

## **I. BUSINESS TAXATION IN CANADA<sup>1</sup>**

### **A. Introduction**

1. During the 1970s and early 1980s, there was an accumulation of business tax preferences in Canada and, as a result, a narrowing of the tax base. This development, and the judgement that statutory tax rates were high, persuaded the Canadian Government to implement a number of reforms to the corporate tax system during the mid-1980s. Canada's examination of corporate tax issues was concurrent with that in other countries, notably the United States and the United Kingdom, who were addressing many of the same issues at that time. In the case of Canada, this exercise culminated in a comprehensive program of tax reform which was initiated 1987. A key consideration in that reform was that the Canadian corporate tax system should be competitive with those of its key trading partners, particularly the United States. By 1989/90 reforms had been implemented that broadened the corporate tax base (in part by reducing capital cost allowances for manufacturing and processing equipment) and reduced statutory tax rates on corporate income. Nevertheless, statutory tax preferences remained for manufacturing and small business.

2. On March 16, 1996, the Canadian government established a Technical Committee on Business Taxation to analyze taxes related to investment and business activity and to recommend changes. The Committee was asked to consider ways of improving the business tax system to promote: (1) job creation; (2) economic growth; (3) simplification and ease of compliance; and (4) fairness. The Committee also was charged with examining the interaction between business taxes—including corporate income, capital, and payroll taxes—and taxes paid by individuals on investment income. The Committee's final report is now scheduled for the end of 1997.

3. This paper reviews Canada's business tax system, with a view to identifying and summarizing tax-based distortions that may induce a misallocation of resources. Section II reviews the existing theoretical tools for evaluating the incentive effects of a country's business tax regime and assesses the general implications for output and employment. Section III describes the salient features of Canada's current business tax regime as of January 1997. Section IV presents and discusses estimates of marginal effective tax rates on corporate-source income in Canada (and comparator countries), across sectors, asset classes, means of finance, and asset ownership. Section V summarizes and concludes that there remains room for reducing tax preferences that distort the allocation of resources in Canada.

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## **B. Business Taxation and Economic Activity**

4. A system of business taxes can affect national output and employment in at least five ways.<sup>2</sup> First, the overall level and structure of business taxation<sup>3</sup> may affect factor demand and output decisions at the firm level and could also affect labor supply decisions, affecting the degree of resource utilization. Second, a tax system that gives preference to some sectors (e.g., manufacturing versus services), and/or asset classes (e.g., machinery, buildings, or inventories), generally induces an inefficient allocation of resources, unless there is an identifiable externality.<sup>4</sup> Third, an unduly complex system will tend to divert scarce resources from productive employment to unproductive administrative and tax-compliance activity. Fourth, a system with broad scope for interpretation will tend to divert resources to discovering tax-minimization strategies and to associated litigation activities. Such a system also may induce lobbying to achieve a more refined set of rules to codify the tax minimization strategies favored by the more concentrated industries. Fifth, the level and structure of business taxes can affect the equilibrium allocation of foreign direct investment, and thus changes in tax policies may affect such flows. The following section establishes the theoretical framework for the descriptive and analytical overview of Canada's system of business taxes presented in sections III and IV.

### **The level and structure of business taxation**

5. The level and structure of business taxes, in principle, can influence aggregate employment and output decisions by affecting the aggregate supply and/or demand for labor and for capital—the effect, if any, will depend on elasticities of supply and demand. A thorough discussion of the theoretical aspects of taxation and output/unemployment is beyond the scope of this paper, but a review of the empirical work in this area leads to some broad conclusions that suggest the connection between business taxation and

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<sup>2</sup> Possible short-run, demand-side effects captured by the Keynesian fiscal multiplier are well-known and are not discussed here. Rather the focus is on the supply-side effects of business taxation.

<sup>3</sup> The term “structure” refers to the mix between payroll taxes, corporate income taxes, and taxes on capital.

<sup>4</sup> If, for example, there is a positive externality in one sector (e.g., research and development expenditures often yield social value not fully internalized by firms), a tax preference in favor of that sector would help induce movement toward the socially optimal allocation of resources. If, instead, there is a negative externality (pollution associated with manufacturing is an example), the socially optimal allocation of resources would be achieved by applying less favorable tax treatment in the sector producing the negative externality.

employment/unemployment can be largely transitory.<sup>5</sup> In cross-country studies, there is no clear relationship between the overall tax burden and unemployment, whether one examines industrial, developing, or transition economies. Moreover, attention to the structure of taxation, including the extent and composition of business taxes, offers little to explain cross-country differences in unemployment rates. In a review of the empirical literature covering OECD countries, the findings expressed in IMF (1995, p. 28) can be summarized as follows: (1) "Many studies find that the impact of taxes on unemployment ... are strongest in the short run, and that the effect fades or even disappears in the longer run when the real wage level has adjusted to the tax change," and (2) "A few recent Fund studies for selected OECD countries point to the fact that, although taxation has a measurable independent impact on unemployment, many other—and probably more important—factors are at play, particularly labor market rigidities as reflected in the presence of hysteresis and insider-outsider behavior."<sup>6</sup>

6. Studies that have investigated the employment effects of payroll taxes generally conclude that, while in the short run higher payroll taxes can depress the demand for labor by raising unit labor costs, ultimately payroll taxes tend to be absorbed largely by workers without changing overall employment by very much because the long-run aggregate supply of labor is highly inelastic with respect to real wages.<sup>7</sup> To the extent that workers view payroll taxes as representing a fee for service (unemployment insurance, health insurance, retirement pensions, and workers compensation) rather than a tax on income, the supply of labor is likely to be even less responsive than otherwise.<sup>8</sup> Indeed, the closer such fees/taxes are to being commensurate with the expected present value of the services received (i.e., to being actuarially fair), the less they will distort labor supply decisions.

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<sup>5</sup> See IMF (1995) and OECD (1995) for in-depth reviews of taxation and unemployment.

<sup>6</sup> "Insider-outsider behavior" refers to labor market models that assume asymmetric bargaining positions for workers already employed (insiders) versus those seeking employment (outsiders). Insiders may be able to negotiate real wages in excess of the market-clearing level when labor turnover is costly.

<sup>7</sup> See, for example, Grignon (1994) and Marchildon, Sargent, and Ruggeri (1996). Grignon (1994), however, observes that sector-specific long-run labor supply elasticities tend to increase as skill levels decline. Thus, while payroll taxes may have a small aggregate employment effect in the long run, effects may be concentrated in low-skill labor markets.

<sup>8</sup> The cross-country empirical results that suggest little or no permanent employment effects should not be interpreted to mean that payroll taxes specifically, and business taxation more generally, will never affect employment or unemployment. It is easy to imagine prohibitively high levels of taxation, levels not reflected in the empirical work, that would permanently effect employment and unemployment.

7. Certainly labor market rigidities will depend to some degree on the structure of payroll taxes. Canada, for example, recently dropped a provision that established a threshold below which employers paid no unemployment insurance premiums for employees working less than 15 hours per week.<sup>9</sup> This clearly introduced a degree of friction in the labor market through its affect on the demand for full-time versus part-time employees. However, while business taxes, particularly payroll taxes, may marginally exacerbate labor market rigidities, such rigidities are most frequently attributed to a variety of nontax policies including high minimum wages, elaborate labor protection provisions, and high replacement ratios in unemployment insurance systems (IMF, 1995, p.28; OECD, 1996).

### **Tax preferences**

8. Capital formation across sectors depends, *inter alia*, on how the tax system treats income from firm-level investments in real assets, both in terms of how this income is treated as it accrues to firms and as it is distributed to the ultimate providers of finance (households and other legal entities). The allocation of capital across sectors within an economy depends on the specifics of the system of business taxation as well as the taxation of a financier's investment income.

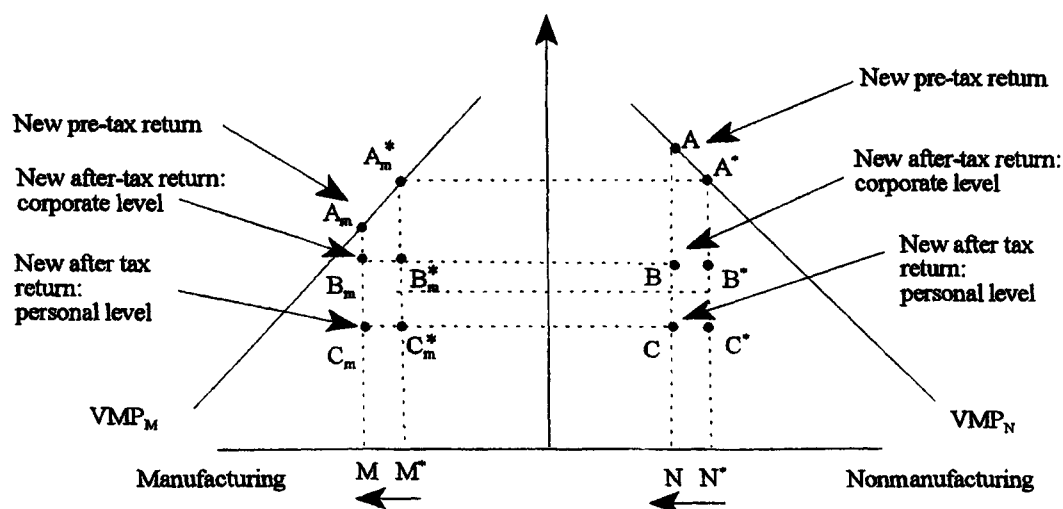
9. In principle, a fully neutral tax system (one that does not alter investment or financing decisions), in the absence of externalities, would result in an allocation of resources that maximizes the value of economy-wide output.<sup>10</sup> This occurs in a market-based system because resources flow naturally toward those activities with the highest rates of return; i.e., those in which scarce resources are most productive. Nonneutral taxation of capital (i.e., differential tax treatment across sectors, asset classes, means of finance, and/or ownership), by altering after-tax rates of return, diverts resources from their most productive use toward less productive activities, and thus depresses output—in other words, the economy is driven to a point inside its production-possibilities frontier. Thus, even if resources remain fully employed, nonneutralities cause them to be allocated inefficiently, thereby depressing real output. Consequently, reducing tax-based nonneutralities can increase national output by inducing a reallocation of resources toward more productive activities (this proposition is examined more formally in Box 1 below).

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<sup>9</sup> The old and new unemployment insurance systems in Canada are described briefly in Section III.

<sup>10</sup> It has been shown that a tax on a firm's cash flow (revenue net of current and capital costs with no deduction for depreciation or interest) is neutral, in the sense that it does not influence the firm's investment or financing decisions (e.g., Bradford, 1986).

### Box 1. Tax Preferences and the Allocation of Capital



The figure presents a stylized model intended to capture the resource-allocation effects of introducing a preferential statutory tax rate on corporate income. In the case depicted, the manufacturing sector is granted a tax preference. Prior to the introduction of the tax preference, the total before-tax return to a unit of physical capital, as measured by the value of the marginal product ( $A_m^*$  and  $A_N^*$ ), the net-of-corporate tax return ( $B_m^*$  and  $B_N^*$ ), and the net-of-personal tax return ( $C_m^*$  and  $C_N^*$ ) are all equalized across manufacturing and nonmanufacturing sectors, assuming capital is fungible. With the introduction of a corporate-income tax preference for manufacturing, given the initial allocation of capital across sectors the after-tax return to capital in manufacturing initially exceeds that in nonmanufacturing. Capital thus begins to flow from nonmanufacturing toward the manufacturing sector. In the figure, for simplicity it is assumed that the allocation of labor across sectors is fixed, as are output prices, otherwise the VMP curves would be shifting. The increased availability of capital, ceteris paribus, tends to decrease the gross (pre-tax) return to the marginal unit of capital (the value of its marginal product) in the manufacturing sector. At the same time, the reduced availability of capital in nonmanufacturing results in an increase in the gross return to capital in that sector. The movement of capital toward manufacturing would continue (under the assumption that capital is fungible and freely mobile across sectors) until the net-of corporate-tax returns were again equalized across sectors. While the allocation of labor across sectors was assumed to be fixed for the sake of simplifying the diagram, labor will also tend to flow toward the sector that was granted new preferences since the increasing capital stock in manufacturing raises the value marginal product of labor.

