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*C.D. Howe Institute*  
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***Communiqué***

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***Reduce reliance on personal income taxes  
in next round of federal tax reform,  
says C.D. Howe Institute study***

The next round of reform and cuts to federal taxes should focus on bringing down overall personal tax rates, so that the tax mix depends relatively more on consumption taxes rather than income taxes, says a study released today by the C.D. Howe Institute. And Ottawa should pay more attention to payroll tax design, the study suggests, since payroll taxes that are clearly seen to fund desired benefits contribute to a more smoothly functioning economy, with better outcomes for retired, current, and future Canadian workers.

The study, *Mixing It Up: Directions for Federal Tax Reform*, was written by Jean-Yves Duclos and Julie Gingras, economists at l'Université Laval.

Duclos and Gingras note that the 1987 federal tax reform initiative was driven by evidence that consumption taxes compare well with income taxes in delivering growth and fairness, two sometimes conflicting goals of Canada's tax system. More than a decade later, however, the tax revenues of Canadian governments remain stubbornly weighted in favor of personal income tax (PIT).

The Canadian tax system is, in fact, an outlier in international terms, Duclos and Gingras say. In an era marked by reform and reduction measures around the globe, Canadian governments' overall income tax rates as well as marginal tax rates (the tax take on the next dollar a taxpayer earns) have remained high or have actually increased. The growth and persistence of federal and provincial surtaxes, rising provincial tax rates, and the insidious effect of inflation on a tax system that does not adjust properly for inflation have acted in concert to keep PIT revenues at historically high levels, despite recent action on some of these fronts.

The authors argue that Canadian taxes on wage income, whether extracted through income taxes or payroll taxes, make an employer's cost of hiring workers significantly greater than the net wages those workers receive. The larger that difference, the greater is the cost to the economy in the form of lost income and growth. And because income taxes, unlike consumption taxes, also apply to the return from savings, the Canadian economy experiences less capital investment and lower productivity and income growth than it could.

Duclos and Gingras also argue that the design of payroll taxes matters. Although nominally charged to employers, payroll taxes are shifted to employees, through lower wages, or to consumers, through higher prices. Either route involves economic adjustment costs that could

be avoided if payroll tax changes were directed more transparently at the employee's share, rather than the employer's share. Required future increases to fund the Canada and Quebec Pension Plans should, therefore, focus on employee premiums, rather than on employer premiums. Payroll tax design should also recognize that workers accept such taxes more easily when they are transparently linked to funded benefits. This means, for example, that employment insurance premiums should be clearly attached to the cost of the underlying program, which itself should be clearly understood and accountable. It also implies that, for the sake of efficiency and equity, payroll taxes that fund general government activity should be uncapped and broadly based.

This is the sixth in a series of C.D. Howe Institute Commentaries called "The Taxation Papers." The series deals with the tax policy opportunities presented by Canada's rapidly changing fiscal environment — in particular, ways to reform personal income tax policy within a sound economic framework, rather than allowing policy to be driven by short-term political considerations. Other papers in the series establish the fiscal room for tax reduction; show how taxes interact with federal and provincial social support programs; establish more equitable methods of taxing families; show how personal income taxes have been or should be adjusted for inflation; and synthesize these issues within a rational framework for tax reform and tax reduction.

The series editors are Jack M. Mintz, who is Arthur Andersen Professor of Taxation at the Joseph L. Rotman School of Management, University of Toronto, and Finn Poschmann, a Policy Analyst at the C.D. Howe Institute.

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## **Communiqué**

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**Embargo : à diffuser le mardi 15 juin 1999 à 10 h**

### ***Une étude de l'Institut C.D. Howe suggère de réduire la dépendance envers l'impôt sur le revenu des particuliers dans le cadre de la prochaine série de réformes de l'impôt fédéral***

La prochaine série de réformes et de réductions de l'impôt fédéral devrait mettre l'accent sur une diminution générale des taux d'imposition sur le revenu des particuliers, afin que la composition des recettes fiscales dépende plus largement des taxes de consommation que de l'impôt sur le revenu, affirme une étude publiée aujourd'hui par l'Institut C. D. Howe. De plus, l'étude suggère qu'Ottawa prête davantage attention à la composition des charges sociales, car lorsque ces dernières sont clairement perçues comme un financement d'avantages souhaités, elles contribuent à une économie qui fonctionne rondement et offrent de meilleures conditions aux retraités, et aux travailleurs actuels et en puissance du Canada.

Intitulée *Mixing It Up: Directions for Federal Tax Reform (Remaniement : directives pour la réforme de l'impôt fédéral)*, l'étude est rédigée par Jean-Yves Duclos et Julie Gingras, économistes à l'Université Laval.

Les auteurs soulignent que l'initiative de réforme de l'impôt fédéral qui a eu lieu en 1987 reposait sur le fait que les taxes de consommation se comparent avantageusement à l'impôt sur le revenu en matière de croissance et d'équité, deux objectifs souvent contradictoires du régime fiscal canadien. Cependant, plus d'une décennie plus tard, les recettes fiscales des administrations canadiennes dépendent encore lourdement de l'impôt sur le revenu des particuliers.

Selon M. Duclos et M<sup>me</sup> Gingras, le régime fiscal canadien est un cas particulier sur le plan international. En effet, dans une ère marquée par les réformes et les mesures de réduction partout dans le monde, les taux d'impôt généraux sur le revenu et les taux marginaux d'imposition (soit le montant d'impôt prélevé sur tout dollar supplémentaire gagné par un contribuable) sont restés élevés et ont même augmenté. La croissance des surtaxes fédérales et provinciales et leur permanence, la poussée des taux d'imposition provinciale et l'effet insidieux de l'inflation sur un régime fiscal qui n'en tient pas véritablement compte ont travaillé de concert pour produire des recettes de l'impôt sur le revenu des particuliers dont le montant a atteint des niveaux historiques, et ce malgré des mesures récentes prises sur plusieurs de ces fronts.

Les auteurs soutiennent que les taxes canadiennes sur le revenu salarial, qu'elles proviennent de l'impôt sur le revenu ou des charges sociales, produisent pour les employeurs un coût d'embauche des travailleurs nettement plus élevé que le salaire net que reçoivent ces derniers. Plus l'écart est grand, plus il en coûte à l'économie sous forme de manque à gagner et de croissance perdue. Et étant donné que les impôts sur le revenu, contrairement aux taxes de consommation, s'appliquent également au rendement de l'épargne, l'économie canadienne souffre d'un niveau moindre d'investissement en capital, de productivité et de croissance des revenus qu'il en serait autrement.

M. Duclos et M<sup>me</sup> Gingras affirment également que la composition des charges sociales est en cause. Bien qu'elles soient essentiellement perçues auprès des employeurs, les charges sociales sont en fait transférées aux employés, par le biais de salaires moindres, ou aux consommateurs, par le biais de prix plus élevés. Quelle que soit la méthode choisie, elle entraîne des coûts économiques de redressement qui pourraient être évités en axant toute modification des charges sociales de manière plus transparente sur la part de l'employé plutôt que sur celle de l'employeur. Ainsi, toute hausse future nécessaire pour financer les régimes de pensions du Canada et du Québec pourrait porter sur les cotisations de l'employé plutôt que sur celles de l'employeur. La composition devrait également tenir compte du fait que les travailleurs acceptent de tels impôts plus facilement lorsqu'ils sont liés de manière transparente au financement des prestations. Il faudrait donc par exemple clairement lier les cotisations d'assurance-emploi aux coûts du programme sous-jacent, selon une méthode responsable qui devrait être distinctement comprise. De plus, dans un souci d'efficacité et d'équité, il faudrait que les charges sociales qui financent les activités générales du gouvernement portent sur une grande échelle, sans être assujetties à un plafond.

Ce document est le sixième volet d'une série de Commentaires de l'Institut C.D. Howe intitulée « Les cahiers de la fiscalité ». Celle-ci traite des possibilités de politiques fiscales qu'offre le milieu fiscal en évolution rapide au Canada et plus particulièrement, des moyens de réformer les politiques de l'impôt sur le revenu des particuliers dans un cadre économique rationnel, plutôt que de laisser des raisons politiques à court terme dicter ces politiques. Les autres documents qui font partie de cette série cherchent notamment à établir la marge fiscale pour une réduction d'impôt, à démontrer l'interaction des taxes et des programmes d'aide sociale provinciaux et fédéraux, à établir des méthodes plus équitables d'imposition des familles, à indiquer comment l'impôt sur le revenu des particuliers a été rajusté ou devrait être rajusté en fonction de l'inflation, et à résumer toutes ces questions dans un cadre rationnel pour la réforme fiscale et la réduction d'impôt.

La série est dirigée par Jack Mintz, professeur de fiscalité titulaire de la chaire Arthur Andersen à l'École de gestion Joseph L. Rotman de l'Université de Toronto et Finn Poschmann, analyste de politique auprès de l'Institut C.D. Howe.

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L'Institut C.D. Howe est un organisme indépendant, non-partisan et à but non lucratif, qui joue un rôle prépondérant au Canada en matière de recherche sur la politique économique. Ses membres, individuels et sociétaires, proviennent du milieu des affaires, syndical, agricole, universitaire et professionnel.

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# Mixing It Up: Directions for Federal Tax Reform

by

*Jean-Yves Duclos  
and  
Julie Gingras*

The 1987 federal tax reform initiative was driven by evidence that consumption taxes compare well with income taxes in delivering growth and fairness, two sometimes conflicting goals of Canada's tax system.

More than a decade later, however, Canadian governments continue to rely heavily on the personal income tax. The growth and persistence of federal and provincial surtaxes, rising provincial tax rates, and the effect of inflation on a partially indexed tax system have brought federal tax revenues to historically high levels.

Canadian taxes on wage income, whether extracted through income taxes or payroll taxes, make the cost to an employer of hiring workers significantly greater than the net wages those workers receive. The larger that difference, the greater is the cost

to the economy in the form of lost income and growth. And because income taxes, unlike consumption taxes, also apply to the return from savings, the Canadian economy experiences less capital investment and lower productivity and income growth than it could.

The upcoming round of reform and cuts to federal taxes should focus on bringing down overall personal tax rates, so that the tax mix depends relatively more on consumption taxes rather than income taxes. And Ottawa should pay more attention to payroll tax design, since payroll taxes that are clearly seen to fund desired benefits contribute to a more smoothly functioning economy, with better outcomes for retired, current, and future Canadian workers.

