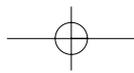
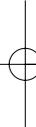
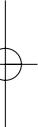
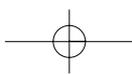
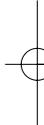
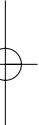
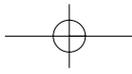
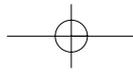


Economics

Eighth Edition







Principles of Economics

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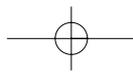
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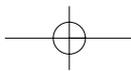
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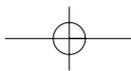
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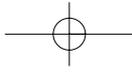
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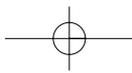
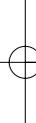
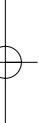
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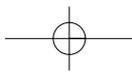
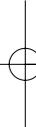
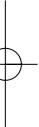
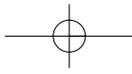


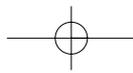


Dedication

For Honora, Mary and Robin







Brief table of contents

<i>Detailed table of contents</i>	ix
<i>Suggested outlines for a shortened course</i>	xviii
<i>Getting the most out of this book</i>	xx
<i>Preface</i>	xxi
<i>Acknowledgements for the eighth edition</i>	xxiii
<i>Guided tour</i>	xxiv
<i>Technology to enhance learning and teaching</i>	xxvi

Part one Introduction 1

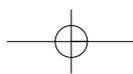
1. Economics and the economy	3
2. Tools of economic analysis	15
3. Demand, supply and the market	30

Part two Positive microeconomics 45

4. Elasticities of demand and supply	47
5. Consumer choice and demand decisions	64
6. Introducing supply decisions	85
7. Costs and supply	101
8. Perfect competition and pure monopoly	120
9. Market structure and imperfect competition	142
10. The labour market	162
11. Different types of labour	185
12. Factor markets and income distribution	201
13. Risk and information	222
14. The information economy	241

Part three Welfare economics 257

15. Welfare economics	259
16. Government spending and revenue	279
17. Industrial policy and competition policy	298
18. Natural monopoly: public or private?	315



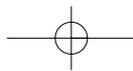
Part four Macroeconomics 333

19.	Introduction to macroeconomics	335
20.	Output and aggregate demand	353
21.	Fiscal policy and foreign trade	367
22.	Money and banking	384
23.	Interest rates and monetary transmission	401
24.	Monetary and fiscal policy	418
25.	Aggregate supply, prices and adjustment to shocks	430
26.	Inflation, expectations and credibility	447
27.	Unemployment	469
28.	Exchange rates and the balance of payments	484
29.	Open economy macroeconomics	500
30.	Economic growth	517
31.	Business cycles	536
32.	Macroeconomics: taking stock	549

Part five The world economy 565

33.	International trade	567
34.	Exchange rate regimes	589
35.	European integration	605
36.	Less developed countries	622

	<i>Appendix: Answers to review questions</i>	638
	<i>Glossary</i>	646
	<i>Index</i>	657



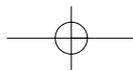
Detailed table of contents

<i>Suggested outlines for a shortened course</i>	xviii
<i>Getting the most out of this book</i>	xx
<i>Preface</i>	xxi
<i>Acknowledgements for the eighth edition</i>	xxiii
<i>Guided tour</i>	xxiv
<i>Technology to enhance learning and teaching</i>	xxvi
Part one Introduction	1
Chapter 1 Economics and the economy	3
1.1 Economic issues	4
1.2 Scarcity and the competing use of resources	6
1.3 The role of the market	8
1.4 Positive and normative	11
1.5 Micro and macro	12
Summary	13
Review questions	14
Chapter 2 Tools of economic analysis	15
2.1 Economic data	16
2.2 Index numbers	17
2.3 Nominal and real variables	18
2.4 Measuring changes in economic variables	20
2.5 Economic models	20
2.6 Models and data	21
2.7 Diagrams, lines and equations	22
2.8 Another look at 'other things equal'	24
2.9 Theories and evidence	25
2.10 Some popular criticisms of economics and economists	25
Summary	27
Review questions	28
Chapter 3 Demand, supply and the market	30
3.1 The market	30
3.2 Demand, supply and equilibrium	31
3.3 Demand and supply curves	32
3.4 Behind the demand curve	33
3.5 Shifts in the demand curve	35
3.6 Behind the supply curve	36
3.7 Shifts in the supply curve	37
3.8 Free markets and price controls	38
3.9 What, how and for whom	40
Summary	42
Review questions	44



Part two Positive microeconomics	45
Chapter 4 Elasticities of demand and supply	47
4.1 The price responsiveness of demand	47
4.2 Price, quantity demanded and total expenditure	52
4.3 Further application of the price elasticity of demand	53
4.4 Short run and long run	55
4.5 The cross-price elasticity of demand	55
4.6 The effect of income on demand	56
4.7 Inflation and demand	59
4.8 Elasticity of supply	59
4.9 Who really pays the tax?	60
Summary	62
Review questions	63
Chapter 5 Consumer choice and demand decisions	64
5.1 Demand by a single consumer	64
5.2 Adjustment to income changes	71
5.3 Adjustment to price changes	73
5.4 The market demand curve	78
5.5 Complements and substitutes	79
5.6 Transfers in kind	79
Summary	80
Review questions	81
Appendix: Consumer choice with measurable utility	82
Chapter 6 Introducing supply decisions	85
6.1 Business organization	85
6.2 A firm's accounts	86
6.3 Firms and profit maximization	90
6.4 Corporate finance and corporate control	91
6.5 The firm's supply decision	92
6.6 Marginal cost and marginal revenue	94
6.7 Marginal cost and marginal revenue curves	97
Summary	99
Review questions	99
Chapter 7 Costs and supply	101
7.1 Input and output	101
7.2 Costs and the choice of technique	102
7.3 Long-run total, marginal and average costs	104
7.4 Returns to scale	105
7.5 Average cost and marginal cost	109
7.6 The firm's long-run output decision	110
7.7 Short-run costs and diminishing marginal returns	110
7.8 A firm's output decision in the short run	115
7.9 Short-run and long-run costs	117
Summary	117
Review questions	118

