

JOSHUA GANS

STEPHEN KING

MARTIN BYFORD

N. GREGORY MANKIW

– PRINCIPLES OF –  
**Microeconomics**



To  
Belanna, Ariel and Annika  
Jacqueline and Rebecca  
Robert  
Catherine, Nicholas and Peter

JOSHUA GANS

STEPHEN KING

MARTIN BYFORD

N. GREGORY MANKIW

– PRINCIPLES OF –  
**Microeconomics**



Principles of Microeconomics  
8th Edition  
Joshua Gans  
Stephen King  
Martin Byford  
N. Gregory Mankiw

Head of content management: Dorothy Chiu  
Content manager: Rachael Pictor  
Content developer: Eleanor Yeowell, Rhiannon Bowen  
Project editor: Raymond Williams  
Text designer: James Steer  
Cover designer: Watershed Art (Leigh Ashforth)  
Editor: Stephen Roche  
Permissions/Photo researcher: Liz McShane  
Proofreader: James Anderson  
Indexer: Max McMaster  
Cover: pika111  
Typeset by MPS Limited

Any URLs contained in this publication were checked for currency during the production process. Note, however, that the publisher cannot vouch for the ongoing currency of URLs.

Seventh edition published 2018

Adapted from Principles of Microeconomics, 9th edition, by N. Gregory Mankiw, published by Cengage © 2021

© 2021 Cengage Learning Australia Pty Limited

#### Copyright Notice

This Work is copyright. No part of this Work may be reproduced, stored in a retrieval system, or transmitted in any form or by any means without prior written permission of the Publisher. Except as permitted under the *Copyright Act 1968*, for example any fair dealing for the purposes of private study, research, criticism or review, subject to certain limitations. These limitations include: Restricting the copying to a maximum of one chapter or 10% of this book, whichever is greater; providing an appropriate notice and warning with the copies of the Work disseminated; taking all reasonable steps to limit access to these copies to people authorised to receive these copies; ensuring you hold the appropriate Licences issued by the Copyright Agency Limited ("CAL"), supply a remuneration notice to CAL and pay any required fees. For details of CAL licences and remuneration notices please contact CAL at Level 11, 66 Goulburn Street, Sydney NSW 2000, Tel: (02) 9394 7600, Fax: (02) 9394 7601  
Email: [info@copyright.com.au](mailto:info@copyright.com.au)  
Website: [www.copyright.com.au](http://www.copyright.com.au)

For product information and technology assistance,  
in Australia call 1300 790 853;  
in New Zealand call 0800 449 725

For permission to use material from this text or product, please email  
[aust.permissions@cengage.com](mailto:aust.permissions@cengage.com)

National Library of Australia Cataloguing-in-Publication Data  
ISBN: 9780170445672

A catalogue record for this book is available from the National Library of Australia

Cengage Learning Australia  
Level 7, 80 Dorcas Street  
South Melbourne, Victoria Australia 3205

Cengage Learning New Zealand  
Unit 4B Rosedale Office Park  
331 Rosedale Road, Albany, North Shore 0632, NZ

For learning solutions, visit [cengage.com.au](http://cengage.com.au)

Printed in China by 1010 Printing International Limited.  
1 2 3 4 5 6 7 24 23 22 21 20



# BRIEF CONTENTS

Guide to the text **xi**  
Guide to the online resources **xiv**  
Preface to this edition **xvi**  
Preface to the original edition **xix**  
To the students **xx**  
About the authors **xxi**  
Acknowledgements **xxiii**

## **Part 1** Introduction **3**

Chapter 1 Ten principles of economics **4**  
Chapter 2 Thinking like an economist **22**  
Chapter 3 Interdependence and the gains from trade **49**

## **Part 2** Supply and demand I: How markets work **65**

Chapter 4 The market forces of supply and demand **66**  
Chapter 5 Elasticity and its application **92**  
Chapter 6 Supply, demand and government policies **114**

## **Part 3** Supply and demand II: Markets and welfare **141**

Chapter 7 Consumers, producers and the efficiency of markets **142**  
Chapter 8 Application: The costs of taxation **161**  
Chapter 9 Application: International trade **178**

## **Part 4** The economics of the public sector **201**

Chapter 10 Externalities **202**  
Chapter 11 Public goods and common resources **223**  
Chapter 12 The design of the tax system **240**

## **Part 5** Firm behaviour and the organisation of industry **259**

Chapter 13 The costs of production **260**  
Chapter 14 Firms in competitive markets **282**  
Chapter 15 Monopoly **303**  
Chapter 16 Monopolistic competition **334**  
Chapter 17 Oligopoly and business strategy **350**

## **Part 6** The economics of labour markets **381**

Chapter 18 The markets for the factors of production **382**  
Chapter 19 Earnings and discrimination **404**  
Chapter 20 Income inequality and poverty **425**

## **Part 7** Topics for further study **447**

Chapter 21 The theory of consumer choice **448**  
Chapter 22 Frontiers of microeconomics **477**  
Glossary **497**  
Suggestions for reading **501**  
Index **503**

# CONTENTS

Guide to the text xi  
Guide to the online resources xiv  
Preface to this edition xvi  
Preface to the original edition xix  
To the students xx  
About the authors xxi  
Acknowledgements xxiii

## Part 1 Introduction 3

### Chapter 1 Ten principles of economics 4

Introduction 5

L01.1 How people make decisions 5

Principle 1: People face trade-offs 5

Principle 2: The cost of something is what you give up to get it 6

Principle 3: Rational people think at the margin 7

Principle 4: People respond to incentives 8

L01.2 How people interact 10

Principle 5: Trade can make everyone better off 11

Principle 6: Markets are usually a good way to organise economic activity 12

Principle 7: Governments can sometimes improve market outcomes 14

L01.3 How the economy as a whole works 15

Principle 8: A country's standard of living depends on its ability to produce goods and services 15

Principle 9: Prices rise when the government prints too much money 16

Principle 10: Society faces a short-run trade-off between inflation and unemployment 17

Conclusion: The big ideas underpinning economics 17

Study tools 19

### Chapter 2 Thinking like an economist 22

Introduction 23

L02.1 The economist as scientist 23

The scientific method: Observation, theory and more observation 23

The role of assumptions 24

Economic models 25

Our first model: The circular-flow diagram 25

Our second model: The production possibilities frontier 27

Microeconomics and macroeconomics 30

L02.2 The economist as adviser 30

Positive versus normative analysis 31

Economists in government 31

Why economists' advice is not always followed 32

Economists in business 33

L02.3 Why economists disagree 33

Differences in scientific judgements 33

Differences in values 34

Conclusion: Let's get going 35

Study tools 36

Appendix: Graphing – a brief review 39

### Chapter 3 Interdependence and the gains from trade 49

Introduction 50

L03.1 A parable for the modern economy 50

Production possibilities 51

Specialisation and trade 52

L03.2 Comparative advantage: The driving force of specialisation 54

Absolute advantage 54

Opportunity cost and comparative advantage 54

Comparative advantage and trade 55

The price of trade 56

L03.3 Applications of comparative advantage 57

Should Serena Williams mow her own lawn? 57

Should Australia trade with other countries? 58

Conclusion: Trade can make everyone better off 60

Study tools 61

## Part 2 Supply and demand I: How markets work 65

### Chapter 4 The market forces of supply and demand 66

Introduction 67

L04.1 Markets and competition 67

What is a market? 67

What is competition? 67

L04.2 Demand 68

The demand curve: The relationship between price and quantity demanded 68

Market demand versus individual demand 70

Shifts in the demand curve 71

L04.3 Supply 75

The supply curve: The relationship between price and quantity supplied 76

Market supply versus individual supply 76

Shifts in the supply curve 77

L04.4 Supply and demand together 80

Equilibrium 80

Three steps for analysing changes in equilibrium 82

Conclusion: How prices allocate resources 86

Study tools 88

### Chapter 5 Elasticity and its application 92

Introduction 93

L05.1 The elasticity of demand 93

The price elasticity of demand and its determinants 93

Computing the price elasticity of demand 94

- The variety of demand curves 96
- Total revenue and the price elasticity of demand 98
- Elasticity and total revenue along a linear demand curve 99
- Other demand elasticities 101
- L05.2 The elasticity of supply 102**
  - The price elasticity of supply and its determinants 102
  - Computing the price elasticity of supply 102
  - The variety of supply curves 103
- L05.3 Three applications of supply, demand and elasticity 105**
  - Can good news for farming be bad news for farmers? 105
  - Why did OPEC fail to keep the price of oil high? 106
  - Do drug bans increase or decrease drug-related crime? 108
- Conclusion: The tools of supply and demand 110
- Study tools 111

