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ABOUT THE AUTHORS

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Anne Garnett is a Senior Lecturer in Economics at Murdoch University. She has extensive teaching experience at the undergraduate and postgraduate level, both in Australia and many parts of Asia. Her research areas include regional economics, labour economics, international investment and trade, and agricultural economics. Anne has been an adviser to the federal government on rural and regional economics. She has published numerous chapters in books and articles in international journals. She has taught in all areas of economics at all levels; however, over the past 20 years her primary teaching focus has been to teach first-year introductory economics. Anne is also co-author of the widely used *Microeconomics* and *Macroeconomics* undergraduate texts published by Pearson Australia.



PHILIP LEWIS

Phil Lewis is Emeritus Professor of Economics, Director of the Centre for Labour Market Research at the University of Canberra, and Visiting Professorial Fellow at the University of New South Wales. He is among the best-known economists in the area of employment, education and training in Australia and Asia. He is the author of over 120 publications including journal articles, book chapters and books. He is the editor of *The Australian Journal of Labour Economics*. Phil has also worked extensively in government and has produced a number of major reports for the private and public sectors. He has served as the National President of the Economic Society of Australia. In 2008 Phil was presented with the Honorary Fellow Award by the Economic Society of Australia for exceptional service to the economics profession.



GLENN HUBBARD

Glenn Hubbard is the Dean and Russell L. Carson Professor of Finance and Economics in the Graduate School of Business at Columbia University and Professor of Economics in Columbia's Faculty of Arts and Sciences. He is also a research associate of the National Bureau of Economic Research and a director of Automatic Data Processing, Black Rock Closed-End Funds, KKR Financial Corporation and MetLife. From 2001 to 2003 he served as chair of the White House Council of Economic Advisers and chair of the OECD Economy Policy Committee, and from 1991 to 1993 he was deputy assistant secretary of the US Treasury Department. He currently serves as co-chair of the non-partisan Committee on Capital Markets Regulation. Glenn's fields of specialisation are public economics, financial markets and institutions, corporate finance, macroeconomics, industrial organisation and public policy. He is the author of more than 100 articles in leading journals.



TONY O'BRIEN

Anthony Patrick (Tony) O'Brien is a Professor of Economics at Lehigh University. He has taught principles of economics for more than 20 years. He received the Lehigh University Award for Distinguished Teaching. He was formerly the director of the Diamond Center for Economic Education and was named a Dana Foundation Faculty Fellow and Lehigh Class of 1961 Professor of Economics. He has been a visiting professor at the University of California, Santa Barbara, and the Graduate School of Industrial Administration at Carnegie Mellon University. Tony's research has dealt with such issues as the evolution of the US car industry, sources of US economic competitiveness, the development of US trade policy, the causes of the Great Depression and the causes of black–white income differences. His research has been published in leading journals.



PREFACE

When George Lucas was asked why he made *Star Wars*, he replied, ‘It’s the kind of movie I like to see, but no one seemed to be making them. So I decided to make one.’ We realised that no one seemed to be writing the kind of textbook we wanted to use in our courses. So, after years of supplementing texts with fresh, lively, real-world examples from websites, newspapers, magazines and professional journals, we decided to write an economics text that delivers complete economics coverage with many real-world examples.

NEW TO THE FOURTH EDITION

The core ideas of economics remain unchanged: opportunity costs, demand and supply, comparative advantage, marginal analysis, efficiency in competitive markets, the role of the entrepreneur in markets, the role of the government, aggregate demand and aggregate supply, the importance of long-run economic growth to rising living standards and the role of economic incentives in the design of policy. What does change is the context in which lecturers and instructors present these ideas in class and the policy debates of the time. In the past few years, to take just a few relevant examples, we have witnessed the runaway success of smartphones and tablet computers, seen the rapid growth of the sharing economy including companies such as Uber and Airbnb, experienced increased policy debate about how best to address climate change, and experienced the impact of the global economic contractions and recessions. This new edition helps students understand these changing economic realities.

