

# *A Roadmap for Federal Tax Reform*

---

Jean-Yves Duclos and Julie Gingras\*

## **ABSTRACT**

Canadian taxpayers are at a fiscal disadvantage relative to US taxpayers in almost every area: consumption, labour, capital, and personal income. Average and marginal personal income tax rates are higher in Canada than in the United States, and they also compare poorly with the OECD average. 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 has detrimental effects on entrepreneurship, productivity, growth, and human capital formation. These effects are of particular importance in the 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.

Fortunately, the new fiscal leeway arising from the federal budgetary surplus 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 a reduction in the aggregate tax burden, a resizing of the personal income tax base, and a reallocation of the mix of personal income taxes and payroll benefits and contributions.

The first step should be to reduce the high marginal and average tax rates on personal income, including the high marginal tax rates that low- to middle-income families face as a result of high benefit clawback rates. The reintroduction of complete indexation would help ensure that the system reflects sound fiscal policy making rather than gives rise to inflationary erosion. Some base broadening and base adjustment are also needed for greater tax efficiency and tax equity, including better allowances for the cost of children and more efficient and equitable treatment of various forms of income.

The second step should be to strengthen the link between payroll contributions and benefits. This could be in the form of reductions in employment insurance

---

\* CRÉFA, Département d'économie Université Laval. This paper is a significantly revised version of *Tax Mix and Tax Size: Directions for Federal Tax Reform*, C.D. Howe Institute Commentary no. 126 (Toronto: C.D. Howe Institute, June 1999). We would like to thank the Fonds FCAR of the Province of Quebec and the SSHRC of the Government of Canada for their support. We are also grateful to Finn Poschmann, Kenneth Boessenkool, Bob Brown, Jack Mintz, Bill Robson, and Jonathan Kesselman for very helpful comments and guidance.

(EI) contributions for firms with a good record of employment stability. These reductions would be fiscally and actuarially sound in the light of the large and growing EI surpluses that have been seen since 1995. The level of employees' contributions for the Canada and Quebec pension plans should move in line with expected government liabilities for the pension entitlements of the current generation of contributors. Unfunded pension liabilities should be financed from general tax revenues, or possibly through a new uncapped and broadly based payroll tax. This program redesign would generate positive effects on labour supply and human capital investment for current and future generations of workers. It would also increase equity, trust, and transparency in the present and future allocation of public transfers.

---

## INTRODUCTION

Recent years have seen the emergence of significant net fiscal revenues for the federal government. Relatively conservative estimates put these revenues at around \$5 billion per year for the medium term,<sup>1</sup> allowing for some repayment of the debt (which is needed for intergenerational equity)<sup>2</sup> and for fiscal prudence in the midst of economic cycles. It is not surprising that debate has grown on the appropriate use of this "surplus." Should it be spent on new or existing fiscal programs? On tax reductions? On debt repayment? This paper contributes to that debate by arguing that this emerging leeway (net of debt repayment) should be used to facilitate improvements in our system of personal taxation—that is, that necessary tax reform should be aided by tax cuts. The overriding aim is to use the new fiscal latitude not only to reduce the average tax bite, which is high by historical and international standards, but also to enhance the structural mix of our personal tax system, both for efficiency and for equity considerations.

To achieve this goal, it is important to set a clear roadmap for the future of taxation. The pressure is already high and will keep mounting for various ad hoc changes to our tax system, and for ad hoc increases in government expenditures, that would favour more the interests of various lobby groups than the interests of the average Canadian taxpayer. The need to resist the pressure for ad hoc changes is particularly urgent in the light of important ongoing and forthcoming economic and demographic changes. For example, expenditures on health care and on public pensions will rise sharply in the next decades. These decades will also require increased human capital investment in education and training. Furthermore, continued transnational economic integration means that the mobility of factors

---

1 See, inter alia, William B.P. Robson, *Payback Time: Assessing the Room for Federal Tax Cuts*, C.D. Howe Institute Commentary no. 119 (Toronto: C.D. Howe Institute, February 1998).

2 See Philip Oreopoulos and François Vaillancourt, *Taxes, Transfers, and Generations in Canada: Who Gains and Who Loses from the Demographic Transition*, C.D. Howe Institute Commentary no. 107 (Toronto: C.D. Howe Institute, June 1998).

of production (capital and labour) will keep increasing, which will significantly increase the costs to the Canadian economy of deficiencies in our personal tax system. The opportunity to remedy these deficiencies should thus be seized as soon as it arises. Finally, a coherent setting for tax and debt policy will help avoid future federal-provincial tensions, which are likely to rise sharply if, for example, the Canadian government chooses to use its fiscal latitude not to rationalize its tax and debt policy but to increase arbitrarily its spending in areas of provincial jurisdiction. A coherent tax agenda should help steer the Canadian government away from such harmful temptations.

Where, therefore, should the federal government be heading, given the existence of significant room for tax reductions? How is Canada currently faring in personal taxation policy compared with other nations? Our goal in this paper is to provide some guidelines and suggestions for forthcoming changes to Canada's personal tax system in the context of competitive fiscal pressures and in the light of the empirical and theoretical literature on tax design. In the section that follows, we summarize the current fiscal context and outline our roadmap for federal tax reform, and then review briefly the structure of Canadian personal taxation. Next, we examine the economic principles of sound taxation in the light of the literature on the design of tax systems. In the paper's final section, we set personal taxation in Canada in an international context, focusing on comparisons with four other countries that are members of the Organisation for Economic Co-operation and Development (OECD): 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.

### **A ROADMAP FOR PERSONAL TAX REFORM**

Personal income tax (PIT) rates, both marginal and average, are higher in Canada than they are 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. When combined with the clawback rates on child tax benefits and goods and services tax (GST) credits, marginal tax rates hurt low- to middle-income families the most. Personal income taxes also make up an unusually large share of total government revenues in Canada. Canadian workers who are mobile may leave the country to escape high average taxes (especially given the proximity of the United States). Their emigration often means that Canada is losing its most specially skilled 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 these reasons, we believe that Canada must strive to reduce its high marginal and average PIT rates, which are important elements in the competitiveness of the fiscal system. PIT cuts should be the priority as long-term fiscal surpluses (net of employment insurance [EI] excess revenues) emerge. A good start would be a reduction in the clawback rates that impair the work incentives of low- and middle-income families, and the elimination of the 5 percent PIT surtax, which is “a tax on a tax.” Eventually, however, all tax rates—explicit and implicit, average and marginal—must be reduced across the whole spectrum of incomes. Only then will Canada’s fiscal competitiveness improve significantly, especially in relation to the United States.

