

Macroeconomics

STEVEN E. LANDSBURG

University of Rochester

LAUREN J. FEINSTONE

The McGraw-Hill Companies, Inc.

NEW YORK ST. LOUIS SAN FRANCISCO AUCKLAND BOGOTÁ CARACAS LISBON LONDON MADRID MEXICO CITY MILAN MONTREAL NEW DELHI SAN JUAN SINGAPORE SYDNEY TOKYO TORONTO

McGraw-Hill



A Division of The McGraw-Hill Companies

Macroeconomics

Copyright © 1997 by The McGraw-Hill Companies, Inc. All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a data base or retrieval system, without the prior written permission of the publisher.

This book was printed on acid-free paper.

1234567890 VNH VNH 90987

ISBN 0-07-020496-9

This book was set in Times Roman by GTS Graphics, Inc.

The editors were Lucille H. Sutton, Adrienne D'Ambrosio, and Elaine Rosenberg;

the production supervisor was Leroy A. Young.

The design manager was Charles A. Carson.

The designer was Edward A. Butler.

Drawings were done by Fine Line Illustrations.

Von Hoffmann Press, Inc. was printer and binder.

Library of Congress Cataloging-in-Publication Data

Landsburg, Steven E.

Macroeconomics / Steven E. Landsburg, Lauren Feinstone.

p. cm.

Includes index.

ISBN 0-07-020496-9

1. Macroeconomics. I. Feinstone, Lauren J., 1952-

II. Title.

HB172.5.L36 1997

339---dc21

96-45453

INTERNATIONAL EDITION

Copyright © 1997. Exclusive rights by The McGraw-Hill Companies, Inc. for manufacture and export. This book cannot be re-exported from the country to which it is consigned by McGraw-Hill. The International Edition is not available in North America.

When ordering this title, use ISBN 0-07-020496-9.

http://www.mhcollege.com

Preface

acroeconomics today is a different subject than it was just a few decades ago. Old controversies have been resolved, new ones have arisen, and in the process some widespread areas of consensus have emerged. We believe that the paradigm of intertemporal choice is the basis for this emerging consensus in macroeconomics and that the new paradigm is sufficiently developed to serve as the unifying theme of an undergraduate textbook. This is that textbook.

Our strategy is to first develop a basic model whose component pieces are largely noncontroversial and then show how variations in certain key assumptions can lead to alternative conclusions. This enables us to emphasize the existence of an established body of knowledge without denying the controversies that remain.

The fundamental model is one of intertemporal exchange and production. This allows us, right from the start, to address the dynamic issues which are the basis for the modern approach to macroeconomics. As we introduce different sectors of the economy, we repeatedly return to the intertemporal aspects, using these as a unifying theme.

The book's chapters can be roughly classified into "building-block" chapters, "application" chapters, and "institutional" chapters. The building-block chapters introduce the microeconomic foundations of macroeconomics in an environment with flexible prices and perfect information. They include chapters on the dynamic elements of borrowing and lending (Chapter 3), consumption (Chapters 4 and 5), investment (Chapter 7), and labor (Chapter 9). These components are added to the model one at a time, so that the student is able to master equilibrium and comparative statics first in a pure endowment economy and then in successively richer models. Throughout, we emphasize supply, demand, and equilibrium—tools that will be familiar to some students but are developed from scratch with macroeconomic examples.

Early in the development, we incorporate the international economy, highlighting the parallel economics of trade across nations and trade between individuals. We also add another building block—a government sector—and address the traditional concerns of macroeconomics, including government expenditure and taxation (Chapter 6) and the market for money (Chapter 9). Along the way we highlight such issues as the debate surrounding Ricardian equivalence and the causes of inflation.

The application chapters combine these building blocks into more substantial structures—the theory of long-run economic growth (Chapter 8) and the theory of business cycles and short-run income determination (Chapters 11 through 14). Because growth theory requires only some of the building blocks, we have been able to position it even before all of the building blocks are in place. Some instructors will want to cover this chapter in sequence; others will prefer to complete the building-

block Chapters 9 and 10 (and possibly some of the subsequent application Chapters 11 through 14) before returning to the topic of growth. We have carefully tailored the presentation so that instructors can follow either sequence without any loss of continuity. Let a thousand flowers bloom.

