MACROECONOMICS

THEORIES AND POLICIES

SEVENTH EDITION

RICHARD T. FROYEN

EDITION

Macroeconomies

Theories and Policies

Richard T. Froyen

University of North Carolina



Library of Congress Cataloging-in-Publication Data

Froyen, Richard T.

Macroeconomics: theories and policies / Richard T. Froyen.-7th ed.

p. cm.

Includes index.

ISBN 0-13-032859-6

1. Macroeconomics. 2. Keynesian economics. I. Title.

HB172.5 .F76 2002

339-dc21

2001034017

AVP/Executive Editor: Rod Banister VP/Editor-in-Chief: P.J. Boardman

Managing Editor (Editorial): Gladys Soto

Assistant Editor: Marie McHale

Media Project Manager: Nancy Welcher Marketing Manager: Joshua P. McClary Marketing Assistant: Christopher Bath Managing Editor (Production): John Roberts Production Editor: Maureen Wilson

Permissions Coordinator: Suzanne Grappi

Associate Director, Manufacturing: Vincent Scelta

Production Manager: Arnold Vila Manufacturing Buyer: Diane Peirano Cover Design: Bruce Kenselaar Cover Illustration/Photo: PhotoDisc

Full-Service Project Management: Carlisle Communications, Ltd., Lynn Steines, CSR

Printer/Binder: Courier, Kendallville

Credits and acknowledgements borrowed from other sources and reproduced, with permission, in this textbook appear on appropriate page within text.

Copyright © 2002, 1999, 1996 by Pearson Education, Inc., Upper Saddle River, New Jersey 07458. All rights reserved. Printed in the United States of America. This publication is protected by Copyright and permission should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or likewise. For information regarding permission(s), write to: Rights and Permissions Department.





The past three decades have been challenging ones for macroeconomists. Key variables in macroeconomics—the levels of output, inflation, and unemployment; interest rates; and foreign exchange rates—have proved difficult to explain and predict. This period also has been an active one in macroeconomic theory, a period of controversy but also of progress. The years since the late 1960s saw a growing number of challenges to Keynesian economics, which was the dominant paradigm of the early 1960s. The 1970s witnessed a growing interest in monetarism and the emergence of the new classical economics. In the 1980s, Keynesian policy prescriptions came under attack from a group called the supplyside economists. The 1980s also witnessed the development of two contrasting lines of research on the business cycle: the new Keynesian economics and the real business cycle theory. However, there has been progress as well as controversy. During the past 30 years there have been significant improvements in the handling of expectations, in our understanding of labor market institutions, in accounting for the macroeconomic implications of various market structures, in the modeling of open economies, and in accounting for the ultimate sources of economic growth.

In this book I have tried to explain macroeconomics, inclusive of recent developments, in a coherent way but without glossing over the fundamental disagreements among macroeconomists on issues of both theory and policy. The major modern macroeconomic theories are presented and compared. Important areas of agreement as well as differences are discussed. An attempt is made to demonstrate that the controversies among macroeconomists center on well-defined issues that are based on theoretical differences in the underlying models.

FEATURES

Distinguishing features of the approach taken here include the following:

- An up-to-date summary of the Keynesian position, including research that has come to be called the new Keynesian economics.
- A detailed analysis of the challenges to the Keynesian position by the monetarists, new classical economists, and real business cycle theorists.
- An extensive treatment of monetary policy that considers the optimal strategy for monetary policy, including targeting on monetary aggregates versus targeting on interest rates, as well as consideration of recent policy changes in central bank operating procedures in a number of other countries—most importantly the move to inflation targeting.

- An analysis of the post-1970 slowdown in U.S. output growth, capital formation, and growth in labor productivity. Within this context of intermediate-run growth the views of the supply-side economists and their critics are examined. Also within this context of the determinants of rates of intermediate-run economic growth, we consider whether there are signs that the productivity slowdown of the 1970s has been reversed. Is there a "new economy" developing for the new century?
- A consideration of the determinants of long-run economic growth. Both the neoclassical growth model and recent models of endogenous growth are discussed.
- Consideration of foreign exchange rate determination, including discussion of recent proposals for policy coordination, target zones for exchange rates, and common currency areas, in particular the eurozone.
- An examination of monetary and fiscal policy effects in the open economy, within the framework of the Mundell-Fleming model.

