# MacroEconomics

PAUL R. GREGORY ROY J. RUFFIN



# MACROECONOMICS

Paul R. Gregory

University of Houston

Roy J. Ruffin

University of Houston

# To Elizabeth Gregory and Blanche Ruffin

Senior Acquisitions Editor: Bruce Kaplan

Project Coordination and Text Design: York Production Services

Cover Design: Ed Smith Design Production Manager: Kewal Sharma Compositor: York Production Services

Printer and Binder: R. R. Donnelley and Sons Company

Cover Printer: Lehigh Press

#### Macroeconomics

Copyright © 1994 by HarperCollins College Publishers

All rights reserved. Printed in the United States of America. No part of this book may be used or reproduced in any manner whatsoever without written permission, except in the case of brief quotations embodied in critical articles and reviews. For information address HarperCollins College Publishers, 10 East 53rd Street, New York, NY 10022.

Library of Congress Cataloging-in-Publication Data

Gregory, Paul R.

Macroeconomics / Paul R. Gregory, Roy J. Ruffin.

p. cm.

Includes indexes.

ISBN 0-673-99043-5

1. Macroeconomics. I. Ruffin, Roy. II. Title.

HB172.5.G774 1993

339-dc20

93-35773 CIP

987654321

Macroeconomics reflects our conviction that principles of economics texts have become too long and encyclopedic. Macroeconomics is meant to teach students the most important economic principles—not every principle and its qualifications—and how these concepts can be applied to the real world in which we live. We have sought to provide a nontechnical, modern, policy-oriented text that can be covered in the normal-length course.

*Macroeconomics* meets three basic needs of first-time students of economics. First, it teaches the core theory of economics in an up-to-date format. Second, it addresses the key economic policy issues of the day, from growth and deficits to unemployment and international competition. Third, it teaches students to apply economics to the real world. Each chapter contains two or more real-world applications of theory to practice.

The emphasis on policy is achieved through a structural innovation. Each chapter begins with a "policy focus" to illustrate the policy issues that the chapter addresses. Each chapter ends with a "policy example" that applies the material of the chapter to a selected policy issue. This structure reinforces the importance of policy. This strengthens the student's interest in such policy issues as the independence of the Fed, balanced-budget amendments, and assistance to the former Soviet Union.

The "Doing Economics" sections at the end of each chapter, written by Jeffrey Parker of Reed College, challenge students to apply what they have learned in the chapter to a small project. The assignment poses an economic question and tells the student how and where to gather the information necessary to complete the assignment. In this way, students can test concepts they have learned and round out their understanding.

In recent years, many instructors have expressed a desire to teach macroeconomics using the tools of aggregate demand and supply entirely in place of the income-expenditure and multiplier approach of Keynes. *Macroeconomics* allows the instructor to follow either approach. The aggregate demand and aggregate supply chapter is placed before the Keynesian model. This placement allows the instructor either to go directly from aggregate demand and supply to the remaining macro chapters or to the Keynesian income-expenditure model.

#### **ORGANIZATION**

Macroeconomics is organized into four parts. Part One (Chapters 1-4) introduces the building blocks of economics that should be learned before proceeding to the

study of macroeconomics. These chapters discuss scarcity, opportunity costs, the production-possibilities frontier, the law of comparative advantage, the price system, the laws of supply and demand, and the role of government. An appendix to Chapter 1 explains how to read graphs.

The development of macroeconomic theory begins in Part Two with an outline of the basic concepts of unemployment and inflation (Chapter 5) and the basic principles of national-income accounting (Chapter 6). Chapter 7 covers the core of macroeconomic theory by introducing aggregate demand and aggregate supply. Chapter 8 covers Keynes's income-expenditure model and multipliers.

Part Three is devoted to problems and policies in macroeconomics, beginning with fiscal policy and national debt (Chapter 9), the monetary sector (Chapters 10–12), and ending with a discussion of the problems of stagflation and stabilization (Chapters 13–14).