In the application Chapters 11 through 14, we first discuss some of the evidence and controversies involved in defining, measuring, and predicting business cycles. In Chapter 11, we use this material to call attention to some of the inadequacies of a flexible-price, full-information model. With this as motivation, we integrate the original building blocks into more sophisticated models, incorporating sticky wages (Chapter 12), sticky prices (Chapter 13), and monetary misperceptions (Chapter 14). We emphasize the question of what governments can and cannot do, and how the answer depends critically on what one believes about the existence and nature of distortions in the economy. At the same time, we insist that despite their different policy implications, all of these models are variations on a single theme. We eschew a pedagogy of "dueling models" with nothing in common, which can leave students with the impression that macroeconomists typically have nothing to say to each other. Instead, we provide a common language in which all schools of macroeconomic thought can be communicated and compared.

While we encourage students to think abstractly, we also encourage them to remember that the purpose of abstract thought is ultimately to understand the real world. Real-world institutions and history are referenced repeatedly in every chapter. A few chapters are exclusively devoted to tying the model to reality; these institutional chapters cover, among other topics, the national income accounts (Chapter 2), the money supply process (Chapter 15), and the making of economic policy (Chapter 17). A separate chapter on international finance (Chapter 16) is both an introduction to important real-world institutions and a new sort of building block, which (as we show the student) can be used to embellish the models and analysis elsewhere in the book.

We believe that students learn best by working problems. We have provided a large number of problems, at every level of difficulty. Within the chapters are exercises which should be easy for any student who has understood the preceding few paragraphs; students can use these exercises to slow themselves down and make sure they have grasped one point before rushing on to the next. The end-of-chapter problem sets call for deeper thought and understanding.

There are many other learning aids, including glossary items in the margins and "special warnings" to alert the students to points of particular subtlety. Special warnings are marked with the symbol below.

Supplements

The supplements that accompany Macroeconomics include a Study Guide prepared by William Weber of Eastern Illinois University as well as an Instructor's Manual, a Testbank in printed and computerized versions, Excel spreadsheet software by Tim

About The Authors

Steven E. Landsburg is an associate professor teaching at the University of Rochester. He has also taught at Colorado State University, Cornell University, the University of Iowa, and the University of Chicago. He is the author of two previous books about economics, *Price Theory and Applications* and *The Armchair Economist*. His monthly columns on economic matters have appeared in *Forbes* and the *Washington Post* and are currently appearing in *Slate*.

Lauren J. Feinstone has been a member of the faculty at the University of Rochester and the Economics Institute in Boulder, Colorado. She received a Ph.D. in economics from the University of Chicago. In 1988–1989, she was a Senior Economist on the President's Council of Economic Advisers, with primary responsibility for international macroeconomics. She is the author of the international finance chapter in the *Economic Report of the President* issued in February 1989.

Contents in Brief

	Preface	xx
Chapter 1:	Introduction	1
Chapter 2:	Income, Output, and Expenditure	7
Chapter 3:	Borrowing and Lending	39
Chapter 4:	Consumption	65
Chapter 5:	Interest Rates and Equilibrium	107
Chapter 6:	The Government	143
Chapter 7:	Investment	183
Chapter 8:	Economic Growth	216
Chapter 9:	Labor	255
Chapter 10:	Money	297
Chapter 11:	The Neoclassical Model	331
Chapter 12:	The Sticky Wage Model	363
Chapter 13:	The Sticky Price Model	397
Chapter 14:	Monetary Misperceptions and the Role of Expectations	431
Chapter 15:	Monetary Institutions	467
Chapter 16:	Exchange Rates	497
Chapter 17:	Economic Policy	529
	Index	543

Contents

	Preface	хх
Cha	ipter 1	1
Intro	oduction	**********
1-1	What Is Macroeconomics?	
1-2	The Plan of This Book	;
	The Fundamental Variables	:
	The Basic Model	:
	Using the Model	;
1-3	Models and Reality	(
Cha	ipter 2	7
Inco	ome, Output, and Expenditure	
2-1	Income	8
	Income and Welfare	9
	Measuring Income	1
	Problems in Measuring Income Directly	13
	Dealing with Measurement Problems	13
2-2	Output Measuring Output	14
	Measuring Output Problems in Measuring Output Directly	14
2-3	• •	_
2-3	Relating Output to Income Relating Measured Output to Measured Income	17 18
	Net Factor Payments Abroad	19
2-4	Expenditure	20
	Measuring Expenditure	20
2-5	The Relationship among Income, Output, and Expenditure	21
	Saving	22
	Taxes	23
	The Circular Flow of Economic Activity	23
2-6	Income and Expenditure in an Open Economy	24
	Measuring Net Exports	25
2-7	Growth	26
	Problems in Measuring Growth	26
	Measuring Real Income: Real GDP	28
	Measuring Real Growth	30
		×