## Chapter 6 Supply, demand and government policies 114

- Introduction 115
- L06.1 Controls on prices 115**
  - How price ceilings affect market outcomes 115
  - How price floors affect market outcomes 120
  - Evaluating price controls 124
- L06.2 Taxes 125**
  - How taxes on sellers affect market outcomes 125
  - How taxes on buyers affect market outcomes 126
  - Elasticity and tax incidence 128
- L06.3 Subsidies 129**
  - How subsidies affect market outcomes 130
- Conclusion 132
- Study tools 133
- Appendix: Tax as a cost of production 137

## Part 3 Supply and demand II: Markets and welfare 141

### Chapter 7 Consumers, producers and the efficiency of markets 142

- Introduction 143
- L07.1 Consumer surplus 143**
  - Willingness to pay 143
  - Using the demand curve to measure consumer surplus 144
  - How a lower price raises consumer surplus 146
  - What does consumer surplus measure? 148
- L07.2 Producer surplus 149**
  - Cost and the willingness to sell 149
  - Using the supply curve to measure producer surplus 150
  - How a higher price raises producer surplus 152
- L07.3 Market efficiency 153**
  - The benevolent social planner 153

- Evaluating the market equilibrium 154
- Conclusion: Market efficiency and market failure 157
- Study tools 158

### Chapter 8 Application: The costs of taxation 161

- Introduction 162
- L08.1 The deadweight loss of taxation 162**
  - How a tax affects market participants 163
  - Deadweight losses and the gains from trade 165
- L08.2 The determinants of the deadweight loss 166**
- L08.3 Deadweight loss and tax revenue as taxes vary 169**
- Conclusion: Taxes distort market outcomes 172
- Study tools 173
- Appendix: The welfare economics of subsidies 176

### Chapter 9 Application: International trade 178

- Introduction 179
- L09.1 The determinants of trade 179**
  - The equilibrium without trade 179
  - The world price and comparative advantage 180
- L09.2 The winners and losers from trade 181**
  - The gains and losses of an exporting country 181
  - The gains and losses of an importing country 183
  - The effects of a tariff 184
  - The lessons for trade policy 187
  - Other benefits of international trade 187
- L09.3 The arguments for restricting trade 190**
  - The jobs argument 190
  - The national security argument 190
  - The infant industry argument 191
  - The unfair competition argument 191
  - The protection-as-a-bargaining-chip argument 191
- Conclusion: A parable of free trade 194
- Study tools 196

## Part 4 The economics of the public sector 201

### Chapter 10 Externalities 202

- Introduction 203
- L010.1 Externalities and market inefficiency 204**
  - Welfare economics: A recap 204
  - Negative externalities 205
  - Positive externalities 206
- L010.2 Public policies on externalities 209**
  - Command-and-control policies: Regulation 209
  - Market-based policy 1: Corrective taxes and subsidies 209
  - Market-based policy 2: Tradeable pollution permits 211
  - Objections to the economic analysis of pollution 215
- L010.3 Private solutions to externalities 216**
  - The types of private solutions 216

The Coase theorem 216  
Why private solutions do not always work 217  
Conclusion: Guiding the invisible hand 218  
Study tools 219

## Chapter 11 Public goods and common resources 223

Introduction 224  
LO11.1 The different kinds of goods 224  
LO11.2 Public goods 226  
The free-rider problem 226  
Some important public goods 226  
The difficult job of cost-benefit analysis 229  
Private provision of public goods 231  
LO11.3 Common resources 232  
The Tragedy of the Commons 232  
Some important common resources 233  
Conclusion: The importance of property rights 235  
Study tools 236

## Chapter 12 The design of the tax system 240

Introduction 241  
LO12.1 An overview of Australian taxation 241  
Taxes collected by the federal government 243  
Taxes collected by state and local governments 244  
LO12.2 Taxes and efficiency 245  
Deadweight losses 245  
Administrative burden 246  
Marginal tax rates versus average tax rates 247  
Lump-sum taxes 248  
LO12.3 Taxes and equity 248  
The benefits principle 248  
The ability-to-pay principle 249  
Tax incidence and tax equity 252  
Conclusion: The trade-off between equity and efficiency 253  
Study tools 254

## Part 5 Firm behaviour and the organisation of industry 259

### Chapter 13 The costs of production 260

Introduction 261  
LO13.1 What are costs? 261  
Total revenue, total cost and profit 261  
Costs as opportunity costs 262  
The cost of capital as an opportunity cost 262  
Economic profit versus accounting profit 263  
LO13.2 Production and costs 264  
The production function 264  
From the production function to the total-cost curve 266  
LO13.3 The various measures of cost 267  
Fixed and variable costs 268  
Average and marginal cost 269

Cost curves and their shapes 269

Typical cost curves 271

LO13.4 Costs in the short run and in the long run 273

The relationship between short-run and long-run average total cost 273

Economies and diseconomies of scale 274

Conclusion: Describing a firm's costs 275

Study tools 277

### Chapter 14 Firms in competitive markets 282

Introduction 283

LO14.1 What is a competitive market? 283

The meaning of competition 283

The revenue of a competitive firm 284

LO14.2 Profit maximisation and the competitive firm's supply curve 285

A simple example of profit maximisation 285

The marginal-cost curve and the firm's supply decision 286

The firm's short-run decision to shut down 288

The firm's long-run decision to exit or enter a market 291

Measuring profit in our graph for the competitive firm 292

A brief recap 292

LO14.3 The supply curve in a competitive market 293

The short run: Market supply with a fixed number of firms 293

The long run: Market supply with entry and exit 294

Why do competitive firms stay in business if they make zero profit? 295

A shift in demand in the short run and long run 296

Why the long-run supply curve might slope upwards 296

Conclusion: Behind the supply curve 298

Study tools 299

### Chapter 15 Monopoly 303

Introduction 304

LO15.1 Why monopolies arise 305

Monopoly resources 305

Government-created monopolies 305

Natural monopolies 306

LO15.2 How monopolies make production and pricing decisions 307

Monopoly versus competition 307

A monopoly's revenue 308

Profit maximisation 310

A monopoly's profit 312

LO15.3 The welfare cost of monopoly 315

The deadweight loss 315

The monopoly's profit: A social cost? 317

LO15.4 Price discrimination 318



- A parable about pricing 318
- The moral of the story 319
- The analytics of price discrimination 320
- Examples of price discrimination 321
- L015.5 Public policy towards monopolies 323**
  - Using the law to increase competition 324
  - Regulation 324
  - Public ownership and privatisation 325
  - Doing nothing 326
- Conclusion: The prevalence of monopoly 326**
- Study tools 328**

## **Chapter 16 Monopolistic competition 334**

- Introduction 335**
- L016.1 Between monopoly and perfect competition 335**
- L016.2 Competition with differentiated products 337**
  - The monopolistically competitive firm in the short run 337
  - The long-run equilibrium 337
  - Monopolistic versus perfect competition 339
  - Monopolistic competition and the welfare of society 341
- L016.3 Advertising 342**
  - The debate about advertising 342
  - Advertising as a signal of quality 343
  - Brand names 345
- Conclusion: Between perfect competition and monopoly 346**
- Study tools 347**

## **Chapter 17 Oligopoly and business strategy 350**

- Introduction 351**
- L017.1 Markets with only a few sellers 351**
  - A duopoly example 351
  - Competition, monopolies and cartels 352
  - The equilibrium for an oligopoly 353
  - How the size of an oligopoly affects the market outcome 354
- L017.2 The economics of cooperation 355**
  - The prisoners' dilemma 355
  - Oligopolies as a prisoners' dilemma 357
  - Other examples of the prisoners' dilemma 358
  - The prisoners' dilemma and the welfare of society 360
  - Why people sometimes cooperate 360
- L017.3 Public policy towards oligopolies 362**
  - Restraint of trade and competition laws 362
  - Controversies over competition policy 364
- Conclusion: Market power and strategic interaction 368**
- Study tools 369**
- Appendix: Types of oligopolistic competition 374**

## **Part 6 The economics of labour markets 381**

### **Chapter 18 The markets for the factors of production 382**

- Introduction 383**
- L018.1 The demand for labour 384**
  - The competitive, profit-maximising firm 384
  - The production function and the marginal product of labour 385
  - The value of the marginal product and the demand for labour 386
  - What causes the labour demand curve to shift? 388
- L018.2 The supply of labour 389**
  - The trade-off between work and leisure 389
  - What causes the labour supply curve to shift? 389
- L018.3 Equilibrium in the labour market 390**
  - Shifts in labour supply 391
  - Shifts in labour demand 392
- L018.4 The other factors of production: Land and capital 394**
  - Equilibrium in the markets for land and capital 394
  - Linkages among the factors of production 396
- Conclusion: The neoclassical theory of distribution 397**
- Study tools 398**
- Appendix: The demand for labour under imperfect competition and monopoly 402**