In this fourth edition we retain the focus of presenting economics in the context of real-world businesses and real-world policy debates which have proved effective for teaching and learning. We have made a number of important improvements, which include suggestions from lecturers currently using the text, and from reviewers. We hope these changes will make the text an even more effective teaching tool. The fourth edition includes the following key changes:

- A new chapter—Chapter 12, Social Policy and Inequality—which covers income redistribution and the taxation system, and domestic and international income inequality and poverty.
- New material on the rapid growth in the use of robotics in the workplace in Chapters 1 and 10.
- Analysis of the rise of the sharing economy through companies such as Uber and Airbnb in Chapter 7.
- Coverage of the *Harper Report* on competition in Chapter 8.
- Extended coverage of compensating differentials in Chapter 10.
- Updated material on the policy debate on climate change policy in Chapter 11.
- New discussion and case studies on money and monetary policy in Chapters 16 and 17, including the use of bitcoin.
- New material on the Millennium Development Goals in Chapters 12 and 20.
- Updated coverage of government debt crises in Europe in Chapters 18 and 20.
- New material on world currencies, including the management of the Chinese yuan in Chapter 20.
- More international case studies, including China, Japan, Greece, Germany, countries in Africa, the United States and the United Kingdom.
- Updated and new chapter-opening cases for every chapter.
- A number of new and substantially revised *Making the Connection* features, with others containing updated data and information, to help students to tie economic concepts to current events and policy debates.
- New *An Inside Look* news articles and analysis, to enable students to apply economic concepts to current events and policy debates.
- Updated figures and tables, using the latest data available.

THE FOUNDATION

CONTEXTUAL LEARNING AND MODERN ORGANISATION

We believe a course is a success if students can apply what they have learned in both personal and business settings and if they have developed the analytical skills to understand what they read in the media. That's why we explain economic concepts by using many real-world business examples and applications, in both Australia and other countries, in the chapter openers, graphs, *Making the Connection* features, *An Inside Look* features, and end-of-chapter problems. This approach helps students to become educated consumers, voters and citizens. In addition, we also have a modern organisation and place interesting policy topics early in the book to pique student interest.

We are convinced that students learn to apply economic principles best if they are taught in a familiar context. Whether they fill a graduate role in business or government, trade on the securities exchange or open their own business, students must understand the economic forces behind their work. And though business and economics students will have many opportunities to see economic principles in action in various courses, students from other disciplines may not. We therefore use many diverse real-world business and policy examples to illustrate economic concepts.

The following points illustrate our approach:

- **A strong set of introductory chapters.** Our introductory chapters provide students with a solid foundation in the basics. We emphasise the key issues of scarcity, trade-offs, marginal analysis and economic efficiency. In Chapter 1 we introduce students to the economic way of thinking through the growing use by Australian businesses of robotics and offshoring, the debate on minimum wages and the debate on immigration to Australia. Chapter 2 examines the trade-offs and marginal analysis that managers and economies have to face, presented in the context of Tesla deciding on the mix of vehicles to produce. Chapters 3 and 4 introduce demand and supply and how the market works, using the examples of demand and supply of tablet computers, the rising demand for fitness trackers, the price of petrol and the increased tax on 'alcopops', to help contextualise the issues and concepts.
- **Early coverage of policy issues.** To pique interest and expose students to policy issues early in the course, we discuss the effect on jobs of Australia's growing use of robotics and offshoring in Chapter 1, the free market and the illegal downloading of movies and music from the Internet in Chapter 2, the market for housing in Australia in Chapter 3, government policy towards illegal drugs in Chapter 4 and whether the government should control rent prices for apartments in Chapter 5. The remainder of the chapters continue this approach by relating concepts to relevant business examples and current economic policy and events.
- **Immediate relevance to students.** This new edition of *Essentials of Economics* has been revised to provide students with the most up-to-date and relevant content they need to succeed in the field of economics. Once again, all chapters contain examples to demonstrate the practicality and relevance of economics to decision making that students may be currently involved with. Here are a few examples: Chapter 4 examines the pricing of alcoholic drinks, Chapter 8 analyses whether companies such as Netflix can provide competition with Foxtel in the subscription video-on-demand market, Chapter 9 looks at whether there is a 'best' strategy for bidding on eBay, Chapter 10 analyses the effect of robotics on the labour market, Chapter 16 poses the question 'Are bitcoins money?', and Chapter 19 touches on the controversial subject of whether we should buy products made with child labour.
- **Applications to contemporary issues.** Our chapters are written to reveal the relevance and importance of economic analysis to current significant issues that affect individuals, business and society. Chapter 6 looks at whether economies of scale can lead to cheaper electric cars. In Chapter 8 we look at the impact of Foxtel's dominance in sports in the pay TV market. In Chapter 11 we look at the effectiveness of government policy in reducing air lead levels in Melbourne and examine policies to address climate change. The new Chapter 12 addresses the growing focus on inequality and poverty, including a study of the role of taxation policy in income redistribution, and an examination of domestic and international income inequality and poverty. Chapters 16 and 17 examine the issue of sovereign debt, while Chapter 20 looks at how exchange rates affect the number of overseas students studying in Australia.