Chapter 8 Perfect competition and pure monopoly	120
8.1 Perfect competition	121
8.2 A perfectly competitive firm's supply decision	122
8.3 Industry supply curves	125
8.4 Comparative statics for a competitive industry	128
8.5 Global competition	130
8.6 Pure monopoly: the opposite limiting case	131
8.7 Profit-maximizing output for a monopolist	132
8.8 Output and price under monopoly and competition	134
8.9 A monopoly has no supply curve	136
8.10 Monopoly and technical change	138
Summary	139
Review questions	140
Chapter 9 Market structure and imperfect competition	142
9.1 Why market structures differ	143
9.2 Monopolistic competition	146
9.3 Oligopoly and interdependence	147
9.4 Game theory and interdependent decisions	150
9.5 Reaction functions	152
9.6 Entry and potential competition	156
9.7 Strategic entry deterrence	157
9.8 Summing up	159
Summary	160
Review questions	161
Chapter 10 The labour market	162
10.1 The firm's demand for factors in the long run	163
10.2 The firm's demand for labour in the short run	164
10.3 The industry demand curve for labour	168
10.4 The supply of labour	169
10.5 Industry labour market equilibrium	174
10.6 Transfer earnings and economic rents	175
10.7 Do labour markets clear?	176
10.8 UK wages and employment	179
Summary	180
Review questions	181
Appendix: Isoquants and the choice of production technique	182
Chapter 11 Different types of labour	185
11.1 Productivity differences	186
11.2 Discrimination	191
11.3 Trade unions	194
Summary	199
Review questions	199
Chapter 12 Factor markets and income distribution	201
12.1 Physical capital	202
12.2 Rentals, interest rates and asset prices	203



12.3	Saving, investment and the real interest rate	207
12.4	The demand for capital services	208
12.5	The supply of capital services	209
12.6	Equilibrium and adjustment in the market for capital services	212
12.7	The price of capital assets	213
12.8	Land and rents	214
12.9	Allocating a fixed land supply between competing uses	215
12.10	The facts again	216
12.11	Income distribution in the UK	217
	Summary	219
	Review questions	220
	Appendix: The simple algebra of present values and discounting	221
Chapter 13 Risk and information		222
13.1	Individual attitudes to risk	222
13.2	Insurance and risk	224
13.3	Uncertainty and asset returns	227
13.4	Portfolio selection	229
13.5	Efficient asset markets	233
13.6	More on risk	236
	Summary	239
	Review questions	240
Chapter 14 The information economy		241
14.1	E-products	241
14.2	Consuming information	242
14.3	Distributors of information	246
14.4	Setting standards	250
14.5	Recap	251
14.6	Boom and bust of the dot.com companies	251
	Summary	254
	Review questions	255
Part three Welfare economics		257
Chapter 15 Welfare economics		259
15.1	Equity and efficiency	259
15.2	Perfect competition and Pareto efficiency	261
15.3	Distortions and the second best	264
15.4	Market failure	266
15.5	Externalities	267
15.6	Environmental issues	270
15.7	Other missing markets: time and risk	274
15.8	Quality, health and safety	274
	Summary	276
	Review questions	278

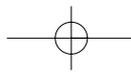


Chapter 16 Government spending and revenue	279
16.1 Taxation and government spending	281
16.2 The government in the market economy	281
16.3 The principles of taxation	285
16.4 Taxation and supply-side economics	289
16.5 Local government	290
16.6 Economic sovereignty	291
16.7 Political economy: how governments decide	293
Summary	295
Review questions	296
Chapter 17 Industrial policy and competition policy	298
17.1 Industrial policy	299
17.2 Economic geography	302
17.3 The social cost of monopoly power	303
17.4 Competition policy	308
17.5 Mergers	310
Summary	313
Review questions	314
Chapter 18 Natural monopoly: public or private?	315
18.1 Natural monopoly	316
18.2 Nationalized industries	317
18.3 Public versus private	321
18.4 Privatization in practice	324
18.5 Regulating private monopolies	325
18.6 The private finance initiative	327
Summary	330
Review questions	330
Part four Macroeconomics	333
Chapter 19 Introduction to macroeconomics	335
19.1 The big issues	336
19.2 The facts	336
19.3 An overview	337
19.4 National income accounting	339
19.5 What GNP measures	347
Summary	350
Review questions	351
Chapter 20 Output and aggregate demand	353
20.1 Components of aggregate demand	355
20.2 Aggregate demand	357
20.3 Equilibrium output	357
20.4 Another approach: planned saving equals planned investment	359
20.5 A fall in aggregate demand	360
20.6 The multiplier	362
20.7 The paradox of thrift	363

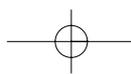
Summary	365
Review questions	366
Chapter 21 Fiscal policy and foreign trade	367
21.1 Government and the circular flow	368
21.2 The government and aggregate demand	368
21.3 The government budget	372
21.4 Deficits and the fiscal stance	374
21.5 Automatic stabilizers and discretionary fiscal policy	375
21.6 The national debt and the deficit	377
21.7 Foreign trade and income determination	378
Summary	381
Review questions	383
Chapter 22 Money and banking	384
22.1 Money and its functions	384
22.2 Modern banking	386
22.3 How banks create money	388
22.4 The monetary base and the money multiplier	390
22.5 Measures of money	392
22.6 Competition between banks	393
22.7 The demand for money	394
Summary	398
Review questions	399
Chapter 23 Interest rates and monetary transmission	401
23.1 The Bank of England	401
23.2 The Bank and the money supply	402
23.3 Lender of last resort	404
23.4 Equilibrium in financial markets	404
23.5 Monetary control	407
23.6 Targets and instruments of monetary policy	409
23.7 The transmission mechanism	409
Summary	415
Review questions	416
Chapter 24 Monetary and fiscal policy	418
24.1 Monetary policy rules	418
24.2 The <i>IS-LM</i> model	420
24.3 The <i>IS-LM</i> model in action	422
24.4 Shocks to money demand	423
24.5 The policy mix	424
24.6 The effect of future taxes	426
24.7 Demand management revisited	428
Summary	428
Review questions	429
Chapter 25 Aggregate supply, prices and adjustment to shocks	430
25.1 Inflation and aggregate demand	431
25.2 Aggregate supply	433
25.3 Equilibrium inflation	434

