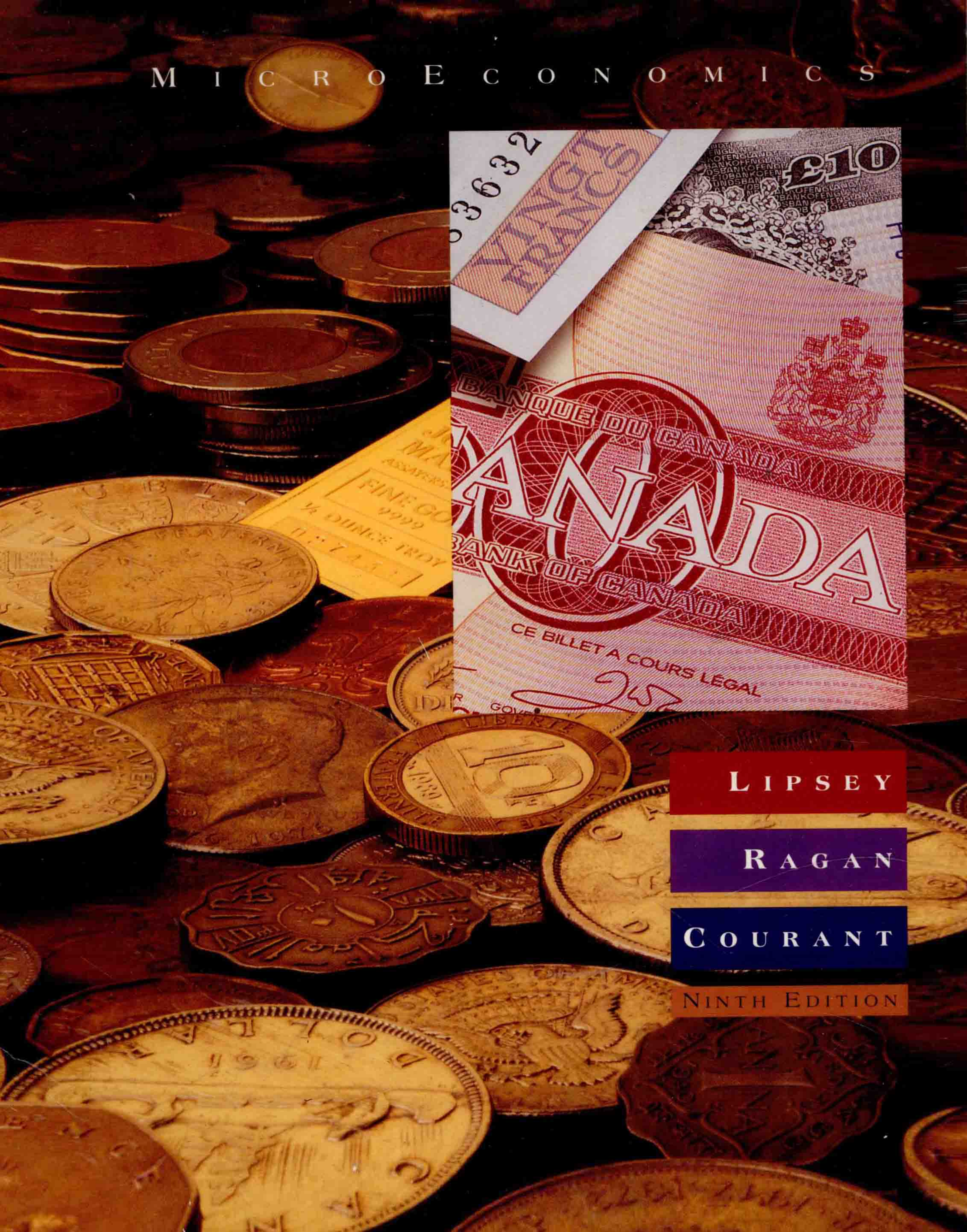
MICROECONOMICS



LIPSEY
RAGAN
COURANT

NINTH EDITION

MICROECONOMICS

NINTH CANADIAN EDITION

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TO THE INSTRUCTOR

Economics is a living discipline, changing and evolving in response to developments in the world economy and in response to the research of many thousands of economists throughout the world. Through nine editions, *Economics* has evolved with the discipline. Our purpose in this edition, as in the previous eight, is to provide students with an introduction to the major issues facing the world's economies, to the methods that economists use to study those issues, and to the policy problems that those issues create. Our treatment is everywhere guided by three important principles:

1. Economics is *scientific,* in the sense that it progresses through the systematic confrontation of theory by evidence. Neither theory nor data alone can tell us much about the world, but combined they tell us a great deal.
2. Economics is *useful* and it should be seen by students to be so. An understanding of economic theory combined with knowledge about the economy produces many important insights about economic policy. Although we stress these insights, we are also careful to point out cases where too little is known to support strong statements about public policy. Appreciating what is not known is as important as learning what is known.
3. We strive always to be *honest* with our readers. Although we know that economics is not always easy, we do not approve of glossing over difficult bits of analysis without letting readers see what is happening and what has been assumed. We always take whatever space is needed to explain why economists draw their conclusions, rather than just asserting the conclusions. We also take pains to avoid simplifying matters so much that students would have to unlearn what they have been taught if they continue their study beyond the introductory course. In short, we have tried to follow Albert Einstein's advice:
Everything should be made as simple as possible, but not simpler.

