

NELSON

Fifth Canadian Edition

Principles of MACROECONOMICS



Mankiw
Kneebone
McKenzie

PRINCIPLES OF MACROECONOMICS

FIFTH CANADIAN EDITION

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EDUCATION

Principles of Macroeconomics, Fifth Canadian Edition

by N. Gregory Mankiw, Ronald D. Kneebone, and Kenneth J. McKenzie

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*To Catherine, Nicholas, and Peter,
my other contributions to the next generation*

*To our parents
and
Cindy,
Kathleen, and Janetta
Thanks for your support and patience*

PREFACE

As soon as we got our hands on the first U.S. edition of *Principles of Macroeconomics*, it was clear to us that “this one is different.” If other first-year economics textbooks are encyclopedias, Gregory Mankiw’s was, and still is, a handbook.

Between us, we have many years of experience teaching first-year economics. Like many instructors, we found it harder and harder to teach with each new edition of the thick, standard texts. It was simply impossible to cover all of the material. Of course, we could have skipped sections, features, or whole chapters, but then, apart from the sheer hassle of telling students which bits to read and not to read, and worries about the consistencies and completeness of the remaining material, we ran the risk of leaving students with the philosophy that what matters is only what’s on the exam.

We do not believe that the writers of these other books set out with the intention of cramming so much material into them. It is a difficult task to put together the perfect textbook—one that all instructors would approve of and that all students would enjoy using. Therefore, to please all potential users, most of the books end up covering a wide range of topics. And so the books grow and grow.

Professor Mankiw made a fresh start in the first U.S. edition. He included all the important topics and presented them in order of importance. And in the fifth U.S. edition, he has resisted the temptation to add more and more material. We have, in adapting the text for Canadian students, taken a minimalist approach: “If it isn’t broken, don’t fix it!” While the book is easily recognizable as Mankiw’s, we have made changes that increase its relevance to Canadian students. Some of these changes reflect important differences between the Canadian and U.S. economies. For example, the Canadian economy is much smaller and more open than the U.S. economy, and this fact is explicitly recognized in this edition. Other changes reflect important institutional differences between the two countries, including the structure of the tax system and the nature of competition policy. Finally, the Canadian edition focuses on issues and includes examples that are more familiar and relevant to a Canadian audience.

We would not have agreed to participate in the Canadian edition if we were not extremely impressed with the U.S. edition. Professor Mankiw has done an outstanding job of identifying the key concepts and principles that every first-year student should learn.

It was truly a pleasure to work with such a well-thought-out and well-written book. We have enjoyed teaching from the earlier Canadian editions and we look forward to using the fifth Canadian edition. We hope you do, too.

Finally, we want to acknowledge the contributions of our friend and colleague Nick Rowe of Carleton University. We began our work adapting Professor Mankiw’s book with Nick, and while he decided to leave the project with this edition, his contributions to the book remain and we acknowledge his help and advice.

HOW THE BOOK IS ORGANIZED

To write a brief and student-friendly book, Mankiw considered new ways to organize familiar material. What follows is a whirlwind tour of this text. This tour, we hope, will give you a sense of how the pieces fit together.

Introductory Material

Chapter 1, “Ten Principles of Economics,” introduces students to the economist’s view of the world. It previews some of the big ideas that recur throughout economics, such as opportunity costs, marginal decision making, the role of incentives, the gain from trade, and the efficiency of market allocations. Throughout the text an effort is made to relate the discussion back to the ten principles of economics introduced in Chapter 1. The interconnections of the material with the ten principles are clearly identified throughout the text.

Chapter 2, “Thinking Like an Economist,” examines how economists approach their field of study, discussing the role of assumptions in developing a theory and introducing the concepts of an economic model. It also discusses the role of economists in making policy. The appendix to this chapter offers a brief refresher course on how graphs are used and how they can be abused.

Chapter 3, “Interdependence and the Gains from Trade,” presents the theory of comparative advantage. This theory explains why individuals trade with their neighbours, as well as why nations trade with other nations. Much of economics is about how market forces coordinate many individual production and consumption decisions. As a starting point for this analysis, students see in this chapter why specialization, interdependence, and trade can benefit everyone.

