



Economics for the Real World

Units 1 & 2

Douglas Cave
Tony De Luca
Ron Hanmer

4th Edition



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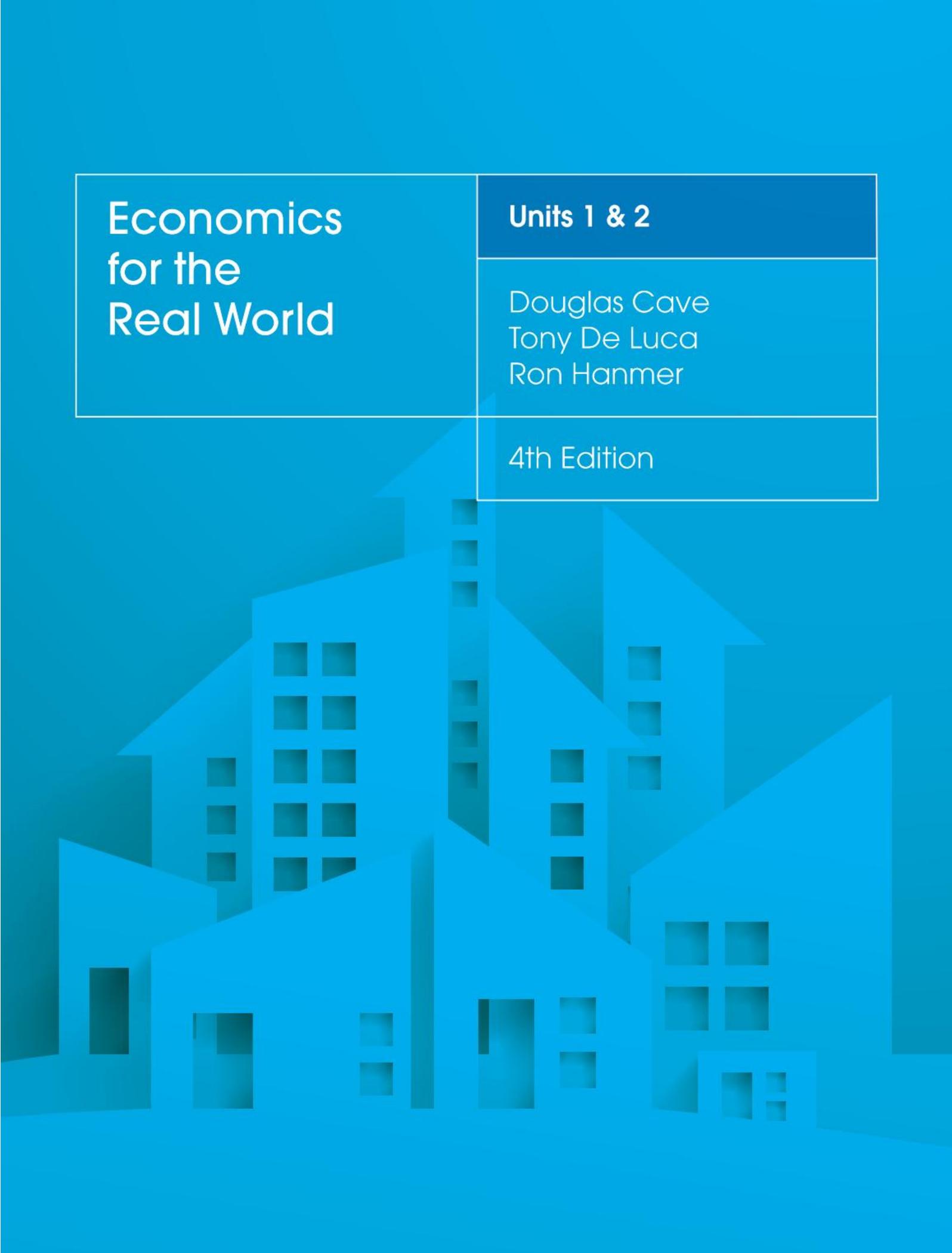
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Douglas Cave
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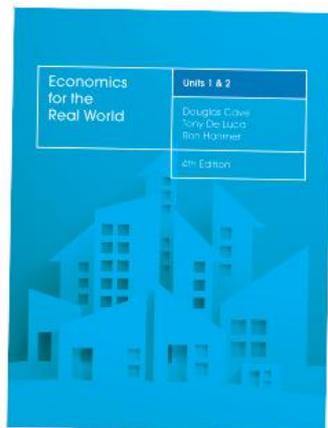
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About this series

This new edition of *Economics for the Real World* has been fully updated for the QCAA Economics Senior Syllabus implemented at Units 1 & 2 in 2019 and Units 3 & 4 in 2020. It comprehensively covers the syllabus and unit objectives using the inquiry approach valued in the syllabus, with integration of the underpinning factors throughout.

