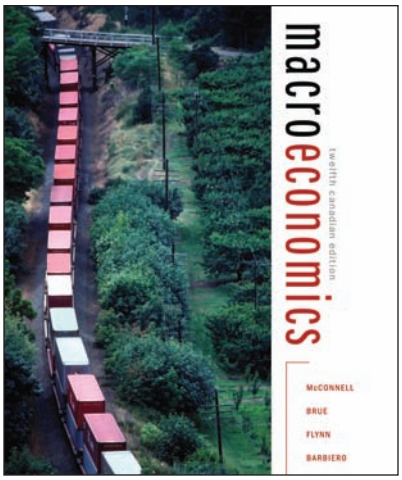
Preface

Welcome to the Twelfth Canadian Edition of *Macroeconomics*. Thousands of Canadian students have studied economics from the Canadian editions of *Macroeconomics* and *Microeconomics*. An estimated 14 million students worldwide have now used a version of the McConnell textbooks, making them the world's best-selling economic principles textbooks.

A Note about the Cover and the New U.S. Co-author

We chose the cover to reference the additional material included in the Twelfth Canadian Edition on economic growth, and supply and demand.

Our new co-author, Sean M. Flynn, has helped to modernize the content of the book from cover to cover. Sean did his undergraduate at the University of Southern California, received his Ph.D. from U.C. Berkley (in 2002), teaches principles at Scripps College, and is the author of *Essentials of Economics*, second edition. We are greatly pleased to have Sean working on the text because he shares our commitment to present economics in a way that is understandable to all.



Fundamental Objectives

We have three main goals for *Macroeconomics*, which are to:

- Help the beginning student master the principles essential for understanding economic problems, specific economic issues, and the policy alternatives.
- Help the student understand and apply the economic perspective, and reason accurately and objectively about economic matters.
- Promote a lasting student interest in economics and the economy.

What's New and Improved?

This is the most significant revision of *Macroeconomics* since the eighth edition. It has greatly benefitted from the addition of our new co-author. One of the benefits of writing a successful text is the opportunity to revise—to delete the outdated and install the new, to rewrite misleading or ambiguous statements, to introduce more relevant illustrations, to improve the organizational structure, and to enhance the learning aids. The more significant changes include the following:

Fully Updated, Totally Contemporary Macroeconomics

We recast the entire macro analysis in terms of the modern, dominant paradigm of macroeconomics, using economic growth as the central backdrop and viewing business fluctuations as significant and costly variations in the rate of growth. In this paradigm, business cycles result from demand shocks (or, less often, supply shocks) in conjunction with inflexible short-run product prices and wages. The degree of price and wage stickiness decreases with time. In our models, the *immediate short run* is a period in which the price level and wages are not only sticky, but stuck; the *short-run* is a period in which product prices are flexible and wages are not; the *long-run* is a period in which both prices and wages are fully flexible. Each of these three periods—and thus each of the models based on them—is relevant to understanding the actual macro economy and its occasional difficulties.

New Chapter 4 introduces the macro framework in a lively, intuitive way, using the example of a hypothetical single-firm economy. It also makes a clear, critical distinction between the broader concept of financial investment and the narrower subset of investment called economic investment in a way that allows us to use both ideas. A chapter on the measurement of nominal and real GDP follows. With real GDP clearly defined and measured, we present a chapter on economic growth. This early placement of the growth chapter allows students to understand the importance of economic growth and the factors that drive it. This growth chapter is followed by a chapter that introduces business fluctuations along the economy's growth path and the problems of unemployment and inflation that may result.

Following this set of core beginning chapters, we immediately begin to build models of the economy for the immediate short run and the short run. Students are therefore quickly introduced to models in which recessions and inflation can occur. This approach allows us to use the short-run AD-AS model to address fiscal policy and monetary policy relatively earlier in the text. Students are made fully aware from the start that the rate of economic growth is fundamentally important for standards of living. Yet, the quick introduction of sticky price models enables students to understand demand shocks, recession, stimulatory fiscal policy, Bank of Canada monetary policy actions, and other topics that dominate the news about the macro economy. After eventually developing the long-run AD-AS model, we directly link this long-run analysis back to our earlier discussions of growth. We finish *Macroeconomics* with two chapters that provide further analysis of international trade, balance of payments, exchange rates, and trade imbalances. The book ends with a bonus Web chapter on the requisites for, and impediments to, economic growth in developing nations.

