

# MODERN MACROECONOMICS

# ***Modern Macroeconomics***

---

MICHAEL PARKIN  
&  
ROBIN BADE

University of Western Ontario

Philip Allan

First published 1982 by  
PHILIP ALLAN PUBLISHERS LIMITED  
MARKET PLACE  
DEDDINGTON  
OXFORD OX5 4SE

© MICHAEL PARKIN & ROBIN BADE 1982  
All rights reserved  
This edition for sale in Great Britain and Ireland only

**British Library Cataloguing in Publication Data**

Parkin, Michael  
Modern macroeconomics.  
1. Macroeconomics.  
I. Title II. Bade, Robin  
339'.01 HB171

ISBN 0-86003-047-4  
ISBN 0-86003-142-X Pbk

Set by *Sunrise Setting*, Torquay  
Printed in Great Britain by Hartnoll Print Limited, Bodmin, Cornwall

# ***Preface***

---

This book presents a comprehensive and up-to-date account of macroeconomics — that branch of economics which seeks to explain inflation, unemployment, interest rates, foreign exchange rates, the balance of payments, and other related phenomena. Unlike any other book currently available at this level, a considerable amount of space and attention is devoted to developments that have taken place in the subject in the past ten years. The chief of these is the incorporation into macroeconomics of the rational expectations hypothesis. The rational expectations hypothesis is explained in simple, intuitive terms, and its implications for the determination of inflation, unemployment and economic stabilisation policy are explained and analysed. The book does not only deal with the developments in macroeconomics that have taken place in the past decade. It also provides an account of the mainstream neoclassical synthesis which grew out of the Keynesian and pre-Keynesian theories. In addition, it shows how the new macroeconomics relates to these earlier approaches. The book pays careful attention to the interrelations between the domestic economy and the rest of the world — open economy macroeconomics — and to the design and conduct of macroeconomic policy.

In presenting an account of modern macroeconomics, we have attempted to avoid the extremes of dry theory and passionate policy advocacy. Theory is presented in such a way that the reader may quickly and easily see its predictive content. Those predictions are checked against the facts, revealing in the process the extent to which a theory is capable of explaining the facts as well as its main shortcomings. Policy is handled by analysing the implications of pursuing the policy recommendations of different schools of thought in such a way that the reader may clearly see why it is that different economists reach different conclusions on these important questions.

The central purpose of the book is to make modern macroeconomics accessible to beginning and intermediate students. To this end, we have used the simplest available analytical techniques, intuitive explanations and, wherever possible, illustrations drawn directly from United Kingdom macroeconomic experience. The book is pitched for the most part at a level which we hope is appropriate for university students who are in their second undergraduate year, although large parts of the book will be easily understood by beginning students; and other parts will be found useful by more advanced students who are looking for a simplified and intuitive explanation of material which is only otherwise available in journal articles. Indeed, in view of the lack of any alternative exposition (other than original research articles in learned journals) of much of the material that is presented here, the book will be found useful even by beginning graduate students who are looking for a broad

overview of material which they will study in greater depth in their post-graduate courses, as well as by those whose formal study of economics was completed before the rational expectations revolution hit macroeconomics and who are now professional economists in government, industry and commerce and wish to be given a quick guided tour of this material.

The book is organised around three main themes — facts, theories and policies. The two introductory sections set out the facts that macroeconomics seeks to explain and also give an account of the ways in which macroeconomic phenomena are observed and measured. The core of the book deals with theory. It is organised around a series of progressively more comprehensive models of the economy, each of which has some merits in explaining a limited set of facts, but each of which also has some shortcomings which are highlighted. Following the development of alternative theories, macroeconomic policy — the problem of stabilising output, employment and prices — is discussed at considerable length.