One reason the average tax rate in Canada has increased since 1985 is that income tax brackets have been only partially indexed, which has contributed to an erosion of the structure of the tax system (in constant dollars). Many taxpayers have slipped into a higher tax bracket, and consequently have faced a significant increase in their marginal tax rates. This has resulted in a worsening of work and savings incentives and an increase in the welfare and growth costs of income taxation. By eroding the value of tax credits and by hurting low- to middle-income families the most, incomplete indexation has also had erratic effects on vertical and horizontal equity. The reintroduction of complete indexation of tax brackets and tax credits would help ensure that the Canadian system reflects sound fiscal policy making rather than gives rise to inflationary erosion.

Some broadening and redefinition of the personal income tax base is also warranted. The introduction of a large universal child credit would help restore horizontal equity in personal taxation. Child-care tax provisions that distort the choice of family versus formal child-care arrangements should be avoided. Preferential tax treatment for pension income against other income and the age credit should be abolished. Employer-provided health benefits, strike pay, and workers’ compensation should be added to the personal income tax base. These changes would enhance the equity and the efficiency of personal income taxation.

Because taxes on consumption create fewer distortions in savings and intertemporal behaviour than do taxes on personal income, the federal government should increase its reliance on the former. It could do this by partially replacing the PIT with enhanced consumption taxes (the GST and retail sales taxes). It could also increase its reliance on consumption taxes by increasing the contribution limits and the flexibility of registered retirement savings plans (RRSPs), which can effectively transform the personal income tax system into a consumption tax system. Compared with an increased reliance on sales taxes, this latter approach would have the advantage of not distorting the choice between home-based and foreign-based consumption. It would also facilitate vertical and horizontal equity, because the structure of the personal income tax system allows the incorporation of tax credits and deductions, and has a basic progressive marginal tax rate schedule. Moving further from income taxation to consumption taxation would benefit efficiency and growth, and would also

promote simplicity and neutrality in taxation. The goals of the 1987 tax reform, which were not wholly met, would thereby be more fully achieved.

As a means of financing general government spending, capped payroll taxes, such as “contributions” to the EI program, are regressive. Because they are not raised on a broad base of earnings and income (the EI base excludes, for example, self-employment income, non-wage benefits, and returns from business, property, and financial investments), they are also a source of inequity. Moreover, capping distorts the choices between hiring new employees and having current staff work overtime and between part-time and full-time work; the narrowness of the base thus favours some types of economic activity at the expense of others. For many workers, both of these features tend to raise marginal tax rates above the level that would prevail 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 source of general government revenue, not just as a means of financing specific entitlements. This argument is especially strong when PIT rates are high by international standards, as Canada’s are. 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 achieved through increases in contributions by employees rather than employers. If the aim is to maintain the contribution of overall payroll revenue to the financing of general government spending, an increase in broad and uncapped employees’ payroll taxes would be a good complement to reductions in employers’ contributions to EI and the Canada or Quebec pension plan (CPP/QPP).

In redesigning the structure of payroll taxation, cross-national competition is always an issue. However, Canada relies less on payroll taxes than do the United States and most other developed countries, which gives Canadian governments some room to manoeuvre. Indeed, it is not the size of aggregate Canadian payroll taxation that appears problematic but, rather, its structure.

What is needed is a stronger 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 problems are particularly important in the light of ongoing and future increases in CPP/QPP contribution rates.

Similar issues arise with regard to 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 pass the economic incidence of these premiums on to 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 labour effort and activity and as a source of vertical and horizontal inequity.

One way to address these issues is to grant reductions in employers' EI contributions to firms with a good record of employment stability—a proposition made by the Technical Committee on Business Taxation,<sup>3</sup> and also by Boessenkool, Poschmann, and Robson.<sup>4</sup> It is an approach that would render the EI system more efficient and more conducive to job creation and stability. Employees' contributions would also be reduced, in part to compensate for the large planned increases in CPP/QPP contributions and in part to restore a degree of equity to the EI system. The reduction would be fiscally and actuarially sound in the light of the large and growing EI surpluses that have been seen since 1995 (estimated to be around \$5 billion a year).

With regard to the CPP/QPP, 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<sup>5</sup> and Dungan<sup>6</sup> 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. The unfunded liability could also, perhaps, be financed through a new, uncapped, and broadly based payroll tax called, say, PT.<sup>7</sup> Although less efficient and less equitable than a direct consumption tax as a source of finance for general government expenditures, such a tax may be politically easier to implement. These changes, in combination, would make CPP/QPP contributions act as true

---

3 Canada, *Report of the Technical Committee on Business Taxation* (Ottawa: Department of Finance, April 1998).

4 Kenneth J. Boessenkool, Finn Poschmann, and William B.P. Robson, *Solving the EI Conundrum*, C.D. Howe Institute Backgrounder (Toronto: C.D. Howe Institute, October 1998).

5 James E. Pesando, *From Tax Grab to Retirement Savings: Privatizing the CPP Premium Hike*, C.D. Howe Institute Commentary no. 93 (Toronto: C.D. Howe Institute, June 1997).

6 Peter Dungan, *The CPP Payroll Tax Hike: Macroeconomic Transition Costs and Alternatives*, C.D. Howe Institute Commentary no. 116 (Toronto: C.D. Howe Institute, November 1998).

7 William B.P. Robson, in *Putting Some Gold in the Golden Years: Fixing the Canada Pension Plan*, C.D. Howe Institute Commentary no. 76 (Toronto: C.D. Howe Institute, January 1996), was one of the first to propose such a tax.

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

For workers, the increased CPP/QPP contributions and the payments under a new, broader PT would be partially offset by the proposed reduction in their EI contributions. Although the net amount could be substantially greater than the current total level of CPP/QPP and EI employee contributions, the link between contributions and expected benefits would be strengthened. 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. Furthermore, a PT would have a less adverse effect on employment than does the portion of CPP/QPP contributions that now implicitly finances the unfunded liability, because the new tax would have a broader base than the current system and because its bite would lessen as the unfunded liability falls and eventually disappears.

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 labour costs on to employees in the form of lower gross wages or perhaps higher unemployment. This approach would thus facilitate growth and job creation. Strengthening the link between the costs and the benefits of payroll taxation would also 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.