## *Main Findings of the Commentary*

- Consumption taxes compare well with income taxes in delivering both growth and prosperity; they also manage a good tradeoff between the efficiency and equity goals that Canadians usually assign to their tax system.
- The 1987 federal tax reform initiative was driven by just that view. Yet, more than a decade later, Canadian governments' tax revenues remain stubbornly weighted in favor of personal income tax (PIT). The growth and persistence of federal and provincial surtaxes, rising provincial tax rates, and the insidious effect of inflation on a tax system that does not adjust properly for inflation have acted in concert to keep PIT revenues at historically high levels, despite recent action on some of these fronts.
- The Canadian tax system is, in fact, an outlier in international terms. In an era marked by reform and reduction measures around the globe, Canadian governments' overall income tax rates as well as marginal tax rates (the tax take on the next dollar taxpayers earn) have remained high or have actually increased, despite domestic efforts at reform.
- Taxes on wage earnings (whether extracted through income taxes or payroll taxes) drive a wedge between the cost to an employer of hiring workers and the net benefit those workers receive from working. The bigger the wedge, the more distorted are the incentives and prices all Canadians face, and the bigger is the cost to the economy in the form of lost income and growth. Canada's high average and marginal tax rates imply that this destructive wedge is large. Because income taxes are assessed on the returns from saving as well as on wages, the Canadian economy also experiences less capital investment and lower productivity and income growth than it could.
- The implication is that the up coming round of federal tax reform and tax reduction should focus on bringing down overall PIT rates, on average and at the margin, so that the tax mix is weighted relatively more toward consumption and less toward income.
- The design of payroll taxes matters. Although nominally charged to employers, payroll taxes are shifted to employees, through lower wages, or to consumers, through higher prices. Either route involves economic adjustment costs that could be avoided if payroll tax changes were directed more transparently at the employee's share, rather than the employer's share. Required future increases to fund the Canada and Quebec Pension Plans should, therefore, focus on employee premiums, rather than on employer premiums.
- Payroll tax design should also recognize that workers accept such taxes more easily when they are transparently linked to funded benefits. This means, for example, that employment insurance premiums should be clearly attached to the cost of the underlying program, which itself should be clearly understood and accountable. It also implies that, for the sake of efficiency and equity, payroll taxes that fund general government activity should be uncapped and broadly based.

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**T**ax systems around the world appear to have been converging during the past decade and a half. For instance, during the 1980s, most countries that are members of the Organisation for Economic Co-operation and Development (OECD) cut their top personal income tax rates by about 10 percent, and simplified and broadened their personal tax structures. Also, like Canada with its goods and services tax (GST), most developed countries now levy a broad value-added tax that raises an important part of their total tax revenues.

Such convergence can be attributed partly to the globalization of the economy and the constant pressure to maintain a competitive tax system. International competition for tax revenues, job creation, skilled labor, and domestic investment has led governments to keep a close eye on the fiscal policies of their neighbors and major trading partners. The facilitation of free trade and transnational production has also directed governments toward greater tax harmonization, partly to ease crossborder tax enforcement and to eliminate discrimination on the basis of product origin or capital ownership.

Personal taxes, however, continue to show important international differences, in both size and mix. The OECD countries still exhibit little convergence of personal taxes as a proportion of gross domestic product (GDP), and the composition of personal tax revenues varies widely among them. Nonetheless, significant trading partners and close neighbors seem to be drawing toward each other in tax size and mix, a feature that can be crucial for competitiveness and growth.

How is Canada faring with respect to other nations? Where should it be heading, especially given the recent emergence of fiscal room for tax reduction? This *Commentary* is a modest contribution to answering these questions. Our goal is to provide some guidelines and suggestions for forthcoming changes to Canada's

personal tax system in the context of competitive fiscal pressures and of the empirical and theoretical literature on tax design.

The remainder of this section contains a preview of our conclusions. We then start the body of the *Commentary* by outlining the structure of Canadian personal taxation. Next we review the economic principles of sound taxation in the light of the literature on the design of tax systems. (Because much of the theory is not specific to Canada, some of the issues we raise here are more immediately pertinent than others.) The following section sets personal taxation in Canada in an international context, and briefly describes recent tax reforms in four other countries: the United States and the United Kingdom, which are important trading partners and competitors for Canada, and Sweden and Ireland, which are interesting in that they are small, open economies recovering from serious fiscal troubles. The conclusion emphasizes some of our suggestions for the evolution of the Canadian tax system.

### *A Look Ahead*

A foretaste of our observations and advice for reform illustrates our main concerns.

### Tax Rates

In Canada, personal income tax (PIT) rates, both marginal (the rate paid on the next dollar of income earned) and average, are higher than their corresponding values in the United States. Indeed, Canada's marginal tax rates for all but the lowest-income individuals are also higher than the OECD average. Furthermore, among OECD countries, only Canada has experienced an increase in marginal rates since 1985, and personal income taxes make up an unusually large share of its total government revenues. Canadian workers who are mobile may leave the country to escape these taxes

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(especially given the proximity of the United States). Their emigration often means losing the most specialized and educated citizens, who are proportionately the largest tax contributors, and the resultant erosion of the knowledge base drives down productivity. Because Canada invests large amounts in education, losses associated with the departure of such workers may be socially substantial and entail an increase in the tax burden on those who are less mobile.

High taxation also reduces work incentives and proves detrimental to innovation, entrepreneurship, and human capital formation. For all these reasons, we believe that Canada must strive to decrease its high marginal and average PIT rates, which are important elements in the competitiveness of the fiscal system.

*Indexation.* One reason the average tax rate in Canada increased between 1984 and 1997 is the incomplete indexation of income tax brackets, which has resulted in many taxpayers' slipping into a higher tax bracket. Other countries, such as Ireland, that do not fully index their tax system have naturally seen a similar result, contributing to an erosion of the structure (in constant dollars) and to erratic effects on equity and on work and savings incentives. The reintroduction of the complete indexation of tax brackets would help ensure that the Canadian system is more a matter of sound fiscal policymaking than capricious inflationary erosion.

## The Tax Mix

Economic theory indicates that sales and payroll taxes create fewer distortions in savings and intertemporal behavior than do personal income taxes, suggesting that the federal government should increase its reliance on the former.

*Consumption Taxes.* If the aim is to keep overall revenues constant, partial replacement of the PIT with enhanced consumption taxes (the GST and retail sales taxes) would help to reduce the current disincentives to save and invest. This outcome would benefit efficiency and growth. It would also move the tax system toward the goals of the 1987 reform, which were not wholly fulfilled.

Such a shift would impose costs on low-income individuals, which could be countered by expanding the use of refundable tax credits, maintaining the progressivity of the overall tax system. Redistribution would then take place by way of the transfer system, which is by far the main source of income redistribution in Canada. This approach would also promote simplicity and neutrality in taxation.

*Payroll Taxes.* As a means of financing general government spending, capped payroll taxes, such as "contributions" to the employment insurance (EI) program, are regressive. Because they are not raised on a broad base of earnings and income (the EI base excludes, for instance, self-employment income, nonwage benefits, and returns from business, property, and financial investments), they are also a source of inequity. Moreover, the capping distorts the choices between hiring new employees and having current staff work overtime and between part-time and full-time work; the base's narrowness thus favors some types of economic activity at the expense of others.

For many workers both of these features tend to raise marginal tax rates above what they would have been in the absence of capping or in the presence of a broader payroll base. These observations are also valid for the provincial regimes of payroll taxation nominally targeted for general health care and education expenditures.

When broadly based and uncapped, payroll taxes can nevertheless serve as a useful

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source of general government revenue, not just a means of financing specific entitlements. This argument is especially strong when PIT rates are high by international standards, as is the case for Canada. But net wage rigidity appears to be higher in this country than in the United States. Hence, to limit adverse effects on employment, greater reliance on broad payroll taxation would best be accomplished by increasing the contributions of employees, rather than those of employers. Thus, if the aim is to maintain the contribution of overall payroll revenue to the financing of general government spending, a rise in broad and uncapped employees' payroll taxes would be a good complement to decreases in employers' contributions to EI and the Canada or Quebec Pension Plans (CPP/QPP).

In redesigning the structure of payroll taxation, crossnational competition is always an issue. Reliance on such taxes is, however, lower in Canada than in the United States and most other developed countries, leaving Canadian governments some room to maneuver. Indeed, it is not the size of aggregate Canadian payroll taxation that appears problematic but, rather, its structure.

What is needed is a greater link between payroll contributions and benefits. Workers' CPP/QPP premiums are used in large part as current funding for current pension benefits; they do not constitute a funded public plan clearly earmarked to pay the future pension benefits of current contributors. Hence, current workers understandably see their pension premiums as an additional form of earnings taxation, rather than as an investment for their future consumption. Because of the erratic link between past contributions and expected future benefits, these premiums are clearly also a source of intergenerational horizontal inequity.

Moreover, changes in the plans' employer contributions cannot be easily and quickly passed through to employees in the form of lower net wages since workers find it hard to

link those contributions to direct benefits for them. These structural difficulties are particularly important in the light of ongoing and future increases in CPP/QPP contribution rates. (Given changes instituted in 1998, however, CPP/QPP premiums are rising to levels that provide some element of funding.)

Similar issues arise for EI contributions. Employers' contributions are not linked to the costs imposed on the program. Thus, they act primarily as a pure payroll tax, not as an incentive to guard against the social cost of uncertain employment; moreover, most firms find it difficult to transfer the economic incidence of these premiums onto their employees. Similarly, most employees do not see how the major portion of their mandatory EI contributions affects the benefits they can reasonably expect from the unemployment system; hence, they view these contributions as a tax on their labor effort and activity and as a source of inequity.

Thus, providing a stronger link between the costs and the benefits of payroll taxation would provide better incentives for firms to create and maintain employment and for workers to invest in their human capital and to increase their work activities and effort. It would also raise public trust in the Canadian social insurance system and lead to increased equity.

## Conclusion

The difficult choices Canada faces are thus clearly about both the mix and the size of taxes. As explained below, Canadian taxpayers are at a fiscal disadvantage relative to their southern neighbors in almost every area: consumption, labor, capital, and personal income. Hence, the problem is a matter not only of altering the composition of total tax revenues but also of decreasing the overall bite. This requirement is particularly important in light of an aging population, the need to invest in education and human capital, and the ever-present risk of entering into a new economic downturn.

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Fortunately, in recent years fiscal room has emerged for a decrease in overall Canadian government revenues. This new leeway, combined with the need for restructuring the tax mix, offers an important opportunity for significant reforms that could enhance both the efficiency and the equity of personal taxation.

To achieve these goals, we envisage both a fall in the aggregate tax burden and a reallocation of the mix of personal income taxes and employer and employee payroll contributions, while consumption taxes remain broadly at their present levels.

Reductions in employers' EI contributions would be granted to firms with a good record of employment stability — a proposition also made by the Technical Committee on Business Taxation (1998); and by Boessenkool, Poschmann, and Robson (1998) — an approach that would render the EI system more efficient and conducive to job creation and stability. Employees' contributions would also be lowered, partly to compensate for the large planned increases in CPP/QPP contributions and partly to restore a degree of equity in the EI system. The reduction would be fiscally and actuarially sound in light of the large and growing EI surpluses that have been seen since 1995.

For the CPP/QPP, we believe that the level of employees' contributions should move in line with expected government liabilities for the pension entitlements of the current generation of contributors. As Pesando (1997) and Dungan (1998) argue, a practical method of effecting the change would be to privatize and fully fund these future retirement entitlements. The unfunded CPP/QPP liability for the current generation of retirees and the financing of disability, death, and survivors' benefits would then be financed through general tax revenues or through a new uncapped and broadly based payroll tax called, say, PT (Robson [1996] was one of the first to propose such a tax).

The two changes would combine to make CPP/QPP contributions act as true benefit-

linked payroll taxes. The redesigned program would thus generate positive effects on labor supply and human capital investment for the current and future generations of workers. It would also increase public trust in the future allocation of contributions and bring more transparency to the public pension system.

For workers, the increased CPP/QPP contributions and the payments under the new, broader PT would be partially offset by the proposed fall in their EI contributions. Although the net amount could be substantially greater than the present total level of CPP/QPP and EI employee contributions, the link with expected benefits would be enhanced. The result would be greater fairness in the financing of the unfunded pension liability and, with time, new intergenerational equity in the operation of the Canadian public pension system. And the PT would have a less adverse effect on employment than does the portion of CPP/QPP contributions now implicitly financing the unfunded pension liabilities because the new tax would have a broader base than the current system and because its bite would gradually disappear as those unfunded liabilities faded and eventually vanished.