### **Chapter 19 Earnings and discrimination 404**

- Introduction 405**
- L019.1 Some determinants of equilibrium wages 405**
  - Compensating differentials 405
  - Human capital 406
  - Ability, effort and chance 407
  - An alternative view of education: Signalling 408
  - The superstar phenomenon 409
  - Above-equilibrium wages: Minimum-wage laws, unions and efficiency wages 410
- L019.2 The economics of discrimination 411**
  - Measuring labour-market discrimination 411
  - Discrimination by employers 413
  - Discrimination by customers and governments 414
  - Statistical discrimination 415
- Conclusion: The factors that influence a worker's wage 416**
- Study tools 417**
- Appendix: Unions and imperfect competition in labour markets 420**

## Chapter 20 Income inequality and poverty 425

Introduction 426

LO20.1 The measurement of inequality 426

Australian income inequality 426

Income inequality around the world 428

LO20.2 The poverty rate 429

Problems in measuring inequality 430

LO20.3 The political philosophy of redistributing income 433

Utilitarianism 433

Liberalism 434

Libertarianism 436

LO20.4 Policies to reduce poverty 437

Minimum-wage laws 437

Social security 437

Negative income tax 438

In-kind transfers 440

Antipoverty programs and work incentives 440

Conclusion: The equity–efficiency trade-off 441

Study tools 442

## Part 7 Topics for further study 447

### Chapter 21 The theory of consumer choice 448

Introduction 449

LO21.1 The budget constraint: What the consumer can afford 449

Representing consumption opportunities in a graph 449

Shifts in the budget constraint 451

LO21.2 Preferences: What a consumer wants 453

Representing preferences with indifference curves 453

Four properties of indifference curves 454

Two extreme examples of indifference curves 456

LO21.3 Optimisation: What a consumer chooses 457

The consumer's optimum choices 457

How changes in income affect a consumer's choices 459

How changes in prices affect a consumer's choices 460

Income and substitution effects 461

Deriving the demand curve 463

LO21.4 Three applications 464

Do all demand curves slope downwards? 464

How do wages affect labour supply? 465

How do interest rates affect household saving? 470

Conclusion: Do people really think this way? 472

Study tools 473

### Chapter 22 Frontiers of microeconomics 477

Introduction 478

LO22.1 Asymmetric information 478

Hidden actions: Principals, agents and moral hazard 478

Hidden characteristics: Adverse selection and the lemons problem 480

Signalling to convey private information 481

Screening to induce information revelation 482

Asymmetric information and public policy 483

LO22.2 Political economy 484

The Condorcet voting paradox 484

Arrow's impossibility theorem 485

The median voter is king 486

Politicians are people too 487

LO22.3 Behavioural economics 488

People aren't always rational 488

People care about fairness 490

People are inconsistent over time 491

Conclusion: The next steps of your journey 492

Study tools 493

Glossary 497

Suggestions for reading 501

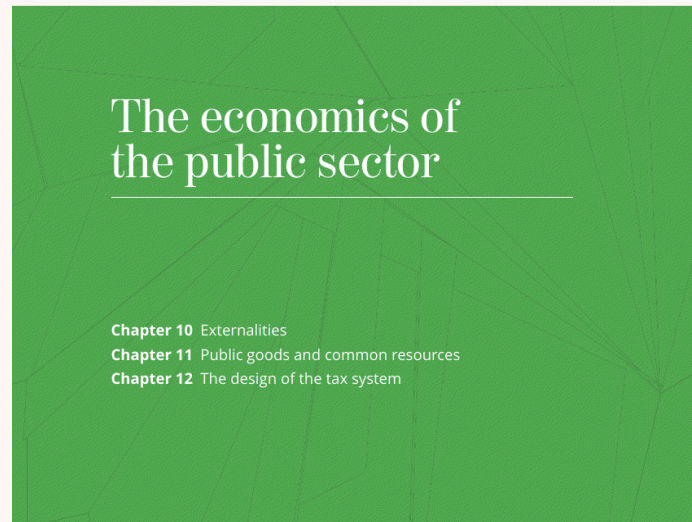
Index 503

# Guide to the text

As you read this text you will find a number of features in every chapter to enhance your study of microeconomics and help you understand how the theory is applied in the real world.

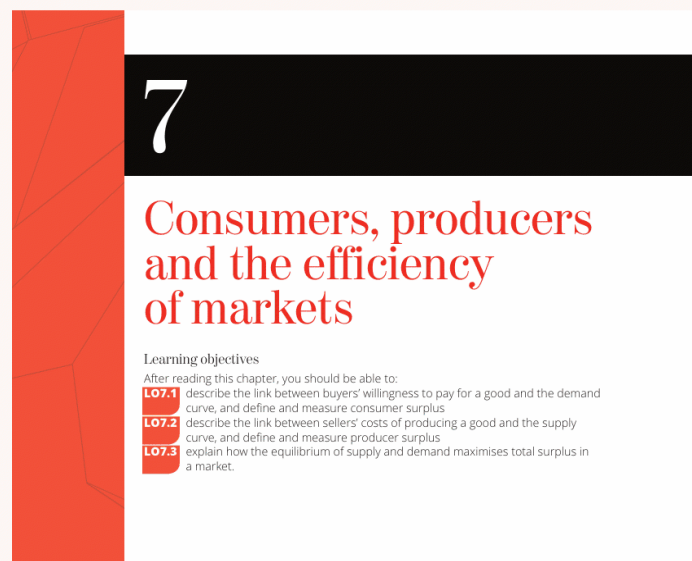
## PART OPENING FEATURES

The **chapter list** outlines the chapters contained in each part for easy reference.



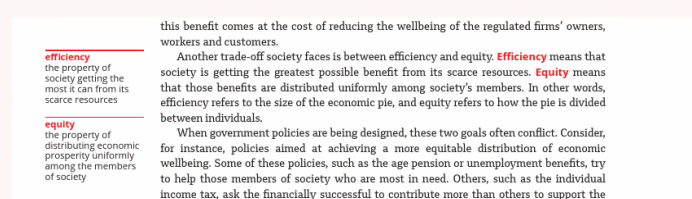
## CHAPTER OPENING FEATURES

Identify the key concepts that the chapter will cover with the **learning objectives** at the start of each chapter.



## FEATURES WITHIN CHAPTERS

**Definitions** or explanations of important **key terms** are located in the margin for quick reference. A full list of key terms are also available in the **glossary**, which can be found at the back of the book.



## FEATURES WITHIN CHAPTERS

Analyse practical applications of concepts through the **case studies** and test your understanding with the associated questions.

Gain insights into recent policy issues using data from Economics Society of Australia with the **What Australian economists think** boxes.

Useful microeconomic facts can be found in **FYI** boxes. They will provide you with additional information and material to support key concepts within each chapter.

Expand your knowledge of economics related to contemporary events **In the news**. These boxes provide news articles about economics in the real world.

Test your progress through each section by answering the **Check your understanding** questions as you progress through the chapter.

### CASE STUDY

#### Two ways to reduce the quantity of smoking demanded

Because smoking can lead to various illnesses, policymakers often want to reduce the amount that people smoke. There are two ways that policy can attempt to achieve this goal.

One way to reduce smoking is to shift the demand curve for cigarettes and other tobacco products. Public service announcements, mandatory health warnings on cigarette packets and the prohibition of cigarette advertising are all policies aimed at reducing the quantity of cigarettes demanded at any given price. If successful, these policies shift the demand curve for cigarettes to the left, as in panel (a) of **Figure 4.4**. Alternatively, policymakers can try to raise the price of cigarettes. If the government taxes the manufacture of cigarettes, for example, cigarette companies pass much of this tax on to consumers in the form of higher prices. A higher price encourages smokers to reduce the number of cigarettes they smoke. In this case, the reduced amount of smoking does not represent a shift in the demand curve. Instead, it represents a movement along the same demand curve to a point with a higher price and lower quantity, as in panel (b) of **Figure 4.4**.

How much does the amount of smoking respond to changes in the price of cigarettes? Economists have attempted to answer this question by studying what happens when the tax on cigarettes changes. They have found that a 10 per cent increase in the price causes a 4 per cent reduction in the quantity demanded. Teenagers are found to be especially sensitive to the price of cigarettes – a 10 per cent increase in the price causes a 12 per cent drop in teenage smoking.