ORGANIZATION

Part I (Chapters 1–2) discusses the subject matter of macroeconomics, the recent behavior of the U.S. economy, and questions of measurement. Part II (Chapters 3–13) presents the major macroeconomic models, beginning with the classical system in Chapters 3–4. Consideration of the classical system at the start is useful because the Keynesian model can then be viewed as an attack on the classical orthodoxy. Challenges to the Keynesian position can then be rooted in the parts of the classical model that provides starting points for their analysis: the quantity theory of money for the monetarists, and the classical labor market clearing assumptions and choice-theoretic-based behavioral functions for the new classical and real business cycle economists.

The Keynesian model is analyzed in detail in Chapters 5–8, beginning from a very simple model; more complex models are built up to incorporate monetary influences, wage and price flexibility, changing price expectations, and shocks to aggregate supply. Chapter 9 examines monetarism and the issues in the monetarist–Keynesian controversy. Chapter 10 examines the monetarist view of the unemployment–inflation trade-off and the *natural rate* theory, as well as the Keynesian view on the same issues. Chapter 11 considers the *new classical* theory with its central concepts of *rational expectations* and market clearing. The Keynesian response to the new classical economics is then considered. Chapter 12 examines two recent directions in macroeconomic research. One, very strongly rooted in the classical tradition, is the *real business cycle theory*. The second, the *new Keynesian economics*, is, as its name suggests, firmly in the Keynesian tradition. Chapter 13 summarizes and compares the different models.

Part III considers *open economy* macroeconomics. Chapter 14 focuses on exchange rate determination and the choice of an international monetary system.

xix

Chapter 15 utilizes the Mundell-Fleming model to examine the effects of monetary and fiscal policy in the open economy.

Part IV deals with macroeconomic policy—monetary policy in Chapters 16 and 17, then fiscal policy in Chapter 18.

In Part V we present extensions of the models and consider parts of the models in greater detail. Chapter 19 examines questions of long-term economic growth and the determinants of growth over intermediate periods, periods too long to fit the short-run framework of the models of Part II, but not necessarily situations of long-run equilibrium. Chapter 20 is a more detailed examination of the components of private sector demand: consumption and investment expenditure. Finally, Chapter 21 extends the earlier analysis of money demand.

In the section on macroeconomic models, the conceptual approach taken is to develop each model within the aggregate demand-aggregate supply framework in order to facilitate comparisons among the models. Throughout the book the aim is to provide a clear and rigorous analysis. Other pedagogical features are the explanatory captions provided for the graphs in the text and end-of-chapter questions and problems.

Most chapters also contain *Perspectives* sections, which relate the material in the text to events in the real economy.

NEW FEATURES IN THE SEVENTH EDITION

- There have been a number of pedagogical improvements in this edition.
 These include: better graphics, some simplifications in notation, more use of graphs rather than tables to display data, and more numerical examples.
- A number of new *Perspectives* sections have been added, several dealing with international questions such as the launch of the Euro, the possibility of a "liquidity trap" in Japan, and the use of currency boards or dollarization as alternative exchange rate mechanisms in countries such as Argentina and Ecuador. Other new *Perspectives* consider the possibility of "irrational exuberance" in the U.S. stock market in the 1990s and the implications of complete elimination of the U.S. national debt.
- The chapter on fiscal policy has been revised to reflect the move from a situation of large budget deficits to one of huge surpluses (at least in the near term future). Longer-term budget trends are also considered.
- The ordering of chapters has also been changed. The international section (now Part III) has been moved forward to directly follow the main section on macroeconomic models (Part II). The policy section (Part IV) comes next, followed by extensions (Part V).
- In order to cover new material without increasing the length of the book, coverage of topics that have become less relevant has been cut back. I have attempted to make the analysis as simple and concise as possible.