- **Extensive, realistic game theory coverage.** In Chapter 9 we use game theory to analyse competition between oligopolists. Game theory helps students to understand how companies with market power make strategic decisions in many competitive situations. We use familiar companies such as Big W, Kmart, eBay, Coca-Cola and Pepsi in our game theory applications.
- **Extensive and contemporary coverage of externalities and environmental policy.** A major part of Chapter 11 focuses on externalities and the associated environmental policy. We believe that in the current context of industrialisation and air pollution, greenhouse gases and climate change, it is important to dedicate the major part of a chapter to the economic analysis of these issues and the corresponding policies.
- **A broad discussion of macro statistics.** Many students pay at least some attention to the financial news and know that the release of statistics by government departments can cause movements in share and bond prices. A background in macroeconomic statistics helps to clarify some of the policy issues encountered in later chapters. In Chapter 13, 'GDP: Measuring Total Production, Income and Economic Growth', and in Chapter 14, 'Unemployment and Inflation', we provide students with an understanding of the uses and potential shortcomings of the key macroeconomic statistics, without getting bogged down in the finer points of how the statistics are constructed.
- **A dynamic model of aggregate demand and aggregate supply.** We take a fresh approach to the standard aggregate demand–aggregate supply (AD–AS) model. We realise there is no good, simple alternative to using the AD–AS model when explaining movements in the price level and in real GDP. But we know that more instructors are dissatisfied with the AD–AS model than with any other aspect of the macroeconomics principles course. The key problem, of course, is that the AD–AS model is a static model that attempts to account for dynamic changes in real GDP and the price level. Our approach retains the basics of the AD–AS model but makes it more accurate and useful by making it more dynamic. We emphasise two points: first, changes in the position of the short-run (upward-sloping) aggregate supply curve depend mainly on the state of expectations of the inflation rate; and second, the existence of growth in the economy means that the long-run (vertical) aggregate supply curve shifts to the right every year. This 'dynamic' AD–AS model provides students with a more accurate understanding of the causes and consequences of fluctuations in real GDP and the price level. We introduce this model in Chapter 15, 'Aggregate Demand and Aggregate Supply Analysis', and use it in Chapter 17, 'Monetary Policy', and Chapter 18, 'Fiscal Policy'.
- **Extensive coverage of monetary policy.** Because of the central role money and monetary policy plays in the economy and in students' curiosity about business and financial news, we devote two chapters—Chapters 16 and 17—to these topics. We emphasise the way in which monetary policy is carried out in Australia through interest rate targeting (not the outdated approach of targeting the money supply that still appears in some textbooks) and the role of credit in the economy. We also cover the use of monetary policy during the economic contraction that followed the Global Financial Crisis.
- **Fiscal policy analysis.** Our discussion of fiscal policy in Chapter 18 carefully distinguishes between automatic stabilisers and discretionary fiscal policy. We include analysis based on real data on government budgets and debt levels. The issue of the structural budget deficit is also introduced. We also have significant coverage of the supply-side effects of fiscal policy.
- **Extensive international coverage.** We include two chapters devoted to international topics: Chapter 19, 'Comparative Advantage and the Gains from International Trade', and Chapter 20, 'Macroeconomics in an Open Economy'. Having a good understanding of the international trading and financial systems is essential to an understanding of the macroeconomy and to satisfying students' curiosity about the economic world around them. In addition to the material in our two international chapters, we weave international comparisons into the narrative of several chapters, including our discussions of unemployment, inflation, central banking and government debt.

SPECIAL FEATURES

A REAL-WORLD, HANDS-ON APPROACH TO LEARNING ECONOMICS

OPENING CASES AND AN INSIDE LOOK NEWS ARTICLES

Each chapter-opening case provides a real-world context for learning, sparks students' interest in economics and helps to unify the chapter. The case describes real situations facing actual companies or countries. The company or economic issue is integrated into the narrative, graphs and pedagogical features in the chapter. For example, we look at companies such as Tesla, Uber, Apple, Sony, Rio Tinto, Coles, Woolworths, JB Hi-Fi, Hills, David Jones, Harvey Norman, Foxtel, Netflix, Telstra, and The Coffee Club.



Here are a few examples of chapter opening cases:

- How Uber brought competition to the taxi industry (Chapter 7).
- Rio Tinto mines with robots (Chapter 10).
- Can economic policy help to protect the environment? (Chapter 11).
- How JB Hi-Fi survived the economic cycle (Chapter 15).
- Australian universities experience crunch from high dollar (Chapter 20).

