

# KRUGMAN'S MACROECONOMICS for AP\*

Margaret Ray and David Anderson



Adapted from *Macroeconomics*, Second Edition  
by Paul Krugman and Robin Wells

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Margaret Ray and David Anderson

University of Mary Washington

Centre College



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**Production Manager:** Barbara Seixas  
**Composition:** TSI Graphics  
**Printing and Binding:** RR Donnelley

Library of Congress Control Number: 2010906980

ISBN-13: 978-1-4292-5730-5

ISBN-10: 1-4292-5730-X

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Printed in the United States of America

Fifth printing

Worth Publishers  
41 Madison Avenue  
New York, NY 10010  
www.bfwpub.com/highschool

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### I. Basic Economic Concepts (8–12%)

- A. Scarcity, choice, and opportunity costs
- B. Production possibilities curve
- C. Comparative advantage, absolute advantage, specialization, and exchange
- E. Macroeconomic issues: business cycle, unemployment, inflation, growth
- D. Demand, supply, and market equilibrium

### II. Measurement of Economic Performance (12–16%)

- A. National income accounts
- C. Unemployment
- B. Inflation measurement and adjustment

### III. National Income and Price Determination (10–15%)

- A. Aggregate demand
- B. Aggregate supply
- C. Macroeconomic equilibrium

### IV. Financial Sector (15–20%)

- A. Money, banking, and financial markets

### Section 1: Basic Economic Concepts

- Module 1 The Study of Economics
- Module 3 The Production Possibilities Curve Model
- Module 4 Comparative Advantage and Trade
- Module 2 Introduction to Macroeconomics

### Section 2: Supply and Demand

- Module 5 Supply and Demand: Introduction and Demand
- Module 6 Supply and Demand: Supply and Equilibrium
- Module 7 Supply and Demand: Changes in Equilibrium

### Section 3: Measurement of Economic Performance

- Module 10 The Circular Flow and Gross Domestic Product
- Module 11 Interpreting Real Gross Domestic Product
- Module 12 The Meaning and Calculation of Unemployment
- Module 13 The Causes and Categories of Unemployment
- Module 14 Inflation: An Overview
- Module 15 The Measurement and Calculation of Inflation

### Section 4: National Income and Price Determination

- Module 16 Income and Expenditure
- Module 17 Aggregate Demand: Introduction and Determinants
- Module 18 Aggregate Supply: Introduction and Determinants
- Module 19 Equilibrium in the Aggregate Demand–Aggregate Supply Model
- Module 20 Economic Policy and the Aggregate Demand–Aggregate Supply Model
- Module 21 Fiscal Policy and the Multiplier

### Section 5: The Financial Sector

- Module 22 Saving, Investment, and the Financial System
- Module 23 The Definition and Measurement of Money
- Module 24 The Time Value of Money



- B. The central bank and control of the money supply

### V. Inflation, Unemployment, and Stabilization Policies (20–30%)

- A. Fiscal and monetary policies

- B. Inflation and unemployment

### VI. Economic Growth and Productivity (5–10%)

### VII. Open Economy: International Trade and Finance (10–15%)

- A. Balance of payments accounts, and C. Net exports and capital flows
- B. The foreign exchange market
- D. Links to financial and goods markets

Module 25 Banking and Money Creation

Module 28 The Money Market

Module 29 The Market for Loanable Funds

Module 26 The Federal Reserve System: History and Structure

Module 27 The Federal Reserve: Monetary Policy

### Section 6: Inflation, Unemployment, and Stabilization Policies

Module 30 Long-run Implications of Fiscal Policy: Deficits and the Public Debt

Module 31 Monetary Policy and the Interest Rate

Module 32 Money, Output, and Prices in the Long Run

Module 33 Types of Inflation, Disinflation, and Deflation

Module 34 Inflation and Unemployment: The Phillips Curve

Module 35 History and Alternative Views of Macroeconomics

Module 36 The Modern Macroeconomic Consensus

### Section 7: Economic Growth and Productivity

Module 37 Long-run Economic Growth

Module 38 Productivity and Growth

Module 39 Growth Policy: Why Economic Growth Rates Differ

Module 40 Economic Growth in Macroeconomic Models

### Section 8: Open Economy: International Trade and Finance

Module 41 Capital Flows and the Balance of Payments

Module 42 The Foreign Exchange Market

Module 43 Exchange Rate Policy

Module 44 Exchange Rates and Macroeconomic Policy

Module 45 Putting It All Together

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To beginning students everywhere,  
which we all were at one time.