Student book

- Reflects changing Australian and global economies, with current data, statistics and real-world applications.
- Updated Economics in action sections provide realistic economics scenarios and allow students to learn through inquiry.
- Clear definitions of key concepts provided throughout each chapter and included in a complete glossary.
- Updated reviews at the end of each chapter and a wealth of questions throughout to ensure a steady development of knowledge and understanding.
- Questions and activities support the new assessment model and provide plenty of opportunity for revision and practice.
- Refreshed full-colour design allows for easy navigation through the topics.
- Numerous illustrative examples and diagrams to assist learning.



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Introduction

Studying economics

Economics is essentially a study of how to use scarce resources in the best way possible. Thus, economics can help individuals, households, businesses and governments, faced with the economic problem of limited resources, to make good decisions and choices among alternative uses for these resources. Extensive coverage of economic issues, problems and events in the media and on the Internet further highlights the need for economic literacy, understanding and skills.

This text aims to help you gain the skills and competencies necessary to participate effectively in, and to contribute to, economic decision making in every aspect of the real world, from personal finances and career choices to the responsibilities of citizenship.

The skills and competencies you will need to become economically literate are gained through inquiry and other activities aimed at developing:

- a knowledge and understanding of economic concepts, ideas, data and principles
- an ability to analyse, select, record and organise economic data and information
- an ability to draw on a variety of ideas and information to evaluate economic issues or problems
- communication skills used to report data and information effectively in inquiries
- a continuing interest in economics and an ability to clarify responsible and ethical attitudes and values related to economic issues.

As you work with your teacher, your textbook and other sources of information, you will gradually develop these necessary skills, competencies and attitudes over your course of study. In the meantime, here is some specific advice to assist you in your study of economics, and to assist you to achieve your best results in examinations and other forms of assessment.

Note-taking

You should observe the following points when taking notes from any economics textbook:

- 1 Draw a wide margin down the left-hand side of a page in your notebook so that, if necessary, you can insert additional points at a later stage.
- 2 Do not write at the same time as you read.
- 3 **Survey** or skim through the section or document to be read, identifying elements such as headings and subheadings, graphics with their titles, highlighted sections, topic sentences for paragraphs, introductions and conclusions.
- 4 Ask yourself some **questions** about the text material: Why am I reading this? What is it about? What is the writer's opinion? What is the context? Is this useful for the topic I am studying?
- 5 **Read**, without making notes at this stage, one paragraph or section at a time. Have a pencil or marker in hand and mark or annotate key elements.
- 6 **Reread**, this time writing notes that will help you to answer the questions you asked or were asked initially.

This will help to pick out the key or topic sentence in each paragraph; that is, the sentence that contains the central idea (often the first sentence). Convert the key sentence into a suitable heading. From the other sentences in the paragraph add, below the heading, examples, related ideas and back-up material. These should be in list form. Work down your notebook page, never across; that is, do not put two ideas on one line. If you do, it will make learning from your notes more difficult. Use your own acceptable economic abbreviations to save time; for example, GDP (gross domestic product), govt (government), Y (income), → (leads to), ↑ (increase), and so on.

- 7 **Review** your notes to check whether they are usable and relevant, and if they have answered the questions asked. It may help to highlight or underline key terms, facts, figures or examples.

(This method of note-taking is known as the SQRRR method: survey, question, read, reread, review.)

- 8 If taking research notes for an inquiry, always record bibliographic details of the document before you start: author, title, edition, publisher, publication date, place of publication, page numbers.