Part Four examines the global economy by first examining the determinants of economic growth (Chapter 15) and then moving to the discussion of international economics in Chapters 16 and 17. Chapter 16 shows how the law of comparative advantage applies on an international scale and gives an analysis of protectionism. Chapter 17 studies the foreign exchange market, the balance of payments, and the problems of international monetary coordination. Chapter 18 rounds out Part Four by studying capitalism and socialism.

#### SUGGESTIONS FOR COURSE PLANNING

This book is intended for the macroeconomics part of the two-semester sequence in economics that is traditionally taught as a first- or second-year college course. The instructor teaching a quarter course in macroeconomics can build a course around the chapters listed below.

#### Introduction

- 1. What Is Economics?
- 2. The Price System
- 3. Supply and Demand
- 4. Government and the Economy

#### Macroeconomics

- 5. Unemployment, Inflation, and the Business Cycle
- 6. Measuring Gross Domestic Product
- 7. Aggregate Demand and Aggregate Supply
- 8. The Keynesian Income-Expenditure Model
- 9. Fiscal Policy and National Debt
- 10. Money and Prices
- 11. Commercial Banking and the Federal Reserve
- 12. Monetary Policy
- 13. Inflation, Unemployment, and Stagflation
- 14. Stabilization Policy

Instructors who wish to eliminate the Keynesian model can do so by dropping Chapter 8 and making proper adjustments in the chapter on fiscal policy.

#### **SUPPLEMENTS**

This book's supplements include an *Instructor's Manual, Study Guide* and *Test Bank* (available in both print and computer form for the IBM-PC and compatibles).

The *Instructor's Manual*, prepared by Henry Thompson of Auburn University, is a valuable teaching aid because it supplies the instructor with examples and real-world illustrations in addition to those in the text. A chapter outline gives a brief overview of the material; it assists the instructor in preparing lecture outlines and in seeing the logical development of the chapter. Each chapter contains teaching hints designed to bring economic concepts to the student level, key points, examples, short-answer questions and problems, and answers to questions and problems in the text.

The Study Guide, prepared by Jeffrey Parker of Reed College, contains an extensive review section for each chapter/appendix. The "Key Graphs" subsection features important in-text graphs, along with a detailed explanation of the meaning of each. "Key Equations" takes important in-text equations and links the symbolic representation to the verbal explanation. "Preparing Yourself for This Chapter" informs students of prior theories or chapters that should be reviewed to better understand the chapter at hand. "Foundations for Future Chapters" indicates what material in the present chapter will be built upon in future chapters. Multiple-choice problems, true/false questions, essay questions, and more advanced challenge problems all teach as well as test. Full solutions are available.

The *Test Bank* contains 2,200 questions, mainly multiple choice, and some short-answer questions.

### **ACKNOWLEDGMENTS**

We are deeply indebted to our colleagues at the University of Houston who had to bear with us in the writing of this book. Joel Sailors helped us with a number of the examples. John Antel, Richard Bean, Thomas Mayor, Irwin Collier, Janet Kohlhase, and David Papell gave us valuable advice on many pedagogical points. To Gary Smith of Pomona College, Calvin Siebert of the University of Iowa, and Allan Meltzer of Carnegie-Mellon University we are particularly grateful for sharing with us their vast knowledge of macroeconomic issues.

The following people from across the country reviewed the manuscript in various stages of preparation. To them it is impossible to express the depth of our appreciation for their suggestions and contributions.