## **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<sup>8</sup> examined the fiscal policy landscape of the time and advanced a number of proposals aimed at improving the system. Some of the recommended changes were incorporated in the 1971 Income Tax Act. The second major reform occurred in 1987. Then, the

---

8 Canada, *Report of the Royal Commission on Taxation* (Ottawa: Queen's Printer, 1966) (the Carter commission).

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 10 to 3, the federal maximum marginal tax rate was cut from 34 percent to 29 percent, and the tax base was broadened. An important followup to this reform was the introduction in 1991 of the GST, a value-added tax (VAT) similar in operation to those in most of the other developed countries on which we focus in this paper.

In brief, Canadian personal tax reforms followed the same broad path as reforms in 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, in part because of incomplete indexation for inflation and in part because of increases in provincial taxes. Nor did the 1987 tax 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 had risen to 55 percent. A similar increase occurred at the provincial level. The percentage of total tax revenues drawn from consumption taxes did increase, but quite modestly in the 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 the discussion below, 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 are linked in two main ways. First, the incidence of any tax on a firm falls ultimately either on the owners of the inputs it uses (capital and labour, for example) 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**

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 under a VAT to exempt production goods, a feature that avoids penalizing goods with multiple production stages. Second, a VAT is less vulnerable than an RST to fraud.<sup>9</sup>

---

<sup>9</sup> Organisation for Economic Co-operation and Development, *Consumption Tax Trends* (Paris: OECD, 1995).



**Table 1 Tax Rates for a Representative Canadian Taxpayer, 1984-1997<sup>a</sup>**

Income (1987 dollars)	Marginal rate <sup>b</sup>				Average rate <sup>c</sup>			
	1984	1988	1992	1997	1984	1988	1992	1997
	<i>percent</i>							
\$ 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

<sup>a</sup> 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>b</sup> Marginal tax rates are 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>c</sup> Average rates apply to all dollars earned up to the bracket threshold.

Sources: Organisation for Economic Co-operation and Development, *Revenue Statistics 1965-1997* (Paris: OECD, 1998); and information from Canada, Department of Finance.

**Table 2 Federal and Provincial Personal Tax Revenues as a Percentage of Total Revenue, Fiscal Years 1985-86 and 1995-96**

Revenue category	Federal government		Provincial governments	
	1985-86	1995-96	1985-86	1995-96
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

— not applicable.

Source: Organisation for Economic Co-operation and Development, *Revenue Statistics 1965-1997* (Paris: OECD, 1998).

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 of the other provinces except Alberta). 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). VATs are 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 paper. 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

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

	Federal VAT	Provincial VAT or RST	Combined rate
		<i>percent</i>	
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: Québec, Ministère des Finances.

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.

### 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 or 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 was also, until 1999 budget measures took full effect, a surtax of 3 percent on the PIT and an additional surtax of 5 percent on the amount by which the PIT exceeds \$12,500. These surtaxes brought the top marginal rate up to 31.32 percent.

The 1998 federal 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 fell, at a rate of 6 percent, for larger amounts of basic federal tax, and eventually vanished 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. Fortunately, 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. The top federal marginal rate is thus set to drop to 30.45 percent. There

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

	Year of introduction	Standard rate at year of introduction	Current standard rate	% of GDP collected
		<i>percent</i>		
United States . . . . .	—	—	—	—
United Kingdom . . . . .	1973	10.0	17.5	6.6
Sweden . . . . .	1969	11.1	25.0	8.5
Ireland . . . . .	1972	16.4	21.0	7.0
Canada . . . . .	1991	7.0	7.0	2.6

— not applicable.

Source: Organisation for Economic Co-operation and Development, *Consumption Tax Trends*, 2d ed. (Paris: OECD, 1997).

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

Marginal rate	Taxable income
<i>percent</i>	<i>dollars</i>
17	29,590 or less
26	29,591 to 59,180
29	59,181 or more
<i>Surtaxes and surtax reductions</i>	
<ul style="list-style-type: none"> <li>• 5% surtax on personal income taxes above \$12,500 (approximately \$63,000 of taxable income)</li> </ul>	
<i>Measures slated for elimination in 1999 budget</i>	
<ul style="list-style-type: none"> <li>• 3% surtax on all personal income taxes</li> <li>• Surtax reduction equal to 3% of personal income taxes up to \$8,333 (approximately \$42,300 of taxable income)</li> <li>• 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)</li> </ul>	

remains, however, the 5 percent surtax on personal income taxes above \$12,500. This is a “tax on a tax” for which there is little economic or administrative rationale, since it could be implemented more simply and transparently as an increased rate of income tax.

To these “statutory” marginal tax rates must be added the clawbacks on refundable credits and benefits. They typically exceed 50 percent from as low as

\$21,000 of *total* family income,<sup>10</sup> and are therefore particularly hurtful for low-income families. These high marginal rates clearly have a very negative effect on the work incentives (hours of work and job selection) of low-income families.

Since 1985, income tax brackets have been indexed only when the consumer price index (CPI) has increased more than 3 percent. Although Canadian incomes have escalated in nominal terms by more than 30 percent, tax credits and the bracket structure (which establish tax liability) have increased by only about 8 percent. 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 higher rates. One result is that, despite a freeze on PIT rates, average rates have increased. Poschmann<sup>11</sup> calculates that this "bracket creep" has resulted in 3 percent more of takehome pay being paid in federal taxes (net of transfers), and in \$10 billion of extra tax revenues in 1998 only (about \$1,000 per Canadian family). Each 1 percent increase in the CPI that is not reflected in the tax system raises about \$500 million in extra tax revenues *per year*. These are very significant figures, not least in political terms, since these extra taxes ("stealth taxes") are not, and have not been, legislated or transparently imposed on taxpayers.

Poschmann and others have also argued that these hidden taxes, which increase steadily and surreptitiously every year, have detrimentally delayed the need for the federal government to readjust its finances. Moreover, it is on low- to middle-income families that the burden of this covert increase in taxes has fallen most heavily—a cost of 4.1 percent of family income on total family income of between \$30,000 to \$40,000 a year. Furthermore, 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. Marginal tax rates have thus been rising at the same time as average tax rates. Since 1992, 18 percent of taxpayers have either become taxable or been pushed into a higher tax bracket because of partial indexation.<sup>12</sup> This indexation failure has thus increased the marginal tax rates that Canadians face on their labour earnings and savings: Poschmann<sup>13</sup> estimates that incomplete indexation increased average marginal tax rates by 5 percent between 1985 and 1998, with an associated increase of 13 percent in the deadweight loss of a dollar of extra taxes.