Developing economic literacy and an understanding of economic concepts

As you study and apply your economic knowledge and skills to the real world of business, politics, media and personal decision making, you will find that you need to understand and use many economic terms and concepts. To really grasp these, you will need to know more than just definitions. You must understand their main attributes and be able to discuss examples of these attributes; and, very importantly, their relationships to other terms and concepts. These relationships can be seen as linkages and categories, as one might find in a map or a chart. For example, a map of Australia would show divisions or categories, such as states. It would show major cities, all linked by roads and railways to each other and to minor cities and towns. In the same way, a concept map can be drawn showing topics, categories or sections of economics, major concepts, the links between major and minor concepts, and examples. To be economically literate, you must develop such concept maps in your mind, and then be able to read, write and communicate in the language of economics, and be able to apply the concepts in theory and in the real world.

To assist you to develop such literacy and understanding, and to improve language and communication abilities, we have added many questions and exercises throughout the chapters. In the review sections at the end of each chapter, you will also find multiple-choice questions, short response questions, interpretation and stimulus–response exercises, inquiries that you could undertake, lots of work with diagrams and models for you to complete.

A concept map is a diagram, usually flowing from a central concept or idea, with lines showing linkages and relationships to other minor concepts or examples. Usually each concept is enclosed within a geometric shape such as a circle. When drawing concept maps, some people find it useful to put their central concept in a shape that reminds them of the number of minor concepts that are linked to it; for instance, a triangle, square or pentagon leads to three, four or five other concepts, shown in the smaller outer circles. Basic principles to keep in mind when drawing concept maps are shown in Figure 1.

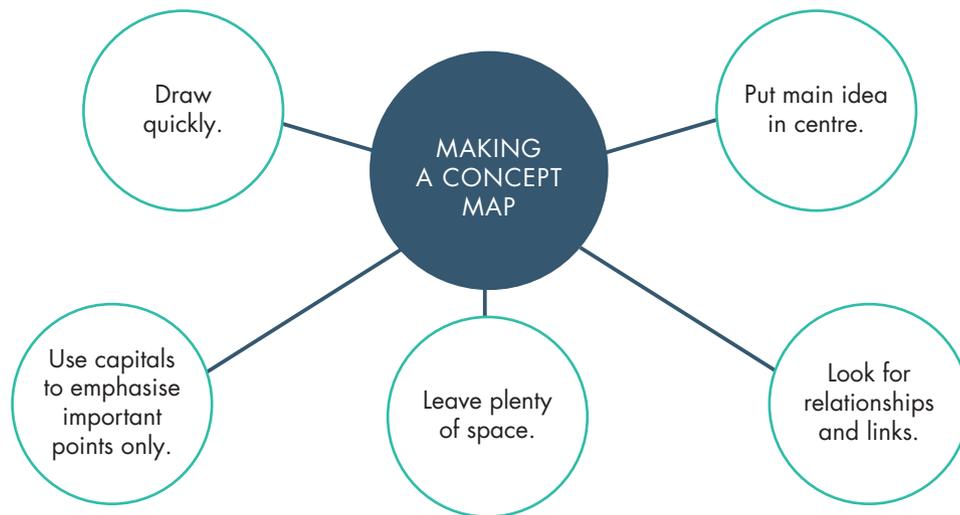


FIGURE 1 Making a concept map

Research and inquiry in economics

A great deal of what you need to know in economics can be gained through your own research, using either primary or secondary sources of data and information. We have already touched on textbooks and the Internet, but there are also many other sources, such as government and business reports, brochures and videos, as well as the firsthand knowledge you can gain through excursions, work experience, guest speakers, case studies, interviews and surveys.

Inquiry learning takes many forms but essentially it involves asking questions about issues or phenomena and finding answers. The model in Figure 2 illustrates this:

- A question is asked or formed; an inquiry is framed.
- Relevant information is gathered and analysed, shared and discussed with others by finding sources, locating and gathering data, information and sources, and reflecting on the usefulness of such data, information and sources.
- A reasoned and justified response is created by analysing, comparing and interpreting relationships, patterns and trends within the data you have gathered. At this stage, reflection should occur, including questions such as, 'Have I found sufficient relevant information? Can my interpretations be justified by the data, information and sources I have used? Do I need to find additional information to aid my analysis (i.e. the findings and the process are reflected on)?'
- A discussion or an evaluation shows the decisions and judgements made and the conclusions arrived at. Can these findings be justified by the evidence gathered? Do they reflect on the accuracy of decisions and examine if those decisions need further evidence to support them?