THE ECONOMIC ISSUES OF THE 1990S

In writing the ninth edition, we have tried to reflect the major economic issues of the last decade of the twentieth century.

GLOBALIZATION AND GROWTH

Enormous changes have occurred throughout the world over the last few decades. Flows of trade and investment between countries have risen so dramatically that it is now common to speak of the "globalization" of the world economy. Today it is no longer possible to study any economy without taking into account developments in the rest of the world.

What is true for most countries is also true for Canada. Economic relations between Canada and the rest of the world have a significant impact on most of the major "domestic" issues in the news. Here are three examples that we discuss, along with many others, in the ninth edition of *Economics.*

1. Throughout most of this century, Canadians, Americans, and Europeans have each regarded the policies that they adopted to support their farmers as strictly their own concern. Now, with the globalization of agricultural markets, what one country does to support its own agricultural sector impacts greatly on farmers in other countries. No longer is any one nation an island unto itself. Each nation's agricultural policies affect agricultural producers throughout the world and therefore concern all countries.
2. Throughout most of the twentieth century, successive generations of Canadians have found themselves, on average, substantially better off than their parents as a result of the nation's economic growth. Over the last two decades, however, this generation-by-generation advance has applied to only the top income levels; for the rest, average incomes are little higher, and sometimes lower, compared with the previous generation. Although some of the causes may be peculiar to the Canadian economy, many have to do with worldwide changes in technology and in patterns of international trade.
3. Over the past fifteen years, Canadians have worried about large government budget deficits. They wonder if the failure to balance the budget will lead to higher taxes in the future. Canadian firms worry about how the budget deficits affect domestic interest rates and the external value of the Canadian dollar, and about how their competitive positions in world markets will be affected.

THE TRIUMPH OF MARKET CAPITALISM

Since the 1980s, the century-long ideological conflict between capitalism and communism has virtually ended. The most powerful communist economy in the world, the Soviet Union, has disappeared, both as a nation and as a planned economy. Mixed capitalism, the system of economic organization that has long prevailed in much of the industrialized world, now prevails in virtually all of it. Many of the less-developed economies are also moving in this direction. The reasons for the failure of the planned economies of Eastern Europe are discussed in Chapter 1 as a contrast to the reasons for the relative success of mixed capitalism. The difficulties of transition to mixed capitalism are also discussed in Chapter 3.

DECLINING GROWTH IN MARKET ECONOMIES

At the same time that the once communist world of Eastern Europe has begun to establish free markets, the economies of western Europe, the United States, Japan, and Canada have experienced a marked reduction in economic growth.

In Canada, average real wages, which rose steadily from 1900 to 1970, have remained nearly constant since the mid 1970s. Over the lifetimes of you who are now using this book, in contrast to readers of our first edition, steadily rising personal incomes have been the exception rather than the rule. Issues raised by the changing growth performance in most advanced industrial countries are discussed frequently in this book.

A GLOBALIZED ECONOMICS TEXTBOOK

Economic growth and the implications of globalization are pressing issues of the day. Much of our study of economic principles and the Canadian economy has been shaped by these issues.

In Chapter 6, foreign trade provides an example of demand and supply in action. Our discussion of agricultural policy in Chapter 6 also has an international dimension. Foreign direct investment and transnational corporations are introduced along with imperfect competition in Chapter 12, and they receive detailed attention in many subsequent chapters, including Chapter 14 on the organization of firms. The newer method of "lean production" or "flexible manufacturing," first developed in Japan and now displacing the older mass-production techniques developed by Henry Ford, is discussed in Chapters 8, 12, and 14.

We treat international trade theory and trade policy in two chapters. Chapter 35 examines the basic theory of international trade. Chapter 36 provides a detailed discussion of policies that interfere with the free flow of international trade, and of trade-liberalizing arrangements such as the GATT and the North American Free Trade Agreement (NAFTA).

In addition to specific coverage of growth and internationally oriented topics, growth and globalization appear naturally throughout the book in the treatment of many topics once thought to be entirely "domestic."

MICROECONOMICS: STRUCTURE AND COVERAGE

Beginning Part 1, Chapter 1 introduces the issues of scarcity and choice and then briefly discusses alternative economic systems. The problems of converting command economies to market economies will be with us for some time, and comparisons with command economies help to establish what a market economy is *by showing what it is not.* We then survey a number of national and international trends to introduce students to many of the issues studied in detail later in the book. We end Chapter 1 with a discussion of the importance and role of economic policy. Chapter 2 makes the important distinction between positive and normative inquiries and goes on to an introductory discussion of the construction and testing of economic theories. Chapter 3 provides an overview of market economies, including a discussion of the important distinction between microeconomics and macroeconomics.