Macroeconomics is a controversial subject and economists often disagree vehemently on policy issues. Despite this, there is a considerable measure of agreement on most matters. There do, however, remain crucial issues that divide economists and, although it is a slight over-simplification, it seems reasonably accurate to divide macroeconomists into two camps — Keynesians and Monetarists. One of us is widely regarded as being a Monetarist and, as a descriptive matter, neither of us can seriously quarrel about being so labelled. We have, nevertheless, tried to write a book which avoids falling into the trap of being a Monetarist tract. Some, no doubt, will conclude that we have failed. We have certainly not shied away from presenting alternative views on macroeconomic policy in the sharpest possible focus. We have attempted to do justice to the positions of each view and explain precisely what it is that each believes and why. Acceptance of the hypothesis that expectations are formed rationally is often regarded as being synonymous with Monetarism. The fact that this book, unlike any other at this level, presents an account of rational expectations (and a sympathetic one at that) will no doubt lead some to conclude that for that reason alone this book is a Monetarist tract. Such a view will be seen, on careful reflection, to be incorrect. There are rational expectations Keynesians (usually referred to as new Keynesians) as well as rational expectations Monetarists (usually referred to as new Classicals). Both of these strands in the literature are presented and explained.

This book would not have been completed without the help of a large number of people. Michael Cox (of the Virginia Polytechnic Institute) has been involved in the project from which the book has resulted since its inception and has read and commented upon substantial parts of the manuscript and provided many of the review questions. Bob Nobay (of the University of Liverpool) and our colleagues David Laidler and Stephen Margolis have provided extensive comments on various parts of the manuscript. We also benefited from the comments on some earlier drafts of what were, at the time, anonymous referees, but whom we now know to have been Brian Scarfe of the University of Alberta and James Pesando of the University of Toronto. Several generations of undergraduate students and graduate teaching assistants at the University of Western Ontario have been of considerable help in providing comments and criticisms upon various parts of the book at different stages of its development. We are especially grateful to Rosalind Wong, Monica van Huystee and David Abramson. Jane McAndrew provided expert library and clerical

assistance and research assistance was provided by Kevin Dowd and Eddie McDonnell. The many drafts and revisions of this book have been typed with great skill by Marg Gower, Yvonne Adams, Leslie Farrant and Brenda Campbell. Ann Hirst has provided the speediest and most thorough copy and production editing that we have ever seen. We are immensely indebted to them all.

Although our debts to all the people named above are considerable, we owe a special debt to Michael Sumner of the University of Salford. The contribution which he has made to this book is enormous. He read the complete penultimate and final drafts with meticulous care and supplied us with the most extensive comments on both style and substance, helping us to remove both blemishes and outright errors. Whatever merit this final product has is in no small measure to be credited to him. We do, of course, absolve him, and all our other helpers, from responsibility for the errors that remain.

Michael Parkin and Robin Bade  
London, Ontario  
March, 1982

# ***Contents***

---

## **Preface**

xix

## **PART I INTRODUCTION**

---

### **1. Macroeconomic Questions 3**

- A. Macroeconomic Questions 3
- B. Macroeconomic Policy Issues 6
- C. Leading 'Schools of Thought' 8
- Summary 10
- Review Questions 11

### **2. Britain's Macroeconomic History since 1900 13**

- A. Evolution of the Macroeconomic Variables 14
- B. Decade Summaries 24
- Summary 28
- Appendix: Britain's Macroeconomic Variables 1900–1980 30
- Review Questions 33

## **PART II MEASURING MACROECONOMIC ACTIVITY**

---

### **3. Aggregate Income Accounting 36**

- A. Flows and Stocks 37
- B. Some Frequently Used Terms 38
- C. Aggregate Income, Output (Product), and Expenditure 40

- D. Measuring Aggregate Income 50
- E. Measuring Aggregate Income in Constant Pounds (Real) 51
- F. Reading National Income and Expenditure Accounts 52
- Summary 54
- Review Questions 56

## **4. Aggregate Balance Sheet Accounting 58**

- A. Asset, Liability, and Balance Sheet 59
- B. Definition and the Nature of Money 61
- C. Main Balance Sheet Items 61
- D. Measuring Aggregate Balance Sheets 68
- Summary 70
- Review Questions 71

## **5. Measuring Inflation and Unemployment 73**

- A. Definition of Inflation 73
- B. Price Index and Percentage Rate of Change 75
- C. Measuring Inflation in the United Kingdom 75
- D. Definition of Unemployment 79
- E. Measuring Unemployment in the United Kingdom 79
- Summary 81
- Review Questions 82

## **6. Economic Transactions with the Rest of the World 83**

- A. Balance of Payments 84
- B. Measuring the United Kingdom's Balance of Payments Accounts 87
- C. Exchange Rate Definitions 88
- D. Measuring Exchange Rates 90
- Summary 92
- Review Questions 94