2-8	The Price Level and Inflation	32
	Measuring the Price Level and Inflation	33
	Summary	35
	Problem Set	36
Cha	ipter 3	39
Bor	rowing and Lending	***************************************
3-1	Bonds and Loans	40
	Borrowing and Lending	40
	Bonds	40
	Net Lending and Borrowing	42
	Banks and the Bond Market	43
3-2	Interest Rates	44
	Nominal Interest Rates	44
	Real Interest Rates	44
	Foreign Interest Rates	45
	The One-Period, Risk-Free Real Interest Rate	46
3-3	The Price of Current and Future Consumption	48
	The Price of Current Consumption The Price of Future Consumption	49
	The Price of a Bond	50 51
	Comparing Streams of Payments	55
3-4	Additional Applications	57
-	Corporate Stocks	57
	Durable Goods	58
	Cash versus Credit	59
	Government Debt	60
	Summary	61
	Problem Set	62
Cha	pter 4	65
Con	sumption	
4-1	Intertemporal Opportunities	66
	Some Simplifying Assumptions	66
	Income Streams	67
	The Intertemporal Budget Line	68
	Intertemporal Choice	71
	The Gains from Trade in Bonds	71
4-2	Effects of Changes in the Interest Rate	73
	The Case of a Net Borrower	74
	The Case of the Perrosentation A part	78
	The Case of the Representative Agent	80

xiii

4-3	Consumption Demand Curves	82
	The Demand Curve for Current Consumption	83
	The Demand Curve for Future Consumption	85
	Aggregate Demand	86
4-4	Effects of Changes in the Endowment Point	88
	Shocks to Current Income	89
	Shocks to Future Income	95
	Permanent Income Shocks	95
	The Role of Wealth	98
	Some Evidence on Consumption Smoothing	101
	Summary	102
	Problem Set	103
Cha	pter 5	107
Inte	rest Rates and Equilibrium	
5-1	The Endowment Economy	108
	Supply	109
	The Market Demand for Current Consumption	110
5-2	Equilibrium in the Endowment Economy	112
	Getting to Equilibrium: Market Forces	112
	The Market for Future Consumption	114
5-3	Comparative Statics	116
	An Increase in Future Income	117
	An Increase in Current Income	120
	A War	121
	A Permanent Increase in Income	123
E 4	General Changes in Income	124
5-4 	Interest Rates: Recent History	125
5-5	The Open Economy	127
	World Supply and Demand Curves	128
	Trade Deficits and Trade Surpluses	129
5-6	Comparative Statics in the Open Economy	133
	An Increase in Domestic Future Income	133
	An Increase in Domestic Current Income Opening an Economy to Trade	13 ²
	The U.S. Trade Balance: Recent History	138
	Summary	139
	Problem Set	140
Cha	pter 6	143
	Government	······································
6-1	Government Spending	144
	Government Budgets	145

6-2	Markets versus Governments	146
	Failures of the Marketplace	146
	Equity	148
	Failures of the Government	150
6-3	Government Spending in the Endowment Economy	151
	Categories of Government Spending	151
	Temporary Spending versus Permanent Spending	153
	Comparative Statics	154
	Government Spending in the United States	159
6-4	Taxation	160
6-5	Debt and Deficits	162
	The History of Government Debt in the United States	162
	Taxation versus Deficits	164
	The Geometry of Ricardian Equivalence	166
6-6	,	168
	A Bad Argument against Ricardian Equivalence	168
	Good Arguments against Ricardian Equivalence	171
	Do Government Budget Deficits Matter?	176
	Summary	1 <i>7</i> 9
	Problem Set	180
<u></u>	pter 7	183
	estment	
<i>7</i> -1	Capital, Investment, and Production	184
	Capital and Investment	184
	The Volatility of Investment Production	185
	The Production Function	186
	Firms	187
7.0		189
7-2	The Demand for Capital and Investment The Demand for Capital	190
	The Demand for Investment	190
	Aggregate Investment Demand	192 194
	Depreciation	194
7-3	Equilibrium and the Market Interest Rate	
7-0	Aggregate Supply	196 196
	Aggregate Demand	196
	Equilibrium Explored	197
	Saving versus Investment	199
7-4		
, .	An Increase in Future Income	201 201
	An Increase in the Marginal Product of Capital	201
	An Increase in Supply	204
此为试读, 需要完	整PDF请访问: www.ertongbook.com	