Part 2 deals with demand and supply. After introducing price determination and elasticity in Chapters 4 and 5, we apply these tools in Chapter 6. The case studies are designed to provide practice in applying the tools rather than a full coverage of each case.

Part 3 presents the foundations of demand and supply. The theory of consumer behaviour is developed via marginal utility theory in Chapter 7, which also provides an introduction to consumer surplus and an intuitive discussion of income and substitution effects. The Appendix to Chapter 7 covers indifference curves, budget lines, and the derivation of demand curves using indifference theory. Instructors' tastes differ greatly on how much demand theory is desirable in an introductory course, and the approach that we have taken in Chapter 7 allows the instructor to choose whether or not to use indifference curves without running into problems later in the book. (Further use of indifference curves is presented in appendices and optional boxes throughout the book.)

Chapter 8 introduces the firm as an institution and develops short-run costs. Chapter 9 covers long-run costs, the principle of substitution, and goes on to consider shifts in cost curves due to technological change. The latter topic is seldom if ever covered in the micro part of elementary textbooks, yet applied work on firms' responses to changing economic signals shows it to be extremely important. Although firms' short- and long-run responses matter, the response of their innovative activity is also highly significant. For example, a change in the wage rate, in capital costs, or in the exchange rate may cause firms to alter prices, outputs, and plans for capital expansion, but they will also cause firms to redirect their R&D expenditures. How firms choose to innovate their way out of unprofitable situations has come to be understood as a critical part of the microeconomic response to changes in market signals.

The first two chapters of Part 4, Chapters 10 and 11, present the standard theories of perfect competition and monopoly with some discussion of international cartels. Chapter 12 deals with monopolistic competition and oligopoly, which are the market structures most commonly found in Canadian industries. Strategic behaviour plays a central part in the analysis of this chapter.

The first half of Chapter 13 deals with the efficiency of competition and the inefficiency of monopoly. The last half of the chapter is largely concerned with competition policy. Part 5 begins in Chapter 15 by discussing the general principles of factor pricing and how factor prices are influenced by factor mobility. Chapter 16 then examines the operation of labour markets while Chapter 17 discusses capital and nonrenewable resources.

The first chapter of Part 6 (Chapter 18) provides a general discussion of market success and market failure, introduces social choice theory, and outlines the arguments for and against government intervention in a market economy. Chapter 19 deals with environmental and health and safety regulation. In addition to providing current applications of microeconomic theory to policymaking, it contains a boxed discussion of the U.S. experience with tradable emissions permits for sulphur dioxide. Chapter 20 analyzes taxes, public expenditure, and the main pillars of Canadian social policy. These three chapters expand on the basics of microeconomic analysis by providing current illustrations of the relevance of economic theory to contemporary policy situations.

The final part of *Microeconomics* focuses primarily on international economics. Chapter 35 gives the basic treatment of international trade, developing both the traditional theory of static comparative advantage and newer theories based on imperfect competition and dynamic comparative advantage. Chapter 36 discusses both the positive and normative aspects of trade policy, as well as the GATT and prospects for regional free-trade areas. There is also a detailed discussion of NAFTA and a box on Canada-U.S. trade disputes.

Strategic Behaviour

One of the most important advances in microeconomic analysis in recent years is the increased focus on strategic behaviour, including game theory and principal-agent analysis. In Chapter 12 we use elementary game theory in our discussion of competition among oligopolies. In Chapter 14 we introduce the principal-agent problem in the context of the market for corporate control. In Chapter 18 we discuss asymmetric information as a source of market failure.

Chapter 14 deals with the market for corporate control. A discussion of takeovers and mergers leads naturally to a brief consideration of why firms may and may not maximize their profits, since the possibility that existing management is not maximizing profits is widely viewed as an important motive for takeovers.

In all of these cases our approach is to introduce strategic behaviour when it is appropriate to the topic under discussion.

Economic Policy

Most chapters of the book contain some discussion of economic policy. We have two main goals in mind in these discussions:

1. We aim to give students practice in using economic theory, because applying theory is both a wonderfully effective teaching method and a reliable test of students' grasp of theory.
2. We want to introduce students to the major policy issues of the day.

Both goals reflect our view that students should see economics as useful in helping us to understand and deal with the world around us.

We hope you find this menu both attractive and challenging; and we hope students find the material stimulating and enlightening. Many of the messages of economics are complex—if economic understanding were only a matter of common sense and simple observation, there would be no need for professional economists and no need for textbooks like this one. To understand economics, one must work hard. Working at this book should help readers gain a better understanding of the world around them and of the policy problems faced by all levels of government. Furthermore, in today's globalized world, the return to education is large. We like to think that we have contributed in some small part to the understanding that increased investment in human capital by the next generation is necessary to restore incomes to the rapid growth paths that so benefited our parents and our peers. Perhaps we may even contribute to some income-enhancing accumulation of human capital by some of our readers.