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# About the Authors



**Margaret Ray** is Professor of Economics at the University of Mary Washington, where she specializes in teaching introductory economics. She received her BS in Economics from Oklahoma State University and her PhD in Economics from the University of Tennessee. Her research is primarily in the areas of economic education and equine industry economics. In 2003 she taught AP Economics at Collegiate School in Virginia. Ray received the National Council on Economic Education's Excellence in Teaching Economics award in 1991. She has been involved in the AP Economics program since 1992, serving as a reader and question leader, writing test items, overseeing the AP course audit, writing College Board "Special Focus" articles, and contributing activities to the National Council on Economic Education's *AP Economics* resource. She has been a College Board Endorsed Consultant for economics since 2001 and she conducts several professional development workshops and institutes each year. She currently serves on the Steering Committee for the College Board's AP National Conference.



**David Anderson** is the Paul G. Blazer Professor of Economics at Centre College. He received his BA in Economics from the University of Michigan and his MA and PhD in Economics from Duke University. Anderson is a leading authority on AP Economics and speaks regularly at the National AP Economics Teacher Conference, the National AP Conference, and regional AP Economics workshops. He has authored dozens of scholarly articles and ten books, including *Cracking the AP Economics Exam*, *Favorite Ways to Learn Economics*, *Environmental Economics and Natural Resource Management*, *Contemporary Economics for Managers*, *Treading Lightly*, and *Economics by Example*. His research is primarily on economic education, environmental economics, law and economics, and labor economics. Anderson teaches courses in each of these fields and loves teaching introductory economics. He lives in Danville, Kentucky with his wife and two children.

## Supplements Team

### **Eric Dodge**

#### **Teachers Resource Binder, Test Bank**

Eric is Professor of Economics and Business Administration at Hanover College in Indiana. He received his BA from the University of Puget Sound and his MA and PhD from the University of Oregon. Eric has been involved with AP Economics for more than ten years and has served as reader, table leader, and question leader.





**Paul Krugman**, recipient of the 2008 Nobel Memorial Prize in Economics, is Professor of Economics at Princeton University, where he regularly teaches the principles course. He received his BA from Yale and his PhD from MIT. Prior to his current position, he taught at Yale, Stanford, and MIT. He also spent a year on the staff of the Council of Economic Advisers in 1982–1983. His research is mainly in the area of international trade, where he is one of the founders of the “new trade theory,” which focuses on increasing returns and imperfect competition. He also works in international finance, with a concentration in currency crises. In 1991, Krugman received the American Economic Association’s John Bates Clark medal. In addition to his teaching and academic research, Krugman writes extensively for nontechnical audiences. Krugman is a regular op-ed columnist for the *New York Times*. His latest trade book, *The Conscience of a Liberal*, is a best-selling study of the political economy of economic inequality and its relationship with political polarization from the Gilded Age to the present. His earlier books, *Peddling Prosperity* and *The Age of Diminished Expectations*, have become modern classics.



**Robin Wells** was a Lecturer and Researcher in Economics at Princeton University. She received her BA from the University of Chicago and her PhD from the University of California at Berkeley; she then did postdoctoral work at MIT. She has taught at the University of Michigan, the University of Southampton (United Kingdom), Stanford, and MIT. The subject of her teaching and research is the theory of organizations and incentives.

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## **David Mayer**

### ***Strive for a 5, Lecture PowerPoint Presentations***

Dave teaches at Churchill High School in San Antonio, Texas. He received a BA in Economics from Texas A&M University and earned his MA at University of Texas, San Antonio. He has been teaching the AP Economics course since 2004, and began working as an AP Economics reader and then table leader in 2006. Dave is a College Board Endorsed Consultant for economics and he conducts several professional development workshops and institutes each year. He is the author of *The Everything Economics Book* published by Adams Media in 2010. David lives in San Antonio with his wife Courtney and children Caty and Colin.

## Section 4: National Income and Price Determination

Section 4 introduces national income and price determination and presents the aggregate supply and demand model, which is the foundation for the material presented in later sections. Modules 16, 17, 18, and 19 introduce individual parts for the model; income and expenditures, aggregate demand, aggregate supply, and equilibrium in the model. Macroeconomics equilibrium and economics fluctuations (including fiscal policy and the multiplier) are presented in Modules 20 and 21.

## Section 5: Financial Sector

In Section 5, money, banks, and the Federal Reserve are added to our model of the macroeconomy. Modules 22, 23, and 24 present basic concepts and their definitions; saving, investment, financial assets, money, the money supply, and the time value of money. Module 25 introduces banking and the creation of money in the economy. Central banks and the Federal Reserve System are included in Modules 26 and 27. Finally, the money market and monetary policy, including the loanable funds market, are presented in Modules 28 and 29.