An Inside Look is a two-page feature that shows students how to apply the concepts of a chapter to the analysis of a news article. Articles are from sources such as ABC News, The Sydney Morning Herald, The Age, The Financial Times, The Australian, and The Conversation. The An Inside Look feature presents analysis of the article, a graph(s), and critical-thinking questions.



Here are some examples of the articles features in An Inside Look:

- 'Rise of the machines: What jobs will survive as robots move into the workplace?' *ABC News* (Chapter 1).
- 'Tesla: The gigafactory is the key.' *Seeking Alpha* (Chapter 6).
- 'Too big to fail: China pledges to set up landmark emissions trading scheme.' *The Conversation* (Chapter 11).
- 'Innovation in electronic payments to accelerate demise of cheques.' *Canberra Times* (Chapter 16).
- 'Brexit tipped to push \$A higher, RBA to cut rate', *The Age* (Chapter 20).

ECONOMICS IN YOUR LIFE

After the chapter-opening real-world case, we have added a personal dimension to the chapter opener, with a feature titled *Economics in Your Life*, which asks students to consider how economics affects their own lives. This feature piques the interest of students and emphasises the connection between the material they are learning and their own experiences.



At the end of the chapter, we use the chapter concepts to answer the questions asked at the beginning of the chapter.



The following are examples of the topics we cover in the *Economics in Your Life* feature:

- Will you buy an Apple iPad or a Samsung Galaxy Tab? (Chapter 3).
- How can you convince your boss to give you a pay rise? (Chapter 10).
- Should you change your career plans if you graduate during a recession? (Chapter 14).
- Should you buy a house during an economic contraction? (Chapter 17).
- The Australian dollar and your new car price (Chapter 20).



MAKING THE CONNECTION

In each chapter, *Making the Connection* features present relevant, stimulating and provocative cases from various countries, primarily about business but sometimes related to other significant world economic events or policy issues. These features link the concepts and models covered in the chapter with a real-world application.

Here are some examples of the *Making the Connection* features:

- The rise and rise of fitness trackers (Chapter 3).
- Can a price on carbon reduce global warming? (Chapter 11).
- Does technological change create unemployment? (Chapter 15).
- Are bitcoins money? (Chapter 16).
- Greece and Germany: Diverse economies, common currency (Chapter 20).

SOLVED PROBLEMS

Many students have great difficulty handling applied economics problems. We help students to overcome this hurdle by including worked-out problems tied to select chapter learning objectives and the associated quantitative information. Our goals are to keep students focused on the main ideas of each chapter and to give students a model of how to solve an economic problem by breaking it down step by step. Additional exercises in the end-of-chapter material are tied to every *Solved Problem*.

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with a value of 800 billion in 1998. Economic growth that is calculated in the price of the overall price level is referred to as **real growth**. This calculation does not include price levels to adjust for inflation—only real values that are adjusted for inflation to create real values.

For many problems, we are interested in teaching changes in an economic variable over time rather than in solving for the value itself. In these cases, we correct for the effects of inflation so we can describe the real value in a price index and usually by 100 to obtain a real variable.

PROBLEM 14.1 WHAT WOULD HAPPEN WITH REAL WAGES IN AUSTRALIA?

In addition to their unemployment, the 400 workers have been experiencing an average weekly earnings of workers. Average weekly earnings are the wages of workers before taxes and other deductions. Economists classify these average weekly earnings as a **nominal variable** because they are based on the price level. **Real average weekly earnings** are the wages referred to as the **real wage**, and **real average weekly earnings** are often referred to as the **real wage**.

Use the information in the following table to calculate the average weekly earnings for each year. Then calculate the percentage change in real average weekly earnings between 2014 and 2017.

Year	Unemployment Rate (%)	Average Weekly Earnings (\$)
2014	6.2	1,050.0
2015	6.2	1,050.0
2016	6.2	1,050.0
2017	6.2	1,050.0

Solving the problem

STEP 1 Review the chapter materials. This problem is about using price indexes to correct for inflation, so you may want to review the section on price indexes in the chapter materials.

