This section introduces you to macroeconomics—the study of the performance of national economies. Macroeconomics looks at issues such as why some economies grow more rapidly than others and why economies can experience severe slumps.

Unlike microeconomics, which focuses on the behaviour of individual households, firms, and markets, macroeconomics takes a bird’s-eye view of the economy. It looks at the forest, so to speak, and not just the trees because sometimes the whole is more than the sum of the parts. So while microeconomists might study the determinants of consumer phone call spending, macroeconomists analyze the factors that determine aggregate, or total, consumer spending. Experience has shown that the macroeconomic perspective is essential for the analysis of issues such as unemployment, inflation, and economic growth.

Chapter 4 begins our discussion of macroeconomics by introducing you to some of the key macroeconomic issues and questions. These include the search for the factors that cause economies to grow, productivity to improve, and living standards to rise over long periods of time. Macroeconomists also study shorter-term fluctuations in the economy (called recessions and expansions), unemployment, inflation, and the economic interdependence among nations, among other topics. Macroeconomic policies—government actions to alter the overall performance of the economy—are of particular concern to macroeconomists, as the quality of macroeconomic policymaking is a major determinat of a nation’s economic health.

To study phenomena like economic growth scientifically, economists must have accurate measurements. Chapters 5 and 6 continue the introduction to macroeconomics by discussing how some key macroeconomic concepts are measured and interpreted. Chapter 5 discusses two important measures of the level of economic activity: the gross domestic product and the unemployment rate. Besides describing how these variables are constructed in practice, that chapter will also discuss how these measures are related to the living standard of the average person. Chapter 6 concerns the measurement of the price level and inflation, and it includes a discussion of the impacts that different types of price-level changes have on the economy. When you have completed Part 2 you will be familiar not only with the major questions that macroeconomists ask but also with some of the most important tools that they use in search of answers.
In 1929, the Great Depression began in the United States and quickly turned into a global economic slump. With its high level of dependence on exports, Canada was hit hard by the global downturn. Between 1929 and 1933, Canada's real output declined by almost 30 percent, consumer prices fell by 23 percent, and the unemployment rate soared from 3 percent to 19.3 percent. Large numbers of Canadians became dependent on government relief for survival.

Economic conditions were even worse in some other countries. In Germany, for example, nearly a third of the labour force could not find work, and many families lost their savings as major banks collapsed. Indeed, the desperate economic situation was a factor behind Adolf Hitler’s rise to power in 1933.

How could such an economic catastrophe have happened? One often-heard hypothesis is that the Great Depression in the United States was caused by wild speculation on Wall Street, which provoked the stock market crash. The hypothesis has been lent some support by Japan’s experience of a decade of stagnation following a stock market crash. But though U.S. stock market prices were unrealistically high in 1929, there is little evidence to suggest that the fall in stock prices was a decisive cause of the Depression on its own. A similar crash in 1987 (when stock market prices fell a record 23 percent in one day—an event comparable in severity to the crash of October 1929) did not slow the U.S. economy significantly. Also, the Depression was a worldwide event, affecting even countries that did not have developed stock markets.

Another explanation for the Depression has been that capitalist economies like the United States and Canada are naturally unstable, prone to long periods of economic depression. This explanation, however, fails to account for why the Great Depression was so much worse than earlier economic slumps. It also fails to explain why the “mixed” capitalist economies that emerged from the Second World War have avoided a depression comparable to that experienced by the capitalist economies of the 1930s.

What was the decisive factor behind the Great Depression, then? Today, most economists who have studied the period attribute much of the blame to poor economic policy-making in the major capitalist countries. Of course, policy-makers
did not set out to transform an economic downturn into a decade-long economic catastrophe. Rather, they fell prey to misconceptions of the time about how the economy worked. In other words, the Great Depression, far from being inevitable, could have been avoided—if only the state of economic knowledge had been better. From today’s perspective, the Great Depression was to economic policymaking what the voyage of the Titanic was to ocean navigation.

One of the few benefits of the Great Depression was that it forced economists and policy-makers of the 1930s to recognize that there were major gaps in their understanding of how the economy works. This recognition led to the development of a new subfield within economics, called macroeconomics. As mentioned in Chapter 1, macroeconomics is the study of the performance of national economies and the policies governments use to try to improve that performance.