## **7. The Business Cycle 95**

- A. Definition of the Business Cycle 97
- B. Autocorrelation 99
- C. Co-Movement 104
- D. Properties of the Business Cycle 106
- E. The United Kingdom's Business Cycle 107
- Summary 116
- Review Questions 117



## **PART III**

# **THE BASIC THEORY OF INCOME, EMPLOYMENT, AND THE PRICE LEVEL**

---

## **8. Introduction to the Basic Model 120**

- A. Why Study the Basic Model? 120
- B. Weaknesses of the Basic Model 121
- Summary 122
- Review Questions 122

## **9. Aggregate Supply and the Labour Market 123**

- A. Short-Run Aggregate Production Function 123
- B. Competitive Aggregate Labour Market 126
- C. Aggregate Supply Curve 131
- Summary 133
- Note on Elasticity 134
- Review Questions 135

## **10. Aggregate Demand and the Money Market 136**

- A. Aggregate Demand 136
- B. The Monetary Theory of Aggregate Demand 137
- Summary 145
- Review Questions 146

## **11. Equilibrium in the Basic Model 147**

- Summary 151
- Review Questions 151

## **12. Unemployment 152**

- A. Minimum Wage Laws and Unemployment 153
- B. Trade Unions and Unemployment 155
- C. Unemployment Benefits and Unemployment 159
- D. Taxes and Unemployment 162
- Summary 167
- Review Questions 168

**13. Inflation 170**

- A. Once-for-All Price Level Rises and Inflation 170
- B. Labour Market Shocks and the Price Level 171
- C. Money Supply Growth and Inflation 173
  - Summary 181
  - Appendix: The Algebra of Inflation 181
  - Review Questions 183

**14. Inflation, the Balance of Payments and the Exchange Rate 184**

- A. Money Supply and Foreign Exchange Reserves 185
- B. 'The Law of One Price' 189
- C. Determination of Inflation and the Balance of Payments under Fixed Exchange Rates 191
- D. Determination of Inflation and the Exchange Rate under a Flexible Exchange Rate Regime 196
- E. Determination of the Balance of Payments and the Exchange Rate in a Managed Floating Regime 201
  - Summary 202
  - Review Questions 204

**15. Post-War United Kingdom Macroeconomic History: How Well is it Explained by the Basic Model? 205**

- A. Review of Facts 206
- B. Predictions of the Basic Model 206
- C. Labour Market Shocks 208
- D. Money Supply and World Inflation 215
- E. What the Basic Model Fails to Explain 218
  - Summary 220
  - Note on the Tax Wedge 221
  - Review Questions 222

**PART IV**  
**THE KEYNESIAN THEORY OF INCOME,  
EMPLOYMENT, AND THE PRICE LEVEL**

---

**16. Introduction to the Keynesian Model 226**

- A. Why Study the Keynesian Model? 226

- B. Strengths and Weaknesses of the Keynesian Model 228
  - Summary 228
  - Review Questions 229

## **17. The Keynesian Theory of Aggregate Supply 230**

- A. Keynes's Modification to the Basic Model 230
- B. The Keynesian Aggregate Supply Curve 232
- C. How to Derive the Keynesian Aggregate Supply Curve 233
- D. The Approximate Keynesian Aggregate Supply Curve – The Inverse 'L' 236
  - Summary 238
  - Review Questions 239

## **18. Aggregate Demand in the Keynesian Model: Consumption and the 45° Cross Model 240**

- A. Components of Aggregate Demand 241
- B. Theories of the Consumption Function Proposed by Keynes, Friedman and Modigliani 244
- C. Connection Between Wealth and Income and Why Current Income is a Major Determinant of Consumption 245
- D. Consumption and Savings Functions in Simple Equations and Diagrams 248
- E. The 45° Cross Model 251
  - Summary 255
  - Review Questions 257

## **19. Investment Demand 258**

- A. Distinction Between Investment and the Capital Stock 258
- B. The Demand for Capital 259
- C. Rental Rate of Capital 260
- D. Investment and the Demand for Capital 263
- E. Investment Demand Function 264
  - Summary 266
  - Review Questions 267