A related question is how the price of cigarettes affects the demand for other

### What Australian economists think

The minimum wage is a source of considerable disagreement among economists. Some economists differ in their *normative views* (their views about which, if any, minimum wage policy *should be* implemented). To see why, consider the previous case study examining minimum wage rates. This case study illustrates the trade-off faced by policymakers – a minimum wage increases the income of the working poor at the cost of creating unemployment. How much unemployment a policymaker is willing

Economists also hold conflicting *positive views* (their opinions about the effects of the minimum wage on the labour market). In the 2011 Economics Society of Australia survey of economists, 45.1 per cent of respondents agreed that lowering the minimum wage would reduce unemployment, while 37.6 per cent of respondents disagreed. How can we reconcile these conflicting views with our understanding of the effects of a price floor? One explanation is that what the economists surveyed really disagree

### FYI

#### The deadweight loss debate

Supply, demand, elasticity, deadweight loss – all this economic theory is enough to make your head spin. But believe it or not, these ideas are at the heart of a profound political question: How big should the government be? The reason the debate hinges on these concepts is that the larger the deadweight loss of taxation, the larger the cost of any government program. If taxation entails very large deadweight losses, then these losses are a strong argument for a leaner government that does less and taxes less. By contrast, if taxes impose only small deadweight losses, then government programs are less costly than they otherwise might be, which in turn argues for a more expansive government.

So how big are the deadweight losses of taxation? This is a question about which economists disagree. To see the nature of this disagreement, consider the most important tax in the Australian economy – the tax on labour. The most important example of this is income tax levied by the federal government. Many state governments also tax the payrolls of firms. Taxes on labour place a wedge between the wages that firms pay and

### IN THE NEWS

#### Trade as a tool for economic development

We have seen that the gains a country derives from opening its markets to international trade exceed the losses. It is important to remember that a country's trading partners experience similar benefits. In the last quarter of a century, free international trade has helped improve the living standards of around one billion of the world's poorest citizens.

#### Andy Warhol's guide to public policy

by Arthur C. Brooks

I often ask people in my business – public policy – where they get their inspiration. Liberals often point to John F. Kennedy. Conservatives usually cite Ronald Reagan. Personally, I prefer the artist Andy Warhol, who famously declared, 'I like boring things.' He was referring to art, of course. But the sentiment provides solid public policy guidance as well.

Warhol's work exalted the everyday 'boring' items that display

people are stupid, but because our brains are wired to filter out the mundane and focus on the novel. This turns out to be an important survival adaptation. To discern a predator, you must filter out the constant rustling of leaves and notice the strange snap of a twig.

Warhol believed that defeating this cognitive bias led to greater appreciation of beauty. It also leads to better public policy, especially in relieving poverty. For example, while our attention is naturally drawn to the latest fascinating and expensive innovations in tropical public health, many experts insist it is



### CHECK YOUR UNDERSTANDING

Draw the supply and demand curve for pure wool suits in the country of Autarka. When trade is allowed, the price of a suit falls from 3 to 2 ounces of gold. In your diagram, what is the change in consumer surplus, the change in producer surplus and the change in total surplus? How would a tariff on suit imports alter these effects?

## ICONS

The **Key figure** icon highlights content relating to a key figure in economics.



The influence of economists on policy goes beyond their role as advisers and policymakers; their research and writings can affect policy indirectly. Economist John Maynard Keynes offered this observation:

The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed, the world is ruled by little else. Practical men, who believe themselves to be quite exempt from intellectual influences, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back.

These words were written in 1935, but they remain true today. Indeed, the 'academic scribbler' now influencing public policy is often Keynes himself.

## END-OF-CHAPTER FEATURES

At the end of each chapter you will find several tools to help you to review, practise and extend your knowledge of the key learning objectives.

Review your understanding of the key chapter topics with the **Summary**.

### STUDY TOOLS

#### Summary

- LO4.1** Economists use the model of supply and demand to analyse competitive markets. In a competitive market, there are many buyers and sellers, each of whom has little or no influence on the market price.
- LO4.2** The demand curve shows how the quantity of a good demanded depends on the price. According to the law of demand, as the price of a good falls, the quantity demanded rises. Therefore, the demand curve slopes downwards. In addition to price, other determinants of the quantity demanded include income, tastes, expectations, and the prices of substitutes and complements. When one of these other factors changes, the quantity demanded at each price changes, and the demand curve shifts.
- LO4.3** The supply curve shows how the quantity of a good supplied depends on the price. According to the law of supply, as the price of a good rises, the quantity supplied rises. Therefore, the supply curve slopes upwards. In addition to price, other determinants of the quantity supplied include input prices, technology and expectations. When one of these other factors changes, the quantity supplied at each price changes, and the supply curve shifts.
- LO4.4** In market economies, prices are the signals that guide economic decisions and thereby allocate scarce resources. The intersection of the supply and demand curves represents the market equilibrium. At the equilibrium price, the quantity demanded equals the quantity supplied. The behaviour of buyers and sellers naturally drives markets towards their equilibrium. When the market price is above the equilibrium price, there is excess supply, which causes the market price to fall. When the market price is below the equilibrium price, there is excess demand, which causes the market price to rise.

Quickly navigate to **Key concepts** introduced in the chapter with this list of key terms.

#### Key concepts

- |                             |                                 |
|-----------------------------|---------------------------------|
| competitive market, p. 68   | law of supply and demand, p. 82 |
| complements, p. 72          | market, p. 67                   |
| demand curve, p. 69         | normal good, p. 71              |
| demand schedule, p. 69      | quantity demanded, p. 68        |
| equilibrium, p. 80          | quantity supplied, p. 76        |
| equilibrium price, p. 80    | shortage, p. 82                 |
| equilibrium quantity, p. 81 | substitutes, p. 72              |
| inferior good, p. 72        | supply curve, p. 76             |
| law of demand, p. 68        | supply schedule, p. 76          |
| law of supply, p. 76        | surplus, p. 81                  |

#### Apply and revise

- 1 What is a competitive market? Briefly describe a type of market that is not perfectly competitive.
- 2 What are the demand schedule and the demand curve, and how are they related? Why does the demand curve slope downwards?
- 3 Does a change in consumers' tastes lead to a movement along the demand curve or to a shift in the demand curve? Does a change in price lead to a movement along the demand curve or to a shift in the demand curve? Explain your answers.
- 4 Harry's income declines, and as a result, he buys more carrot juice. Is carrot juice an inferior or a normal good? What happens to Harry's demand curve for carrot juice?
- 5 What are the supply schedule and the supply curve, and how are they related? Why does the supply curve slope upwards?
- 6 Does a change in producers' technology lead to a movement along the supply curve or to a shift in the supply curve? Does a change in price lead to a movement along the supply curve or to a shift in the supply curve? Explain your answers.
- 7 Define the equilibrium of a market. Describe the forces that move a market towards its equilibrium.

Test your knowledge and consolidate your learning through **Apply and revise** and **Practice questions**, containing **multiple choice questions** and **problems and applications**.

#### Practice questions

##### Multiple choice

- 1 A change in which of the following will NOT shift the demand curve for hamburgers?
  - a the price of meat pies
  - b the price of hamburgers
  - c the price of hamburger buns
  - d the income of hamburger consumers
- 2 An increase in \_\_\_\_\_ will cause a movement along a given demand curve, which is called a change in \_\_\_\_\_.
  - a supply, demand
  - b supply, quantity demanded
  - c demand, supply
  - d demand, quantity supplied
- 3 Movie tickets and Blu-rays are substitutes. If the price of Blu-rays increases, what happens in the market for movie tickets?
  - a The supply curve shifts to the left.
  - b The supply curve shifts to the right.
  - c The demand curve shifts to the left.
  - d The demand curve shifts to the right.

##### Problems and applications

- 1 Explain each of the following statements using supply-and-demand diagrams.
  - a When a cyclone hits Queensland, the price of bananas rises in supermarkets throughout the country.
  - b On Tuesdays, cinemas discount tickets.
  - c When a war breaks out in the Middle East, the price of petrol rises and the price of a used SUV falls.
- 2 'An increase in the demand for notebooks raises the quantity of notebooks demanded, but not the quantity supplied.' Is this statement true or false? Explain.

# Guide to the online resources

## FOR THE INSTRUCTOR

Cengage is pleased to provide you with a selection of resources that will help you prepare your lectures and assessments. These teaching tools are accessible via [cengage.com.au/instructors](http://cengage.com.au/instructors) for Australia or [cengage.co.nz/instructors](http://cengage.co.nz/instructors) for New Zealand.

### MINDTAP

Premium online teaching and learning tools are available on the *MindTap* platform - the personalised eLearning solution.

