issue. For example, suppose that Canadian voters were asked to decide if the sign marking the entrance to an obscure national park should be enlarged. Most voters would decide that the potential costs and benefits of this decision are negligible. The new sign is unlikely to be the size of Prince Edward Island, and anybody who has even heard of the national park in question probably already has a pretty good idea of its location. Thus, most voters would choose to remain rationally ignorant about the exact costs and benefits of enlarging the sign, implying that (1) many will choose not to vote at all, and (2) those who do vote will simply flip a coin or cast their ballot on the basis of some other, perhaps ideological, grounds.

**WHY BE RATIONALLY IGNORANT?** For most political decisions, majority rule prevails. Only a coalition of voters representing slightly more than 50 percent of those who vote is needed. Whenever a vote is taken, the result is going to involve costs and benefits. Voters, then, must evaluate their share of the costs and benefits of any budgetary expenditure. Voters, however, are not perfectly informed. That is one of the crucial characteristics of the real world—information is a resource that is costly to obtain. Rational voters will, in fact, decide to remain at some level of ignorance about government programs because the benefits from obtaining more information may not be worth the cost, given each individual voter's extremely limited impact on the outcome of an election. For the same reason, voters will fail to inform themselves about taxes or other revenue sources to pay for proposed expenditures because they know that for any specific expenditure program, the cost to them individually will be small. At this point, it might be useful to contrast this situation with what exists in the nonpolitical private market sector of the economy. In the private market sector, the individual chooses a mix of purchases and bears fully the direct and indirect consequences of this selection (ignoring for the moment the problem of externalities).

# 10.3 Tax Rates and the Canadian Tax System

Jean-Baptiste Colbert, the seventeenth-century French finance minister, said the art of taxation was in "plucking the goose so as to obtain the largest amount of feathers with the least possible amount of hissing." In Canada, governments have designed a variety of methods of plucking the private-sector goose. To analyze any tax system, we must first understand the distinction between marginal tax rates and average tax rates.

## Marginal and Average Tax Rates

If somebody says, "I pay 28 percent in taxes," you cannot really tell what that person means unless you know whether the individual is referring to average taxes paid or the tax rate on the last dollar earned. The latter concept has to do with the **marginal tax rate**.[2]

**Marginal tax rate** The change in taxes due divided by the change in taxable income.

The marginal tax rate is expressed as follows:

$$\text{Marginal tax rate} = \frac{\text{Change in taxes due}}{\text{Change in taxable income}}$$

It is important to understand that the marginal tax rate applies only to the income in the highest tax bracket reached, where a **tax bracket** is defined as a specified level of taxable income to which a specific and unique marginal tax rate is applied.

**Tax bracket** A specified level of taxable income to which a specific and unique marginal tax rate is applied.

The **average tax rate** is not the same thing as the marginal tax rate; it is defined as follows:

**Average tax rate** The total taxes due divided by total taxable income.

$$\text{Average tax rate} = \frac{\text{Total taxes due}}{\text{Total taxable income}}$$

[2]The word *marginal* means "incremental" (or "decremental") here.

## Taxation Systems

No matter how governments raise revenues—from income taxes, sales taxes, or other taxes—all of those taxes can fit into one of three types of taxation systems—proportional, progressive, and regressive, expressing a relationship between the percentage tax (or tax rate) paid and income. To determine whether a tax system is proportional, progressive, or regressive, we simply ask the question: "What is the relationship between the average tax rate and the marginal tax rate?"

**Proportional taxation** A tax system in which regardless of an individual's income, the tax bill comprises exactly the same proportion. Also called a flat-rate tax.

**PROPORTIONAL TAXATION.** **Proportional taxation** means that regardless of an individual's income, the taxes comprise exactly the same proportion, also called a flat-rate tax. In terms of marginal versus average tax rates, in a proportional taxation system, the marginal tax rate is always equal to the average tax rate. If every dollar is taxed at 20 percent, then the average tax rate is 20 percent, as is the marginal tax rate.

As mentioned earlier, a proportional tax system is also called a flat-rate tax. Taxpayers at all income levels end up paying the same percentage of their income in taxes. If the proportional tax rate were 20 percent, an individual with an income of $10 000 would pay $2000 in taxes, while an individual making $100 000 would pay $20 000, the identical 20 percent rate being levied on both. See this chapter's Issues and Applications for a more in-depth look at the flat tax issue.