Although the framework in which this textbook is built has been extensively revised, the revisions were made to preserve the main elements of the chapters in the previous edition. We simply have wrapped the macroeconomics analysis into a modern package of growth, expectations, shocks, price stickiness, time horizons, and international linkages.

Our macro content is also fully modern in terms of its coverage of contemporary problems and policies. For example, we cover the global financial crisis that started with the mortgage loan crisis in the U.S., the economic slowdown that followed the financial crisis, the Bank of Canada's reductions of the overnight lending rate, the fiscal stimulus tax package of the federal and provincial governments, and more.

Two New Chapters

Two chapters are new to the print version of *Macroeconomics*. Our common purpose for both chapters is to incorporate contemporary analytical themes and address current economic issues.

CHAPTER 4 INTRODUCTION TO MACROECONOMICS

As previously noted, this new chapter introduces the revised macroeconomic content in an interesting, concise way. It motivates the study of macroeconomics and establishes the analytical framework to the subject that we use in the book.

CHAPTER 14 FINANCIAL ECONOMICS

This new chapter examines ideas such as compound interest, present value, arbitrage, risk, diversification, and the risk-return relationship. Students need a better grounding in such ideas to truly understand the modern economy. In view of the problems in the financial markets over the recent past, we think that integrating financial economics more directly in the macro principles course makes good sense. For many students, this course will be their only (classroom!) opportunity to learn that promises of high, unguaranteed returns reflect high, uninsured risk. Even if instructors cannot find time to assign and cover the entire chapter, they may want to discuss the beginning portion, which addresses the time value of money and provides easy-to-understand real-world examples of present value.

To make room for our two new chapters, we had to make certain accommodations. Specifically, we have moved the lengthy historical discussions of the gold standard and the Bretton Woods system from the chapter on exchange rates to the supplemental material for the chapter at our website. Other, lesser deletions or abridgements have occurred throughout the book.

New Appendix

An additional chapter appendix is available for optional assignment in this edition, and is supported by the supplementary materials. The concise new appendix is:

CHAPTER 3: ADDITIONAL EXAMPLES OF SUPPLY AND DEMAND

At the end of Chapter 3 we provide several additional examples of supply and demand, including concrete examples of simultaneous shifts in supply and demand curves. Products covered include lettuce, corn and ethanol, pink salmon, gasoline, and sushi. We also use the Olympic Games to illustrate examples of pre-set prices, shortages, and surpluses.

New (or Relocated) "Consider This" and "Last Word" Boxes

Our **Consider This** boxes are used to provide analogies, examples, or stories that help drive home central economic ideas in a student-oriented, real-world manner. For instance "Market Failure and the Need for Government" demonstrates that while markets are generally efficient, they sometimes fail and government intervention is needed. These brief vignettes, each accompanied by a photo, illustrate key points in a lively, colourful, and easy-to-remember way.

New or relocated Consider This boxes include such disparate topics as an economic comparison of the two Koreas (Chapter 2), patent reform in India (Chapter 6), negative growth rates in Canada during the global financial crisis (Chapter 7), a rise in the Canadian unemployment rate during the recession of 2008–09 (Chapter 7), the transmission of the global financial crisis through international trade (Chapter 9), the decrease of aggregate demand during the global financial crisis (Chapter 10), how the financial crisis in the U.S. spilled into Canada (Chapter 11), the impact on government finance from severe economic downturn (Chapter 11), the action of the Bank of Canada during the global financial crisis (Chapter 13), stock market performance during the global financial crisis (Chapter 14), the relative returns on standard versus ethical investing (Chapter 14), deep recession and policy intervention (Chapter 15), the global financial crisis and the plunge of international trade (Chapter 16), and global recession and the deterioration of Canada's current account (Chapter 17).

Our **Last Word** pieces are lengthier applications and case studies located toward the end of chapters. New or relocated Last Words include those on the role of inventory management in reducing recessions (Chapter 4), the U.S. banking crisis during the Great Depression and the similarities with the current global financial crisis (Chapter 12), the U.S. Federal Reserve's response to the mortgage loan crisis (Chapter 13), the relative performance of index funds versus actively managed funds (Chapter 14), and fair trade products (Chapter 16).

Contemporary Discussions and Examples

The twelfth Canadian edition refers to and discusses many current topics. Examples include the additions of countries to the European Union and to the euro zone, normal trade relations status, China's rapid growth rate, the business downturn of late 2008 and early 2009, the stimulus package to counter the slowdown that followed the global financial crisis, the federal budget deficits, the mortgage loan crisis in the U.S., recent Bank of Canada monetary policy, the Taylor rule, the decline of world trade during the financial crisis, and many more.