This chapter will introduce the subject matter and some of the tools of macroeconomics. Although understanding episodes like the Great Depression remains an important concern of macroeconomists, the field has expanded to include the analysis of many other aspects of national economies. Among the issues macroeconomists study are the sources of long-run economic growth and development, the causes of high unemployment, and the factors that determine the rate of inflation. Appropriately enough in a world in which economic “globalization” preoccupies business people and policy-makers, macroeconomists also study how national economies interact. Since the performance of the national economy has an important bearing on the availability of jobs, the wages workers earn, the prices they pay, and the rates of return they receive on their savings, it’s clear that macroeconomics addresses bread-and-butter issues that affect virtually everyone.

In light of the world’s experience during the Great Depression, macroeconomists are particularly concerned with understanding how macroeconomic policies work and how they should be applied. Macroeconomic policies are government actions designed to affect the performance of the economy as a whole (as opposed to policies intended to affect the performance of the market for a particular good or service, such as lumber or haircuts). The hope of many macroeconomists is that by improving knowledge about how government policies affect the economy, they can help current or alternative policy-makers do a better job—and avoid serious mistakes, such as those that were made during the Great Depression. On an individual level, educating people about macroeconomic policies and their effects will make for a better-informed citizenry, capable of making well-reasoned decisions in the voting booth.

4.1 THE MAJOR MACROECONOMIC ISSUES

We have defined macroeconomics as the study of the performance of the national economy as well as the policies used to improve that performance. Let’s now take a closer look at some of the major economic issues that macroeconomists study.

ECONOMIC GROWTH AND LIVING STANDARDS

Although the wealthy industrialized countries (such as Canada, the United States, Japan, and the countries of Western Europe) are certainly not free from poverty, hunger, and homelessness, the typical person in those countries enjoys a standard of living better than at any previous time or place in history. By standard of living, we mean the degree to which people have access to goods and services that make their lives easier, healthier, safer, and more enjoyable. People with a high living standard enjoy more and better consumer goods: audio equipment, camcorders, cellular phones, and the like. But they also benefit from a longer life expectancy and better general health (the result of high-quality medical care, good nutrition, and good sanitation), from higher literacy rates (the result of greater
access to education), from more time and opportunity for cultural enrichment and recreation, from more interesting and fulfilling career options, and from better working conditions. Of course, the scarcity problem will always exist—even for the citizens of a rich country, having more of one good thing means having less of another. But higher incomes make these choices much less painful than they would be otherwise. Choosing between a larger apartment and a nicer car is much easier than choosing between feeding your children adequately and sending them to school, the kind of hard choice people in the poorest nations face.

Canadians sometimes take their standard of living for granted. But we should realize that the way we live today is radically different from the way people have lived throughout most of history. The current standard of living in Canada is the result of sustained economic growth through several generations, a process of steady increase in the quantity and quality of the goods and services the economy can produce. The basic equation is simple: the more we can produce, the more we can consume, whether it be private goods, social spending, or leisure.

To get a sense of the extent of economic growth over time, examine Figure 4.1, which shows how the output of the Canadian economy has increased since 1926. (We discuss the measure of output used here, real gross domestic product, in Chapter 5.) Although output fluctuates at times, the overall trend has been unmistakably upward. Indeed, in 2007 the output of the Canadian economy was more than 19 times what it was in 1926 and more than eight times its level in 1950. What caused this remarkable economic growth? Can it continue? Should it? These are some of the questions macroeconomists try to answer.

One reason for the growth in Canadian output over the past century has been the rapid growth of the Canadian population, and hence the number of workers available. Because of population growth, increases in total output cannot be equated with improvements in the general standard of living. Although increased output means that more goods and services are available, increased population implies that more people are sharing those goods and services. Because the population changes over time, output per person is a better indicator of the average living standard than total output.

Figure 4.2 shows output per person in Canada since 1926 (the blue line). Note that the long-term increase in output per person is smaller than the increase in total output shown in Figure 4.1 because of population growth. Nevertheless,
the gains made over this long period are still impressive: in 2007, the value of personal goods and services consumed by a typical Canadian resident was nearly six times the value available to a typical Canadian resident back in 1926. To put this increase into perspective, Canadians no longer rely upon horse and buggy for everyday travel—according to recent estimates, more than 83 percent of Canadian households owned or leased one or more vehicles (automobiles, trucks or vans). Television ownership is taken for granted, with about 65 percent of households subscribing to cable and 23 percent to satellite. About three in four Canadian households have a computer at home, and 68 percent of all households access the Internet from home.

Nor has the rise in output been reflected entirely in increased availability of consumer goods. In health, for example, great strides have been made. The mortality rate for infants has plummeted from about 100 per 1000 live births in the 1920s to about 5 per 1000 live births. Average life expectancy has risen from 59 to 80 years (78 years for males and 83 years for females). In education, as late as 1951 over half of the Canadian population aged 15 and over had less than a Grade 9 education, while only a few percent (mostly men) had university degrees. By 1996, adults with university degrees had become more numerous than adults with less than Grade 9, and the share of degrees earned by women had surpassed 50 percent. By 2006, almost half of the population aged 25 to 64 had obtained a college or university degree.