STEP 2 Calculate the average weekly earnings for each year. To calculate the average weekly earnings for each year, divide nominal average weekly earnings by the CPI. For example, real average weekly earnings for 2014 are equal to

$$\frac{\$1,050.0}{100} = \$10.50$$

The table for the other years is:

Year	Nominal Average Weekly Earnings (\$)	CPI (2014 = 100)	Real Average Weekly Earnings (\$)
2014	1,050.0	100	10.50
2015	1,050.0	100	10.50
2016	1,050.0	100	10.50
2017	1,050.0	100	10.50

STEP 3 Calculate the percentage change in real average weekly earnings from 2014 to 2016. The percentage change is equal to

$$\frac{10.50 - 10.50}{10.50} \times 100 = 0\%$$

We can conclude that although nominal average weekly earnings increased by 2.2 percent from 2014 to 2016, real average weekly earnings remained by 0 percent.

Full employment

As the economy moves through the expansion phase of the business cycle, cyclical unemployment will eventually drop to zero. The unemployment rate will be zero because, because of frictional and structural unemployment, Figure 14.4 shows, the unemployment rate is normally below zero even for most two decades. When the only remaining unemployment is frictional and structural unemployment, the economy is in a state of **full employment**.

Economists often think of frictional and structural unemployment as being the natural or **normal** level of unemployment in the economy. The **frictionless** level of unemployment is the level of unemployment that would exist if there were no frictional or structural unemployment. The **frictionless** level of unemployment is referred to as the **natural rate of unemployment**, and it varies when the economy is operating at a natural level of unemployment. The **frictionless** level of unemployment is the level of unemployment that would exist if there were no frictional or structural unemployment. The **frictionless** level of unemployment is referred to as the **natural rate of unemployment**.

DO NOT LET THIS HAPPEN TO YOU

Don't confuse full employment with zero unemployment rate. The natural rate of unemployment is not zero. It is the level of unemployment that would exist if there were no frictional or structural unemployment. The **frictionless** level of unemployment is the level of unemployment that would exist if there were no frictional or structural unemployment. The **frictionless** level of unemployment is referred to as the **natural rate of unemployment**.

EXPLAINING FRICTIONAL AND STRUCTURAL UNEMPLOYMENT

Full employment does not mean that everyone who wants to work has a job. It means that everyone who wants to work has a job. It means that everyone who wants to work has a job. It means that everyone who wants to work has a job.

DON'T LET THIS HAPPEN TO YOU

We know from many years of teaching which concepts students find most difficult. Each chapter contains a box feature called *Don't Let This Happen to You* which alerts students to the most common pitfalls in that chapter's material. We follow up with a related question in the end-of-chapter *Problems and Applications* section.

GRAPHS AND SUMMARY TABLES

Graphs are an indispensable part of the principles of an economics course but are a major stumbling block for many students. Every chapter includes end-of-chapter problems that require students to draw, read and interpret graphs. Interactive graphing exercises can be found on the book's supporting MyLab website. We use four devices to help students read and interpret graphs:

1. Detailed captions
2. Boxed notes
3. Colour-coded curves
4. Summary tables with graphs.

FIGURE 14.1 Unemployment in Australia, 1962-2017

The following table uses the actual inflation rate in each year to calculate the real average weekly earnings for each year.

Year	Unemployment Rate (%)	Average Weekly Earnings (\$)	Real Average Weekly Earnings (\$)
2014	6.2	1,050.0	10.50
2015	6.2	1,050.0	10.50
2016	6.2	1,050.0	10.50
2017	6.2	1,050.0	10.50

WHAT CAUSES INFLATION?

Inflation is usually categorized as demand-pull or cost-push. Demand-pull inflation is a rise in the general price level in the economy that is caused by an increase in the aggregate demand for goods and services. Demand-pull inflation is usually caused by an increase in the aggregate demand for goods and services. Demand-pull inflation is usually caused by an increase in the aggregate demand for goods and services.

Increasing wages for women, the desire to increase household income levels, increased availability of goods that reduce the time it takes for households to make such a purchase, automatic household expenses and the availability of prepackaged meals, and the typical family being more childless.

How long are people usually unemployed?

The longer a person is unemployed, the greater the hardship and the more difficult it is for them to find a job. In fact, the longer a person is unemployed, the more difficult it is for them to find a job.