Integrated Text and Web Site

We continue to integrate the book and our Web site by including icons in the text margin that direct readers to additional content. **Worked Problems** are now available at the McConnell Web site and provide students with a step-by-step illustration of how to solve a problem. These pieces consist of side-by-side computational questions and the computational procedures used to derive the answers. In essence, they extend the textbook's explanations involving computations—for example, of real GDP, real GDP per capita, the unemployment rate, the inflation rate, per-unit production costs, and more. At relevant points in the text, the Worked Problem icon directs the student to the Web site for this additional support.

For those students who want to explore the mathematical details of the theoretical concepts covered in the text, **Math** icons direct the students to the McConnell Web site.

Also on the Web site are **Origin** articles. These brief histories examine the origins of 70 major ideas identified in the book. Students will find it interesting to learn about economists who first developed such ideas as opportunity cost, equilibrium price, the multiplier, and comparative advantage and elasticity. The Origin icon directs students to the McConnell Web site for this extension material.

For selected Key Graphs, **interactive graphs** are available on the McConnell Web site (**www.mcgrawhillconnect.ca**). Developed under the supervision of Norris Peterson of Pacific Lutheran University, this interactive feature depicts major graphs and instructs students to shift the curves, observe the outcomes, and derive relevant generalizations.

Web Chapter

Bonus Web chapters available in PDF format for easy download at **www.mcgrawhillconnect.ca**. They are: 15W, "Current Issues in Macro Theory and Policy," and 17W, "The Economics of Developing Countries."

Distinguishing Features

- ***Comprehensive Explanations at an Appropriate Level*** *Macroeconomics* is comprehensive, analytical, and challenging, yet fully accessible to a wide range of students. Its thoroughness and accessibility enable instructors to select topics for special classroom emphasis with confidence that students can independently read and comprehend other assigned material in the book. Where needed, an extra sentence of explanation is provided. Brevity at the expense of clarity is false economy.
- ***Fundamentals of the Market System*** Many economies throughout the world are making difficult transitions from planning systems to market systems. Our detailed description of the institutions and operation of the market system in Chapter 2 is even more relevant than before. We pay particular attention to property rights, entrepreneurship, freedom of enterprise and choice, competition, and the role of profits because these concepts are often misunderstood by beginning students.
- ***Step-by-Step, Two-Path Macro*** As in the previous edition, our text continues to be distinguished by a systematic step-by-step approach in developing ideas and building models. Explicit assumptions about price and wage stickiness are posited and then systematically peeled away, yielding new models and extensions, all in the broader context of growth, expectations, shocks, and degrees of price and wage stickiness over time.

  In crafting this step-by-step macro approach, we took care to preserve the "two-path macro" that many instructors appreciated. Instructors who so choose can bypass the immediate short-run model (Chapter 9) and can proceed without loss of continuity directly to the short-run AD-AS model (Chapter 10), fiscal policy, money and banking, monetary policy, and the long-run analysis.

- ***Emphasis on Technological Change and Economic Growth*** This edition continues to emphasize economic growth. Chapter 1 uses the production possibilities curve to show the basic ingredients of growth. Chapter 6 discusses the causes of growth, looks at productivity growth, and addresses some controversies surrounding economic growth. The Last Word in that chapter examines the rapid economic growth in China. Chapter 17W focuses on developing countries and the growth obstacles they confront.
- ***Integrated Text and Web Site*** *Macroeconomics* and its Web site are highly integrated through in-text Web icons, bonus Web chapters, Web newspaper articles, Web math notes, and other features. Our Web site is part and parcel of our student learning package, customized to the book.

Organizational Alternatives

Although instructors generally agree as to the content of principles of economics courses, they sometimes differ as to how to arrange the material. *Macroeconomics* includes six parts, and that provides considerable organizational flexibility. For example, the two-path macro enables covering the full aggregate expenditures model or advancing directly from the basic macro relationships chapter to the AD-AS model. Also, the section of Chapter 15 that discusses the intricacies of the relationship between short-run and long-run aggregate supply can easily be appended to Chapter 9 on AD and AS.

Pedagogical Aids

Macroeconomics has always been student oriented. Economics is concerned with efficiency—accomplishing goals using the best methods. Therefore, we offer the student some brief introductory comments on how to improve their efficiency and hence their grades.

CHAPTER 3

Demand, Supply, and Market Equilibrium

According to an old joke, if you teach a parrot to say "demand and supply," you have an economist. There is much truth in this quip. The tools of demand and supply can take us far in understanding both specific economic issues and how individual markets work.