---

10 See, *inter alia*, James B. Davies, *Marginal Tax Rates in Canada: High and Getting Higher*, C.D. Howe Institute Commentary no. 103 (Toronto: C.D. Howe Institute, March 1998).

11 Finn Poschmann, *Inflated Taxes, Deflated Paycheques*, C.D. Howe Institute Commentary no. 118 (Toronto: C.D. Howe Institute, December 1998).

12 Organisation for Economic Co-operation and Development, *Revenue Statistics 1965-1997* (Paris: OECD, 1998).

13 *Supra* footnote 11.

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 shows 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 primarily affect firms, but they also fall on individuals who have business and investment income. Income from an unincorporated business and employment income are treated similarly and are 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 one-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 typically comprises the sum of wages and the value of taxable benefits. Taxes on the wage bill may be levied either on the employer (so that the tax is paid on top of the wage) or on the employee (so that the tax is deducted from the wage). Canadian governments use payroll tax 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 gross domestic product (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; the total rate in 1998 was 6.48 percent of insurable earnings. CPP/QPP contributions are evenly divided between employers and employees; the total rate in 1999 was 7.0 percent of covered earnings and is scheduled to rise to 9.9 percent by 2003. It is estimated that 2.9 percent of this scheduled 9.9 percent contribution rate will pay for the unfunded CPP liability of past contributors—a

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

	Rate
	<i>percent</i>
Newfoundland .....	53.3
Nova Scotia .....	49.7
Prince Edward Island .....	50.3
New Brunswick .....	49.0
Quebec .....	52.6
Ontario .....	50.3
Manitoba .....	50.1
Saskatchewan .....	51.6
Alberta .....	45.6
British Columbia .....	54.2

Source: Deloitte & Touche.

clear intergenerational transfer.<sup>14</sup> Overall, Canada's payroll tax revenues in 1996 represented 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, and 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 property taxes 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. 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 is, the greater the distortions are likely to be. Minimizing distortions also often holds down the negative effects of taxes on growth and employment. A tax is also expected to contribute to the goal of equity, or fairness; that is, it may redistribute income from rich to poor (vertical equity) while striving to treat equally individuals who are in similar economic circumstances (horizontal equity). Finally, a tax should be

14 See Pesando, *supra* footnote 5 and the text below.

**Table 7 Trends in Payroll Taxes, as a Percentage of Government Revenue, All Canadian Governments, 1950-1996**

	Unemployment insurance	Workers' compensation	CPP/QPP	Provincial payroll taxes <sup>a</sup>	All
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

— not applicable.

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

Sources: Jonathan R. Kesselman, *General Payroll Taxes: Economics, Politics, and Design* (Toronto: Canadian Tax Foundation, 1997); and information from Statistics Canada.

simple to administer and should limit opportunities for evasion and avoidance. This section examines some of the complex, interconnected issues involved in designing an efficient, fair, and simple tax system.

### **Tax Distortions and Efficiency**

Most taxes distort to some degree the free operation of the economy through their impact on savings, consumption, employment, the migration of labour, and growth.

#### ***Savings and Consumption***

The impact of taxes on savings varies with their type. In Canada, the PIT has several major effects on the level of savings. First, taxes undermine the incentive to save by reducing the net return on savings (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 partially 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 in taxpayers' saving behaviour 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 pre-retirement to post-retirement). Life cycle considerations are important in determining saving behaviour, and annual redistribution discourages pre-retirement 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 also of their 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, usually reduced by a wage tax (assuming that other 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 will 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 on inheritance (the price effect), estate taxes tend to reduce 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 behavioural 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 the level of 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 partially crowd out some private savings that workers would otherwise set aside for retirement, their introduction generally tends to increase aggregate savings, capital accumulation, the economy's productivity, and labour competitiveness.

*Unfunded* public pension plans, however, simply transfer income from the current working population to the current retired generation. 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 reduce 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; this implies 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 government revenues are put: that share is lower if revenues from the tax on returns to risky investments are spent or invested in non-risky assets.

Property taxes entail two main types of distortion. 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. In addition to these distortions, property taxes have an immediate effect on the valuation of the existing stock of property.

### ***The Labour Market***

Payroll taxes increase the gap between the gross wages paid by employers and the net wages received by employees. The result is thus generally a fall in

employment and production. This gap, also called the tax wedge, may partially correspond to workers' willingness to pay for public services, such as employment and health-care insurance, that are supported by particular payroll taxes.

If the level of benefits provided to employees corresponds 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 labour market is flexible, net wages eventually will be driven downward, reducing the effect of publicly provided benefits on employment and competitiveness. But if the labour market is rigid, wages cannot adjust fully and quickly, and the cost of labour increases, resulting in unemployment and a loss of competitiveness. For this reason, Dungan<sup>15</sup> argues that increases in CPP/QPP premiums should be on the side of employees, not employers, so as to reduce the adverse impact of employee benefits on jobs and output and accelerate the adjustment of net wages.

If, however, publicly provided benefits are not produced at a level corresponding to employees' wishes, then, even with wage flexibility, employment falls if the labour supply is elastic. The negative impact is likely to be the greatest for low-wage earners and women because the elasticity of labour supply for these two categories is generally estimated to be higher than that for other employees. This dependence on employee preferences provides an argument for a strong link between individual benefits and contributions in the design of payroll taxation.

Because adjustment to a tax change takes time, the long-run impact on competitiveness, wages, and employment generally differs from the short-run one. If a payroll tax on employers is increased, competitiveness will instantly be impaired but will eventually be restored (if wages are flexible in the long run). Jobs and firms' labour demand will fall in the short run because of the reduction in competitiveness. Labour costs will rise instantly but will return to their initial levels as employees gradually accept lower wages in the face of reduced competitiveness and employment. If, however, a payroll tax on employees is increased, the short- and long-run responses will be 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 reductions in employment or competitiveness.

The effect of payroll taxes on the demand for labour thus depends on whether they are borne by 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 employees pushes down net wages, which contributes to a fall in labour supply but does not affect labour demand. Workers may then decide to withdraw from the labour market, to reduce the number of hours they work, to move to a

---

15 *Supra* footnote 6.

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 a function both of the marginal rate of payroll taxation (for example, through 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 (through decisions to migrate or to withdraw completely from the official labour market). Thus, when the supply of labour is elastic, excessive reliance on payroll taxes contributes, even in the long run, to an inefficient reduction in the quantity and quality of labour supplied.