Table 14.1 Duration of unemployment, 2017	2017 (%)
Less than 4 weeks	45.3
4 to 5 weeks	21.5
6 to 7 weeks	14.2
8 to 9 weeks	10.2
10 to 11 weeks	6.8
12 to 13 weeks	4.5
14 to 15 weeks	3.0
16 to 17 weeks	2.0
18 to 19 weeks	1.5
20 to 21 weeks	1.0
22 to 23 weeks	0.8
24 to 25 weeks	0.5
26 to 27 weeks	0.3
28 to 29 weeks	0.2
30 to 31 weeks	0.1
32 to 33 weeks	0.1
34 to 35 weeks	0.1
36 to 37 weeks	0.1
38 to 39 weeks	0.1
40 to 41 weeks	0.1
42 to 43 weeks	0.1
44 to 45 weeks	0.1
46 to 47 weeks	0.1
48 to 49 weeks	0.1
50 to 51 weeks	0.1
52 to 53 weeks	0.1
54 to 55 weeks	0.1
56 to 57 weeks	0.1
58 to 59 weeks	0.1
60 to 61 weeks	0.1
62 to 63 weeks	0.1
64 to 65 weeks	0.1
66 to 67 weeks	0.1
68 to 69 weeks	0.1
70 to 71 weeks	0.1
72 to 73 weeks	0.1
74 to 75 weeks	0.1
76 to 77 weeks	0.1
78 to 79 weeks	0.1
80 to 81 weeks	0.1
82 to 83 weeks	0.1
84 to 85 weeks	0.1
86 to 87 weeks	0.1
88 to 89 weeks	0.1
90 to 91 weeks	0.1
92 to 93 weeks	0.1
94 to 95 weeks	0.1
96 to 97 weeks	0.1
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REVIEW QUESTIONS AND PROBLEMS AND APPLICATIONS—GROUPED BY LEARNING OBJECTIVE TO IMPROVE ASSESSMENT

All the end-of-chapter material—*Summary*, *Review Questions* and *Problems and Applications*—is grouped under learning objectives. The goals of this organization are to make it easier for instructors to assign problems based on learning objectives, both in the book and in MyLab, and to help students to efficiently review material that they find difficult. If students have difficulty with a particular learning objective, an instructor can easily identify which end-of-chapter questions and problems support that objective and assign them as homework or discuss them in class. Similar exercises to every exercise in a chapter's *Problems and Applications* section are available in MyLab. Using MyLab, students can complete these and many other exercises online, get tutorial help and receive instant feedback and assistance on exercises they answer incorrectly. Also, student learning will be enhanced by having the summary material and problems grouped together by learning objective, which will allow students to focus on the parts of the chapter they found most challenging. Each major section of the chapter, paired with a learning objective, has at least two review questions and three problems.

As in the previous editions, we include one or more end-of-chapter problems that test students' understanding of the content presented in the *Solved Problem* and *Don't Let This Happen to You* special features in the chapter. Instructors can cover a feature in class and assign the corresponding problem for homework.

CHAPTER SUMMARY AND PROBLEMS

KEY TERMS

cease to produce (all else being equal)	59	inferior good	61	quantity supplied	64
competitive market	68	law of demand	58	shortage	68
equilibrium	68	law of supply	64	substitutes	61
complements	61	market equilibrium	68	substitution effect	59
demand curve	58	market supply	64	supply curve	64
demand schedule	58	normal good	61	supply schedule	64
demand shifts	61	perfectly	68	technological change	68
income effect	62	quantity demanded	58		

THE DEMAND SIDE OF THE MARKET
LEARNING OBJECTIVE 1

SUMMARY

The types and quantities of goods and services produced ultimately depend on the desires of consumers. The model of demand and supply is one of the most powerful tools in economics. The **quantity demanded** is the amount of a good or service that consumers are able and willing to purchase at a given price. A **demand schedule** is a table that shows the relationship between the price of a product and the quantity of the product demanded. A **demand curve** is a graph showing the relationship between the price of a product and the quantity of the product demanded. **Income** determines the ability of consumers of a given good or service. The **law of demand** states that ceteris paribus—holding everything else constant—the quantity of a product demanded increases when the price falls and decreases when the price rises. Demand curves slope downward because of the substitution effect and the income effect. The **substitution effect** is the change in the quantity demanded that results from a change in price, making the good or service more or less expensive relative to other goods or services that are available. The **income effect** is the change in the quantity demanded that results from the effect of a change in the price of the good or service on consumer purchasing power. Changes in income, the prices of other goods, income, population, and demographics (the characteristics of a population that can be used for the purpose of a similar purpose). **Complements** are goods and services that are used together. A **normal good** is a good or service for which the demand increases as income rises and decreases as income falls. A **luxury good** is a good or service for which the demand increases as income rises and increases as income falls. A change in demand refers to a shift of the demand curve. A change in quantity demanded refers to a movement along the demand curve as a result of a change in the product's price.