**PRODUCTIVITY**

While growth in output per person is closely linked to changes in what the typical person can *consume*, macroeconomists are also interested in changes in what the average worker can *produce*. Figure 4.2 shows how output per employed worker (that is, total output divided by the number of people working) has changed since 1926 (red line). The figure shows that in 2007, a Canadian worker could produce about 4.2 times the quantity of goods and services produced by a worker back in 1926, despite the fact that the workweek is now much shorter.
Economists define **average labour productivity** as output per employed worker.\(^1\) As Figure 4.2 shows, average labour productivity and output per person are closely related. This relationship makes sense—as we noted earlier, the more we can produce, the more we can consume. Because of this close link to the average living standard, average labour productivity and the factors that cause it to increase over time are of major concern to macroeconomists.

It should be noted that although the typical household is more likely to experience better wages and living conditions when average labour productivity is rising, the process is not automatic. In some countries there have been whole decades during which the value of goods and services that typical households could buy actually stagnated despite rising average labour productivity. During such periods, there is a shift in the income distribution from low- and middle-income households to high-income households. (For further information, see Figure 6.1.)

Although the long-term improvement in output per worker is impressive, the rate of improvement has slowed somewhat since the 1970s. Between 1950 and 1973 in Canada, output per employed worker increased by 2.4 percent per year. But from 1973 to 2007, the average rate of increase in output per worker was only 1 percent per year, despite a noticeable upsurge during the 1997–2000 period. Slowing productivity growth leads to less rapid improvement in living standards, since the supply of goods and services cannot grow as quickly as it does during periods of rapid growth in productivity. Identifying the causes of productivity slowdowns and speedups is thus an important challenge for macroeconomists.

The current standard of living in Canada is not only much higher than in the past but also much higher than in many other nations today. Why do many of the world’s countries, including both the developing nations of Asia, Africa, and Latin America and some countries of Eastern Europe, not enjoy living standards comparable to those of Western countries? How can these countries catch up? Once again, these are questions of keen interest to macroeconomists.

**Example 4.1**

**Productivity and output per person in Canada, the United States, and China**

In 2000, the value of Canadian economic output was approximately C$1 trillion (1000 billion). In the same year, the estimated value of U.S. output was approximately C$11.8 trillion and that of the People’s Republic of China was C$1.8 trillion. The populations of Canada, the United States, and China in 2000 were about 30.8 million, 275.4 million, and 1.27 billion respectively while the numbers of employed workers in the three countries were approximately 14.9 million, 135.2 million, and 626.6 million respectively.\(^2\)

The output per person and average labour productivity for Canada, the United States, and China in the year 2000 can be determined using the data provided above. Output per person is simply total output divided by the number of people in an economy. Average labour productivity is output divided by the number of employed workers. Doing the math, we get the following results for 2000, the year in question:

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\(^1\)For some purposes, such as productivity comparisons between the United States and Europe, it is useful to recognize that average labour productivity can also be measured as output divided by the number of hours worked. A country with relatively long average hours of work, such as the United States, comes out higher in international average labour productivity rankings if countries are ranked by average output per employed worker than if they are ranked by average output per hour worked.

\(^2\)The statistics in the example are from each country’s official agencies, and the output statistics are converted to a common basis using average annual exchange rates for each country. Economists often adjust the output of the Chinese economy upward by a very large amount to reflect what Chinese output would be if valued at prices prevailing in the rest of the world. They sometimes adjust Chinese employment numbers upward by a moderate amount to reflect alleged undercounting of the employed in China.
Note that the larger population and hence greater number of employed workers of the United States provides a partial explanation of why U.S. output was larger than Canadian output in 2000. But U.S. output was also higher because average labour productivity was higher in that country. On the other hand, China’s output was greater than Canada’s solely because of China’s greater population and employment figures; China’s average labour productivity was much lower. But in recent years China’s output has been growing much more rapidly than those of high-income countries, and China’s population growth has been relatively slow in the same period. This means that the average labour productivity gap between China and high-income countries has shrunk considerably since 2000.

Even if we examine more recent data, the average labour productivity gap between China and, for example, Canada is substantial and is associated with significant differences in more direct measures of living standards. For example, according to the latest Human Development Report published by the United Nations, average life expectancy at birth is several years longer in Canada than in China, about 10 percent of the adult Chinese population is classified as illiterate compared to less than 1 percent in Canada, and about 12 percent of the Chinese population is classified as undernourished compared to less than 1 percent in Canada.1 (For additional evidence of how average labour productivity differences among countries are associated with differences in direct measures of living standards, see Table 5.5.)