10. The extent to which the introduction or removal of tax preferences might affect employment and unemployment depends on labor market rigidities, the endogenous effect of tax preferences on the relative price of capital-to-labor, and the elasticity of labor supply. If

ultimately the change in tax preferences across sectors affects the relative price of capital-to-labor, total employment could be effected.<sup>11</sup> Moreover, real-world labor markets tend to involve a degree of inflexibility, particularly over short- and medium-term time horizons. Thus, changes in sectoral tax preferences will typically result in a transitional period of frictional and structural unemployment. As a change in sectoral tax preferences induces a reallocation of capital toward the favored sector, the drain of capital from other sectors implies a decline in the value of the marginal product of labor in those other sectors (i.e., the firm-level demand for labor declines) as less capital is now available for each unit of labor. On the other hand, as capital is drawn to the favored sector, the demand for labor will rise there. The duration of the unemployment induced by the introduction (or removal) of sectoral tax preferences is then either mitigated or exacerbated according to whether labor market conditions are more or less conducive to facilitating the transition. The change in tax policy is the trigger for higher transitional unemployment. Thereafter, its duration depends on the characteristics of the labor market.

### **International tax competition**

11. When capital is mobile internationally, an assessment of the consequences of tax preferences for national output (and employment) is more difficult since the available stock of capital cannot be considered fixed, as it depends on the flow of foreign direct investment (FDI). Changes in business taxation at home and abroad can alter these flows and, thus, either exacerbate or mitigate the within-country allocative effects of tax preferences. If, for example, new business tax legislation introduced preferences for the manufacturing sector, the new preferences would initially draw domestic capital (and labor) away from the nonmanufacturing sector and attract new flows of foreign capital. With no impediments to international capital mobility, this reallocation of capital would continue until after-tax returns were again equalized, across sectors and internationally. Of course, international capital mobility is a matter of degree, and the tax elasticity of FDI flows will depend on a number of factors, including the degree to which capital may be country specific and the existence of restrictions on foreign ownership and/or repatriation of profits.

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<sup>11</sup> If a tax preference for manufacturing also implies a cut in the average tax on capital income this would generally imply that the relative price of labor would rise, *ceteris paribus*, and the economy-wide capital-to-labor ratio would increase, thereby producing a negative impact on aggregate employment. In the longer run, however, the tax cut may stimulate greater investment and thus increase the rate of growth of the capital stock, and with it the demand for labor (see, e.g., IMF, 1995, pp.8–9). Thus, the aggregate employment effect is ambiguous.

12. Because of such spillover effects, normative tax policy analysis must consider the likely endogenous policy response of trading partners.<sup>12</sup> In the case of Canada, business tax policies in the United States are particularly important. It is well accepted that among the most important considerations leading to the July 1986 decision to undertake comprehensive tax reform in Canada was the tax reform initiative underway in the United States.<sup>13</sup> As observed by Dodge (1989, p.37), "The reduction in U.S. corporate rates demanded a response." The reduction in statutory corporate income tax rates in Canada was intended, in part, to head off capital outflows and a consequent reduction in the domestic capital stock and the corporate income tax base. More generally, Bird (1995, p.1050) has argued that "corporate tax rates will increasingly hew to an international norm set by dominant economies."

13. Sustained employment effects from a change in business tax preferences might occur when international FDI flows are included in the analysis. This is because the domestic stock of capital goods is now endogenous, even in the relatively short run (FDI can literally mean the movement of machinery and equipment across borders, and FDI also often implies the transfer of managerial skills and technologies which complement the existing capital stock). If new tax preferences cause a surge in FDI, the increased stock of capital generally would imply an increase in labor productivity, and so an increase in the aggregate demand for labor and higher real wages. The problem with that scenario, as suggested above, is that countries are not generally passive in the face of such policy changes. Indeed, as discussed in Section IV, developments between 1980 and 1990 regarding effective marginal tax rates on corporate source income were broadly similar in Canada, the United Kingdom, and the United States.<sup>14</sup>

### **Complexity and specificity**

14. A tax system can also be evaluated in terms of the cost of compliance and the deadweight loss associated with diverting resources to developing tax-avoidance strategies, to associated litigation activity, and to rent seeking. As a general rule, simplicity and

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<sup>12</sup> In other words, the social objective function that is to be maximized must include in its specification policy reaction functions for each trading partner. If the economy were economically small (which, in this context, may not be the case for Canada), policy makers could correctly assume that there would be no response abroad to its tax policy decisions.

<sup>13</sup> See, for example, *The White Paper: Tax Reform 1987: Income Tax Reform*, p.99, and the discussion in Whalley (1990, pp.81–84).

<sup>14</sup> According to Bird (1995, p.1043), there was a worldwide trend toward lower statutory tax rates on corporate source income and broader tax bases (through reduced capital consumption allowances) during the 1980s.

transparency are essential to minimizing these costs.<sup>15</sup> Simplicity tends to ensure that administrative and compliance costs are kept low, while also reducing the prospects for devising tax-avoidance strategies. Transparency tends to reduce the effectiveness, and thus the extent, of rent seeking by helping to ensure that such activities, if they occur, will be met by a countervailing response from potential losers. It should be noted that investment incentives via capital consumption allowances and sectoral tax preferences (apart from their costly allocative effects) also create complexity and, thereby, increase compliance and administrative costs.

### **C. The Current Tax Environment for Business in Canada**

15. At the aggregate level, it is clear from Table 1 and Chart 1 that there has been a modest downward trend since the mid-1970s in corporate income tax revenues-to-GDP. This trend is also evident in the share of corporate tax revenues in total tax revenues (Table 2 and Chart 1). Corporate income taxes currently account for just over six percent of total Canadian government revenues—a share well below personal income taxes (35 percent), indirect taxes (32 percent), and social insurance revenues (12 percent) (Table 2 and Chart 1). Growth in Canadian payroll taxes has outpaced most other G-7 countries, rising from 4.5 percent of GDP in 1985 to 5.9 percent in 1993. Nevertheless, Canada continues to have one of the lowest payroll tax burdens among the G-7 countries (Chart 4 and Chart 5).

16. The overall business tax environment includes corporate income taxes, payroll taxes, taxes on capital, and selected aspects of the personal income tax, particularly the taxation of dividends and capital gains. It also includes the various tax preferences (credits and deductions) that tend to lower the effective corporate income tax rate relative to the statutory rate. In general, corporate income tax rates in Canada vary according to a firm's size, its production activity, and its provincial location.<sup>16</sup> During the last major reform of the system of business taxes in 1987, efforts were made to minimize the influence of tax considerations on

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<sup>15</sup> Because Canada is a federal system, provincial autonomy in tax matters is responsible for some degree of complexity and nontransparency. For example, compliance and administrative costs could be reduced if there were harmonization across provinces and if tax auditing and collection could be centralized. Alternatively, there could be a “disentanglement” of taxes, whereby the federal and provincial governments would agree to allocate the administration and collection of different taxes (corporate income versus excise taxes, for example) to different levels of government (Bird, 1995, p.1051).

<sup>16</sup> A review of tax developments appears, for example, in Daly, Mercier and Schweitzer (1989 and 1993), including pre- and post- reform business taxes with comparative effective tax rates by sector. A snapshot of Canada's current business tax system is available in Government of Canada Tax Expenditures, Department of Finance, (1995), Appendices A and B.



capital investment decisions.<sup>17</sup> This was accomplished by lowering statutory tax rates while broadening the corporate tax base and narrowing the effective tax preferences across sectors.

17. The federal corporate *statutory income tax rate* is set at 28 percent for general business income. However, a number of statutory tax preferences offer reductions from the general rate. Small domestically owned incorporated businesses, or Canadian-controlled private corporations (CCPCs), qualify for a rate reduction of 16 percentage points (to 12 percent) on the first \$200,000 of taxable income. For income in excess of the small-business threshold, the general federal rate is reduced by seven percentage points (to 21 percent) for income derived from manufacturing and processing.<sup>18</sup> The provinces also frequently grant reductions in provincial corporate income tax rates for small businesses and in some cases for manufacturing and processing activities. When both federal and provincial rates are considered, there is significant variation in statutory tax rates on corporate income across Canada. Small business income earned in Newfoundland, for example, faces a 12 percent federal tax together with a 5 percent provincial tax, while general business income earned in New Brunswick faces a 28 percent federal tax along with a 17 percent provincial tax (see tabulation below). Federal and provincial governments also levy an annual tax of 0.225 percent on the paid-up capital of Canadian corporations.<sup>19</sup>

18. *Tax credits* restrict the size of the corporate tax base by crediting certain corporate expenditures against the general corporate tax obligation. The current tax code grants tax credits, for example, for certain expenditures on research and development, for investment in eligible depreciable property used in Atlantic Canada, for certain exploration expenditures, and for certain contributions to registered political parties.<sup>20</sup> Moreover, tax credits not used in the current tax year may be carried forward.

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<sup>17</sup> See International Monetary Fund, Board Paper (1988) for a more detailed description of the latest major round of income tax legislation in Canada.

<sup>18</sup> According to Bird, Perry, and Wilson (1995, p. 159), the term “processing” has been loosely interpreted, with over half of the income of restaurants having been classified as such.

<sup>19</sup> Banks, trust companies, and life insurance companies face additional capital taxes ranging from 0.5 percent to 1.5 percent of capital employed in Canada (Bird, Perry, and Wilson, 1995).

<sup>20</sup> Tax credits are discussed in detail in Department of Finance (1995), pp. 75–78.

Federal and Provincial Corporate Income Tax Rates, 1996

	General Business	Manufac- turing and Processing	General Small Business
Federal 1/	28.00	21.00	12.00
Newfoundland	14.00	5.00	5.00
Prince Edward Island	15.00	7.50	7.50
Nova Scotia	16.00	16.00	5.00
New Brunswick	17.00	17.00	7.00
Québec	8.90	8.90	5.75
Ontario	15.50	13.50	9.50
Manitoba	17.00	17.00	9.00
Saskatchewan	17.00	10.00	8.00
Alberta	15.50	14.50	6.00
British Columbia	16.50	16.50	10.00
Yukon	15.00	2.50	6.00
Northwest Territories	14.00	14.00	5.00

Source: Department of Finance, Canada.

1/ In addition, a four percent federal surtax is imposed raising the general business rate to 29.12, the manufacturing and processing rate to 22.12, and the general small business rate to 13.12.

19. A variety of *income exemptions and deductions* also reduce the size of the corporate tax base and, in some cases, may distort investment decisions. There is a twenty-five percent exemption on income from capital gains.<sup>21</sup> Twenty-five percent of profits from oil and gas, and mining operations may be excluded from taxable income.<sup>22</sup> A deduction from taxable income for certain natural-resource exploration and development expenditures and other resource investments (the "earned depletion" deduction) was eliminated in 1990; however, deductions continue on a carry forward basis from pre-1990 earned depletion pools.

<sup>21</sup> Because capital gains may result from share appreciation owing to retained earnings (which already were taxed as corporate income), the 25 percent exemption on capital gains provides relief from double taxation.

<sup>22</sup> This measure is intended to grant the provinces greater scope for imposing royalties and/or mining taxes on natural-resource extraction activities (Department of Finance, 1995, p.79). Provincial royalties on petroleum and mining firms are currently nondeductable.

Regarding the 0.2 percent tax on the paid-up capital of Canadian corporations, there is a \$10 million capital deduction, which effectively exempts smaller corporations from this tax. Other allowable deductions include deductions for charitable donations and gifts to the Crown.

20. The rules governing corporate income *tax deferrals* also affect the size of the tax base and potentially affect the amount and timing of capital expenditure decisions. The tax reform initiated in 1987 brought depreciation schedules more in line with the economic life of each asset, thereby reducing the amount of deferred income that results from capital consumption allowances (CCA). However, a large number of exceptions remain. The cost of capital equipment used for scientific research and experimental development can be fully expensed in the year of acquisition. In addition, a number of asset classes still have arguably fast CCA schedules. The asset classes which receive the most generous provisions include manufacturing and processing assets, vessels, power-operated movable equipment, railway assets, communication satellites, retailer's point-of-sale equipment, application software, energy-efficient equipment, water and air pollution control property, and mining assets.<sup>23</sup> Moreover, a fast write-off is allowed for expenses related to development and exploration.

21. Certain business investment losses may also be deducted from current income. While capital losses are generally deductible only against capital gains, three-quarters of capital losses stemming from the disposition of shares or debts of a small business corporation may be used to offset other income.<sup>24</sup> Allowable (noncapital) business losses may be charged against income in the current tax year, and they may also be carried back three years and forward seven years. The fact that capital gains are taxed on a realization basis and not an accrual basis also creates a deferral of taxable income. In addition, there are a number of allowable accounting procedures for agricultural corporations that result in a deferral of taxation.

22. *Payroll taxes* in Canada include unemployment insurance premiums, Canada Pension Plan (CPP) contributions,<sup>25</sup> workers compensation premiums, and the provincial health/post-secondary education tax levied by some provinces.<sup>26</sup> The structure and level of payroll taxes

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<sup>23</sup> See Department of Finance (1995, pp.89–95) for a more detailed description of the capital consumption provision for each asset class listed. Mida and Stewart (1995) present a review and analysis of the Canadian capital cost allowance system.