Markets bring together buyers ("demanders") and sellers ("suppliers"), and exist in many forms. The corner gas station, an e-commerce site, the local music store, a farmer's roadside stand—all are familiar markets. The Toronto Stock Exchange and the Chicago Board of Trade are markets where buyers and sellers of stocks and bonds and farm commodities from all over the world communicate with one another to buy and sell. Auctioneers bring together potential buyers and sellers of art, livestock, used farm equipment, and, sometimes, real estate. In labour markets, new college or university graduates "sell" and employers "buy" specific labour services.

Some markets are local, while others are national or international. Some are highly personal, involving face-to-face contact between demander and supplier; others are faceless, with buyer and seller never seeing or knowing each other.

To keep things simple, we will focus in this chapter on markets consisting of large numbers of buyers and sellers of standardized products. These are the highly competitive

IN THIS CHAPTER YOU WILL LEARN:

3.1 What demand is and what affects it

3.2 What supply is and what affects it

3.3 How demand and supply together determine market equilibrium

3.4 What government-set

- ***In This Chapter You Will Learn*** We set out the learning objectives at the start of each chapter so the chapter's main concepts can be easily recognized. We have also tied the learning objectives to each of the numbered sections in each chapter and the Study Questions at the end of each chapter. In addition, the chapter summaries are organized by number.
- ***Terminology*** A significant portion of any introductory course is terminology. Key terms are highlighted in bold type the first time they appear in the text. Key terms are defined in the margin and a comprehensive list appears at the end of each chapter. A glossary of definitions can also be found at the end of the book and on the Web site.
- ***Ten Key Concepts*** Ten Key Concepts have been identified to help students organize the main principles. The Ten Key Concepts are introduced in Chapter 1 and each one is reinforced throughout the textbook by an icon.

FACING TRADEOFFS

OPPORTUNITY COSTS

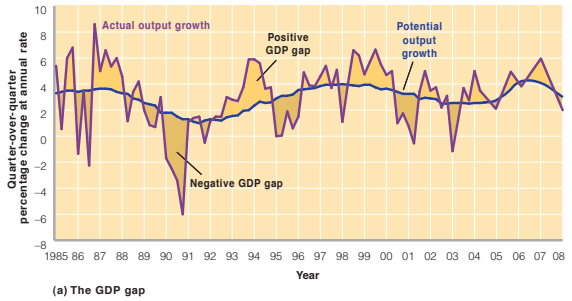
CONCEPT 3 ("Choosing a Little More or Less"): Choices are usually made at the margin; we choose a "little" more or a "little" less of something.

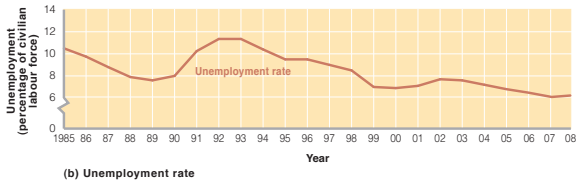
CONCEPT 4 ("The Influence of Incentives"): The choices you make are influenced by incentives.

- ***Data Updates*** Data updates for selected graphs and tables can be found on the McConnell Web site **www.mcgrawhillconnect.ca**.
- ***Graphics with Supporting Data*** Where possible we have tried to provide data to support our graphs. In such cases a data table now appears in the same figure with the graph.

FIGURE 7-3 Actual and Potential GDP and the Unemployment Rate

(a) The difference between actual and potential GDP is the GDP gap. A negative GDP gap measures the output the economy sacrifices when actual GDP falls short of potential GDP. A positive GDP gap indicates that actual GDP is above potential GDP. (b) A high unemployment rate means a large GDP gap (negative), and a low unemployment rate means a small or even positive GDP gap.



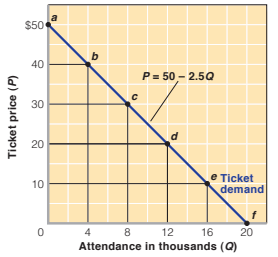


SOURCES: (a) Bank of Canada, Monetary Policy Report, October 2005 and the authors' own calculations; (b) Statistics Canada. At: http://www40.statcan.ca/l01/cst01/econ10-eng.htm. Accessed May 15, 2009.

FIGURE A1-2 The Relationship between Ticket Prices and Attendance

Two sets of data that are negatively or inversely related, such as ticket price and the attendance at basketball games, graph as a downward-sloping line.