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### RECESSIONS AND EXPANSIONS

Economies do not always grow steadily; sometimes they go through periods of unusual strength or weakness. A look back at Figure 4.1 shows that although output generally grows over time, it does not always grow smoothly. (Figure 7.2, which shows growth of output per capita directly, provides a sharper picture of the often rough process of output growth.) Particularly striking is the decline in output during the Great Depression of the 1930s, followed by the sharp increase in output during the Second World War (1939–1945). But the figure shows many more moderate fluctuations in output as well.

Pronounced slowdowns in economic growth are called recessions; extraordinarily severe economic slowdowns, like the one that began in 1929, are called depressions. In Canada, major recessions occurred in 1981–1982 and 1990–1992 (find those recessions in Figure 4.1). During recessions, economic opportunities decline: jobs are harder to find, people with jobs are less likely to get wage increases, profits are lower, and more companies go out of business. Recessions are particularly hard on economically disadvantaged people, who are most likely to be thrown out of work and have the hardest time finding new jobs.

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Sometimes the economy grows quickly. These periods of economic growth are called expansions, and particularly strong expansions are called booms. During an expansion, jobs are easier to find, more people get raises and promotions, and most businesses thrive.

The alternating cycle of recessions and expansions raises some questions that are central to macroeconomics. What causes these short-term fluctuations in the rate of economic growth? What can government policy-makers do about them?

UNEMPLOYMENT

The unemployment rate, the fraction of the labour force who are looking for a job but can’t find work, is a key indicator of the state of the labour market. When the unemployment rate is high, work is hard to find, and people who do have jobs typically find it harder to get promotions or wage increases.

Figure 4.3 shows the unemployment rate in Canada since 1921. Unemployment rises during recessions; note the dramatic spike in unemployment during the Great Depression and the increases in unemployment during the 1981–1982 and 1990–1992 recessions. But even in the so-called good times, such as the 1960s and the last few years of the 1990s, some people are unemployed. Why does unemployment rise so sharply during periods of recession? And why are there always unemployed people, even when the economy is booming?

**FIGURE 4.3**
The Canadian Unemployment Rate, 1921–2007
The unemployment rate measures the unemployed as a percentage of the labour force. This graph of the Canadian unemployment rate shows three major spikes since 1921: during the Great Depression of the 1930s and during the severe recessions of the early 1980s and the early 1990s.

**EXAMPLE 4.2**
Increases in unemployment during recessions and an economic slowdown

Find the increase in Canada’s monthly unemployment rate from the onset of a recession or economic slowdown to the peak unemployment rate in the three-year period thereafter. Specifically, find the increases in the unemployment rate
associated with the recessions beginning in the third quarter of 1981, the second quarter of 1990, and in the slowdown beginning in mid-2000.

Unemployment-rate data are published in Statistics Canada’s *Labour Force Survey*, which yields the following information:

<table>
<thead>
<tr>
<th>Unemployment rate at the beginning of recession or slowdown (%)</th>
<th>Peak unemployment rate (%)</th>
<th>Increase in unemployment rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.3 (October 1981)</td>
<td>12.9 (December 1982)</td>
<td>+4.6</td>
</tr>
<tr>
<td>7.8 (July 1990)</td>
<td>11.8 (June 1993)</td>
<td>+4.0</td>
</tr>
<tr>
<td>6.7 (June 2000)</td>
<td>8.0 (January 2002)</td>
<td>+1.3</td>
</tr>
</tbody>
</table>

The unemployment rate reached a higher peak in the 1980s recession and underwent a larger percentage-point increase than in the recession of the 1990s. But the recession of the 1990s was more drawn out, and it took longer for the unemployment rate to peak. The rise in the unemployment rate during the economic slowdown of 2000–2001 was much less pronounced than in the two earlier recessions.

Though the recessions of the 1980s and 1990s have been the most severe for Canada since the Second World War, they pale in comparison to the Great Depression. Then Canada’s unemployment rate increased from an annual rate of 3 percent in 1929 to an annual rate of 19.3 percent in 1933. Clearly, that 16.3-percentage-point increase in the unemployment rate belongs to a class by itself.

One question of great interest to macroeconomists is why unemployment rates differ markedly from country to country. For example, the unemployment rate in Canada prior to 1981 tended to be no higher on average than the U.S. rate. But during the 1980s, the Canadian rate averaged two percentage points higher than the U.S. rate, and in the 1990s, the gap widened to 3.8 points.