## Section 6: Inflation, Unemployment and Stabilization Policies

Section 6 continues with coverage of monetary and fiscal policies. Module 30 focuses on fiscal policy and the implications of government deficits and debt. Module 31 focuses on monetary policy and its effect on the interest rate. Modules 32 and 33 look in detail at the types of inflation, disinflation, and deflation, while Module 34 introduces both the short-run and long-run Phillips curve. Finally, Modules 35 and 36 present some history of macroeconomic thought as it leads to the modern macroeconomic consensus, emphasizing the role of expectations in macroeconomic policy.

## Section 7: Economic Growth and Productivity

Economic growth and the role of productivity are the focus in Section 7. Module 37 defines and discusses long-run economic growth and Module 38 emphasizes the role of productivity in generating economic growth. Module 39 looks at how differences in human and physical capital, research and development, and technology lead to differences in long-run economic growth and how growth policy can be used to facilitate economic growth in the long run. Finally, Module 40 reviews and highlights how economic growth plays a role in the macroeconomic models developed in earlier sections.

## Section 8: Open Economy: International Trade and Finance

The last section adds the international sector to the macroeconomic models presented in previous sections. Module 41 introduces balance of payments accounts. Modules 42 and 43 develop the foreign exchange market and exchange rate policy. Module 44 links the foreign exchange market to financial markets and the markets for goods and services through a discussion of exchange rates and macroeconomic policy.

**Module 45** - Finally, Module 45 shows students how the models they have studied throughout the course can be applied to answer real-world questions, like the type they will see on the AP exam.

## The AP Edition: What's Different?

Perhaps the most important feature of the AP adaptation of *Economics* is what has been left unchanged. We retain Paul Krugman's fresh voice and lively writing style, which AP students find easy to understand. We also adhere to the general approach of the parent book:

"To achieve deeper levels of understanding of the real world through economics, students must learn to appreciate the kinds of trade-offs and ambiguities that economists and policy makers face when applying their models to real-world problems. We believe this approach will make students more insightful and more effective participants in our common economic, social, and political lives."

Finally, we have been careful to maintain the international focus and global coverage of issues from *Economics*, 2e.

However, we have made significant changes in the original book to meet the specific needs of AP Economics teachers and students. Here are the major adaptations:

## Close Adherence to the AP Topic Outline and Terminology

We have carefully followed the AP Topic Outline for Macroeconomics and included all of the material required for the course. The book covers the course material using the same terminology students will see on the AP Macroeconomics Exam. When there is more than one term that can be used in a particular situation, we have introduced students to each of the terms they might see on the exam and made it clear that the terms are synonymous. Because it closely conforms to the required course material and introduces AP exam terminology, this book helps students learn the material and terminology they will see on their AP Macroeconomics Exam.



## AP Course-friendly Organization

This book is arranged by sections that correspond to the AP Topic Outline provided by the College Board. Each section is divided into 4–7 modules. Each module breaks the course material into a pedagogically appropriate unit that is designed to be presented in one class period, with additional class periods for activities, demonstrations, and reinforcement, as needed. This organization takes teachers and students through the required AP course material in a sequence and at a pace designed for optimal success for students in AP economics classes.

## Relevant Examples

The Krugman and Wells textbook was lauded for its use of relevant and interesting examples to teach economic principles. We have retained this approach and many of the examples from the parent book. However, we have modified, added, or replaced examples to speak specifically to a high school audience.

## Practice for the AP Exam

Each module in the book ends with AP review material including sample multiple-choice and free-response questions related to the content in the module. The multiple-choice questions are written in the style of the AP exam with five distracters. Two sample free-response questions are included for each module, the first of which includes a sample grading rubric. Providing the rubric helps students to prepare for the format of the AP exam and to better understand how their responses will be graded (which will help them to provide better responses on the exam). In addition, Module 45 “Putting it All Together” is devoted to showing students how to use the economic principles they have learned in macroeconomics to answer comprehensive questions like the long question typically found on the AP Macroeconomics Exam.

## Supplements

The teacher and student supplements have been designed by experts in AP economics to facilitate teaching and learning. The instructor’s resources are comprehensive enough to guide new AP teachers through their first years of teaching AP economics but also provide unique ideas and suggestions that will help experienced teachers enhance their courses. The student’s resources help students through both the course and preparation for the AP exam. All supplement materials are developed to adhere to the AP course outline, goals, and testing format.

## Economics by Example

David Anderson’s *Economics by Example* has become a leading supplemental resource for AP economics courses. Each book is bundled with a copy of the Anderson book,

and suggestions for how to use it in an AP economics course are integrated throughout the text and the instructor materials.

