes in Canada has changed frequently since Confederation. The most recent important change was the introduction of the “tax on income” system in 2000-2001, which allowed provinces great flexibility to set their own tax brackets, tax rates, and tax credits using a common taxable income definition set by the federal government. In the seven years since this system was put in place, there has been a significant amount of evolution and innovation across provinces—particularly in western Canada. At this juncture, therefore, the time is ripe to assess the success of the “tax on income” system and to chart a path for the future of the personal income tax in western Canada.

This paper provides a detailed analysis of the present state of the personal income tax system in western Canada. I start with some context on the importance of personal income taxation to the economy and a review of the research on the impact of personal income taxation on individual decisions. Next is an historical overview of federal-provincial interactions over personal income taxation, followed by a discussion of the philosophical underpinnings and structure of personal income taxation in Canada. I then provide simulations for each province of the marginal and average tax rates produced by their tax systems, and discuss the findings and implications. Finally, I briefly discuss the features of the tax systems of five international jurisdictions important for western Canadians in order to provide context. The paper closes with several recommendations based on the analysis and findings.

In the past few months, most fiscal discussion has turned to appropriate responses to the recession. This paper does not address countercyclical fiscal measures. Instead, I pursue a longer-run concentration on the tax structure that should be in place when Canada again emerges from recession and for the future. As well, for reasons of space, this paper focuses only on personal income taxation. This should not be interpreted as suggesting that other tax choices, such as changing the structure of corporate taxation or changing

the tax mix toward more environmental taxes, are not worthy of study or consideration. Instead, I leave that analysis to others and pursue here answers to the questions, what *does* western Canada's personal income tax system look like and what *should* it look like?

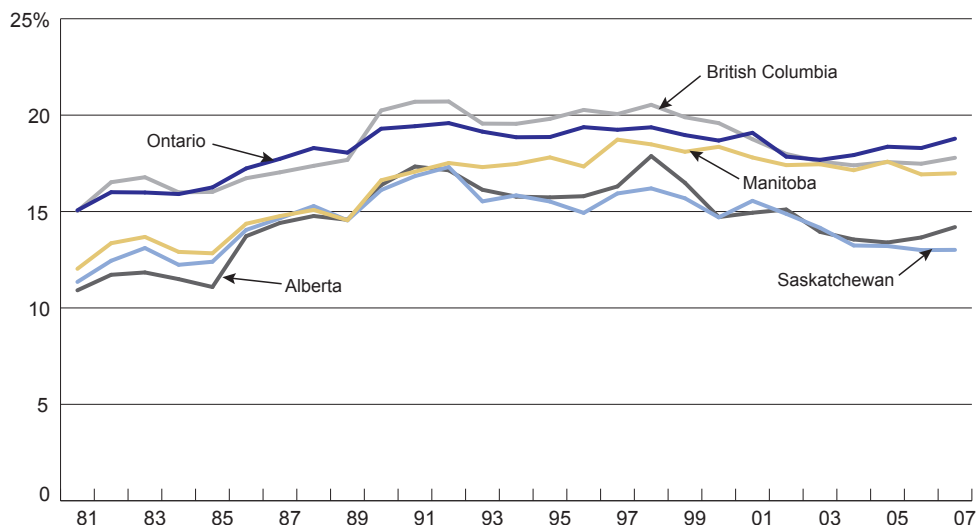
2. Importance of PIT

Personal Income Taxation (PIT) raises a large share of total government revenue in western Canada. Moreover, PIT represents a large fraction of economic activity within each province. In this section, I review some facts on the magnitude of PIT in the economy in order to give context and perspective for the discussion in the paper that follows.

Figure 1 displays personal taxes as a proportion of gross domestic product (GDP) in each of the four western provinces plus Ontario over the years 1981 to 2007.¹ The numerator of the ratio is personal taxes, which is a component of the system of National Accounts. Personal taxes includes both income taxes (federal and provincial) and social insurance contributions (such as payments to the Canada Pension Plan, health insurance premiums, and the Employment Insurance system) paid by residents of the specific province. Not included in personal taxes are indirect taxes such as sales taxes, the federal Goods and Services Tax, or excise taxes on specific goods. The denominator of the ratio is the provincial GDP, which measures the value of the goods and services produced in the province. The ratio is informative about the amount of tax paid as a proportion of the production capacity of the province.

The graph in Figure 1 shows that the five provinces included have followed broadly similar trends over the past 27 years, with the GDP share of personal taxes rising by about 5 percentage points between the early 1980s and the late 1990s, then following by 3 percentage points or so to 2008. This follows developments both at the national and provincial levels of increasing taxes in attempt to mitigate government deficits, followed by a "fiscal dividend" over the last 10 years as provincial and federal deficits for the most part abated. Looking across the provinces, there are some distinctions to be found. Alberta and Saskatchewan are consistently the lowest of the group, starting at about 11% in 1981, rising to around 16% in the mid-1990s, then falling back to 14%. British Columbia has tracked Ontario quite closely going from 15% to just over 20% then back down to 17%. Most interesting is the case of Manitoba which started the time period covered in Figure 1 with the lower Saskatchewan and Alberta group but ended the time period up with Ontario and British Columbia.

Figure 1: Personal Taxes as a % of Provincial GDP



Source: Statistics CANSIM database.

Do these differences across provinces derive from differences in overall government revenues, or are they shifts among different revenue sources? That is, have different provinces put more or less emphasis on PIT as a source of revenue? The next set of data explores this question by comparing the share of provincial

¹ The source is the CANSIM database.

Figure 2: Sources of Provincial Government Revenue, 2007-08

	ON	MB	SK	AB	BC
Total revenues (millions)	\$99,523	\$11,450	\$10,486	\$39,580	\$36,981
	<i>Share of total</i>				
Personal income taxation	28.5%	21.1%	18.4%	21.2%	18.5%
Corporate income taxation, logging, and mining	11.2%	4.2%	8.3%	11.1%	7.1%
Consumption taxes	24.7%	20.9%	19.0%	9.9%	24.8%
Property and related taxes	2.9%	3.0%	1.4%	3.5%	8.2%
Other taxes contributions to social security/other revenue	10.6%	8.1%	11.7%	8.7%	10.4%
Sales of goods and services	2.6%	1.8%	3.8%	1.5%	2.3%
Investment income	3.3%	9.3%	19.5%	36.2%	13.0%
Transfers from federal government	16.2%	31.6%	17.9%	7.9%	15.7%

Source: Statistics Canada CANSIM database.

government revenue in the 2007-08 fiscal year coming from different sources. There are vast differences.

Figure 2 shows the total provincial government revenue and its decomposition. The source of the data is the CANSIM database. The first row contains the total revenue from all sources in millions of dollars. Beneath that, the share of the total in eight categories is displayed. Across the four western provinces, the share of revenue from PIT is remarkably consistent, between 18 and 21%. Ontario, on the other hand, raises over 28% from PIT. The sharpest difference is in the investment income category, which includes natural resource royalty income. Here, Alberta takes in 36.2% of its revenues, while Ontario takes in only 3.3%. For Manitoba, this vast difference in natural resource royalties is partially made up from payments for the federal equalization program in the transfers from federal government category. However, Saskatchewan and British Columbia do not receive payments under this program, so they make up for part of the difference using much higher consumption taxes.

To sum up the findings of this section, there have been very strong swings over the past 27 years in the share of provincial output taken by personal taxes. On average across the four western provinces, personal taxes as a share of GDP rose by 48% to a share of 18.3% between 1981 and 1998 before falling back modestly in the 2000s. In addition, there is remarkably little difference across provinces in the share of revenue coming

from personal income taxation, which is in stark contrast to the importance of other revenue sources which vary greatly across provinces. Later in the paper I will investigate whether this remarkable similarity in the level of PIT across western provinces masks differences in the structure of the PIT.

3. Review of Research on PIT

In the last section, I explored differences in the level and structure of PIT across the western Canadian provinces. But does the level or the structure of PIT matter at all? This question has been the focus of a great volume of economic research. This section provides a brief review of this research organized around specific questions.

Before embarking on the analysis, I begin by borrowing the analytical structure of Slemrod (1992), who posited a hierarchy of responses to taxation. At the top of the hierarchy as the most responsive is the *timing* of economic transactions. In this case, taxes do not affect what is done, but shift when it is done. Second, in the middle of the hierarchy, are financial and accounting responses. Here, firms and individuals rebalance how their economic actions are reported in order to lower taxation. Finally, at the bottom of the hierarchy are true behavioural responses—real changes in production decisions by firms and consumption, work, and savings decisions by individuals. While behavioural

responses are perhaps less common, they are economically the most critical since they have the largest impact on economic efficiency and our well-being.

I now turn to the analysis of five specific questions on the impact of PIT on economic behaviour. For each of the five, I argue from economic principles and from drawing on the relevant research. The review is by no means comprehensive; instead the goal is to give a flavour of the evidence on these questions as motivation and context for the rest of the analysis in this paper.

Does PIT affect labour mobility?

Through the late 1990s and early 2000s, there was a swell of concern about a “brain drain” from Canada to the US, with exchange rates, economic opportunities, and high tax rates on large earners being three common recipients of blame. The tax explanation requires some thought. When one moves a place of residence, it is not high marginal tax rates that matter. Why not? Marginal tax rates reflect the tax paid on the last dollar earned. When you move, not only is the marginal dollar moving but the first dollar and more generally all of the taxable income moves as well. This means that average tax rates matter, not the marginal rate. Moreover, the bundle of government-provided goods and services also changes as one moves jurisdictions. Taxes may be lower, but it is possible that the bundle of government-provided goods is judged to be less valuable as well, making the switch less beneficial. So, it is the net fiscal benefit (including both tax and spending sides of the budgets) that should in theory govern the decision to move.²

While the theoretical predictions are quite clear, the empirical evidence has been more mixed. In a recent Canadian paper, Day and Winer (2006) find that the magnitude of migration induced by fiscal incentives is quite small and is unlikely to have large effects relative to large political shocks (like troubles in Quebec) or economic shocks (like the closing of the Atlantic cod fishery).

Does PIT affect capital allocation decisions?

² The theory on this topic of fiscally induced migration is grounded in the model of Tiebout (1956), who argued that individuals compare the amenities, fiscal costs, and fiscal benefits when choosing a residence.

Unlike for labour mobility, shifting one’s capital from one jurisdiction to another does not require a physical location of one’s domicile. This means that marginal tax rates now matter and that government expenditure unrelated to the investment itself now becomes irrelevant. This suggests a stronger likelihood that tax rates will affect capital allocation across jurisdictions than was the case for labour. Empirically, this theoretical case holds true. Mintz and Smart (2004) show that Canadian firms respond to interprovincial differences in corporate tax rates by financially shifting profits from high tax to low tax provinces. Using Slemrod’s hierarchy, this is a “second tier” response. Of course, this paper examined corporate rather than personal tax responses, but it does provide evidence that capital is much more sensitive to tax rate differentials across jurisdictions than labour.

Beyond moving across jurisdictions, personal income taxation can have a large impact on how capital is allocated across investment opportunities within one jurisdiction. To take one example, the portfolio choice decisions of American households within a tax-deferred account and outside the tax-deferred account are shown by Bergstresser and Poterba (2004) to be different for many households. That is, the mix of investments chosen between stocks and bonds depends on the taxation of the investments.