Wesley F. Booth
Gary Burbridge
Louis P. Cain
John F. Dahlquist
Jan L. Dauve
Bernard Davis
Gregg E. Davis
Donald H. Farness
Martin G. Giesbrecht
Robert Charles Graham
Cole Gustafson

San Antonio College Grand Rapids Junior College Loyola University, Chicago College of Alameda University of Missouri-Columbia

Morehead State University Marshall University Oregon State University Economics Associates

The University of North Carolina, Charlotte

North Dakota State University

Judy Hoagland Keith R. Leeseberg George A. Loughran, Jr. Robert Metts Michael S. Miller Ravindra Parashar Timothy Payne Doug Pressel Ronald Schuelke B. Ted Stecker Robert W. Thomas Roane State Community College Manatee Community College San Jacinto College North University of Nevada, Reno DePaul University Saint Mary's College Shoreline Community College Cochise College Santa Rosa Junior College North Hennepin Community College

Iowa State University

Paul R. Gregory

Paul R. Gregory Roy J. Ruffin Many students find economics a difficult subject because economics cannot be mastered through memorization. Economics relies on economic theories to explain real-world occurrences—such as why people buy less when prices rise or why increased government taxation may increase unemployment. An economic theory is simply a logical explanation of how the facts fit together in a particular way. If the theory were not logical, or if the theory failed to be confirmed by real-world facts, it would be readily discarded by economists.

The successful student will be the one who learns that economics is built upon a number of fairly simple and easy-to-understand propositions. These propositions and assumptions—that businesses seek to maximize profits or that consumers base their expenditure decisions on disposable income—form the building blocks upon which economics is based. These propositions are typically little more than common sense. If a major building block is missing, however, the whole structure can fall apart. To prevent the student from overlooking or forgetting a critical building block, we frequently engage in pedagogical review. In other words, when a new proposition is added to a theoretical structure, the underlying propositions are briefly reviewed.

Economics—like other academic disciplines—has its own vocabulary. Unlike the physical sciences, however, where the student is encountering terms for the first time, much of the vocabulary of economics—terms such as *efficiency*, *capital*, *stock*, *labor*—has a common usage that is already familiar to the student. Economists, however, use the vocabulary of economics in a very exact way, and often the common usage of a term is not the same as the economic usage. In this book, each key term appears in boldface type where it is first discussed in text. Immediately following the paragraph where the term first appears in boldface type, the formal, economic definition of the term is set off in color. At the end of each chapter is a list of all the key terms that have been boldfaced and given formal definitions in that chapter; a glossary at the end of the book contains all the definitions of key terms and gives the chapter number in which the term was defined.

Economics attempts to explain in a logical manner how the facts bind together. Modern developments have occurred because established theories were not doing a good job of explaining the world around us. Fortunately, the major building blocks of modern theory—that people attempt to anticipate the future, that rising prices motivate wealth holders to spend less, that people and businesses gather information and make decisions in a rational manner—rely on commonsense logic.

Economics is valuable only if it explains the real world. Economics should be able to answer very specific questions like: Why are there three major domestic producers of automobiles and hundreds or even thousands of producers of textiles? Why is there a positive association between the growth of the money

supply and inflation? Why does the United States export computers and corn to the rest of the world? Why do restaurants rope off space during less busy hours? If Iowa corn land is the best land for growing corn, why is corn also grown in Texas while some land stands idle in Iowa? Why do interest rates rise when people expect the inflation rate to increase? What is the impact of the well-publicized government deficit? The successful student will be able to apply the knowledge he or she gains of real-world economic behavior to explain any number of events that have already occurred or are yet to occur.

In writing this book, we have made a conscious effort to present arguments and evidence on both sides of every economic controversy. We attempt to make a case for each distinct viewpoint, even if it would be more interesting and less complicated to come out strongly in one camp. We believe it is best to allow the student to keep an open mind at this very early stage in the study of economics.

This book contains a number of important learning aids.