<sup>24</sup> Department of Finance (1995, p.81).

<sup>25</sup> The province of Québec has its own separate pension plan that is roughly comparable to the CPP. Residents of Québec have the option of participating in either the CPP or the Québec Pension Plan.

<sup>26</sup> Lin, Picot, and Beach (1996) presents a comprehensive review of developments in

(continued...)

vary considerably between provinces. For example, payroll taxes per employee ranged in 1993 from a high of \$3,750 in Québec to a low of about \$2,000 in Saskatchewan (Lin, Picot, and Beach, 1996, p.11).

23. A new unemployment insurance system (the Employment Insurance program) entered into force on July 1, 1996. Under the new system, *unemployment insurance premiums* are collected by the federal government from employers and employees for every dollar earned up to an annual maximum of \$39,000.<sup>27</sup> As of January 1, 1997, the employee premium is \$2.90 per \$100 of eligible earnings. Employers pay 1.4 times the employee premium. Small businesses (those paying less than \$60,000 in Employment Insurance premiums) can qualify for a partial premium refund in 1997 and 1998. Low-income workers (earning no more than \$2,000 per year) are also eligible for a premium refund.

24. The CPP is financed through a payroll tax on employees and employers, with the contribution rate adjusted periodically to maintain a balance in the plan equivalent to two years of benefit payments. Employees and employers each currently contribute 2.93 percent on the first \$35,400 of earnings. Allowing for a \$3,500 income exemption, the maximum annual contribution per employee and employer is \$933. Self-employed workers pay the full 5.85 percent with a maximum annual contribution equal to \$1,866.

25. *Workers compensation premiums* are administered by the provinces in order to finance their respective workers compensation programs. Premiums vary according to the hazard or risk of the future use of workers compensation.

26. Québec, Manitoba, Ontario, and Newfoundland assess a *payroll tax on employers to finance provincial health care and post-secondary education systems*. Provincial statutory rates for the health and post-secondary education payroll tax vary from a high of 4.26 percent in Québec to just under 2 percent in Ontario. In addition, Québec is the only province that does not provide relief from this levy for small businesses. The health and post-secondary education payroll tax was the fourth largest source of tax revenues for Manitoba, Ontario, and Newfoundland, and the third largest for Québec (Lin, Picot, and Beach, 1996, p.10).

27. The *individual income tax treatment of dividends and capital gains* can affect the flow of financing and, thus, alter business investment decisions. Three-quarters of net capital gains, beyond a \$500,000 lifetime exemption for farms and small corporations, are taxed as

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<sup>26</sup> (...continued)

Canadian payroll taxes since 1961.

<sup>27</sup> Under the previous system, premiums were not assessed for employees working less than 15 hours per week. The new system abandons this threshold and thus eliminates employer incentives to engage in some premium-avoidance behavior by over hiring part-time workers.

personal income.<sup>28</sup> Gains realized from the sale of a principal residence are fully exempt, as are gains from the sale of certain personal property worth less than \$1,000. Dividend income accruing to resident taxpayers from taxable Canadian corporations has been granted partial tax relief for several decades. This relief occurs through a gross-up and credit under the personal income tax. The gross-up and credit has been adjusted periodically with a view to maintaining rough parity in the tax treatment of small corporations and unincorporated businesses (Bird, Perry and Wilson, 1995, p.155). Dividends are currently grossed-up by 25 percent and this grossed-up amount is taken into taxable income. The federal "basic tax"<sup>29</sup> is then applied to personal income including grossed-up dividends, before the federal tax is reduced by a credit equal to 13.33 percent of the grossed-up dividend. When provincial taxes are taken into account, the net effect is to offset the double taxation of corporate source income accruing to individuals by roughly 50 percent for public companies and 100 percent for private corporations.

#### **D. Estimates of Effective Marginal Tax Rates in Canada**

28. Because business tax systems are generally complex, and distortions can be offsetting or reinforcing, the net nonneutralities present in a system cannot typically be assessed from a description of the regime. The related concepts of "cost of capital" and "marginal effective tax rate" were developed to help capture the net effects of the tax system on business incentives (see Box 2 below). This section presents estimates of marginal effective tax rates in Canada on new investments across sectors, asset groups, means of finance, and ownership. It also includes figures from two comparator countries, the United States and the United Kingdom. These figures offer summary estimates of the extent and nature of the nonneutralities present in Canada's business tax regime, both before and after the last major reform initiated in 1987.

29. Jorgenson (1993) and Daly, Mercier, and Schweitzer (1993) estimated marginal effective tax rates for Canada and other G-7 countries at five-year intervals from 1980–1990, using the methodology developed by King and Fullerton (1984).<sup>30</sup> King and Fullerton first observed that the marginal effective tax rate applicable to any given investment project will generally depend on four primary factors: (1) the type of asset being purchased for an investment project; (2) the industry in which the investment takes place; (3) the means of finance; and (4) the ultimate owner of the net returns to the project (the financier).

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<sup>28</sup> The 1994 Budget terminated a \$100,000 lifetime exclusion on all capital gains.

<sup>29</sup> Bird, Perry, and Wilson (1995, p.156) describe the federal "basic tax" as "a term of art that describes the result of applying the rate schedule to taxable income and then allowing for certain adjustments".

<sup>30</sup> The King-Fullerton methodology is based on the assumption of a closed-economy.

## Box 2. Fundamental Business Tax Concepts

The related concepts of the "cost of capital" and the "marginal effective tax rate" are the most commonly employed analytical tools for determining the net incentive effects of a system of business taxes. The cost of capital is the minimum pre-tax rate of return that an investment project must yield in order to induce an economic agent (firm or individual) to undertake an investment project.<sup>1</sup> This, of course, depends on the alternative rates of return on financial investments. But given the opportunity cost implied by alternative returns in financial markets, the specific structure of the tax system is a major determinant of the cost of capital across sectors (e.g., manufacturing versus nonmanufacturing), asset classes (e.g., machinery, buildings, or inventories), owners (e.g., tax-exempt institutions, households, or insurance companies), and methods of finance (debt, retained earnings, or new shares). Anything that changes the cost of capital (including, for example, enhanced risk, increases in the statutory tax rate on corporate or personal investment income, changes in the risk-free rate of return, and changes in the expected rate of return on other financial assets) will generally alter the level and allocation of real investment expenditures.

A closely related concept, the marginal effective tax rate, assesses the taxes paid as a share of the income generated by the marginal unit of a specific type of capital employed by an economic agent.<sup>2</sup> This concept can be evaluated at the level of the firm (marginal effective corporate tax rate), at the level of an individual investor (marginal effective personal tax rate on corporate-source income), or in total (marginal effective tax rate on corporate-source income). The marginal effective corporate tax rate reflects the net-of-corporate-tax return to the firm from a specific investment. The marginal effective personal tax rate on corporate-source income reflects the return net of personal taxes to a financier of a firm's investment. The marginal effective corporate tax rate directly affects the investment decisions of firms, whereas the marginal effective personal tax rate on corporate source investment income directly affects the amount and composition (equity versus corporate debt) of household savings channeled to corporate investment. The figure displays the relationship between these and other fundamental tax concepts.

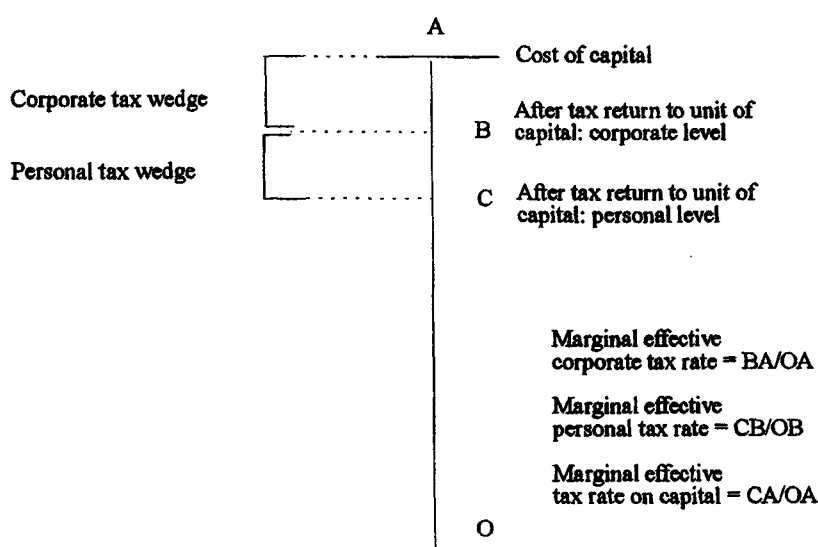
An example will help to convey the close relationship between the marginal effective tax rate and the cost of capital. Suppose that the interest rate structure (and thus the opportunity cost of the investment project) is fixed, as is the expected yield on (and the riskiness of) a physical investment project. Given these, the cost of capital (OA in the figure below) is judged just sufficient (i.e., it satisfies the "hurdle rate") to induce the firm to undertake the marginal investment expenditure in that project. Since corporate decision makers presumably care about after tax returns, this implies that the

<sup>1</sup>This definition is generalized from King and Fullerton (1984, p. 10). Shoven and Topper (1992, p. 218) express the same concept with a risk element as "the expected net rate of return before corporate taxes that is required in order for an incremental real investment to be in the interest of the owners of the firm." See also Copeland and Weston (1983, p. 383) for a discussion of the "cost of capital." This concept is also referred to as the "hurdle rate."

<sup>2</sup>This definition is generalized from McKenzie and Mintz (1992, p. 190).

### Box 2. Fundamental Business Tax Concepts (Concluded)

after tax return OB is just sufficient to go forward with the marginal expenditure for this project. Now suppose the marginal effective corporate tax rate increases. The cost of capital increases and investment takes place only in those projects expected to provide a pre-tax return at least as great as the new higher cost of capital, thereby achieving the original after-tax returns OB (corporate level) and OC (personal level). Had the marginal effective personal tax rate changed instead, an analogous scenario would have applied to the financing decision. Thus, a change in marginal effective tax rates alters the cost of capital and affects capital expenditure decisions.



Because tax laws typically make distinctions even within these broad categories, King and Fullerton further divided these four categories into three sub-types, thus, identifying 81 types of investment projects, each possibly with a different marginal effective tax rate. The marginal effective tax rates reported in Tables 3–5 are weighted mean marginal effective tax rates over each of the four primary King-Fullerton categories.<sup>31</sup> Table 3 presents these weighted-average estimates at the corporate level for Canada, the United States, and the United Kingdom, across each of the four King-Fullerton categories. Table 4 presents comparable estimates of

<sup>31</sup> For example, the reported marginal effective tax rate applicable to investment in machinery is a weighted average of rates on machinery across every combination of industry, source of finance, and ownership category. Similarly, the reported marginal rate for an investment in the manufacturing sector is the weighted average over all possible combinations of asset class, source of finance, and ownership.

the marginal effective personal tax rates on corporate source investment income, and Table 5 presents estimates of the combined marginal effective corporate and personal tax rates.

30. The data in Table 3 show that in Canada the dispersion of marginal effective corporate tax rates across assets, industries, means of finance, and owners narrowed substantially following implementation of the 1987 reforms. In particular, the effective marginal tax rates for "manufacturing" over "other industry" and "commerce" narrowed considerably between 1985 and 1990, with the variance of rates across the three sub-groups declining from 76.2 in 1985 to just 6.4 in 1990.<sup>32</sup> The preferential tax treatment of machinery and inventory investments relative to buildings also narrowed over this period, although the capital cost allowances for machinery continued to be more generous than allowances for buildings. The more favorable treatment of debt-financed investments relative to investments financed through retained earnings or new shares was reduced as well. All the while, the overall effective tax rate at the corporate level increased in Canada. Although the statutory corporate tax rates fell, this was more than offset by less generous capital cost allowances.

31. The dispersion of marginal effective tax rates at the corporate level across sectors also narrowed in both the United Kingdom and the United States between 1985 and 1990. Preferences for nonmanufacturing sectors in the United States declined significantly following the 1986 tax reforms. In the United Kingdom, effective subsidies<sup>33</sup> for manufacturing and other industry had been eliminated by 1985, and the variance of the effective tax burden across sectors was narrowed still further by 1990. As in Canada, the variance of marginal effective tax rates across asset classes and means of finance also declined between 1985 and 1990 in both the United Kingdom and the United States. Even in the case of ownership categories, the dispersion of marginal effective corporate tax rates declined for all three countries between 1985 and 1990, although the drop was most significant in the cases of Canada and the United Kingdom. Overall effective corporate tax rates in Canada, the United States, and the United Kingdom all rose between 1985 and 1990; in Canada, from 19 percent to 25.9 percent; in the United States, from 9.2 percent to 24 percent;<sup>34</sup> and in the United Kingdom, from 21.4 percent to 28.0 percent.