Finally, there is the well-known phenomenon of the “lock-in effect.” Because capital gains are taxed only upon realization, the paying of tax can be deferred by not realizing a gain even if for investment portfolio reasons it would be optimal to sell and reallocate the capital. This phenomenon has been heavily studied in the finance and taxation literatures (see the review in Klein 2004), with most studies finding evidence that taxation affects realization decisions. In light of the Slemrod hierarchy, this should not be surprising because the lock-in effect is a timing decision, so Slemrod would predict capital gains realizations to be highly sensitive to taxes.

Does PIT affect corporate form decisions?

The taxation of personal income can also have an impact on corporate form. There are several ways to extract income from a corporation and get it into the hands of the provider of the capital. The income could arrive as wages, a debt repayment (interest), a dividend, or through a capital gain to existing

shareholders because of a share repurchase scheme by the firm. If these different channels face different rates of taxation, the providers of capital benefit by choosing a channel for their repayments wisely. In some circumstances, this can lead to a change in the legal organization of the business activity in order to minimize taxes.

For example, the small-business sector is one that faces these considerations in many countries. Auerbach and Slemrod (1997) review the evidence on the Tax Reform Act of 1986 in the United States which lowered the top personal rate beneath the corporate rate, giving smaller businesses an opportunity to save tax by moving away from corporate organization. They find evidence that indeed this occurred.

In Canada, the experience with income trusts is similar. As personal income tax rates fell in the late 1990s and early 2000s, the treatment of dividends and interest income became disjointed in favour of interest income. The dividend tax credit had not been properly updated to reflect changes in corporate and individual tax rates. This led to a growing movement away from the corporate form into an income trust structure, which paid distributions taxed as ordinary income rather than as dividends. (See Mintz and Richardson 2006 for a complete analysis.) Although this might be seen as an innocuous change to avoid taxation, it potentially had serious consequences for real corporate decisions because the legal requirements for an income trust structure placed restrictions on distributions. This could have led to decreased corporate investment.

Does PIT affect labour market participation and effort?

One of the most active areas of research on taxation has been the effect of taxes on the labour market. The research in this area is vast, so I will focus tightly on two questions. First, what is known about the labour market participation of lower ability/lower earning individuals? The evidence strongly suggests that the “in or out” decision of marginal workers is affected by the fiscal incentives they face. A major body of this research has studied the impact of the tremendous expansion in working tax credits for families with children in Canada, the United States, and the United Kingdom. For example, Milligan and Stabile (2007) find that the expansion of the National Child Benefit system in the 1990s can account for 19 to 27% of the decline

in social assistance take up in the late 1990s. The second question is what happens to the labour supply of more active labour market participants. For those already in the labour market, their response to taxes would be to work more hours in a week or more weeks in a year (i.e., work more intensively). A landmark paper on this topic by Blundell, Duncan, and Meghir (1998) looked at the impact of tax rates changing over time on the work behaviour of married women in the United Kingdom. The authors find that hours worked responded with an elasticity of 0.14 for women without children, rising to 0.301 for women with a child age 0-2.³ Typical findings in the literature show that men are less responsive to taxes than women, however, so these findings cannot be applied directly to the case of men. The consensus in the literature is that taxes have a moderate impact on labour force effort.

Does PIT affect entrepreneurial effort?

The taxation of the return to entrepreneurial effort presents some unique considerations. At first look, higher taxation of the return to entrepreneurship would seem to predict lower effort, which would have negative implications for this important segment of the economy. However, as shown originally by Domar and Musgrave (1944), taxing the return to risk can in some circumstances *increase* risky investments. The key assumption for their analysis is full-loss offset; that losses may be deducted from other income or be tax refundable. In that case, the government shares not only in the gains, but also subsidizes part of any loss. Because both the upside and downside are muted by taxation, entrepreneurs may invest more to increase their risk exposure. This example provides a powerful lesson for the importance of thinking carefully about the impact of taxes on behaviour.

Empirical evidence has typically found a negative link between self-employment or entrepreneurial activity and taxes. For example, Gentry and Hubbard (2005) find taxes are negatively related to entry into self-employment and attribute their finding to the progressivity of the tax schedule—the gains are taxed more heavily than the losses are subsidized. However, more recently Cullen and Gordon (2007) have injected some doubt with their finding that evidence of entrepreneurial activity is

³ An elasticity of 0.14 implies that a 10 percent change in the after-tax wage leads to a 1.4 percent change in work.

strongly *positively* related to taxes, consistent with the Domar-Musgrave hypothesis. So, this literature has not converged on a consensus and remains active.

To conclude, this section has discussed evidence suggesting that taxes can have a substantial impact on behaviour. However, the degree of the effect depends on the object under consideration. Evidence suggested that the labour mobility response to taxes is not empirically large. However, capital seems more responsive. Corporate form is extremely sensitive to tax differentials across different channels of transferring income from business to owner. Labour supply is quite sensitive for those with children or at the margins of the labour market; less so for those already working. Finally, the evidence on entrepreneurship is perhaps surprisingly ambiguous—with some evidence showing an increase in risky investments related to increases in taxes.

An important caveat comes from the evidence in Lee and Gordon (2005). They study overall economic growth across countries, comparing the impact of corporate tax rates and individual marginal tax rates. They find a strong response to higher corporate taxes, but no significant response to higher personal tax rates. While only suggestive, this serves as a reminder that building a policy conducive to economic growth requires the study of more than just personal income tax rates.

4. Federal-Provincial Relations and the PIT

The relationship between the federal and provincial governments with respect to income taxation has changed through time. This change can best be described as evolutionary, with several more sharp episodes of rapid change. It is important to understand this history in order to set the stage for consideration of where personal income taxation should go next in western Canada. The discussion appearing below draws primarily upon La Forest (1967), Moore, Perry, and Beach (1966), and Boadway and Hobson (1993).

To begin, the British North America Act of 1867 assigned to the federal government the power to raise revenue through any means, including of course direct income taxation. In contrast, provinces had their fields of taxation restricted. However, the provinces were assigned the right to tax incomes for provincial purposes. From 1867 through to the First World War, however,

the use of this power was sporadic. Ontario used some direct taxation after Confederation and British Columbia did as well starting in the late 1800s. It was not until the First World War, however, that the federal government moved into direct taxation in a large way in order to fund war obligations. After the First World War and until 1941 the use of income taxation crept forward in many provinces, each with their own system of income definition, tax bases, exemptions, and rates.

Again, it was war obligations that spurred another great change. In 1941, the federal government offered to “rent” the income tax field from the provinces in return for payments from the federal government. The provinces would have to shut down their existing income taxes. All 9 provinces agreed to this arrangement, giving birth to the “tax rental agreement” era. After the war, through many discussions between the federal and provincial governments, this system persisted until 1962. Gradually, provinces were allowed under the terms of the agreement to re-introduce some direct taxes and gain a greater share of federal revenue as “rent.” The setting up of a stand alone income taxation system in Quebec in the late 1950s spurred more calls for change.

Many discussions through the late 1950s and early 1960s resulted in a new arrangement starting in 1962. The federal government kept its existing base and rate structure, but “abated” a percentage of the tax revenue, meaning that taxpayers essentially got a tax reduction of the specified percentage. This percentage was set initially to 16%, but rose up to 28% by 1971. In place of this federal income taxation, provinces could then collect revenue for their own purposes. This revenue was collected by the federal government and remitted to the provincial governments, at no charge. Thus, these arrangements are referred to as the Tax Collection Agreements.

The exact structure of these arrangements centered on the Basic Federal Tax of the federal tax system. Basic Federal Tax was the amount resulting from the federally-defined taxable income being put through the federally-defined bracket and rate structure. Provinces could then choose a percentage of the Basic Federal Tax to levy as their “own” revenue. This is referred to as a “tax on tax” structure. This arrangement was quite restrictive, in that provinces had no control over the definition of total income or the deductions/exemptions from total income that determine taxable income. What’s more, because the bracket

and rate structure were federally-defined, provinces had little control over the progressivity of the system.⁴ The benefit to the provinces was that they were able to enjoy the economies of scale in tax collection by ceding the administration of tax collection to the central authority. Notably, Quebec did not sign a tax collection agreement and continued the development of its own income tax system with different base, deductions, credits, and rates.

The most recent development in the Tax Collection Agreement system arrived in the late 1990s as pressure arose from the provinces to give them more freedom in the structure of their income taxes. The result was a move in 2000-01 away from “tax on tax” toward “tax on income,” often referred to by the acronym TONI. Under the new TONI system, the federal government continued to set the tax base through the definition of total income and the deductions that lead to the calculation of taxable income. From that point, the provinces have considerable latitude to set brackets, rates, and refundable and non-refundable credits.⁵ Provinces were given the option to stick with tax on tax or switch to tax on income, but all 9 provinces and the three territories in the Tax Collection Agreements chose to switch by 2001. Some provinces have introduced new credits. Others have mimicked changes to federal credits. For inflation indexation, some provinces use a provincial inflation index to update their brackets and credits while others have not implemented automatic indexing. The result of these changes is a system that is slowly taking different shapes in each province.

To summarize, the collection of provincial income taxes has changed dramatically from the “anything goes” era from Confederation to 1941, through the restrictive tax rental agreements of the middle of the 20th century, and finally to the

Tax Collection Agreements since 1962 which have slowly but steadily renewed a large degree of provincial autonomy in the personal income taxation field.

5. The Structure of PIT in Canada

This section outlines the structure of the PIT system in Canada. I begin by providing background on the underlying philosophical and logical roots of the personal income tax system in Canada. I then discuss the importance of the income tax in addressing inequality of economic outcomes. Finally, I describe in detail the structure of the personal income tax in Canada and in the four western Provinces.

The roots of the PIT

The roots of the personal income taxation (PIT) structure in Canada can be found in the Royal Commission on Taxation of 1967, commonly referred to as the “Carter Commission.” The Carter Commission constructed a real-world framework for taxation based on the concept of “comprehensive income” developed by economists Robert Murray Haig and Henry C. Simon. The Haig-Simon concept posited that accruals to economic power, no matter the source, should be treated as income and taxed equally. For example, earnings, capital gains, accruing pension benefits, social benefits, scholarship income, and corporate dividends all increase one’s power to consume. Under the Haig-Simon comprehensive income, these should all be included equally in determining the ability to pay of the tax unit (be it individual or family). From this base should be deducted expenses which are necessary to earn income (such as interest paid on funds borrowed to invest) or do not yield gratification (such as medical expenses). The end target was a measure that could be construed as the ability to pay of the tax unit.

In a major tax reform in Canada in 1972 implemented many of the proposals of the Carter Commission. Many new categories of income became taxable, including capital gains, scholarship income, family allowance, among others. New deductions for items such as childcare expenses helped to move the definition of income closer to the theoretical notion of “ability to pay.”

4 Provinces were able to design and implement different refundable and non-refundable tax credits under the Tax Collection Agreements. As well, the prairie provinces each implemented a special flat tax (that varied between 1 and 2%) on a different income base, which also gave some control over base and progressivity to those provinces.

5 They do not have complete flexibility, however, as the agreements restrict the value and determination of credits in some ways. For example, if a credit is the same as the federal equivalent credit, the administration is free of charge. However, if it is different, the province must pay for the administration. See Canada (2000) for full details.

Even with these reforms, however, the tax system did not conform exactly to the Haig-Simon ideal. To take a conspicuous example, the imputed income of owner-occupied housing, as well as any capital gains from the primary residence, were excluded from taxation. Moreover, all capital gains are taxed only upon realization rather than annually on accrual. On top of these shortcomings, subsequent tax reforms and changes have through time further eroded the structure of the tax system from its Carter-inspired target. For example, the expansion of eligibility and widespread adoption of Registered Retirement Savings Plans means that a large fraction of households can shield the return to savings from current taxation and defer the tax to the future. This moves the tax base away from the comprehensive income ideal. Instead, by exempting the return to savings, only income that is consumed remains as the base for tax. More recently, the complete exemption of scholarship income and the introduction of the Tax Free Savings Account in 2009 further disconnects the definition of income from its roots. This is not to say that these changes to the definition of income are necessarily unwanted or undesirable. However, what is clear is that the current logical underpinnings of the system have become diluted and confused.