REVIEW QUESTIONS

1. What is a demand schedule? What is a demand curve?
2. What do economists mean when they use the Latin expression ceteris paribus?
3. What is the difference between a change in demand and a change in quantity demanded?
4. What is the law of demand? Does the substitution effect and income effect in explaining an increase in the price of a product cause a decrease in the quantity demanded?
5. What are the main variables that will cause the demand curve to shift? Give an example of each.

PROBLEMS AND APPLICATIONS

1. The main price-taking users of production resources are households, which are complements, which are substitutes and which are complements.
 - a. Paper and Coke
 - b. The Big Mac and soft drinks
 - c. Vegetables and assembling jobs
 - d. MP3 players and graphics calculators
2. Based on the opening case about tablet computers based on the Android operating system were first introduced, there were existing two applications, or apps, available for them. Now there are many more apps available for Android-based tablets. Are these apps substitutes or complements for tablet computers? How has the increase in the availability of apps for Android-based tablets affected the demand for Apple iPads? Explain.

CHAPTER 3 MARKET PRICES COME FROM THE INTERACTION OF DEMAND AND SUPPLY

LEARNING OBJECTIVE 1

1. State whether each of the following events will result in a movement along the demand curve for McDonald's Big Mac burgers or whether it will cause the curve to shift. If the demand curve shifts, indicate whether it will shift to the left or to the right and draw a graph to illustrate the shift.

- a. The price of ketchup falls (ketchup complements burgers).
- b. McDonald's distributes vouchers for \$1.00 off on a purchase of a Big Mac.
- c. A change of preference causes the price of fries to increase.
- d. A 10% rise in the price of a bucket of fast-food chicken.
- e. The Australian economy enters a period of rapid growth.

2. Suppose that the following table shows the quantity demanded of US loans in five different years in 2017 and 2018.

Interest Rate	2017	2018
1%	100	200
2%	400	400
3%	800	800
4%	1200	1200
5%	1600	1600
6%	2000	2000

3. Name two different variables that could cause the quantity demanded of US loans to change as indicated from 2017 to 2018.

4. During times of economic downturns and recessions, when unemployment rates are rising, it has been observed that the rates of saving tend to fall and other savings increase. If this is true, we characterize and explain recent growth or relative growth? Briefly explain what characteristics of households and savers relative to other goods might make them normal goods or inferior goods.

5. Is it possible for a good to be an inferior good for one person and a normal good for another person? If so, possible, can you give some examples?

6. [Based on the opening case.] 2. Name three goods or services whose demand is likely to increase rapidly if the following demographic groups increase or fall in size: the population in a state.

THE SUPPLY SIDE OF THE MARKET
LEARNING OBJECTIVE 2

SUMMARY

The **quantity supplied** is the amount of a good or service that a firm is willing and able to supply at a given price. A **supply schedule** is a table that shows the relationship between the price of a product and the quantity of the product supplied. When the price of a product rises, the product is more profitable, a **supply curve** is a graph that shows the relationship between the price of a product and the quantity of the product supplied. The **law of supply** states that, ceteris paribus, the quantity of a product supplied increases as the price of the product increases.

REVIEW QUESTIONS

1. State whether each of the following events will result in a movement along the supply curve for McDonald's Big Mac burgers or whether it will cause the curve to shift. If the supply curve shifts, indicate whether it will shift to the left or to the right and draw a graph to illustrate the shift.
 - a. The price of ketchup falls (ketchup complements burgers).
 - b. McDonald's distributes vouchers for \$1.00 off on a purchase of a Big Mac.
 - c. A change of preference causes the price of fries to increase.
 - d. A 10% rise in the price of a bucket of fast-food chicken.
 - e. The Australian economy enters a period of rapid growth.
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6. [Based on the opening case.] 2. Name three goods or services whose demand is likely to increase rapidly if the following demographic groups increase or fall in size: the population in a state.

RESOURCES FOR EDUCATORS AND STUDENTS

A suite of resources are provided to assist with delivery of the text, as well as to support teaching and learning. These resources are downloadable from the Pearson website: www.pearson.com.au/9781488616983.

SOLUTIONS MANUAL

The Solutions Manual provides educators with answers to all of the end-of-chapter questions and problems in the textbook.

TEST BANK

Available in Word® format, the Test Bank provides educators with a wealth of accuracy-verified testing material for homework and quizzing. Revised to match the 4th edition, each Test Bank chapter offers a wide variety of multiple-choice and short-answer questions, ordered by key topics.

POWERPOINT LECTURE SLIDES

A comprehensive set of PowerPoint slides can be used by educators for class presentations or by students for lecture preview or review. They include key figures and tables, as well as a summary of key concepts and examples from the text.