Ticket price	Attendance, thousands	Point
$ 50	0	*a*
40	4	*b*
30	8	*c*
20	12	*d*
10	16	*e*
0	20	*f*

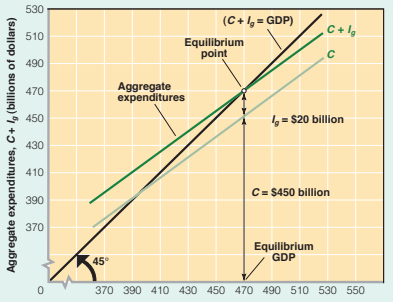


- ***Key Graphs*** We have labelled graphs having special relevance as Key Graphs. There is a quick quiz of four questions related to each Key Graph, with answers provided at the bottom of the graph.
- ***Reviewing the Chapter*** Important things should be said more than once. You will find a Chapter Summary at the conclusion of every chapter as well as two or three Quick Reviews within each chapter. The summary at the end of each chapter is presented by numbered chapter section. These review statements will help the student to focus on the essential ideas of each chapter and also to study for exams.

KEY GRAPH

FIGURE 9-2
Equilibrium GDP

The aggregate expenditures schedule, $C + I_g$, is determined by adding the investment schedule I_g to the upward-sloping consumption schedule C. Since investment is assumed to be the same at each level of GDP, the vertical distances between C and $C + I_g$ do not change. Equilibrium GDP is determined where the aggregate expenditures schedule intersects the 45° line, in this case at $470 billion.



Quick Quiz

1. **In this figure, the slope of the aggregate expenditures schedule $C + I_g$:**
   a. increases as real GDP increases.
   b. decreases as real GDP increases.
   c. is constant and equals the MPC.
   d. is constant and equals the MPS.
2. **At all points on the 45° line:**
   a. equilibrium GDP is possible.
   b. aggregate expenditures exceed real GDP.
   c. consumption exceeds investment
   d. aggregate expenditures are less than real GDP.
3. **The $490 billion level of real GDP is not at equilibrium because:**
   a. investment exceeds consumption.
   b. consumption exceeds investment.
   c. planned $C + I_g$ exceeds real GDP.
   d. planned $C + I_g$ is less than real GDP.
4. **The $430 billion level of real GDP is not at equilibrium because:**
   a. investment exceeds consumption.
   b. consumption exceeds investment.

QUICK REVIEW

- The main determinant of exports is the GDP of our trading partners. The main determinant of imports is our own GDP.
- Positive net exports increase aggregate expenditures on domestic output and increase equilibrium GDP; negative net exports decrease aggregate expenditures on domestic output and reduce equilibrium GDP.
- The multiplier for an open economy is smaller than the multiplier for a closed economy. The higher the marginal propensity to import, the smaller the open economy multiplier.
- In the open economy changes in (a) prosperity abroad, (b) tariffs, and (c) exchange rates can affect Canadian net exports and therefore Canadian aggregate expenditures and equilibrium GDP.

- ***Global Perspective Boxes*** Each nation increasingly functions in a global economy. To help the student gain appreciation of this wider economic environment, we provide Global Perspective features, which compare Canada to other nations.

17.2 GLOBAL PERSPECTIVE

Exchange Rates: foreign currency per Canadian dollar

The amount of foreign currency that a dollar will buy varies greatly from nation to nation. These amounts are for May 2009 and fluctuate in response to supply and demand changes in the foreign exchange market.

$1 will buy
0.56 British pounds
0.90 U.S. dollars
11.8 Mexican pesos
0.64 Euros
87 Japanese yen
6.1 Chinese renminbi
42 Indian rupees

CONSIDER THIS | The Ratchet Effect

A ratchet analogy is a good way to think about effects of changes in aggregate demand on the price level. A ratchet is a tool or mechanism such as a winch, car jack, or socket wrench that cranks a wheel forward but does not allow it to go backward. Properly set, each allows the operator to move an object (boat, car, or nut) in one direction while preventing it from moving in the opposite direction.

Product prices, wage rates, and per-unit production costs are highly flexible upward when aggregate demand increases along the aggregate supply curve. In Canada, the price level has increased in 57 of the 58 years since 1950.

But when aggregate demand decreases, product prices, wage rates, and per-unit production costs are inflexible downward. The price level has declined in only a single year (1953) since 1950, even though aggregate demand and real output have declined in a number of years, such as 1946, 1954, 1982, and 1991.

In terms of our analogy, increases in aggregate demand ratchet the Canadian price level upward. Once in place, the higher price level remains until it is ratcheted up again. The higher price level tends to remain even with declines in aggregate demand.