The Fundamental Tools of Supply and Demand

The next chapter introduces the basic tools of supply and demand. Chapter 4, “The Market Forces of Supply and Demand,” develops the supply curve, the demand curve, and the notion of market equilibrium.

More Macroeconomics

Our overall approach to teaching macroeconomics is to examine the economy in the long run (when prices are flexible) before examining the economy in the short run (when prices are sticky). We believe that this organization simplifies learning macroeconomics for several reasons. First, the classical assumption of price flexibility is more closely linked to the basic lessons of supply and demand, which students have already mastered. Second, the classical dichotomy allows the study of the long run to be broken up into several, more easily digested pieces. Third, because the business cycle represents a transitory deviation from the economy’s long-run growth path, studying the transitory deviations is more natural after the long-run equilibrium is understood. Fourth, the macroeconomic theory of the short run is more controversial among economists than the macroeconomic theory of the long run. For these reasons, most upper-level courses in macroeconomics now follow this long-run-before-short-run approach; our goal is to offer introductory students the same advantage.

Returning to the detailed organization, we start the coverage of macroeconomics with issues of measurement. Chapter 5, “Measuring a Nation’s Income,” discusses the meaning of gross domestic product and related statistics from the national income accounts. Chapter 6, “Measuring the Cost of Living,” discusses the measurement and use of the consumer price index.

The next three chapters describe the behaviour of the real economy in the long run. Chapter 7, "Production and Growth," examines the determinants of the large variation in living standards over time and across countries. Chapter 8, "Saving, Investment, and the Financial System," discusses the types of financial institutions in our economy and examines their role in allocating resources. Chapter 9, "Unemployment and Its Natural Rate," considers the long-run determinants of the unemployment rate, including job search, minimum-wage laws, the market power of unions, and efficiency wages.

Having described the long-run behaviour of the real economy, the book then turns to the long-run behaviour of money and prices. Chapter 10, "The Monetary System," introduces the economist's concept of money and the role of the central bank in controlling the quantity of money. Chapter 11, "Money Growth and Inflation," develops the classical theory of inflation and discusses the costs that inflation imposes on a society.

The next two chapters present the macroeconomics of open economies, maintaining the long-run assumptions of price flexibility and full employment. Chapter 12, "Open-Economy Macroeconomics: Basic Concepts," explains the relationship among saving, investment, and the trade balance; the distinction between the nominal and real exchange rate; and the theory of purchasing-power parity. Chapter 13, "A Macroeconomic Theory of the Open Economy," presents a classical model of the international flow of goods and capital. The model sheds light on various issues, including the link between budget deficits and trade deficits and the macroeconomic effects of trade policies. Because instructors differ their emphasis on this material, these chapters are written so that they can be used in different ways. Some may choose to cover Chapter 12 but not Chapter 13, others may skip both chapters, and still others may choose to defer the analysis of open-economy macroeconomics until the end of their courses.

After fully developing the long-run theory of the economy in Chapters 5 through 13, the book turns to explaining short-run fluctuations around the long-run trend. This organization simplifies teaching the theory of short-run fluctuations because, at this point in the course, students have a good grounding in many basic macroeconomic concepts. Chapter 14, "Aggregate Demand and Aggregate Supply," begins with some facts about the business cycle and then introduces the model of aggregate demand and aggregate supply. Chapter 15, "The Influence of Monetary and Fiscal Policy on Aggregate Demand," explains how policymakers can use the tools at their disposal to shift the aggregate-demand curve. Chapter 16, "The Short-Run Tradeoff between Inflation and Unemployment," explains why policymakers who control aggregate demand face a tradeoff between inflation and unemployment. It examines why this tradeoff exists in the short run, why it shifts over time, and why it does not exist in the long run.

The book concludes with Chapter 17, "Five Debates over Macroeconomic Policy." This capstone chapter considers controversial issues facing policymakers: the proper degree of policy activism in response to the business cycle, the choice between rules and discretion in the conduct of monetary policy, the desirability of reaching zero inflation, the importance of reducing the government's debt, and the need for tax reform to encourage saving. For each issue, the chapter presents both sides of the debate and encourages students to make their own judgments.


WALK-THROUGH

The purpose of this text is to help students learn the fundamental lessons of economics and to show how such lessons can be applied to the world in which they live. Toward that end, various learning tools recur throughout the book.