## **20. The IS Curve 268**

- A. Definition of the IS Curve 269
- B. Derivation of the IS Curve 269
- C. Determination of the IS Curve Slope 274

D. Shifts in the <i>IS</i> Curve	277
Summary	282
Appendix: The Algebra of the <i>IS</i> Curve	283
Review Questions	284
<b>21. The Demand for Money, the Supply of Money and the <i>LM</i> Curve</b>	<b>285</b>
A. Definition of the <i>LM</i> Curve	286
B. Derivation of the <i>LM</i> Curve	286
C. Determination of the <i>LM</i> Curve Slope	290
D. Shifts in the <i>LM</i> Curve	292
Summary	294
Review Questions	295
<b>22. Equilibrium in the Keynesian Model</b>	<b>296</b>
A. Equilibrium at <i>IS</i> – <i>LM</i> Intersection	296
B. Properties of the <i>IS</i> – <i>LM</i> Equilibrium	297
C. Changes in Government Expenditure and Taxes	302
D. Change in the Money Supply	306
E. The Keynesian Model as a General Theory of Aggregate Demand	308
Summary	311
Appendix: The Algebra of the Keynesian Model	313
Review Questions	316
<b>23. The Keynesian Model of the Open Economy</b>	<b>317</b>
A. Derivation of the <i>IS</i> Curve for an Open Economy	318
B. Definition of the <i>BP</i> Curve	321
C. Derivation of the <i>BP</i> Curve	321
D. Shifts in the <i>IS</i> , <i>LM</i> , and <i>BP</i> Curves	324
E. Determination of Output, Interest Rate, and the Balance of Payments in a Fixed Exchange Rate Regime	326
F. Determination of Output, Interest Rate, and the Exchange Rate in a Flexible Exchange Rate Regime	331
Summary	336
Review Questions	338
<b>24. The Neoclassical Synthesis</b>	<b>339</b>
A. Definition of the ‘Neoclassical Synthesis’	340
B. Keynesian Theory at Full Employment	340

- C. The Neoclassical Theory of Price Adjustment 346
- D. Price Level Expectations and the 'Natural Rate' Hypothesis 348
- E. The Neoclassical Explanation of the Business Cycle 351
- F. Policy Implications of the Neoclassical Synthesis 355
  - Summary 355
  - Review Questions 357

## **25. The United Kingdom's Recent Economic History: How Well is it Explained by the Neoclassical Synthesis? 358**

- A. Main Predictions of the Neoclassical Model 359
- B. The Facts Explained by the Neoclassical Model 367
- C. The Facts Not Explained by the Neoclassical Model 370
- D. Strengths and Shortcomings of the Neoclassical Model 371
  - Summary 372
  - Review Questions 373

## **PART V**

### **RATIONAL EXPECTATIONS THEORY OF INCOME, EMPLOYMENT, AND THE PRICE LEVEL**

---

## **26. Introduction to the Rational Expectations Theories of Income, Employment, and the Price Level 376**

Summary 380

## **27. Information, Expectations, and the New Classical Theory of Aggregate Supply 381**

- A. Incomplete Information and the Labour Market 382
- B. Wrong Expectations and the Labour Market 383
- C. Definition of the Expectations-Augmented Aggregate Supply Curve 388
- D. Derivation of the Expectations-Augmented Aggregate Supply Curve 388
  - Summary 391
  - Review Questions 392

<b>28. The New Keynesian Theory of Aggregate Supply</b>	<b>393</b>
A. Assumptions of the New Keynesian Analysis	394
B. Determination of Money Wages	395
C. The New Keynesian Expectations-Augmented Aggregate Supply Curve	396
D. Overlapping Wage Contracts	398
Summary	400
Review Questions	401
<b>29. Equilibrium Income, Employment, and the Price Level with Fixed Expectations</b>	<b>402</b>
A. Full-Employment Equilibrium	403
B. Simple Diagrams to Characterise Full-Employment Equilibrium	404
C. Effects of a Change in Aggregate Demand with a Fixed Expected Price Level	406
Summary	412
Review Questions	412
<b>30. Price Level Expectations</b>	<b>414</b>
A. Subjective Expectation and Conditional Mathematical Expectation	415
B. Rational Expectation	417
C. Rational Expectation of the Price Level	418
D. How to Work Out the Rational Expectation of the Price Level	420
Summary	424
Review Questions	425
<b>31. Equilibrium Income, Employment, and the Price Level with Rational Expectations</b>	<b>426</b>
A. Anticipated and Unanticipated Changes in Aggregate Demand	427
B. Effects of an Anticipated Change in Aggregate Demand	429
C. Effects of an Unanticipated Change in Aggregate Demand	432
Summary	434
Appendix: The Algebra of Rational Expectations Equilibrium	435
Review Questions	437