Overall, there has been an attempt to make the book more student friendly.

ANCILLARIES

- Instructor's Manual with Test Bank: This resource manual provides the
 instructor with detailed chapter summaries, answers to end-of-chapter
 questions, and a complete test bank. For each chapter, there are 50 to 70
 multiple-choice questions as well as 10 to 15 problems and essay questions.
- Computerized Test Bank: Prentice Hall's Custom Test, a Windowsbased test program, permits professors to edit and add or delete questions from the test bank to generate their own customized classroom tests.
- Study Guide: Each chapter contains a detailed overview with a tips section on equations and graphs called *Techniques in Depth*. The Study Guide also provides a self-test with 30 multiple-choice questions and 10 problems and essay questions.

ACKNOWLEDGMENTS

Reviewers recruited by Prentice Hall to help with the preparation of this edition provided many useful suggestions. These reviewers are: Peter Hess, Davidson College; Sharon Erenburg, East Michigan University; Bryce Sutton, St. Louis University; and Darryl Getter, U.S. Naval Academy.

Many people have been helpful in preparing the various editions of this book. I have benefited from comments by Roger Waud, Art Benavie, Alfred Field, and Pat Conway, all from the University of North Carolina, as well as by Lawrence Davidson and Williard Witte, Indiana University; Dennis Appleyard, Davidson College; Alfred Guender, University of Canterbury; Homer Erekson, Miami University; Allin Cottrell, Wake Forest University; David Van Hoose, University of Alabama; Michael Bradley, George Washington University; Rexford Santerre and Michael Tucci, Bentley College; Art Goldsmith, Washington and Lee University; Thomas Havrilesky, Duke University; Sang Sub Lee, District of Columbia Government; David Bowles, Clemson University; Michael Loy and Lawrence Ellis, Appalachian State University; and Richard Selden, University of Virginia.

Editors have been helpful at all stages and I wish to thank Rod Banister, Gladys Soto and Maureen Wilson at Prentice Hall and Lynn Steines at Carlisle Publishing Services.

Brief Contes

	Preface		xvii
Part	1 :	In	TRODUCTION AND MEASUREMENT 1
	Chapter	1	Introduction 3
	Chapter	2	Measurement of Macroeconomic Variables 15
Part	II:	M	ACROECONOMIC MODELS 35
	Chapter	3	Classical Macroeconomics (I): Equilibrium Output and Employment 37
	Chapter	4	Classical Macroeconomics (II): Money, Prices, and Interest 60
	Chapter	5	The Keynesian System (I): The Role of Aggregate Demand 80
	Chapter	6	The Keynesian System (II): Money, Interest, and Income 111
	Chapter	7	The Keynesian System (III): Policy Effects in the IS-LM Model 153
	Chapter	8	The Keynesian System (IV): Aggregate Supply and Demand 178
	Chapter	9	The Monetarist Counterrevolution 216
	Chapter	10	Output, Inflation, and Unemployment: Alternative Views 238
	Chapter	11	New Classical Economics 259
	Chapter	12	Real Business Cycles and New Keynesian Economics 280
	Chapter	13	Macroeconomic Models: A Summary 298
Part	III:	OF	PEN ECONOMY MACROECONOMICS 305
	Chapter	14	Exchange Rates and the International Monetary System 307
	Chapter	15	Monetary and Fiscal Policy in the Open Economy 341
Part	IV:	Ec	CONOMIC POLICY 361
	Chapter	16	The Money Supply Process 363
	Chapter	17	Monetary Policy 385
	Chapter	18	Fiscal Policy 406