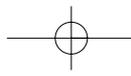
25.4	The labour market and wage behaviour	437
25.5	Short-run aggregate supply	438
25.6	The adjustment process	439
25.7	Sluggish adjustment to shocks	441
25.8	Tradeoffs in monetary objectives	444
	Summary	445
	Review questions	446
Chapter 26	Inflation, expectations and credibility	447
26.1	Money and inflation	448
26.2	Inflation and interest rates	450
26.3	Inflation, money and deficits	452
26.4	Inflation, unemployment and output	453
26.5	The costs of inflation	459
26.6	Defeating inflation	462
26.7	The Monetary Policy Committee	464
	Summary	466
	Review questions	467
Chapter 27	Unemployment	469
27.1	The labour market	470
27.2	Analysing unemployment	471
27.3	Explaining changes in unemployment	475
27.4	Cyclical fluctuations in unemployment	479
27.5	The cost of unemployment	480
	Summary	482
	Review questions	483
Chapter 28	Exchange rates and the balance of payments	484
28.1	The foreign exchange market	484
28.2	Exchange rate regimes	487
28.3	The balance of payments	488
28.4	The real exchange rate	490
28.5	Determinants of the current account	491
28.6	The financial account	492
28.7	Internal and external balance	494
28.8	The long-run equilibrium real exchange rate	495
	Summary	498
	Review questions	499
Chapter 29	Open economy macroeconomics	500
29.1	Fixed exchange rates	500
29.2	Macroeconomic policy under fixed exchange rates	503
29.3	Devaluation	504
29.4	Floating exchange rates	507
29.5	Monetary and fiscal policy under floating exchange rates	511
29.6	The pound since 1980	512
	Summary	514
	Review questions	515

Chapter 30 Economic growth	517
30.1 Economic growth	518
30.2 Growth: an overview	519
30.3 Technical knowledge	521
30.4 Growth and accumulation	523
30.5 Growth through technical progress	526
30.6 Growth in the OECD	527
30.7 Endogenous growth	530
30.8 The costs of growth	532
Summary	533
Review questions	534
Chapter 31 Business cycles	536
31.1 Trend and cycle: statistics or economics?	537
31.2 Theories of the business cycle	538
31.3 Real business cycles	541
31.4 An international business cycle?	544
31.5 UK recovery after 1992	545
31.6 The odyssey after 2001	546
Summary	547
Review questions	548
Chapter 32 Macroeconomics: taking stock	549
32.1 Areas of disagreement	550
32.2 New Classical macroeconomics	554
32.3 Gradualist monetarists	556
32.4 Moderate Keynesians	557
32.5 Extreme Keynesians	559
32.6 A summing up	560
Summary	561
Review questions	562
Part five The world economy	565
Chapter 33 International trade	567
33.1 Trade patterns	568
33.2 Comparative advantage	570
33.3 Intra-industry trade	575
33.4 Gainers and losers	577
33.5 The economics of tariffs	578
33.6 Good and bad arguments for tariffs	580
33.7 Tariff levels: not so bad?	585
33.8 Other trade policies	585
Summary	587
Review questions	588
Chapter 34 Exchange rate regimes	589
34.1 The gold standard	590
34.2 An adjustable peg	591
34.3 Floating exchange rates	593



34.4	Speculative attacks on pegged exchange rates	594
34.5	Fixed versus floating	596
34.6	International policy co-ordination	598
34.7	The European Monetary System	599
	Summary	602
	Review questions	603
Chapter 35	European integration	605
35.1	The Single Market	605
35.2	Benefits of the Single Market	606
35.3	From EMS to EMU	607
35.4	The economics of EMU	610
35.5	Central and Eastern Europe	614
	Summary	619
	Review questions	620
Chapter 36	Less developed countries	622
36.1	World income distribution	622
36.2	Obstacles to development	623
36.3	Development through trade in primary products	625
36.4	Industrialization	629
36.5	Borrowing to grow	631
36.6	Development through structural adjustment	633
36.7	Aid	634
	Summary	635
	Review questions	636
	Appendix: Answers to review questions	638
	Glossary	646
	Index	657





Suggested outlines for a shortened course

As a lecturer using this textbook to deliver an economics module, you may not be able to use the complete text. Below are some suggestions on how it may be used on a short economics course, or as a text for a microeconomics or macroeconomics module.