- ***Appendix on Graphs*** Being comfortable with graphical analysis and a few related quantitative concepts will be a big advantage to students in understanding the principles of economics. The appendix to Chapter 1, which reviews graphing, line slopes, and linear equations, should not be skipped.

Appendix to Chapter 1

A1.1 GRAPHS AND THEIR MEANINGS

If you glance quickly through this text, you will find many graphs. Some seem simple, others more complicated. All are included to help you visualize and understand economic relationships. Physicists and chemists sometimes illustrate their theories by building arrangements of multicoloured wooden balls, representing protons, neutrons, and electrons, which are held in proper relation to one another by wires or sticks. Economists use graphs to illustrate their models. By understanding these "pictures," you can more readily make sense of economic relationships. Most of our principles or models explain relationships between just two sets of economic facts, which can be conveniently represented with two-dimensional graphs.

Construction of a Graph

A *graph* is a visual representation of the relationship between two variables. Figure A1-1 is a hypothetical illustration showing the relationship between income and consumption for the economy as a whole. Without even studying economics, we would logically expect that people would buy more goods and services when their incomes go up. Thus it is not surprising to find in Figure A1-1 that total consumption in the economy increases as total income increases.

The information in Figure A1-1 is expressed both graphically and in table form. Here is how it is done: We want to show graphically how consumption changes as income changes. We therefore represent income on the **horizontal axis** of the graph and consumption on the **vertical axis**.

Now we arrange the vertical and horizontal scales of the graph to reflect the ranges of values of consumption and income, and mark the scales in convenient increments. As you can see in Figure A1-1, the values marked on the scales cover all the values in the table. The increments on both scales are $100 for approximately each centimetre.

Because the graph has two dimensions, each point within it represents an income value and its associated consumption value. To find a point that represents one of the five income–consumption combinations in the table, we draw straight lines from the appropriate values on the vertical and horizontal axes. For example, to plot point *c* (the $200 income, $150 consumption), straight lines are drawn up from the horizontal (income) axis at $200 and across from the vertical (consumption) axis at $150.These straight lines intersect at point *c*, which represents this particular income–consumption combination. You should verify that the other income–consumption combinations shown in the table are properly located in the graph. Finally, by assuming

- ***Study Questions*** A comprehensive list of questions is located at the end of each chapter. The old cliché that you "learn by doing" is very relevant to economics. Use of these questions will enhance your understanding. We designate several of them as "Key Questions" and answer them in the Study Guide. For the twelfth Canadian edition of *Macroeconomics* we have added a total of five new Study Questions and connected every question with a Learning Objective.

STUDY QUESTIONS

LO 1.2 1. What is an opportunity cost? How does the idea relate to the definition of economics? Which of the following decisions would entail the greater opportunity cost: allocating a square block in the heart of Toronto for a surface parking lot or allocating a square block at the edge of a typical suburb for such a lot? Explain.

LO 1.2 2. What is meant by the term "utility" and how does the idea relate to purposeful behaviour?

LO 1.2 3. **KEY QUESTION** Cite three examples of recent decisions that you made in which you, at least implicitly, weighed marginal cost and marginal benefit.

LO 1.3 4. What are the key elements of the scientific method and how does this method relate to economic principles and laws?

LO 1.4 5. **KEY QUESTION** Indicate whether each of the following statements applies to microeconomics or macroeconomics:

a. The unemployment rate in Canada was 8 percent in March 2009.

d. Canadian output, adjusted for inflation, grew by 0.4 percent in 2008.

e. Last week Scotiabank lowered its interest rate on business loans by one-half of 1 percentage point.

f. The Consumer Price Index rose by 2.3 percent in 2008.

LO 1.4 6. State (a) a positive economic statement of your choice, and then (b) a normative economic statement relating to your first statement.

LO 1.5 7. **KEY QUESTION** Suppose you won $15 on a Lotto Canada ticket at the local 7-Eleven and decided to spend all the winnings on candy bars and bags of peanuts. The price of candy bars is $0.75 and the price of peanuts is $1.50.

a. Construct a table showing the alternative combinations of the two products that are available.

b. Plot the data in your table as a budget line in a graph. What is the slope of the budget line? What is the opportunity cost of one more candy bar? Of one more

- ***Consider This Boxes*** Consider This boxes are used to provide analogies, examples, or stories that help drive home central economic ideas in a student-oriented, real-world manner. These brief vignettes illustrate key points in a lively, colourful, and easy-to-remember way. See the list of Consider This boxes inside the front cover of the text.
- ***The Last Word*** The Last Word features are lengthier applications and case studies located toward the end of each chapter. In this edition, we have included photos to pique student interest. See list of Last Word features inside the front cover of the text.