### *Empirical Estimates*

Whether actual labour 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 a study by Tyrväinen,<sup>16</sup> illustrates his broad estimates of how firms' labour costs may vary among countries when social security, income, or consumption taxes are changed. (We emphasize that Tyrväinen's estimates of the effects of taxes on labour costs represent a possible range of values, not necessarily definitive or reliable ones.) In Germany, for example, it is estimated that employers absorb entirely a \$1.00 increase in their contributions to social security, in which case firms' labour costs increase by \$1.00, net wages to employees remain unchanged, and labour demand and employment are expected to fall. However, if the additional tax burden is passed on entirely to employees (as it is in Sweden and the United States), employees experience a loss of income equal to the increase in contributions, employers bear no additional wage cost, and labour demand should be unaffected. In Canada, an increase of \$1.00 in social security contributions increases employers' labour costs by an estimated \$0.80 and reduces employees' net wages by \$0.20.

In the case of a \$1.00 increase in personal income or consumption taxes or in employees' social security contributions, it is estimated that German employees 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 (25 percent) offset by higher gross wages. In Canada, it is estimated that 80 percent of a \$1.00 increase in employees' contributions is offset by an increase in firms' cost of labour.

Tyrväinen's results should be viewed as largely illustrative and open to challenge. His results for Canada, for example, have been confirmed only for

---

16 Timo Tyrväinen, *Real Wage Resistance and Unemployment: Multivariate Analysis of Cointegrating Relations in 10 OECD Countries*, Jobs Study Working Paper no. 10, OCDE/GD(95)135 (Paris: Organisation for Economic Co-operation and Development, 1995).

**Table 8 Elasticity of Labour Costs with Respect to Various Factors,  
Selected OECD Member Countries**

	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: Timo Tyrväinen, *Real Wage Resistance and Unemployment: Multivariate Analysis of Cointegrating Relations in 10 OECD Countries*, Jobs Study Working Paper no. 10, OCDE/GO(95)135 (Paris: Organisation for Economic Co-operation and Development, 1995).

the short run, since Canadian wages are thought to adjust downward substantially in the long run.<sup>17</sup> Dahlby<sup>18</sup> supports this contention by emphasizing that employees absorb about 80 percent of the burden of payroll taxes imposed on employers in the long run, which may amount to several years.<sup>19</sup>

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 labour to firms increases. This degree of short- and medium-run Canadian wage resistance leads Coe<sup>20</sup> 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, which results in a greater impact on net wages than on employment levels.

Thus, the elasticity of Canadian labour 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 reduction 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 an increase in employers' payroll taxes.

17 B. Cozier and K. Mang, "Explaining the Jobless Recovery" (mimeograph, Department of Finance, Economic Studies and Policy Analysis Division, Ottawa, 1994).

18 Bev Dahlby, "Taxation and Social Insurance," in Richard M. Bird and Jack M. Mintz, eds., *Taxation to 2000 and Beyond*, Canadian Tax Paper no. 93 (Toronto: Canadian Tax Foundation, 1992), 110-56, and Bev Dahlby, "Payroll Taxes," in Allan M. Maslove, ed., *Business Taxation in Ontario* (Toronto: University of Toronto Press in cooperation with the Fair Tax Commission of Ontario, 1993), 87-170.

19 Dahlby, "Taxation and Social Insurance," supra footnote 18.

20 David T. Coe, "Structural Determinants of the Natural Rate of Unemployment in Canada" (March 1990), 37 *International Monetary Fund Staff Papers* 94-115.

### *The Effects of Structure*

As already suggested, the use to which revenues from a payroll tax are put affects the ease with which the burden can be shifted onto employees. An increase in the payroll tax to fund a program whose benefits are paid directly and transparently to employees 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 pay for these benefits themselves. Pesando<sup>21</sup> and Dungan<sup>22</sup> use such arguments in favouring a closer link between CPP/QPP premiums and entitlements to reduce labour disincentives and foster increased trust in the public pension system.

A payroll tax rate that is differentiated according to the nature and behaviour of firms can lighten the tax wedge for some firms, since those whose employees make greater 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. Differential 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, which reduces the distortions and costs to the labour market associated with a flat rate tax. Along the same lines, the report of the Technical Committee on Business Taxation<sup>23</sup> includes recommendations that would strengthen the 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 labour unions make more modest wage demands when marginal PITs are more progressive, since the marginal wage cost of labour is then higher. Conversely, Tyrväinen,<sup>24</sup> Holmlund and Kolm,<sup>25</sup> and Lockwood and Manning<sup>26</sup> show that an increase in the progressivity of income taxes creates pressure on net

---

21 Supra footnote 5.

22 Supra footnote 6.

23 Supra footnote 3.

24 Supra footnote 16.

25 Bertil Holmlund and Ann-Sofie Kolm, *Progressive Taxation, Wage Setting, and Unemployment: Theory and Swedish Evidence*, Working Paper 1995:15 (Uppsala, Sweden: Uppsala University, Department of Economics, 1995).

26 Ben Lockwood and Alan Manning, "Wage Setting and the Tax System: Theory and Evidence for the United Kingdom" (August 1993), 52 *Journal of Public Economics* 1-29.

wages (by increasing the tax wedge) and that, in Japan, Italy, the United Kingdom, Finland, and Sweden, this pressure has generally led to lower wages. Knoester and van der Windt<sup>27</sup> 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 labour supplied by individuals. 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 labour is unclear. Estate taxes, however, cause heirs to increase their labour supply since their expected inheritance is generally diminished.

Although, as already noted, Canada has no inheritance or gift taxes, 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 labour supply behaviour 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 labour 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 cross-border shopping circumscribe producers' ability to pass on part of their tax bill to consumers in the form of higher 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 that has been ongoing since the 1980s also makes it increasingly difficult for one country to tax capital at a rate different from 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 due to 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,

---

27 Anthonie Knoester and Nico van der Windt, "Real Wages and Taxation in Ten OECD Countries" (February 1987), 49 *Oxford Bulletin of Economics and Statistics* 151-69.

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 some 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, the levels of both productivity and economic growth suffer. In a recent study, DeVoretz and Laryea<sup>28</sup> estimate the net loss in knowledge at about \$6.7 billion, resulting from the emigration of Canadian professionals and managers to the United States between 1982 and 1996.

One 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 labour. It is also a byproduct of investment in physical capital. A firm that invests in physical capital is able to raise its level of expertise since new equipment enables employees to develop new skills and qualifications and increase their knowledge. This enhanced knowledge, 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 of economic growth involves the work of firms’ R & D divisions in the development of new products and technologies. Firms’ investment in knowledge is, however, generally below the socially optimal level because, despite the existence of patents, firms are not able to capture fully the positive externalities generated by their innovations. 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 economic growth.