First option

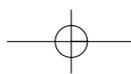
A short introduction to economics

- 1 Economics and the economy
- 2 Tools of economic analysis
- 3 Demand, supply and the market
- 4 Elasticities of demand and supply
- 6 Introducing supply decisions
- 7 Costs and supply
- 8 Perfect competition and pure monopoly
- 9 Market structure and imperfect competition
- 10 The labour market
- 12 Factor markets and income distribution
- 15 Welfare economics
- 19 Introduction to macroeconomics
- 20 Output and aggregate demand
- 21 Fiscal policy and foreign trade
- 22 Money and banking
- 23 Interest rates and monetary transmission
- 24 Monetary and fiscal policy
- 32 Macroeconomics: taking stock
- 33 International trade

Second option

An introduction to microeconomics

- 1 Economics and the economy
- 2 Tools of economic analysis
- 3 Demand, supply and the market
- 4 Elasticities of demand and supply
- 5 Consumer choice and demand decisions
- 6 Introducing supply decisions
- 7 Costs and supply
- 8 Perfect competition and pure monopoly
- 9 Market structure and imperfect competition
- 10 The labour market
- 12 Factor markets and income distribution
- 15 Welfare economics
- 16 Government spending and revenue
- 17 Industrial policy and competition policy



- 18 Natural monopoly: public or private?
- 33 International trade

Third option

An introduction to macroeconomics

- 1 Economics and the economy
- 2 Tools of economic analysis
- 3 Demand, supply and the market
- 19 Introduction to macroeconomics
- 20 Output and aggregate demand
- 21 Fiscal policy and foreign trade
- 22 Money and banking
- 23 Interest rates and monetary transmission
- 24 Monetary and fiscal policy
- 25 Aggregate supply, prices and adjustment to shocks
- 26 Inflation, expectations and credibility
- 27 Unemployment
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- 29 Open economy macroeconomics
- 30 Economic growth
- 31 Business cycles
- 32 Macroeconomics: taking stock
- 34 Exchange rate regimes

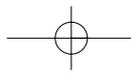
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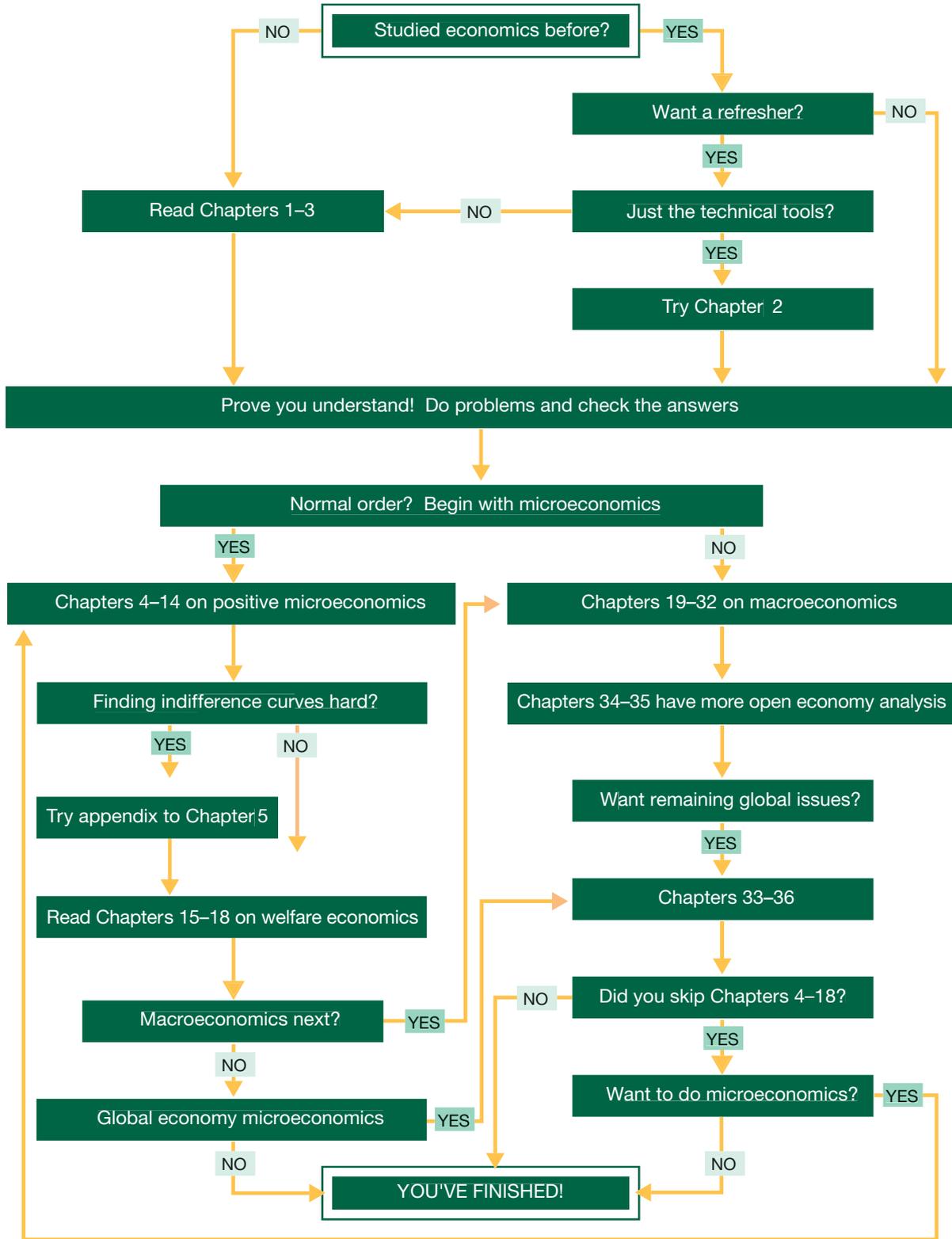
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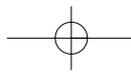
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Getting the most out of this book





Preface

Economics is much too interesting to be left to professional economists. It affects almost everything we do, not merely at work or at the shops but also in the home and the voting booth. It influences how well we look after our planet, the future we leave for our children, the extent to which we can care for the poor and the disadvantaged, and the resources we have for enjoying ourselves.

These issues are discussed daily, in bars and buses as well as cabinet meetings and boardrooms. The formal study of economics is exciting because it introduces a toolkit that allows a better understanding of the problems we face. Everyone knows a smoky engine is a bad sign, but sometimes only a trained mechanic can give the right advice on how to fix it.