*MindTap* is a flexible and easy-to-use platform that helps build student confidence and gives you a clear picture of their progress. We partner with you to ease the transition to digital – we're with you every step of the way.

The *Cengage Mobile App* puts your course directly into students' hands with course materials available on their smartphone or tablet. Students can read on the go, complete practice quizzes or participate in interactive real-time activities.

*MindTap* for Principles of Economics is full of innovative resources to support critical thinking, and help your students move from memorisation to mastery! Includes:

- Principles of Economics eBook
- Concept clips
- Graphing workshops
- Video problem walkthroughs
- Video lessons
- Study guide
- Aplia problem sets
- Aplia news analysis
- Adaptive test preparation
- Practice quizzes
- MobLab games and experiments

*MindTap* is a premium purchasable eLearning tool. Contact your Cengage learning consultant to find out how *MindTap* can transform your course.



### INSTRUCTOR'S MANUAL

The **Instructor's manual** includes:

- Learning objectives
- Key point summaries
- Chapter outline
- Check your understanding questions
- Questions for review and practice questions

# PREFACE TO THIS EDITION

Studying economics should invigorate and enthral. It should challenge students' preconceptions and provide them with a powerful, coherent framework for analysing the world they live in. Yet, all too often, economics textbooks are dry and confusing. Rather than highlighting the important foundations of economic analysis, these books focus on the 'ifs' and 'buts'. The motto underlying this book is that it is 'the rule, not the exception' that is important. Our aim is to show the power of economic tools and the importance of economic ideas.

This book has been designed particularly for students in Australia and New Zealand. However, we are keenly aware of the diverse mix of students studying in these countries. When choosing examples and applications, we have kept an international focus. Whether the issue is the plastic bag ban in California, organ donations in Wales or the petrol market in Australia, examples have been chosen for their relevance and to highlight that the same economic questions are being asked in many countries. The specific context in which economics is applied may vary, but the lessons and insights offered by the economic way of thinking are universal.

To boil economics down to its essentials, we had to consider what is truly important for students to learn in their first course in economics. As a result, this book differs from others not only in its length but also in its orientation.

It is tempting for professional economists writing a textbook to take the economist's point of view and to emphasise those topics that fascinate them and other economists. We have done our best to avoid that temptation. We have tried to put ourselves in the position of students seeing economics for the first time. Our goal is to emphasise the material that students should and do find interesting about the study of the economy.

One result is that more of this book is devoted to applications and policy, and less is devoted to formal economic theory, than is the case with many other books written for the principles course. For example, after students learn about the market forces of supply and demand in Chapters 4 to 6, they immediately apply these tools in Chapters 7 to 9 to consider three important questions facing our society: Why is the free market a good way to organise economic activity? How does taxation interfere with the market mechanism? Who are the winners and losers from international trade? These kinds of questions resonate with the concerns and interests that students hear about in the news and bring from their own lives.

Throughout this book, we have tried to return to applications and policy questions as often as possible. Most chapters include case studies illustrating how the principles of economics are applied. In addition, 'In the news' boxes offer excerpts from newspaper and magazine articles showing how economic ideas shed light on the current issues facing society. It is our hope that after students finish their first course in economics, they will think about news stories from a new perspective and with greater insight.

To write a brief and student-friendly book, we had to consider new ways to organise the material. This book includes all the topics that are central to a first course in economics, but the topics are not always arranged in the traditional order. What follows is a whirlwind tour of this text. This tour will, we hope, give instructors some sense of how the pieces fit together.

Chapter 1, 'Ten principles of economics', introduces students to the economist's view of the world. It previews some of the big ideas that recur throughout economics, such as opportunity cost, marginal decision making, the role of incentives, the gains from trade and the efficiency of market allocations. Throughout the book, we refer regularly to the *Ten Principles of Economics* in Chapter 1 to remind students that these principles are the foundation for most economic analysis.

Chapter 2, 'Thinking like an economist', examines how economists approach their field of study. It discusses the role of assumptions in developing a theory and introduces the concept of an economic model. It also discusses the role of economists in making policy. The appendix to this chapter offers a brief refresher course on how graphs are used and how they can be abused.

## COGNERO TEST BANK

This bank of questions has been developed in conjunction with the text for creating quizzes, tests and exams for your students. Deliver these through your LMS and in your classroom.

## POWERPOINT™ PRESENTATIONS

Use the chapter-by-chapter **PowerPoint slides** to enhance your lecture presentations and handouts by reinforcing the key principles of your subject.

## ARTWORK FROM THE TEXT

Add the digital files of graphs, tables, pictures and flow charts into your course management system, use them in student handouts, or copy them into your lecture presentations.

## FOR THE STUDENT

### MINDTAP

*MindTap* is the next-level online learning tool that helps you get better grades!

*MindTap* gives you the resources you need to study – all in one place and available when you need them. In the *MindTap Reader*, you can make notes, highlight text and even find a definition directly from the page.

If your instructor has chosen *MindTap* for your subject this semester, log in to *MindTap* to:

- Get better grades
- Save time and get organised
- Connect with your instructor and peers
- Study when and where you want, online and mobile
- Complete assessment tasks as set by your instructor

When your instructor creates a course using *MindTap*, they will let you know your course link so you can access the content. Please purchase *MindTap* only when directed by your instructor. Course length is set by your instructor.





Chapter 3, 'Interdependence and the gains from trade', presents the theory of comparative advantage. This theory explains why individuals trade with their neighbours, and why nations trade with other nations. Much of economics is about the coordination of economic activity through market forces. As a starting point for this analysis, students see in this chapter why economic interdependence can benefit everyone. This is done using a familiar example of trade in household chores among flatmates.

The next three chapters introduce the basic tools of supply and demand. Chapter 4, 'The market forces of supply and demand', develops the supply curve, the demand curve and the notion of market equilibrium. Chapter 5, 'Elasticity and its application', introduces the concept of elasticity and uses it in three applications to quite different markets. Chapter 6, 'Supply, demand and government policies', uses these tools to examine price controls, such as rent control, the award wage system, tax incidence and subsidies.

Attention then turns to welfare analysis using the tools of supply and demand. Chapter 7, 'Consumers, producers and the efficiency of markets', extends the analysis of supply and demand using the concepts of consumer surplus and producer surplus. It begins by developing the link between consumers' willingness to pay and the demand curve and the link between producers' costs of production and the supply curve. It then shows that the market equilibrium maximises the sum of the producer and consumer surplus. In this book, students learn about the efficiency of market allocations early in their studies.

The next two chapters apply the concepts of producer and consumer surplus to questions of policy. Chapter 8, 'Application: The costs of taxation', examines the deadweight loss of taxation. Chapter 9, 'Application: International trade', examines the winners and losers from international trade and the debate about protectionist trade policies.

Having examined why market allocations are often desirable, the book then considers how the government can sometimes improve on market allocations. Chapter 10, 'Externalities', examines why external effects such as pollution can render market outcomes inefficient. It also examines the possible public and private solutions to those inefficiencies. This has become highly relevant as policymakers attempt to deal with mitigating the causes of climate change. Chapter 11, 'Public goods and common resources', considers the inefficiencies that arise for goods that have no market price, such as national defence. Chapter 12, 'The design of the tax system', examines how the government raises the revenue necessary to pay for public goods. It presents some institutional background about the tax system and then discusses how the goals of efficiency and equity come into play in the design of a tax system.

The next five chapters examine firm behaviour and industrial organisation. Chapter 13, 'The costs of production', discusses what to include in a firm's costs and introduces cost curves. Chapter 14, 'Firms in competitive markets', analyses the behaviour of price-taking firms and derives the market supply curve. Chapter 15, 'Monopoly', discusses the behaviour of a firm that is the sole seller in its market. It discusses the inefficiency of monopoly pricing and the value of price discrimination. Chapter 16, 'Monopolistic competition', examines behaviour in a market in which many sellers offer similar but differentiated products. It also discusses the debate about the effects of advertising. Chapter 17, 'Oligopoly and business strategy', examines markets when there are only a few sellers and so strategic interactions are important. It uses the prisoners' dilemma as the model for examining strategic interaction.

The next three chapters examine issues related to labour markets. Chapter 18, 'The markets for the factors of production', emphasises the link between factor prices and marginal productivity. It includes an appendix on the firm demand for labour under imperfect competition and monopoly. Chapter 19, 'Earnings and discrimination', discusses the determinants of equilibrium wages, including compensating differentials, human capital, unions, efficiency wages and discrimination. The union discussion goes beyond simplistic analyses of unions and monopolists, introducing union behaviour as part of a bargaining equilibrium in a bilateral monopoly. The discussion of human capital and efficiency wages proves a convenient point to introduce students to the concepts of signalling and asymmetric information. Chapter 20, 'Income inequality and poverty,' examines the degree of inequality in

Australian society, the alternative views about the government's role in changing the distribution of income, and the various policies aimed at helping society's poorest members.