**EXERCISE 4.1**

Find the most recent monthly unemployment rates for Canada and the United States. A useful source is the Web site (http://www.oecd.org/) of the Organization for Economic Cooperation and Development (OECD), an organization of high-income countries. The OECD produces standardized unemployment rates for making comparisons among its member countries. Is the Canada–U.S. unemployment rate gap narrower today than it was during the 1990s?

**INFLATION**

Another important economic statistic is the rate of inflation, which is the rate at which prices in general increase over time. As we discuss in Chapter 6, when the inflation rate changes sharply it can alter the distribution of income between borrowers and savers. Very high inflation imposes costs on the economy, as does negative inflation (known as deflation).

In recent years inflation has been relatively low in Canada, but that has not always been the case (see Figure 4.4 for data on Canadian inflation since 1915). During the 1970s, inflation was a major public concern. Why was inflation high in the 1970s, and why is it relatively low today? What difference does it make to the average person?
Inflation and unemployment are often linked together in policy discussions. One reason for this linkage is the oft-heard argument that unemployment can be reduced only at the cost of higher inflation and that inflation can be reduced only at the cost of higher unemployment. Another impact of inflation is that interest rates tend to be higher in periods of high inflation. The link between inflation and interest rates is discussed in Chapter 6.

**ECONOMIC INTERDEPENDENCE AMONG NATIONS**

National economies do not exist in isolation but are increasingly interdependent. Canada, always a trading nation, became sharply more dependent on trade during the 1990s. By 2007, Canadian exports amounted to about 35 percent of Canadian output and imports to 33 percent.

Sometimes international flows of goods and services become a matter of political concern. The Canada–U.S. Free Trade Agreement (FTA) implemented in January 1989 and the North American Free Trade Agreement (NAFTA), entered into by Canada, the United States, and Mexico in January 1994, have been the subject of intense policy debate in Canada. What are the implications—for economic growth, jobs, and income distribution—of trade agreements in which countries agree to reduce taxes or quotas on the international flow of goods and services?

A related issue is the phenomenon of *trade imbalances*, which occur when the quantity of goods and services that a country sells abroad (its *exports*) differs significantly from the quantity of goods and services its citizens buy from abroad (its *imports*). Figure 4.5 shows Canadian exports and imports since 1961, measured as a percentage of the economy’s total output. Except for a brief time following the implementation of the Canada–U.S. Free Trade Agreement, Canadian exports have typically outstripped imports, creating a situation called a *trade surplus*. Given the timing of events, the *trade deficits* of the early 1990s might seem to stem from the FTA, but many economists point more to the role of the then-strong Canadian dollar, which hampered exports and encouraged imports.

While Canada tends to run trade surpluses, imports to the United States have exceeded exports since the 1970s, with the U.S. trade deficit in 2000 reaching a record high of 3.7 percent of GDP. Macroeconomists debated whether U.S. trade deficits of this magnitude were sustainable and whether the deficits pointed to
FIGURE 4.5
Exports and Imports as Shares of Canadian Output, 1961–2007
The red line shows Canadian exports as a percentage of Canadian output. The blue line shows imports relative to output. In recent decades, Canada has exported more than it has imported, though imports outstripped exports during the period 1991–1992 (when the Canadian dollar was strong and the Canada–U.S. Free Trade Agreement was being implemented). SOURCE: Adapted from Statistics Canada, CANSIM II series v646957 (imports), v646954 (exports), and v646937 (GDP).

Canada’s Exchange Rate, 1971 to early 2008
The figure expresses the value of the Canadian dollar relative to the U.S. dollar from 1971 to January 2008. The declining value of the Canadian dollar from the early 1990s until 2002 was a source of controversy in Canada. More recently, the sharply appreciating value of the Canadian dollar has become a source of controversy. SOURCE: Pacific Exchange Rate Service, http://fx.sauder.ubc.ca/.

an eventual weakening of the U.S. dollar. Starting in 2003, the U.S. dollar has weakened against most major currencies, including the Canadian dollar.

The value of one currency relative to another, known as the foreign exchange rate, is another aspect of the economic interdependence among nations. Figure 4.6 illustrates the large swings in the value of the Canada–U.S. foreign exchange rate in recent decades. Exchange rate issues are discussed in detail in Chapter 12.
4.2 MACROECONOMIC POLICY

We have seen that macroeconomists are interested in why different countries’ economies perform differently and why a particular economy may perform well in some periods and poorly in others. Although many factors contribute to economic performance, government policy is surely among the most important. Understanding the effects of various policies and helping government officials develop better policies are important objectives of macroeconomists.