32. Movement toward reduced effective rate dispersion is also evident at the personal level (Table 4) in Canada, the United States, and the United Kingdom from 1985 to 1990, although the dispersion of effective rates across industries in Canada rose slightly. The overall effective marginal tax rate on personal corporate source income in Canada declined slightly over this period. Downward movement in the overall effective rate was also evident in the

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<sup>32</sup> This refers to the simple variance across the three reported sectors.

<sup>33</sup> "Effective subsidies" refers to negative marginal effective tax rates.

<sup>34</sup> Substantial "investment incentives" in the U.S. 1981 tax act were reversed in the Tax Reform Act of 1986.



United States and the United Kingdom between 1980 and 1990. While effective rate dispersion in the United States was already quite low across industries and asset classes in 1980, and remained low in 1985, appreciable differences in treatment existed across sources of finance and, more significantly, ownership. Rate dispersion in the United States was narrowed in both of these areas between 1980 and 1990. The United Kingdom evidenced significantly greater rate dispersion in 1980 in every category compared to both Canada and the United States. However, reforms led to a significant narrowing of marginal effective personal tax rates on corporate source income by 1985, and a significant further narrowing was achieved by 1990. By 1990, the United States evidenced the lowest rate dispersion in every category except in the personal tax treatment of corporate source income across different owners of capital.

33. Overall, Tables 3 and 4 reveal a significant trend toward reducing nonneutralities between 1980 and 1990 in almost every King-Fullerton category. During the same period, effective marginal corporate tax rates generally were rising in Canada and the United Kingdom (in the United States, these rates eventually rose), while the marginal effective personal tax rates on corporate source investment income generally were declining in the United States and the United Kingdom (in Canada these rates remained essentially unchanged).

34. Table 5 combines corporate and personal taxation to assess the total taxation at the margin of corporate source income across each of the four King-Fullerton categories. The overall effective tax rate ultimately moved upward for all three countries between 1980 and 1990; although it briefly dipped in the United States before rising to a higher level. All three countries reveal significant movement toward reducing differential tax treatment of corporate source investment income across the King-Fullerton categories, particularly since 1985.

35. In sum, the last major business tax reform in Canada achieved a significant narrowing of the dispersion of marginal effective tax rates on corporate source investment income, and this change was in line with policy developments in the United States and the United Kingdom. Nevertheless, appreciable nonneutralities remain in the effective tax treatment of corporate-source income in every King-Fullerton category, suggesting that opportunities for efficiency gains through business tax reform in Canada remain.

### **E. Concluding Comments**

36. A number of observations can be drawn from this overview of business taxation in Canada. In terms of marginal effective tax rates, payroll taxes, and the overall tax burden imposed on the corporate sector, Canada compares well with the United States and the United Kingdom. Moreover, the literature generally concludes that unemployment associated with the level and structure of business taxation (and/or changes in these) tends in large part to be

transitory, although this period of adjustment may be quite lengthy.<sup>35</sup> The last major reform of Canada's tax regime moved the corporate tax system closer to neutrality by reducing preferences and revising capital consumption allowances more in line with the economic life of assets. Nevertheless, there continues to be scope for improving the neutrality of the system and, thereby, improving resource allocation. Changing tax preferences, however, whether distortions are mitigated or exacerbated, disturbs the equilibrium allocation of factors of production and, thus, generates transitional periods (the duration of which will depend on factor market rigidities) in which some factors (including labor) will be underemployed. When assessing the economic implications of a reform proposal, such transitional employment effects must be traded off against permanent improvements in output from enhanced allocative efficiency. Highly open economies such as Canada must consider the prospective response of major trading partners, if any, to changes in business taxes in order to properly assess the consequences for FDI flows. This implies, for example, that a step toward greater neutrality in the treatment of corporate-source income across industries (say by raising the statutory tax rate on manufacturing), could induce capital outflows that lessen, or perhaps overwhelm, the associated static improvement in resource allocation. Finally, business tax reforms that move toward greater simplicity and transparency will mitigate the deadweight loss associated with tax-compliance, tax-minimization, tax litigation, and rent seeking activities.

37. The Technical Committee on Business Taxation will present in-depth coverage of many of the issues examined here. The Committee is undertaking a comprehensive review of Canada's system of business taxation with the guiding objectives of promoting the creation and retention of jobs in Canada, ensuring that multi-national companies pay the intended level of tax on their business activity in Canada, and ensuring effective tax compliance while seeking ways in which compliance costs for taxpayers could be reduced. The study will also examine the structure of corporate income and capital taxes, the employment impact of payroll taxes, and the integration of corporate and personal taxes.<sup>36</sup>

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<sup>35</sup> The empirical work in the next paper in this report, "Labor Markets in Canada" suggests, for example, that labor market adjustment to an increase in payroll taxes takes place over roughly a six-year period.

<sup>36</sup> Department of Finance Canada, Press Release (November 5, 1996), "Martin Grants Extension to Technical Committee on Business Taxation."

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Table 1. Canada: Tax Revenues

(In percent of GDP)

	General Government						Federal Government						Provincial and Local Governments 1/					
	Cor- porate Income	Per- sonal Income	Social Ins. 2/	Indirect	Other	Total	Cor- porate Income	Per- sonal Income	Social Ins. 2/	Indirect	Other	Total	Cor- porate Income	Per- sonal Income	Social Ins. 2/	Indirect	Other	Total
1970	3.45	10.93	2.03	13.38	4.55	34.33	2.56	7.79	1.42	4.53	1.75	17.18	0.89	3.13	0.61	8.86	2.48	15.65
1971	3.44	11.43	1.98	13.28	4.71	34.84	2.54	7.99	1.39	4.60	1.80	17.48	0.89	3.45	0.59	8.68	2.51	15.82
1972	3.61	11.42	2.05	13.46	4.64	35.18	2.67	7.90	1.44	4.72	1.83	17.76	0.94	3.51	0.61	8.75	2.37	15.87
1973	3.98	11.31	2.09	12.98	4.55	34.91	2.86	7.83	1.45	4.58	1.70	17.68	1.13	3.48	0.64	8.40	2.39	15.74
1974	4.64	11.49	2.46	13.60	4.95	37.14	3.30	7.87	1.81	5.59	1.68	19.45	1.34	3.62	0.65	8.01	2.79	16.15
1975	4.37	11.39	2.69	12.42	5.10	35.97	3.14	7.75	1.97	4.65	1.63	18.29	1.23	3.64	0.72	7.78	2.95	16.05
1976	3.61	11.46	2.90	12.47	5.26	35.69	2.56	7.86	2.07	4.41	1.59	17.68	1.05	3.60	0.83	8.06	3.09	16.33
1977	3.33	11.78	2.83	12.41	5.58	35.92	2.36	7.12	2.01	4.24	1.69	16.58	0.97	4.66	0.82	8.17	3.28	17.63
1978	3.38	11.11	2.85	11.94	6.21	35.49	2.37	6.17	2.00	4.08	1.79	15.57	1.01	4.94	0.85	7.87	3.77	18.14
1979	3.63	10.88	2.67	11.64	6.48	35.30	2.48	6.32	1.86	3.90	1.74	15.45	1.15	4.56	0.82	7.74	4.07	18.04
1980	3.90	11.15	2.65	11.46	6.90	36.06	2.71	6.55	1.85	3.95	1.85	16.07	1.19	4.60	0.80	7.51	4.33	18.12
1981	3.60	11.87	2.96	12.90	6.94	38.28	2.63	6.87	2.17	5.33	1.84	17.99	0.98	4.99	0.80	7.58	4.34	18.42
1982	3.14	12.63	3.11	12.89	7.09	38.85	2.46	7.30	2.26	4.70	1.65	17.40	0.68	5.33	0.85	8.19	4.57	19.33
1983	3.03	12.29	3.40	12.36	7.33	38.42	2.35	7.03	2.58	4.02	1.79	16.91	0.69	5.26	0.82	8.34	4.66	19.50
1984	3.37	11.92	3.42	12.36	7.41	38.47	2.55	6.73	2.60	4.07	1.88	16.94	0.82	5.19	0.83	8.28	4.62	19.47
1985	3.26	12.12	3.59	12.31	7.21	38.48	2.42	7.10	2.74	3.96	1.85	17.16	0.83	5.02	0.86	8.35	4.45	19.21
1986	2.88	13.07	3.77	12.72	6.76	39.20	2.04	7.78	2.83	4.18	1.96	17.87	0.84	5.28	0.94	8.54	3.87	19.17
1987	3.08	13.48	3.83	12.93	6.35	39.68	2.15	7.92	2.84	4.29	1.80	18.02	0.93	5.56	1.00	8.64	3.65	19.46
1988	2.90	13.73	3.96	13.04	6.41	40.05	1.96	7.95	2.91	4.27	1.95	18.05	0.95	5.79	1.05	8.77	3.58	19.82
1989	2.86	13.67	3.69	13.35	6.69	40.25	1.97	8.09	2.61	4.41	1.98	18.04	0.89	5.58	1.07	8.94	3.84	19.99
1990	2.51	15.57	4.15	13.10	6.57	41.90	1.74	9.00	3.11	3.97	2.11	18.76	0.78	6.57	1.05	9.13	3.58	20.75
1991	2.22	15.72	4.40	13.84	6.37	42.56	1.53	9.06	3.47	4.46	2.10	19.38	0.69	6.66	0.94	9.38	3.39	20.70
1992	2.10	15.33	4.88	14.16	6.33	42.81	1.45	9.00	3.90	4.51	2.09	19.64	0.65	6.33	0.97	9.66	3.39	20.63
1993	2.05	14.79	4.91	14.02	6.31	42.09	1.42	8.56	3.95	4.26	1.99	18.84	0.64	6.23	0.97	9.76	3.51	20.73
1994	2.34	14.47	4.98	13.80	6.33	41.92	1.62	8.23	4.00	4.05	1.98	18.55	0.72	6.25	0.98	9.75	3.59	20.88
1995	2.60	14.80	4.98	13.53	6.48	42.38	1.79	8.55	3.96	3.90	2.13	18.88	0.81	6.24	1.01	9.63	3.61	20.89

Sources: Statistics Canada (National Income and Expenditure Accounts); and Fund staff estimates.

1/ Own-source revenue only. Excluding tax revenues of the hospital sector which are included in total general government revenue.

2/ Includes: direct tax revenues of the federal Canada Pension Plan (CPP) and the provincial Quebec Pension Plan (QPP); federal unemployment insurance contributions; and provincial workers' compensation contributions. Note, this is not a complete representation of payroll taxes.