Chapter 21, 'The theory of consumer choice', analyses individual decision making using budget constraints and indifference curves. Finally, Chapter 22, 'Frontiers of microeconomics', goes beyond standard microeconomics to examine cutting-edge issues such as the role of information, political economy and behavioural economics; all of which help explain more of what happens in the real world. These last two chapters cover material that is somewhat more advanced than the rest of the book. Some instructors may want to skip the last chapter, depending on the emphases of their courses and the interests of their students. Instructors who do cover this material may want to move it earlier, and we have written this chapter so that it can be covered any time after the basics of supply and demand have been introduced.

**Joshua S. Gans**  
**Stephen P. King**  
**Martin C. Byford**

# PREFACE TO THE ORIGINAL EDITION

During my twenty-year career as a student, the course that excited me most was the two-semester sequence on the principles of economics I took during my freshman year in college. It is no exaggeration to say that it changed my life.

I had grown up in a family that often discussed politics over the dinner table. The pros and cons of various solutions to society's problems generated fervent debate. But, in school, I had been drawn to the sciences. Whereas politics seemed vague, rambling and subjective, science was analytic, systematic and objective. While political debate continued without end, science made progress.

My freshman course on the principles of economics opened my eyes to a new way of thinking. Economics combines the virtues of politics and science. It is, truly, a social science. Its subject matter is society – how people choose to lead their lives and how they interact with one another. But it approaches its subject with the dispassion of a science. By bringing the methods of science to the questions of politics, economics tries to make progress on the fundamental challenges that all societies face.

I was drawn to write this book in the hope that I could convey some of the excitement about economics that I felt as a student in my first economics course. Economics is a subject in which a little knowledge goes a long way. (The same cannot be said, for instance, of the study of physics or the Japanese language.) Economists have a unique way of viewing the world, much of which can be taught in one or two semesters. My goal in this book is to transmit this way of thinking to the widest possible audience and to convince readers that it illuminates much about the world around them.

I am a firm believer that everyone should study the fundamental ideas that economics has to offer. One of the purposes of general education is to make people more informed about the world in order to make them better citizens. The study of economics, as much as any discipline, serves this goal. Writing an economics textbook is, therefore, a great honour and a great responsibility. It is one way that economists can help promote better government and a more prosperous future. As the great economist Paul Samuelson put it, 'I don't care who writes a nation's laws, or crafts its advanced treaties, if I can write its economics textbooks.'

**N. Gregory Mankiw**

**July 2000**

# TO THE STUDENTS

Economics is a study of mankind in the ordinary business of life.' So wrote Alfred Marshall, the great nineteenth-century economist, in his textbook *Principles of Economics*. Although we have learned much about the economy since Marshall's time, this definition of economics is as true today as it was in 1890, when the first edition of his text was published.

Why should you, as a student in the twenty-first century, embark on the study of economics? There are three reasons.

The first reason to study economics is that it will help you understand the world in which you live. There are many questions about the economy that might spark your curiosity. Why are houses more expensive in Sydney than in Hobart? Why do airlines charge less for a return ticket if the traveller stays over a Saturday night? Why are some people paid so much to play tennis? Why are living standards so meagre in many African countries? Why do some countries have high rates of inflation while others have stable prices? Why are jobs easy to find in some years and hard to find in others? These are just a few of the questions that a course in economics will help you answer.

The second reason to study economics is that it will make you a more astute participant in the economy. As you go about your life, you make many economic decisions. While you are a student, you decide how many years you will continue with your studies. Once you take a job, you decide how much of your income to spend, how much to save and how to invest your savings. Some day you may find yourself running a small business or a large corporation, and you will decide what prices to charge for your products. The insights developed in the coming chapters will give you a new perspective on how best to make these decisions. Studying economics will not by itself make you rich, but it will give you some tools that may help in that endeavour.

The third reason to study economics is that it will give you a better understanding of the potential and limits of economic policy. As a voter, you help choose the policies that guide the allocation of society's resources. When deciding which policies to support, you may find yourself asking various questions about economics. What are the burdens associated with alternative forms of taxation? What are the effects of free trade with other countries? Under what circumstances can government intervention improve market outcomes? What is the best way to protect the environment? How does a government budget deficit affect the economy? These and similar questions are always on the minds of policymakers, whether they work for a local council or the prime minister's office.

Thus, the principles of economics can be applied in many of life's situations. Whether the future finds you reading the newspaper, running a business or running a country, you will be glad that you studied economics.

**Joshua S. Gans**  
**Stephen P. King**  
**Martin C. Byford**  
**N. Gregory Mankiw**

# ABOUT THE AUTHORS

**Joshua Gans** holds the Jeffrey S. Skoll Chair in Technical Innovation and Entrepreneurship and is a Professor of Strategic Management at the Rotman School of Management, University of Toronto. He studied economics at the University of Queensland and Stanford University. He currently teaches digital economics and entrepreneurship to MBA students. Professor Gans's research ranges over many fields of economics, including economic growth, game theory, regulation and the economics of technological change and innovation. His work has been published in academic journals including the *American Economic Review*, *Journal of Economic Perspectives*, *Journal of Political Economy* and the *Rand Journal of Economics*. Joshua also has written the popular books *Parentonomics*, *Information Wants to be Shared*, *The Disruption Dilemma*, *Prediction Machines*, *Innovation + Equality and Economics in the Age of COVID-19*. Currently, he is department editor at *Management Science*. He has also undertaken consulting activities (through his consulting firm, CoRE Research), advising governments and private firms on the impact of microeconomic reform and competition policy in Australia. In 2007, he was awarded the Economic Society of Australia's Young Economist Award for the Australian economist under

40 who has made the most significant contribution to economic knowledge. In 2008, he was elected as a Fellow of the Academy of Social Sciences Australia.

Professor Gans lives in Toronto with his partner, Natalie Lippey, and children, Belanna, Ariel and Annika.

**Stephen King** is a Commissioner with Australia's Productivity Commission and an adjunct Professor of Economics at Monash University. He has previously been Dean of Business and Economics at Monash University, a member of the Economic Regulation Authority of Western Australia, a member of the National Competition Council and a Commissioner at the Australian Competition and Consumer Commission. After starting (and stopping) studying Forestry and Botany, Stephen completed an economics degree at the Australian National University. He completed his PhD at Harvard University in 1991. Stephen has taught a variety of courses, including teaching introductory economics for 11 years at Harvard University, Monash University and the University of Melbourne.

Professor King has researched and published in a wide range of areas, including law and economics, game theory, corporate finance, privatisation and tax policy. From 2012 to 2016, he had a regular column in *The Conversation* and he has

a YouTube channel where you can view companion videos for introductory economics. Stephen regularly provides advice to government, private firms and the courts on a range of issues relating to regulation and competition policy. He is a Lay Member of the High Court of New Zealand and a Fellow of the Academy of Social Sciences in Australia.

Professor King lives in Melbourne with his wife, Mary. Their two children, Jacqui and Rebecca, have grown up, graduated, and run away from home.

**Martin Byford** is Senior Lecturer of Economics at RMIT University. Prior to joining RMIT, he was Assistant Professor of Economics at the University of Colorado at Boulder. Martin discovered economics during the final year of a combined Arts and Civil Engineering degree. Realising that he had made a terrible error in his choice of vocation, Martin went back to university to study economics. He completed a PhD at the University of Melbourne in 2007. Martin has taught introductory microeconomics at RMIT campuses in Australia and Singapore.

Dr Byford's research is primarily in the fields of industrial organisation and microeconomic theory. He has published in academic journals including the *Journal of Economic Theory*, the *International Journal of Industrial*

*Organization*, the *Journal of Economics and Management Strategy* and the *International Journal of Game Theory*. Martin also contributes to economic policy debates on a diverse range of topics, including the design of the banking system, social housing allocation and labour market reform.

Dr Byford lives in Melbourne with his wife, Siobhan, and their son, Robert.

**N. Gregory Mankiw** is Professor of Economics at Harvard University. As a student, he studied economics at Princeton University and

MIT. As a teacher, he has taught macroeconomics, microeconomics, statistics and principles of economics. He even spent one summer long ago as a sailing instructor on Long Beach Island.