## Advantages of This Book

This book has all of the advantages found in the parent book as well as many new advantages unique to the AP adaptation:

- ▶ **Created by a Team with Insight.** The team of authors for this project has a wealth of experience with AP economics. This book is the result of extensive collaboration within the team as well as incredible support from highly qualified AP content reviewers and accuracy checkers at all points along the way.
- ▶ **Created Specifically to Meet the Needs of AP Economics Teachers and Students.** From the Table of Contents through the supplements, this project is specifically designed to meet the needs of AP teachers and students. The outline of the book follows the AP topic outline, the terminology in the book conforms to accepted terminology used in AP materials and on the AP exam, and supplements provide everything new or experienced teachers and students need to be successful in an AP economics course.
- ▶ **Chapters build intuition through realistic examples.** In every chapter, real-world examples, stories, applications, and case studies teach the core concepts and motivate student learning. The best way to introduce concepts and reinforce them is through real-world examples; students simply relate more easily to them.
- ▶ **Pedagogical features reinforce learning.** The book includes a genuinely helpful set of features that are illustrated and described later in the Preface.
- ▶ **Modules are accessible and entertaining.** A fluid and friendly writing style makes concepts accessible. Whenever possible, the book uses examples that are familiar to students: choosing which college to attend, paying a high price for a cup of coffee, or deciding where to eat at the food court at the local shopping mall.
- ▶ **Although easy to understand, the book also prepares students for the AP exam and further coursework.** Too often, instructors find that selecting a textbook means choosing between two unappealing alternatives: a textbook that is “easy to teach” but leaves major gaps in students’ understanding, or a textbook that is “hard to teach” but adequately prepares students for the AP exam and future coursework. This is an easy-to-understand textbook that offers the best of both worlds.



## Tools for Learning...Getting the Most from This Book

Each section and its modules are structured around a common set of features designed to help students learn while keeping them engaged.

The **section outline** lists the modules that comprise the section and suggests a relevant chapter in Dave Anderson's book, *Economics by Example*, which is packaged with this text.

**Opening Story** Each section opens with a compelling story that often extends through the modules. The opening stories are designed to illustrate important concepts, to build intuition with realistic examples, and then to encourage students to read on and learn more.

## section 4

- Module 16** Income and Expenditure
- Module 17** Aggregate Demand: Introduction and Determinants
- Module 18** Aggregate Supply: Introduction and Determinants
- Module 19** Equilibrium in the Aggregate Demand–Aggregate Supply Model
- Module 20** Economic Policy and the Aggregate Demand–Aggregate Supply Model
- Module 21** Fiscal Policy and the Multiplier
- Economics by Example:**  
"How Much Debt Is Too Much?"

# National Income and Price Determination

### FROM BOOM TO BUST

Ft. Myers, Florida, was a boom town in 2003, 2004, and most of 2005. Jobs were plentiful; by 2005 the unemployment rate was less than 3%. The shopping malls were humming, and new stores were opening everywhere.

But then the boom went bust. Jobs became scarce, and by 2009 the unemployment rate had reached 14%. Stores had few customers, and many were closing. One new business was flourishing, however. Marc Joseph, a real estate agent, began offering "foreclosure tours": visits to homes that had been seized by banks after the owners were unable to make mortgage payments.

What happened? Ft. Myers boomed from 2003 to 2005 because of a surge in home construction, fueled in part by speculators who bought houses not to live in, but because they believed they could resell those houses at much higher prices. Home construction gave jobs to construction workers, electricians, real estate agents, and others. And these workers, in turn, spent money locally, creating jobs for sales workers, waiters, gardeners, pool cleaners, and more. These workers also spent money locally, creating further expansion, and so on.

The boom turned into a bust when home construction came to a virtual halt. It turned out that speculation had been feeding on itself: people were buying houses as investments, then selling them to other people who were also buying houses as investments, and the prices had risen to levels far beyond what people who actually wanted to live in houses were willing to pay.

The abrupt collapse of the housing market pulled the local economy down with it, as the process that had created the earlier boom operated in reverse.

The boom and bust in Ft. Myers illustrates, on a small scale, the way booms and busts often happen for the economy as a whole. The business cycle is often driven by ups or downs in investment spending—either residential investment spending (that is, spending on home construction) or nonresidential investment spending (such as spending on construction of office buildings, factories, and shopping malls). Changes in investment spending, in turn, indirectly lead to changes in consumer spending, which magnify—or *multiply*—the effect of the investment spending changes on the economy as a whole.

In this section we'll study how this process works on a grand scale. As a first step, we introduce *multiplier* analysis and show how it helps us understand the business cycle. In Module 17 we explain *aggregate demand* and its two most important components, consumer spending and investment spending. Module 18 introduces *aggregate supply*, the other half of the model used to analyze economic

fluctuations. We will then be ready to explore how aggregate supply and aggregate demand determine the levels of prices and real output in an economy. Finally, we will use the aggregate demand–aggregate supply model to visualize the state of the economy and examine the effects of economic policy.