Table 1. United States: Tax Revenues (Concluded)

(In percent of GDP)

	General Government						Federal Government						State and Local Governments 1/					
	Cor- porate Income	Per- sonal Income	Social	Indirect	Other	Total	Cor- porate Income	Per- sonal Income	Social Ins. 2/	Indirect	Other	Total	Cor- porate Income	Per- sonal Income	Social Ins. 2/	Indirect	Other	Total
1970	3.32	10.53	5.99	9.10	0.98	29.92	2.96	8.91	5.09	1.76	0.22	18.94	0.36	1.62	0.89	6.60	1.52	10.98
1971	3.36	9.65	6.18	9.20	0.96	29.35	2.98	7.99	5.28	1.70	0.22	18.16	0.38	1.67	0.90	6.74	1.51	11.20
1972	3.38	10.67	6.43	9.00	1.03	30.51	2.96	8.72	5.50	1.50	0.26	18.94	0.42	1.96	0.93	6.71	1.56	11.58
1973	3.57	10.16	7.08	8.76	1.06	30.63	3.13	8.26	6.14	1.44	0.21	19.19	0.43	1.90	0.94	6.54	1.63	11.44
1974	3.46	10.63	7.46	8.64	1.16	31.34	3.02	8.74	6.49	1.35	0.22	19.82	0.44	1.88	0.98	6.49	1.73	11.53
1975	3.11	9.59	7.43	8.59	1.04	29.76	2.66	7.69	6.39	1.36	0.12	18.23	0.45	1.90	1.03	6.45	1.70	11.53
1976	3.53	10.02	7.57	8.33	1.11	30.57	3.00	8.05	6.50	1.19	0.24	18.98	0.53	1.97	1.07	6.38	1.64	11.59
1977	3.60	10.37	7.67	8.17	1.10	30.91	3.04	8.35	6.58	1.13	0.24	19.33	0.56	2.02	1.09	6.28	1.62	11.57
1978	3.64	10.48	7.73	7.77	1.32	30.93	3.11	8.45	6.65	1.12	0.37	19.70	0.53	2.02	1.08	5.89	1.72	11.23
1979	3.45	10.95	7.99	7.38	1.54	31.30	2.91	8.98	6.91	1.02	0.43	20.25	0.53	1.97	1.07	5.54	1.93	11.05
1980	3.04	11.22	8.08	7.61	1.72	31.67	2.53	9.20	7.02	1.22	0.49	20.46	0.52	2.02	1.07	5.45	2.17	11.22
1981	2.61	11.56	8.40	8.00	1.92	32.48	2.11	9.54	7.35	1.61	0.64	21.26	0.50	2.02	1.04	5.39	2.27	11.22
1982	1.95	11.46	8.66	7.91	2.23	32.20	1.51	9.34	7.55	1.28	0.71	20.39	0.43	2.11	1.11	5.60	2.56	11.81
1983	2.19	10.52	8.59	7.97	2.43	31.71	1.74	8.35	7.52	1.28	0.77	19.66	0.45	2.17	1.07	5.68	2.68	12.05
1984	2.41	10.13	8.85	7.93	2.48	31.81	1.93	7.90	7.83	1.23	0.76	19.65	0.48	2.23	1.03	5.66	2.76	12.16
1985	2.31	10.47	8.99	7.89	2.72	32.38	1.82	8.22	7.97	1.12	0.86	19.99	0.48	2.25	1.02	5.70	2.93	12.38
1986	2.41	10.40	9.09	7.80	2.83	32.52	1.90	8.10	8.02	1.00	0.84	19.85	0.51	2.30	1.07	5.75	3.03	12.66
1987	2.71	10.95	9.02	7.78	2.71	33.17	2.20	8.57	7.98	1.01	0.74	20.49	0.51	2.38	1.05	5.78	2.95	12.68
1988	2.71	10.54	9.17	7.64	2.70	32.75	2.20	8.21	8.14	1.01	0.68	20.24	0.52	2.33	1.03	5.73	2.91	12.51
1989	2.60	10.94	9.03	7.63	2.73	32.92	2.15	8.52	8.04	0.93	0.66	20.30	0.45	2.42	0.99	5.81	2.96	12.62
1990	2.45	10.88	9.03	7.71	2.66	32.71	2.05	8.46	8.03	0.92	0.63	20.09	0.39	2.42	1.00	5.89	2.92	12.62
1991	2.25	10.56	9.19	8.08	2.68	32.76	1.86	8.06	8.16	1.06	0.70	19.83	0.40	2.50	1.03	6.04	2.95	12.92
1992	2.29	10.42	9.15	8.10	2.51	32.47	1.90	7.86	8.12	1.03	0.58	19.49	0.39	2.56	1.03	6.08	2.91	12.97
1993	2.50	10.53	9.05	8.24	2.37	32.68	2.10	7.99	8.03	1.05	0.56	19.73	0.40	2.54	1.02	6.21	2.78	12.95
1994	2.81	10.55	9.06	8.25	2.27	32.95	2.37	8.09	8.05	1.07	0.56	20.15	0.44	2.45	1.01	6.24	2.66	12.80
1995	3.01	10.95	9.10	8.21	2.26	33.54	2.54	8.48	8.11	1.05	0.58	20.75	0.47	2.47	0.99	6.27	2.58	12.79

Sources: Bureau of Economic Analysis, U.S. Department of Commerce; and Fund staff estimates.

1/ Own-source revenue only.

2/ Includes: federal old-age, survivors, disability, and hospital insurance contributions; federal and state unemployment insurance contributions; federal and state employee pension contributions; and other federal and state social insurance programs, including workers compensation. Note, this is not a complete representation of payroll taxes.

Table 2. Canada: Tax Revenues

(In percent of total revenues)

	General Government						Federal Government						Provincial and Local Governments 1/					
	Corporate Income	Personal Income	Social Ins. 2/	Indirect	Other	Total	Corporate Income	Personal Income	Social Ins. 2/	Indirect	Other	Total	Corporate Income	Personal Income	Social Ins. 2/	Indirect	Other	Total
1970	10.04	31.83	5.90	38.98	13.24	100.00	14.88	45.37	8.24	26.35	10.20	100.00	5.70	20.03	3.90	56.57	15.82	100.00
1971	9.86	32.82	5.67	38.12	13.52	100.00	14.55	45.69	7.94	26.34	10.31	100.00	5.64	21.79	3.71	54.83	15.89	100.00
1972	10.25	32.45	5.83	38.27	13.20	100.00	15.02	44.50	8.12	26.55	10.32	100.00	5.90	22.12	3.84	55.09	14.91	100.00
1973	11.40	32.40	5.98	37.18	13.04	100.00	16.15	44.28	8.21	25.92	9.64	100.00	7.15	22.11	4.04	53.33	15.19	100.00
1974	12.49	30.95	6.62	36.61	13.33	100.00	16.95	40.47	9.28	28.74	8.64	100.00	8.30	22.42	4.05	49.57	17.30	100.00
1975	12.14	31.67	7.47	34.54	14.19	100.00	17.14	42.34	10.75	25.40	8.91	100.00	7.68	22.71	4.48	48.46	18.41	100.00
1976	10.10	32.11	8.12	34.94	14.73	100.00	14.48	44.48	11.73	24.97	9.00	100.00	6.40	22.03	5.05	49.34	18.96	100.00
1977	9.26	32.80	7.88	34.53	15.53	100.00	14.23	42.94	12.13	25.55	10.22	100.00	5.48	26.45	4.65	46.33	18.61	100.00
1978	9.53	31.29	8.02	33.66	17.50	100.00	15.21	39.60	12.85	26.19	11.52	100.00	5.58	27.23	4.66	43.36	20.77	100.00
1979	10.29	30.81	7.57	32.97	18.36	100.00	16.05	40.89	12.01	25.23	11.25	100.00	6.37	25.25	4.52	42.88	22.53	100.00
1980	10.81	30.93	7.34	31.79	19.13	100.00	16.87	40.77	11.50	24.59	11.50	100.00	6.55	25.38	4.40	41.44	23.89	100.00
1981	9.42	31.00	7.74	33.71	18.13	100.00	14.59	38.21	12.05	29.62	10.22	100.00	5.31	27.11	4.32	41.14	23.59	100.00
1982	8.08	32.52	8.00	33.17	18.24	100.00	14.13	41.99	12.98	27.01	9.51	100.00	3.51	27.57	4.40	42.36	23.65	100.00
1983	7.90	32.00	8.85	32.17	19.08	100.00	13.89	41.58	15.26	23.76	10.57	100.00	3.52	27.00	4.21	42.80	23.88	100.00
1984	8.76	30.97	8.90	32.12	19.25	100.00	15.03	39.71	15.33	24.05	11.09	100.00	4.23	26.66	4.25	42.55	23.74	100.00
1985	8.46	31.48	9.34	31.98	18.74	100.00	14.13	41.37	15.96	23.08	10.76	100.00	4.33	26.10	4.45	43.44	23.15	100.00
1986	7.35	33.33	9.62	32.45	17.24	100.00	11.41	43.57	15.86	23.42	10.97	100.00	4.40	27.56	4.90	44.53	20.18	100.00
1987	7.76	33.97	9.66	32.60	16.01	100.00	11.93	43.93	15.74	23.81	10.01	100.00	4.77	28.56	5.12	44.41	18.75	100.00
1988	7.25	34.30	9.89	32.57	16.00	100.00	10.85	44.03	16.14	23.66	10.83	100.00	4.77	29.21	5.29	44.26	18.05	100.00
1989	7.10	33.97	9.16	33.16	16.62	100.00	10.92	44.87	14.49	24.45	10.98	100.00	4.44	27.90	5.37	44.71	19.21	100.00
1990	6.00	37.15	9.91	31.26	15.68	100.00	9.27	47.98	16.57	21.15	11.23	100.00	3.74	31.63	5.04	44.00	17.27	100.00
1991	5.22	36.93	10.35	32.52	14.98	100.00	7.89	46.75	17.89	23.03	10.84	100.00	3.33	32.18	4.53	45.31	16.40	100.00
1992	4.91	35.81	11.39	33.09	14.79	100.00	7.38	45.81	19.87	22.94	10.66	100.00	3.17	30.69	4.72	46.80	16.45	100.00
1993	4.87	35.15	11.67	33.31	14.99	100.00	7.52	45.46	20.94	22.61	10.56	100.00	3.07	30.05	4.66	47.10	16.93	100.00
1994	5.58	34.53	11.87	32.93	15.10	100.00	8.72	44.36	21.58	21.86	10.68	100.00	3.45	29.92	4.67	46.69	17.18	100.00
1995	6.13	34.92	11.74	31.92	15.29	100.00	9.48	45.31	20.99	20.64	11.26	100.00	3.87	29.89	4.85	46.09	17.27	100.00

Sources: Statistics Canada (National Income and Expenditure Accounts); and Fund staff estimates.

1/ Own-source revenue only. Excluding tax revenues of the hospital sector which are included in total general government revenue.

2/ Includes: direct tax revenues of the federal Canada Pension Plan (CPP) and the provincial Quebec Pension Plan (QPP); federal unemployment insurance contributions; and provincial workers' compensation contributions. Note, this is not a complete representation of payroll taxes.

Table 2. United States: Tax Revenues (Concluded)

(In percent of total revenues)

	General Government						Federal Government						State and Local Governments 1/					
	Corporate Income	Personal Income	Social Ins. 2/	Indirect	Other	Total	Corporate Income	Personal Income	Social Ins. 2/	Indirect	Other	Total	Corporate Income	Personal Income	Social Ins. 2/	Indirect	Other	Total
1970	11.09	35.19	20.01	30.42	3.28	100.00	15.61	47.06	26.89	9.27	1.15	100.00	3.28	14.73	8.13	60.08	13.80	100.00
1971	11.43	32.89	21.07	31.36	3.26	100.00	16.39	44.01	29.07	9.35	1.21	100.00	3.41	14.87	8.07	60.16	13.51	100.00
1972	11.08	34.97	21.08	29.50	3.37	100.00	15.61	46.02	29.06	7.93	1.38	100.00	3.64	16.89	8.01	57.98	13.45	100.00
1973	11.64	33.18	23.12	28.59	3.46	100.00	16.32	43.08	32.01	7.51	1.08	100.00	3.79	16.59	8.20	57.18	14.23	100.00
1974	11.04	33.91	23.80	27.55	3.69	100.00	15.22	44.12	32.73	6.82	1.12	100.00	3.86	16.34	8.47	56.29	15.03	100.00
1975	10.45	32.22	24.95	28.85	3.51	100.00	14.61	42.19	35.09	7.48	0.65	100.00	3.89	16.50	8.94	55.89	14.75	100.00
1976	11.56	32.78	24.78	27.26	3.62	100.00	15.83	42.44	34.25	6.25	1.24	100.00	4.58	16.96	9.26	55.04	14.16	100.00
1977	11.66	33.54	24.81	26.42	3.57	100.00	15.71	43.17	34.02	5.85	1.25	100.00	4.87	17.46	9.41	54.24	14.01	100.00
1978	11.76	33.86	24.99	25.12	4.26	100.00	15.79	42.91	33.78	5.66	1.86	100.00	4.70	18.00	9.59	52.44	15.29	100.00
1979	11.01	34.99	25.51	23.58	4.92	100.00	14.39	44.32	34.14	5.03	2.13	100.00	4.80	17.87	9.71	50.16	17.47	100.00
1980	9.61	35.42	25.52	24.03	5.42	100.00	12.35	44.98	34.29	5.96	2.41	100.00	4.63	17.98	9.52	48.57	19.30	100.00
1981	8.03	35.59	25.85	24.63	5.90	100.00	9.93	44.86	34.59	7.60	3.02	100.00	4.42	18.02	9.30	48.01	20.26	100.00
1982	6.04	35.58	26.88	24.56	6.93	100.00	7.42	45.82	37.03	6.26	3.47	100.00	3.67	17.90	9.36	47.39	21.67	100.00
1983	6.91	33.17	27.11	25.14	7.67	100.00	8.85	42.48	38.26	6.50	3.91	100.00	3.75	18.00	8.90	47.13	22.23	100.00
1984	7.59	31.85	27.84	24.93	7.78	100.00	9.83	40.21	39.83	6.26	3.88	100.00	3.96	18.36	8.47	46.50	22.71	100.00
1985	7.13	32.34	27.78	24.36	8.39	100.00	9.12	41.13	39.85	5.59	4.31	100.00	3.91	18.15	8.28	46.01	23.66	100.00
1986	7.40	31.98	27.96	23.97	8.69	100.00	9.55	40.81	40.40	5.02	4.23	100.00	4.04	18.14	8.45	45.41	23.96	100.00
1987	8.16	33.02	27.20	23.44	8.18	100.00	10.72	41.83	38.92	4.91	3.63	100.00	4.01	18.80	8.27	45.62	23.30	100.00
1988	8.28	32.18	27.99	23.31	8.24	100.00	10.86	40.56	40.21	5.01	3.37	100.00	4.12	18.62	8.22	45.77	23.28	100.00
1989	7.90	33.22	27.43	23.16	8.29	100.00	10.61	41.97	39.59	4.59	3.23	100.00	3.54	19.14	7.88	46.02	23.43	100.00
1990	7.48	33.25	27.60	23.56	8.12	100.00	10.22	42.09	39.97	4.56	3.16	100.00	3.10	19.19	7.91	46.70	23.10	100.00
1991	6.88	32.24	28.04	24.67	8.17	100.00	9.35	40.65	41.12	5.36	3.51	100.00	3.10	19.33	7.96	46.76	22.85	100.00
1992	7.06	32.08	28.19	24.94	7.73	100.00	9.75	40.32	41.66	5.27	3.00	100.00	3.01	19.72	7.94	46.87	22.46	100.00
1993	7.64	32.21	27.69	25.21	7.24	100.00	10.63	40.49	40.68	5.34	2.86	100.00	3.10	19.59	7.88	47.97	21.46	100.00
1994	8.54	32.01	27.50	25.06	6.90	100.00	11.76	40.17	39.97	5.31	2.79	100.00	3.48	19.16	7.86	48.73	20.78	100.00
1995	8.99	32.65	27.13	24.48	6.75	100.00	12.24	40.85	39.07	5.05	2.79	100.00	3.71	19.34	7.76	49.01	20.18	100.00