With the scheme we propose, employers' pension contributions would not need to rise and, therefore, there would be no need for firms to pass rising labor costs on to employees in the form of lower gross wages or perhaps higher unemployment. This approach would facilitate growth and job creation.

Finally, PIT cuts should clearly be the priority as long-term fiscal surpluses (net of EI excess revenues) emerge. As reductions in average and marginal rates took place, Canada's fiscal competitiveness would increase, especially in relation to its southern neighbor, and prospects for savings, human capital investment, growth, and employment would be improved to the benefit of all residents.

Table 1: *Tax Rates for a Representative Canadian Taxpayer, 1984–97*

Income	Marginal Rate <sup>a</sup>				Average Rate <sup>b</sup>			
	1984	1988	1992	1997	1984	1988	1992	1997
(1987 \$)				(percent)				
0	2.3	2.3	3.0	2.9	0.0	0.0	0.0	0.0
20,000	30.9	30.0	31.1	31.0	12.6	15.1	15.9	16.6
40,000	33.8	41.1	43.7	40.8	20.9	21.7	23.2	24.7
60,000	39.3	41.4	41.5	45.5	26.3	28.1	29.3	30.1
80,000	44.1	45.8	47.7	47.0	30.8	31.8	33.3	34.3
100,000	47.7	45.8	47.7	47.0	33.4	34.6	36.2	36.8

Note: The representative taxpayer is an unmarried individual without dependants whose only source of revenue is wage income. Calculations include a representative level of provincial PIT (47 percent of the basic federal tax rate in 1984, 55 percent in 1988, 55 percent in 1992, and 54 percent in 1997).

<sup>a</sup> Marginal tax rates adjusted to reflect the GST credit and CPP/QPP and EI premiums in order to highlight their marginal impact on net income. Marginal rates apply to the first dollar earned above bracket thresholds.

<sup>b</sup> Average rates apply to all dollars earned up to the bracket threshold.

Sources: OECD 1997b; and information from Canada, Department of Finance.

## An Overview of Personal Taxation in Canada

In this section, we outline the basic structure of personal taxation in Canada in order to give a sense both of its main features and of the importance of the mix of income, consumption, payroll, and other taxes. We also show how the mix and size of taxes have evolved in the past few decades. Throughout, we set personal taxation in its federal context, showing the importance of provincial taxes in accounting for the variation of average and marginal rates across the country and across time.

The past three decades have witnessed two significant reforms to the Canadian tax system. In the mid-1960s, the Royal Commission on Taxation (the Carter Commission) examined the fiscal policy landscape of the time and advanced a number of proposals aimed at improving the system. Some of these recommendations took shape in the 1971 *Income Tax Act*.

The second major set of changes occurred in 1987. Then, the goal was to reduce the share of tax revenue derived from direct personal income taxes and to increase the share generated

by taxes on firms and on consumption. The number of tax brackets was reduced from ten to three, the federal maximum marginal tax rate was cut from 34 percent to 29 percent, and the tax base was broadened. A most important follow-up to this reform was the introduction in 1991 of the GST, a value-added tax (VAT) that follows the practice in most of the other developed countries on which we focus in this paper.

In brief, Canadian personal tax reforms followed the same broad thrust as those of many other countries. Nevertheless, most taxpayers experienced an increase in their average and marginal tax rates between 1984 and 1997 (see Table 1). Rates rose significantly at all income levels during this period, partly because of the lack of indexation for inflation and partly because of increases in provincial taxes.

Nor did the 1987 reform succeed in its goal of reducing the share of the PIT in overall tax revenues (see Table 2). At the federal level, the PIT had accounted for 52 percent of total tax revenues in fiscal year 1985/86; by 1995/96 the share was 55 percent. A similar rise occurred at

Table 2: *Federal and Provincial Personal Tax Revenues, fiscal years 1985/86 and 1995/96*

Revenue Category	Federal Government		Provincial Governments	
	1985/86	1995/96	1985/86	1995/96
	(percentage of total revenue)			
Income taxes	52.0	55.0	33.8	37.0
Consumption taxes	20.1	22.3	22.7	23.0
Payroll taxes	10.6	13.4	8.9	8.1
Property taxes	—	—	1.4	4.5
Other	17.3	9.3	33.2	27.4

Source: Information from Statistics Canada.

the provincial level. The percentage of total tax revenues drawn from consumption taxes did increase, but quite modestly in light of the reform's ambitious goal. It is not surprising, therefore, that personal tax reform seems to be on the agenda again today.

In what follows, we do not deal explicitly with corporate income taxation, although its structure should affect the choice of appropriate personal tax reforms. Corporate and personal taxation have two main links. First, the incidence of any tax on a firm falls ultimately either on the owners of the inputs it uses (capital and labor, for instance) or on the buyers of the output. Thus, the incidence of corporate taxes always falls on persons, and this burden ought to influence the proper design of personal taxation.

Second, the Canadian tax system attempts significant integration of personal and corporate taxation. Changes in one are bound to affect the other, so the two must be considered jointly in the reform of either.

### *Consumption Taxes*

As already noted, consumption taxes include both VATs and retail sales taxes (RSTs). An RST

is collected only at the point of final sale; producers and retailers do not pay it on transactions of goods for resale. In contrast, each firm must pay VAT on its inputs, which is then reimbursed (if the firm is registered); the final consumer also pays the tax.

A VAT has two principal advantages over an RST. First, it is simpler with a VAT to exempt production goods, a feature that avoids penalizing goods with multiple production stages. Second, a VAT is less vulnerable to fraud than is an RST (OECD 1995).

Since 1991, the federal government has collected a VAT (the GST) on a wide variety of goods and services, and most provinces also impose either VATs or RSTs. Today there exist the national GST, two provincial VATs (one in Quebec and one applying in the four Atlantic provinces), and four provincial RSTs (in all the other provinces except Alberta). Thus, the combined national and provincial VAT and RST rates on consumption vary between 7 percent in Alberta and 16 percent in Saskatchewan (see Table 3).

A VAT is now used by all OECD members except Australia (which is scheduled to adopt one) and the United States. Table 4 shows the rates in 1997 for the five countries on which we focus in this *Commentary*. Notice that Canada's tax rate is lower than the others'. But it is generally higher than the RST rates imposed in the United States, which has no consumption tax at the national level.

Economic theory suggests that the tax rate on each good should be inversely proportional to its elasticity of demand, thereby minimizing distortions and efficiency losses. However, a multiplicity of rates makes the administration of a tax burdensome and costly, which is why the countries that most recently introduced a VAT — New Zealand in 1986, Iceland and Japan in 1989, and Canada in 1991 — chose to have only one or two rates.

Table 3: *Combined Federal and Provincial Consumption Tax Rates*

	Federal VAT	Provincial VAT or RST	Combined Rate
		(percent)	
Newfoundland	7.000	8.000	15.000
Nova Scotia	7.000	8.000	15.000
New Brunswick	7.000	8.000	15.000
Prince Edward Island	7.000	8.000	15.000
Quebec	7.000	8.025	15.025
Ontario	7.000	8.000	15.000
Manitoba	7.000	7.000	14.000
Saskatchewan	7.000	9.000	16.000
Alberta	7.000	0.000	7.000
British Columbia	7.000	7.000	14.000

Source: Quebec, Ministère des Finances.

### *Personal Income Taxes*

In Canada, the federal PIT falls on income from a variety of sources: employment, business (from self-employment or from an unincorporated business), property (interest, dividends), pensions, transfers from government, and capital gains. In fiscal year 1995/96, the PIT provided 55 percent of the federal government's personal tax revenues, compared with only 8 percent in 1939/40.

The system comprises three statutory tax rates, which increase with the level of income, as shown in Table 5. There is also, until 1999 budget measures take effect, a surtax of 3 percent on personal income tax and an *additional* surtax of 5 percent on the amount by which the PIT exceeds \$12,500. These surtaxes bring the top marginal rate up to 31.32 percent.

The 1998 budget announced the elimination of the general surtax for individuals with basic federal taxes of less than \$8,333 (on taxable income of about \$42,300); this reduction gradually falls, at a rate of 6 percent, for larger amounts of basic federal tax, and eventually vanishes on taxable incomes of about \$59,000. This combination

of surtaxes and surtax reductions made the tax system more intricate by creating several new tiers of marginal tax rates for low- and middle-income earners. The 1999 federal budget proposed to eliminate the 3 percent surtax for all taxpayers, so that, for most low- and middle-income taxpayers, the statutory marginal rates would be 17 percent or 26 percent, in addition to clawbacks on refundable credits and benefits. The top federal marginal rate is set to drop to 30.45 percent.

Since 1980, income tax brackets have been indexed only when the consumer price index (CPI) has increased more than 3 percent. Thus, although Canadian incomes have escalated in nominal terms, the bracket structure, which establishes tax liability, has moved hardly at all since 1985. An increasing share of taxpayers' real income has thus become exposed to tax, and as inflation has pushed their nominal income upward through the tax schedule, that income has been taxed at an increasing rate. One result is that, despite a freeze on PIT rates, average rates have increased.

Moreover, because the federal tax has a graduated rate structure, each year rising taxable income lifts many taxpayers above the threshold at which that additional (inflated) income is subject to a higher rate. So marginal tax rates have been rising at the same time as average tax rates.

Table 4: *National Value-Added Taxes, Selected OECD Countries, 1997*

	Year of Introduction	Standard Rate at Year of Introduction	Current Standard Rate	% of GDP Collected
			(percent)	
United States	—	—	—	—
Britain	1973	10.0	17.5	6.6
Sweden	1969	11.1	25.0	8.5
Ireland	1972	16.4	21.0	7.0
Canada	1992	7.0	7.0	2.6

Source: OECD 1997a.

Table 5: *Federal Marginal Tax Rates and Surtaxes, 1999*

Marginal Rate	Taxable Income
(percent)	(dollars)
17	29,590 or less
26	29,591 to \$59,180
29	59,181 or more
<b>Surtaxes and Surtax Reductions</b>	
5% surtax on personal income taxes above \$12,500 (approximately \$63,000 of taxable income)	
<i>Measures Slated for Elimination in 1999 Budget</i>	
3% surtax on all personal income taxes	
Surtax reduction equal to 3% of personal income taxes up to \$8,333 (approximately \$42,300 of taxable income)	
Reduction in the surtax reduction equal to 6% of personal income taxes in excess of \$8,333 (the surtax reduction thus disappears at \$12,500 of personal income taxes, which is about \$59,000 of taxable income)	

This indexation failure has thus increased the marginal tax rates that Canadians face on their labor earnings and savings. Since 1992, 18 percent of taxpayers have either become taxable or been pushed into a higher tax bracket because indexation is only partial (OECD 1997b). Of course, all taxpayers — not only those passing a bracket threshold — pay progressively more taxes under a regime of partial indexation; see Poschmann (1998) for more on this issue.

Provincial governments also affect marginal and average PIT rates. Quebec has its own PIT system, but the other provinces raise varying proportions of the basic federal tax. Table 6 reflects the substantial disparity in provincial marginal taxes; the maximum combined rate varies from 45.6 percent in Alberta to 54.2 percent in British Columbia.