- 1. The *Learning Objectives* that precede each chapter provide a brief overview of the important points to be learned in that chapter.
- 2. *Definitions* are set off in color following the paragraphs in which key terms are introduced in context.
- 3. *Key Ideas*—important economic principles or conclusions—appear in the margins.
- 4. Boxed Examples allow the student to appreciate how economic concepts apply in real-world settings, without disrupting the flow of the text, and supplement the numerous examples already found in the text discussions.
- 5. A *Chapter Summary* of the main points of each chapter is found at the end of each chapter.
- 6. Key Terms that were defined in color in the chapter are listed at the end of each chapter.
- 7. Questions and Problems that test the reader's understanding of the chapter following each chapter.
- 8. A *Glossary*—containing definitions of all key terms defined in color in chapters and listed in chapter "Key Terms" sections—appears at the end of the book. Each entry contains the complete economic definition as well as the number of the chapter where the term was first defined.
- 9. A thorough *Index* catalogs the names, concepts, terms, and topics covered in the book.
- 10. The *Doing Economics* sections are end-of-chapter assignments and projects concerning the theoretical material in that chapter.

# Part and Chapter Title

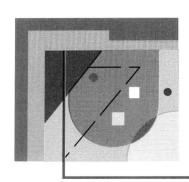
# Part and Chapter Number in

	Economics	Macro- economics	Micro- economics
THE BUILDING BLOCKS OF ECONOMICS	One	One	One
What Is Economics? The Price System Supply and Demand Government and the Economy	1 2 3 4	1 2 3 4	1 2 3 4
MACROECONOMICS: THE ECONOMY AS A WHOLE	Two	Two	
Unemployment, Inflation, and the Business Cycle Measuring Gross Domestic Product Aggregate Demand and Supply The Keynesian Income-Expenditure Model	5 6 7 8	5 6 7 8	
MACROECONOMICS PROBLEMS AND POLICIES	Three	Three	
Fiscal Policy and National Debt Money and Prices Commercial Banking and the Federal Reserve Monetary Policy Inflation, Unemployment, and Stagflation Stabilization Policy	9 10 11 12 13 14	9 10 11 12 13 14	
THE GLOBAL ECONOMY	Four	Four	
Productivity, Growth, and Development International Trade and Protection The International Monetary System	15 16 17	15 16 17	20

Part and Chapter Title

# Part and Chapter Number in

	Economics	Macro- economics	Micro- economics
MICROECONOMICS AND THE PRODUCT MARKETS	Five	,	Two
Elasticity of Demand and Supply Demand and Utility Business Firms, Information, and Contracts Costs and Productivity Perfect Competition Monopoly Oligopoly and Monopolistic Competition Regulation, Deregulation, and Antitrust The Economics of Agriculture	18 19 20 21 22 23 24 25 26		5 6 7 8 9 10 11 12 13
FACTOR MARKETS	Six		Three
Factor Markets Labor Markets Labor Unions Interest, Rent, and Profit Income Distribution and Poverty	27 28 29 30 31		14 15 16 17 18
ISSUES IN ECONOMICS	Seven	Four	Four
Environmental Economics and Market Failure Capitalism and Socialism	32 33	18	19



#### PARTONE

#### THE BUILDING BLOCKS OF ECONOMICS 1

C	Н	Α	P	Т	Ε	R	1	What Is Economics?	2

Scarcity and Choice 3

The Law of Scarcity - Scarcity and Allocation

Economic Systems 4

Opportunity Costs 5

Resources 6

Definition of Economics 7

The Production-Possibilities Frontier 7

The Law of Increasing Costs • Efficiency • The Ceteris Paribus or "Other Things Equal" Assumption

Microeconomics and Macroeconomics 11

Microeconomics • Macroeconomics

Positive and Normative Economics 12

Positive Economics • Normative Economics

Policy Focus 14

Gallery of Economists 15

Chapter Summary 15

EXAMPLE 1 Opportunity Cost and Orbital Slots in Outer Space 5

EXAMPLE 2 Hawaiian Pineapples and the Production-Possibilities

Frontier 9

APPENDIX 1 Reading Graphs 18

The Value of Graphs 19

Positive and Negative Relationships 
Graphs Show Relationships and Display Data Efficiently
Shifts in Graphs

Understanding Slope 21

Straight Lines 
Curvilinear Relationships 
Scatter Diagrams

Areas of Rectangles 27

Appendix Summary 27

CHAPTER 2 The Price System 29

The Circular Flow of Economic Activity 30

The Economic Problem 30

What? - How? - For Whom?