Because of its links with knowledge and human capital, investment in education has a positive impact on economic growth. The more progressive the PIT is, 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

---

28 Don DeVoretz and Samuel A. Laryea, *Canadian Human Capital Transfers: The United States and Beyond*, C.D. Howe Institute Commentary no. 115 (Toronto: C.D. Howe Institute, October 1998).

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<sup>29</sup> 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 reduction in taxes on capital or in PITs, which stimulates savings and investment, or a reduction in wage taxes, which stimulates human capital formation, is better for growth than equivalent reductions in consumption 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<sup>30</sup> 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 tax rates (panel A) and marginal tax rates (panel B) 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 annual 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 who have identical standards of living before a tax is imposed have identical

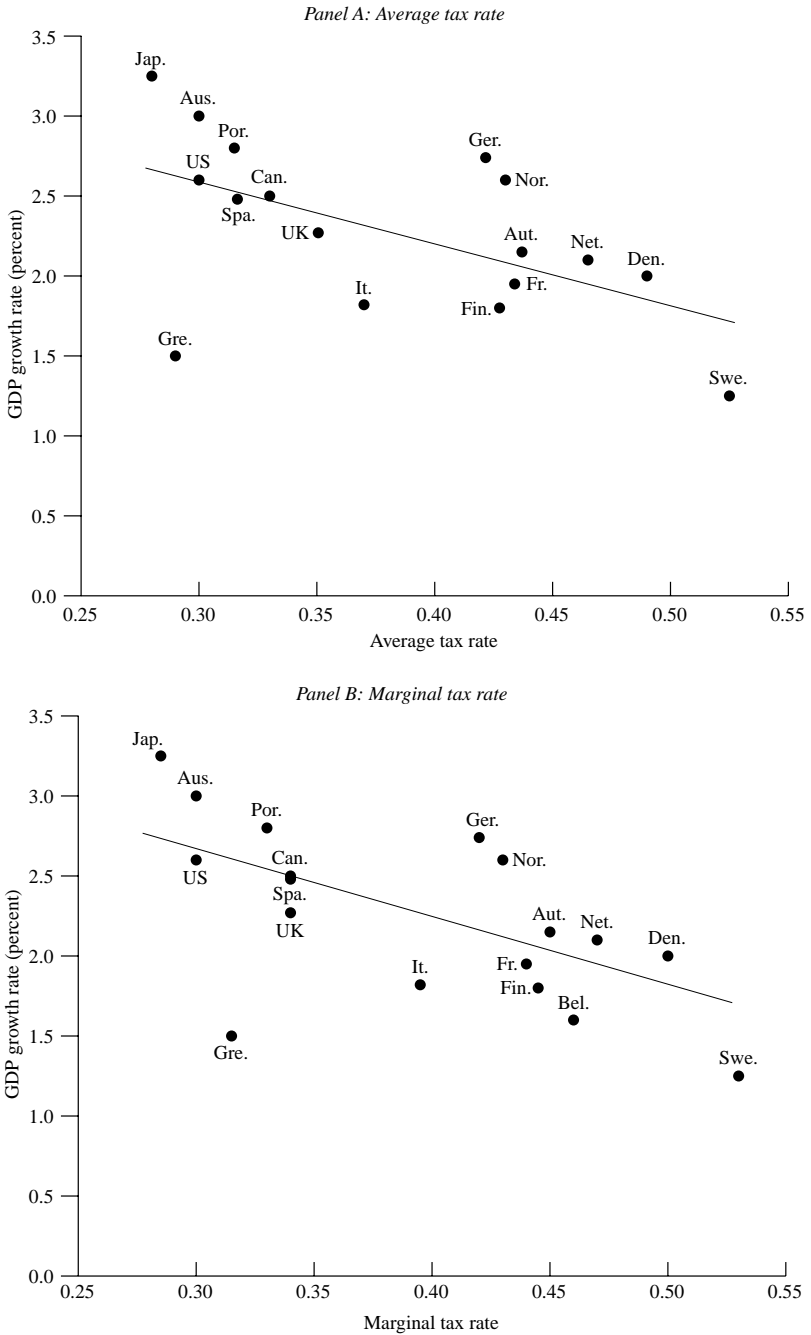
---

29 J. Xu, "The Dynamic Effects of Taxes and Government Spending in a Calibrated Canadian Endogenous Growth Model" (mimeograph, Department of Finance, Ottawa, 1997).

30 Gerald W. Scully, "Rights, Equity, and Economic Efficiency" (1991), vol. 68, nos. 1-3 *Public Choice* 195-215.



**Figure 1 Tax Rates and Growth, Selected OECD Member Countries, 1980-1995**



standards of living afterward, the tax 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 onto 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 example, 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). Life-time consumption may, however, provide a more equitable standard. It probably offers a better indication of both the demands that individuals make on public goods and services and the standards of living that 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 labour and human capital since progressive taxation discourages employment and investment in education. In general, redistributing income always produces efficiency or deadweight 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. Either all such characteristics are too imperfectly correlated with income to be used either equitably (consider age or sex) or efficiently, or the characteristics can be concealed or altered (in the form of activities in the underground economy or of reduced effort, labour supply, or investment).

Concealment or alteration of their activities forces individuals away from the economic behaviour they would have preferred, while depriving the state of some of the revenue it would otherwise have raised. Any taxation of income results in a deadweight efficiency 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.<sup>31</sup>

---

31 See, for example, Bev Dahlby, "The Distortionary Effect of Rising Taxes," in William B.P. Robson and William M. Scarth, eds., *Deficit Reduction: What Pain, What Gain?* Policy Study no. 23 (Toronto: C.D. Howe Institute, 1994), 43-72; and Davies, *supra* footnote 10.

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. Examples of sources of horizontal inequity in Canada include the means-testing of child tax credits (as opposed to a system of universal child deductions that would recognize the costs of raising children at all income levels), the non-inclusion in taxable income of strike pay, workers' compensation benefits and employer-provided health benefits, the discriminatory lifetime capital gains exemption, and the preferential treatment for pension income and the tax credit for being 65 years of age or older.<sup>32</sup>

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, signalling an erosion in economic equality. In the context of lifetime consumption, however, consumption taxes seem less regressive, since the greater savings of the higher-income individuals are taxed when they are eventually consumed. Because it seems to provide relatively fewer opportunities for tax evasion and because it relies on a large base, a consumption tax can be more horizontally equitable than an income tax. This conclusion is reversed, however, if consumption tax rates differ significantly across types of goods, or if ability to pay should take into account family size and composition.