TYPES OF MACROECONOMIC POLICY

We have defined macroeconomic policies as government policies that affect the performance of the economy as a whole, as opposed to the market for a particular good or service. There are three major types of macroeconomic policy: monetary policy, fiscal policy, and structural policy.

The term monetary policy refers to central bank management of interest rates in order to achieve macroeconomic objectives. For reasons that we will discuss in later chapters, most economists agree that changes in interest rates affect other important economic variables, including the international value of the dollar, national output, employment, and inflation. In virtually all countries, monetary policy is controlled by a government institution called the central bank. In
Canada, the central bank is called the Bank of Canada. It corresponds to the Federal Reserve System in the United States.

**Fiscal policy** refers to decisions that determine the government’s budget, including the amount and composition of government expenditures and government revenues. The balance between government spending and revenue (mainly from taxes) is a particularly important aspect of fiscal policy known as the government budget balance. If revenues are less than expenditures, the government budget balance is negative and is described as a government budget deficit. If revenues exceed expenditures, the balance is positive and described as a government budget surplus. Figure 4.7 shows Canada’s federal government budget deficits and surpluses for the 1984–2007 period. As with monetary policy, economists generally agree that fiscal policy can have important effects on the overall performance of the economy. For example, many economists believe that contractionary fiscal policy in the 1930s contributed to the severity of the Great Depression in Canada.

Finally, the term **structural policy** includes government policies aimed at changing the underlying structure or institutions of the nation’s economy. Structural policies come in many forms, from minor tinkering to ambitious overhauls of the entire economic system. The move away from central planning and toward a more market-oriented approach in many formerly communist countries, such as Poland, the Czech Republic, and Hungary, is a large-scale example of structural

**fiscal policy** decisions that determine the government’s budget, including the amount and composition of government expenditures and government revenues

**government budget balance** the difference between government revenues and expenditures; it equals zero when revenues equal expenditure, is positive when revenues exceed expenditures, and is negative when revenues fall short of expenditures

**government budget deficit** when government revenues fall short of expenditures; that is, the government budget balance is negative

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**FIGURE 4.7**

The federal deficit percentage declined from the mid-1980s until the early 1990s recession, which caused it to rise again. Recovery and major federal expenditure cuts in the mid-1990s reduced deficits and produced surpluses by the end of the decade. Federal income tax cuts in 2000 reduced the surpluses but counteracted the economic slowdown of 2000–2001.


**NOTE:** The year shown is the fiscal year ending in that year; e.g., 2007 stands for fiscal year 2006–2007.
In Chapter 1, we discussed the difference between macroeconomics, the study of national economies, and microeconomics, which studies both individual economic entities (such as households and firms) and the markets for specific goods and services. The main difference between the fields is one of perspective: macroeconomists take a “bird’s-eye view” of the economy, ignoring the fine details to understand how the system works as a whole. Microeconomists work instead at “ground level,” studying the economic behaviour of individual households, firms, and markets. Both perspectives are essential to understanding what makes an economy work.

Which of the following questions would be studied primarily by macroeconomists? By microeconomists? Explain.

a. Does increased government spending lower the unemployment rate?

b. Does Microsoft’s dominance of the software industry harm consumers?

c. Should the Bank of Canada and the Department of Finance raise the midpoint of the inflation-control target range from 2 percent to something higher?

d. Why did Canada’s average rate of personal saving fall during the 1990s?

e. Does the increase in the number of consumer products being sold over the Internet threaten the profits of conventional retailers like Zellers?

Although macroeconomics and microeconomics take different perspectives on the economy, the basic tools of analysis are much the same. In the chapters to come, you will see that macroeconomists apply the same core principles (see Chapters 1 to 3) as microeconomists. But macroeconomists must pay particular attention to issues of aggregation, the adding up of individual economic variables to obtain economy-wide totals.

For example, explaining trends in movie theatre ticket sales relative to spending on DVD and video rentals is a topic for microeconomics, not macroeconomics.
Instead, macroeconomists add up consumer spending on all goods and services during a given period to obtain aggregate, or total, consumer spending. And they explore connections between aggregate consumer spending and variables such as aggregate income and unemployment. Sometimes aggregation just involves suppressing the mind-boggling details to see broad trends, as in Example 4.3.

**Aggregation: A national crime index**

To illustrate aggregation as a process of suppressing details in order to see the bigger picture, consider an issue that is only partly economic—crime. Suppose policy-makers want to find out whether the problem of crime in Canada is getting worse. How could they do so?