Relative Prices and Money Prices 32
Prices in the Land of Markkas

Calculating Relative Prices 33

The Principle of Substitution 34

Property Rights 34

The Price System as a Coordinating Mechanism 35
The Invisible Hand • Equilibrium

How the Price System Decides What, How, and For Whom 36

Specialization 37

Specialization and Exchange • Specialization and Productivity • Specialization and Money

Transaction Costs and Information Costs 4

Policy Focus 43

Chapter Summary 44

EXAMPLE 1 The Decline of IBM and the Principle of Substitution 35

EXAMPLE 2 The Invisible Hand: The Paradox of Progress 38

EXAMPLE 3 How Transaction Costs Limit Exchange: Return Airline Tickets 42

GALLERY OF ECONOMISTS Adam Smith (1723-1790) 32

#### CHAPTER 3 Supply and Demand 46

#### Markets 47

Types of Markets Perfectly Competitive Markets

#### Demand 49

The Law of Demand 
The Demand Curve Factors That Cause the Demand Curve to Shift

#### Supply 54

The Supply Curve Factors That Cause the Supply Curve to Shift

#### Equilibrium of Supply and Demand 58

What the Market Accomplishes

#### Changes in the Equilibrium Price 60

Change in Demand (or Supply) Versus Change in Quantity Demanded (or Supplied) • The Effects of Changes in Supply and Demand • Simultaneous Changes in Supply and Demand

Unconventional Use of Supply and Demand 63

Policy Focus 66

#### Chapter Summary 6

EXAMPLE 1 M&Ms and the Law of Demand 50

EXAMPLE 2 Shifts in Demand: Wine, Health, and Recession 53

GALLERY OF ECONOMISTS Alfred Marshall (1842-1924) 48

## CHAPTER 4 Government and the Economy 70

#### Government Spending 71

Types of Government Spending Size of Government Shares of Federal, State, and Local Governments

#### Taxes 74

Efficiency, Fairness, and Social Goals • Principles of Fairness • Incidence of Taxation: Who Actually Pays? • Progressive and Regressive Taxes

Government Surpluses and Deficits 78

#### Reasons for Government Action 81

Monopoly • Externalities • Public Goods • Inequality • Macroeconomic Instability

# Evaluating Government Resource Allocation 83

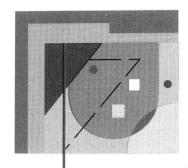
The Market Test • The Rationality of Public Choices

Policy Focus 86

#### Chapter Summary 86

EXAMPLE 1 The U.S. Income Tax: A Brief History 80 EXAMPLE 2 Sugar: Special Interests and Logrolling 85

GALLERY OF ECONOMISTS James Buchanan (1919- ) 72



#### PARTTWO

#### MACROECONOMICS: THE ECONOMY AS A WHOLE 89

CHAPTER 5 Unemployment, Inflation, and the Business Cycle 90

Macroeconomic Issues 91

Unemployment 91

Three Labor Market Classifications • The Unemployment Rate • Types of Unemployment • Labor Market Search • Full Employment • Trends in Unemployment

Inflation 96

Measuring Inflation • Trends in Inflation • Two Types of Inflation • Why People Fear Inflation

Stagflation 102

Business Cycles 105

The Four Phases of the Business Cycle 

Business Cycles and the World Economy

Chapter Summary 108

Policy Focus 109

EXAMPLE 1 How Inflation Redistributes Income: Wages and Inflation 103

EXAMPLE 2 Stop-and-Go Policies: The Dance Between Inflation and Unemployment 105

GALLERY OF ECONOMISTS John Maynard Keynes (1883–1946) 92

CHAPTER 6 Measuring Gross Domestic Product 111

National-Income Accounting 112

The Circular Flow • A Simple Example • Gross Domestic Product: Definition

Gross Domestic Product: The Sum of Output or Income 115
The Sum of Final Expenditures • GDP as the Sum of Incomes