Professor Mankiw is a prolific writer and a regular participant in academic and policy debates. His work has been published in scholarly journals, such as the *American Economic Review*, *Journal of Political Economy* and *Quarterly Journal of Economics*, and in more popular forums, such as *The New York Times*, *Boston Globe* and *The Wall Street Journal*. He is also the author of the

best-selling intermediate-level textbook *Macroeconomics* (Worth Publishers). In addition to his teaching, research and writing, Professor Mankiw is a research associate of the National Bureau of Economic Research, an adviser to the Federal Reserve Bank of Boston and the Congressional Budget Office, and a member of the ETS test development committee for the advanced placement exam in economics.

Professor Mankiw lives in Wellesley, Massachusetts, with his wife and three children.

# ACKNOWLEDGEMENTS

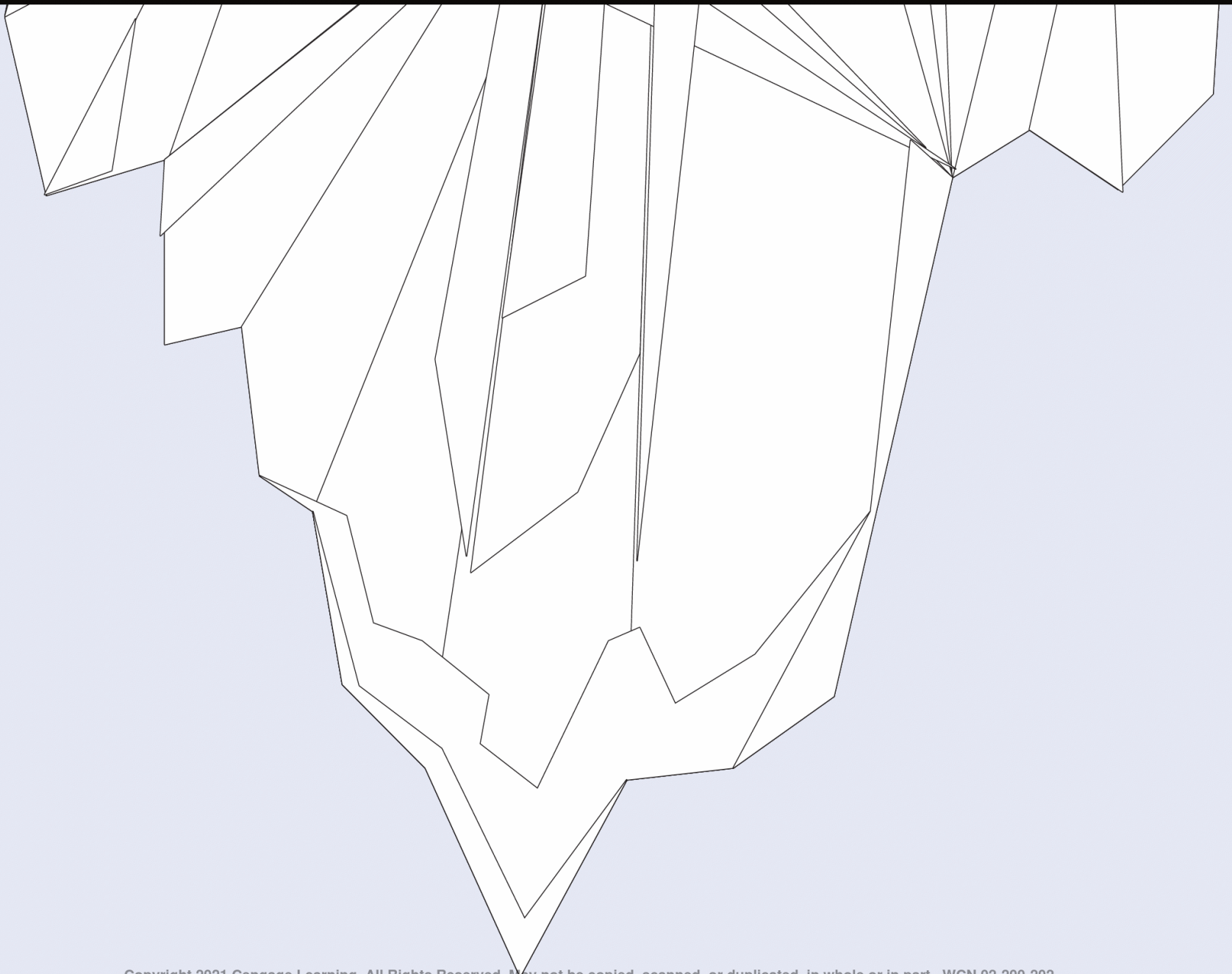
In updating this book, we have benefited from the input of a wide range of talented people. We would like to thank all those people who helped us with this task. We would also like to thank those economists who read and commented on portions of both this edition and the previous editions, including:

Mark Buchanek, Deakin College Burwood  
Dana Hanna, Australian National University  
Nahid Khan, University of Melbourne  
JP Monck, Macquarie University  
Brendan Moyle, Massey University

Sam Richardson, Massey University  
Professor Kishor Sharma, Charles Darwin University  
Robert Wrathall, Bond University  
Kheng Yeoh, RMIT University

Finally, we give special acknowledgement to our team of research assistants – Teresa Fels, Richard Hayes, Richard Scheelings, Anna Kim and Kimberly Jin – who worked on this project.

# PART ONE





# 1

## Ten principles of economics

### Learning objectives

After reading this chapter, you should be able to:

- LO1.1** recognise that people face trade-offs when they make decisions, and discuss how the nature of these trade-offs influences their behaviour
- LO1.2** explain why trade among people or nations can be good for everyone, and discuss why markets are a good, but not perfect, way to allocate resources
- LO1.3** identify the factors that drive some significant trends in the overall economy.

# Introduction

The word *economy* comes from the Greek word *oikonomos*, which means ‘one who manages a household’. At first, this origin might seem peculiar. But, in fact, households and economies have much in common.

A household faces many decisions. It must decide which members of the household do which tasks and what each member receives in return: Who cooks dinner? Who does the laundry? Who gets the extra dessert at dinner? Who gets to use the car? In short, the household must allocate its scarce resources (time, dessert, petrol) among its various members, taking into account each member’s abilities, efforts and desires.

Like a household, a society faces many decisions. A society must decide what jobs will be done and who will do them. It needs some people to grow food, other people to make clothing and still others to design computer software. Once society has allocated people (as well as land, buildings and machines) to various jobs, it must also allocate the output of the goods and services that they produce. It must decide who will eat caviar and who will eat potatoes. It must decide who will drive a Porsche, and who will take the bus.

The management of society’s resources is important because resources are scarce. **Scarcity** means that society has limited resources and therefore cannot produce all the goods and services people wish to have. Just as each member of a household cannot get everything he or she wants, each individual in society cannot attain the highest standard of living to which he or she might aspire.

**Economics** is the study of how society manages its scarce resources. In most societies, resources are allocated not by an all-powerful dictator but through the combined choices of millions of households and firms. Economists, therefore, study how people make decisions – how much they work, what they buy, how much they save and how they invest their savings. Economists also study how people interact with one another. For instance, they examine how the many buyers and sellers of a good interact to determine the price at which the good is sold and the quantity that is sold. Finally, economists analyse the forces and trends that affect the economy as a whole, including the growth in average income, the fraction of the population that cannot find work and the rate at which prices are rising.

The study of economics has many facets, but it is unified by several central ideas. In the rest of this chapter, we look at *Ten Principles of Economics*. Don’t worry if you don’t understand them all at first or if you are not completely convinced. We explore these ideas more fully in later chapters. The 10 principles are introduced here to give you an overview of what economics is all about.

---

**scarcity**  
the limited nature of society’s resources

---

**economics**  
the study of how society manages its scarce resources

## L01.1 How people make decisions

There is no mystery about what an economy is. Whether we are talking about the economy of Sydney, of Australia or of the whole world, an economy is just a group of people interacting with one another as they go about their lives. Because the behaviour of an economy reflects the behaviour of the individuals who make up the economy, our first four principles concern individual decision making.

### Principle 1: People face trade-offs

You may have heard the saying, ‘There’s no such thing as a free lunch’. To get something that we like, we usually have to give up something else that we also like. Making decisions requires trading off one goal against another.

Consider Carol, a student, who must decide how to allocate her most valuable resource – her time. She can spend all her time studying economics; she can spend all of her time studying psychology; or she can divide her time between the two fields. For every hour she studies one subject, she gives up an hour she could have used studying the other. And for every hour Carol spends studying, she gives up an hour that she could have spent sleeping, bike riding, watching YouTube clips, or working at her part-time job for some extra spending money.

Consider parents deciding how to spend their family income. They can buy food or clothing, or have a holiday. Or they can save some of their income for retirement or their children's education. When they choose to spend an extra dollar on one of these goods, they have one less dollar to spend on some other good.