CHANGES TO THIS EDITION

We have done a major revision and update of the entire text with guidance from an extensive series of reviews and feedback from both users and nonusers of the previous editions of this book. As always, we have strived very hard to improve the teachability and readability of the book. Toward this goal, the revised text has been "test read" by a person *who is not an economics instructor* to locate difficult passages and confusing explanations and examples. This process led to the rewriting or considerable revision of many passages in the text; we are confident that students will have fewer difficulties with this edition.

OVERALL FORMAT

In addition to the usual tasks of rewriting and updating for the new edition, there are some changes to what might be called the "format" of the book. Here are some of the highlights.

Part Openers. Each part of the book (eleven in all) now begins with a brief description of what topics are covered in the part. There are a number of questions which we pose, not only to kindle the students' interest, but also to give them some indication of the type of questions they will be able to answer after successfully working through the material. In some cases, the questions are quite general; but in many cases the questions relate to specific examples that are covered within the following chapters.

Use of Colour Passages. We have reduced the use of colour passages in the text. Our view was that in order for these passages to have the most impact on the student, we had to be more selective in their use. We also thought that having fewer colour passages would improve the flow of the argument.

Footnotes. Wherever possible, we have tried to shorten or eliminate footnotes, while at the same time making sure that we are not glossing over important details. We hope this makes the presentation of the central ideas less choppy.

Boxes. In this edition, we have added many new boxes and dropped many old ones (there are 24 new boxes). We have also differentiated the ways in which we use boxes in the text. All boxes are optional, and thus the student is able to skip all boxes without losing any *central economic principles*. The student's understanding of economics, however, will naturally be deeper if the material in the boxes is not skipped. In this edition, boxes are coded as one of two types.

1. *Applications* are meant to show economics in action, providing examples of how theoretical material relates to issues of current interest.
2. *Extensions* are designed to provide a deeper and more detailed treatment of a topic that is discussed in the text.

Chapter Summaries. In this edition, we have introduced a new format for our chapter summaries. The main section headings from the chapter now appear in the summaries, with the summary points organized appropriately. Making this change revealed to us that in previous editions we had not covered all parts of the chapter in the summary, and thus we have added many new summary points to fill these gaps. These revised and expanded summaries should be a very useful study tool for students.

End-of-Chapter Questions. We have updated and added to the list of questions at the end of each chapter. The answers to these questions are found in the Instructor's Manual (which is available for free to all adopters).

Mathematical Notes. Mathematical notes are collected in a separate section at the end of the book. Since mathematical notation and derivation is not necessary to understand the principles of economics but is helpful in more advanced work, this seems to be a sensible arrangement. Mathematical notes provide clues to the uses of mathematics for the increasing number of students who have some background in math, without loading the text with notes that are unnecessary and are a put-off to other readers.

Glossary. The glossary at the end of the book offers definitions of the terms that are used in boldface in the text. In addition, the glossary includes some commonly used terms that are not printed in boldface in the text because they are not, strictly speaking, technical terms.

Time Line of Great Economists. New to this edition, we have constructed a time line which runs from the mid 1700s to the middle of this century. Along this time line we have placed brief descriptions of the life and works of some great economists, most of whom the students encounter in the textbook. So that the students have a better appreciation of *when* these economists did their work, the time line also lists some major world events. We hope this will improve the students' sense of history and their sense of who these great economists are. The time line is located at the back of the book, immediately following the glossary.

CHANGES IN MICROECONOMICS

Here is a brief description of the major changes to *Microeconomics*.

Part 1 The Nature of Economics

- Chapter 1 has a new discussion of why opportunity cost changes along the production possibility boundary and there is a new box on the opportunity cost of a university education. There is a new final section in the chapter discussing the importance of economic policy.
- Chapter 2 has a new section on economic models, discussing the various ways in which economists use the term "model," and connecting model building to the process of developing and testing theories. In the appendix there is a clarified discussion of the difference between cross-sectional and time-series data.

- In Chapter 3, the box on comparative advantage has been completely rewritten. It now shows what happens when specialization occurs in the "wrong direction." There is also a new box on the difficulties involved in converting from command economies to market economies.

Part 2 An Introduction to Demand and Supply

- Chapter 4, which introduces the concepts of demand and supply, has a reworked discussion of what causes shifts in demand and supply curves. The existing box on "what really happens" has new examples of weather-generated demand and supply shocks. (The old appendix on foreign trade has been moved to Chapter 6.)
- In Chapter 5, the old box on the use of averages for computing elasticities has now been integrated into the text. In an effort to reduce the dryness of this chapter, we have added a new final section that presents "two examples where elasticity matters." This section examines the issue of tax incidence and the distinction between short-run and long-run elasticities.
- Chapter 6 has been substantially redesigned. It begins with a general discussion of government-controlled prices. It then goes on to examine the case of rent controls (this discussion has been extensively rewritten), agricultural policy, and foreign trade and tariffs. Each of these three applications can be covered independently. The chapter then ends with a section on "four lessons about resource allocation" which generalizes the specific lessons learned throughout the chapter.