The PIT and inequality

Within the tax system, the personal income tax forms a strong buttress against inequality. Kesselman and Cheung (2004) find that, on a lifetime basis, only personal income taxes are strongly progressive. Sales taxes, excise taxes, payroll taxes, and property taxes are strongly regressive, and corporate income taxes mildly regressive. Taking this as true, if a society does wish to have a degree of redistribution from the market-generated distribution of income, it must do so through the income tax.

Over the past quarter century, the nature of inequality in Canada has changed significantly. Saez and Veall (2005) document the extraordinary rise in income inequality at the very top of the income distribution, with the share of total income going to the top 1/100th of one percent quadrupling from 1975 to 2000.⁶ Frenette, Green, and Milligan (2007) show that, in the 1980s, the income tax and transfer system was able to “undo” most of the increase in market inequality. However, in the 1990s, this was no

longer true and increases in market inequality led to increases in overall inequality. In a follow-up paper, Frenette, Green, and Milligan (2008) show that a large share of the changes in the progressivity of the tax system were generated at the provincial level, meaning that provinces can have a large impact on the overall progressivity of the income tax system.

Federal structure

I next describe the structure of the federal income tax.⁷ I use year 2008 as the basis of the discussion, since the 2009 tax system could still be changed before it is finalized.

The federal personal income tax starts by assembling the components of total income (line 150). Earned income, interest income, self-employment income, rental income, and employment insurance benefits, among other items, are added together. Special treatment is accorded to several items. For capital gains, only 50% is included and only upon realization. Dividend income is subject to “gross up and credit” treatment, which first multiplies the amount of dividends received by 45%, and then later is eligible for a special credit. Since 2006, scholarship income has been excluded from total income. Also of note, lottery and gambling winnings are not included, in contrast to the United States. It is important to remember that these decisions, while made by the federal government, are binding on provinces signed to Tax Collection Agreements as they must accept the federally-designated definition of income.

Once total income is obtained, several items are subtracted from total income in order to arrive at net income (line 236). These items include familiar amounts such as contributions to Registered Pension Plans and Registered Retirement Savings Plans, childcare expenses, and moving expenses. The Net Income amount is important to provinces and to the federal government because it is used to assess eligibility for many refundable tax credits such as the GST tax credit, the National Child Benefit Supplement, and the provincial National Child Benefit programs. To arrive at taxable income (line 260) a few less common items are subtracted from net income.

⁶ In the United States over the same time period, Veall and Saez show that the income share of the top 1/100th of one percent went up by a factor of 6.

⁷ This section could be read in conjunction with the actual tax forms, available at <http://www.cra-arc.gc.ca/formspubs/t1gnrnl/menu-eng.html>.

Taxable income is then used to calculate the net federal tax by applying the tax brackets and rates. For 2008, there are four federal tax brackets:

- 15% for taxable income less than or equal to \$37,885
- 22% for taxable income between \$37,885 and \$75,769
- 26% for taxable income between \$75,769 and \$123,184
- 29% for taxable income in excess of \$123,184.

The result of this calculation is called the Net Federal Tax.

The next step involves taking account of the personal circumstances and expenditures of the individual. This is accomplished through a set of non-refundable tax credits. These tax credits range from a basic personal amount of \$9,600 to tuition expenses and adoption expenses. The total amount of these credits is then multiplied by 15% to arrive at the amount to be credited against net federal tax to yield the total payable. So, the \$9,600 basic personal amount actually decreases the tax liability by only $15\% \times \$9,600 = \$1,440$. If the total of the credits is greater than the net federal tax, then the difference is not refunded. This is why these credits are called non-refundable tax credits.

There are three reasons why some types of expenditures might attract special treatment in the tax system. First, the expenditure might not be something that brings gratification, but instead just maintains the status quo. Health expenses might fit in this category, since someone who spends thousands a year on medical treatments is likely worse off than someone of equal income who does not need to spend on health. The second type of expenditure includes expense incurred to earn income. For example, education expenses represent an investment that will pay off in the future. Childcare expenses can be thought of similarly, as they allow the parent to earn income. Finally, society might want to encourage certain types of behaviour by subsidizing the price through the tax system.

In 2006 and 2007, there were several additional non-refundable tax credits added in the first two budgets of the Conservative government. These included a children's fitness tax credit, an expanded education credit nominally attached to textbook

expenses, an employment amount for earned income, a children credit, and a public transit tax credit. These new initiatives do not have any direct impact on provincial income tax receipts because they are credits against net federal tax; under the tax on income system only taxable income has an impact on provincial tax receipts. Provinces are able to adopt these new credits, but for the most part they have not.⁸ Moreover, provinces have some freedom under the Tax Collection Agreements to design their own credits, but again, for the most part they have not.⁹ As time progresses there may be more adoption of federal credits or innovation by provinces, but this has not been a dominant feature of the tax on income era since 2000.

Manitoba

The personal income tax in Manitoba is quite straightforward, although the rates are among the highest of any province. The brackets and rates for 2008 are the following:

- 10.9% on taxable income up to and including \$30,544
- 12.75% on taxable income between \$30,544 and \$66,000
- 17.4% on taxable income over \$66,000

These brackets are not automatically indexed. The 2007 Manitoba budget set a path for the middle tax rate and bracket to reach 10.5% and \$70,000 by 2011. Manitoba has adopted a version of the federal children's fitness tax credit for up to \$500 of expenses.

Saskatchewan

There are three tax brackets in Saskatchewan. Compared to Manitoba above, the rate is lower at the top and the thresholds are also much higher:

- 11% on taxable income up to \$39,135

⁸ Only Nova Scotia and Manitoba among the provinces adopted a children's fitness tax credit. The Yukon offers credits that mirror directly the federal ones, so they have all the aforementioned credits available.

⁹ One example of a unique tax credit is in Prince Edward Island, where up to \$500 of school supplies bought by teachers is eligible for a credit.

- 13% on taxable income between \$39,135 and \$111,814
- 15% on taxable income over \$111,814.

The brackets and credit amounts are updated annually for inflation. Saskatchewan has some unique non-refundable credits. First, there is an amount for dependent children, \$4,795 in 2008. Second, there is a supplement for seniors of \$1,118. Both of these were instituted in 2001 when Saskatchewan switched from tax on tax to tax on income. Saskatchewan has not adopted the new federal credits introduced in 2006-07.

Alberta

There are two strongly distinctive features of the Alberta personal income tax. First, there is only one tax bracket with a rate of 10%. Second, the basic personal amount and the spousal amount, both at \$16,161, are much higher than the federal amount or the amounts in other provinces. The 10% rate is lower for high income earners compared to other provinces, but is higher than the rate facing lower income individuals in many other provinces. However, this is partially mitigated by the large basic personal amount. The credit amounts in Alberta have been adjusted annually for inflation. Alberta has not adopted any of the new federal credits.

Another factor that has differed in Alberta is the presence of a health premium that applied to all individuals. This health premium was substantial, amounting to over \$1,000 annually for a family—although relief for lower income families was available. This premium was collected provincially and not by the Canada Revenue Agency through the Tax Collection Agreement system. Only Ontario and British Columbia have similar premiums. Although nominally a premium for health insurance, the revenue was collected into general revenues and not earmarked for health. As of 2006, seniors no longer had to pay. As of 2009, the entire health premium is scheduled to disappear.

British Columbia

There are five tax brackets in British Columbia, featuring the lowest rates at the bottom of any province. The brackets and rates for 2008 are:

- 5.06% for taxable income up to and including \$35,016

- 7.7% for taxable income from \$35,016 to \$70,033
- 10.5% for taxable income from \$70,033 to \$80,406
- 12.29% for taxable income from \$80,406 to \$97,636
- 14.7% for taxable income over \$95,909

Brackets and credits in BC are adjusted annually for inflation. With the introduction of a carbon tax as of July 1, 2008, there is a scheduled decrease in the tax rates for the bottom two brackets in 2009 as part of the effort to maintain revenue neutrality. British Columbia has not adopted any of the new federal tax credits.

British Columbia also has a substantial health premium, with rates of \$1,296 per family (with reductions for lower income families). Again, these funds go into general provincial revenues and are not earmarked for health.

6. Simulations

In this section, I provide some numerical simulations to explore more deeply the structure of the personal income tax in western Canada. This analysis will provide more insight into the differences in taxation across provinces and will be very useful for the development of policy options later in the paper.

The simulations are performed using the Canadian Tax and Credit Simulator, described in Milligan (2007). Using the statistical software program Stata, the CTaCS computer programs allow users to calculate the tax liability and refundable credit entitlement for Canadians in any province or territory between 1961 and 2007. The simulations presented here start with a set of “model families.” These families differ in specific ways that allow several interesting features of the tax system to be brought out in interesting ways. By comparing the tax rates faced by the model families across years and across provinces, a complete picture of the differences in the tax systems of different provinces can be seen.

I use two types of model families. The first is a single individual. While the proportion of single individuals in the population is not large, this family type is useful for the simulations because

it is simple. We can more easily isolate the impact of tax rates when there are fewer variables at play. The second model family I employ is a married couple with two children, ages 7 and 10. For both model families, I assume the adults are 40 years old.

The next step is to assign some different income levels to the model families. I draw incomes from the Survey of Labour and Income Dynamics using 2005 data. This survey is a large and nationally representative survey of Canadians focusing on labour market variables. I select individuals between the ages of 30 and 50 who are the major earner in their family. For these individuals, I sum their earned income, self-employment income, and investment income with any Canada/Quebec Pension Plan benefits and Employment Insurance benefits to form a measure of total income analogous to line 150 of the income tax form. I then take percentiles of this variable from the sample to define the income levels I assign to the model families. After some experimentation, I found that the 25th, the 50th, and the 99th percentiles gave the most complete description of the tax system.¹⁰ For the married family, I assign the income only to one of the spouses and put the other spousal income at zero. While this is not the most typical case in Canadian society, it allows a comparison of the taxation of singles vs. married couples holding income constant. The income levels are then adjusted for inflation for each year between 1981 and 2007. Finally, an observation for each year, family type, and income level is created for each of the four western provinces.

This income and other information are taken as input for the CTaCS calculator. For simplicity of comparison, the income levels are assumed to be earned income. Given an income amount, a marital status, the number of children, the year, and the province, CTaCS calculates the income tax owing and the refundable tax credits to which the family would be entitled. The basic amount, spousal amount, earned income adjustments, and children amounts are all accounted for. Other tax preferences such as for pension contributions, RRSP contributions, or childcare expenses are assumed to be zero for simplicity.

The output of the calculator is a detailed set of tax liabilities and benefit entitlements. CTaCS reports the federal basic and surtax

liabilities, Canada/Quebec Pension Plan contributions, (Un) Employment Insurance premiums, provincial basic income taxes and surtaxes, and provincial health premiums. For refundable tax credits, CTaCS reports the amounts of GST credit, Canada Child Tax Benefit, National Child Benefit Supplement, as well as specific refundable tax credits for each province.