The LAST WORD | Do Tax Increases Reduce Real GDP?*

Determining the relationship between changes in taxes and permanent changes in real GDP is fraught with complexities and difficulties. University of California–Berkeley economists Christina Romer and David Romer have recently devised a novel new way to approach the topic. Their findings suggest that tax increases reduce real GDP.**

How do changes in the level of taxation affect the level of economic activity? The simple correlation between taxation and economic activity shows that, on average, when economic activity rises more rapidly, tax revenues also are rising more rapidly. But this correlation almost surely does not reflect a positive effect of tax increases on output. Rather, under our tax system, any positive shock to output raises tax revenues by increasing income. In "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks," authors Christina Romer and David Romer observe that this difficulty is just one of many manifestations of a more general problem. Changes in taxes occur for many reasons. And, because the factors that give rise to tax changes often are correlated with other developments in the economy, disentangling the effects of the tax changes from the other effects of these underlying factors is inherently difficult. To address this problem, Romer and Romer use the narrative record—Presidential speeches, executive branch documents, Congressional reports, and so on—to identify the size, timing, and principal motivation for all major tax policy actions in the post–World War II United States. This narrative analysis allows them to separate revenue changes resulting from legislation from changes occurring for other reasons. It also allows them to classify legislated changes according to their primary motivation. Romer and Romer find that despite the complexity of the legislative process, most significant tax changes have been motivated by one of four factors: counteracting other influences in the economy; paying for increases in government spending (or lowering taxes in conjunction with reductions in spending); addressing an inherited budget deficit; and promoting long-run growth. They observe that legislated tax changes taken to counteract other influences on the economy, or to pay for increases in government spending, are very likely to be correlated with other factors affecting the economy. As a result these observations are likely to lead to unreliable estimates of the effect of tax changes. Tax changes that are made to promote long-run growth, or to reduce an inherited budget deficit, in contrast, are undertaken for reasons essentially unrelated to other factors influencing output. Thus, examining the behaviour of output following these tax changes is likely to provide more reliable estimates of the output effects of tax changes. *The results of this more reliable test indicate that tax changes have very large effects: a tax increase of 1 percent of GDP lowers real GDP by roughly 2 to 3 percent.* These output effects are highly persistent. The behaviour of inflation and unemployment suggests that this persistence reflects long-lasting departures of output from previous levels. Romer and Romer also find that output effects of tax changes are much more closely tied to the actual changes in taxes than news about future changes, and that investment falls sharply in response to tax changes. Indeed, the strong response of investment helps to explain why the output consequences of tax increases are so large. Romer and Romer find suggestive evidence that tax increases to reduce an inherited budget deficit have much smaller output costs than other tax increases. This is consistent with the idea that deficit-driven tax increases may have important expansionary effects through [improved] expectations and [lower] long-term interest rates, or through [enhanced] confidence. There is good reason to believe that these general results may also apply to the Canadian economy.

*Abridged from Les Picker, "Tax Increases Reduce GDP," *The NBER Digest*, February/March 2008. The *Digest* provides synopses of research papers in progress by economists affiliated with the National Bureau of Economic Research (NBER).

**Christina Romer and David Romer, "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks," National Bureau of Economic Research Working Paper No. 13264, 2007.

Question

On average, does an increase in taxes raise or lower real GDP? If taxes as a percentage of GDP go up 1 percent, by how much does real GDP change? Are the decreases in real GDP caused by tax increases temporary or permanent? Does the intention of a tax increase matter?

- ***Internet Application Questions*** Students are presented with questions to explore on the Internet relevant to the topic discussed in the chapter. From the McConnell Web site, **www.mcgrawhill connect.ca**, students will find direct links to the Web sites included in these questions.

INTERNET APPLICATION QUESTIONS @

1. **More Labour Resources—What Is the Evidence for Canada and France?** Use the links on the McConnell-Brue-Flynn-Barbiero Web site (Chapter 1) to compare the growth in employment in Canada and France. In which of the two countries did "more labour resources" (in percentage terms) have the greatest impact in shifting the nation's production possibilities curve outward over the 10-year period?