Part 3 Consumption, Production, and Cost

- Chapter 7 has been completely rewritten. We now lay out the basic theory of consumer demand using marginal utility theory. This has proved to be the most accessible to students. Indifference curve analysis is now presented in the appendix. The more formal approach is thus still available to those instructors who prefer it. Consumer surplus, income and substitution effects, and the total-marginal distinction, all of which we view as key concepts, are developed in the text of Chapter 7.
- Chapter 8 is now the first chapter in the theory of the firm. It combines definitional material (economic profit, opportunity cost) with the analysis of cost and production in the short run. We have added a new box which presents a glossary of the different short-run cost concepts.
- Chapter 9 examines the firm in the long run and the very-long run. We have rewritten the discussion of the profit-maximizing factor mix. There is also a new box on Jacob Viner's famous error. The appendix develops the long-run cost model via the use of isoquants and isocost curves.

Part 4 Pricing and Market Structure

- Chapter 10, which examines perfect competition, is unchanged in its basic structure. The box which contrasts the firm's and the industry's demand elasticity has been rewritten. We have also rewritten the discussion of entry and exit and the conditions required for long-run equilibrium.
- In the discussion of monopoly in Chapter 11, there is a new box on "fashion knockoffs" as an example of how technilogical change has lowered entry barriers.
- Chapter 12 has been retitled to reflect its added emphasis on strategic behaviour. The first section has been completely rewritten and now better motivates both the discussion of monopolistic competition and oligopoly. There is a new box on the prisoner's dilemma, and the discussion of strategic behaviour has been recast to emphasize game theory.
- In Chapter 13, we have tried to emphasize that allocative efficiency is a property of an *economy* rather than just a single industry. We have also made some clarifying changes in the discussion of marginal-cost and average-cost pricing. There is a new box on the pricing policies of the provincial hydro authorities.
- Chapter 14 combines institutional material from Chapter 9 of the previous edition with a streamlined discussion of the market for corporate control and the behaviour of foreign direct investment. We have added some data on the flows of inward- and outward-bound foreign investment since 1960.

Part 5 The Markets for Factors of Production

- In Chapter 15, the section on "the demand for factors" has been substantially reworked, emphasizing the distinction between the physical and revenue aspects of marginal revenue product. The section on "policy issues" now concludes with an examination of data on Canadian interprovincial labour mobility. This should emphasize the importance of the chapter's main theme of factor mobility.
- Chapter 16 now begins with a discussion of the conditions required to have a single wage in the labour market. The chapter then examines violations of these conditions. The discussion of wage differentials now leads to a new box on the puzzle of interindustry wage differentials in Canada. The section on labour unions has been substantially reworked, and a discussion of the union wage premium has been added. The final section presents the "good jobs—bad jobs" debate.

- Chapter 17 discusses the pricing of capital and nonrenewable resources. The discussion on present value has been clarified. A new box has been added on inflation and the distinction between nominal and real interest rates. The section of the equilibrium interest rate has been substantially reworked.

Part 6 Government Policy in the Market Economy

- In Chapter 18 we now make a very clear distinction between what we call the "formal" and the "informal" defences of free markets. The section on externalities has been completely rewritten and now ends with a new example of the Coase theorem. There is a new box on the Atlantic fishery illustrating the Tragedy of the Commons. The existing box on the "lemons problem" has been moved to this chapter to complement the discussion on information asymmetries.
- Chapter 19 examines environmental and safety regulation. The discussion on pollution regulation is now complemented with a new box on the U.S. experience with tradable emissions permits for sulphur dioxide.
- Chapter 20 examines government taxation and expenditure, and is the merger of Chapters 22 and 23 from the previous edition. It has also been extensively rewritten. The discussion on equity and efficiency of the tax system now leads to a new box on the negative income tax. There are considerable changes in the discussion of fiscal federalism. The final section of the chapter examines what we call the five pillars of Canadian social policy—education, health care, income support, unemployment insurance, and retirement support.

Part 11 International Economics

- Chapter 35 examines the theory of international trade. The section on the sources of comparative advantage now contains a discussion of acquired comparative advantage. The box on the gains from trade has been changed to apply to an economy with a concave production possibilities boundary. In the final section, we have added data on Canada's terms of trade.
- Chapter 36, which discusses trade policy, has been substantially rewritten. In addition to thorough discussions of the theoretical arguments for and against free trade, there is an extensive discussion of the GATT, the formation of the WTO and the creation of NAFTA. There is a new discussion of trade creation and trade diversion. There is also a new box on Canada-U.S. trade disputes which discusses the cases of softwood lumber, supply-managed agricultural products, and cultural industries.

SUPPLEMENTS TO THE TEXTBOOK

There are several products to accompany *Microeconomics,* either for the student or for the instructor.

Study Guide. Our book is accompanied by a Study Guide, written by Kenneth Grant and William Furlong. The Study Guide can be used either in the classroom or by the students on their own. It offers additional study support and essential reinforcement for each text chapter, including chapter overviews, objectives, multiple-choice questions, exercises, short problems, and answers. It is available in one- or two-volume editions.