The response is communicated to an audience, and perhaps another inquiry is established, following the process again. By doing this, we learn more about economics and our world.

Research and inquiry can be carried out individually or in small groups. There is a range of inquiry models for different purposes.

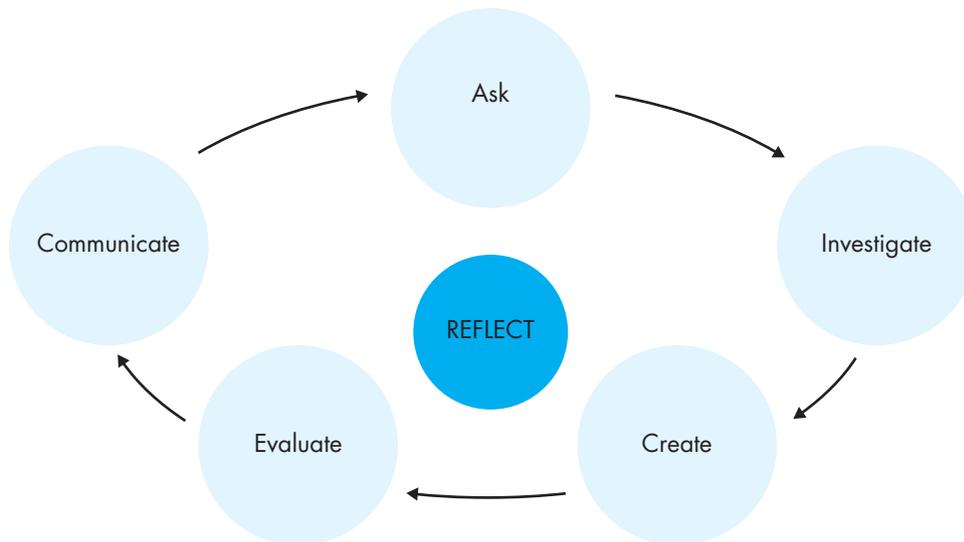


FIGURE 2 An economic inquiry model

A method of problem solving that involves inquiry

- 1 Define the problem or issue.
 - What is the problem or issue? What do I want to know? Clearly define it.
 - Whose problem or issue is it? How are various parties affected?
 - Where can I get reliable data or evidence about the problem or issue?
 - What primary and secondary sources can I use?
 - How do I know the information is valid and reliable?
- 2 Identify the economic aspects of the problem or issue.
 - Are there technical and financial aspects as well as economic aspects?
 - What are the causes of the problem or issue?
 - What are the effects of the problem or issue in terms of costs and benefits?
 - What economic concepts and theories might help us understand the situation?
- 3 Identify alternative possible solutions to the problem or issue.
 - What are the various proposals to resolve the problem or issue?
 - What are the likely consequences of each alternative in terms of costs and benefits?
 - What evidence is there to support or argue against each proposed solution?
- 4 Identify the best solution according to the goals, costs and benefits.
 - What are the goals or objectives regarding the problem or issue?
 - What criteria should be used to evaluate alternatives? Costs and benefits? Efficiency, effectiveness, equity?
 - Is there any other evidence to help decide the best solution?
- 5 Reflect on the process of inquiry and the solution or outcome of the inquiry.
 - Has a solution been found?
 - How does it connect to the central question or hypothesis?
 - Do I need to rephrase the central question or hypothesis?
 - What have I learnt that can help me in future inquiries?

Such an analysis will help to choose the best decision or course of action when faced with an economic problem or issue. By ensuring that all aspects of the problem are examined and by ensuring that our goals and criteria are clearly established and alternatives compared on the basis of their costs and benefits, a good solution is most likely to emerge.

This approach can be used by businesses and governments when making major decisions on such things as spending or investment, or when trying to solve problems such as inflation or unemployment. However, it is equally applicable to individuals and households as a tool for making financial decisions, such as whether to rent or purchase, what car to buy, or whether to take a part-time job while studying.