This book is designed to teach you the toolkit and give you practice in using it. Nobody carries an enormous toolbox very far. Useful toolkits are small enough to be portable but contain enough proven tools to deal both with routine problems and unforeseen circumstances. With practice, you will be surprised at how much light this analysis can shed on daily living. This book is designed to make economics seem as useful as it really is.

How much do economists disagree?

There is an old complaint that economists never agree about anything. This is simply wrong. The media, taxi drivers, and politicians love to talk about topics on which there is disagreement; it would be boring TV if all participants in a panel discussion held identical views. But economics is not a subject in which there is always an argument for everything. There are answers to many questions. We aim to show where economists agree – on what and for what reason – and why they sometimes disagree.

Economics in the 21st century

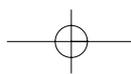
Our aim is to allow students to understand today's economic environment. This requires mastering the theory and practising its application. Just as the theory of genetics or information technology is slowly progressing, so the theory of economics continues to make progress, sometimes in dramatic and exciting ways.

We believe in introducing students immediately to the latest ideas in economics. If these can be conveyed simply, why force students to use older approaches that work less well? Two recent developments in economics underlie much of what we do. One is the role of information, the other is globalization.

How information is transmitted and manipulated is central to many issues in incentives and competition, including the recent boom in e-commerce. Ease of information, coupled with lower transport costs, also explains trends towards globalization, and associated reductions in national sovereignty, especially in smaller countries. Modern economics helps us make sense of our changing world, think about where it may go next, and evaluate choices that we currently face.

Learning by doing

Few people practise for a driving test just by reading a book. Even when you think you understand how to do a hill start, it takes a lot of practice to master the finer points. In the same way, we give you lots of examples and real-world applications not just to emphasize the relevance of economics but also to help you master it for yourself. We start at square one and take you slowly



through the tools of theoretical reasoning and how to apply them. We do not use algebra and there are very few equations in the book. The best ideas are simple and robust, and can usually be explained quite easily.

How to study

Don't just read about economics, try to do it! It is easy, but mistaken, to read on cruise control, highlighting the odd sentence and gliding through paragraphs we have worked hard to simplify. Active learning needs to be interactive. When the text says 'clearly', ask yourself 'why' is it clear? See if you can construct the diagram before you look at it. As soon as you don't follow something, go back and read it again. Try to think of other examples to which the theory could be applied. The only way to check you really understand things is to try the review questions and see if you got the right answer. The eighth edition has comprehensive answers, which you will find on pages 638–45. You can also explore the on-line resources centre that accompanies this book for extra learning resources, and may also wish to consider using the student workbook that accompanies this text.

To assist you in working through this text, we have developed a number of distinctive study and design features. To familiarize yourself with these features, please turn to the Guided Tour on pages xxiv–xxv, overleaf.

Changes to the eighth edition

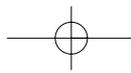
The eighth edition has been thoroughly revised, even though we have kept to the familiar and proven structure, to ensure that it keeps up with the latest thinking about our evolving world and the way in which economics can make sense of it.

Specific changes to the new edition include:

- A complete revision of the discussion of UK competition policy, reflecting changes in legislation and regulatory practice, themselves a response to evolving market conditions that we explain.
- A realistic discussion of modern monetary policy using inflation targeting. Traditional analyses that rely on IS/LM with fixed money supply are more obsolete than ever, and the core of Part 4 integrates the new monetary policy into traditional discussions of aggregate supply and the Phillips curve.
- The eighth edition streamlines the pioneering discussion of the new monetary policy, first introduced in the seventh edition, stripping it down to its bare essentials to make it fully accessible to students learning economics for the first time.
- Fully updated throughout to include 2003/2004 data in graphs and tables, and many new contemporary boxes to illustrate key ideas with relevance to students.
- Revised design that places key terms in the margin for easy reference, and that aims to make the text easier to navigate and use.
- More resources provided for lecturers.

Supplementary resources

Economics eighth edition offers a comprehensive package of resources for the teaching and learning of economics. The resources offered with the new edition have been developed in response to feedback from current users in order to provide lecturers with a variety of teaching resources for class teaching, lectures and assessment. Students are also offered a range of extra materials to assist them in learning, revising and applying the principles of economics.

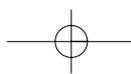


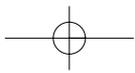
Acknowledgements for the eighth edition

We thank the team at McGraw-Hill for their support, advice and enthusiasm, and the many readers of previous editions who took the trouble to write with suggestions for improvements and ideas for the new edition.

We would like to thank the following reviewers who provided helpful suggestions and comments on the book as it progressed through its revisions:

Steve Cook, University of Swansea
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Michael Wood, London South Bank University





Guided tour

part two

Positive micro-economics

Positive economics looks at how the economy functions. Microeconomics has a detailed look at particular decisions without worrying about all the indirect effects elsewhere. Part 2 studies in detail the demand behaviour of consumers and the supply behaviour of producers, showing how markets work and why different markets exhibit different forms of behaviour. By applying similar logic to the analysis of local markets, we can also understand why some people earn so much more than others.

Chapter 4 examines the responsiveness of demand and supply behaviour. Chapter 5 develops a theory of demand based on self-interested choice by consumers. Chapter 6 introduces different types of firm and considers revenue based production decisions. Chapter 7 analyses how costs of production influence the output that firms choose to supply. Chapters 8 and 9 explore how differences in market structure affect competition and the output decisions of firms. Chapters 10 to 12 analyse input markets for labour, capital and land, which determine the distribution of income. Chapter 13 explores why people make risk, how risk aversion concepts to shift risk on to those who can bear it more cheaply, and why informational problems can inhibit the development of markets for some commodities. Chapter 14 uses the microeconomic analysis of Part 2 to examine recent developments in the information economy.

Contents

- 1 Elasticities of demand and supply 00
- 2 Consumer choice and decisions demand 00
- 3 Introducing supply decisions 00
- 4 Costs and supply 00
- 5 Perfect competition and pure monopoly 00

Part openings

There are five Part Openers, which introduce the topics and themes covered throughout the five parts of the text.