**Progressive taxation** As taxable income increases, the percentage of income paid in taxes also increases.

**PROGRESSIVE TAXATION.** Under **progressive taxation**, as a person's taxable income increases, the percentage of income paid in taxes also increases. In terms of marginal versus average tax rates, in a progressive system, the marginal tax rate is above the average tax rate. If you are taxed 5 percent on the first $10 000 you make, 10 percent on the next $10 000 you make, and 30 percent on the last $10 000 you make, you face a progressive income tax system. Your marginal tax rate is always above your average tax rate. Read Policy Example 10–3 to see how Canada compares with other countries.

**Regressive taxation** A smaller percentage of taxable income is taken in taxes as taxable income increases.

**REGRESSIVE TAXATION.** With **regressive taxation**, a smaller percentage of taxable income is taken in taxes as taxable income increases. The marginal rate is below the average rate. As income increases, the marginal tax rate falls, and so does the average tax rate. The Goods and Services Tax (GST) is regressive. Someone earning $10 000 per year pays the same sales tax on a tube of toothpaste as someone earning $100 000 per year. But the tube of toothpaste takes up a much larger proportion of the low-income earner's budget, and so the marginal tax rate for that person is higher. The federal government tries to address this inequity by giving GST rebates to low-income earners who apply for them on their income tax returns each year.

### POLICY EXAMPLE 10–3 Tax Freedom Day around the World

One of the measures that is getting a lot of attention from people is tax freedom day. Tax freedom day is the day people stop working to pay taxes to various governments and start working to pay themselves. It is easier for the average person to understand than a discussion on marginal and average tax rates. Canadians frequently complain that we pay too much tax, so the tax freedom day gives a quick, understandable measure of how we are doing against other nations.

**TABLE 10–2**

**Tax Freedom Day in Various Countries**

| Country | Day of Year | % Burden | Date of Year |
|---|---|---|---|
| Australia | 122 | 33.00 | April 25 |
| Belgium | 159 | 43.30 | June 8 |
| Brazil | 145 | 40.00 | May 25 |
| Bulgaria | 147 | 40.00 | May 27 |
| Canada | 170 | 47.00 | June 19 |
| Croatia | 166 | 45.00 | June 15 |

*continued*

| Country | Day of Year | % Burden | Date of Year |
|---|---|---|---|
| Czech Republic | 161 | 44.10 | June 11 |
| Estonia | 114 | 31.10 | April 24 |
| France | 197 | 53.60 | July 16 |
| Germany | 185 | 50.68 | July 5 |
| Hungary | 140 | 38.00 | May 20 |
| India | 74 | 20.00 | March 14 |
| Israel | 207 | 56.70 | July 26 |
| Lithuania | 125 | 34.00 | May 5 |
| Norway | 210 | 56.70 | July 29 |
| New Zealand | 141 | 39.00 | May 21 |
| Poland | 175 | 48.00 | June 24 |
| Slovakia | 145 | 39.60 | May 25 |
| Slovenia | 171 | 48.00 | June 21 |
| South Africa | 112 | 31.00 | April 22 |
| Spain | 141 | 39.00 | May 21 |
| Sweden | 200 | 55.00 | July 20 |
| United Kingdom | 154 | 42.00 | June 3 |
| United States | 120 | 32.69 | April 30 |
| Uruguay | 133 | 38.6 | May 13 |

Source: "Tax freedom day." Wikipedia. http://en.wikipedia.org/wiki/Tax_Freedom_Day#Tax_Freedom_Day_around_the_world.

**For critical analysis:** Looking at all of the tax freedom days from around the world, how is Canada doing in comparison?

# The Most Important Federal Taxes

The federal government imposes income taxes on both individuals and corporations, and collects sales taxes as well as a variety of other taxes.

# The Federal Personal Income Tax

The most important tax in the Canadian economy is the federal personal income tax, which accounts for about 48 percent of all federal revenues. All Canadian citizens, non-residents, and most others who earn income in Canada are required to pay federal income tax on all taxable income. The tax rates depend on the amount of taxable income earned, as can be seen in Table 10–3. Marginal income tax rates at the federal level have varied from as low as 4 percent after the passage of the *Income Tax Act* in 1917, to as high as 98 percent during World War II.

Advocates of a more progressive income tax system in Canada argue that such a system redistributes income from the rich to the poor, taxes people according to their ability to pay, and taxes people according to the benefits they receive from government. Although there is much controversy over the "redistributional" nature of our progressive tax system, there is no strong evidence that, in fact, the tax system has ever done much income redistribution in this country. Currently, about 80 percent of all Canadians, rich or poor, pay roughly the same proportion of their income in federal income tax.

**TABLE 10–3**

**Federal Tax Rates (as of 2010)**

| Federal Tax Rates |
|---|
| 15% on first $40 970 |
| 22% over $40 970 up to $81 941 |
| 26% over $81 941 up to $127 021 |
| 29% of taxable income over $127 021 |

Source: Canada Revenue Agency.