An approach to inquiry-based study using hypotheses

One important tool used by all social scientists, and especially economists, is hypothesising. A hypothesis is a statement of what is assumed to be true: a tentative explanation. It is usually expressed as a statement, or sometimes as a question or an if-then proposition. This statement should then be tested to see if it can be verified. Once confirmed by data and the evidence gathered, it becomes a conclusion or a generalisation, which can be used in future decision making and problem solving.

Some typical hypotheses:

- **Statement:** The main causes of inflation are wage increases and government spending.
- **If-then proposition:** If a commodity is scarce, then its price will be high.

The recommended steps for hypothesising are listed below.

- 1 **Topic:** Set down the topic being investigated.
- 2 **Objectives:** Set out objectives for studying the topic.
- 3 **Hypothesis:** Establish and refine the hypothesis as a statement, question or proposition.
- 4 **Data:** Gather and evaluate primary and secondary data relevant to the hypothesis.
- 5 **Testing:** Establish appropriate evidence (and sources of it) to test the validity of the hypothesis, and apply these.
- 6 **Conclusions:** Confirm or reject the hypothesis. If confirmed, establish generalisations and conclusions. If rejected, can it be modified, or is a new hypothesis and further investigation needed?
- 7 **Reflect on the outcomes and processes:** Confirm the solution connects to the central question and identify what has been learnt to inform future inquiries.

Sometimes, it may also be necessary to add another step:

- 8 **Presentation:** Determine the best way to present the data gathered, the testing procedure and the conclusions.

There are many models of inquiry that can be applied to the study of economics. No matter which model you use, they all tend to have common features as follows:

- **Framing your inquiry** involves forming your inquiry question, deciding what you will be doing in the inquiry and identifying what you will need to find out.
- **Finding your information**, which is often referred to as research. You will need to find primary sources of data such as statistics as well as secondary sources that describe, discuss, interpret, comment upon, analyse, evaluate, summarise and process primary sources, such as reports, websites, media and expert commentary.
- **Analysing and processing information** you have located in your research. You should look for relationships between data found, check that the data and information you have found is valid and up to date, look for patterns and trends, the causes and effects of problems and issues, and identify the economic concepts and theories that might help you to understand the situation.

- **Evaluating** and making a decision. You should use some criteria (two or three) on which to base your decision. Look for alternative solutions and make a conclusion that is justified, reasoned and balanced.
- **Reflection** should happen at each stage of your inquiry, but you should also reflect at the conclusion and check that you have found a solution, and connected it to the central question of inquiry.

Economics and ICT

The computer provides us with many real-world applications and learning tools in economics. Specific programs, such as *Virtual Economics* from the National Council on Economic Education in America, and more general resources offer great opportunities for learning about economics and economists. But arguably the most easily accessible source of information today is the Internet. We cannot list all the possible sites you might find useful, but there are some basic websites that you will constantly use as you start your digital exploration in economics.

The websites of the organisations listed below can be found on NelsonNet.

Australian economy

- Australian Bureau of Statistics
- Reserve Bank of Australia
- Commonwealth Bank of Australia
- Westpac Bank
- National Australia Bank
- ANZ Bank
- Australian Securities Exchange
- Australian Securities and Investments Commission
- The Treasury of Australia
- Australian Competition and Consumer Commission
- Business Council of Australia
- Australian Industry Group



Useful economics
websites

Media

- ABC News
- *Financial Review*
- *The Economist*

International statistics

- United Nations
- The World Bank
- International Monetary Fund
- Organisation for Economic Co-operation and Development
- World Trade Organization

In each chapter you will find tasks requiring you to research particular websites. The current location of these websites can be accessed by logging on to NelsonNet, or clicking the weblink icon in your NelsonNetBook.

As you come across worthwhile sites, keep a record of them in your ‘favourites’ or ‘bookmark’ file so you can refer to them as you need.

Evaluating a website

Because almost anyone (including you) can publish on the Internet, it is important to discriminate between reliable, useful sites and those that may be wasting your time. The criteria listed below will help you make a judgement regarding the sites you use.