## What you will learn in this Module:

- How scarcity and choice are central to the study of economics
- The importance of opportunity cost in individual choice and decision making
- The difference between positive economics and normative economics
- When economists agree and why they sometimes disagree
- What makes macroeconomics different from microeconomics

**What You Will Learn in This Module** Each module has an easy-to-review bulleted list format that alerts students to critical concepts and module objectives.

**Key Terms** Every key term is defined in the text and then again in the margin, making it easier for students to study and review important vocabulary.

**Economics** is the study of scarcity and choice.

**Individual choice** is decisions by individuals about what to do, which necessarily involve decisions about what not to do.

An **economy** is a system for coordinating a society's productive and consumptive activities.

In a **market economy**, the decisions of individual producers and consumers largely determine what, how, and for whom to produce, with little government involvement in decisions.

# Module 1

## The Study of Economics

### Individual Choice: The Core of Economics

**Economics** is the study of scarcity and choice. Every economic issue involves, at its most basic level, **individual choice**—decisions by individuals about what to do and what *not* to do. In fact, you might say that it isn't economics if it isn't about choice.

Step into a big store such as Walmart or Target. There are thousands of different products available, and it is extremely unlikely that you—or anyone else—could afford to buy everything you might want to have. And anyway, there's only so much space in your room. Given the limitations on your budget and your living space, you must choose which products to buy and which to leave on the shelf.

The fact that those products are on the shelf in the first place involves choice—the store manager chose to put them there, and the manufacturers of the products chose to produce them. The **economy** is a system that coordinates choices about production with choices about consumption, and distributes goods and services to the people who want them. The United States has a **market economy**, in which production and consumption are the result of decentralized decisions by many firms and individuals. There is no central authority telling people what to produce or where to ship it. Each individual producer makes what he or she thinks will be most profitable, and each consumer buys what he or she chooses.

All economic activities involve individual choice. Let's take a closer look at what this means for the study of economics.

### Resources Are Scarce

You can't always get what you want. Almost everyone would like to have a beautiful house in a great location (and help with the housecleaning), two or three luxury cars, a vacation home, and a big boat. Even in a rich country like the United States, people must make choices—whether to go to college or to get a job, whether to live in a big house or a small one, whether to have a big yard or a small backyard or no yard at all, and so on. The point is that resources are scarce, and choices must be made.

fyi

#### The Great Tortilla Crisis

"Thousands in Mexico City protest rising food prices." So read a recent headline in the *New York Times*. Specifically, the demonstrators were protesting a sharp rise in the price of tortillas, a staple food of Mexico's poor, which had gone from 25 cents a pound to between 35 and 45 cents a pound in just a few months.

Why were tortilla prices soaring? It was a classic example of what happens to equilibrium prices when supply falls. Tortillas are made from corn; much of Mexico's corn is imported from the United States, with the price of corn in both countries basically set in the U.S. corn market. And U.S. corn prices were rising rapidly thanks to surging demand in a new market: the market for ethanol.

Ethanol's big break came with the Energy Policy Act of 2005, which mandated the use of a large quantity of "renewable" fuels starting in 2006, and rising steadily thereafter. In practice, that meant increased use of ethanol. Ethanol producers rushed to build new production facilities and quickly began buying lots of corn. The result was a rightward shift of the demand curve for corn, leading to a sharp rise in the price of corn. And since corn is an input in the production of tortillas, a sharp rise in the price of corn led to a fall in the supply of tortillas and higher prices for tortilla consumers.

The increase in the price of corn was good news in Iowa, where farmers began planting



A cook prepares tortillas made with four different types of corn in a restaurant in Mexico City.

more corn than ever before. But it was bad news for Mexican consumers, who found themselves paying more for their tortillas.

**FYI** The FYI feature provides a short but compelling application of the major concept just covered in a module. Students experience an immediate payoff when they can apply concepts they've just read about to real phenomena. For example, we use the tortilla crisis of 2007 to illustrate how changes in supply impact consumers as bread-and-butter (and tortilla) issues.

## Each module concludes with a unique AP Review

### Module 1 AP Review

Solutions appear at the back of the book.

#### Check Your Understanding

- What are the four categories of resources? Give an example of a resource from each category.
  - time spent flipping hamburgers at a restaurant
  - a bulldozer
  - a river
- You make \$45,000 per year at your current job with Whiz Kids Consultants. You are considering a job offer from Brainiacs, Inc., which would pay you \$50,000 per year. Which of the following are elements of the opportunity cost of accepting the new job at Brainiacs, Inc.? Answer yes or no, and explain your answer.
  - the increased time spent commuting to your new job
  - the \$45,000 salary from your old job
  - the more spacious office at your new job
- Identify each of the following statements as positive or normative, and explain your answer.
  - Society should take measures to prevent people from engaging in dangerous personal behavior.
  - People who engage in dangerous personal behavior impose higher costs on society through higher medical costs.