Chapter Openers Well-designed chapter openers act as previews that summarize the major concepts to be learned in each chapter.

Case Studies Economic theory is useful and interesting only if it can be applied to understanding actual events and policies. Updated or replaced with more current Canadian examples, this book therefore contains numerous case studies that apply the theory that has just been developed.

MEASURING THE COST OF LIVING



In 1957 the price of gasoline was 43 cents per gallon, or 9.5 cents per litre. In 2009 the average price was around 95 cents per litre. Why did the price of gas increase so many times the price it was 50 years previously? Do we blame the Organization of the Petroleum Exporting Countries (OPEC) for using its monopoly power to force up the price of crude oil? Did the big oil companies that buy the crude oil and sell gas at the pumps increase their markup? Or was this rise in the price of gas the inevitable result of rising demand from more people driving more cars, facing a diminishing supply of a nonrenewable natural resource?

At first sight, the increase in the price of gas might make you think that gas was a more scarce and valuable commodity in 2009 than it was in 1957. But, as everyone knows, the prices of nearly all goods and services have increased over time, and so have people's incomes. So it is not clear whether gas was more or less affordable in 2009 than it was in 1957. Did the value of gas increase or did the value of money decrease?

In the preceding chapter we looked at how economists use gross domestic product (GDP) to measure the quantity of goods and services that the economy is producing. This chapter examines how economists measure the overall cost of living. To compare 1957 prices and incomes with 2009 prices and incomes, we need to find some way of turning dollar figures into meaningful measures of purchasing power. That is exactly the job of a statistic called the *consumer price index*. After seeing how the consumer price index is constructed, we discuss how we can use such a price index to compare dollar figures from different points in time.

6


Learning Objectives

In this chapter, you will:

- Learn how the consumer price index (CPI) is constructed
- Consider why the CPI is an imperfect measure of the cost of living
- Compare the CPI and the GDP deflator as measures of the overall price level
- See how to use a price index to compare dollar figures from different times
- Learn the distinction between the *core* and *trimmed* national-average rates

Figures and Tables Colourful and eye-catching visuals are used to make important economic points and to clarify Canadian and other key economic concepts. These have also proved to be valuable and memorable teaching aids.

MEASURING THE COST OF LIVING



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CHAPTER 11 MONEY GROWTH AND INFLATION

Bigbank because it diminishes the real value of the debt; Sam can repay the loan in less valuable dollars than he anticipated. Deflation enriches Bigbank at Sam's expense because it increases the real value of the debt; in this case, Sam has to repay the loan in more valuable dollars than he anticipated. If inflation were predictable, then Bigbank and Sam could take inflation into account when setting the nominal interest rate. (Recall the Fisher effect.) But if inflation is hard to predict, it imposes risk on Sam and Bigbank that both would prefer to avoid.

This cost of unexpected inflation is important to consider together with another fact: Inflation is especially volatile and uncertain when the average rate of inflation is high. This is seen most simply by examining the experience of different countries. Countries with low average inflation, such as Germany in the late twentieth century, tend to have stable inflation. Countries with high average inflation, such as many countries in Latin America, tend also to have unstable inflation. There are no known examples of economies with high, stable inflation. This relationship between the level and volatility of inflation points to another cost of inflation: If a country pursues a high-inflation monetary policy, it will have to bear not only the costs of high expected inflation but also the arbitrary redistributions of wealth associated with unexpected inflation.

Case Study

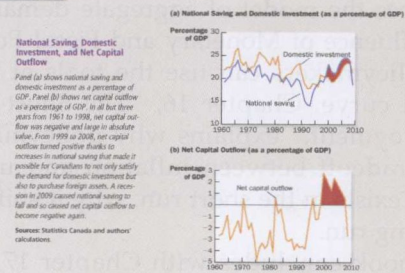
MONEY GROWTH, INFLATION, AND THE BANK OF CANADA

In the early 1970s, Canada had a quickly growing money supply, and the inflation rate rose to over 10 percent. At the same time, an economic viewpoint known as "monetarism" was becoming increasingly influential. One of the main recommendations of monetarists was that central banks should keep the supply of money growing at a slow, constant rate.