viii Brief Contents

PART V: EXTENSIONS OF THE MODELS 429

Chapter 19 Long- and Intermediate-Term Economic Growth 431

Chapter 20 Consumption and Investment 462

Chapter 21 Money Demand 487

Glossary 509

Index 515



Preface xvii

Part I	Introduction and Measurement 1
CHAPTER	1 Introduction 3
1.1	What Is Macroeconomics? 3
1.2	Post-World War II U.S. Economic Performance 4 Output 4 Unemployment 5 Inflation 6 Inflation and Unemployment 7 The U.S. Federal Budget and Trade Deficits 8
1.3	Central Questions in Macroeconomics 12 Economic Instability 12 The Output-Inflation Relationship 12 A Growth Slowdown and Turnaround? 12 Implications of Deficits and Surpluses 13
1.4	Conclusion 13
CHAPTER	2 Measurement of Macroeconomic Variables 15
2.1	The National Income Accounts 15
2.2	Gross Domestic Product 16 Currently Produced 16 Final Goods and Services 16 Evaluated at Market Prices 17
2.3	National Income 19
2.4	Personal and Disposable Personal Income 21
2.5	Some National Income Accounting Identities 23
2.6	Measuring Price Changes: Real Versus Nominal Gross Domestic Product 25 Real GDP in Prices from a Base Year 25 Chain-Weighted Real GDP 27
2.7	The Consumer Price Index and the Producer Price Index 28
2.8	Measures of Cyclical Variation in Output 30
2.9	Conclusion 33 Perspectives 2.1 What GDP Is Not 20 Perspectives 2.2 Upward Bias in the Consumer Price Index 30 Perspectives 2.3 Dating Business Cycles 32

Part II	MACROECONOMIC MODELS 35
CHAPTEI	R 3 Classical Macroeconomics (I): Equilibrium Output and Employment 37
3.1	The Starting Point 37
3.2	The Classical Revolution 38
3.3	Production 40
3.4	Employment 43 Labor Demand 43 Labor Supply 47
3.5	Equilibrium Output and Employment 50 The Determinants of Output and Employment 50 Factors That Do Not Affect Output 56 Factors That Do Affect Output 56
3.6	Conclusion 58
	Perspectives 3.1 Real Business Cycles: A First Look 56
СНАРТЕ	
4.1	The Quantity Theory of Money 60 The Equation of Exchange 60 The Cambridge Approach to the Quantity Theory 62 The Classical Aggregate Demand Curve 64
4.2	The Classical Theory of the Interest Rate 66
4.3	Policy Implications of the Classical Equilibrium Model 71 Fiscal Policy 71 Government Spending 71 Tax Policy 73 Monetary Policy 76
4.4	Conclusion 78 Perspectives 4.1 Money in Hyperinflations 67 Perspectives 4.2 Supply-Side Economics—A Modern Classical View 77
CHAPTER	The Keynesian System (I): The Role of Aggregate Demand 80
5.1	The Problem of Unemployment 80
5.2	The Simple Keynesian Model: Conditions for Equilibrium Output 83
5.3	The Components of Aggregate Demand 88 Consumption 88 Investment 90 Government Spending and Taxes 92
5.4	Determining Equilibrium Income 93
5.5	Changes in Equilibrium Income 97
5.6	Fiscal Stabilization Policy 102
5.7	Exports and Imports in the Simple Keynesian Model 104
5.8	Conclusion 108 Perspectives 5.1 Fiscal Policy in Practice 104