Important key concepts

These are highlighted throughout each chapter and provide key points for ease of reference. A glossary at the end of the book compiles the key terms for handy reference.

Learning outcomes

Each chapter opens with a set of learning outcomes that introduce the issues that will be addressed in the chapter and offer a guide to the students for their revision and learning.

chapter 9

Market structure and imperfect competition

Learning outcomes

By the end of this chapter, you should understand:

- 1 imperfect competition, supply and monopolistic competition
- 2 how cost and demand affect market structure
- 3 how globalization changes domestic market structure
- 4 significance in monopolistic competition
- 5 the tension between collusion and competition in a cartel
- 6 game theory and strategic behaviour
- 7 the concepts of commitment and credibility
- 8 reaction functions and Nash equilibria
- 9 Cournot and Bertrand competition
- 10 Stackelberg leadership
- 11 why there is no market power in a contestable market
- 12 imperfect and strategic supply functions

Perfect competition and monopolistic competition

Perfect competition and monopolistic competition are both based on the existence of market structures. Most markets are between the extremes. What determines the structure of a particular market? Why are there 1000000 firms but only 3 firm demand producers? How does the structure of an industry affect the behaviour of its constituent firms?

A perfectly competitive firm faces a horizontal demand curve at the market price. In a particular, any other type of firm faces a downward-sloping demand curve for its product and is imperfectly competitive.

For your example, the demand curve for the firm and the industry table.

Why are there no market power in a contestable market?

Perfect competition and monopolistic competition are both based on the existence of market structures. Most markets are between the extremes. What determines the structure of a particular market? Why are there 1000000 firms but only 3 firm demand producers? How does the structure of an industry affect the behaviour of its constituent firms?

Chapter 9 Market structure and imperfect competition 145

Figure 9.1 illustrates the relationship between the number of firms in an industry and the industry's demand curve. As the number of firms increases, the industry's demand curve shifts to the right, and the average price falls. This relationship is shown in Table 9.1.

Number of firms	Industry demand curve	Average price
1	Vertical	High
2	Slightly downward-sloping	High
3	Downward-sloping	Medium
4	More downward-sloping	Medium
5	Even more downward-sloping	Low
6	Very downward-sloping	Low
7	Almost horizontal	Low
8	Nearly horizontal	Low
9	Horizontal	Low

Why market structures differ

Some industries are legal monopolies, the sole licensed producers. Patents limit new entrants to monopoly on products of a new process. Ownership of a rare natural resource creates monopoly on a single firm. We now develop a general theory of how demand and cost curves determine the firm structure of each industry.

The car industry is not an oligopoly one day but perfectly competitive the next. Long-run influences determine market structures. Eventually, one firm can buy another's workers and have its industrial assets.

Figure 9.2 shows the demand curve (D) for output of an industry with two firms. Suppose all firms produce identical units. With the demand curve (D), industry supply (S), and both firms break even. If one firm expands a bit, its average cost falls. Its higher output sells for the price given. With lower average cost, that firm survives but the other firm goes bankrupt. The firm that expands undercuts its competitor and drives it out of business.

The industry is a natural monopoly. Suppose (D) is the output at which its marginal cost and marginal revenue coincide. The price is P_0 and the natural monopoly makes maximum profit. There is no room in the industry for other firms with lower average cost.

As with more firms, the industry supply curve shifts to the right. The price falls. The firm that expands undercuts its competitor and drives it out of business. Finally, only one firm remains. The industry supply curve shifts to the right. The price falls. The firm that expands undercuts its competitor and drives it out of business.

Figures and tables

Each chapter provides a number of figures and tables to help you to visualize the various economic models, and to illustrate and summarize important concepts. Captions offer thorough explanations of important figures.

Part 2: Positive microeconomics

Figure 9.1: Perfect competition and market structure

These industries with only a few key players have some small firms on the fringe. The total number of firms can be a misleading indicator of the structure of the industry. Economists use the number of firms to describe the number of key firms in an industry.

Then, the 1000000 conventional vehicles on the market share of the largest three firms. If there are three key firms, they will supply most of the market. If the industry is perfectly competitive, the largest three firms will have a tiny share of industry output and sales.

It would be nice to look at concentration ratios to see if market structures always differ. If this is to be an independent check, we only need standard data before globalisation and European integration became important. Table 9.1 examines evidence for the UK, France and Germany for the year 1970.

For the US, concentration ratios, the market share of the top three firms, 80% to measure how many firms in an industry supply most of the market. If our share of market goes in correct industries with high concentration ratios, we should have few key firms. However, when the US has high concentration ratios, we should have many key firms. A larger share of market should have a much smaller market share. It should be low.

Table 9.1 confirms that this theory of market structure holds for basic industries such as oilfields and agribusiness. It also holds for firms in industries such as brewing and publishing. In the top three firms, they have half the market. Industries such as banking, insurance and publishing have very low concentration ratios. The top three firms share only a tiny share of the market.

Country	Industry	CR3	CR4	CR5	CR6	CR7	CR8	CR9
USA	Automotive	100	100	100	100	100	100	100
	Chemicals	98	100	100	100	100	100	100
	Food	7	10	15	20	25	30	35
France	Automotive	100	100	100	100	100	100	100
	Chemicals	98	100	100	100	100	100	100
	Food	11	15	20	25	30	35	40
Germany	Automotive	100	100	100	100	100	100	100
	Chemicals	98	100	100	100	100	100	100
	Food	11	15	20	25	30	35	40

Table 9.2: Domestic cost and market structure

Industry	Number of firms	Number of plants
Automotive	100	100
Chemicals	100	100
Food	100	100
Textiles	100	100
Pharmaceuticals	100	100

Table 9.3: Domestic cost and market structure

Industry	Number of firms	Number of plants
Automotive	100	100
Chemicals	100	100
Food	100	100
Textiles	100	100
Pharmaceuticals	100	100

Evidence on market structure

The larger the economies of scale relative to the market size, the fewer the number of plants – and probably the number of firms – in the industry. The number of plants (7) operating at minimum efficient scale does a useful job. Chapter 7 discussed estimates of minimum efficient scale in different industries. By looking at the total purchase of a product we can estimate market size. Hence we can estimate NP for each industry.