In response to the problem of inflation and influenced by the monetarist perspective, the Bank of Canada adopted a policy of "monetary gradualism." The central bank announced a target path for the future supply of money, along which the growth rate of the money supply would gradually be reduced, so that the inflation

280 PART 6 THE MACROECONOMICS OF OPEN ECONOMIES

FIGURE 12.2



Updated Canadian “In the News” Features

One benefit that students gain from studying economics is a new perspective and greater understanding about news from Canada and around the world. To highlight this benefit, there are excerpts from many Canadian news articles, some of which are opinion columns written by prominent economists. These articles show how basic economic theory can be applied.

152 PART 4 THE REAL ECONOMY IN THE LONG RUN



IN THE NEWS

PROMOTING HUMAN CAPITAL

Human capital is a key to economic growth. With this in mind, some developing countries now give parents an immediate financial incentive to keep their children in school.

Brazil Pays Parents to Help Poor Be Pupils, Not Wage Earners
By Celia W. Dugger

ORTALEZA, Brazil—Vandelson Andrade, 13, often used to skip school to work 12-hour days on the small, graceful fishing boats that sail from the picturesque harbor here. His meager earnings helped pay for rice and beans for his desperately poor family.

But this year he qualified for a small monthly cash payment from the government that his mother receives on the condition that he shows up in the classroom.

“I can’t skip school anymore,” said Vandelson, whose hand-me-down pants were so big that the crotch ended at his knees and the legs bunched up around his ankles. “If I miss one more day, my father won’t get the money.”

program that is spreading swiftly across Latin America. It is a developing-country version of American welfare reform: to break the cycle of poverty, the government gives the poor small cash payments in exchange for keeping their children in school and taking them for regular medical checkups.

“I think these programs are as close as you can come to a magic bullet in development,” said Nancy Birdsall, president of the Center for Global Development, a nonprofit research group in Washington. “They’re creating an incentive for families to invest in their own children’s futures. Every decade or so, we see something that can really make a difference, and this is one of those things.”

Antonio Souza, 48, and Maria Torres, 37, are raising seven children in a mud hut, a couple of miles away from the city. Souza is a farmer who grows meat or vegetables. But their grant of \$27 a month makes it possible to buy rice, sugar, pasta and oil.

Mr. Souza and Mr. Torres, illiterate believers in the power of education, have always sent their children to school. “If they don’t study, they’ll turn into dummies like me,” said their father, whose weathered, deeply creased face broke into a wide smile as he surveyed his bright-eyed daughters, Ana Paula, 11, and Danielle, 8, among them. “All I can do is work in the fields.”

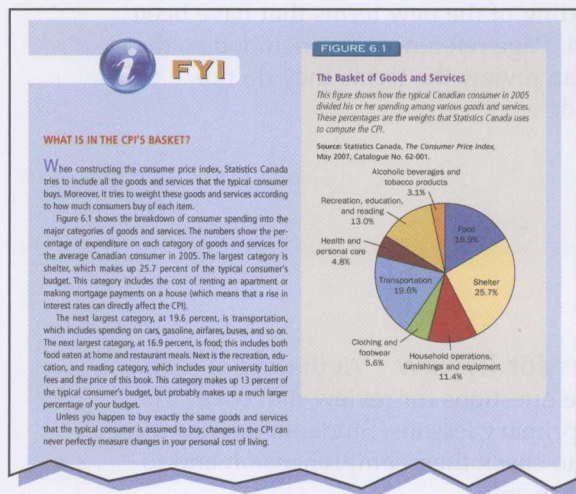
His wife said proudly: “There are fathers who don’t want their children to go to school. But this man here has done everything he could to send his children to school.”

Source: Celia Dugger, “To Help Poor Be Pupils, Not Wage Earners, Brazil Pays Parents,” *New York Times*, May 1, 2007.

Key Concept Definitions When key concepts are introduced in the chapter, they are presented in bold typeface. In addition, their definitions are placed in the margin and in the “Glossary” at the back of the book. This treatment should aid students in learning and reviewing the material.

QuickQuizzes After each major section, students are offered a quick quiz to check their comprehension of what they have just learned. If students cannot readily answer these quizzes, they should stop and reread the material before continuing.

“FYI” Features These features provide additional material “for your information.” Some of them offer a glimpse into the history of economic thought. Others clarify technical issues. Still others discuss supplementary topics that instructors might choose either to discuss or skip in their lectures.