## The Treatment of Capital Gains

**Capital gain** The positive difference between the buying and selling prices of an asset.

**Capital loss** The negative difference between the purchase price and the sale price of an asset.

The positive difference between the buying and selling prices of an asset, such as a share of stock or a plot of land, is called a **capital gain**, and the negative difference between the purchase price and the sale price of an asset is called a **capital loss**. Capital gains are taxed at ordinary income marginal tax rates. The taxable part of a capital gain is 50 percent of the net amount of your capital gains minus 50 percent of your capital losses for the year.

Capital gains are not always real. In Canada, gains on principal are not taxed, but if in one year you pay $100 000 for a house you plan to rent and sell it at a 50 percent higher price 10 years later, your nominal capital gain is $50 000. But what if, during those 10 years, there had been such inflation that average prices had also gone up by 50 percent? Your real capital gain would be zero. But you still have to pay taxes on that $50 000. To counter this problem, many economists have argued that capital gains should be indexed to the rate of inflation.

## The Corporate Income Tax

Corporate income taxes account for about 14 percent of all federal taxes collected, and 3.4 percent of all provincial taxes collected. Corporations are generally taxed at a flat rate of 28 percent on the difference between their total revenues (or receipts) and their expenses.

**DOUBLE TAXATION.** Because individual shareholders must pay taxes on the dividends they receive, paid out of after-tax profits by the corporation, corporate profits are taxed twice. If you receive $1000 in dividends, you have to declare it as income, and you must pay taxes at your marginal tax rate. Before the corporation was able to pay you those dividends, it had to pay taxes on all its profits, including any that it put back into the company or did not distribute in the form of dividends. Eventually, the new investment made possible by those **retained earnings**—profits not given out to shareholders—along with borrowed funds will be reflected in the increased value of the shares in that company. When you sell your shares in that company, you will have to pay taxes on the difference between what you paid for them and what you sold them for. In both cases, dividends and retained earnings (corporate profits) are taxed twice.

**Retained earnings** Profits not given out to shareholders.

**WHO REALLY PAYS THE CORPORATE INCOME TAX?** Corporations can exist only as long as employees make their goods, consumers buy their products, shareholders (owners) buy their shares, and bondholders buy their bonds. Corporations *per se* do not do anything. We must ask, then, who really pays the tax on corporate income. This is a question of **tax incidence**, the distribution of tax burdens among various groups in society. (The question of tax incidence applies to all taxes, including sales and payroll taxes.) There remains considerable debate about the incidence of corporate taxation. Some economists say that corporations pass their tax burdens on to consumers by charging higher prices. Other economists believe that it is the shareholders who bear most of the tax. Still others believe that employees pay at least part of the tax by receiving lower wages than they would otherwise. Because the debate is not yet settled, we will not hazard a guess here as to what the correct conclusion should be. Suffice it to say that you should be cautious when you advocate increasing corporate income taxes. You may be the one who ends up paying the increase, at least in part, if you own shares in a corporation, buy its products, or work for it.

**Tax incidence** The distribution of tax burdens among various groups in society.

## Unemployment and Pension Taxes

An increasing percentage of federal revenues is accounted for each year by taxes (other than income taxes) levied on payroll. These payroll taxes are for Canada Pension Plan (CPP) benefits and employment insurance (EI).

Employment insurance is a compulsory federal program that provides income assistance in the event of unemployment. EI premiums are paid by employees and matched by employers. (The employer's contribution is really paid, at least in part, in the form of a

reduced wage paid to employees, as explained in Example 10–3.) The maximum personal contribution to EI in 2010 was $747.36. EI premiums become part of government's general revenues; as of 1999, there was a large surplus in the EI account, which helped the federal government balance the budget for the 1999–2000 fiscal year.

**EXAMPLE 10–3 Employment Insurance**

Countless articles have been written about the problem with the EI system in Canada. They all make reference to the employer and employee "contributions" to the EI fund. One gets the impression that EI premiums paid by employees go into a special government account and that employees do not pay for their employers' "contribution" to this account. Both concepts are not only flawed but grossly misleading as well. EI premiums are mixed in with the rest of government taxes collected and spent every year. The "contributions" are not contributions at all; they are merely taxes paid to the federal government. The so-called employer contribution, which matches the employee payments, is not, in fact, paid for by employers but rather by employees because of the lower wages that they are paid. Anybody who quits a job and becomes self-employed finds this out when the time comes to pay one's self-employment taxes (employment insurance "contributions"), which effectively double the payments previously being made as an employee.