Sources: Bureau of Economic Analysis, U.S. Department of Commerce; and Fund staff estimates.

1/ Own source revenue only.

2/ Includes: federal old-age, survivors, disability, and hospital insurance contributions; federal and state unemployment insurance contributions; federal and state employee pension contributions; and other federal and state social insurance programs, including workers compensation. Note, this is not a complete representation of payroll taxes.



Table 3. Canada: Marginal Effective Corporate Tax Rates

(In percent)

	Canada			United States			United Kingdom		
	1980	1985	1990	1980	1985	1990	1980	1985	1990
Industry <sup>1</sup>									
Manufacturing	10.3	11.2	24.5	33.8	27.5	34.0	-53.3	14.7	24.8
Other industry	25.6	28.3	29.1	-13.7	-16.7	11.7	-24.2	14.5	21.2
Commerce	19.2	22.8	25.0	15.5	9.2	21.8	12.7	38.9	37.8
Variance <sup>2</sup>	59.30	76.20	6.40	574.00	493.20	124.70	1,094.10	196.80	76.30
Asset									
Machinery	4.3	8.2	15.5	-12.0	-18.6	18.5	-67.0	-5.4	8.0
Buildings	30.3	31.6	35.9	19.1	12.2	25.3	20.4	43.9	49.7
Inventories	20.6	20.4	30.7	28.5	28.7	26.3	-34.2	46.8	39.8
Variance <sup>2</sup>	172.60	137.00	112.40	449.30	576.40	18.00	1,949.30	860.60	474.70
Source of Finance									
Debt	-25.0	-20.5	-6.3	-49.2	-55.5	-14.7	-157.8	-36.8	-15.9
New shares	44.7	45.2	47.2	47.1	43.0	44.1	-61.2	-10.1	4.1
Retained earnings	44.7	45.3	47.3	45.6	42.1	43.7	2.3	38.0	40.5
Variance <sup>2</sup>	1,619.40	1,441.00	955.90	3,043.80	3,204.80	1,144.70	6,499.30	1,436.90	817.70
Owner									
Households	19.2	21.2	26.9	15.8	9.5	23.6	-45.5	14.9	23.1
Tax-exempt institutions	10.7	13.2	20.2	9.1	2.4	19.3	-12.9	30.1	34.5
Insurance companies	-6.9	-3.4	31.1	26.3	25.1	40.9	-29.5	22.2	28.7
Variance <sup>2</sup>	177.20	157.50	30.20	75.20	134.80	130.70	265.70	57.80	32.50
Overall tax rate	16.90	19.00	25.90	14.40	9.20	24.00	31.40	21.40	28.00

Source: Jorgensen (1993), Table 1-1 & Daly, Mercier and Schwetzer (1993), Table 3-5. Estimates assume a 5 percent expected annual inflation rate and real pre-tax return on net of depreciation on all investment projects at 10 percent.

1/ King and Fullerton's original work classified sectors by standard industrial classifications (SIC). The "other industry" group consists primarily of construction, transportation, communications, and utilities. The "commerce" sector includes nonfinancial services and distribution (King and Fullerton, 1984, p.13).

2/ This is the variance of the three values immediately above. It offers a measure of the dispersion of rates within each of the four main King-Fullerton categories.

Table 4. Canada: Marginal Effective Personal Tax Rates on Corporate Source Income  
(In percent)

	Canada			United States			United Kingdom		
	1980	1985	1990	1980	1985	1990	1980	1985	1990
<b>Industry<sup>1</sup></b>									
Manufacturing	20.0	21.1	18.5	21.8	17.7	18.8	33.9	18.2	14.2
Other industry	18.4	19.3	18.4	23.3	19.8	19.4	29.8	18.3	14.6
Commerce	21.4	22.3	21.5	23.8	19.2	19.2	24.2	14.6	12.5
Variance <sup>2</sup>	2.3	2.3	3.1	1.1	1.2	0.1	23.7	4.4	1.2
<b>Asset</b>									
Machinery	21.4	22.2	20.6	22.6	18.9	19.1	35.9	21.1	16.3
Buildings	18.1	19.1	17.7	22.6	18.8	19.1	23.1	13.9	11.0
Inventories	20.1	21.4	19.2	22.3	18.4	19.0	31.3	13.5	12.3
Variance <sup>2</sup>	2.8	2.6	2.1	0.0	0.1	0.0	42.0	18.3	7.6
<b>Source of Finance</b>									
Debt	37.1	39.5	37.6	26.0	23.6	20.5	105.7	62.8	44.0
New shares	10.4	10.4	24.9	53.0	44.2	35.7	50.7	32.3	22.3
Retained earnings	8.4	8.3	4.4	18.2	14.0	17.0	10.6	4.8	5.6
Variance <sup>2</sup>	256.8	304.1	280.6	333.5	238.1	98.8	2279.5	841.8	370.7
<b>Owner</b>									
Households	26.1	27.3	24.5	44.4	36.5	32.8	52.5	28.4	23.5
Tax-exempt institutions	0.0	0.0	0.0	-31.9	-25.3	-14.6	0.0	0.0	0.0
Insurance companies	-22.9	-22.9	-6.4	-17.2	-13.6	-7.9	32.3	21.4	14.5
Variance <sup>2</sup>	601.1	631.6	266.0	1638.7	1077.7	658.0	701.3	218.9	140.6
<b>Overall tax rate</b>	20.0	20.9	19.3	22.5	18.7	19.1	30.7	17.2	13.8

Source: Jorgensen (1993), Table 1-2 & Daly, Mercier and Schwetzer (1993), Table 3-6. Estimates assume a 5 percent expected annual inflation rate and real pre-tax return on net of depreciation on all investment projects at 10 percent.

1/ King and Fullerton's original work classified sectors by standard industrial classifications (SIC). The "other industry" group consists primarily of construction, transportation, communications, and utilities. The "commerce" sector includes nonfinancial services and distribution (King and Fullerton, 1984, p.13).

2/ This is the variance of the three values immediately above. It offers a measure of the dispersion of rates within each of the four main King-Fullerton categories.

Table 5. Canada: Marginal Effective Tax Rates on Corporate Source Income  
(In percent)

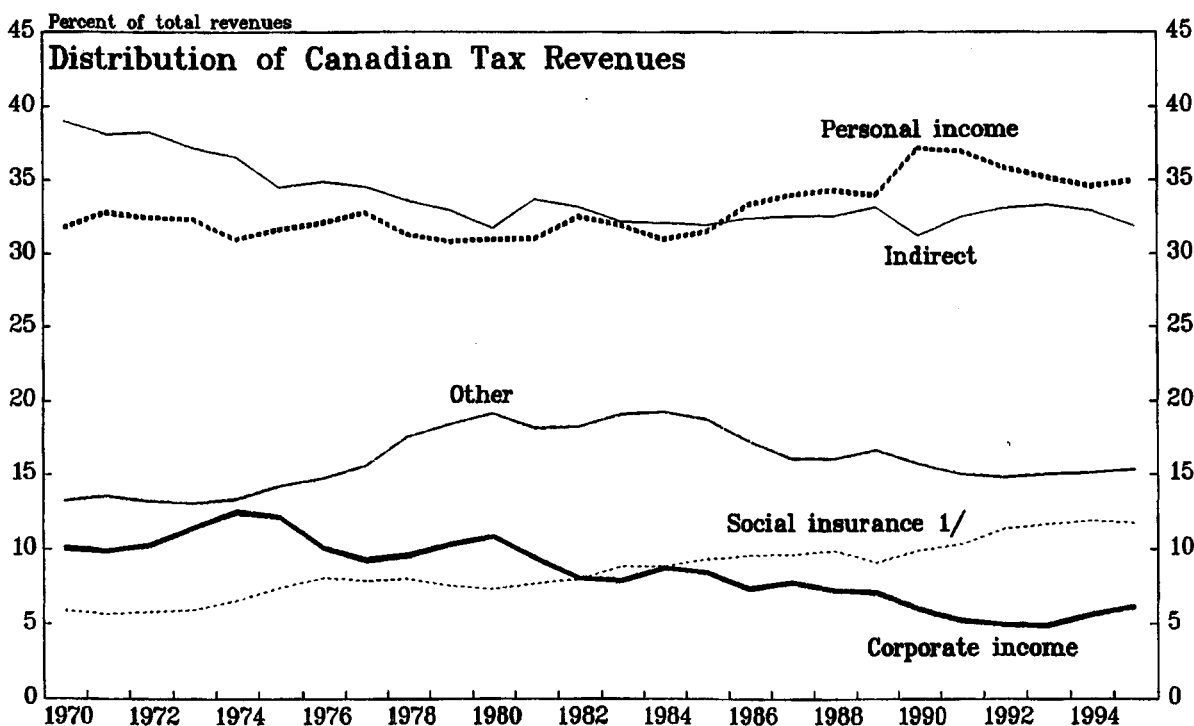
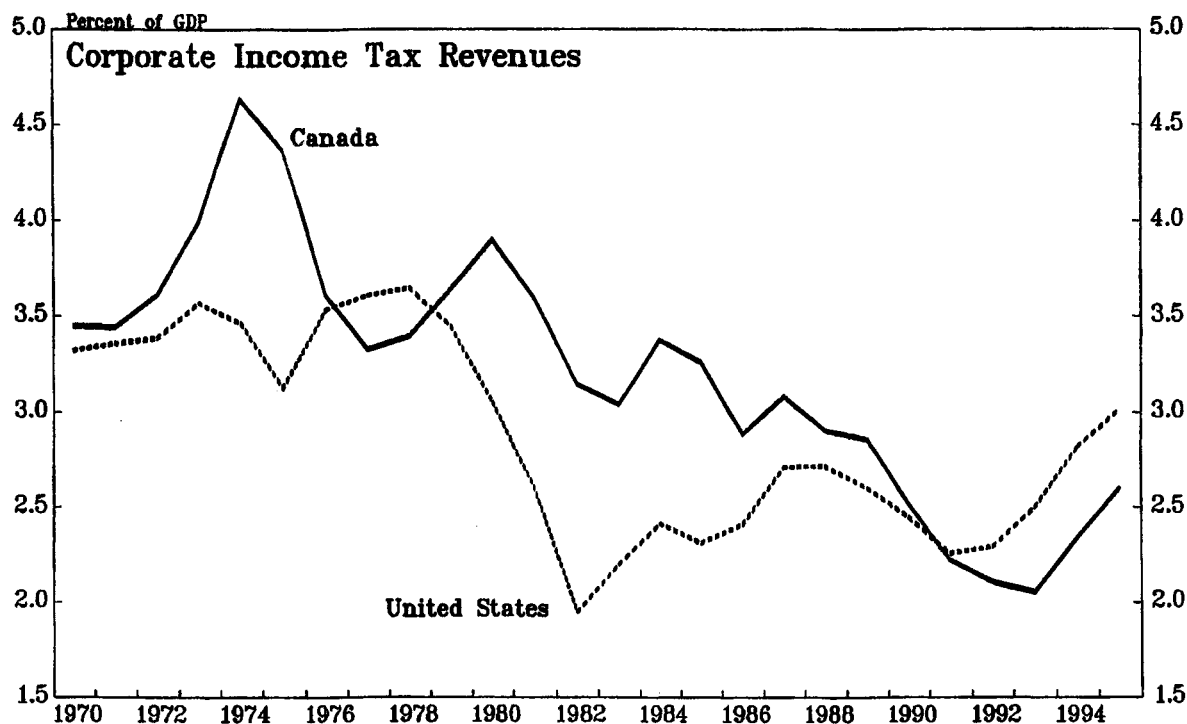
	Canada			United States			United Kingdom		
	1980	1985	1990	1980	1985	1990	1980	1985	1990
Industry <sup>1</sup>									
Manufacturing	28.2	29.9	38.5	48.2	40.3	46.4	-1.3	30.2	35.5
Other industry	39.3	42.1	42.1	12.8	6.4	28.8	12.8	30.1	32.7
Commerce	36.5	40.0	41.1	35.6	26.6	36.8	33.8	47.8	45.6
Variance <sup>2</sup>	33.3	42.5	3.5	322.0	290.8	77.7	312.0	103.8	46.0
Asset									
Machinery	24.8	28.6	32.9	13.3	3.8	34.1	-7.0	16.8	23.0
Buildings	42.9	44.7	47.2	37.4	28.7	39.6	38.8	51.7	55.2
Inventories	36.6	37.4	44.0	44.4	41.8	40.3	7.8	54.0	47.2
Variance <sup>2</sup>	84.4	65.0	56.3	266.2	372.6	11.5	546.3	434.5	281.1
Source of Finance									
Debt	21.4	27.1	33.7	-10.4	-18.8	8.8	114.7	49.1	35.1
New shares	50.5	50.9	60.3	75.1	68.2	64.1	20.5	25.5	25.5
Retained earnings	49.3	49.8	49.6	55.5	50.2	53.3	12.7	41.0	43.8
Variance <sup>2</sup>	271.1	180.5	179.1	2006.2	2109.0	859.2	3223.1	143.8	83.8
Owner									
Households	40.3	42.7	44.8	53.2	42.5	48.7	30.9	39.1	41.2
Tax-exempt institutions	10.7	13.2	20.2	-19.9	-22.3	7.5	-12.9	30.1	34.5
Insurance companies	-31.4	-27.1	26.7	13.6	14.9	36.2	12.3	38.8	39.0
Variance <sup>2</sup>	1298.2	1227.7	162.5	1339.0	1057.4	446.2	483.2	26.1	11.7
Overall tax rate	33.5	35.9	40.2	33.7	26.2	38.5	8.9	34.9	37.9