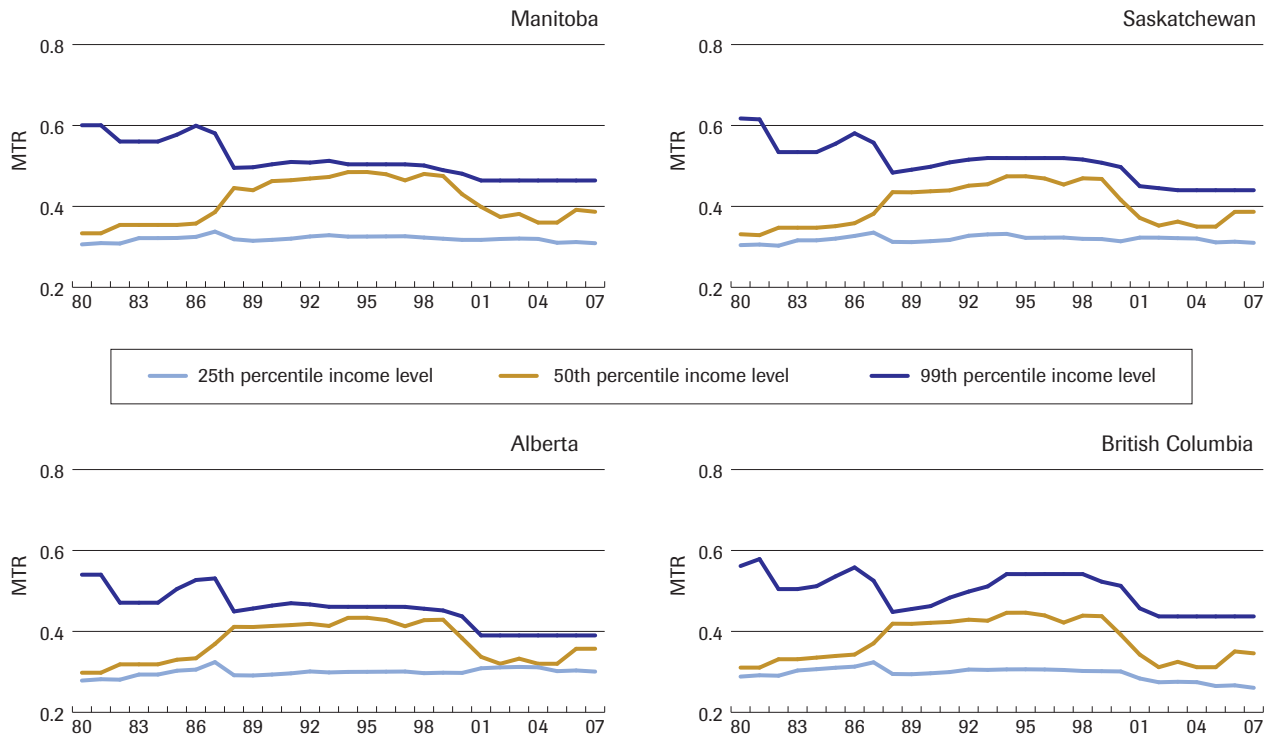
Using this output, two types of tax rates are constructed as the object of the analysis. The first is the average tax rate, calculated as the total tax liability divided by the pre-tax income. The second is the marginal tax rate, calculated as the extra tax that would be incurred for a marginal increase in income. Both of these tax rates are calculated in two ways. First, I use just the income tax liabilities to construct a basic average and marginal tax rates. Second, I account for the refundable tax credits in a more sophisticated calculation for each of the tax rates. The refundable tax credits decrease the average tax rate because the tax credits may offset some or all of the income tax liability. For the marginal tax rate, the incorporation of refundable tax credits has a major impact because an extra dollar earned leads to a (sometimes substantial) decrease in the benefit entitlement, as the benefits are income-tested through a claw-back mechanism. This means, effectively, that a marginal dollar of income can face a very steep marginal tax rate as the marginal dollar both attracts a higher tax liability and lowers benefit entitlements.

The different tax rates have sharply different implications. If one is concerned about the incentive to work more hours or to invest more dollars, then the marginal tax rates are the most important since those actions will be taxed at the marginal rate. On the other hand, if one is considering moving jurisdictions or cares about the overall welfare of people at different income percentiles, then the average tax rate is the right rate to look at since it speaks to the overall effect of tax on each dollar earned from the first to the last. Of course, in order to have a higher average tax rate it is necessary to have a high marginal tax rate over some sustained range of income, so there is a fundamental relationship between the two. However, it is important to think carefully about the implications of each.

The results below go through two sets of graphs. For each figure, I show four panels corresponding to the four western provinces. The first set of results looks at the development of

¹⁰ The 25th percentile is \$22,000, the 50th is \$41,200, and the 99th is \$225,100.

Figure 3: Marginal Tax Rate Through Time for Single Individual



Source: Calculations from the CTaCS calculator.

marginal and average tax rates through time, using years from 1981 to 2007. Marginal and average tax rates are shown for a single individual and a married family with two children. I also show the results for the three different income groups (25th, 50th, and 99th percentiles). The second set of results takes the 2007 year and explores marginal and average tax rates across all income levels. Again, a single individual and a married family with two children are considered.

Time series simulation results

The first set of results is presented in Figure 3, with marginal tax rates through time for a single individual. The marginal tax rate for the P25 individual (where P25 refers to the 25th percentile income level) is in the lowest tax bracket in all years since the 1988 federal tax reform, and was in middle brackets pre-1988. Taking Manitoba as an example, the 2005 marginal tax rate is 31.01%. This is built up from a federal income tax rate of 15%, a provincial rate of 10.9%, and net Employment Insurance/Canada

Pension Plan contributions of 5.11%.¹¹ Across all four provinces, the marginal tax rate faced by a P25 individual has been fairly constant around 30%. There is a slight blip in 1987/88 at the time of a major federal tax reform.

Two notable cases are worth mentioning. First, British Columbia has shown a substantial drop in the tax rate at the bottom bracket, from 30.1% in 2000 to 26.05% in 2007. This was driven by a drop in the lowest rate from 8.4% in 2000 down to 5.7% in 2007—and scheduled to decline further in 2008-2009 because of the revenue offset for the British Columbia carbon tax. The second notable change is in Alberta, where the flat rate of 10% for all tax brackets went into effect in 2001. In 2000, the Alberta provincial “tax on tax” rate was 44%, meaning that the federal rate of 17% yielded 7.48% (17% times 44%) in revenue for the province. For a P25 individual, the switch to a flat tax increased the marginal tax rate by over 2.5 percentage points. However, it

¹¹ The Canada Pension Plan contribution rate is 4.95% and in 2005 the Employment Insurance contribution rate was 1.95%. However, these contributions were eligible for a non-refundable tax credit of 15% federally and 10.9% provincially. This nets out to 5.11%.

is important to note that the larger basic personal amount that was introduced at the same time meant that the impact on the average tax rate was more moderate—this can be checked in a later graph of average tax rates.

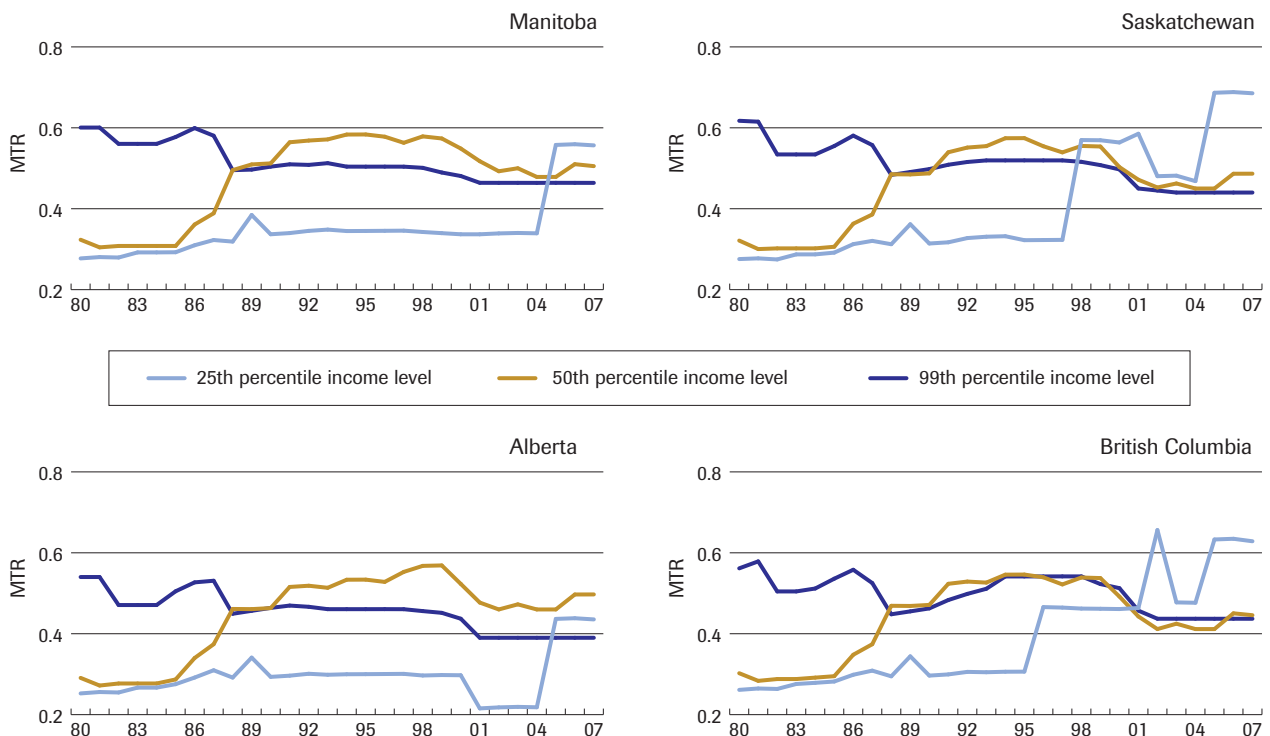
For middle income earners at P50, the swings have been dramatic. Marginal tax rates rose substantially in the federal tax reform of 1988, with a change of about 5 percentage points in the four western provinces driven by the change in the federal system. Whereas previously this P50 individual was in a 23% tax bracket, the reform shifted the P50 person to a 26% federal bracket. This was then amplified by the provincial tax on tax to arrive at the large increase visible in Figure 3. In Manitoba, Saskatchewan, and Alberta, the marginal tax rate for the P50 individual was only slightly less than for a P99 individual—only British Columbia has a substantially higher rate for P99. This resulted from the fact that there was only a 3 percentage point gap between the middle and highest tax brackets through the 1990s (26% vs. 29%) and that middle earners faced payroll taxes for Canada Pension and Unemployment Insurance while high earners did not, since high earners were above the contribution threshold for the payroll taxes. The final swing was downward,

in 2001. This resulted both from the federal income tax bracket faced by these individuals falling from 26% to 22% and also from the switch to tax on income in the provinces, which also saw lower taxes arise in some provinces.

The marginal tax rates faced by high income earners at the 99th percentile (P99) have moved on a mostly downward trajectory. There was a slight upswing in the mid-1980s as the federal government instituted high-income surtaxes. The 1988 federal tax reform saw a drop in the top marginal rate from 34% down to 29%, and this is clearly visible in the graphs. For the three prairie provinces, the top rate was fairly flat through the 1990s, finally falling in 1999-2001 as the federal surtaxes were removed. The outlier here was British Columbia, which increased marginal tax rates on high earners in the 1990s through high-income surtaxes which started in 1991 and continually increased until 1998.