**For critical analysis:** Should EI premiums go into a special account?

In 2010, the Canada Pension Plan (CPP) premium payable on eligible earnings to $47 200 was 4.95 percent, with employers contributing an equal share on behalf of the employee. CPP premiums do not form part of government's general revenue but are managed separately from the government budget. The CPP is a system in which current workers subsidize already retired workers. With the coming retirement of the postwar "baby boomers," the number of retired people will grow much more rapidly than the number of current workers. In anticipation of increased outlays in pension plan benefits, the combined (employer–employee) premium has risen to 9.9 percent of eligible earnings.

## The Goods and Services Tax

The Goods and Services Tax (GST) is a sales tax that makes up about 18 percent of federal government revenues. Consumers pay a 5 percent tax on virtually all goods and services they purchase in addition to any applicable provincial sales taxes. Prior to January 2008, the GST was 6 percent, having been reduced from 7 percent in 2006. The GST is a regressive tax, since it taxes consumption at the same rate for both the rich and the poor. The federal government tries to mitigate this, however, by giving a rebate of up to $76 four times a year to low-income earners. While consumers must pay GST on imports, Canadian exports are exempt.

Some economists argue that in spite of the regressive nature of sales taxes, such a tax as the GST is preferable to an income tax. Income taxes tax all income, whether it is spent or saved. Therefore, they argue, saving is discouraged. However, a sales tax taxes only income that is consumed, and so saving is encouraged. This chapter's Issues and Applications section revisits the pros and cons of this topic.

## Spending, Government Size, and Tax Receipts

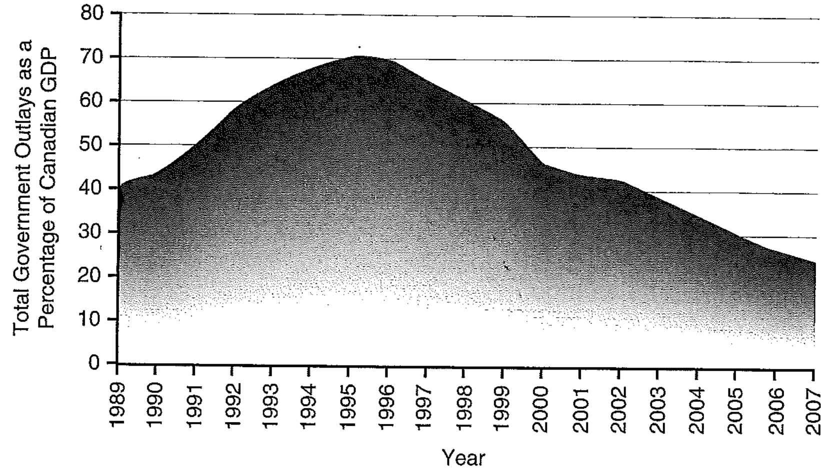
The size of the public sector can be measured in many different ways. One way is to count the number of public employees. Another is to look at government outlays. Government

**FIGURE 10–2**

**Government Total Outlays over Time**

Total government outlays (as a percentage of GDP) peaked in 1995 and declined to just under 25 percent in 2007.

Source: "OECD Economic Outlook No. 81 Annex Table 33". May 2007. http://www.oecd.org/document/61/0,3343,en_2649_34109_2483901_1_1_1_1,00.html.




outlays include all of the government expenditures on goods and services as well as all transfer payments. Transfer payments include employment insurance benefits, welfare, and old age security. In Figure 10–2, you can see that total government outlays (as a percentage of GDP) peaked in 1995 at about 70 percent and have since declined to just under 25 percent in 2007.

## Government Receipts

The main revenue raiser for all levels of government is taxes. We show in the two pie diagrams in Figure 10–3 the percentage of receipts from various taxes obtained by the federal government and by the provincial and municipal governments.