7-5	Measuring Investment	204
	Measured Real Net Investment	206
	Why Has Measured Real Net Investment Decreased since the 1970s?	207
7-6		208
	Measuring International Investment	209
	Do International Investment Positions Matter?	211
	Summary	211
	Problem Set	212
Cho	pter 8	215
Eco	nomic Growth	
8-1	Growth in the Neoclassical Model	216
	How the Capital Stock Grows from One Period to the Next	217
	How the Capital Stock Grows in the Long Run	219
	Economic Growth	219
	Comparative Statics	221
	Economic Growth and Population Growth	222
8-2	The Solow Model of Economic Growth	223
	Returns to Scale	223
	The Per-Worker Production Function	224
	Why the Capital-Labor Ratio Evolves	225
	Depreciation and Population Growth	225
	Saving and Investment	228
	The Transformation Curve	230
	How the Capital-Labor Ratio Evolves	231
	Economic Growth	232
	Comparative Statics	233
	The Solow Model So Far	237
8-3	International Evidence	238
8-4	Enriching the Model	241
	Increasing Returns to Scale	241
	Population Growth and Technological Progress	243
8-5	Evaluating Growth	244
	Consumption versus Investment	244
	Future Generations	246
	The Golden Rule	246
	Income versus Welfare	250
	Summary	251
	Problem Set	252
Cha	pter 9	255
Labo	or	*****************
9-1	A Very Simple Model	256
	The Production Function	257

	The Labor Model	259
	Changes in the Environment	259
	The Model versus Reality	263
9-2	The Model with Borrowing and Lending	263
	Changes in Current and Future Nonlabor Income	264
	Changes in Current and Future Productivity	265
	Temporary Changes versus Permanent Changes	265
	Changes in the Interest Rate	267
	A Summary of Four Effects	267
	Historical Evidence	268
9-3	The Labor Market	273
	Real and Nominal Wage Rates	273
	The Demand for Labor	273
	The Supply of Labor	273
	Equilibrium	275
	Comparative Statics	276
	The Government	281
9-4	The Goods Market with Labor	284
	The Supply of Goods	284
	Equilibrium in the Goods Market	284
	Comparative Statics	285
9-5	Trends in Real Wages	289
	Real Wages and Real Compensation	289
	Real Compensation and Productivity	291
	Comparison with Economic Growth	292
	Summary	293
	Problem Set	294
Cha	pter 10	297
Mon	ley	
10-1	The Price Level and the Price of Money	298
	The Price Level	299
	The Price of Money	299
	The Quantity of Money	300
10-2	The Demand for Money	300
	Real Money Holdings	301
	The Money Demand Equation	302
	Demand versus Quantity Demanded	303
	Determinants of the Demand for Money	304
10-3	The Supply of Money and Equilibrium	306
	Changes in Supply	306
	Changes in Real Income	309
	Other Factors That Change Money Demand	312
	Testing the Theory	313

Tab	le of Contents	xvii
10-4	Inflation	315
	Inflation around the World	317
	The Onset of Inflation	317
	Expected versus Unexpected Inflation	320
10-5	The Role of Government	321
	The Algebra of Seigniorage	322
	The Inflation Tax	323
10-6	Money and Interest Rates	326
	Summary	327
	Problem Set	328
Cha	pter 11	331
The	Neoclassical Model	.,
11-1	The Neoclassical Model: An Overview	332
	The Locations of the Curves	334
	Market Clearing in the Neoclassical Model	335
11-2	Inadequacies of the Neoclassical Model	335
	The Real-Nominal Dichotomy	336
	Market Clearing and Unemployment	337
	Market Clearing and Recessions	339
	Market Clearing and the Government	339
11-3	What Is a Business Cycle?	343
	Permanent Effects of Recessions	345
	What Happens during Business Cycles?	346
	Business Cycles Are Worldwide	348
	Have Business Cycles Changed? Are Business Cycles a Problem?	349 351
	•	
11-4	Business Cycles and the Neoclassical Model A Supply Shock	352
	A Shock to Productivity	352 354
	A Demand Shock	355
	A Monetary Shock	357
	International Shocks	357
	Where Do We Go from Here?	359
	Summary	360
	Problem Set	361
Chap	oter 12	363
	Sticky Wage Model	
12-1	The Sticky Wage Model: An Overview	364
	Real versus Nominal Wages	364
	The Labor Market with Sticky Wages	365
	The Goods Market	368