Police forces and RCMP detachments keep records of crimes reported to them, so a researcher could determine, say, how many break-and-enters occurred last year in any one of dozens of jurisdictions. But data on the number of crimes of each type in each jurisdiction would produce stacks of computer output. Is there a way to add up all the crime data to get some sense of the national trend?

Aggregation is used to obtain a measure of annual criminal code offences expressed in terms of crimes per 100 000 population. For example, Statistics Canada reported that in 2006, some 8269 criminal code offences (violent crimes, property crimes, and other crimes) occurred for every 100 000 Canadians. This rate represented a substantial drop from the crime rate in 1993, which was 10 594 crimes per 100 000 people. So aggregation (the adding up of many different crimes into a national total) indicates that crime decreased in Canada between 1993 and 2006.

Although aggregation of crime statistics reveals the big picture, it may obscure important details. Criminal code offences is a category lumping together relatively minor crimes such as theft with very serious crimes such as murder. Most people would agree that murder does far more damage than theft, so adding them might give a false picture of crime trends. In this case, though, the percentage decline in the overall crime rate was close to the percentage decline in the murder rate.

Sometimes, sensible aggregation involves more than just suppressing details in order to see the bigger picture—it requires recognizing that the whole can be more than the sum of the parts. In other words, sensible aggregation may require avoiding the mistake known as the fallacy of composition.

The fallacy of composition occurs when, for example, the assumption is made that if one fan at a sporting event can get a better view by standing up, then all fans at the event will get a better view if they all stand up at once. In economics, the fallacy of composition occurs when it is falsely assumed that what is true at the level of a particular individual, household, firm, or industry is necessarily true at a higher aggregate level.

A classic example of the fallacy of composition relates to microeconomics. Suppose that one potato farmer decides to put in longer hours. By working longer hours, the farmer produces a larger crop of potatoes, and thereby earns a larger income. It might seem safe to generalize that if all potato farmers worked longer hours and produced larger crops of potatoes, they would all earn larger incomes. But if a single farmer supplies more potatoes to the market, the market price for potatoes will typically be unaffected, whereas if all farmers supply more potatoes, then the price of potatoes would tend to fall (because of a rightward shift of the supply schedule, as explained in Chapter 3). The total revenues of the farmers could fall. If revenues fell, the generalization about all potato farmers in the market (the potato-farming industry) based on the experience of the one farmer would be an example of the fallacy of composition.

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4See Statistics Canada, CANSIM II series V12397045.
CHAPTER 4  MACROECONOMICS: THE BIRD’S-EYE VIEW OF THE ECONOMY

AGGREGATION

Macroeconomics, the study of national economies, differs from microeconomics, the study of individual economic entities (such as households and firms) and the markets for specific goods and services. Macroeconomists take a bird’s-eye view of the economy. To study the economy as a whole, macroeconomists make frequent use of aggregation, the adding up of individual economic variables to obtain economy-wide totals. A cost of aggregation is that the fine details of the economic situation are obscured. Sensible aggregation sometimes requires recognizing that the whole can be more than the sum of its parts.

RECAP

4.4 STUDYING MACROECONOMICS: A PREVIEW

This chapter introduced many of the key issues of macroeconomics. In the chapters to come we will look at each of these issues in more detail. The next two chapters (Chapters 5 and 6) cover the measurement of economic performance, including key variables like the level of economic activity, the extent of unemployment, and the rate of inflation. Obtaining quantitative measurements of the economy, against which theories can be tested, is the crucial first step in answering basic macroeconomic questions like those raised in this chapter.

In Part 3 we will study short-term economic fluctuations. Chapter 7 provides background on what happens during recessions and expansions, as well as some historical perspective. Chapter 8 discusses one important source of short-term economic fluctuations; that is, variations in aggregate spending. The chapter also shows how, by influencing aggregate spending, fiscal policy may be able to moderate economic fluctuations. The second major policy tool for stabilizing the economy, monetary policy, is the subject of Chapter 9. Chapter 10 develops a model of the simultaneous determination of the price level and of the level of output. Chapter 11 brings inflation into the analysis and discusses the circumstances under which macroeconomic policy-makers may face a short-term trade-off between inflation and unemployment.

Chapter 12 fleshes out our analysis of exchange rates between national currencies. We will discuss in detail how exchange rates are determined and how they affect the workings of the economy and macroeconomic policy. The role
played in the economy by money and banks is covered in Chapter 13. This chapter supplements the preceding chapters on monetary policy and exchange rates and provides a bridge to the long-run chapters which follow.