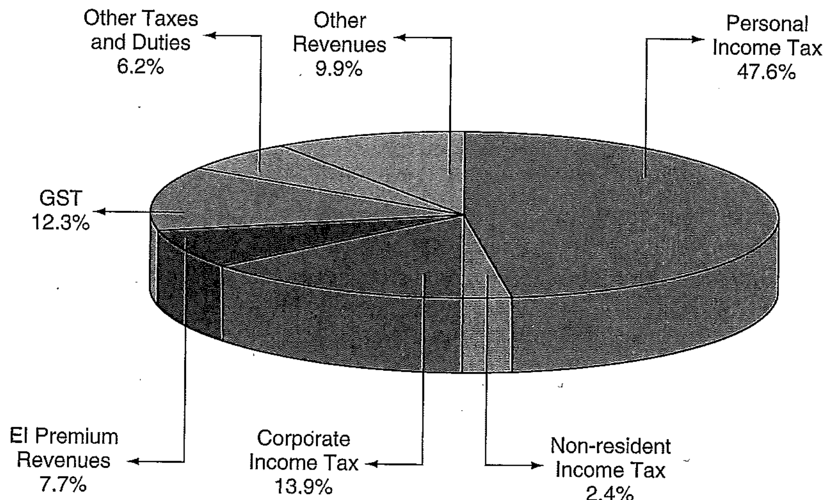
**THE FEDERAL GOVERNMENT.** The largest source of receipts for the federal government is the individual income tax. In 2006–7, individual income taxes accounted for 66 percent of all federal revenues. In 2008–9, they accounted for only 49.8 percent, a decrease of 16 percent.

**COMPARING FEDERAL SPENDING WITH PROVINCIAL AND MUNICIPAL SPENDING.** A typical federal government budget is given in Figure 10–4. The categories of most importance in the federal budget are transfers to persons and governments, debt charges, protection, and inter-governmental transfers, which make up over 67 percent.

**FIGURE 10–3**

**Federal Revenues 2009–10**

Source: "Composition of revenues for 2008–09." *Annual Financial Report of the Government of Canada Fiscal Year 2008–2009.* Department of Finance Canada. http://www.fin.gc.ca/afr-rfa/2009/afr-rfa09_1-eng.asp#revenues.



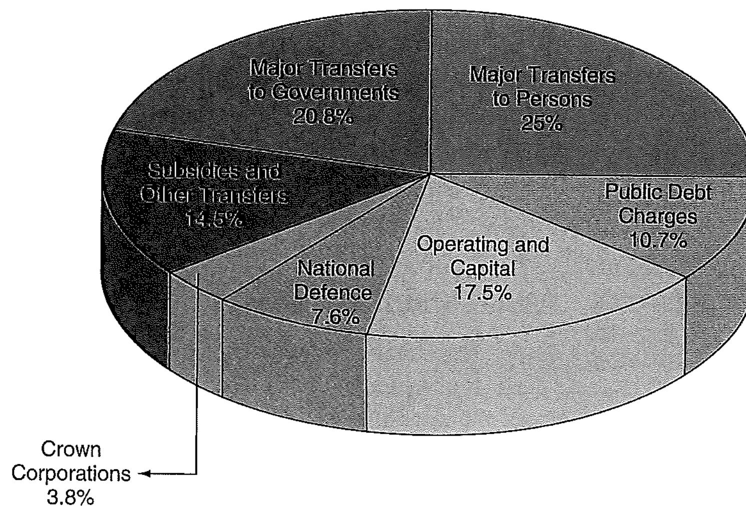



**FIGURE 10–4**
**Federal Expenditures 2009–10**

Source: "Composition of expenses for 2008–09." *Annual Financial Report of the Government of Canada Fiscal Year 2008–2009.* Department of Finance Canada. http://www.fin.gc.ca/afr-rfa/2009/afr-rfa09_1-eng.asp#expenses.

## ISSUES AND APPLICATIONS

# Should We Switch to a Flat Tax?

### Concepts Applied: Average versus Marginal Tax Rates, Opportunity Cost, Progressive Income Tax System

Each year, Canadian taxpayers spend numerous hours preparing their taxes or hire accountants to do so for them. Switching to a national sales tax, one alternative to our current system, would lead to the downsizing of the Canada Revenue Agency and all of the expenses associated with that organization.

Since the introduction of federal income tax, Canadians have faced a progressive system of taxation. The top marginal tax rate soared to 98 percent in 1943, dropped to 80 percent in 1948, dropped again to 60 percent in 1968, and settled at 47 percent starting in 1971. Government reduced the top marginal tax rate to 34 percent in 1983; today, it stands at 29 percent. The idea behind a progressive tax system is that the "rich" should pay more. In actuality, what happens is quite a different story. In Figure 10–5, you see that regardless of what the top tax rate is, the federal government obtains around 45 percent of its annual income as tax revenues.

Why? Because people respond to incentives. At high marginal tax rates, the following occurs: (1) Rich people hire more tax lawyers and accountants to help them figure out loopholes in the tax system to avoid high marginal tax rates; (2) Some people change their investments to take advantage of loopholes that allow them to pay lower marginal tax rates; (3) Some people drop out of the labour force, particularly secondary income earners, such as lower-paid working women; and (4) More people engage in off-the-books "underground" activities for cash on which no income taxes are paid.