## **32. Rational Expectations Theory of the Open Economy: A Selective Sketch 438**

- A. Need for a Rational Expectations Theory of the Open Economy 439
- B. Aggregate Demand when Capital is Perfectly Mobile 440
- C. Determination of Output and the Price Level with a Fixed Exchange Rate 446
- D. Determination of Output, the Price Level, and the Exchange Rate under Flexible Exchange Rates 448
- Summary 461
- Review Questions 463

## **33. Explaining the Facts 464**

- A. Procyclical Co-Movements in Prices 466
- B. Independent Movements of Output and Prices 468
- C. Autocorrelation of Output and Employment 470
- D. Interest Rate Behaviour 471
- E. The Business Cycle 473
- F. The Hypothesis Testing Problem Posed by the Rational Expectations Theories 474
- Summary 476
- Appendix: A Methodological Postscript 478
- Review Questions 481

## **PART VI MACROECONOMIC POLICY**

---

## **34. Introduction to Macroeconomic Policy Problems 484**

- A. What Macroeconomic Policies Seek to Achieve 484
- B. Highlights in the Evolution of the Policy Debate 485
- C. Policy — A Process, Not an Event 486
- Summary 488
- Review Questions 488

<b>35. The Constraints on Macroeconomic Policy</b>	<b>489</b>
A. Government Budget Constraint	450
B. Government Budget Constraint and the Conduct of Monetary and Fiscal Policy	493
C. Balance of Payments Constraint	498
D. Government Budget and Balance of Payments Constraints and Rational Expectations	501
Summary	502
Review Questions	504
<b>36. Control of the Money Supply</b>	<b>505</b>
A. Links Between the Monetary Base and the Money Supply	506
B. How the Bank of England Operates to Achieve its Target Growth Path for the Money Supply	509
Summary	513
Review Questions	514
<b>37. Monetary Policy I: Aggregate Demand Shocks</b>	<b>515</b>
A. Monetarist and Keynesian Monetary Policy Advice	516
B. Aggregate Demand Shocks and the Aggregate Demand Curve	517
C. Consequences of Monetarist Policy	519
D. Consequences of Keynesian Policy	520
E. Why Monetarists and Keynesians Offer Conflicting Advice	521
Summary	526
Review Questions	527
<b>38. Monetary Policy II: Aggregate Supply Shocks</b>	<b>528</b>
A. Effects of Supply Shocks	529
B. Expectations-Augmented Aggregate Supply Curve and the Expectation of the Aggregate Supply Curve	533
C. Consequences of Monetarist Policy	534
D. Consequences of Keynesian Policy	535
E. Consequences of Keynesian Policy with an Information Lag	537
F. The Monetarist–Keynesian Dispute: A Presumption in Favour of Monetarism	538
Summary	539
Review Questions	540



**39. Fiscal Policy 542**

- A. Keynesian and Monetarist Fiscal Policy Advice 542
- B. Anticipated and Unanticipated Fiscal Policy 544
- C. Effects of Anticipated Change in Government Expenditures 545
- D. Effects of Unanticipated Change in Government Expenditures 547
- Summary 551
- Review Questions 552

**40. Prices and Incomes Policies 553**

- A. Content of a Prices and Incomes Policy 554
- B. Posted Price and Actual Price 555
- C. Wage and Price Controls and the Expected Price Level 556
- D. Wage and Price Controls and the Actual Price Level 559
- E. Wage and Price Controls Make Matters Worse 560
- Summary 564
- Review Questions 565

**41. United Kingdom Macroeconomic Policy 566**

- A. Fiscal Policy 567
- B. Monetary Policy 569
- C. Policy Patterns and Effects 571
- D. Is the Thatcher Government Pursuing Monetarist Policies? 577
- Summary 578
- Appendix 580
- Review Questions 586

**Index 587**