The next set of graphs explores the marginal tax rate for a family with two children taking into account the impact of the income-testing/claw-backs for the refundable tax credits. The same income levels are used here in Figure 4 as for Figure 3, at percentiles P25, P50, and P99. For the P25 family, income

Figure 4: Marginal Tax Rate with Refundable Tax Credits Through Time for Married Family with Two Children



Source: Calculations from the CTaCS calculator.

was below the income range used to claw-back refundable tax credits through the first part of this time period, so the marginal tax rates look similar to those in Figure 3. However, as provincial refundable child tax credits expanded in 1996 in British Columbia and Saskatchewan and later in Manitoba and Alberta, P25 families started to face very high marginal tax rates—even exceeding those faced by P99 families in some cases.

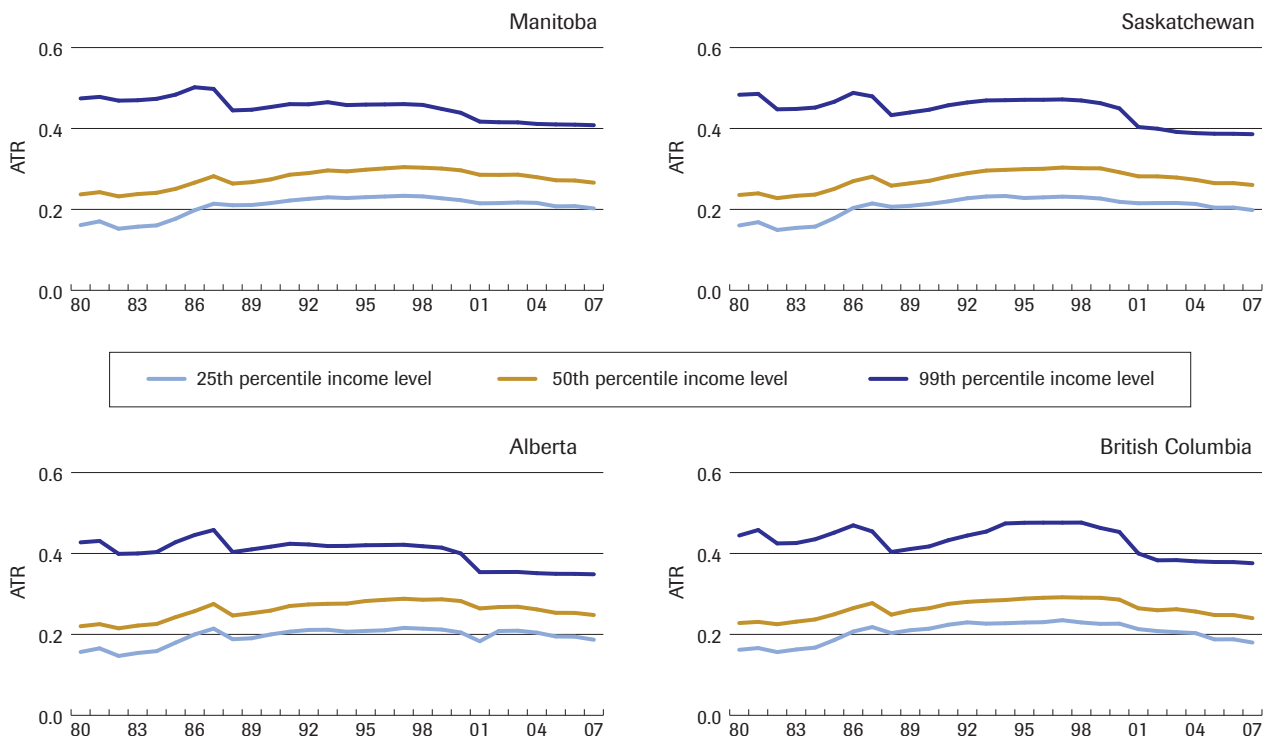
From the late 1980s onward, the P50 families in all provinces showed elevated marginal tax rates, equal or even higher than for P99 families. This results from the introduction of the income-tested child benefits at the federal level in the late 1980s, and consolidated into the Canada Child Tax Benefit in the 1990s. Families in the P50 income range were in the middle of the claw-back income range and so suffered from very high marginal tax rates. This is important because marginal tax rates have been shown to have an impact on the labour market behaviour of individuals. These higher marginal tax rates facing middle income families should therefore be noted.

I now turn to an analysis of the average tax rates in Figure 5. Again, each province is shown separately with three different

income levels shown for single individuals. In all of the graphs, for the P25 and P50 individual there is a bump with average tax rates rising through the mid 1990s and then falling slightly through the 2000s. The increase is not insubstantial, with P50 average tax rates rising from 23% to 30% in Saskatchewan, for example. This is an increase in the tax burden of over 33% from trough to peak. Similar percentage increases are seen for P25 individuals, with part of this coming through Canada Pension Plan and Employment Insurance increases through the 1980s and part of it through higher income tax rates. Since the mid-1990s, however, this upward trend has reversed, although average tax rates have not returned to their early-1980s levels.

A great contrast can be drawn with the average tax rate for the P99 earners. In all provinces, the average tax burden was lower in 2007 than in 1981. There was a slight increase in the mid 1980s with the introduction of federal high-income surtaxes, but the federal tax reform of 1988 soon lowered the average tax rate again. In British Columbia, the high-income surtaxes had a substantial impact on the average tax rate of P99 individuals, increasing from 40.4% in 1988 to 47.6% in 1996. Since 2000, average tax rates have come down in all four western provinces,

Figure 5: Average Tax Rate Through Time for Single Individual



Source: Calculations from the CTaCS calculator.

with the largest drop in British Columbia and only a slight drop in Manitoba.

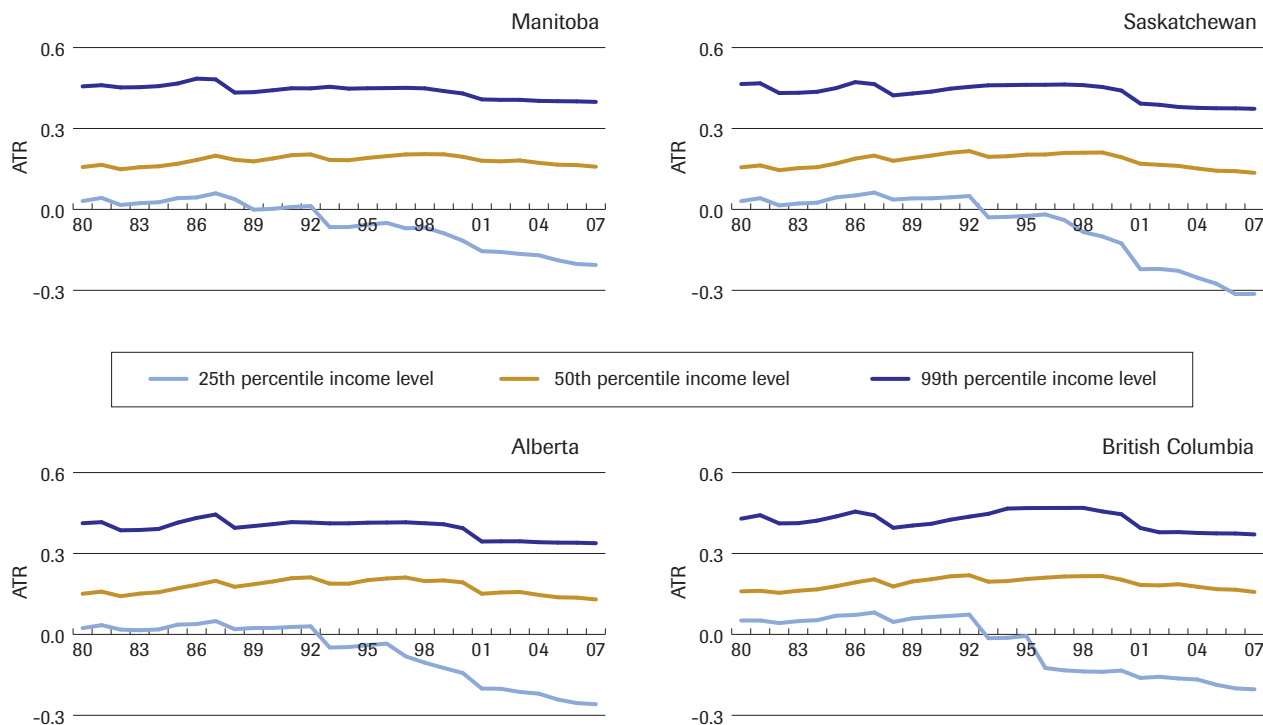
The final graph looking at the time series patterns across provinces shows the average tax rate faced by the married family with two children. Figure 6 graphs these lines for the four provinces and the three income levels. The P99 lines are almost unchanged from Figure 5, although the change in the scale obscures this. P99 families do not receive any of the income-tested refundable tax credits, so their average tax rate is little different than for a single individual. For P50 families, the same up-then-down pattern can be seen, although again it is somewhat obscured by the scale. The average tax rates for P50 in Figure 6 are lower than in Figure 5 by around 10 percentage points because these families receive large refundable tax credits which lower their net tax liability.

The most remarkable feature of Figure 6 is the very sharp drop of the average tax rate for P25 families. Not only does it drop, but it drops sharply into negative territory. A negative average tax rate simply means that the refundable tax credits exceed the income tax liability. The expansions of the Canada Child

Tax Benefit and the introduction of the National Child Benefit program since the late 1990s are responsible for these trends.

To conclude this analysis of the time series data, three major findings have emerged. First, high earners have seen continually lower marginal tax rates and overall tax burdens over the past 25 years (with the exception of British Columbia in the 1990s). Second, middle income families saw a very substantial increase in both their marginal tax rates and tax burdens from the late 1980s to the late 1990s. There has been some modest recovery since then, but tax burdens for middle income families remain historically high. Finally, modest income families have seen little change in their statutory personal income tax rates. However, the great expansion and proliferation of refundable child tax credits through the 1990s and 2000s has led these families to face very high marginal tax rates. On the other hand, these same refundable tax credits have led to a truly remarkable decrease in the net tax burden faced by these families, with most of them receiving much more from the system in child benefits than they pay in income taxes.

Figure 6: Average Tax Rate with Refundable Tax Credits Through Time for Married Family with Two Children



Source: Calculations from the CTaCS calculator.