### *Taxes on Capital Income*

In Canada, taxes on income from capital mostly affect firms, but they also fall on individuals via their business and investment in-

come. Income from an unincorporated business is treated like employment income and subject to the same tax rates.

Individuals may receive investment income in the form of capital gains, dividends, interest, and annuities. Capital gains are taxed at 75 percent of their value on the basis of realization. Dividend income is subject to a tax credit formula, which adds a measure of integration between personal and corporate income taxation. (The formula grosses up dividends by 25 percent for the PIT but then grants a non-refundable tax credit equal to a sixth of the dividend actually received.)

The return to deposits is taxed at the same rate as other investments, except for retirement savings, which are generally sheltered. The imputed benefit of home ownership is free of income tax, although the real property involved is subject to municipal property tax.

### *Payroll Taxes*

The base on which payroll taxes are collected normally comprises the sum of wages and the value of taxable benefits. Taxes on the wage bill may be levied either on the employer (the tax is paid on top of the wage) or on the employee (the tax is deducted from the wage). Canadian

Table 6: *Top Combined Marginal PIT Rates by Province, 1998*

	Rate
	(percent)
Newfoundland	53.3
Nova Scotia	49.70
Prince Edward Island	50.30
New Brunswick	49.0
Quebec	52.6
Ontario	50.30
Manitoba	50.1
Saskatchewan	51.6
Alberta	45.6
British Columbia	54.2

Source: Deloitte & Touche 1998.

Table 7: *Trends in Payroll Taxes, All Canadian Governments, 1950–96*

	Unemployment Insurance	Workers' Compensation	CPP/QPP	Provincial Payroll Taxes <sup>a</sup>	All
	<i>(percentage of government revenue)</i>				
1950	2.3	1.2	—	—	3.5
1960	2.5	1.1	—	—	3.6
1970	1.5	0.8	3.3	0.1	5.7
1980	2.7	1.3	3.0	0.5	7.5
1990	4.6	1.7	3.5	1.9	11.7
1992	5.9	1.6	3.8	1.8	13.1
1993	5.8	1.3	3.9	1.8	12.9
1994	6.2	1.9	3.9	1.3	13.3
1995	5.8	1.9	4.2	1.3	13.2
1996	5.4	1.8	4.1	1.4	12.7

<sup>a</sup> Brought in, at various times, by Quebec, Manitoba, Ontario, and Newfoundland to finance health care and education.

Sources: Canadian Tax Foundation 1993; Kesselman 1997; information from Statistics Canada.

governments tend to use this type of revenue primarily to fund social programs, such as EI and the CPP/QPP at the federal level and workers' compensation, health care, and education at the provincial level.

The tax base is sometimes constrained to a limited range of wages (those between a specified floor and ceiling), and revenues sometimes greatly exceed those required to finance the intended social program (as has occurred for the EI program since 1995). In the latter case, as already noted, the tax then essentially serves to finance general government expenses, with important consequences for its efficiency and equity, as we discuss below.

Over the past 30 years, government revenues from payroll taxes have increased significantly as a percentage of GDP at both the federal and provincial levels, rising from 3.5 percent in 1950 to 12.7 percent in 1996 (see Table 7). Employers' share of EI premiums is 1.4 times that of employees, with a total levy of 6.48 percent of insurable earnings in 1998. CPP/QPP contributions are evenly divided between employers and employees; the total rate in 1999 is 7.0 percent of covered earnings and is scheduled to rise to 9.9 percent by 2003.

Overall, Canada's payroll taxation in 1996 was 6.0 percent of GDP — the lowest proportion of the major OECD countries, for which the average was 9.8 percent.

### *Wealth Taxes*

Wealth taxes apply to ownership or transfers of wealth; they include taxes on such items as the ownership of property, inheritances, and gifts. Canada does not tax wealth *per se*, except through provincial probate fees, property taxes, and capital gains taxation (the last is really a form of income taxation since it taxes *changes* in wealth).

Property taxes are, however, one of the oldest forms of taxation in Canada, used primarily by municipalities, school boards, and some provincial governments. Municipalities impose this type of tax on the value of residential, industrial, and commercial properties. The burden is typically high by OECD standards and proportionately hard on business.

### **Tax System Design**

The designers of a tax system usually consider three criteria: efficiency, equity, and simplicity.

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A tax is considered *efficient* if it does not contribute to an undesired allocation of resources in the market — that is, if it minimizes price distortions. The size of tax-induced distortions depends mainly on the elasticity of economic agents' responses; the greater the elasticity, the greater the distortions are likely to be. Minimizing distortions also often holds down the negative effects of taxes on growth and jobs.

A tax may contribute to the goal of *equity*, or fairness; that is, it may effect some redistribution from rich to poor (*vertical equity*) while striving to treat equally individuals who are in similar economic circumstances (*horizontal equity*).

Finally, governments want the tax to be administratively simple and to limit opportunities for evasion and avoidance.

This section examines some of the complex, interconnected issues involved.

### *Tax Distortions and Efficiency*

Most taxes somewhat distort the free operation of the economy through their impact on savings, consumption, employment, the migration of labor, and growth.

#### Savings and Consumption

The effect of taxes on savings varies with their type. In Canada, the PIT has several major effects on the level of savings.

First, taxes on savings undermine the incentive to save by reducing their net return (a *price* or *substitution effect*). To put the point a different way, when individuals choose to save part of their income, it is taxed twice: when it is first earned, and when the invested savings earn a return. The effective tax rate on future consumption thus exceeds the rate on present consumption.

Second, taxes reduce any given amount of gross savings, encouraging individuals to set

aside a greater proportion of their initial income for future consumption (an *income effect*).

Third, personal taxation partly redistributes income from those with greater wealth to those with less. The two groups differ in their savings and consumption requirements; those with more wealth tend to save more because their present consumption needs are met more easily. This difference tends to reduce the level of aggregate savings (a *wealth effect*).

Fourth, even if everyone had identical lifetimes, those at different points in the life cycle would have different incomes. Thus, a progressive tax system generates annual income redistribution (say, from preretirement to postretirement). Life-cycle considerations are important in determining saving behavior, and annual redistribution discourages preretirement saving.

Finally, the PIT system treats various kinds of savings vehicles differently, which alters the composition of total savings. Some retirement savings, dividends, capital gains, and real estate investments generally receive preferential treatment, in contrast to interest-yielding securities, which are taxed at a higher rate (although an overall assessment of the differentiated taxation of these sources of income requires careful consideration of their additional treatment under corporate income taxation). Differentiated tax rates naturally drive some savings toward the less-taxed vehicles.

Overall, taxes on wages (earned income) reduce lifetime earnings but do not affect the interest rate directly because they do not fall on returns from savings and investment. Since the financial return on postponing a dollar of consumption to the future is given by the interest rate, a wage tax does not distort the price incentive to postpone current consumption. The share of total lifetime income allocated to current consumption is thus left broadly unchanged.

Total lifetime income is, however, normally reduced by a wage tax (assuming other

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taxes are constant). So, although the consumption profile may broadly retain its shape across time in the face of a wage tax (given the absence of a price effect), that profile shifts down for current and future consumption, and the level of savings over the active life decreases. The net impact on national savings then depends on the use to which the government puts wage tax revenues. If it saves them, national savings may increase; otherwise they fall.

Consumption taxes increase the cost of consumption and reduce its level, so they have the same impact on savings as wage taxes. Taxes on income from capital are equivalent to a reduction in the after-tax interest rate. Hence, although they create a price distortion, their effect on aggregate savings is theoretically ambiguous since it depends on the relative sizes of the substitution effect, the income effect, and the wealth effect.

The impact of taxes on inheritance is similar to that of income taxes on savings. By reducing the post-tax return of inheritance (the price effect), estate taxes tend to decrease the amount of pre-tax inheritance planned and left by donors (although an income effect could, in principle, reverse this proclivity). Estate taxes do tend, however, to increase the level of savings for individuals who receive an inheritance, since the amount expected is diminished by the tax. (Although Canada has no estate taxes, the rules concerning capital gains taxation bear on estate planning and on associated behavioral effects.)

An estate tax also affects the composition of investment since it treats human capital and physical capital differently. Parents' investment in their children's human capital is not taxed as an inheritance. One result is increased investment in human capital at the expense of physical capital — which may yet emerge as a good outcome if governments aim for the plausibly bigger spillovers associated with human capital investment.

Governments can also influence national savings through the type of old age security programs they provide. *Funded* public pension plans — those with savings set aside specifically to meet future benefit entitlements and claims — save resources for the future. Although such plans can partly crowd out some private savings that workers would otherwise have set aside for retirement, their introduction generally tends to increase aggregate savings, capital accumulation, the economy's productivity, and labor competitiveness.

*Unfunded* public pension plans, however, simply transfer income from the current working population to the current retired generation. Thus, these plans do not set aside national savings in anticipation of future entitlement liabilities, and they provide a disincentive for workers to save for their future retirement (since current workers can expect that the next generation of workers will pay for their retirement). Hence, unfunded plans lead to a lower level of national savings than do funded plans.

## Investment

Taxation also affects both the levels and the types of investments. Taxes on capital income reduce the real rate of return on investments, creating an incentive for investors to focus on the least-taxed vehicles.

Taxes also generally decrease the incentive to invest in risky assets. With capital income taxes, governments appropriate a part of the benefits realized by investors. On the other hand, investors still bear a large share of the burden of possible losses despite the availability of tax deductions for capital losses. The deductibility of losses is restricted, and nominal profits are not adjusted for the cost of inflation, implying that even in the case of a net economic loss (one calculated with a correction for inflation), the tax may still be levied on the nominal profit.

The share of risky assets in the economy also depends on the use to which the govern-

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ment revenues are put: that share is lower if revenues from the tax on returns to risky investments are spent or invested in nonrisky assets.

Property taxes entail two main types of distortions. First, if the supply of and the demand for property are elastic, the introduction of a tax reduces the accumulation and enhancement of property. Second, the level of the tax can vary widely among regions, which may make it a distorting factor in the choice of location for property. Finally, as well as affecting supply and demand, property taxes immediately manifest themselves in the valuation of the existing stock of property.

## The Labor Market

Payroll taxes add to the gap between the gross wage paid by the employer and the net wage received by the worker. The result is thus generally a fall in jobs and production. This gap, also called the *tax wedge*, may partially correspond to willingness to pay for public services, such as employment and health care insurance, that particular payroll taxes support.

If the benefits provided workers are at a level corresponding to their wishes, an increase in employer payroll taxes should be followed by a downward adjustment in net wages, limiting the burden on employers. If the labor market is flexible, net wages eventually will be driven downward, reducing the effect on employment and competitiveness.

But if the labor market is rigid, wages cannot adjust fully and quickly, and the cost of labor increases, resulting in unemployment and a loss of competitiveness. (For this reason, Dungan [1998] argues that rises in CPP/QPP premiums should be on the workers' side, not the employers', so as to reduce the adverse impact on jobs and output and accelerate the adjustment of net wages.)

If, however, publicly provided benefits are not produced at a level corresponding to work-

ers' wishes, then, even with wage flexibility, employment falls if the labor supply is elastic. (The negative impact is likely to be the greatest for low-wage earners and women because the elasticity of labor supply for these two categories is generally estimated to be higher than for other workers.)

This dependence on workers' preferences provides an argument for a tight link between individual benefits and contributions in the design of payroll taxation.