2. **Normative Economics—Canadian Politics.** Many economic policy statements made by the Liberal Party, the Conservative Party, and the New Democratic Party can be considered normative rather than positive economic statements. Use the links on the McConnell-Brue-Flynn-Barbiero Web site (Chapter 1) and compare and contrast their views on how to achieve economic goals. How much of the disagreement is based on positive statements and how much on normative statements? Give an example of loaded terminology from each site.

Comprehensive Learning and Teaching Package

The Twelfth Canadian Edition is also accompanied by a variety of high-quality supplements that help students master the subject and help instructors implement customized courses.

For the Students

Lyryx Assessment for Economics is a leading-edge online assessment system, designed to support both students and instructors. The assessment takes the form of a homework assignment called a Lab. The assessments are algorithmically generated and automatically graded so that students get instant grades and feedback. New Labs are randomly generated each time, providing the student with unlimited opportunities to try a type of question. After they submit a Lab for marking, students receive extensive feedback on their work, thus promoting their learning experience.

Lyryx for the student offers algorithmically generated and automatically graded assignments. Students get instant grades and instant feedback—no need to wait until the next class to find out how well they did! Grades are instantly recorded in a grade book that the student can view.

Students are motivated to do their labs for two reasons: first because it can be tied to assessment, and second because they can try the Lab as many times as they wish prior to the due date with only their best grade being recorded.

Instructors know from experience that if students do their economics homework, they will be successful in the course. Recent research regarding the use of Lyryx has shown that when Labs are tied to assessment, even if worth only a small percentage of the total grade of the course, students WILL do their homework—and MORE THAN ONCE!

Please contact your *i*Learning Sales Specialist for additional information on the Lyryx Assessment Economics system.

Visit http://lyryx.com

- ***Online Learning Centre*** This electronic learning aid, located at **www.mcgrawhill.ca/olc/mcconnell**, offers materials including chapter highlights, key terms, the Origin of the Idea, and access to the Statistics Canada free database. Highly visible Web icons in the text margins alert students to points in the book where they can springboard to the site to learn more. There also are regular news updates and an interactive glossary—all specific to *Macroeconomics*. For the math-minded student, there is a "Math" section, where they can explore the mathematical details of the concepts in the text. There are also three optional bonus Web chapters.

- Developed in partnership with Youthography, a Canadian youth research company, and hundreds of students from across Canada, McGraw-Hill Connect™ embraces diverse study behaviours and preferences to maximize active learning and engagement.

  With McGraw-Hill Connect™, written by Lance Shandler of Kwantlen Polytechnic University, students complete pre- and post-diagnostic assessments that identify knowledge gaps and point them to concepts they need to learn. McGraw-Hill Connect™ provides students the option to work through recommended learning exercises and create their own personalized study plan using multiple sources of content, including a searchable e-book, multiple-choice and true/false quizzes, chapter-by-chapter learning goals, interactivities, personal notes, videos, and more. Using the copy, paste, highlight, and sticky note features, students collect, organize, and customize their study plan content to optimize learning outcomes.

For the Instructor

- ***The Instructor Online Learning Centre*** The Instructor Online Learning Centre (OLC) at **www.mcgrawhill.ca/olc/mcconnell** includes a password-protected Web site for instructors. The site offers downloadable Instructor supplements.

All Instructor supplements are available at the OLC:

- ***Instructor's Manual*** The Instructor's Manual is prepared by Thomas Barbiero of Ryerson University, and Shawn D. Knabb of Western Washington University. Available again in this edition as a Microsoft® Office Word document, the manual includes: Chapter Overview, What's New, Instructional Objectives, Comments and Teaching Suggestions, Student Stumbling Blocks, Lecture Notes, Last Word, and answers to end-of-chapter questions.
- ***Microsoft® PowerPoint® Presentation Software*** Prepared by Bruno Fullone of George Brown College, this presentation system is found on the Instructor's Site of the Online Learning Centre. It offers visual presentations that may be edited and manipulated to fit a particular course format.
- ***Computerized Test Banks*** Prepared by Nargess Kayhani, Mount St. Vincent University, Computerized Test Bank I contains about 6000 multiple-choice and true/false questions. Rob Moir, University of New Brunswick, has prepared over 30 short-answer questions with suggested answers for each chapter. Also included is U.S. Test Bank II. This test bank contains around 6300 multiple choice and true/false questions. All questions are categorized according to level and difficulty.

In addition, content cartridges are available for the course management systems **WebCT** and **Blackboard**. These platforms provide instructors with user-friendly, flexible teaching tools. Please contact your local McGraw-Hill Ryerson *i*Learning Sales Specialist for details.

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