THE MEASUREMENT OF GROSS DOMESTIC PRODUCT

Now that we have discussed the meaning of gross domestic product in general terms, let’s be more precise about how this statistic is measured. Here is a definition of GDP:

- Gross domestic product (GDP) is the market value of all final goods and services produced within a country in a given period of time.

This definition might seem simple enough. But, in fact, many subtle issues arise when computing an economy’s GDP. Let’s therefore consider each phrase in this definition with some care.

“GDP Is the Market Value . . .”

“You probably heard that the market value of a good is the price you pay for it. You can think of the market value of a good as the price you pay for it.”

QuickQuiz List and describe four determinants of a country’s productivity.

ECONOMIC GROWTH AND PUBLIC POLICY

So far, we have determined that a society’s standard of living depends on its ability to produce goods and services and that its productivity depends on physical capital, human capital, natural resources, and technological knowledge. Let’s now turn to the question of how the government can promote economic growth.

NEW IN THIS FIFTH CANADIAN EDITION

Chapter 6 A new “FYI” feature on the Bank of Canada’s Inflation Calculator has been added. The feature shows how students can calculate the rate of inflation over any time period and determine the level of prices in any year since 1914, using the Inflation Calculator provided on the Bank of Canada’s website.

Chapter 8 A new “FYI” feature, “Financial Institutions in Crisis,” has been added that explains the source of the financial crisis that struck the world’s economies in 2007–09 and discusses the importance of financial market regulations. Our existing “Case Study” on the debate over government budgets has been modified to reflect the return to deficits following the 2007–09 financial crisis.

Chapter 9 A new “FYI” feature has been added comparing the labour market effects of the latest recession to that in 1990–91. It shows that not all recessions affect all parts of Canada the same. Another new “FYI” feature has been added, examining who earns the minimum wage.

Chapter 10 A new “FYI” feature has been added explaining how the Bank of Canada responded to the world financial crisis of 2007–09.

Chapter 14 A new “Case Study” on housing wealth presents and discusses data on the boom and bust in house prices over the period 1993–2009 and what role that may have played in the financial crisis of 2007–09. Another new “Case Study” studies the recession Canada suffered in 2008–09 and makes comparisons to the Great Depression of the 1930s.

Chapter 15 A new “Case Study” on the recession of 2008–09 evaluates the response of Canadian policymakers.

Clear Explanations In Chapter 3, we have expanded our discussion of comparative advantage to better enable students to understand and appreciate this key concept. In Chapter 5, we expand our discussion of how inflation is measured. Chapter 7 extends our discussion of the source of productivity speedups and slowdowns. In Chapter 9, we have further developed our discussion of the concept of efficiency wages. In Chapter 12, we discuss the terms “strong” and “weak” as applied to the value of a currency and emphasize the importance of interpreting these terms appropriately. In Chapter 14, we have significantly updated our discussion of how changes in oil prices impact the economy. Finally, in Chapter 16, we have modified our discussion of the future of the inflation–unemployment tradeoff to reflect what occurred during the world financial crisis of 2007–09.



SUPPLEMENTS

For the Instructor

The Nelson Education Teaching Advantage (NETA) program delivers research-based resources that promote student engagement and higher-order thinking and enable the success of Canadian students and educators.

The primary NETA components are **NETA Engagement** and **NETA Assessment**.

NETA Engagement The foundational principles underlying NETA Engagement are student-centred learning, deep learning, active learning, and creating positive classroom environments. The *NETA Instructor's Guide to Classroom Engagement (NETA IGCE)* provides an overview of the research underlying these principles. The structure of the Classroom Engagement Activities was created by Dr. Roger Fisher and validated by an interdisciplinary editorial advisory board of scholars of teaching and learning.

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The Classroom Engagement Activities for *Principles of Macroeconomics*, Fifth Canadian Edition, were written by Professor Oliver Franke at Concordia University College of Alberta.

NETA Assessment Recognizing the importance of multiple-choice testing in today's classroom and in response to instructors' concerns, Nelson Education has created the NETA Assessment program. NETA Assessment is a research-based program that improves the quality of our test banks by ensuring our test banks measure not just recall (as is typical with test banks) but *higher-level thinking* skills as well.