Globalization and multinationals

Table 9.1 shows that the US is a globalisation and multinationals. Globalisation affects change transport costs, better information technology and a different policy of reducing currency barriers to make it get different gains from large scale and specialization. Multinationals are in many countries at the same time. They may, or may not, also produce in countries.

Part 3: Welfare economics

122 **Principles versus quantities**

If the market is not competitive, society can pollute either by regulating the quantity of pollution or by using the price system to discourage each enterprise from polluting. In some respects, it is easier to regulate quantities than prices. It is much easier to change the same price or tax for a marginal unit of pollution, with the firm equating the marginal cost of reducing pollution to the price of pollution, than it is to change the same quantity of pollution. One objection to this is that it is easier to reduce pollution in one firm rather than with high marginal reduction costs across firms. Some pollution is reduced as a cost.

The main problem with using taxes rather than quantity restrictions is uncertainty about emissions. Higher pollution levels are a risk for the damage consequences, for example increasing the chance of global warming. Quantity restrictions are more certain.

123 **Atmosphere of pollution**

Climate change is a global problem. It is caused by the greenhouse effect, which traps the sun's heat in the atmosphere. The main cause is the increase in greenhouse gases, particularly carbon dioxide (CO₂), since the Industrial Revolution. The world's population is growing, and the amount of energy used is increasing. This leads to more CO₂ being emitted. The main source of CO₂ is the burning of fossil fuels. The world's population is growing, and the amount of energy used is increasing. This leads to more CO₂ being emitted. The main source of CO₂ is the burning of fossil fuels.

124 **EU climate targets in trouble?**

Experts in the emerging market for clean technology... The EU has set a target of reducing CO₂ emissions by 20% by 2020. This is a significant challenge, particularly for the UK, which has a high per capita emissions. The UK has committed to reducing its emissions by 26-30% by 2020. This is a significant challenge, particularly for the UK, which has a high per capita emissions.

Boxes

Examples throughout the chapters bring economics to life and demonstrate the application of theories and concepts to contemporary issues.

Review questions

These questions encourage you to review and apply the knowledge you have acquired from each chapter and can be undertaken to test your understanding or as a focus for discussion in class. Students can check progress by reviewing the answers at the back of the book.

End of chapter summary

This briefly reviews and reinforces the main topics covered in each chapter, offering a useful revision tool and a means of testing that a solid understanding of the key topics has developed.

Part 2: Positive microeconomics

125 **Technical progress and capital investment in the home**

Technical progress and capital investment in the home... This leads to an increase in the marginal product of labour, which shifts the production function outwards. This leads to an increase in the marginal product of labour, which shifts the production function outwards.

SUMMARY

- The long-run, a firm chooses a production technique to minimize the cost of a particular output. By considering each input, it constructs a total cost curve.
- In the long run, the firm's choice of production technique is a substitution effect and an output effect. The substitution effect reduces the quantity of labour employed as the capital-labour ratio rises at each output level. The output effect increases the quantity of labour employed as the capital-labour ratio rises at each output level.
- In the short run, the firm has fixed factors, and probably a fixed production technique. The only way that the firm can reduce its total cost is by changing the quantity of labour employed.
- A profit-maximizing firm produces the level of output at which marginal revenue equals marginal cost. Equivalently, it hires labour until the marginal product of labour equals the real wage. The firm's profit-maximizing level of output is determined by the intersection of the marginal revenue curve and the marginal cost curve.
- The firm's labour demand curve is derived from the profit-maximizing level of output. The firm's labour demand curve is derived from the profit-maximizing level of output.
- The downward-sloping marginal product of labour schedule is the short-run demand curve for labour in terms of the real wage rate. Equivalently, the marginal product of labour schedule is the demand curve in terms of the real wage rate.
- The firm's labour demand curve is not moving the horizontal axis of the real wage rate. Higher real wages reduce the quantity of labour employed, but the firm's labour demand curve is not moving the horizontal axis of the real wage rate.
- Labour demand curves are derived from the profit-maximizing level of output. The firm's labour demand curve is derived from the profit-maximizing level of output.
- Indistinguishable with non-labour income may prefer not to work. Four things raise the participation rate in the labour market: higher real wages, lower fixed costs of working, lower non-labour income and changes in tastes in favour of working. These explain the trend for increasing labour force participation by women since the late 1960s.

REVIEW QUESTIONS

- Explain why the marginal product of labour eventually declines. (1) Show in a diagram the effect of an increase in the firm's capital stock on the demand curve for labour.
- Over the last 100 years the real wage has risen but the length of the working week has fallen. Explain the result using income and substitution effects. (1) Explain how an increase in the real wage could cause workers to be employed to work fewer hours but still increase the total amount of work done in the economy.
- Why would the labour supply curve for an industry steepen over time if the aggregate labour supply to the economy is flat?
- Answer the questions with which we began the chapter. (1) Why can a higher real wage in a market that is initially perfectly competitive in a world of 100 identical workers be economically expected to earn more than a higher real wage in a market that is not perfectly competitive?
- Comment: Make sure you are fully comfortable with the following statements: (1) In a competitive market, any assets that have a higher return than the real wage rate will be sold. (1) Higher wages may lead to more working hours.

Check your answers to these questions, go to pages 200-202.