			Э	
- 3	ı	2	1	n
	1	ĸ	91	ı

CHAPTER	6 The Keynesian System (II): Money, Interest, and Income 111
6.1	Money in the Keynesian System 111 Interest Rates and Aggregate Demand 111 The Keynesian Theory of the Interest Rate 114 The Keynesian Theory of Money Demand 116 The Effects of an Increase in the Money Supply 122 Some Implications of Interest on Money 122 Summary 124
6.2	The IS-LM Curve Model 124 Money Market Equilibrium: The LM Curve 125 Product Market Equilibrium: The IS Curve 135 The IS and LM Curves Combined 146
6.3	Conclusion 148 Appendix: The Algebra of the IS-LM Model 149 Perspectives 6.1 Residential Construction and the Interest Rate 114
CHAPTER	7 The Keynesian System (III): Policy Effects in the IS-LM Model 153
7.1	Factors That Affect Equilibrium Income and the Interest Rate Monetary Influences: Shifts in the LM Schedule 153 Real Influences: Shifts in the IS Schedule 155
7.2	The Relative Effectiveness of Monetary and Fiscal Policy Policy Effectiveness and the Slope of the 1S Schedule Policy Effectiveness and the Slope of the LM Schedule 161
7.3	Conclusion 171 Appendix: Monetary and Fiscal Policy Multipliers in the IS-LM Curve Model 175 Perspectives 7.1 The Monetary-Fiscal Policy Mix: Some Historical Examples 159 Perspectives 7.2 A Liquidity Trap in Japan? 172
CHAPTER	8 The Keynesian System (IV): Aggregate Supply and Demand 178
8.1	The Keynesian Aggregate Demand Curve 179
8.2	The Keynesian Aggregate Demand Schedule Combined with the Classical Theory of Aggregate Supply 183
8.3	The Keynesian Contractual View of the Labor Market Sources of Wage Rigidity 189 A Flexible Price-Fixed Money Wage Model 190
8.4	Labor Supply and Variability in the Money Wage 197 The Classical and Keynesian Theories of Labor Supply 197 The Keynesian Aggregate Supply Curve with a Variable Money Wage 198 Policy Effects in the Variable-Wage Keynesian Model 200
8.5	The Effects of the Shifts in the Aggregate Supply Function 203 Factors That Shift the Aggregate Supply Schedule 205 More Recent Supply Shocks 208
8.6	Conclusion: Keynes Versus the Classics 211 Keynesian Versus Classical Theories of Aggregate Demand 211 Keynesian Versus Classical Theories of Aggregate Supply 213

	Keynesian Versus Classical Policy Conclusions 214 Perspectives 8.1 Price and Quantity Adjustment in Great Britain, 1929–36 19.0 Perspectives 8.2 Severe Supply Disruption: The Case of the Former Soviet Republics
CHAPTER	9 The Monetarist Counterrevolution 216
9.1	Introduction 216
9,2	The Reformulation of the Quantity Theory of Money 218 Money and the Early Keynesians 219 Friedman's Restatement of the Quantity Theory 223 Friedman's Monetarist Position 226
9.3	Fiscal and Monetary Policy: Monetarists Versus Keynesians 229 Fiscal Policy 229 Monetary Policy 230
9.4	Unstable Velocity and the Declining Influence of Monetarism Recent Instability in the Money-Income Relationship 235 Monetarist Reaction 235
9.5	Conclusion 236 Perspectives 9.1 The Monetarist View of the Great Depression 222
CHAPTER	10 Output, Inflation, and Unemployment: Alternative Views 238
10.1	The Natural Rate Theory 238
10.2	Monetary Policy, Output, and Inflation: A Monetarist View 241 Monetary Policy in the Short Run 241 Monetary Policy in the Long Run 242 Policy Implications 246
10.3	A Keynesian View of the Output-Inflation Trade-off 248 The Phillips Curve: A Keynesian Interpretation 248 Stabilization Policies for Output and Employment: The Keynesian View 252
10.4	Evolution of the Natural Rate Concept 254 Determinants of the Natural Rate of Unemployment 255 Time-Varying Natural Rates of Unemployment 255 Explaining Changing Natural Rates of Unemployment 256
10.5	Conclusion 257
CHAPTER	11 New Classical Economics 259
11.1	The New Classical Attack 260 A Review of the Keynesian Position 260 The Rational Expectations Concept and Its Implications 261 The New Classical Policy Conclusions 266
11.2	A Broader View of the New Classical Position 270
11.3	The Keynesian Countercritique 271 The Question of Persistence 271 The Extreme Informational Assumptions of Rational Expectations 274 Auction Market Versus Contractual Views of the Labor Market 276
11.4	Conclusion 277 Perspectives 11.1 U.S. Stock Prices: Rational Expectations or Irrational Exuberance? 269