**Check Your Understanding** review questions allow students to immediately test their understanding of a module. By checking their answers with those found in the back of the book, students will know when they need to reread the module before moving on.

The **Tackle the Test** feature presents five AP-style multiple-choice questions, with solutions, to help students become comfortable with the types of questions they will see in the multiple choice section of the AP exam.

#### Tackle the Test: Multiple-Choice Questions

- Which of the following is an example of a resource?
  - petroleum
  - a factory
  - a cheeseburger dinner
  - I only
  - II only
  - III only
  - I and II only
  - I, II, and III
- Which of the following situations represent(s) resource scarcity?
  - Rapidly growing economies experience increasing levels of water pollution.
  - There is a finite amount of petroleum in the physical environment.
  - Cassette tapes are no longer being produced.
  - I only
  - II only
  - III only
  - I and II only
  - I, II, and III
- Suppose that you prefer reading a book you already own to watching TV and that you prefer watching TV to listening to music. If these are your only three choices, what is the opportunity cost of reading?
  - watching TV and listening to music
  - watching TV
  - listening to music
  - sleeping
  - the price of the book
- Which of the following statements is/are normative?
  - The price of gasoline is rising.
  - The price of gasoline is too high.
  - Gas prices are expected to fall in the near future.
  - I only
  - II only
  - III only
  - I and III only
  - I, II, and III
- Which of the following questions is studied in microeconomics?
  - Should I go to college or get a job after I graduate?
  - What government policies should be adopted to promote employment in the economy?
  - How many people are employed in the economy this year?
  - Has the overall level of prices in the economy increased or decreased this year?
  - What determines the overall salary levels paid to workers in a given year?

#### Tackle the Test: Free-Response Questions

- Define resources, and list the four categories of resources. What characteristic of resources results in the need to make choices?
- In what type of economic analysis do questions have a “right” or “wrong” answer? In what type of economic analysis do questions not necessarily have a “right” answer? On what type of economic analysis do economists tend to disagree most frequently? Why might economists disagree? Explain.

**Answer (6 points)**

**1 point:** Resources are anything that can be used to produce something else.

**1 point each:** The four categories of the economy's resources are land, labor, capital, and entrepreneurship.

**1 point:** The characteristic that results in the need to make choices is scarcity.

In addition, two **AP-style free-response questions** are provided. A sample grading rubric is given for the first FRQ to teach students how these questions are graded on the AP exam and to help them learn how to write thoughtful answers.



**Each Section ends with a comprehensive review and problem set**

## Section 4 Review

### Summary

1. The **consumption function** shows how an individual household's consumer spending is determined by its current disposable income. The **aggregate consumption function** shows the relationship for the entire

9. Changes in commodity prices, nominal wages, and productivity lead to changes in producers' profits and shift the short-run aggregate supply curve.

10. In the long run, all prices, including nominal wages, are

its **potential output**. In response to a change in potential output, nominal

### Key Terms

Marginal propensity to consume (*MPC*), p. 159  
Marginal propensity to save (*MPS*), p. 159  
Autonomous change in aggregate spending, p. 160  
Multiplier, p. 160

Interest rate effect of a change in the aggregate price level, p. 174  
Fiscal policy, p. 176  
Monetary policy, p. 177  
Aggregate supply curve, p. 179

Demand shock, p. 191  
Supply shock, p. 192  
Stagflation, p. 192  
Long-run macroeconomic equilibrium, p. 192  
Recessionary gap, p. 192

### End-of-Section Review and Problems

In addition to the opportunities for review at the end of every module, each section ends with a brief but complete Summary of the key concepts, a list of key terms, and a comprehensive set of end-of-chapter problems.

### Problems

1. A fall in the value of the dollar against other currencies makes U.S. final goods and services cheaper to foreigners even though the U.S. aggregate price level stays the same. As a result, foreigners demand more American aggregate output. Your study partner

says that this represents a movement down the aggregate demand curve because foreigners are demanding more in response to a lower price. You, however, insist that this represents a rightward shift of the aggregate demand curve. Who is right? Explain.



## Module 45 Putting It All Together

**Putting it All Together** The final module in the book, Module 45, shows students how to use what they have learned to answer comprehensive, "real-world" questions about the macroeconomy, like the type they will see in the long question in the free-response section of the AP exam.

Having completed our study of the basic macroeconomic models, we can use them to analyze scenarios and evaluate policy recommendations. In this module we develop a step-by-step approach to macroeconomic analysis. You can adapt this approach to problems involving any macroeconomic model, including models of aggregate demand and supply, production possibilities, money markets, and the Phillips curve. By the end of this module you will be able to combine mastery of the principles of macroeconomics with problem solving skills to analyze a new scenario on your own.