The NETA Assessment program was created in partnership with David DiBattista, a 3M National Teaching Fellow, professor of psychology at Brock University, and researcher in the area of multiple-choice testing.

All NETA test banks include Professor DiBattista's guide for instructors, *Multiple Choice Tests: Getting Beyond Remembering*. This guide has been designed to assist you in using Nelson test banks to achieve the desired outcomes in your course.

Instructor's Resource CD Managing classroom resources is now easier for instructors. The new Instructor's Resource CD contains all key supplements: Instructor's Manual, NETA Classroom Engagement Activities, NETA Test Bank, ExamView Computerized Test Bank, Microsoft® PowerPoint® slides, and Image Library. ISBN 978-0-17-644179-1.

Computerized Test Bank The ExamView Computerized Testing Software contains all the questions in the NETA test bank. Technically checked and copyedited for this new edition, the program is an easy-to-use test-creation software application that is compatible with Microsoft Windows. Instructors can add or edit questions, instructions, and answers, and can select questions by previewing them on the screen, selecting them randomly, or selecting them by number. Instructors can also create and administer quizzes online, whether over the Internet, a local area network (LAN), or a wide area network (WAN). The *Principles of Macroeconomics* Fifth Canadian Edition Test Bank was updated and revised by Professor Constantin Colonescu at Grant MacEwan University. The *Principles of Microeconomics* Fifth Canadian Edition Test Bank was updated and revised by Professor Hannah Holmes at McMaster University. The Test Banks reside on the Instructor's Resource CD and as a downloadable from the instructor's area of the text's website (www.mankiw5e.nelson.com).

Microsoft® PowerPoint® Lecture and Exhibit Slides Available on the Instructor's Resource CD and downloadable from the text's website (<http://www.mankiw5e.nelson.com>) are two versions of the PowerPoint presentation. Revised by Professor Marc Prud'Homme at the University of Ottawa, to save instructors valuable time as they prepare for class using this comprehensive lecture presentation, this supplement covers all the essential topics presented in each chapter of the book. Graphs, tables, lists, and concepts are developed sequentially, much as one might develop them on a chalkboard. Additional examples and applications are used to reinforce major lessons. A separate exhibit presentation provides instructors with all of the tables and graphs from the main text.

Aplia For instructors, Aplia offers high-quality, auto-graded assignments, which ensure that students put forth effort on a regular basis throughout the term. Contact your Nelson sales representative for more information.

Ten Principles Video Set Ken Witty, a talented documentary filmmaker, has produced a video series to illustrate the ten principles of economics introduced in Chapter 1 of both the fifth Canadian edition and the fifth U.S. edition texts. Instructors can show these videos as an interesting and visually appealing introduction to topics discussed throughout the textbook. ISBN 978-0-324-17395-6.

For the Student

Study Guide Written by Professors Peter Fortura at Algonquin College and Shahram Manouchehri at Grant MacEwan University, this study guide was prepared to enhance student success. Each chapter of the study guide includes learning objectives, a description of the chapter's context and purpose, a chapter review, key terms and definitions, advanced critical thinking questions, and helpful hints for understanding difficult concepts. Students can develop their understanding by doing the practice problems and short-answer questions, and then assess theory mastery of the key concepts with the self-test, which includes true/false and multiple-choice questions. Solutions to all problems are included in the study guide.

Principles of Macroeconomics Study Guide:

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Principles of Microeconomics Study Guide:

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Aplia For students, Aplia offers a way to stay on top of course work with regularly scheduled homework assignments. Interactive tools and content further increase engagement and understanding. Students, ask your instructor about Aplia.

Principles of Macroeconomics Website Valuable resources for students can be found on the Internet at the *Principles of Macroeconomics* textbook support site: <http://www.mankiw5e.nelson.com>. Students will find more true/false, multiple-choice, and short-answer questions (updated and revised by Eric Moon at the University of Toronto); links to economics-related Internet sites; PowerPoint slides for their review; a graphics workshop for appropriate chapters; and much more.

ABOUT THE AUTHORS



Jordi Cabré

N. Gregory Mankiw is Professor of Economics at Harvard University. As a student, he studied economics at Princeton University and MIT. As a teacher, he has taught macroeconomics, microeconomics, statistics, and principles of economics. He even spent one summer long ago as a sailing instructor on Long Beach Island.

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