209

272

	Perspectives 11.2 The New Classical Economics and the Disinflation of the 1980s Perspectives 11.3 The Great Depression: New Classical Views 278
CHAPTER	12 Real Business Cycles and New Keynesian Economics 280
12.1	Real Business Cycle Models 280 Central Features of Real Business Cycle Models 280 A Simple Real Business Cycle Model 282 Effects of a Positive Shock to Technology 283 Macroeconomic Policy in a Real Business Cycle Model 285 Questions About Real Business Cycle Models 286 Concluding Comment 289
12.2	New Keynesian Economics 289 Sticky Price (Menu Cost) Models 290 Efficiency Wage Models 291 Insider-Outsider Models and Hysteresis 294
12.3	Conclusion 296 Perspectives 12.1 Labor Market Flows 288 Perspectives 12.2 Are Prices Sticky? 292
CHAPTER	13 Macroeconomic Models: A Summary 298
13.1	Theoretical Issues 298
13.2	Policy Issues 302
	OPEN ECONOMY MACROECONOMICS 305
CHAPTER	
14.1	The U.S. Balance of Payments Accounts 308 The Current Account 308 The Capital Account 309 Statistical Discrepancy 310 Official Reserve Transactions 310
14.2	Exchange Rates and the Market for Foreign Exchange 312 Demand and Supply in the Foreign Exchange Market 312 Exchange Rate Determination: Flexible Exchange Rates 315 Exchange Rate Determination: Fixed Exchange Rates 316
14.3	The Current Exchange Rate System 319 Current Exchange Rate Arrangements 320 How Much Managing? How Much Floating? 320 The Breakdown of the Bretton Woods System 322
14.4	Advantages of Exchange Rate Flexibility 323 Policy Independence and Exchange Rate Flexibility 323 Flexible Exchange Rates and Insulation from Foreign Shocks 326
14.5	Experience with Floating Exchange Rates The Dollar in Decline, 1976–80 328 The Rising Dollar, 1981–85 332 The Dollar's Slide, 1985–88 334 The Dollar Since 1988 334

14.6	Fixed Versus Flexible Exchange Rates 336 Greater Policy Independence of Flexible Exchange Rates 336 Greater Insulation from Foreign Stocks 337 Arguments for a Return to a Fixed Rate System 338 Conclusion 339 Perspectives 14.1 Large U.S. Current Account Deficits: Are They Sustainable Perspectives 14.2 Currency Boards and Dollarization 321 Perspectives 14.3 The Euro 335
CHAPTER	15 Monetary and Fiscal Policy in the Open Economy 341
15.1	The Mundell–Fleming Model 341
15.2	The Case of Imperfect Capital Mobility 345 Policy Under Fixed Exchange Rates 345 Policy Under Flexible Exchange Rates 347
15.3	The Case of Perfect Capital Mobility 351 Policy Effects Under Fixed Exchange Rates 352 Policy Effects Under Flexible Exchange Rates 355
15.4	Conclusion 358 Perspectives 15.1 The Savings–Investment Correlation Puzzle 357
PART IV	ECONOMIC POLICY 361
CHAPTER	16 The Money Supply Process 363
16.1	The Definition of Money 364 The Functions of Money 364 Components of the Money Supply 364
16.2	The Federal Reserve System 366 The Structure of the Central Bank 366 Federal Reserve Control of the Money Supply 366 The Tools of Federal Reserve Control 368
16.3	Bank Reserves and Bank Deposits 370 A Model of Deposit Creation 370 Deposit Creation: More General Cases 375
16.4	Who Controls the Money Supply? 378
16.5	Conclusion 381 Perspectives 16.1 The Money Supply During the Great Depression 382
CHAPTER	17 Monetary Policy 385
17.1	The Monetary Policymaking Process 385
17.2	Competing Strategies for Monetary Policy: Targeting Monetary Aggregates or Interest Rates 388 Targeting Monetary Aggregates 388 Targeting the Interest Rate 389
17.3	Implications of Targeting a Monetary Aggregate 389 The Ideal Case for Targeting a Monetary Aggregate 390 Less Than Ideal Cases for Intermediate Targeting a Monetary Aggregate 392