### A Structure for Macroeconomic Analysis

In our study of macroeconomics we have seen questions about the macroeconomy take many different forms. No matter what the specific question, most macroeconomic problems have the following components:

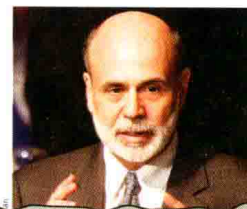
- 1) A **starting point**. To analyze any situation, you have to know where to start.
- 2) A **pivotal event**. This might be a change in the economy or a policy response to the initial situation.
- 3) **Initial effects of the event**. An event will generally have some initial, short-run effects.
- 4) **Secondary and long-run effects of the event**. After the short-run effects run their course, there are typically secondary effects and the economy will move toward its long-run equilibrium.

For example, you might be asked to consider the following scenario and answer the associated questions.

*Assume the U.S. economy is currently operating at an aggregate output level above potential output. Draw a correctly labeled graph showing aggregate demand, short-run aggregate supply, long-run aggregate supply, equilibrium output, and the aggregate price level. Now assume that the Federal Reserve conducts contractionary monetary policy. Identify the event and explain how the Fed would conduct*

### What you will learn in this Module:

- How to use macroeconomic models to conduct policy analysis
- How to approach free-response macroeconomics questions



## Supplements and Media

We are pleased to offer an enhanced and completely revised supplements and media package to accompany this textbook. The package has been crafted by experienced AP teachers to help instructors teach their AP Economics course and to give students the tools to develop their skills in economics and succeed on the AP Economics Exam.

### For Instructors

**Teachers Resource Binder** The TRB, written by Eric Dodge, is a comprehensive resource for AP Economics teachers that provides suggestions for organizing an AP Economics course, including a sample syllabus, teaching strategies, suggested resources, and AP tips that will prove helpful for new and experienced AP teachers alike. In addition, the following components are provided for each module:

- Student learning objectives
- Key economic concepts
- Common student difficulties
- Class presentation ideas
- Pacing guides to suggest how much class time to spend on the module
- Sample lectures
- In-class demonstrations and activities
- Solutions to AP Review problems from the textbook

**Instructor's Resource CD-ROM** The CD-ROM contains all text figures (in JPEG and PPT formats), PowerPoint lecture slides, and detailed solutions to all of CYU, Tackle the Test, and end-of-section problems. Using the Instructor's Resource CD-ROM, the teacher can easily build classroom presentations or enhance online courses.

**Printed Test Bank by Eric R. Dodge.** The Test Bank provides a wide range of AP-style multiple choice and short answer questions appropriate for assessing student comprehension, interpretation, analysis, and synthesis skills. With close to 3000 questions, the Test Bank offers multiple-choice and short answer questions designed for comprehensive coverage of the AP course concepts. Questions have been checked for correlation with the text content and notation, overall usability, and accuracy.

The questions are organized by Section, keyed to the pertinent module(s), and categorized by degree of difficulty. The Test Bank includes questions designed to represent the various question formats used on the AP exam. It contains questions based on the graphs that appear in the book. These questions ask students to use the graphical models developed in the textbook and to interpret the information presented in the graph. Selected questions are paired with scenarios to reinforce comprehension.

**Computerized Test Bank** The printed Test Bank is also available on a CD-ROM (Windows and Macintosh) and allows users to write and edit questions as well as create and print tests. Questions may be sorted according to various information fields and scrambled to create different versions of tests.

**Lecture PowerPoint Presentation** Created by David Mayer and Margaret Ray, the enhanced PowerPoint presentation slides are designed to assist teachers with lecture preparation and presentations. The slides contain graphs, data tables, and bulleted lists of key concepts suitable for lecture presentation. Key figures from the text are replicated and animated to demonstrate how they build. *Notes to the Instructor* are included to provide added tips, class exercises, examples, and explanations to enhance classroom presentations. The PowerPoint presentations may also be customized by adding personalized data, questions, and lecture notes. The files may be accessed on the instructor's side of the Web site or on the Instructor's Resource CD-ROM.

### For Students

**Strive for a 5** Prepared by Margaret Ray and David Mayer, this guide serves as a study guide for students as they complete the course and as an AP test preparation resource. It reinforces the topics and key concepts covered in the text and on the AP exam.

The study guide component of *Strive for a 5* begins with an overview of the sections to provide a big picture context and to review how the textbook content correlates to the AP exam weighting and then shifts to a module by module review. The coverage for each module is organized as follows:

#### *Before You Read the Module*

- Summary: an opening paragraph that provides a brief overview of the chapter.
- Learning Objectives: a numbered list outlining and describing the most important concepts in the module.
- A review and discussion of key models and/or graphs introduced in the module.