Because adjustment to a tax change takes time, the long-run response in competitiveness, wages, and employment generally differs from the short-run one. If a payroll tax on employers is increased, competitiveness is instantly worsened but is eventually restored (if long-run wage flexibility is present). Jobs and firms' labor demand will fall in the short run because of the decrease in competitiveness. Labor costs rise instantly but will return to their initial levels as workers gradually accept lower wages in the face of decreased competitiveness and employment.

If, however, a payroll tax on employees is increased, the short- and long-run responses are more similar, because the anticipated transfer of the tax burden from employers to employees has been facilitated from the beginning and does not require initial falls in employment or competitiveness.

The effect of payroll taxes on the demand for labor thus depends on whether their incidence is on employers or employees. The share of taxes not shifted onto employees increases the cost to employers, which tends to drive down the number of workers hired or the number of hours worked. The share of taxes borne by workers pushed down net wages, contributing to a fall in labor supply, but not affecting labor demand. Workers may then decide to withdraw from the labor market, to reduce the number of hours they work, to move to a country with lower taxes, or to participate

in the underground economy, thus depriving the government of a portion of its tax revenues.

These adjustments are both a function of the marginal rate of payroll taxation (for example, via decisions to adjust at the margin the number of hours worked or the level of education achieved) and of the average rate of payroll taxation (via decisions to migrate or to withdraw completely from the official labor market). Thus, when the supply of labor is elastic, excessive reliance on payroll taxes contributes, even in the long run, to an inefficient reduction in the quantity and quality of labor supplied.

*Empirical Estimates.* Whether actual labor markets are flexible enough to rapidly absorb changes in employees' and employers' payroll taxes equally well without much impact on employment is thus an empirical question. Table 8, drawn from Tyrväinen (1995), illustrates his broad estimates of how firms' labor costs may vary among countries when social security, income, or consumption taxes are changed. (We stress that Tyrväinen's estimates of the effects of taxes on labor costs represent a possible range of values, not necessarily definitive or reliable ones.) In Germany, for instance, employers are estimated to absorb entirely a \$1.00 increase in their contributions to social security, in which case firms' labor costs increase by \$1.00, net wages to employees remain unchanged, and labor demand and jobs are expected to fall. However, if the additional tax burden is entirely passed on to employees (as in Sweden and the United States), they experience a loss of income equal to the increase in contributions, while employers bear no additional wage cost, and labor demand should be unaffected. Notice that, for Canada, labor costs to employers increase an estimated \$0.80 after a \$1.00 increase in social

Table 8: *The Elasticity of Labor Costs, Selected OECD Countries*

	With Respect to		
	Employers' Social Security Contributions	PIT and Employees' Social Security Contributions	Consumption Taxes
Germany	1.00	1.00	1.00
Sweden	0.00	0.00	1.00
United States	0.00	0.00	0.00
United Kingdom	0.25	0.25	0.25
Canada	0.80	0.80	0.80

Source: Tyrväinen 1995.

security contributions, while employees' net wages decline by only \$0.20.

In the case of a \$1.00 increase in personal income or consumption taxes or in employees' social security contributions, we see that German employees are estimated to receive a pay raise of \$1.00 to compensate for the tax increase. In the United States and Sweden, employees absorb the increase entirely, and their net wages fall; in the United Kingdom, the employees' loss of income is only partially offset by higher gross wages. In Canada, 80 percent of a \$1.00 rise in employees' contributions is again estimated to be offset by a rise in firms' cost of labor.

Tyrväinen's results should be viewed as largely illustrative and open to challenge. His results for Canada, for example, have been confirmed only for the short term, since Canadian wages are thought to adjust downward substantially in the long term (Cozier and Mang 1994). Dahlby (1992; 1993) supports this contention by emphasizing that about 80 percent of the burden of payroll taxes imposed on employers is absorbed by employees in the long run, which may amount to several years (Dahlby 1992).

In the short run, Canadian employers are able to shift only a small part of the payroll tax burden onto employees, so the cost of labor to

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the firm increases. This degree of short- and medium-run Canadian wage resistance leads Coe (1990) to estimate that payroll taxes may have contributed 1.5 percentage points to the unemployment rate in the 1970s and 1.0 point in the 1980s. In the long run, however, Canadian employers can make adjustments and shift roughly the entire payroll tax burden onto employees, creating a greater impact on net wages than on employment levels.

Thus, the elasticity of Canadian labor costs to employers' contributions is nearly nil in the long run — that is, employees eventually assume the largest part of the tax burden through a fall in their net wages. This situation corresponds broadly to the one shown in Table 8 for Sweden, the United States, and the United Kingdom, but only several years after a rise in employers' payroll taxes.

*The Effects of Structure.* As already suggested, the use to which a payroll tax's revenues are put affects the ease with which the burden can be shifted to employees. An increase in the payroll tax to fund a program whose benefits are paid directly and transparently to workers may most readily translate into a reduction in wages. Employees may be more willing to accept somewhat lower wages to have access to programs such as EI or public pension plans.

To put the point differently, if the programs did not exist, many employees would probably decide to set aside money to replace these benefits. Pesando (1997) and Dungan (1998) use such arguments in favoring a closer link between CPP/QPP premiums and entitlements to reduce labor disincentives and foster increased trust in the public pension system.

A payroll tax rate differentiated according to the nature and behavior of the firm can lighten the tax wedge for some firms, since those whose employees make heavier use of the programs financed by the tax contribute a larger share to their funding. For example, the

taxes levied by the Commission de la santé et de la sécurité du Québec and workers' compensation boards in other provinces are higher in sectors such as construction, in which the risk of injury is higher. This method of rate setting generates broad efficiency gains for firms, since each pays an amount that has some resemblance to the risk its activities pose to the program, reducing the distortions and costs to the labor market that a flat rate imposes.

Along the same lines, the report of the Technical Committee on Business Taxation (1998) includes recommendations that would create a greater link between premiums and benefits within the EI program, such as reductions in employer-paid premiums for firms that have stable employment patterns.

*Taxes on Income and Wealth.* Analysts do not agree on the impact of personal taxes on wages. Some suggest that labor unions make more modest wage demands when marginal PITs are more progressive, since the marginal wage cost of labor is then higher. Conversely, Tyrväinen (1995), Holmlund and Kolm (1995), and Lockwood and Manning (1993) show that an increase in the progressivity of income taxes creates pressure on net wages (by increasing the tax wedge) and that, in Japan, Italy, the United Kingdom, Finland, and Sweden, it has generally tended to lower them. Knoester and Van Der Windt (1987) find that the upward pressure on real wages exerted by indirect taxes is less substantial than that from the same level of PITs or social security premiums.

Taxes on wealth transfers, such as inheritance and gift taxes, also affect the amount of labor individuals supply. They may decide to work more in order to be able to bequeath the same amount after taxes (income effect) or they may reduce the number of hours worked and choose to invest less in the after-tax estate. Thus, the overall impact of a wealth tax on labor is unclear. Estate taxes, however, cause

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heirs to increase their labor supply since their expected inheritance is generally diminished.

Again, Canada has no inheritance or gift taxes, but attribution rules (and deemed realization of capital gains at death) govern the taxation of income derived from capital assets given to family members. These tax restrictions induce labor supply behavior by donors and recipients that is analogous to that described for pure estate taxes.

## Migration

The openness of the economy has a profound impact on the outcomes of a country's tax system. The mobility of the final goods produced and of the labor and capital that go into those goods increases as the economy is more exposed to world trade. This greater mobility of goods and the possibility of crossborder shopping circumscribe producers' ability to pass on part of their tax bill to consumers by raising prices.

The same is true for firms' ability to pass on part of their payroll taxes to mobile workers; firms may thus have to relocate and follow workers across borders. The integration of global capital markets since the 1980s also makes it increasingly difficult for one country to tax capital at a rate different than that prevailing in other countries; if taxes reduce the net return on capital to a level lower than that prevailing in the global economy, there is the danger of capital flight.

The loss of mobile physical, financial, and human capital because of excessive taxation means that immobile factors have to absorb the additional tax burden. Indeed, mobile factors may not leave the country at all if they can shift their tax burden, partially or entirely, onto immobile factors.

Factor mobility thus creates an incentive for governments to make their tax system competitive to prevent the loss of mobile factors to jurisdictions that treat them more generously.

The most mobile workers are the specialists: top-level managers and executives, professionals, and individuals skilled in high-technology work. Other workers are mostly immobile in the short term and scarcely mobile in the longer term.

The loss of mobile workers, who are often among the most educated, has direct effects on the economy. First, a country that invests a great deal in higher education (as Canada does) finds the productivity and efficiency of its investment undermined when it loses a portion of the people it has trained. The decline in the return to investment in education may encourage governments to invest elsewhere, where returns are higher.

Second, knowledge is an important source of economic growth. If the stock of available knowledge in the economy diminishes, both the level of productivity and economic growth suffer. In a recent study, DeVoretz and Laryea (1998) estimate the net loss in embodied higher education at about \$6.7 billion, resulting from the emigration of Canadian professionals and managers to the United States between 1982 and 1996.

Part of the reason for this emigration appears to be the "pull" factor of higher after-tax earnings in the United States. Canada thus has a clear economic interest in limiting the emigration of skilled workers, not only because of the lost tax revenues it entails but also because of the high cost in lost human capital.

## Growth

Economic growth has two principal motors: the accumulation of knowledge and investment in research and development (R&D). The two mechanisms operate differently. Knowledge can be treated as an input, just like capital and labor. It is also a by-product of investment in physical capital. The firm that invests in physical capital is able to raise its level of expertise since new equipment breeds new skills

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and qualifications in workers, contributing to an increase in their knowledge. This enhanced understanding, in turn, helps to improve the firm's own productivity, and spillover effects mean productivity growth for other firms in the economy.

The second mechanism involves the work of firms' R&D divisions, which develop new products and technologies, contributing to enhanced economic growth. Firms' investment in knowledge is, however, generally below the socially optimal level because, despite the existence of patents, they are not able to capture fully the positive externalities their innovations generate. This phenomenon suggests the need for global tax policy to stimulate (or at least not to discourage) investments in human capital and R&D and thus encourage the economic growth rate.

Because of its links with knowledge and human capital, investment in education has a positive impact on economic growth. The higher the level of PIT progressivity, however, the less it is in individuals' interest to invest in education. Such an investment implies a reduction in income today in the hope of acquiring a suitably greater reward later. That future reward is clearly made less attractive by high levels of marginal and average income tax rates.

Taxation may yet benefit growth if it allows for an accumulation of the stock of productive public goods. An increase in their quantity and quality entails an improvement in the productivity of physical and human capital and thus increases the level of economic growth. Xu (1997) finds that growth is encouraged more by increasing transfers that enhance human capital formation than by increasing unconditional transfers to persons.

Xu also simulates the impact on growth of a change in the tax mix. A fall in taxes on capital or in PITs, which stimulates savings and investment, or a fall in wage taxes, which stimulates human capital formation, is better for growth than equivalent decreases in con-

sumption taxes, which have a smaller impact on individual decisions to invest in physical or human capital. The final impact of taxes on growth thus depends on the tax structure (and on whether tax revenue is spent productively).