Instructor's Manual. Prepared by us, the Instructor's Manual includes an explanation of the approach used in each text chapter, along with a chapter overview, answers to all end-of-chapter questions, and additional teaching suggestions.

Test Bank. The Test Bank to accompany *Microeconomics* has been completely overhauled by Ingrid Kristjanson-Ragan and Christopher Ragan. Approximately one-third of the questions in each chapter have been replaced by new questions. Many others have been revised or corrected. The questions are now organized within each chapter according to topic, which should make it easier for the instructor to select questions. We have also added two new levels of difficulty for questions. Each question was previously coded as either Difficulty 1, 2, or 3. These categories still exist (though we have in many cases reclassified the difficulty of the question). Difficulty 4 now pertains *only* to questions that are based on material found in the appendices. Difficulty 5 now pertains *only* to material found in the boxes. This is in keeping with our general approach that boxes and appendices are optional.

The Test Bank is free to adopters; it is also available in a microcomputerized version for IBM PCs or Macintosh computers called *Test Master,* which provides customized testing capabilities.

Transparencies. For this edition, over 100 illustrations from 18 key theory chapters are reproduced as four-color transparency acetates. In addition, the remaining figures in the text are reproduced in the form of transparency masters. All of these are available free to adopters.

Software. Also available with this text is a student software package. It contains an interactive tutorial with multi-coloured graphs and exercises to help your students learn key material from 15 chapters. Interactive learning can make it much easier to absorb graphically presented concepts. The student software also offers a self-test program which asks questions about any text chapter, and scores results.

ACKNOWLEDGMENTS

The starting point for this book was *Economics,* Eleventh Edition, by Richard G. Lipsey and Paul N. Courant. It would be impossible to acknowledge here all the teachers, colleagues, and students who contributed to that book. Hundreds of users have written to us with specific suggested improvements, and much of the credit for the fact that the book does become more and more teachable belongs to them. We can no longer list them individually but we thank them all most sincerely.

Ian Christensen provided research assistance for which we are thankful. A number of individuals provided reviews of the eighth Canadian edition that were most helpful in preparing the present edition. At a later stage, we were also aided by the comments from several reviewers of the revised manuscript. These people are:

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We thank them all for their contribution to improving this textbook.

In addition, the following people reviewed the supplements that accompany this book: Study Guide—Peter Tsigaris (University College of the Cariboo), David Gray (University of Ottawa), Keith MacKinnon (York University), Eva Lau (University of Waterloo), Suki Badh (Doublas University College); Test Bank—Peter Kantrowitz (Douglas University College).

Our special thanks goes to Ingrid Kristjanson-Ragan, who closely read the entire manuscript and provided excellent comments and suggestions for improving some of the most difficult passages. She also helped tremendously with the biographical sketches of the economists for the timeline at the back of the book. For her diligence and hard work we are especially grateful.

Richard G. Lipsey
Christopher T. S. Ragan
Paul N. Courant

TO THE STUDENT

A good course in economics will give you insight into how an economy functions and into some currently debated policy issues. Like all rewarding subjects, economics will not be mastered without effort. A book on economics must be worked at. It cannot be read like a novel.

Each of you must develop an individual technique for studying, but the following suggestions may prove helpful. It is usually a good idea to read a chapter quickly in order to get the general run of the argument. At this first reading, you may want to skip the boxes and any footnotes. Then, after reading the Chapter Summary and the Key Concepts (both at the end of each chapter), reread the chapter more slowly, making sure that you understand each step of the argument.

With respect to the figures and tables, be sure you understand how the conclusions that are stated in the brief tag lines with each table or figure have been reached. You must not skip the captions. They provide the core of economic reasoning. You should be prepared to spend time on difficult sections; occasionally, you may spend an hour on only a few pages. Paper and pencil are indispensable equipment in your reading. It is best to follow a difficult argument by building your own diagram while the argument unfolds rather than by relying on the finished diagram as it appears in the book. It is often helpful to invent numerical examples to illustrate general propositions.

The end-of-chapter questions require you to apply what you have studied. We advise you to outline answers to some of the questions. In short, you should seek to understand economics, not to memorize it.

We call your attention to the glossary at the end of the book, beginning on page G-1. Any time that you encounter a concept that seems vaguely familiar but is not clear to you, check the glossary. Chances are that it will be there and that its definition will remind you of what you once understood. If you are still in doubt, check the index entry to find where the concept is discussed more fully. Incidentally, the glossary, along with the captions that accompany figures and tables and the end-of-chapter summaries, may prove to be very helpful when you are reviewing for examinations.

The bracketed boldface numbers in the text itself refer to a series of mathematical notes that are found starting on page M-1 at the end of the book. For those of you who like mathematics or prefer mathematical argument to verbal or geometric exposition, these may prove useful. Others may ignore them.

There is also a time line of great economists, located at the back of the book, immediately following the Glossary. While reading the textbook, you will encounter the names of many great economists that have shaped the way modern-day economists think. But in the text we usually do not have the space to say more than a few words about these economists. The time line at the back of the book offers a more complete (but still brief) description of the life and works of many of these great economists. They are placed on a time line that begins in the mid 1700s and continues through the middle of this century. On this time line are also placed major world events, so that you will be better able to appreciate the world in which these economists lived when they were developing their thoughts. Our hope is that your sense of history and your sense of the origins of economics will be enhanced by glancing through this time line. Do so at your leisure!