Part 2: Positive microeconomics

126 **To help you grasp the key concepts of the chapter**

The choice of technology can be explained with the help of the indifference curve-hedge line approach used to analyse consumer choice in Chapter 9. Figure 10.1 shows the indifference curve-hedge line approach used to analyse consumer choice in Chapter 9. Figure 10.1 shows the indifference curve-hedge line approach used to analyse consumer choice in Chapter 9.

Figure 10A1 An isoquant

The isoquant curve shows the combinations of capital and labour that produce a given level of output. The isoquant curve shows the combinations of capital and labour that produce a given level of output.

Figure 10A2 Capital substitution

The diagram shows the substitution effect and output effect of an increase in the capital stock. The substitution effect reduces the quantity of labour employed, while the output effect increases it.

Figure 10A3 The effect of a wage increase

The diagram shows the effect of a wage increase on the firm's labour demand curve. A higher real wage reduces the quantity of labour employed.

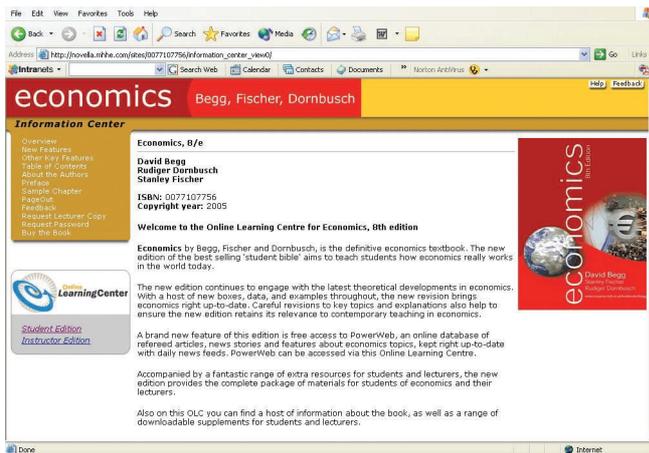
Chapter appendices

These sections at the end of the chapters provide further explanations of economic models for those who wish to use them. They are not necessary to understand the economics of the text but rather for those who are interested in expanding their knowledge further.

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Resources for Students

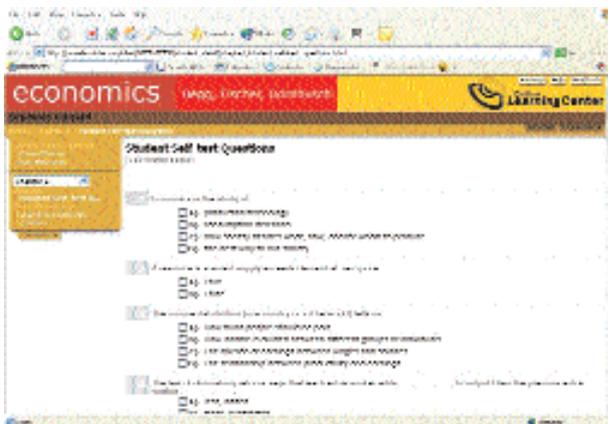


Online Learning Centre (OLC)

After completing each chapter, log on to the supporting Online Learning Centre website. Take advantage of the study tools offered to reinforce the material you have read in the text and to develop your knowledge of economics in a fun and effective way. A range of resources are offered providing revision tools and exam practice.

The new edition provides the complete package of materials for students of economics:

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- **Web links** to a wealth of economics sources available online.
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PowerWeb

Free with this book you will receive a pass card that contains a password for PowerWeb. By entering the password into the Online Learning Centre, you will be able to access a subject-specific online database containing carefully referred articles and daily news feeds about economics topics.

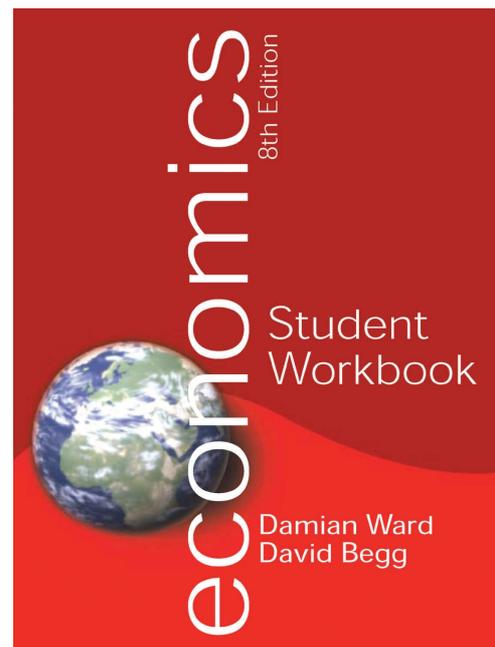


PowerWeb is perfect for researching essays and assignments, keeping in touch with current affairs and seeing how the topics you have learnt apply to economics in the real world. Ideal for expanding your knowledge of up-to-the-minute economics stories and issues – free of charge.

Workbook to accompany Begg Economics Eighth Edition

ISBN 0077107802

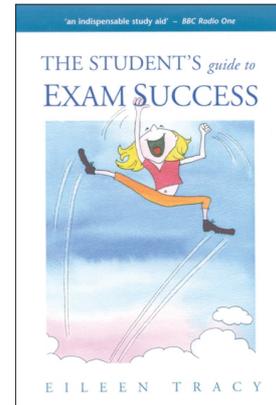
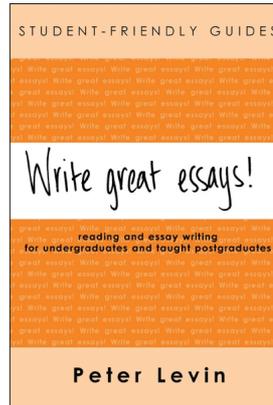
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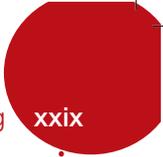
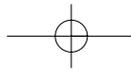
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