The overall level of taxation also seems to be correlated with growth. A simulation by Scully (1991) suggests that countries maximize growth when they collect about 20 percent of GDP in taxes, a proportion much lower than the current level of Canadian taxation. Scully's simulation also suggests that governments seeking to collect maximum tax revenues should strive for a tax bite of 43 percent of GDP. Beyond this level, tax revenues decrease because of the high costs of administration and problems with incentives and tax evasion.

The simple empirical evidence of Figure 1 seems to confirm the adverse effect of high taxation on economic growth. Average and marginal tax rates are negatively correlated with the rate of growth. A crude regression suggests that a 10.0 percent increase in the average tax rate slows growth by 0.5 percent. Thus, a tax increase on the order of 10.0 percent of GDP costs the economy 0.5 percent in growth per year, which compounds after 20 years to a permanent yearly loss of 10 percent of per capita income.

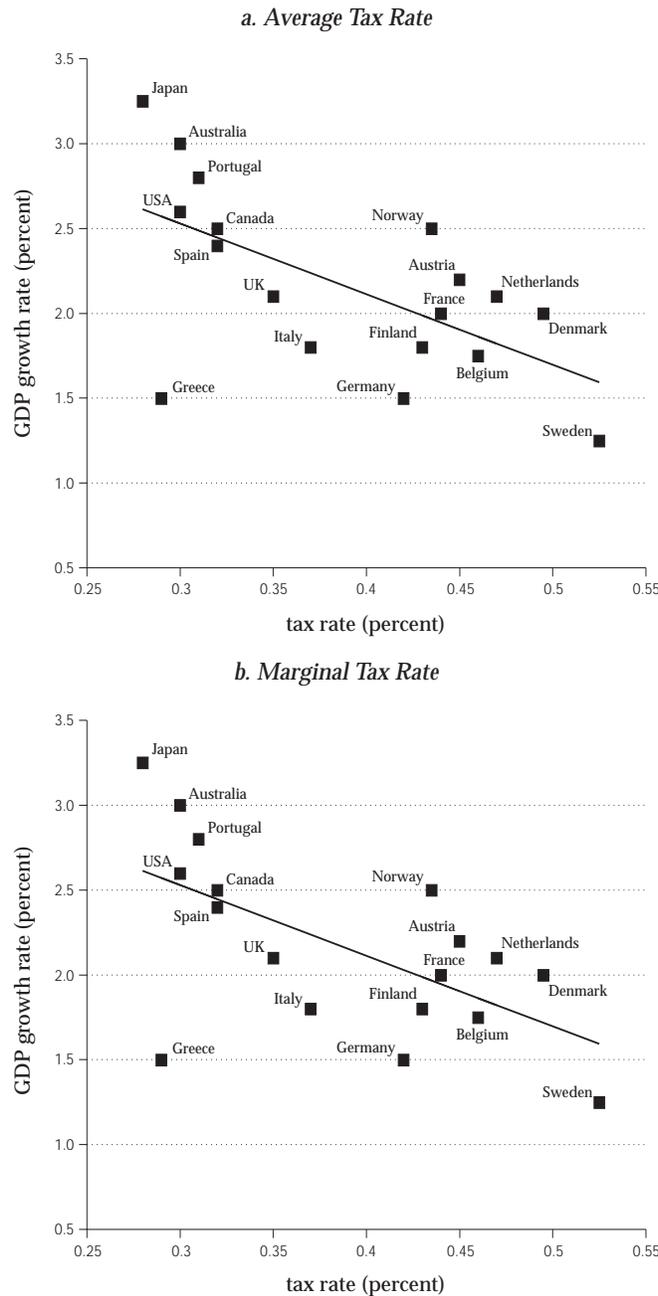
### *Tax Distortions, Incidence, and Equity*

Equity is often at the forefront of criticism and reform of tax systems. It is thus important to see how it can be assessed and how it can be fostered or violated by different forms of taxation. We briefly review these issues in this section and offer some comments on the equity of the Canadian system.

#### Sources of Inequity

As already noted, a tax can be equitable in two distinct senses. If any two people having iden-

Figure 1: *Tax Rates and Growth, Selected OECD Countries, 1980–95*



Source: Leibfritz, Thornton, and Bibbee 1997.

tical standards of living before the tax is imposed have identical standards of living afterward, it is said to be *horizontally equitable*. In contrast, *vertical equity* refers to the use of the

tax to level standards of living across all taxpayers (the implication is progressivity in taxation and in income support). Horizontal equity tends to be influenced by the identification and determination of a proper tax base under which to assess tax liabilities, while vertical equity is typically more a function of the rate structure.

The designers of a tax must keep in mind that the economic agent who bears the legal or administrative responsibility for paying it is often able to shift the actual burden to others. Thus, in assessing the equity of a tax, it is important to determine its true economic incidence — who actually pays it. As discussed above, for instance, sizable proportions of employers' contributions to EI and CPP/QPP are likely passed on to employees in the form of lower net wages.

Also important is the proper base on which to assess tax liability. The official standard for measuring the ability to pay is often a broad concept of income (including wage income, self-employment income, and capital income). Lifetime consumption may, however, provide a more equitable standard. It probably better indicates both the demands that individuals make on public goods and services and the standards of living people really enjoy in society.

At first glance, the PIT seems to be a good way to redistribute income. However, it introduces distortions into the markets for labor and human capital since progressive taxation discourages employment and investment in education.

Generally speaking, redistributing income always produces efficiency or dead-weight losses. The reason is simple. In order to redistribute income, the government must target individuals for receipt of transfers or payments of tax on the basis of an observable characteristic that is associated with their income status. All such characteristics are either

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too imperfectly correlated with income to be used either equitably (consider age or sex) or efficiently, or they can be concealed or altered (in the form of activities in the underground economy or of reduced effort, labor supply, or investment).

Concealment or alteration of their activities forces individuals away from the economic behavior they would have preferred, while depriving the state of some the revenue it would otherwise have raised. The result is a deadweight efficiency loss to any taxation of income, a loss that rises rapidly with the average and marginal rates of taxation. At current levels of taxation in Canada, that deadweight loss is estimated to be on the order of \$0.40 to \$1.00 per \$1.00 of additional PIT at the provincial level and \$0.40 at the federal level (see, for instance, Dahlby 1994).

Whether a PIT system is horizontally equitable depends on whether its base is sufficiently broad and well defined to impose a similar burden on families with similar ability to pay. Differentiated taxation of different types of income, insufficient allowances for family size and composition, and opportunities for tax avoidance are all sources of horizontal inequity.

Because returns to capital are a form of income, horizontal equity demands that they be taxed without preferential rates so long as income is used as the base. If, however, discounted lifetime consumption is deemed the proper base, then zero taxation of capital income is not a source of horizontal inequity. On the contrary, it avoids taxing the consumption of savers twice.

Consumption taxes are usually regressive if they are assessed on the basis of annual income because high-income individuals tend to put a smaller percentage of their income into current consumption than do low-income earners. Thus, the relative burden of the tax decreases with current income, signaling an erosion in economic equality. Seen in a lifetime

perspective, however, consumption taxes seem less regressive, since the greater savings of the higher-income individuals are taxed when they are eventually consumed.

Moreover, because a consumption tax relies on a large base, it can be more horizontally equitable (unless the rates differ significantly across types of goods), more efficient, and create fewer distortions than a PIT. Consumption taxes also seem to provide relatively fewer opportunities for tax evasion.

At first blush, payroll taxes seem proportional. When they are capped at a given earnings level, however, they can be regressive. Moreover, although the share paid by employers seems progressive, if they shift that amount to employees, the tax becomes proportional or regressive, and if they shift it to consumers, it can be regressive. It is more regressive if, owing to different elasticities of labor mobility, low-income workers are subject to proportionally greater reductions in income than high-income earners.

When payroll taxes are used at least partly as general tax revenues (as in the case of some provincial health and education payroll taxes, and now EI revenues), they are a source of horizontal inequity since they discriminate in favor of taxpayers with significant sources of nonwage income.

## The Assessment of Equity

The study of the overall incidence of a tax system is generally fraught with difficulties, because analysts must make several behavioral and tax-shifting assumptions in order to capture the true economic incidence of various taxes. Typically, they check incidence under alternative sets of assumptions, such as a standard set, a progressive one, and a regressive one. In a progressive set, a greater share of the tax load than in the standard set is assumed to be shifted to the wealthier segment of the population, while in a regressive case, low-

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income earners are assumed to be more often the real bearers of the tax burden.

An example is landlords' property taxes, which they either bear themselves (a progressive incidence assumption) or ultimately shift to their tenants in the form of higher rents (a regressive incidence assumption). Consumption taxes provide another example. If the analysis assumes great mobility on the part of consumers' outlays (because, for example, they can avoid paying the tax by consuming abroad or in the underground economy), then at least part of the burden falls on the owners of business and capital (a progressive incidence assumption). Otherwise, as in the case of perfect capital mobility, all of the incidence can be assumed to fall on consumers or workers (a more regressive assumption). A similar exercise can be done for the incidence of payroll taxes.

Vermaeten, Gillespie, and Vermaeten (1994) and Ruggeri, Van Wart, and Howard (1994) report such exercises for Canada. Their results are generally sensitive to the sets of assumptions and to the definitions of income they use. The overall tax system is often progressive but can be found to be regressive under the more regressive incidence assumptions.

Such ambiguities, which are also present in studies of the equity of other countries' tax systems, are symptomatic of the difficulties posed by short- and long-run incidence issues. More important perhaps, such uncertainty suggests that, despite the current high levels of taxation in Canada, the tax system may not be the country's main source of income redistribution.

This result is confirmed by general studies of tax and transfer progressivity and equity. It is the Canadian transfer system that is really effective at redistribution, having apparently prevented, for instance, the inequality of after-tax and after-transfer income from rising in the 1980s despite a strong rise in the inequality of market income. Duclos and Lambert (forthcoming) note that the 1987 tax reform was broadly successful in maintaining aggregate

fiscal horizontal equity during the 1980s despite a significant rise in the average tax burden. They also find that transfers appear to be the main source of horizontal inequity in Canada. Thus, for concerns over both vertical and horizontal equity, greater focus on both the structure and the effects of the transfer system, rather than on those of the fiscal system, is probably warranted.

### *Administrative Costs and Simplicity*

In addition to the criteria of equity and efficiency, tax designers must take into account issues of administrative costs and simplicity. The PIT is difficult to administer, given its many deductions and exemptions, which explains its relatively high cost.

Consumption taxes are also expensive, although less so than PITs (Vaillancourt and Gmati 1995; Slemrod 1990). Tax evasion can be reduced by differential treatment of goods and services, depending on whether avoiding taxes on them is easy (as the recent episodes of cigarette tax adjustments illustrate).

Finally, payroll taxes are relatively inexpensive, since firms already do all the accounting required for implementation. For Canada, Plamondon and Zussman (1998) estimate the compliance costs for the majority of business taxes (including payroll, sales, and corporate income taxes) at \$3.4 billion, or 1.5 percent of total tax revenues.

### *Tax Evasion and Avoidance*

High levels of taxation generate problems of evasion. Consumers who feel overburdened may choose to try to avoid taxation by smuggling purchases across the border or by resorting to the underground economy. Similarly, workers underreport their income or shift part of their income-generating activity into difficult-to-tax sources. (Some sectors in the

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economy — construction, child care, household production, informal professional services, and so on — are particularly subject to this sort of behavior. And investors may try to avoid taxes by investing in foreign assets, whose income is often hard for the state to monitor. High levels of taxation also encourage delaying repatriation and the realization of capital gains.