#### *While You Read the Module*

- Key Terms: a list of boldface key terms—including room for definitions and note-taking.
- What to watch for: A list of questions that prompt students to look for key information as they read, with space left for answers and note taking.



### After You Read the Module

- ▶ Review questions: fill-in-the blank questions that review important material in the module.
- ▶ Featured graph: a graphing exercise that helps students understand and draw the important graphs in the module.
- ▶ Practice questions: study questions, and sample free response questions to help review the material in the module.

### Answer Key

- ▶ Solutions: detailed solutions to the Questions, and Exercises in the Study Guide.

The AP preparation section of *Strive for a 5* is a comprehensive test review resource. It begins with a diagnostic pre-test and instructions to help students determine where to focus their test preparation efforts. Test preparation tips, suggestions for setting a test preparation schedule, and advice on how to study effectively and efficiently in preparation for the AP exam are also featured. Finally, sample practice tests that simulate the AP exam with solutions and sample grading rubrics are provided. Information about purchasing the *Strive for a 5* guide may be found on the Web site.

**Krugman's Macroeconomics for AP\*, eBook** The eBook fully integrates the text with the student media including animated graphs. The eBook also offers a range of customization features including bookmarking, highlighting, note-taking, plus a convenient glossary.

### Book Companion Web Site for Students and Instructors

#### **www.bfwpub.com/highschool/Krugman\_AP\_Macro**

The companion Web site offers valuable tools for both instructors—including access to the contents of the Instructors Resource CD and suggestions for additional resources—and for students—additional opportunities for self-testing and review. For additional information on the supplements package and other offerings check out the Web site.

## Acknowledgments

Our deep appreciation and heartfelt thanks to the following experienced AP-teacher reviewers who helped us to shape this text.

Patricia Brazill, *Irondequoit High School, Rochester, NY*  
Matthew Bohnenkamp, *Marian Catholic High School, Chicago Heights, IL*  
Ralph Colson, *Stephen F. Austin High School, Austin, TX*  
Anthony O. Gyapong, *Penn State University, Abington, PA*  
Martin Inde, *Willis High School, Willis, TX*  
Mary Kohelis, *Brooke High School, Follansbee, WV*  
David Mayer, *Winston Churchill High School, San Antonio, TX*  
Francis C. McMann, *George Washington High, Cedar Rapids, IA*  
Dianna Miller, *Florida Virtual School, FL*  
Diana Reichenbach, *Miami Palmetto Senior High School, Miami, FL*  
James Spellicy, *Lowell High School, San Francisco, CA*  
Kevin Starnes, *Garden Grove HS, Lake Forest, CA*  
Shaun Waldron, *Niles West High School, Skokie, IL*  
Marsha Williams, *The Bronx High School of Science, Bronx, NY*  
Sandra Wright, *Adlai Stevenson High School, Lincolnshire, IL*

We are indebted to the following reviewers, class testers, survey participants, and other contributors whose input helped guide the second edition of Krugman and Wells' *Economics*.

Carlos Aguilar, *El Paso Community College*; Terence Alexander, *Iowa State University*; Morris Altman, *University of Saskatchewan*; Farhad Ameen, *State University of New York, Westchester Community College*; Christopher P. Ball, *Quinnipiac University*; Sue Bartlett, *University of South Florida*; Scott Beaulier, *Mercer University*; David Bernotas, *University of Georgia*; Marc Bilodeau, *Indiana University and Purdue University, Indianapolis*; Kelly Blanchard, *Purdue University*; Anne Bresnock, *California State Polytechnic University*; Douglas M. Brown, *Georgetown University*; Joseph Calhoun, *Florida State University*; Douglas Campbell, *University of Memphis*; Kevin Carlson, *University of Massachusetts, Boston*; Andrew J. Cassey, *Washington State University*; Shirley Cassing, *University of Pittsburgh*; Sewin Chan, *New York University*; Mitchell M. Charkiewicz, *Central Connecticut State University*; Joni S. Charles, *Texas State University, San Marcos*; Adhip Chaudhuri, *Georgetown University*; Eric P. Chiang, *Florida Atlantic University*; Hayley H. Chouinard, *Washington State University*; Kenny Christianson, *Binghamton University*; Lisa Citron, *Cascadia Community College*; Steven L. Cobb, *University of North Texas*; Barbara Z. Connolly, *Westchester Community College*; Stephen Conroy, *University of San Diego*; Thomas E. Cooper, *Georgetown University*; Cesar Corredor, *Texas A&M University and University of Texas, Tyler*; Jim F. Couch, *University of Northern Alabama*; Daniel Daly, *Regis University*; H. Evren Damar, *Pacific Lutheran University*;