We strongly suggest you make use of the excellent Study Guide written expressly for this text: It will test and reinforce your understanding of the concepts and analytical techniques stressed in each chapter of the text and will help prepare you for your examinations. The ability to solve problems and to communicate and interpret your results are important goals in an introductory course in economics. The Study Guide can play an important role in your acquisition of these skills.

We hope you will find the book rewarding and stimulating. Students who used earlier editions made some of the most helpful suggestions for revision, and we hope that you will carry on the tradition. If you are moved to write to us (and we hope that you will be!), please do. You can send any comments or questions regarding the text (or any of the supplementary material, such as the Study Guide) to:

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BRIEF CONTENTS

PART ONE

THE NATURE OF ECONOMICS

What is economics all about? How will the study of economics help you to understand how modern economies function, and how modern economies differ from the economies of the past? Why does it appear that economists seldom agree on anything among themselves, or is this only an illusion? What makes some economic theories more sensible than others? What is the difference between microeconomics and macroeconomics, and is one more important than the other? These are questions that you will be able to answer after reading the following three chapters.

Chapter 1 introduces you to the concepts of *scarcity, choice, and opportunity cost;* each is central to understanding any economic system. You will then learn about various types of economic systems, ranging from the primarily *command economies* of the former Soviet Union to the primarily *market economies* of Canada, the United States, or Japan. This chapter also discusses the importance of *economic policy,* and emphasizes that *trade offs* between various policy goals are inevitable, and are often the source of disagreements about what constitutes the "best" policy.

Chapter 2 discusses the study of economics itself. You are introduced to the distinction between *positive statements* and *normative statements,* a distinction upon which the progress of economics as a social science is based. We then examine the role of *theory* in economics, and we explain why economists—like physicists or chemists—build *models* to help them think about the complex world they are trying to understand. Finally, you will learn about the way economists *test* their theories by confronting the *predictions* of their theories with the *evidence* drawn from the real world.

Chapter 3 presents a broad outline of the way market economies function. You are first shown how economies developed from ones in which all individuals were largely self sufficient to modern economies in which *specialization* and *trade* play a crucial role. You then meet the economy's main cast of characters—*households, firms, and governments.* Like characters in a play need the props and the lighting, you will see that a modern economy needs *markets* and *institutions* in order to operate smoothly. Finally, we examine the two separate but complementary ways of viewing the economy—*microeconomics* and *macroeconomics.* The questions and the emphasis differ markedly between the two, but we need both to understand the whole economy.

CHAPTER 1

THE ECONOMIC PROBLEM

Turn on the TV news, read your local newspaper or *The Globe and Mail,* glance at *Maclean's* or *The Economist* magazines and you will see for yourself that many of the world's most pressing problems are economic.

Why did communism fail to deliver acceptable living standards to the citizens of the countries of Eastern Europe and the republics of the former USSR? Why is the transition from communism to markets proving so difficult for many of these countries? Are the developed nations right in making the adoption of more market-oriented economic policies a precondition of increased foreign aid to the less-developed countries of the world? What is the impact of the growth of vast transnational corporations that conduct business over much of the world? Will the growth of mouths to feed outrun the growth of food to feed those mouths? Are economists right in arguing that environmental protection is often best accomplished using market incentives rather than direct government intervention?

Your media survey of press, radio, and TV will also show the importance of economic issues in the problems facing Canada today.

How is it that when the average Canadian citizen enjoys one of the highest living standards the world has ever seen, a standard vastly higher than has been achieved by most of the people who have ever lived on the earth, many Canadians are living below the so-called "poverty line" and worrying about how to feed their children? Should Canada feel threatened by Japanese economic power, or by the emerging economic power of the countries known as the "Asian Tigers"? Has the North American Free Trade Agreement (NAFTA) been a good or bad thing for the average Canadian? Why are so many large and established companies engaged in re-engineering (often a euphemism for downsizing, which in turn is a euphemism for laying workers off), and what does this imply for people's job prospects?

Does the size of the Federal government's budget deficit affect the average Canadian's living standards? Is the Bank of Canada right in believing that a low inflation rate is good for the country? Why has labour productivity in Canada and most other developed countries grown more slowly in the past two decades than through most of this century? Does it pay you to go on to higher education? Does it pay the nation to subsidize you to do so?

Of course, not all the world's problems are primarily economic. Political, biological, social, cultural, and philosophical issues often predominate. However, as the following examples suggest, no matter how noneconomic a particular problem may seem, it will almost always have a significant economic dimension.