The least expensive way the authorities can combat these problems is sometimes simply to reduce the tax rate. Enforcement costs for the government and taxpayers' evasion expenses can easily exceed the forgone tax revenues, and the economic costs of social welfare and of the growth of legal tax avoidance activities may be sizable and detrimental to steady investment and employment.

### *The Effect of an Aging Population*

The nature of the tax structure may have important intergenerational effects since various taxes fall more heavily at different stages of the life cycle. For example, the number of individuals eligible to collect government pensions is now about one-fifth the number contributing to them; the estimate for 2030 is about a third (Rosveare, Leibfritz, and Wurzel (1996)). In one generation, the ratio of beneficiaries to contributors will have increased by about 65 percent. This aging of the population is thus likely to cause problems for future governments. One way to fund the additional load is to increase contributions, a relatively easy modification when the general tax burden is light but much more difficult when taxes are already high.

CPP premiums are scheduled to increase from 5.85 percent of insurable earnings in 1997 to 9.9 percent by 2003 and beyond. Governments that wish to be able to face forthcoming demographic challenges must continue to monitor the fiscal pressure on taxpayers.

## The International Setting

Given the globalization of production and the increasing mobility of its factors, the pressure on countries to maintain competitive tax systems is becoming more and more intense.

In this section, we present some international comparisons for personal taxation in Canada. For reasons already described, we focus on the United States, the United Kingdom, Ireland, and Sweden.

### *Some International Standards*

In recent years, governments in many countries, including all of those in our sample, have worked on both reducing maximum marginal tax rates and cutting the number of tax brackets of their PITs. Ottawa, for example, cut its maximum marginal tax rate from 47 percent to 31 percent between 1975 and 1998. Table 9 sets out the top marginal rates for PITs levied by the central governments of our sample. Table 10 adds in the subnational (provincial, state, or country) rates for the countries whose systems include such taxes. Of the countries listed, only Sweden has a combined rate higher than Canada.

Table 11 reveals that Canada, like the other countries, has reduced the number of its tax brackets. The United States has dropped them from fourteen to five (but note the upward revision in the 1990s). Four of the central governments use a system with differential rates for low- and high-income earners; Sweden now taxes personal income at a flat rate.

Despite various tax reforms, the revenues of the OECD countries have increased as a percentage of GDP in recent decades: from 27 percent to 32 percent between 1960 and 1980, and from 32 percent to almost 38 percent between 1980 and 1996. As shown in Table 12, the 1996 tax-to-GDP ratio for Canada was close to the OECD average, but it exceeded that of the United States by 8.4 percentage points. Be-

**Table 9: Top Marginal PIT Rates of Central Governments, Selected OECD Countries, 1975–98**

	1975	1985	1990	1995	1998
	(percent)				
United States <sup>a</sup>	70	50	28	40	40
United Kingdom	83	60	40	40	40
Ireland	77	60	53	48	48
Sweden <sup>a</sup>	56	54	20	25	25
Canada <sup>a</sup>	47	34	31 <sup>b</sup>	31 <sup>b</sup>	31 <sup>b</sup>

<sup>a</sup> The United States, Canada, and Sweden also have PIT levied by regional (state, provincial, or county) governments; the rates are shown in Table 10.

<sup>b</sup> Standard rate of 29.0 percent plus surtax of 2.3 percent.

Sources: Owens and Whitehouse 1996; OECD 1998.

tween 1989 and 1996, both countries experienced an increase in the tax burden (about 1.7 percentage points for Canada and 1.5 for the United States).

The composition of tax revenue varies significantly from one country to the next (see Table 13). Canada relies more heavily on PIT and consumption taxes than does the United States but raises a smaller portion of its revenue in total social security contributions.

A different picture arises when one examines the split of payroll taxes between those paid by employers and those paid by employees (see Table 14). Canada relies half as much on employee paid contributions as does the United States, but employer payroll taxes are about the same share of total taxes in the two countries. The ratio of employee to employer payroll contributions in Canada is about the same as in Ireland and Sweden but significantly lower than in the United Kingdom. Compared with the OECD average, Canada makes much greater use of the PIT and raises twice as much revenue with property taxes, while relying less on consumption taxes and social security premiums.

Table 15 shows the average effective taxes on capital, labor, and consumption for most of

our sample countries. (These average tax rates are “effective” in the sense of combining a variety of taxes whose incidence is thought to fall on capital, labor, or consumption.) Notice that the average effective tax rate on labor, which includes PITs and payroll taxes, rose by 65 percent in Canada between 1965–75 and 1985–94, making these taxes significantly higher than in the United States (28 percent versus 23 percent). The rate on capital is higher in Canada than in the United States (44 percent versus 40 percent), but lower than in the United Kingdom and Sweden.

Across the OECD, the United States, Japan, the United Kingdom, Canada, Australia, and New Zealand have high rates of taxation on capital (in the 40–50 percent range) and low rates on labor (20–30 percent). Western Europe has a much lower rate on capital, (about 25 percent) and a higher rate on labor (35–40 percent) (see Leibfritz, Thornton, and Bibbee 1997).

These differences affect the ratio at which capital- and labor-intensive industries are distributed among these areas. In the global economy, after-tax marginal rates of return on capital tend to converge across countries in the long run, driving a greater share of capital to jurisdictions with lighter capital taxation and thus tending to make production in Europe

**Table 10: Top Marginal PIT Rates, Selected OECD Countries, All Government Levels, 1998**

	Central Government	Subnational Government	Total
	(percent)		
United States	39.6	7.0	46.6
United Kingdom	40.0	—	40.0
Ireland	48.0	—	48.0
Canada	31.3 <sup>a</sup>	22.8	54.1
Sweden	25.0	36.6	61.6

<sup>a</sup> Standard rate of 29.0 percent plus surtax of 2.3 percent.

Source: OECD 1998.

**Table 11: Statutory Brackets in Central Government PIT Schedules, Selected OECD Countries, 1986, 1990, and 1995**

	1986	1990	1995
	(number)		
United States	14	2	5
United Kingdom	6	2	3
Ireland	3	3	2
Sweden	10	1	1
Canada	10	3	3

Source: Owens and Whitehouse 1996.

more capital intensive than in the United States. Although generally less pronounced than capital mobility, labor mobility also entices some workers to move to jurisdictions where the after-tax wage is greater (to the United States, for instance). Combined with the presence of significantly greater wage and labor market rigidities in Western Europe, the lower rate of labor taxation in the United States also helps to explain the latter's comparatively lower unemployment rate.

### *Recent Tax Changes*

All four of our sample countries have undergone at least one round of tax reform in the past two decades. Some of the innovations and

their results should interest Canadian tax designers. In what follows, we briefly review these innovations.

### The United States

In the United States, the winds of tax reform blew twice during the 1980s. The first reform, in 1981, allowed for a reduction in the PIT, which was achieved with a cut in rates averaging 23 percent across brackets; the highest marginal tax rate was reduced to 50 percent and the highest rate on capital gains fell to 20 percent. This reform introduced indexation of income brackets and deductions for two-income couples (although it took effect only five years later). Also included were incentives to save by enhancing self-employed workers' eligibility for Investment Retirement Accounts (IRAs); their maximum annual contribution was doubled to US\$15,000.

The second reform, in 1986, brought the most far-reaching structural overhaul of the US income tax system since World War II. It considerably reduced the tax burden on income from capital and standardized the marginal rates of taxation on its various forms.

The reform also further alleviated the burden on individuals. The number of PIT brackets was much reduced, while the maximum marginal tax rate fell from 50 percent to 28 percent. Deductions for married couples went up

**Table 12: Total Tax Revenue as a Percentage of GDP, Selected OECD Countries, 1989-96**

	1989	1990	1991	1992	1993	1994	1995	1996
	(percent)							
United States	27.0	26.7	26.8	26.7	27.0	27.5	27.9	28.5
United Kingdom	36.3	36.5	35.6	35.1	33.5	34.5	35.6	36.0
Ireland	35.2	34.8	35.2	35.4	35.4	36.1	33.8	33.7
Sweden	55.5	55.6	53.7	51.0	50.1	50.8	49.5	52.0
Canada	35.2	36.0	36.6	36.2	35.6	35.9	36.0	36.9
OECD average	35.9	36.1	36.6	37.3	37.5	37.5	37.3	37.7

Source: OECD 1997b.

Table 13: *Major Tax Revenues, Selected OECD Countries, 1996*

	Personal Income Taxes as a % of		Social Security Levies as a % of		Consumption Taxes as a % of		Property Taxes as a % of	
	Total Taxes	GDP	Total Taxes	GDP	Total Taxes	GDP	Total Taxes	GDP
	(percent)							
Canada	37.7	13.9	16.3	6.0	24.9	9.1	10.4	3.8
United States	37.6	10.7	24.7	7.0	17.2	4.9	11.0	3.1
Ireland	31.3	10.5	13.5	4.5	39.7	13.4	4.8	1.6
Sweden	35.3	18.4	29.8	15.5	22.8	11.8	3.8	2.0
United Kingdom	25.9	9.3	17.3	6.2	35.2	12.7	10.6	3.8
OECD	26.8	10.4	25.1	9.8	32.5	12.0	5.4	1.9

Source: OECD 1997b.

to US\$5,000, the personal exemption rose to US\$2,000, and the earned-income tax credit increased. The decline in the marginal tax rate was compensated by broadening the tax base and downgrading preferential rules for the treatment of capital gains, retirement planning, consumer interest expenses, unemployment benefits, and medical expenses.

These US tax reforms significantly altered the burden on different groups of taxpayers between 1980 and 1990 (see Table 16). The fall in average rates was partly offset by a rise in social security contributions during the same period, meaning that the overall average tax rate remained relatively stable or even increased. Low-income households experienced no significant decline in their tax bill, while middle-income households paid slightly higher taxes despite a 6 percentage point cut in the marginal tax rate. High-income taxpayers benefited the most; their average rate fell along with a 15 percentage point drop in their marginal rate. It also appears that the reform increased horizontal equity by treating families that differ in size and circumstance more equitably and by introducing a more uniform treatment of wage and capital income (Gravelle 1992).

Evaluating the impact of these reforms on savings, investment, and labor supply

is difficult because the United States experienced many other changes during the same period, such as interest rate increases, an appreciation of its dollar, and a stock market correction. Although the tax reform appears to have increased affluent families' labor supply, particularly of married women, much of the surge in aggregate supply likely comes from other factors (Bosworth and Burtless 1992).

These outside factors also explain why capital investment and private savings could not be maintained following costly new saving incentives and a large rise in the real rate of return. Greater simplicity, one of the original aims of the reform, was partly left aside in the

Table 14: *Sources of Social Security Contributions, Selected OECD Countries, 1996*

	Employees' Payments as a % of		Employers' Payments as a % of	
	Total Taxes	GDP	Total Taxes	GDP
	(percent)			
United States	10.6	3.0	12.9	3.7
United Kingdom	7.2	2.6	9.6	3.4
Ireland	4.5	1.5	8.2	2.8
Sweden	4.5	2.3	24.9	12.9
Canada	5.3	1.9	10.7	3.9
OECD average	7.8	3.0	14.5	5.8

Source: OECD 1997b.