One way to make a tax on consumption more horizontally and vertically equitable is to integrate it in the personal income tax system, by effectively transforming that system into a consumption tax system. This transformation is effected by taxing income net of savings, which amounts to taxing consumption. With its deductibility of RRSPs and its non-taxation of the returns to home ownership, the present tax system does this in part already. That capacity could be further

---

32 See, inter alia, Kenneth J. Boessenkool and James B. Davies, *Giving Mom and Dad a Break: Returning Fairness to Families in Canada's Tax and Transfer System*, C.D. Howe Institute Commentary no. 117 (Toronto: C.D. Howe Institute, November 1998); Jack M. Mintz and Finn Poschmann, *Tax Reform, Tax Reduction: The Missing Framework*, C.D. Howe Institute Commentary no. 121 (Toronto: C.D. Howe Institute, February 1999); and Jonathan R. Kesselman, "Base Reforms and Rate Cuts for a Revitalized Personal Tax" (1999), vol. 47, no. 2 *Canadian Tax Journal* 210-41.

extended, however, by raising the upper limit of allowed RRSP contributions, by broadening the range of investments that qualify for retirement savings plans, and by facilitating intertemporal consumption smoothing by enabling the reinvestment of RRSP funds that have been previously taken out of plans.<sup>33</sup>

Another advantage of the method of direct consumption taxation (that is, through the income tax system) is that allowance can then be made directly and appropriately for the costs of supporting other family members and for the deductibility of various costs (EI contributions, union dues, etc.), and that rising marginal tax rates on consumption are then possible (for increased vertical equity). Taxing consumption directly also has the advantage of taxing the consumption flowing from all of the income earned by Canadian residents, whether it is spent in Canada or abroad, a feature that further enhances the efficiency and the equity of consumption taxation. Finally, a direct or an indirect consumption tax taps better than a payroll tax the consumption financed by the dissavings of the retired, who are not earning income anymore.<sup>34</sup> This can be important for intergenerational equity, and for equity in the financing of the unfunded public pension liability.

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 employers 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 labour mobility, low-income workers are subject to proportionally greater reductions in income than high-income earners. When payroll taxes are used at least in part 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, because they discriminate in favour of taxpayers with significant sources of non-wage income (such as self-employment income). Payroll taxes are also vertically and horizontally inequitable in the financing of general government expenditures since (as opposed to direct income or consumption taxation) they do not take into account family circumstances and individual needs in the assessment of the ability to pay.

### ***The Assessment of Equity***

The study of the overall incidence of a tax system is generally fraught with difficulties, because analysts must make several behavioural and tax-shifting assumptions in order to estimate the true economic incidence of various taxes.

---

33 As discussed in Kesselman, *supra* footnote 32, for example.

34 See Jonathan R. Kesselman, "Payroll Taxes in the Finance of Social Security" (June 1996), 22 *Canadian Public Policy* 162-79.

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; in a regressive set, low-income earners are assumed to be more often the real bearers of the tax burden.

An example is landlords' property taxes, which are either borne by landlords (a progressive incidence assumption) or ultimately shifted to 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 incidence assumption). A similar exercise can be done for the incidence of payroll taxes.

Vermaeten, Gillespie, and Vermaeten<sup>35</sup> and Ruggeri, Van Wart, and Howard<sup>36</sup> 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; it apparently prevented, for example, 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<sup>37</sup> 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. An example of this is EI, which (in its social assistance role, not its social insurance role) fails completely to take into account family circumstances and total and yearly family

---

35 Frank Vermaeten, W. Irwin Gillespie, and Arndt Vermaeten, "Tax Incidence in Canada" (1994), vol. 42, no. 2 *Canadian Tax Journal* 348-416.

36 G.C. Ruggeri, D. Van Wart, and R. Howard, "The Redistributive Impact of Taxation in Canada" (1994), vol. 42, no. 2 *Canadian Tax Journal* 417-51.

37 Jean-Yves Duclos and Peter J. Lambert, "A Normative Approach to Measuring Classical Horizontal Inequity" (February 2000), vol. 33, no. 1 *Canadian Journal of Economics* 87-113.

income in its benefit schedule.<sup>38</sup> Thus, in considerations of vertical and horizontal equity, greater focus on both the structure and the effects of the transfer system, rather than on those of the tax system, is probably warranted.

### **Administrative Costs and Simplicity**

In addition to the criteria of equity and efficiency, issues of administrative costs and simplicity must be considered by the designers of a tax system. 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.<sup>39</sup> 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. Plamondon and Zussman<sup>40</sup> estimate the compliance costs for the majority of business taxes in Canada (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 tax evasion and avoidance. Consumers who feel overtaxed may choose to try to evade taxation by smuggling purchases across the border or by resorting to the underground economy. Similarly, workers may underreport their income or shift part of their income-generating activity into difficult-to-tax sources. (Some sectors in the economy—construction, child care, household production, informal professional services, and so on—are particularly subject to this sort of behaviour.) 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 delays in the repatriation and realization of capital gains.

Sometimes, the least expensive way that authorities can combat these problems is simply to reduce the tax rate. Governments' enforcement costs 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.

---

38 Evidence of the inequitable impact of benefits in Canada is presented in Finn Poschmann, *Where the Money Goes: The Distribution of Taxes and Benefits in Canada*, C.D. Howe Institute Commentary no. 105 (Toronto: C.D. Howe Institute, April 1998).

39 François Vaillancourt and M. Gmati, "Les coûts privés de perceptions des impôts : l'état de la question" (mimeograph, Université de Montréal, 1995); and Joel Slemrod, "Optimal Taxation and Optimal Tax Systems" (Winter 1990), 4 *The Journal of Economic Perspectives* 157-78.

40 Robert E. Plamondon and David Zussman, "The Compliance Costs of Canada's Major Tax Systems and the Impact of Single Administration" (1998), vol. 46, no. 4 *Canadian Tax Journal* 761-85.

### The Effect of an Aging Population

The nature of the tax structure may have important intergenerational effects since the burden of various taxes is heavier 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 one-third.<sup>41</sup> In one generation, the ratio of beneficiaries to contributors will increase by about 65 percent. The ratio of individuals 65 years of age and older to those of working age is now 19 percent. In 20 years, with the retirement of the “baby-boom” generation, this ratio will increase to 27 percent;<sup>42</sup> in 30 years, it will rise to 36 percent.