DIGITAL IMAGE POWERPOINT SLIDES

All the diagrams and tables from the course content are available for lecturer use.

MyLab for Hubbard/Garnett/Lewis/O'Brien Essentials of Economics, 4th edition

A guided tour for students and educators

Auto-generated tests and assignments

Each MyLab™ comes with preloaded assignments, all of which are automatically graded and include selected end-of-chapter questions and problems from the textbook.

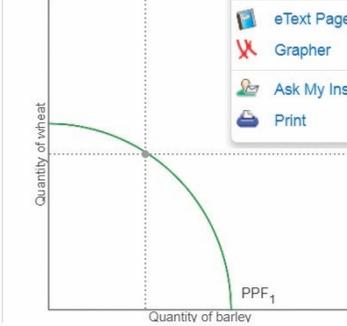
Problem 1.4 4 of 16 (1 complete) Question Help

Consider the production possibility frontier that shows the trade-off between the production of wheat and the production of barley depicted in the figure to the right.

Suppose that genetic modification makes barley resistant to insects, allowing yields to increase.

Use the three-point curved line drawing tool to show the effect of this technological change by drawing a new production possibility frontier. Properly label this curve.

Carefully follow the instructions above, and only draw the required object.



Click the graph to plot the first point of your curve.

All parts showing Clear All Check Answer ◀ ▶

Unlimited Practice

Many Study Plan and Instructor-assigned exercises contain algorithms to ensure students get as much practice as they need.

As students work through Study Plan or Homework exercises, instant feedback and tutorial resources guide them towards understanding.

Problem A.1 1 of 6 (0 complete) Question Help

The following table gives the relationship between the price of custard pies and the number of pies Bruce buys per week.

Price	Quantity of pies	Week
\$3.00	7	2 July
\$2.00	8	9 July
\$5.00	5	16 July
\$6.00	4	23 July
\$1.00	9	
\$4.00	6	

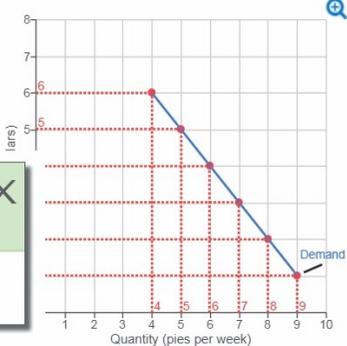
a. Is the relationship between the price of pies and the number of pies bought a positive relationship or a negative relationship?

A. Positive relationship B. Negative relationship

b. Plot the data.

- Use the point drawing tool to plot each data-point from the table.
- Use the line drawing tool to draw a straight line that best fits the points. Label this line 'Demand'.

Carefully follow the instructions above, and only draw the required objects.



Enter your answer in the answer box and then click Check Answer.

All parts showing Clear All Check Answer ◀ ▶

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Essentials of Economics, 4e
Hubbard, Garnett, Lewis, O'Brien

more info

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- ▶ Chapter 2: Choices and trade-offs in the market
- ▶ Chapter 3: Where prices come from: demand and supply
- ▶ Chapter 4: Elasticity: responsiveness of demand and supply
- ▶ Chapter 5: Economic efficiency, price setting and taxes
- ▶ Chapter 6: Technology, production and costs
- ▶ Chapter 7: Firms in perfectly competitive markets
- ▶ Chapter 8: Monopoly markets

HUBBARD GARNETT LEWIS O'BRIEN

ESSENTIALS OF ECONOMICS
4TH EDITION

Learning resources

To further reinforce understanding, Study Plan and Homework problems link to additional learning resources.

- Step-by-step Guided Solutions
- Graphing Tool
- eText linked to sections for all Study Plan questions

MyLab Economics

Hubbard, Essentials of Economics, 4e Student User

Main Menu

- Course Materials
- Study Plan Builder
- Study Plan**
- Assignments
- Assignment Calendar
- eText
- Multimedia

Study Plan

Recommendations Progress All Chapters

Practice the learning objectives, then take a Quiz Me to prove mastery and earn mastery points (MP).

Recommended learning objectives

1.1 Explain these three key economic ideas: people are rational, people respond to incentives, and optimal decisions are made at the margin			
1.2 Understand the issue of scarcity and trade-offs, and how the market makes decisions on these issues			
1.3 Understand the role of models in economic analysis			
1.4 Distinguish between microeconomics and macroeconomics			

Study plan

A Study Plan is generated from each student's results on quizzes and tests. Students can clearly see which topics they have mastered and, more importantly, which ones they need to work on.

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