When people are grouped into societies, they face different kinds of trade-offs. The classic trade-off is between 'guns and butter'. The more society spends on national defence (guns) to protect our shores from foreign aggressors, the less we can spend on consumer goods (butter) to raise our standard of living. Also important in modern society is the trade-off between a clean environment and a high level of income. Laws that require firms to reduce pollution usually raise the cost of producing goods and services. Because of these higher costs, these firms end up earning smaller profits, paying lower wages, charging higher prices or some combination of these three. Thus, while pollution regulations give us a cleaner environment and the improved health that comes with it, this benefit comes at the cost of reducing the wellbeing of the regulated firms' owners, workers and customers.

Another trade-off society faces is between efficiency and equity. **Efficiency** means that society is getting the greatest possible benefit from its scarce resources. **Equity** means that those benefits are distributed uniformly among society's members. In other words, efficiency refers to the size of the economic pie, and equity refers to how the pie is divided between individuals.

When government policies are being designed, these two goals often conflict. Consider, for instance, policies aimed at achieving a more equitable distribution of economic wellbeing. Some of these policies, such as the age pension or unemployment benefits, try to help those members of society who are most in need. Others, such as the individual income tax, ask the financially successful to contribute more than others to support the government. Although these policies achieve greater equity, they reduce efficiency. When the government redistributes income from the rich to the poor, it reduces the reward for working hard; as a result, people may work less and produce fewer goods and services. In other words, as the government tries to cut the economic pie into more equitable slices, the pie itself shrinks in size.

Recognising that people face trade-offs does not by itself tell us what decisions they will or should make. A student should not abandon the study of psychology just because doing so would increase the time available for the study of economics. Society should not stop protecting the environment just because environmental regulations reduce our material standard of living. The government should not ignore the disadvantaged just because helping them would distort work incentives. Nonetheless, people are likely to make good decisions only if they understand the options that they have available. Our study of economics, therefore, starts by acknowledging life's trade-offs.

## Principle 2: The cost of something is what you give up to get it

Because people face trade-offs, making decisions requires comparing the costs and benefits of alternative courses of action. In many cases, however, the cost of some action is not as obvious as it might first appear.

---

### efficiency

the property of society getting the most it can from its scarce resources

---

### equity

the property of distributing economic prosperity uniformly among the members of society

Consider the decision whether to go to university. The benefits include intellectual enrichment and a lifetime of better job opportunities. But what is the cost? To answer this question, you might be tempted to add up the money you or your parents spend on fees, books, rent and food. Yet this total does not truly represent what you give up to spend a year at university.

There are two problems with this calculation. First, it includes some things that are not really costs of university education. Even if you quit university, you would need a place to sleep and food to eat. Rent and food are costs of going to university only to the extent that they may be more expensive because you are at university. Second, this calculation ignores the largest cost of going to university – your time. When you spend a year listening to lectures, reading textbooks and writing assignments, you cannot spend that time working at a job and earning money. For most students, the wages given up to attend university are the largest cost of their education.

The **opportunity cost** of an item is the best alternative you give up to get that item. When making any decision, decision makers should take into account the opportunity costs of each possible action. In fact, they usually do. For example, some young athletes can earn millions if they forgo university and play professional sports. Their opportunity cost of university is very high. Not surprisingly, they often decide that the benefit of a university education is not worth the opportunity cost.

---

**opportunity cost**  
the best alternative that must be given up to obtain some item

### Principle 3: Rational people think at the margin

Economists normally assume that people are rational. **Rational people** systematically and purposefully do the best they can do to achieve their objectives, given the opportunities they have. As you study economics, you will encounter firms that decide how many workers to hire and how much of their product to manufacture and sell to maximise profits. You will encounter individuals who decide how much time to spend working, and what goods and services to buy with the resulting income to achieve the highest possible level of satisfaction.

---

**rational people**  
people who systematically and purposefully do the best they can to achieve their objectives

Rational people know that decisions in life are rarely black and white but usually involve shades of grey. At dinnertime, you don't ask yourself 'Should I fast or eat like a pig?' More likely, the question you face is 'Should I eat that extra spoonful of mashed potatoes?' When exams roll around, your decision is not between blowing them off and studying 24 hours a day, but whether to spend an extra hour reviewing your notes instead of posting selfies on Instagram. Economists use the term **marginal change** to describe a small incremental adjustment to an existing plan of action. Keep in mind that margin means 'edge', so marginal changes are adjustments around the edges of what you are doing. Rational people often make decisions by comparing *marginal benefits* and *marginal cost*.

---

**marginal change**  
a small incremental adjustment to a plan of action

For example, suppose you are considering watching a movie tonight. You pay \$12 a month for a streaming service that gives you unlimited access to its films and TV shows, and you typically watch eight movies a month. What cost should you take into account when deciding whether to watch another movie? You might at first think the answer is  $\$12/8$ , or \$1.50, which is the *average* cost of a movie. More relevant for your decision, however, is the *marginal* cost – the extra cost that you would incur by streaming another film. Here, the marginal cost is zero because you pay the same \$12 for the service regardless of how many movies you watch. In other words, at the margin, streaming a movie is free. The only cost of watching a movie tonight is the time it takes away from other activities, such as working at a job or (better yet) reading this textbook.



Source: Shutterstock.com/rafapress

Many streaming services set the marginal cost of a movie equal to zero.

Thinking at the margin also works for business decisions as well. Consider an airline deciding how much to charge passengers who fly standby. Suppose that flying a 200-seat plane from Brisbane to Perth costs the airline \$100 000. In this case, the average cost of each seat is  $\$100\,000/200$ , which is \$500. One might be tempted to conclude that the airline should never sell a ticket for less than \$500. But the airline can often increase its profits by thinking at the margin. Imagine that a plane is about to take off with 10 empty seats and a standby passenger waiting at the gate will pay \$300 for a seat. Should the airline sell the ticket? Of course it should. If the plane has empty seats, the cost of adding one more passenger is tiny. Although the *average* cost of flying a passenger is \$500, the *marginal* cost is merely the cost of the sandwich and coffee that the extra passenger will consume and the small bit of jet fuel needed to carry the extra passenger's weight. As long as the standby passenger pays more than the marginal cost, selling the ticket is profitable. Thus, a rational airline can increase profits by thinking at the margin.

Marginal decision making can help explain some otherwise puzzling economic phenomena. Here is a classic question: Why is water so cheap, while diamonds are so expensive? Humans need water to survive, while diamonds are unnecessary. Yet people are willing to pay much more for a diamond than for a cup of water. The reason is that a person's willingness to pay for a good is based on the marginal benefit that an extra unit of the good would yield. The marginal benefit, in turn, depends on how many units a person already has. Although water is essential, the marginal benefit of an extra cup is small because water is plentiful. By contrast, no one needs diamonds to survive, but because diamonds are so rare, the marginal benefit of an extra diamond is large.

A rational decision maker takes an action if and only if the action's marginal benefit exceeds its marginal cost. This principle explains why people use streaming services as much as they do, why airlines are willing to sell tickets below average cost, and why people are willing to pay more for diamonds than for water. It can take some time to get used to the logic of marginal thinking, but the study of economics will give you ample opportunity to practise.

## Principle 4: People respond to incentives

---

**incentive**  
something that  
induces a person to act

An **incentive** is something that induces a person to act, such as the prospect of a punishment or reward. Because rational people make decisions by comparing costs and benefits, they respond to incentives. You will see that incentives play a central role in the study of economics. One economist went so far as to suggest that the entire field could be summarised simply: 'People respond to incentives. The rest is commentary.'

Incentives are key to analysing how markets work. For example, when the price of apples rises, people decide to eat fewer apples. At the same time, apple orchards decide to hire more workers and harvest more apples. In other words, a higher price in a market provides an incentive for buyers to consume less and an incentive for sellers to produce more. As we will see, the influence of prices on the behaviour of consumers and producers is crucial to understanding how the economy allocates scarce resources.

Public policymakers should never forget about incentives. Many policies change the costs or benefits that people face and, as a result, alter their behaviour. A tax on petrol, for instance, encourages people to drive smaller, more fuel-efficient cars. That is one reason people drive smaller cars in Europe and Australia, where petrol taxes are higher, than in the United States, where petrol taxes are low. A petrol tax also encourages people to take public transportation rather than drive, to live closer to where they work, or to switch to electric cars.

When policymakers fail to consider how their policies affect incentives, they often end up facing unintended consequences. For example, consider public policy towards seat belts and car safety. Today, all cars have seat belts, but this was not the case in the 1950s. In the

# Introduction

---

**Chapter 1** Ten principles of economics

**Chapter 2** Thinking like an economist

**Chapter 3** Interdependence and the gains from trade