Source: Jorgensen (1993), Table 1-3. Estimates assume a 5 percent expected annual inflation rate and real pre-tax return on net of depreciation on all investment projects at 10 percent.

1/ King and Fullerton's original work classified sectors by standard industrial classifications (SIC). The "other industry" group consists primarily of construction, transportation, communications, and utilities. The "commerce" sector includes nonfinancial services and distribution (King and Fullerton, 1984, p.13).

2/ This is the variance of the three values immediately above. It offers a measure of the dispersion of rates within each of the four main King-Fullerton categories.

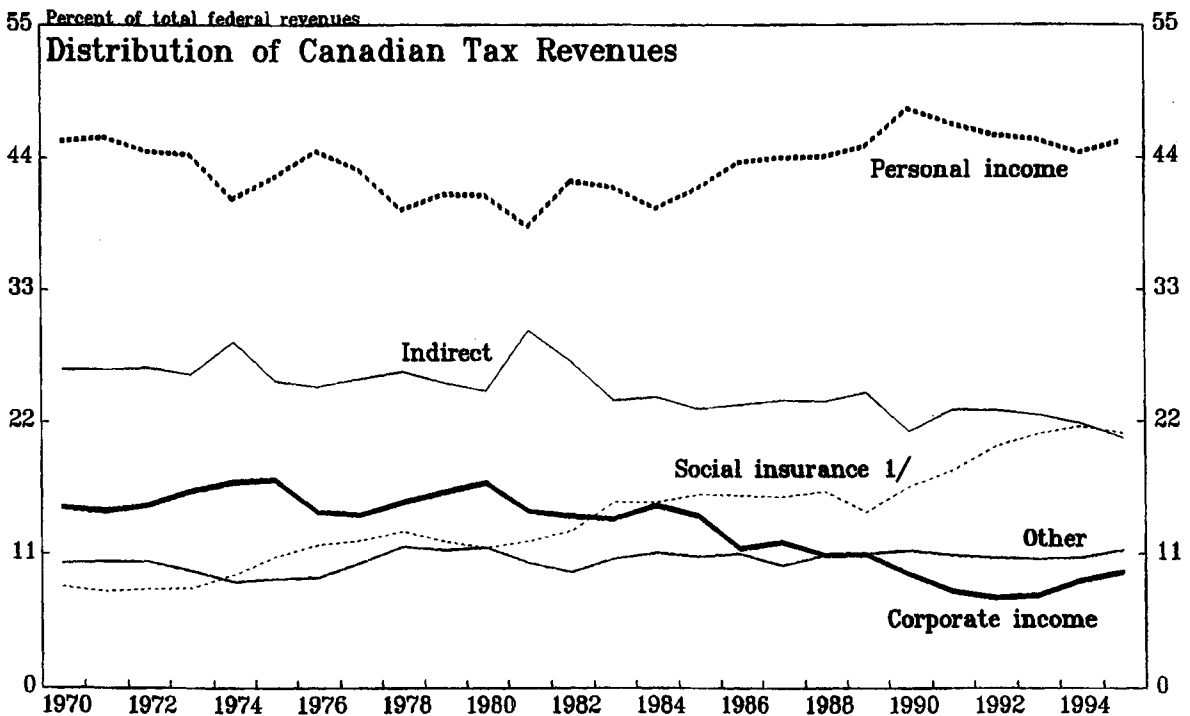
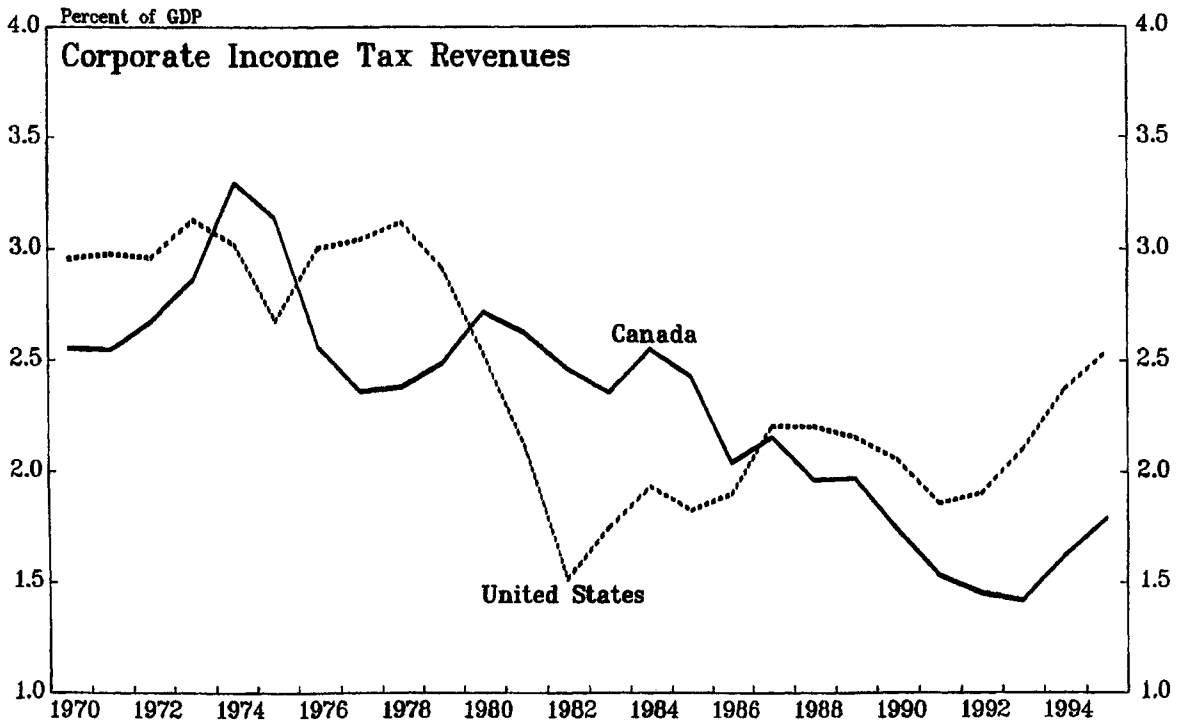
# GENERAL GOVERNMENT TAX REVENUES



Sources: Statistics Canada; Bureau of Economic Analysis, U.S. Department of Commerce; and Fund staff estimates.

1/ Includes direct tax revenues of the Canada Pension Plan and the Quebec Pension Plan, and contributions for unemployment insurance and workers' compensation. Note, this is not a complete representation of payroll taxes.

# FEDERAL GOVERNMENT TAX REVENUES

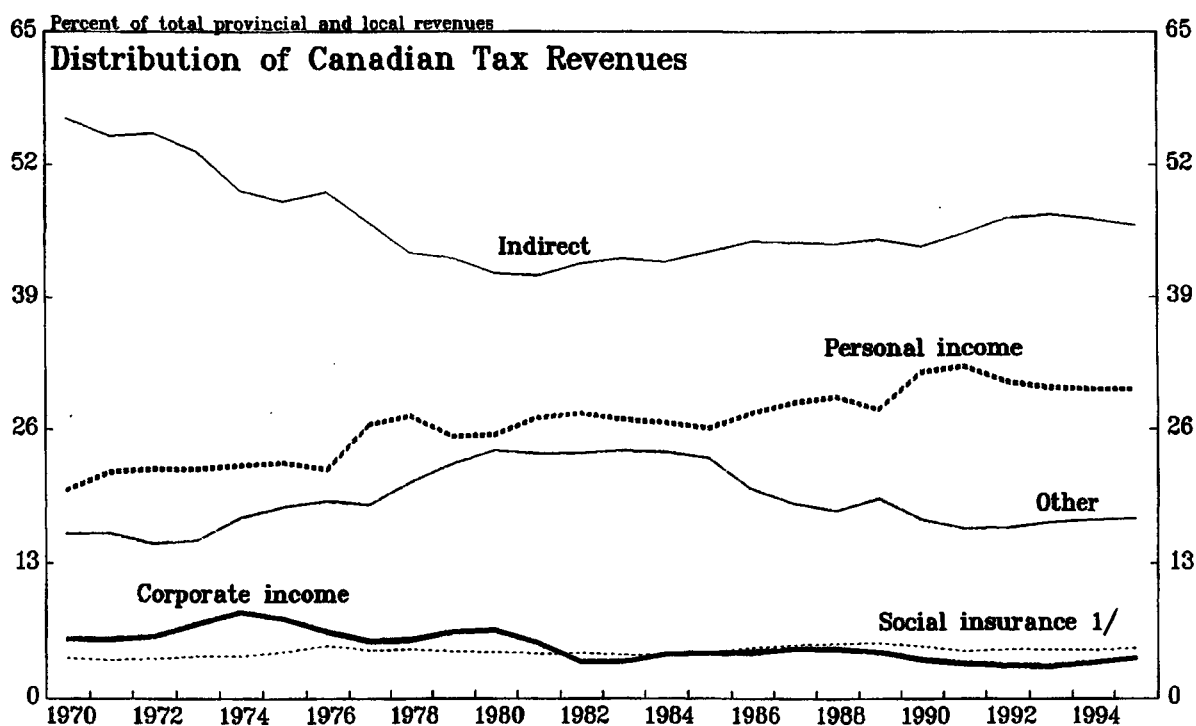
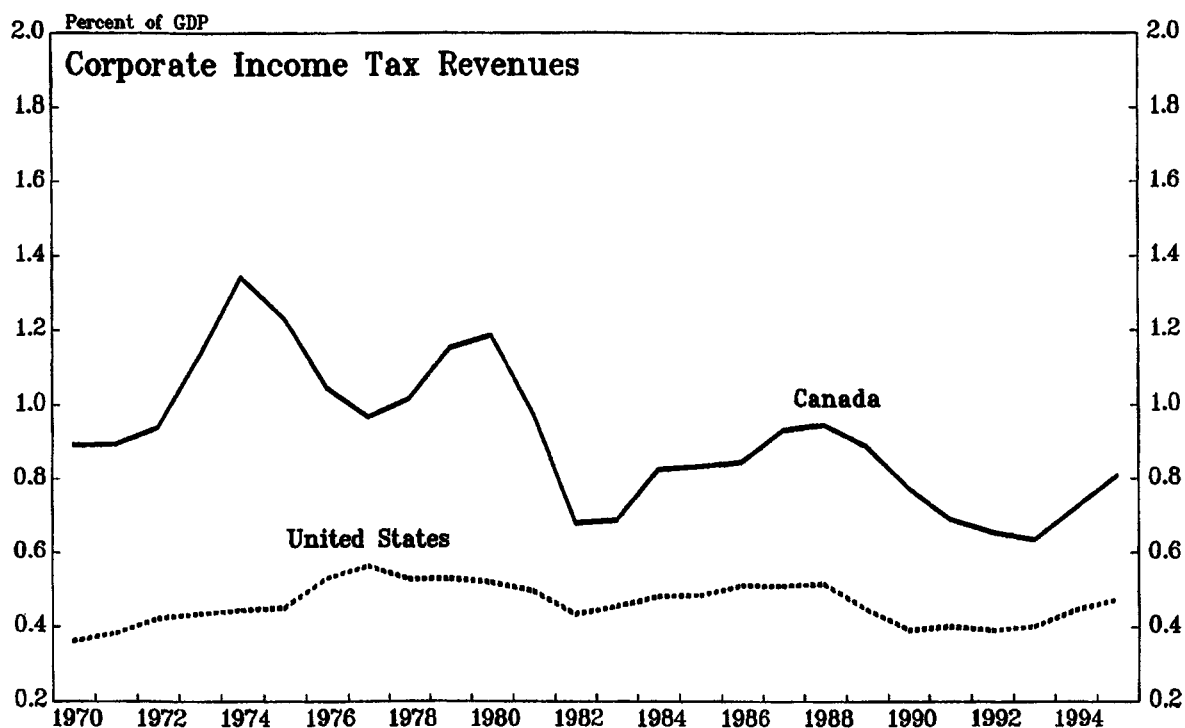