In Part 4 we look at economic behaviour over relatively long periods of time. Long-run economic performance is extremely important, accounting for much of the substantial differences in living standards among the inhabitants of different countries. Chapter 14 examines economic growth and productivity improvement, the fundamental determinants of the average standard of living in the long run. International trade, which has played an important role in Canada’s development, is the focus of Chapter 15. In Chapter 16 we study saving and its link to the creation of new capital goods, such as factories and machines. Chapter 17 covers the role of the financial system, explains the pricing of bonds and stocks, and discusses international capital flows.

SUMMARY

4.1 Macroeconomics is the study of the performance of national economies and of the policies governments use to try to improve that performance. Some of the broad issues macroeconomists study are:

- Sources of economic growth and improved living standards
- Trends in average labour productivity, or output per employed worker
- Short-term fluctuations in the pace of economic growth (recessions and expansions)
- Causes and cures of unemployment and inflation
- Economic interdependence among nations

4.2 To help explain differences in economic performance among countries, or in economic performance in the same country at different times, macroeconomists study the implementation and effects of macroeconomic policies. Macroeconomic policies are government actions designed to affect the performance of the economy as a whole. Macroeconomic policies include monetary policy (central bank management of interest rates), fiscal policy (relating to decisions about the government’s budget), and structural policy (aimed at affecting the basic structure and institutions of the economy).

4.3 Macroeconomics is distinct from microeconomics, which focuses on the behaviour of individual economic entities and specific markets. Macroeconomists make heavy use of aggregation, which is the adding up of individual economic variables into economy-wide totals. Aggregation allows macroeconomists to study the “big picture” of the economy, while ignoring fine details about individual households, firms, and markets. Sensible aggregation sometimes requires recognition that the whole can be more than the sum of the parts.

KEY TERMS

aggregation (100)  government budget balance (99)  macroeconomic policies (89)
average labour productivity (92)  government budget deficit (99)  monetary policy (98)
fallacy of composition (101)  government budget surplus (100)  structural policy (100)
CHAPTER 4  MACROECONOMICS: THE BIRD’S-EYE VIEW OF THE ECONOMY

REVIEW QUESTIONS

1. How did the experience of the Great Depression motivate the development of the field of macroeconomics?

2. How has Canadian economic performance differed from U.S. economic performance in recent decades?

3. Why is average labour productivity a particularly important economic variable?

4. True or false, and explain: Economic growth within a particular country generally proceeds at a constant rate.

5. True or false, and explain: Differences of opinion about economic policy recommendations can always be resolved by objective analysis of the issues.

6. If one computer chip maker increases output, it will realize increased revenue. If all computer chip makers increase output, prices will tend to fall, and this could result in reduced revenue. What is the term used for the mistake of assuming that what is true for one acting alone is also true for all acting together?

7. What type of macroeconomic policy (monetary, fiscal, structural) might include each of the following actions:
   a. A broad government initiative to reduce the country’s reliance on resources and promote high-technology industries.
   b. A reduction in sales taxes like the GST.
   c. Provision of additional cash to the banking system.
   d. An attempt to reduce the government budget deficit by reducing spending.
   e. A decision by a developing country to defy the International Monetary Fund by imposing controls on international capital flows.

PROBLEMS

1. Over the next 50 years, the Japanese population is expected to decline, while the fraction of the population that is retired is expected to increase sharply. What are the implications of these population changes for total output and average living standards in Japan, assuming that average labour productivity stagnates?

2. Is it possible for average living standards to rise during a period in which average labour productivity is falling? Discuss, using a numerical example for illustration.

3. The Bureau of Economic Analysis, or BEA, is a U.S. government agency that collects a wide variety of statistics about the U.S. economy. From the BEA’s home page (http://www.bea.gov) find data for the most recent year available on U.S. exports and imports of goods and services. Is the United States running a trade surplus or deficit? Calculate the ratio of the surplus or deficit to U.S. exports.

4. Which of the following would be studied by a macroeconomist? By a microeconomist?
   a. The global operations of Nortel Networks.
   b. The effect of anti-competitive business practices on energy prices.
   c. The impact of rising energy prices on inflation and growth in the Canadian economy.
   d. Inflation in developing countries.
   e. The effects of tax cuts on consumer spending.

ANSWERS TO IN-CHAPTER EXERCISES

4.1 The answer depends on current statistics.

4.2 a. Macroeconomists. Government spending and the unemployment rate are aggregate concepts pertaining to the national economy.
   b. Microeconomists. Microsoft, though large, is an individual firm.
   c. Macroeconomists. Relevant evidence would relate to the links between inflation and other macroeconomic variables.
   d. Macroeconomists. Average saving is an aggregate concept.
   e. Microeconomists. The focus is on a relatively narrow set of markets and products rather than on the economy as a whole.

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