Given the significant pressure on public services (such as health care) that the aging of the population will cause and the lower tax base that it will generate, this demographic transition is likely to cause problems for future governments. A lower number of workers will be expected to pay for the needs of a higher number of retired individuals. One way to fund the additional load is to increase taxes and payroll contributions; such a modification is relatively easy (though intergenerationally inequitable) when the general tax burden is light but much more difficult when taxes are already high. CPP premiums are already scheduled to increase from 5.85 percent of insurable earnings in 1997 to 9.9 percent by 2003 and beyond. More than half of that increase (5.1 percent)<sup>43</sup> will incidentally go to the payment of the unfunded CPP/QPP liability. A government that wishes to be able to face such forthcoming demographic challenges must therefore monitor closely the fiscal pressure on its taxpayers. The aging of the population also militates strongly in favour of allocating a significant share of the emerging fiscal leeway in repaying the debt. To let present and future generations of workers bear alone the payment of the debt liability accumulated by past generations of workers would be inequitable,<sup>44</sup> especially given the drastic forthcoming fall in the number of workers per retired person.

### 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 intense. In this section, we present some international comparisons for personal taxation in Canada. We focus on the United States and the United Kingdom, two

---

41 Deborah Roseveare, Willi Leibfritz, Douglas Fore, and Eckhard Wurzel, *Ageing Populations, Pension Systems and Government Budgets: Simulations for 20 OECD Countries*, Economics Department Working Paper no. 168 (Paris: Organisation for Economic Co-operation and Development, September 1996).

42 Oreopoulos and Vaillancourt, *supra* footnote 2.

43 See Pesando, *supra* footnote 5.

44 As argued by Oreopoulos and Vaillancourt, *supra* footnote 2.

of Canada's important trading partners and competitors, and Ireland and Sweden, two small, open economies recovering from serious financial troubles.

### **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. For example, between 1975 and 1998, Ottawa cut its maximum marginal tax rate from 47 percent to 31 percent. 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 county) rates for the countries whose systems include such taxes. Of the countries listed, only Sweden has a combined rate higher than Canada's. Table 11 reveals that Canada, like the other countries, has reduced the number of its tax brackets. The United States has cut its brackets from 14 to 5 (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 OECD member 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. Between 1989 and 1996, both countries experienced an increase in the tax burden (about 1.7 and 1.5 percentage points for Canada and the United States, respectively).

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 the United States does, but it raises a smaller portion of its revenue in total social security contributions. The picture changes when one examines the share of payroll taxes paid by employers and employees (see table 14). Canada relies on employee-paid contributions half as much as the United States does, 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, and relies less on consumption taxes and social security premiums.

Table 15 shows the average effective tax rates on capital, labour, and consumption for most of our sample countries. (These rates are "effective" in the sense that they combine a variety of taxes whose incidence is thought to fall on capital, labour, or consumption.) Notice that the average effective tax rate on labour, which includes PITs and payroll taxes, rose by 65 percent in Canada between 1965-1975 and 1985-1994, 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 labour (20-30 percent). Western Europe has a much lower rate on capital (about 25 percent) and a higher rate on labour (35-40 percent).<sup>45</sup> These differences affect the ratio at which capital- and labour-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 more capital-intensive than in the United States. Although generally less pronounced than capital mobility, labour mobility also entices some workers to move to jurisdictions where the after-tax wage is greater (the United States, for example). Combined with the presence of significantly greater wage and labour market rigidities in Western Europe, the lower rate of labour taxation in the United States also helps to explain the latter's comparatively lower unemployment rate.

---

45 See Willi Leibfritz, John Thornton, and Alexandra Bibbee, *Taxation and Economic Performance*, Economics Department Working Paper no. 176 (Paris: Organisation for Economic Co-operation and Development, June 1997).

**Table 9 Top Marginal PIT Rates of Central Governments, Selected OECD Member Countries, 1975-1998**

	1975	1985	1990	1995	1998
	<i>percent</i>				
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> PIT is also levied in the United States, Canada, and Sweden 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: J. Owens and E. Whitehouse, "Tax Reform: Tax Reform for the 21st Century" (1996), vol. 50, nos. 11-12 *Bulletin for International Fiscal Documentation* 538-47; and Organisation for Economic Co-operation and Development, *Revenue Statistics 1965-1997* (Paris: OECD, 1998).

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

	Central government	Subnational government	Total
	<i>percent</i>		
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

— not applicable.

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

Source: Same as table 2.

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

	1986	1990	1995
	<i>percent</i>		
United States .....	14	2	5
United Kingdom .....	6	2	3
Ireland .....	3	3	2
Sweden .....	10	1	1
Canada .....	10	3	3

Sources: Same as table 9.

**Table 12 Total Tax Revenues as a Percentage of GDP, Selected OECD Member Countries, 1989-1996**

	1989	1990	1991	1992	1993	1994	1995	1996
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: Same as table 2.

**Table 13 Major Tax Revenues, Selected OECD Member 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
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 average .....	26.8	10.4	25.1	9.8	32.5	12.0	5.4	1.9

Source: Same as table 2.

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

	Employees' payments as a % of		Employers' payments as a % of	
	Total taxes	GDP	Total taxes	GDP
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: Same as table 2.

**Table 15 Average Effective Tax Rates on Capital, Labour, and Sales, Selected OECD Member Countries, 1965-1994**

	Capital <sup>a</sup>				Labour <sup>b</sup>				Sales <sup>c</sup>			
	1965-1975	1975-1985	1985-1994	1965-1975	1975-1985	1985-1994	1965-1975	1975-1985	1985-1994	1965-1975	1975-1985	1985-1994
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	0.05	0.05	0.05 <sup>d</sup>
United Kingdom .....	0.50	0.60	0.52	0.24	0.25	0.21	0.12	0.13	0.14	0.13	0.13	0.14
Sweden .....	—	0.45	0.58	—	0.46	0.48	0.16	0.17	0.20	0.17	0.17	0.20
Canada .....	0.41	0.38	0.44	0.17	0.22	0.28	0.11	0.11	0.11	0.11	0.11	0.11

— not applicable.

<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 non-wage consumption. <sup>d</sup> Figure for the period 1985-1993.

Source: Same as table 2.

**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 (US\$)	Average rate <sup>b</sup> (%)	Marginal rate (%)	Income (US\$)	Average rate <sup>b</sup> (%)	Marginal rate (%)	Income (US\$)	Average rate <sup>b</sup> (%)	Marginal rate (%)
1980 .....	12,166	18.3	30.3	24,332	3.27	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.