Sources: Statistics Canada; Bureau of Economic Analysis, U.S. Department of Commerce; and Fund staff estimates.

1/ Includes direct tax revenues of the Canada Pension Plan and contributions for unemployment insurance.

Note, this is not a complete representation of payroll taxes.

# PROVINCIAL, STATE, AND LOCAL GOVERNMENT TAX REVENUES

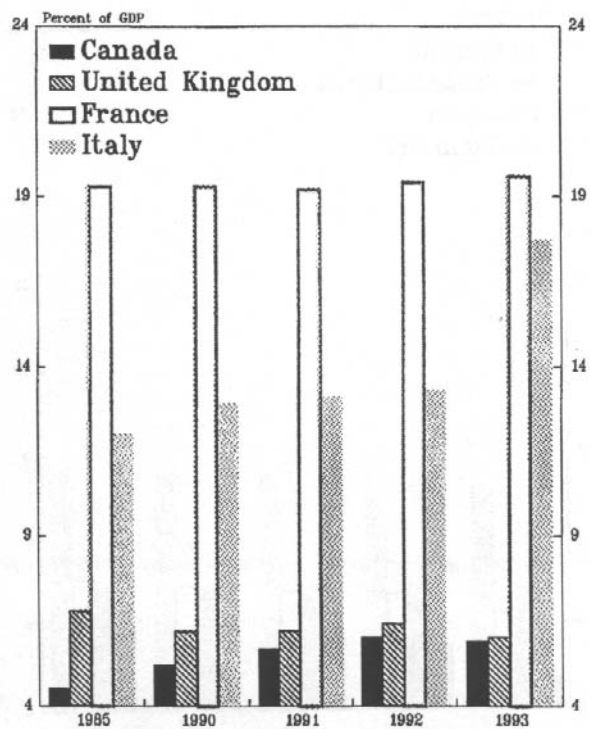
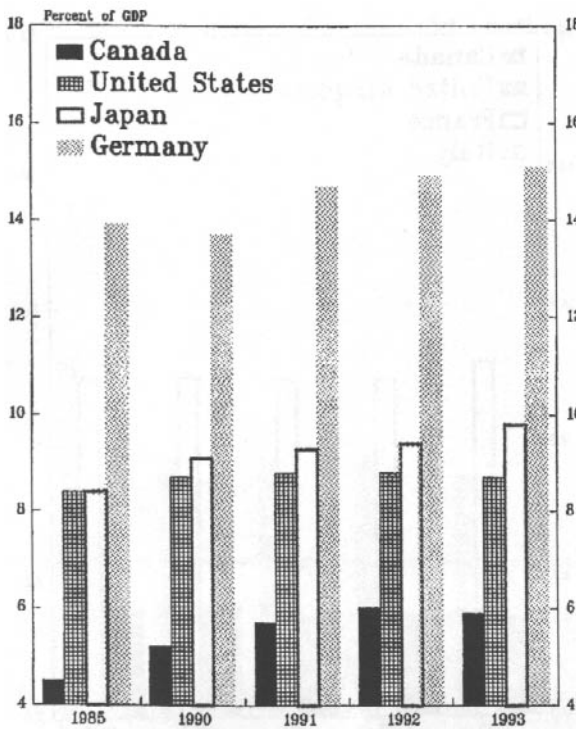
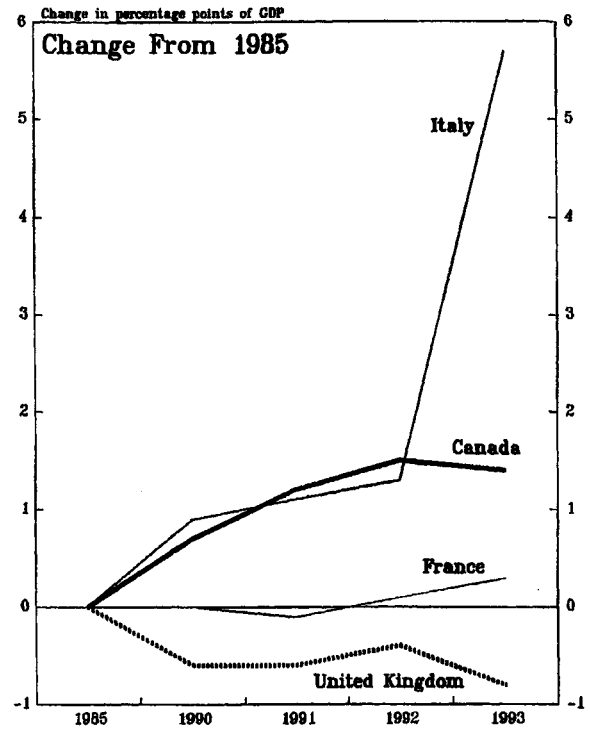
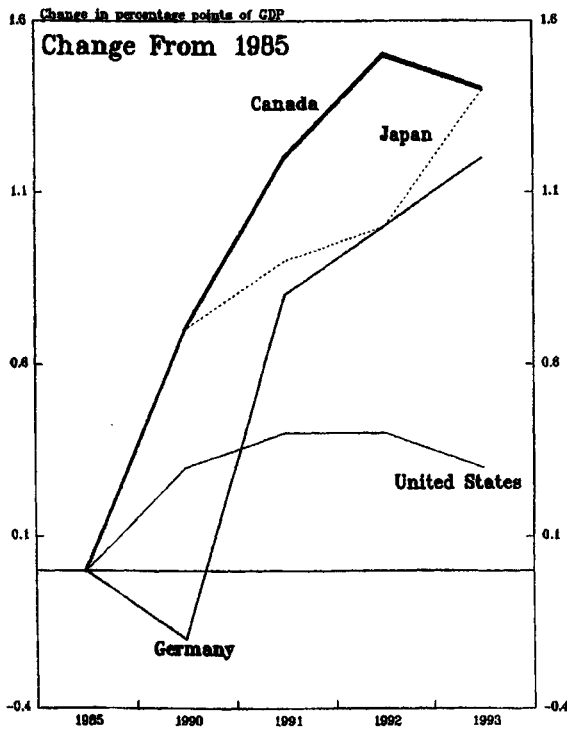


Sources: Statistics Canada; Bureau of Economic Analysis, U.S. Department of Commerce; and Fund staff estimates.

1/ Includes direct tax revenues of the Quebec Pension Plan and contributions for workers' compensation.  
Note, this is not a complete representation of payroll taxes.

CHART 4

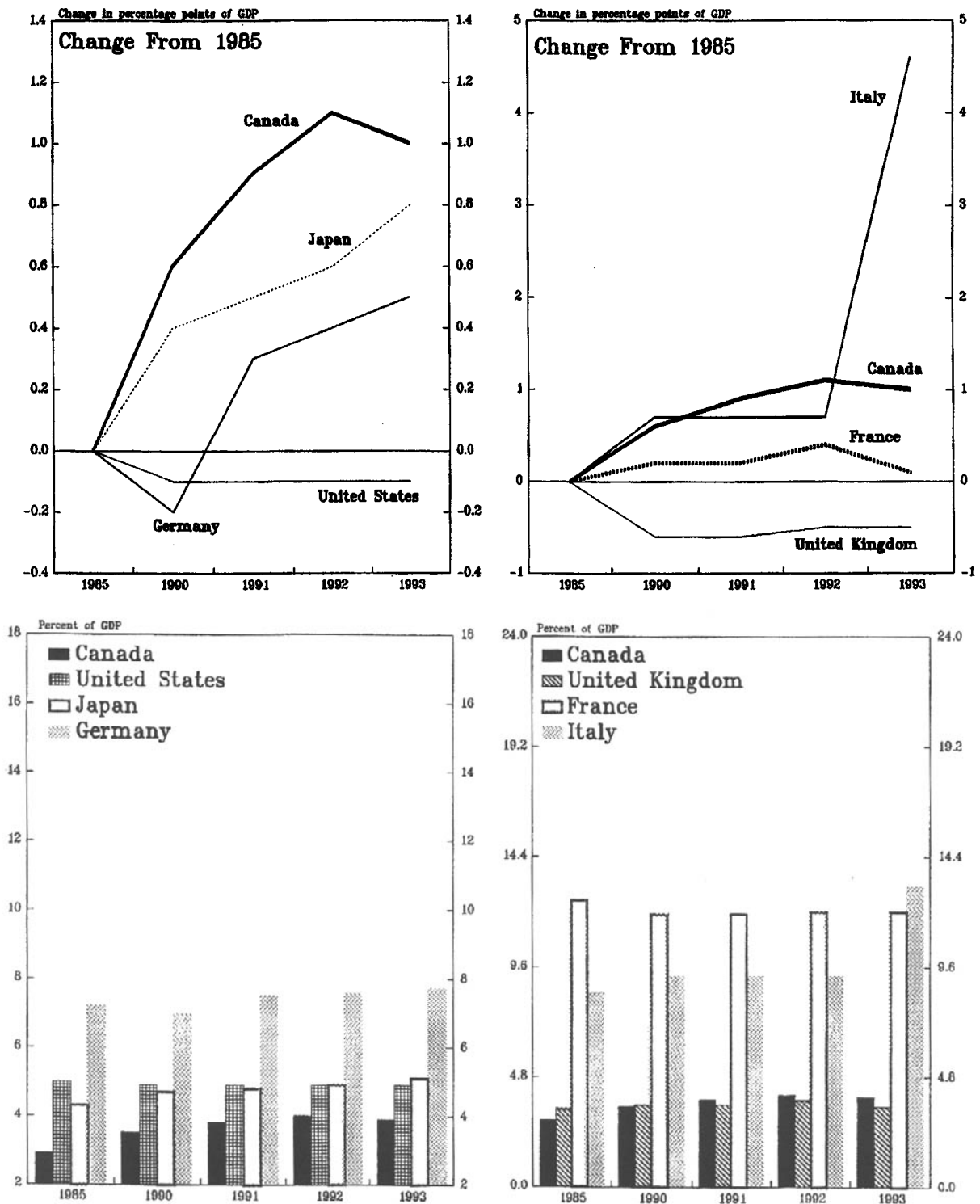
# CANADA AND OTHER G7 COUNTRIES TOTAL PAYROLL TAXES



Source: Organization for Economic Cooperation and Development (OECD), *Revenue Statistics of OECD Member Countries 1965-1994*, (1995 edition), table 14.

CHART 5

# CANADA AND OTHER G7 COUNTRIES EMPLOYERS' CONTRIBUTION TO PAYROLL TAXES



Source: Organization for Economic Cooperation and Development (OECD), *Revenue Statistics of OECD Member Countries 1965-1994*, (1995 edition), table 18.