Income level simulation results

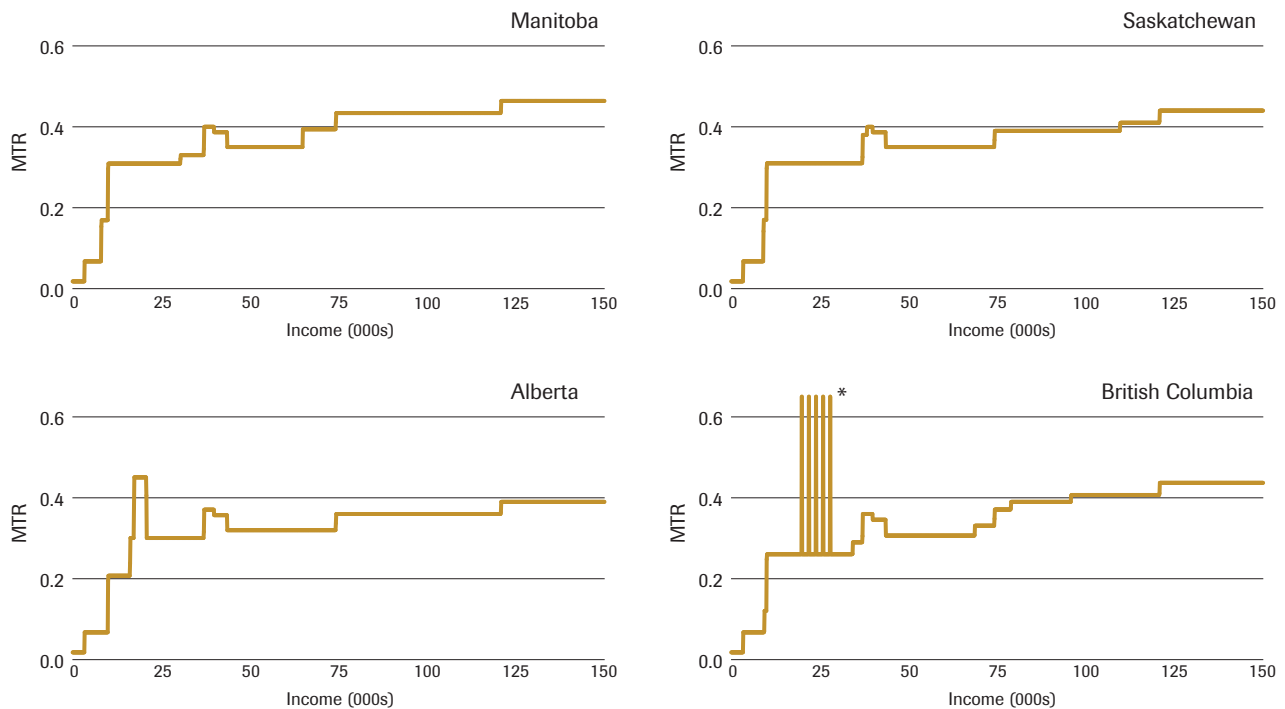
The second set of simulation results takes one year, 2007, and simulates the marginal and average tax rates across all income levels. This analysis gives a very strong impression of the redistributive aspects of the personal income tax system in the western Canadian provinces. The same model families are used for this analysis, but instead of focusing on specific percentiles of the income distribution, a different model family was created with income levels from \$0 to \$150,000 by increments of \$100.

The analysis begins with Figure 7, which looks at the marginal tax rate for single individuals. Over the first \$20,000, the provinces show similar patterns. From the first dollar of earnings the individual has to pay Employment Insurance premiums of 1.8%. After \$3,500 of earnings, an additional 4.95% must be paid for Canada Pension Plan contributions. Finally, once the earnings exceed the basic personal amount of \$9,600, the federal income tax rate of 15% will apply. In addition, provincial rates will apply once earnings exceed the provincial basic amount. The provincial basic amount is slightly less than the federal amount in three provinces, but much higher at \$15,435 for Alberta. Another

common feature across all four provinces is a slight bump in the marginal rate schedule around \$40,000. This occurs because the federal bracket increases from 15% to 22% at \$35,488, but both Canada Pension and Employment Insurance premiums no longer have to be paid after \$43,700 and \$40,000 respectively.

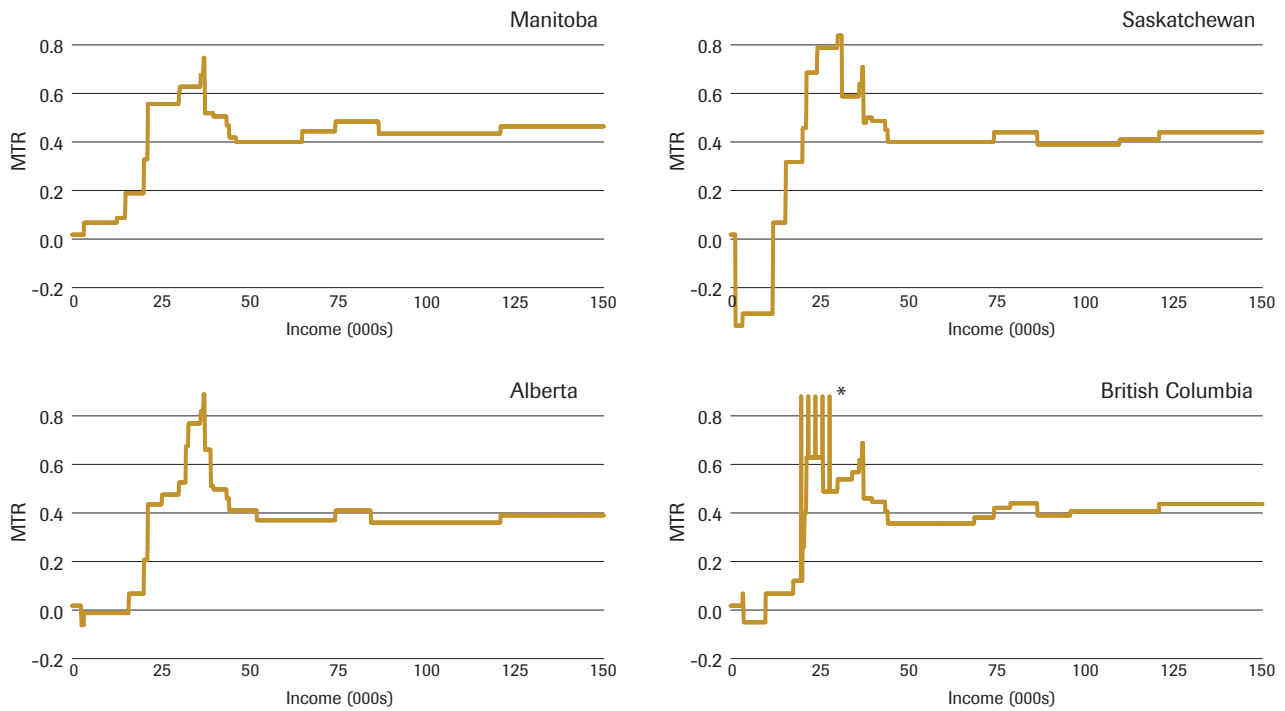
Two odd features appear in Figure 7, both related to provincial health premiums. First, in Alberta below \$17,450 full relief is given to single individuals from the Alberta Health Care Insurance Premium. After \$17,450, the health premium is slowly phased in at a rate of 15% until it is fully in place at \$1,056 annually, which occurs at an income level of \$20,970. This accounts for the bump visible between \$17,450 and \$20,970 for Alberta. As of 2009, these premiums are scheduled to disappear in Alberta. More striking is British Columbia. Here, the Medical Services Plan premiums are charged at different rates for different levels of income. For example, below \$20,000 full relief is available. Between \$20,000 and \$22,000, 20% relief from the premiums is available. However, this means that as one earns one more dollar from \$19,999 to \$20,000, the Medical Services Plan liability increases by 20% of the full premium (\$648) which is \$129.6. So, taxes go up well in excess of the dollar earned, leading to a tax

Figure 7: Marginal Tax Rate at Different Income Levels for Single Individual



Note: The line shows the marginal tax rate at the indicated income level. * infinite marginal tax rate due to health premiums (see text).
Source: Calculations from the CTaCS calculator.

Figure 8: Marginal Tax Rate with Refundable Tax Credits at Different Income Levels for Married Family with Two Children



Note: The line shows the marginal tax rate including refundable tax credits at the indicated income level. * infinite marginal tax rate due to health premiums (see text).
 Source: Calculations from the CTaCS calculator.

rate greater than 100%.¹² There are five of these thresholds between \$20,000 and \$28,000, accounting for the five large spikes in the graph.

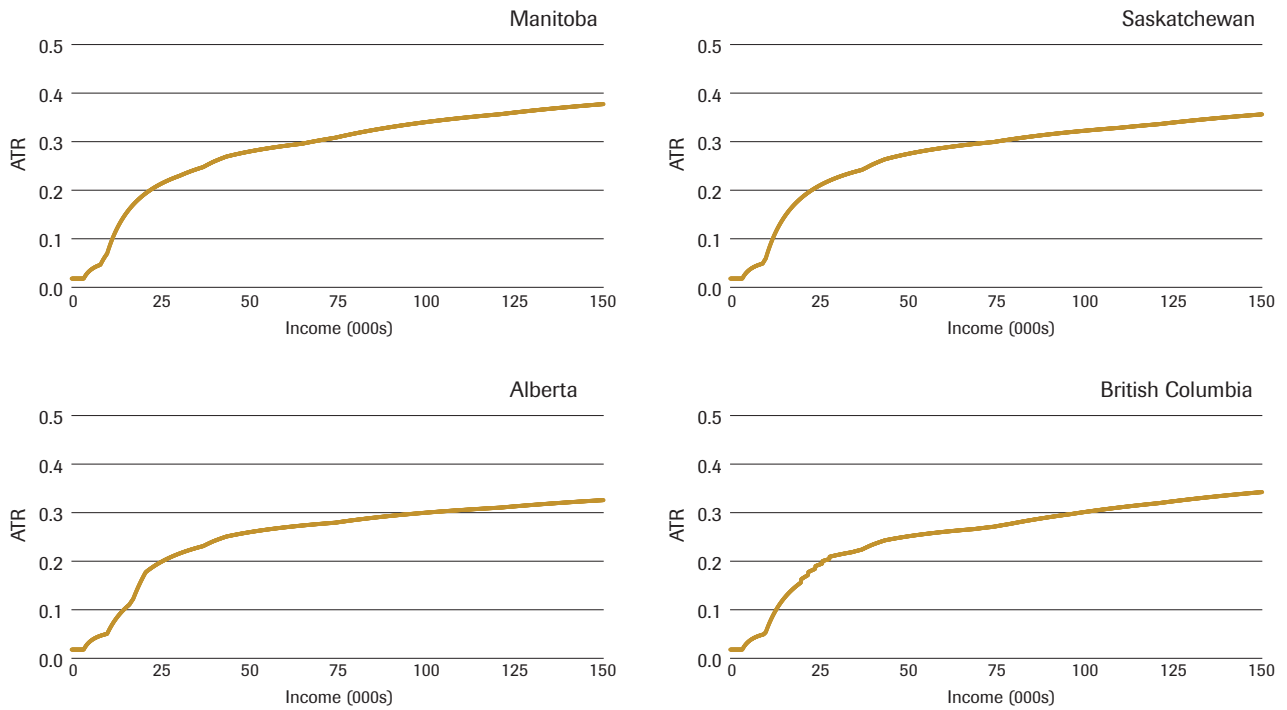
In Figure 8 are graphed the marginal tax rates for a married family with two children at different income levels. The substantial difference in these graphs compared with the single individuals in Figure 7 is the refundable child tax credits. The claw-back income ranges for these income-tested benefits starts around \$15,000 and therefore elevates the marginal tax rates of these families substantially. For example, the claw-back rate for the federal National Child Benefit Supplement for families with two children is 23% for income above \$21,827. However, with the exception of the Canada Child Tax Benefit, these claw-backs are complete by the time income reaches around \$40,000. This leads to marginal tax rates at middle income levels of \$25,000-\$40,000 that exceed the marginal tax rates faced by the highest income earners.

One interesting feature that can be seen in Figure 8 is in Saskatchewan. There are large negative marginal tax rates, implying a subsidy to earn more income. This results from the Saskatchewan Employment Subsidy, which is phased-in with earned income at a rate of 25% when there are two children. The Alberta Family Employment Tax Credit is similar, but is only phased-in at a rate of 8%, leaving a less dramatic impact on the graph. These phased-in benefits have the impact of increasing the incentive to work over the phase-in range because the marginal tax rate is low—or even negative.