Real GDP 120

From GDP to Disposable Income 120

Saving Equals Investment 123

Omissions from GDP 124

Nonmarketed Goods and Services 

Illegal Activities 

The Value of Leisure 

Economic "Bads" and Measures of Economic Welfare

Policy Focus 128

Chapter Summary 128

EXAMPLE 1 How the Commerce Department Ensures the Security and Neutrality of

GDP Estimates 116

EXAMPLE 2 Foreign Saving as a Source of Investment Finance 125

EXAMPLE 3 GDP in International Perspective 127

GALLERY OF ECONOMISTS Simon Kuznets (1901–1985) 113

CHAPTER 7 Aggregate Demand and Supply 13

Aggregate Demand 132

The Slope of the Aggregate Demand Curve 

The Conditions of Aggregate Demand

Aggregate Supply 136

Wage Rigidities 

Aggregate Supply in the Short Run

Short-Run Equilibrium 138

Changes in Equilibrium Output and Prices 138
Supply Shocks • Shifts in Aggregate Demand

Inflationary and Deflationary Gaps 140

Long-Run Equilibrium: The Self-Correcting Mechanism 143

The Automatic Removal of a Deflationary Gap 

The Automatic Removal of an Inflationary Gap

Policy Focus 145

Chapter Summary 146

EXAMPLE 1 Is Wage Flexibility Increasing? 137

EXAMPLE 2 Supply Shocks: The Energy Crisis 141

EXAMPLE 3 Inflationary and Deflationary Gaps 143

GALLERY OF ECONOMISTS John R. Hicks (1904-1989) 134

CHAPTER 8 The Keynesian Income-Expenditure
Model 149

Two Views of Macroeconomics 150

Classical Macroeconomics 150

Say's Law • Laissez Faire Policy

The Transition to Keynesian Macroeconomics 153

The Great Depression Fixed Prices in the Keynesian Model

The Income-Expenditure Approach 155

Consumption, Income, and Saving • The Marginal Propensities • Other Factors That Affect Consumption

Equilibrium Expenditures 160

Desired Aggregate Expenditures 
Realization of Desired Aggregate
Expenditures 
Saving and Investment Two Definitions of Equilibrium Are
One

Multipliers 165

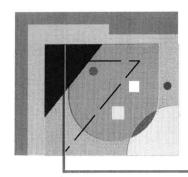
Policy Focus 168

Chapter Summary 168

EXAMPLE 1 Images from the Great Depression 154

EXAMPLE 2 The Classical and Keynesian Models and the Great Depression 15

GALLERY OF ECONOMISTS James Tobin (1918- ) 152



#### PARTTHREE

#### MACROECONOMIC PROBLEMS AND POLICIES 173

CHAPTER 9 Fiscal Policy and National Debt 174

Policy Goals 175

Automatic Stabilizers Versus Discretionary Policy

Automatic Stabilizers

Discretionary Fiscal Policy

Fiscal Policy and Deficits 178
Facts and Trends

The Full-Employment Deficit 181

The Effectiveness of Fiscal Policy 183

Lags in Fiscal Policy Permanent Income Crowding Out National Debt

Internal Versus External Debt 187

Deficits, Inflation, and Interest Rates Problems of Deficit Reduction

Policy Focus 192

Chapter Summary 193

EXAMPLE 1 Supply-Side Economics 185

EXAMPLE 2 The Burden of the Debt on Different Generations 188

GALLERY OF ECONOMISTS Franco Modigliani (1919- ) 176

CHAPTER 10 Money and Prices 195

The Functions of Money 196

Money as a Medium of Exchange 

Money as a Unit of Value 

Money as a Store of Value

The Supply of Money 199

Types of Money Definitions of Money Supply