xviii

The Cor	mplete Sticky Wage Model	372
Effect o	f a Change in the Price Level	373
12-2 Compa	ring the Models	376
The Rea	al-Nominal Dichotomy	376
Involunt	tary Unemployment	378
Business	s Cycles	380
12-3 Govern	ment Actions	389
Fiscal P	olicy	389
An Incre	ease in the Money Supply	393
Conclus	ion: The Role of Government	393
Summa	ıry	394
Probler	n Set	395
Chapter 13		397
The Sticky I	Price Model	
13-1 Sticky	Prices	398
Why Sti	icky Prices?	398
The Mo	ney Market with Sticky Prices	401
The LM	Curve	403
Money S	Supply Shocks and the LM Curve	405
Price Le	evel Shocks and the LM Curve	406
Money 1	Demand Shocks and the LM Curve	407
A Digre	ssion: The Sticky Inflation-Rate Model	408
13-2 Sticky	Price Equilibrium	409
The Goo	ods Market in the Sticky Price Model	409
Adding	the Government	412
The Cor	mplete Sticky Price Model	412
=	ative Statics	413
The Sho	ort Run versus the Long Run	418
13-3 Compa	ring the Models	419
The Rea	al-Nominal Dichotomy	419
	ary Unemployment	419
Business	s Cycles	420
13-4 Govern	ment Actions	423
Fiscal Po	•	423
Does the	e U.S. Government Believe the Sticky Price Model?	426
Summary		428
Problem Set		429
Chapter 14		431
Monetary M	hisperceptions and the Role of Expectations	······
14-1 Inflation	n and Unemployment	432
The Phil	llips Curve	432
The Phil	llips Curve and Economic Theory	433

Table	o f	Contents	xix

14-2	Prices versus Output: Comparing the Models	436
	Money Market Equilibrium and the ME Curve	436
	Goods Market Equilibrium and the GE Curve	439
	Using the ME and GE Curves to Compare the Models	441
14-3	Monetary Misperceptions: The Role of Expectations	444
	Fable 1: The Tale of the Unemployed Worker	444
	Fable 2: The Little Grocery Store	445
	The Morals	446
14-4	The Monetary Misperceptions Model	448
	Prices and Output	448
	Effects of a Monetary Shock	451
	Rational Expectations	451
	The Lucas Critique	454
	The Government Patienal Expectations More Constally	456 459
	Rational Expectations More Generally	
14-5	Testing the Monetary Misperceptions Model	460
	When Does Money Matter?	460
	International Evidence	461
	Summary	463
	Problem Set	464
Chai	oter 15	467
	etary Institutions	
		440
13-1	A Brief History of Money Coins	468
	Paper Money and the Gold Standard	468 469
	Fiat Currency	469
	Government Money	470
	Central Banks	471
15-2	Monetary Assets: An Overview	472
	Currency	473
	Bank Deposits	474
15-3	The Monetary Base	476
	Open-Market Operations	476
	The Discount Window	477
15-4	The Money Supply	479
	Changes in the Monetary Base	479
	How a Central Bank Controls M1	483
	Broader Definitions of Money	483
15-5	What the Fed Does	484
	Making Monetary Policy	484
	The Fed as a Bank for Banks	486
15-6	Issues in Monetary Policy	488

	What Can Central Banks Do?	488
	What Should the Federal Reserve Do?	492
	Summary	494
	Problem Set	495
Chap	oter 16	497
Exch	ange Rates	
16-1	Arbitrage	498
	Arbitrage, Exchange Rates, and International Trade	499
	Purchasing-Power Parity	503
16-2	An Overview of Exchange-Rate Regimes	506
16-3	Flexible-Exchange-Rate Regimes	509
	The Supply of Foreign Money	509
	The Determination of Price Levels and Exchange Rates in a Two-Nation	
	Economy	509
16-4	Flexible Exchange Rates and Macroeconomic Models	512
	Exchange Rates and the Neoclassical Model	512
	Exchange Rates and Other Models	514
	Advice to Tourists Can a Currency Be Overvalued or Undervalued?	514 515
	Central Bank Intervention	517
16-5	Fixed-Exchange-Rate Regimes	519
	Early Trading: A Brief History	520
	Modern Fixed-Exchange-Rate Systems	520
	International-Reserve Crises	522
	Fixed Exchange Rates and Economic Events	522
	The Evolution from Fixed Exchange Rates to Flexible Rates and Beyond	524
	Summary	526
	Problem Set	527
Chap	oter 17	529
	omic Policy	
	How Fiscal Policy Is Made	530
	Issues in Economic Policy	531
., _	Positive Issues versus Normative Issues	531
	Some Points of Disagreement	534
	What Economists Agree On	539
	Summary	540
	Problem Set	541
	Index	543