The next graphs in Figure 9 examine the average tax rate across income levels in 2007 for a single individual. The steeper the line, the more progressive the average tax rate is, since when the line is steep, the tax burden is growing quickly with income. The first, most overwhelming impression from Figure 9 is that most of the progressivity in the system occurs over the first \$50,000 of income. The average tax rates in the four provinces at \$50,000 range from 25.1% in British Columbia to 27.9% in Manitoba. After that point, the lines flatten out quite considerably.

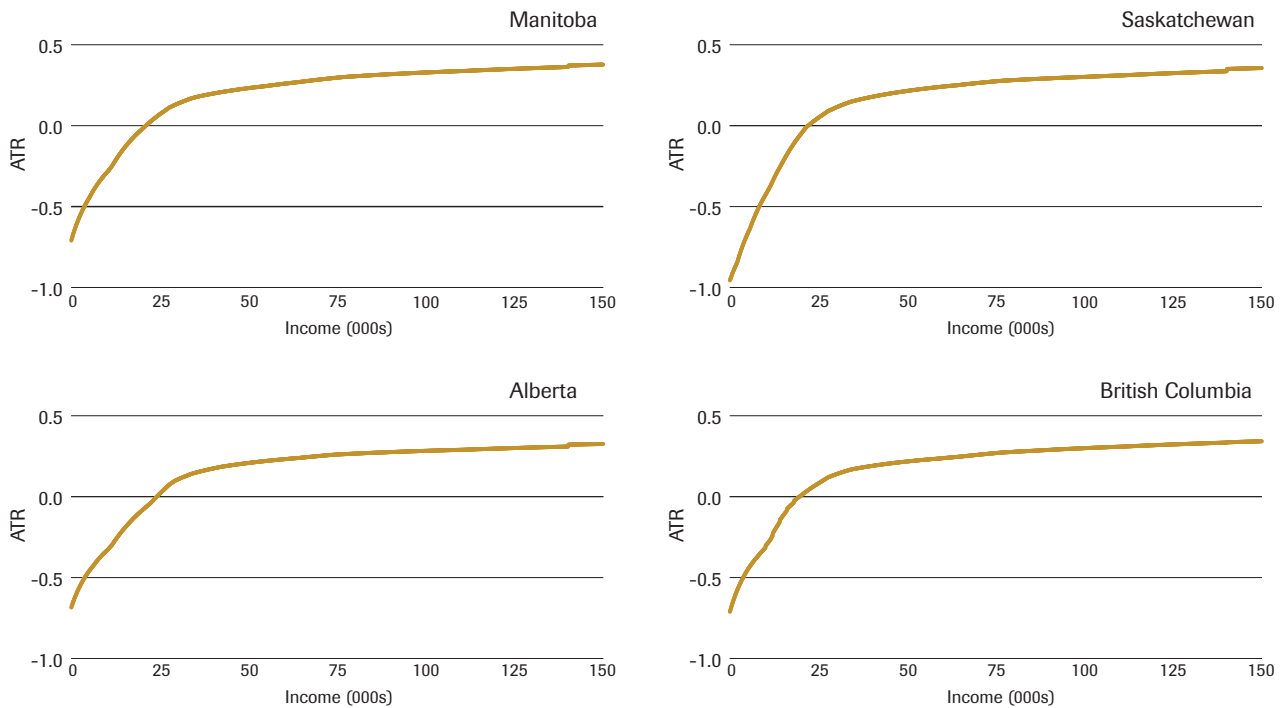
¹² In fact, at each of the threshold points such as \$20,000, the marginal tax rate is infinite.

Figure 9: Average Tax Rate at Different Income Levels for Single Individual



Note: The line shows the marginal tax rate at the indicated income level. Source: Calculations from the CTaCS calculator.

Figure 10: Average Tax Rate with Refundable Tax Credits at Different Income Levels for Married Family with Two Children



Note: The line shows the marginal tax rate at the indicated income level. Source: Calculations from the CTaCS calculator.

The second point about Figure 9 is that the progressivity past \$50,000 varies considerably by province. In Alberta, the average tax rate at \$150,000 is only 6.6% higher than at \$50,000, while in Manitoba it is 9.8% higher. This results from Alberta's flat income tax rate of 10%, compared to Manitoba's 17.4% rate on higher earners.

The final set of graphs for the simulations appears in Figure 10, which shows the average tax rates for a family with two children. Because this graph accounts for the refundable tax credits, the average tax rates are lower than for a single person, especially at lower income levels. With the refundable tax credits taken into account, the average tax rates schedules appear extremely L-shaped (with the "L" rotated). This reflects the fact that lower income Canadians escape income taxation and receive child benefits, but once modest income levels are obtained, very high marginal tax rates are used to raise the tax burden substantially and very quickly. It is noteworthy how little progressivity is evident when comparing high to middle income earners.

The analysis of average and marginal tax rates across income groups for 2007 has revealed two major findings. First, the large preponderance of progressivity in the personal income tax is compressed into a very narrow range of income between \$10,000 and \$40,000, with much smaller increases at higher incomes. Second, there are strong differences in the approaches taken in different provinces, with a much flatter system in Alberta, but relatively strong progressivity in British Columbia and Manitoba.

7. International Comparisons

To place the findings about the income tax system in western Canada in context, this section of the paper compares the personal income tax system of several major trading partners. These comparisons are important for two reasons. First, investment dollars may flow to lower tax jurisdictions, and this investment may increase economic growth and prosperity. Second, differences in average tax rates may be important for explaining patterns of international migration. Below, each of the five countries is covered with reference to the main features of its income tax system. Because space only permits a very brief review, this analysis is far from comprehensive. In all cases, the

information has been taken from the websites of each country's tax authorities using the 2007 year unless otherwise specified.

United States

The American income tax system, like Canada's, has significant national and sub-national (state and even municipal) components.¹³ The definition of taxable income, while not identical to Canada's, is quite similar and has its roots in the Haig-Simon tradition discussed earlier. There are preferential rates for capital gains and for dividends. One substantial difference is that many tax preferences (such as the "standard deduction") are deductions from income rather than credits against tax. This makes the comparison of tax brackets a bit difficult, since an individual with \$20,000 of earnings in Canada might have \$20,000 of taxable income but in the United States would be able to deduct \$3,500 as a personal exemption and \$5,350 as a standard deduction, leaving only \$11,150 of taxable income.

There are five tax brackets, taking the following structure:

- 10% on the first \$7,825
- 15% on any amount over \$7,825 and less than \$31,850
- 25% on any amount over \$31,850 and less than \$77,100
- 28% on any amount over \$77,100 and less than \$160,850
- 33% on any amount over \$160,850 and less than \$349,500
- 35% on any amount over \$349,500

A striking feature of this structure is the continued progressivity well past \$150,000. This contrasts with Canada, which features no change in progressivity beyond \$120,887. Moreover, high income earners in the United States have their personal exemptions phased-out.

State income taxes in the United States are very diverse. There is no equivalent to the Tax Collection Agreements in Canada, so

¹³ Information for the United States is taken from the IRS website at: <http://www.irs.gov/formspubs/article/0,,id=164272,00.html>.

each state designs its own tax forms and collects its own taxes. Several states have no state income tax at all. Many others have a flat tax rate, while the remaining states have a rate-bracket system. The highest rate that can be found is in California, at 9.3% for incomes over \$43,468. This rises to 10.3% for incomes over \$1 million.

Some municipalities, such as New York, levy an income tax. For example, New York's rate is 3.648%.¹⁴ Payroll taxes for Social Security and Medicare are also levied on employees on earnings up to \$102,000 at a combined rate of 7.65%.

United Kingdom

The income tax in the United Kingdom is again quite similar in many respects to those in Canada and the United States, rooted in the Haig-Simon tradition.¹⁵ The tax year is from April 1 to March 31, which is different from the calendar year system employed in Canada and the United States. There are preferential rates for dividend income, and, as of April 2008, a special preferential rate on all savings income. Capital gains are taxed at the regular rate, but there is a fairly large exemption (£9,200 in 2007-08) before tax becomes payable.

The rate structure in 2007-08 took the following form:

- 10% on the first £2,230
- 22% on amounts higher than £2,230 and less than £34,600
- 40% on amounts higher than £34,600.

As of April 2008, the 10% bracket has been eliminated and the "basic" rate has been changed from 22% to 20%. This reduces the number of brackets in the United Kingdom down to just two. This contrasts with Canada and the United States. Moreover, there is no progressivity in the income tax past £34,600, approximately \$70,000 at current exchange rates. There are also National Insurance contributions between the lower and

upper tax bracket thresholds in the amount of 11%, which is substantial.¹⁶

Japan

Japan levies an income tax on a comprehensive income base.¹⁷ There is no preference for dividend income, but only a percentage of capital gains is included in income. The rates take the following form:

- 5% on amounts up to 1,950,000 yen
- 10% on amounts between 1,950,000 and 3,300,000 yen
- 20% on amounts between 3,300,000 and 6,950,000 yen
- 23% on amounts between 6,950,000 yen and 9,000,000 yen
- 33% on amounts between 9,000,000 and 18,000,000 yen
- 40% on amounts over 18,000,000 yen.

The Canadian dollar is worth approximately 104 yen, meaning that the top tax bracket starts at a level equivalent to \$173,077. Importantly, there is an additional 10% levied at all income levels for local and prefecture taxes. The net effect of this structure is a system with a high degree of progressivity quite far up the income distribution. The rates at high income levels are higher than in Canada, the United States, or the United Kingdom.

China

The Chinese income tax looks less like a Haig-Simon comprehensive income tax and more like a "tabular" system that charges different rates for different types of income.¹⁸ There are special rates for interest income, capital gains, wages, and earnings, among others. For income from salary, the first 9,600 yuan per year is exempted. (There are 6.6 Yuan per Canadian dollar.) For any remaining income, there is a progressive structure

¹⁶ National Insurance information is from: <http://www.hmrc.gov.uk/rates/nic.htm>.

¹⁷ Information on Japan comes from the Ministry of Finance: http://www.mof.go.jp/english/tax/taxes2006e_c.pdf.

¹⁸ Information for China taken from the website of the Beijing tax bureau: <http://english.tax861.gov.cn/zgszky/zgszky09.htm>.

¹⁴ See http://www.nyc.gov/html/dof/html/services/business_tax_nys_income.shtml for details on the New York income tax.

¹⁵ Information on the income tax in the United Kingdom is taken from Her Majesty's Revenue and Customs at <http://www.hmrc.gov.uk/rates/it.htm>.

of 10 brackets with rates ranging from 5% for 6,000 yuan per year up to 45% for amounts over 1,200,000 yuan per year. The top bracket threshold is equivalent to \$181,818 per year.

Hong Kong

Hong Kong, like China, has more of a tabular system than a Haig-Simon comprehensive income tax.¹⁹ There are three categories of income—profits, salaries, and property. For the salaries tax, there is a very large personal allowance of \$100,000 for a single person or \$200,000 per couple, with an additional \$50,000 per child (\$100,000 per newborn). One Canadian dollar is worth 7.53 Hong Kong dollars. This means a couple with two children would not pay tax on their first \$300,000 of income (equal to \$39,841 Canadian). On the remaining income after the personal allowances, the salaries tax is progressive, with the following rate structure in 2007-08:

- 2% on first \$35,000
- 7% on amounts from \$35,000 to \$70,000
- 12% on amounts from \$70,000 to \$105,000
- 17% on amounts over \$105,000.

In 2007-08, there was a special one-time abatement of 75% of the taxes owing up to \$25,000, reflecting a budget surplus. Compared to Canada, the United States, or the United Kingdom, these are very low tax rates.