17.4	Implications of Targeting the Interest Rate 394 Uncertainty About the IS Schedule 394 Uncertainty About Money Demand 396
17.5	Money Supply Versus Interest-Rate Targets 398 The Sources of Uncertainty and the Choice of a Monetary Policy Strategy 398 Other Considerations 398
17.6	The Evolution of Federal Reserve Strategy 399 1970–79: Targeting the Federal Funds Rate 399 1979–82: Targeting Monetary Aggregates 400 1982–2000: Current Federal Reserve Strategy 400
17.7	Changes in Central Bank Institutions: Recent International Experience 401 The Time Inconsistency Problem 402 Other Arguments for Inflation Targeting 403
17.8	Conclusion404Perspectives 17.1Central Bank Independence and Economic Performance387Perspectives 17.2Inflation Targeting in Practice: The New Zealand Experiment404
CHAPTER	18 Fiscal Policy 406
18.1	The Goals of Macroeconomic Policy 407
18.2	The Goals of Macroeconomic Policymakers 407 The Public-Choice View 408 The Partisan Theory 410 Public-Choice and Partisan Theories from Perspective of 2001 410
18.3	The Federal Budget 412
18.4	The Economy and the Federal Budget: The Concept of Automatic Fiscal Stabilizers 415
18.5	Keynesian Objections to Balanced-Budget Rules 421
18.6	What About the Deficit? 422 Cyclical Versus Structural Deficits 422 The Keynesian View of Deficits in the 1980s 424 The Federal Budget in the Late 1990s and into the Twenty-First Century 424
18.7	Conclusion 426 Perspectives 18.1 Rational Expectations and the Partisan Theory 411 Perspectives 18.2 Budget Deficits in Seven Industrial Countries 415 Perspectives 18.3 Will We Miss the Debt? 425
Part V	Extensions of the Models 429
CHAPTER	The second secon
19.1	Long-Run Steady-State Growth 432 Growth and the Aggregate Production Function 432 Sources of Economic Growth 435 Recent Developments in the Theory of Economic Growth 438 Explaining Intercountry Income Differences 442

19.3	Determinants of Output Growth in Intermediate-Run Periods U.S. Economic Growth, 1960–97 444 A Possible Reversal in U.S. Growth Trends? 446 The Supply-Side Position 446 The Keynesian Critique of Supply-Side Economics 455
19.3	Growth Policies in the Reagan, Bush, and Clinton Administrations Economic Redirection in the Reagan Years 457 Initiatives in the Bush Administration 459 Growth Policies During the Clinton Administrations 459
19.4	4 Conclusion 460 Perspectives 19.1 Growth Accounting for the United States: An Example 440 Perspectives 19.2 Growth and Productivity Slowdowns in Other Industrialized Economies 445 Perspectives 19.3 The Laffer Curve 454
CHAPTI	ER 20 Consumption and Investment 462
20.1	Consumption 462 Early Empirical Evidence on the Keynesian Consumption Function 462 The Life Cycle Theory of Consumption 467 Policy Implications of the Life Cycle Hypothesis 474 The Permanent Income Hypothesis 475
20.2	2 Investment Spending 479 Investment and Output: The Accelerator Relationship 480 Investment and the Cost of Capital 482 Monetary and Fiscal Policy and Investment 484
20.3	Conclusion 485 Perspectives 20.1 Declining U.S. Personal Saving 473
CHAPTE	CR 21 Money Demand 487
21.1	Review of Previous Analysis 487
21.2	The Theory of the Transactions Demand for Money 489 The Inventory-Theoretic Approach to Money Demand 490 Summary 498
21.3	Extensions of Keynes's Theory of the Demand for Money as a Store of Wealth 498 The Demand for Money as Behavior Toward Risk 499 Money Demand and the Rate of Interest 502
21.4	Instability of Money Demand 503
21.5	Conclusion 506
Glo	ssary 509
Inde	x 515