1. The crises that lead to wars often have economic roots. Nations often fight for oil and rice and land to live on, even when the rhetoric of their leaders evokes God, glory, and nation.
2. It took 100,000 years, from the time *Homo sapiens* first appeared on earth until the year 1800, for the human population to reach 1 billion. In the next 100 years, a second billion was added. Three billion more came in the next 80 years. The world's population is predicted to reach 10 billion by the middle of the twenty-first century. The economic consequences are steady pressures on the environment and the food supply. Unless the human race can find ways to deal with these pressures, increasing millions of people face starvation, and increasing billions face rising levels of environmental degradation.
3. *Global warming* describes the possibility of a gradual warming of the earth's climate due to a cumulative buildup of carbon dioxide (CO_2) in the atmosphere. If the possibility proves a reality, the warming will have significant economic consequences, changing both production possibilities and consumption patterns.

WHAT IS ECONOMICS?

We have mentioned a handful of important current issues on which economics can shed some light. One way to define *economics* is to say that it is the social science that deals with such problems. A better known definition comes from the great economist Alfred Marshall (1842–1924), whom we will encounter at several points in this book: "Economics is a study of mankind in the ordinary business of life." A more penetrating definition is the following:

Economics is the study of the use of scarce resources to satisfy unlimited human wants.

Scarcity is inevitable and is central to economic problems. What are society's resources? Why is scarcity inevitable? What are the consequences of scarcity?

RESOURCES AND PRODUCTS

A society's resources consist of natural endowments such as land, forests, and minerals; human resources, both mental and physical; and manufactured aids to production such as tools, machinery, and buildings. Economists call such resources **factors of production**[1] because they are used to produce the outputs that people desire. We divide these outputs into goods and services. **Goods** are tangible (e.g., cars and shoes), and **services** are intangible (e.g., haircuts and education). Notice the implication of positive value contained in the terms *goods* and *services.* (Compare the terms *bads* and *disservices.*)

People use goods and services to satisfy many of their wants. The act of making them is called **production,** and the act of using them to satisfy wants is called **consumption.** Goods are valued for the services they provide. An automobile, for example, helps to satisfy its owner's desires for transportation, mobility, and possibly status.

SCARCITY

For most of the world's 6 billion people, scarcity is real and ever present. In relation to desires (for more and better food, clothing, housing, schooling, entertainment, and so forth), existing resources are woefully inadequate; there are enough to produce only a small fraction of the goods and services that are wanted.

But are not the advanced industrialized nations rich enough that scarcity is nearly banished? After all, they have been characterized as affluent societies. Whatever affluence may mean, it does not mean the end of the problem of scarcity. Most households that earn $80,000 per year (a princely amount by world standards) have no trouble spending it on things that seem useful to them. Yet it would take nearly twice the present output of the Canadian economy to produce enough to allow all Canadian households to earn that amount.

CHOICE

Because resources are scarce, all societies face the problem of deciding what to produce and how much each person will consume. Societies differ in who makes the choices and how they are made, but the need to choose is common to all. Just as scarcity implies the need for choice, so choice implies the existence of cost. A decision to have more of something requires a decision to have less of something else. The less of "something else" can be thought of as the cost of having the more of "something."

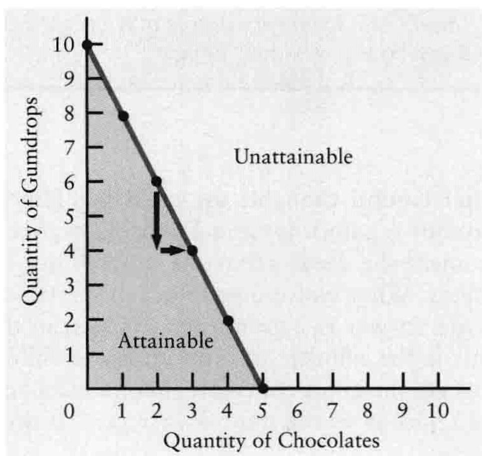
Scarcity implies that choices must be made, and making choices implies the existence of costs.

Opportunity Cost

To see how choice implies cost, we look first at a trivial example and then at one that vitally affects all of us; both examples involve precisely the same fundamental principles.

Consider the choice that must be made by a young girl who has 50 cents to spend and who is determined to spend it all on candy. For the child, there are only two kinds of candy in the world: gumdrops, which sell for 5 cents each, and chocolates, which sell for 10 cents each. The child would like to buy 10 gumdrops and 10 chocolates but soon discovers that this is not possible: It is not an *attainable combination* given the scarce resources available. However, several combinations are attainable: 8 gumdrops and 1 chocolate, 4 gumdrops and 3 chocolates, 2 gumdrops and 4 chocolates, and so on. Some of these combinations leave money unspent, and the child is not interested in them. Only six combinations, as shown in Figure 1-1, are both attainable and use the entire 50 cents.

FIGURE 1-1
A Choice Between Gumdrops and Chocolates



A limited amount of money forces a choice among alternatives. Six combinations of gumdrops and chocolates are attainable and use all of the child's money. The negatively sloped line provides a boundary between attainable and unattainable combinations. The arrows show that the opportunity cost of 1 more chocolate is 2 gumdrops.

[1]Definitions of the terms in boldface can be found in the glossary at the back of the book.