Summary

The income tax system in western Canada shows strong differences from, but some similarities to, the other countries in the comparison group selected for this section. Like the United States, the United Kingdom, and Japan, the roots of today's system are found in the comprehensive Haig-Simon tradition. However, like China and Hong Kong, there is a move toward more of a tabular system with special rates for different types of capital income. Income tax rates in western Canada are not strongly different from the other countries selected, with the noticeable exception of Hong Kong which has extraordinarily

low income tax rates. Finally, on progressivity the income tax in western Canada appears to be more progressive than that in the United Kingdom or Hong Kong, but perhaps less so than in the United States or Japan.

8. Policy Discussion

The analysis and findings of the previous sections lead now to a discussion of public policy. In this section, I introduce three areas where the analysis suggests policy action might be considered. I adopt a framework of revenue neutrality here; any policy options considered should neither increase nor decrease the total revenue from the personal income tax system. I adopt this framework because a decision to raise or lower the overall tax take is intimately tied to decisions about what and how much provincial governments should spend, and that is beyond the scope of this paper. Similarly, shifts between corporate income taxation, consumption taxation, property taxes, or environmental taxes might be very worthy of consideration, but they require analysis that has not been completed here. By sticking to a stance of revenue neutrality, focus on the structure of the personal income taxation system can be maintained, with a target to designing the best personal income tax system possible in order to raise the revenue required.

This section proceeds by discussing each of the three potential areas of PIT policy innovation, drawing on the evidence and analysis presented earlier in the paper. Both the positives and the negatives of policy action are considered. Decisive recommendations are left to the next section.

Tax Collection Agreements

Currently, all provinces except for Quebec have signed Tax Collection Agreements with the federal government. This includes the four western provinces. As an agreeing province, the Canada Revenue Agency collects tax revenue on behalf of the province and remits it to the provincial government. The agreeing provinces are constrained to use the taxable income definition set out by the federal government and there are some further, more minor, restrictions. If a province were to pull out of the Tax Collection Agreement, it would have to set up its own personal income tax collection administration.

¹⁹ Information for Hong Kong taken from Internal Revenue Department for the Hong Kong Special Administrative Region: http://www.ird.gov.hk/eng/tax/ind_sal.htm.

The main advantage of pulling out of the Tax Collection Agreement is autonomy. Currently, if the federal government makes changes to the definition of taxable income either by changing what is included in total income or by altering the allowable deductions and exemptions from total income, provincial government revenues are affected unless they change their tax rates to adjust. With its own tax administration, a province would not be subject to any changes made by the federal government.

The main advantages of staying in the Tax Collection Agreement are cost and simplicity. If a province chooses a structure similar to the federal government for its credits, the tax administration provided by the Canada Revenue Agency is free of charge. The simplicity advantage is more subtle. By having one set of similar tax forms for all jurisdictions in the country, the tax system becomes more transparent. In a perhaps small way, interprovincial mobility of labour and capital is enhanced. The twist here is that this benefit does not accrue only to the province that signs a Tax Collection Agreement, but to residents of all provinces who might benefit from the transparency and simplicity. This provides an extra reason for the federal government to want to enter into a Tax Collection Agreement with each province in order to strengthen the economic union.

Tax credits

The second potential area for policy innovation is tax credits. The current tax on income (TONI) system allows for a lot of flexibility in determining the non-refundable tax credits that are recognized by a provincial government. For example, only two provinces (Manitoba and Nova Scotia) have followed the federal government in introducing a children's fitness tax credit. As another example of innovation, Prince Edward Island now has recognition for costs for school supplies incurred by teachers. Moreover, even if the credit is for the same category of expense as a federal credit, provinces may choose a different amount at which the credit can be capped. For example, the pension income credit was expanded to \$2,000 by the federal government, a move that was only adopted by the territorial governments of Yukon and Nunavut.

There are four options that could be considered for tax credits. First, a province could revert to simply taking the value of federal credits on the province's tax form. This approach has been taken by the Yukon. The advantage is simplicity, but the cost is the loss

of any local control over not just the distribution of who gets credits, but also revenue changes.

A second option to innovate with credits is to replace the sundry credits for different types of expenditures with one big basic amount. Rather than increasing compliance costs to filers and adding to administrative complexity with the currently large number of credits, having just one big credit enhances simplicity by streamlining the tax system. Because the credit rate at the provincial level is typically small, the cash value of the credits is not large. For example, the \$500 children's fitness tax credit if adopted in British Columbia would yield just \$28.50 (\$500 times the credit rate of 5.7% in 2007). This is unlikely to change behaviour noticeably, generates compliance and administrative costs, and further complicates the tax system.

A third approach is the opposite of the above—add new credits in strategically important areas of social concern or targeting groups in special need of assistance. The advantage comes from being able to use the powerful information collected by the tax system to target programs more accurately. The disadvantage is the increasing complexity and the possibility that the tax system becomes a source of political payoffs to vocal or politically important interest groups.

Finally, the credits could be adjusted annually for inflation. Currently, some provinces do this while others do not. Without an annual adjustment for inflation, pay increases that keep real purchasing power constant will be taxed more heavily because the credits do not keep pace with generally rising prices. The disadvantage here is a budgetary cost of foregone implicit tax increases generated by inflation.

Tax rates

The final potential area for innovation in the provincial PIT system is the rate structure. Provinces have considerable flexibility in setting the rates and brackets in the TONI system. This has been seen in the analysis here, with Alberta's single rate producing some very different results than British Columbia's sharply progressive five brackets or Manitoba's three brackets with high rates. I consider two possibilities—expanding the number of rates and brackets or contracting them down to one.

The main advantage of multiple brackets is the flexibility to affect the progressivity of the personal income tax. While provincial

income tax is not as large as the federal tax, the analysis in this paper and in Frenette, Green and Milligan (2008) has shown that the choices made by provincial governments can still have substantial impact on average tax burdens across different income groups. With more brackets, like British Columbia, there can be more differences in the tax treatment of lower and higher income individuals. If there is a desire among the population in a province to mitigate in part the strong upward trend in market income inequality, adding more income tax progressivity could help. In the international analysis, both the United States and Japan had much more progressivity higher up the income distribution than is the case in Canada. On the other hand, the United Kingdom and Hong Kong showed less progressivity. A disadvantage of having several brackets is complexity. Not only does complexity decrease the transparency of the system, but it also creates opportunities for wasteful tax avoidance. Having higher rates at high income levels could also damage work effort and investment returns.

Moving the tax system in the other direction, provinces could adopt a rate structure like Alberta's single rate. Because other provinces have higher revenue requirements from their income taxes, the rate in other provinces would most likely have to be higher than the 10% currently used in Alberta. Having a lower rate could improve work, savings, and investment incentives for those seeing rate drops. As was seen in the simulations, however, the move in Alberta to the 10% rate actually increased the marginal tax rate faced by the P25 individuals, so it is not obvious that a move to a single rate would improve incentives for everybody. Moreover, the average tax rate was the least progressive in Alberta, which might not match well with the redistributive preferences of the citizens of other provinces. On the plus side, an advantage of the single rate system is the simplicity. Having only one tax rate increases the transparency of the system and also minimizes tax planning and intrafamilial tax arbitrage strategizing.

With market incomes growing much more strongly at the top than in the middle, holding the tax system constant means that after-tax inequality will continue to grow. The simulations in this paper show a remarkable lack of progressivity in average tax rates at higher income levels where the inequality in market incomes has been growing. In the United States, someone earning \$350,000 faces a 7% higher tax rate than someone earning \$150,000, reflecting an assessment among Americans

that a \$350,000 earner has a higher ability to pay. In Canada, the tax rate in all provinces for the two individuals would be the same. This may reflect a different assessment by Canadians about the relative abilities to pay of the \$150,000 and \$350,000 individuals. It also may reflect a desire not to upset the incentives of the highest earning and most productive members of society, in order to keep them productively employed.

9. Policy Recommendations

In this section, I provide clear recommendations for the personal income tax system of the western Canadian provinces based on the analysis presented in this paper. With each recommendation is a small discussion of my assessment of the merits of the policy. The section closes with a brief discussion of options not taken.

1. Remain in the Tax Collection Agreements

The provinces should remain signatories to Tax Collection Agreements with the federal government. The advent of the tax on income system since 2001 has given the provinces ample flexibility to design and create a personal income tax system that reflects the values and needs of its citizens.

This recommendation comes with two caveats. First, the price charged by the Canada Revenue Agency for the design of specialized credits should be comparable or better than what it would cost a province to collect the tax on its own. If the federal government doesn't offer a good deal, the Tax Collection Agreement should be reconsidered. Second, the definition of taxable income (comprised of total income less deductions) should be monitored closely to ensure that federal changes do not have adverse impacts on provincial revenues.

2. All provinces should index tax credits and brackets to inflation

When tax credits and brackets are not indexed to inflation, nominal pay increases that don't enhance real purchasing power lead to higher average tax burdens; a stealth tax increase. For the sake of transparency, all tax brackets and credits should be fully indexed to inflation in each province. Manitoba is the

only western province that has not indexed its personal income tax system.

3. Stop expanding non-refundable credits

Instituting non-refundable credits for new categories of spending generates complexity, administrative, and compliance costs. They also cost revenue that must be made up elsewhere; the foregone possibility of lower rates. A PIT system with ever-expanding nonrefundable tax credits is one that has high marginal tax rates yet raises less revenue, which is not a good feature for a tax system. While seemingly legitimate equity or social concerns do generate some of the demands for new tax credits, a return to a simple standard of redistributing on a basic measure of ability to pay is preferable.

4. Consolidate some existing non-refundable credits

Many of the existing tax preferences recognized by non-refundable credits can be justified as reflecting a decrease in one's ability to pay or as a cost of earning income. However, others are harder to justify. Specifically, the age amount for those age 65 or higher perhaps was meant to account for special expenses that are incurred by the elderly compared to a young person with similar income. However, there are now also credits for caregiver expenses and an existing credit for medical expenses, creating duplication. Furthermore, it is hard to understand a justification for pension income receiving special tax preference. These credits could be rolled into a larger age credit that aims to recognize that seniors have special expenses, but only recognizes this once and in one place.

5. Consider increasing progressivity at the top

The degree of progressivity in the income tax system should reflect the values of the citizens of each province. For that reason, I am reluctant to recommend strongly a change to progressivity. However, I do recommend that each province consider whether its tax system could be adjusted to account for the increasing market income inequality that has occurred over the last 25 years. This increase in inequality has occurred primarily at the very top of the income distribution, and a steepening of the progressivity there could to some degree mitigate this long-term trend.

10. Conclusions

This paper has reviewed the personal income taxation system in the provinces of western Canada. Beginning with an overview of the importance of PIT as a revenue source and as a factor in determining economic behaviour, I progressed to describe its historical development and principal features. Simulations provided evidence that tax rates have risen for middle income individuals at the same time as they have fallen for high income individuals. When refundable tax credits are considered, average tax rates for both high and lower income families have fallen considerably, but those in the middle have not. Moreover, there were substantial differences across provinces, indicating substantial scope for provincial governments to affect their economies through their PIT choices.

The paper closed with recommendations for some innovations to the existing structure, including a call for the western provinces to remain in the tax collection agreements, index their systems to inflation, and to simplify and rationalize their non-refundable credits. I also recommended a reconsideration of the progressivity of the rate structures.

As the provinces of western Canada continue to adjust their tax systems to the changing needs and priorities of the dynamic economy, the personal income tax remains a central pillar in provincial revenue structures. Improving the personal income tax can yield benefits not only by improving incentives for work, investment, and saving, but also in providing a degree of fairness that reflects the values of western Canadians.

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