Table 15: *Average Effective Tax Rates on Capital, Labor, and Sales, Selected OECD Countries, 1965–94*

	Capital <sup>a</sup>			Labor <sup>b</sup>			Sales <sup>c</sup>		
	1965–75	1975–85	1985–94	1965–75	1975–85	1985–94	1965–75	1975–85	1985–94
	(percent)								
United States	0.42	0.42	0.40 <sup>d</sup>	0.17	0.21	0.23 <sup>d</sup>	0.06	0.05	0.05
United Kingdom	0.50	0.60	0.52	0.24	0.25	0.21	0.12	0.13	0.14
Sweden	—	0.45	0.58	—	0.46	0.48	0.16	0.17	0.20
Canada	0.41	0.38	0.44	0.17	0.22	0.28	0.11	0.11	0.11

<sup>a</sup> Rate defined as the sum of household income taxes paid on operating surplus of private unincorporated enterprises and on household property and entrepreneurial income plus tax on income, profits, and capital gains of corporations plus recurrent taxes on immovable property plus taxes on financial and capital transactions divided by total operating surplus of the economy.

<sup>b</sup> Rate defined as household income tax paid on wages (including self-employment income) plus payroll or manpower taxes; divided by wages and salaries (including income of self-employed) plus employers' contribution to social security and to private pension plans.

<sup>c</sup> Rate defined as general tax on goods and services plus excise taxes, divided by private and government nonwage consumption.

<sup>d</sup> Figure for the period 1985–93.

Source: OECD 1997b.

process; Slemrod even concludes that “the compliance cost of the income tax system is probably higher now than it was in the early 1980s” (1992, 45).

### The United Kingdom

Reforms of the UK tax regime occurred during the 1980s and the early 1990s, largely in reaction to the heavy tax burden of the 1960s and 1970s and the associated sluggish performance of the economy. The official goals were the redistribution of income and the reduction of disincentives to work and save.

Like many other OECD countries, the United Kingdom initiated a staged decline in personal marginal tax rates and a reduction in the number of tax brackets. The PIT rate was cut to 20 percent for the lowest-income earners and 23 percent for the middle-income group, while the highest marginal rate fell from 83 percent in 1978 to 40 percent at the beginning of the 1990s. Since 1990, the reforms have allowed for independent taxation of couples.

Capital gains became taxed like labor income. Moreover, to encourage investment,

surtaxes on investment income were abolished. The share of total tax revenues raised by indirect taxes increased from 34 percent in 1978 to 40 percent in 1990.

### Sweden

In Sweden, a major tax reform took effect on January 1, 1991, and several conforming adjustments of the system have followed. The reform broadened the tax bases for both the corporate and individual income tax; at the same time, nominal income tax rates were significantly reduced. Another important initiative was the introduction of separate taxation on income from labor and income from capital.

The income tax in Sweden is imposed by municipalities (or counties) and by the national government. The former tax varies by municipality from approximately 26 percent to 35 percent. Individuals who earn more than a set amount (Skr 213,000 in 1998) in taxable income also pay 25 percent in national tax on the excess. The tax on capital income and capital gains is 30 percent regardless of any other income a taxpayer has. After the cut in marginal

Table 16: *Average and Marginal Income Tax for Four-Person Family, United States, 1980, 1985, and 1990*

	Low-Income Family <sup>a</sup>			Middle-Income Family <sup>a</sup>			High-Income Family <sup>a</sup>		
	Income	Average Rate <sup>b</sup>	Marginal Rate	Income	Average Rate <sup>b</sup>	Marginal Rate	Income	Average Rate <sup>b</sup>	Marginal Rate
	(US\$)	(%)	(%)	(US\$)	(%)	(%)	(US\$)	(%)	(%)
1980	12,166	18.3	30.3	24,332	23.7	36.3	48,664	24.8	43.0
1985	16,389	20.7	28.1	32,777	24.4	36.1	65,554	25.3	38.0
1990	20,726	20.4	30.3	41,451	24.6	30.0	82,902	24.6	28.0

<sup>a</sup> "Middle income" is the median, "low income" is half that amount, and "high income" is twice the median.

<sup>b</sup> Mean rate.

Source: Information from United States, Department of the Treasury, Office of Tax Analysis.

tax rates, rent subsidies and child benefit payments were made more generous in order to re-establish the system's progressivity.

The 1991 tax reform also broadened the tax base for the Swedish VAT. It is now generally levied at 25 percent on sales of both goods and services but at 12 percent on food, hotel services, and passenger transportation.

Studies by Agell, Englund, and Södersten (1996) and Kristofferson (1995) show that tax revenues in Sweden fell by an amount equivalent to 2 percent of GDP between 1991 and 1993. However, the broadened base of the consumption tax worked to offset 30 percent of the government revenue forgone because of the cut in the PIT.

The reduced tax on income from labor and capital had a positive impact on the level of savings; households used these benefits to reduce their debt load and increase savings. According to Agell, Berg, and Edin (1995), a third of the increase in household savings in 1992–93 was attributable to the tax reform. Klevmarken et al. (1995) nevertheless suggest that a quarter of Swedish taxpayers experienced a rise in their tax bill, motivating them to reduce their supply of labor. For the others, the impact of this reform on the supply of labor appears to have been positive, especially over the long term, since the reduced tax bill has encouraged

many households to increase their work effort and eventually their investment in education. This effect on the labor supply seems to have been most pronounced for women, who increased their hours worked by more than did men (Klevmarken 1997).

## Ireland

At the beginning of the 1980s, the tax bite in Ireland was one of the highest in the OECD, just below the levels in Sweden, Denmark, and the Netherlands. This situation pushed Ireland to undertake a series of reforms that were implemented over a lengthy period between 1986 and 1994 (with a break at the beginning of the 1990s). With the reforms, the number of income brackets in the tax code fell from six in 1983 (with rates ranging from 25 percent to 65 percent) to three in 1990 (with rates of 30, 48, and 53 percent), in keeping with global trends.

The 1994 budget further broadened the tax base and reduced the number of brackets to two; rates were also reduced to 27 and 48 percent (including social insurance costs paid by individuals). Moreover, the bottom tax bracket was enlarged, making the system less steeply progressive. Personal income taxes are nevertheless still collected at relatively low income levels.

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Since 1972, Ireland has collected a VAT with four rates: 0, 10.0, 12.5, and 21.0 percent. The most broadly applicable is 21.0 percent, which is high by international standards.

Despite recent reforms, Irish marginal taxes on labor income remain among the highest in the OECD and continue to apply to a large proportion of taxpayers. Neither do the reforms appear to have succeeded in reducing the emigration of workers fleeing the onerous tax burden. Ireland's unemployment rate also remains high.

## Concluding Observations

This review of Canadian personal taxation in light of the literature on the design of tax systems and in the context of competitive pressures leads to a number of observations and suggestions.

The fiscal disadvantage that Canadian taxpayers face compared with their southern neighbors is apparent in almost all taxes: on consumption, on labor, on capital, and on personal income. Average and marginal PIT rates in Canada are higher than in the United States, and they fare poorly compared with the OECD average.

Furthermore, of the countries examined here — Canada, the United States, the United Kingdom, Ireland, and Sweden — Canada alone has increased its marginal tax rates since 1985; when provincial levies are taken into account, it has the highest overall rates. And its total government revenues tend to be derived from a larger-than-average proportion of personal income taxes.

This heavy tax burden encourages the migration of the most highly mobile workers, reduces work and savings incentives for those who remain in Canada, and leads to detrimental effects on entrepreneurship, productivity, growth, and human capital formation. These effects are particularly important in light of Canada's aging population, the need to invest

in education and human capital, and the ever-present risk of a new economic downturn.

We feel that difficult choices must be made about both the mix and the size of the taxload Canadians are asked to bear. Fortunately, recent years have seen the emergence of fiscal room for a decrease in overall Canadian government revenues. Given the need for restructuring the tax mix, we believe that this new space provides an important opportunity for significant reforms that could enhance the efficiency and the equity of personal taxation in Canada.

The first effort should be to decrease the high marginal and average tax rates on personal income, both of which are important elements in the competitiveness of the Canadian fiscal system. Cuts to the PIT clearly should be the priority as long-term fiscal surpluses (net of excess EI revenues) emerge. As these cuts took place, the country's fiscal competitiveness would be increased, especially with respect to its southern neighbor, and the prospects for savings, human capital investment, growth, and employment would be improved for the benefit of all citizens.

We also believe that the reintroduction of complete indexation of tax brackets would help to ensure that the system better reflects sound fiscal policymaking rather than capricious inflationary erosion.

To maximize the positive effects of emerging fiscal surpluses on savings and growth, we envisage leaving consumption taxes broadly at their current levels and reallocating employer and employee payroll contributions. Canadians need a greater link between payroll contributions and benefits. Because the connection between past contributions and expected future benefits has been so erratic, CPP/QPP premiums are a clear source of intergenerational horizontal inequity. Similarly, most employees do not see how their mandatory EI contributions affect the benefits they can reasonably anticipate from the EI system;

hence, they see these contributions as a tax on their labor effort and activity and a source of horizontal inequity. Further, because employers' contributions are not linked to the costs they impose on the EI regime, they act largely as a pure payroll tax, not as an incentive to guard against the social cost of uncertain employment.

Providing employers and employees with a better bridge between the costs and benefits of payroll taxation would improve firms' incentives to create and maintain jobs and workers' motivation to invest in their human capital and to sustain their work activities and effort. It would also raise public trust in the social insurance system and lead to increased horizontal and intergenerational equity, which is particularly needed in light of the demographic challenges ahead. We therefore believe that the level of employee contributions to the CPP/QPP should rise in line with expected future liabilities for the pension entitlements of the current generation of contributors.

The unfunded CPP/QPP liability (for the current generation of retirees) and the financing of disability, death, and survivors' benefits could be financed instead through general tax revenues or through a new, uncapped, and broadly based payroll tax. This change would make the remaining CPP/QPP contributions act as true benefit-linked payroll taxes. It would thus generate positive effects on labor supply and human capital investment for the current and future generations of workers.

It would also increase public confidence in the future allocation of these contributions and bring more transparency to the public pension system. Moreover, it would bring greater horizontal equity to the financing of the unfunded pension liability and, over time, would introduce intergenerational equity to the operation of the Canadian public pension system.

To limit adverse effects on employment, the greater reliance on broad payroll taxation and the increase in CPP/QPP contributions

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would best be done by drawing on employees' contributions, rather than employers'. This approach would eliminate the need for firms to pass rising labor costs onto their employees in the form of lower gross wages, thus avoiding the higher unemployment associated with higher labor costs.

The new payroll tax needed for the unfunded pension liabilities would also have advantages over its counterpart in the current system. It would have a broader base than actual contributions and would thus require a lower tax rate. Its bite would gradually disappear as the unfunded part of public pension liabilities faded and eventually vanished. Once it had disappeared, the only remaining CPP/QPP contributions would be the more efficient

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and more equitable benefit-linked payroll taxes.

Reductions in EI contributions would be fiscally and actuarially sound in light of the large and growing program fund surpluses seen since 1995. Moreover, as a means of financing general government spending, capped payroll taxes, such as current EI contributions, are regressive and inefficient. Hence, we believe that cuts in employers' EI contributions should be granted to firms with a good

record of employment stability. Such a move would render the EI system more efficient and more conducive to job creation and stability. Employees' contributions should also be lowered, partly to compensate for the planned increases in their pension contributions and partly to restore a degree of horizontal equity in the EI system. This reduction, combined with the fall in EI employer contributions, would facilitate growth and job creation.

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