- 1 **Accuracy:** Is the information accurate and error-free? It is not always easy to tell, but you may find through cross-checking that there are inconsistencies between a site and other sources of information. How accurate is the text's spelling and grammar? How reliable are the links on the site; are they relevant and comprehensive?
- 2 **Authority:** Who has written and published the site? What are their qualifications? Government department sites and those of large organisations can usually be relied upon to provide authoritative information. Look at the URL for a personal name following a % sign or for domain labels such as .gov for government, .org for a non-profit organisation, .edu for an educational institution.
- 3 **Objectivity:** How much bias is there on the site? Is the site's information fact or opinion? Do any words or statements on the site suggest bias? Is the language emotive or factual? Who is the audience for the site and what is the site's purpose?
- 4 **Currency:** How up to date is the site? Check when the site was produced and how recently it has been updated.
- 5 **Coverage:** What topics are dealt with and what is the depth of treatment of the topics? How comprehensive is the information?
- 6 **Structure:** How easy is it to navigate through the site to find information and ideas? Can a user find what is wanted within about three clicks?

This list is not exhaustive and you may wish to add to it as you conduct your research. You could do some independent research to find what others say about the evaluation of websites. Your school librarian or teacher will know suitable sites for you to visit to evaluate a website.

Answering questions

The questions that you encounter throughout the text and in the review sections at the end of each chapter will help you to prepare for assessments. Familiarise yourself with each type of question; the tips listed below will help you to learn how best to tackle them.

Answering multiple-choice questions

- 1 Always read the instructions carefully.
- 2 Work out the time you can afford to spend on each question. Do not spend more than that time on any one question. If you are having difficulty, leave the question and return to it later.
- 3 Some questions will contain responses that are clearly not applicable. Eliminate these, reread the question and then eliminate the next most unlikely response until you arrive at the most feasible alternative.
- 4 Have confidence in your answer. Do not waste time trying to prove that it is correct; that may cause doubt and undermine your confidence.
- 5 Answer every question and, if in doubt, do not hesitate to make an educated guess.

Answering short response and paragraph questions

- 1 Read the question carefully and try to identify the key 'topic' words and phrases; for example, 'specialisation', 'demand', 'economic growth'. Also identify key structural words; for example, 'discuss', 'explain', 'describe', 'compare', 'justify', 'analyse' and 'evaluate'. Highlight or underline these key words.
- 2 Check the number of marks allocated to each question. A five-mark question will require a longer answer than a two-mark question. If an answer sheet is provided, the number of lines allocated will give an indication of length required. Avoid writing beyond the lined space.
- 3 Ensure you do not include information that does not directly answer the question you are responding to.
- 4 Short response questions are often best handled by mentioning several points and briefly explaining each. Avoid repetition. Aim to be clear and concise. Ensure your response answers the question and nothing irrelevant is included.

Answering extended response questions to seen and unseen stimuli

- 1 Read the instructions at least twice. It can be useful to scan an assessment standards document linked to the task to ascertain exactly what knowledge and skills will be assessed.
- 2 Allocate your time carefully.
- 3 Analyse the task and ensure that you structure an analytical essay appropriately.
 - a Look for the key topic words and phrases; for example, 'Keynesian economics', 'economic growth', 'global trade'.
 - b Look for the key structural words; for example, 'discuss', 'explain', 'describe', 'compare', 'justify', 'analyse', 'evaluate'. Highlight or underline these.
 - c Look for other important words that may assist you in understanding the question.
 - d Extract relevant points from any stimulus material provided. For example, when analysing graphs, note the title, the labels of the axes, any trends and high or low points.
- 4 Make a brief writing plan. Use the key words as an outline. Block diagrams, arrows and other graphic devices are often useful. Be sure to answer what the question asks. It is easy to fall into the trap of just writing all you know on the topic – the 'scattergun approach'. Do not write a response to the task you would have liked to be set, rather than the task that actually was set. You must convey your ideas or views on the subject, combined with material covered in class and the text. You must show your reader that you understand the topic, can comprehend and analyse material presented, can evaluate economic ideas and make a decision, and can communicate your views rationally and lucidly.
- 5 Write the response. Ensure you refer to the various pieces of stimulus that are provided.
 - a Compose a good introductory paragraph. Do not rewrite the question. This only wastes time. Use the introductory paragraph to define or explain key economic terms or concepts and outline arguments and contentions directly.
 - b The body of the essay should develop your argument. Each paragraph should begin with a topic sentence. Subsequent sentences will expand on this with examples and illustrations. Use factual evidence and examples to support your arguments. Write simply and say what you mean. Make sure that you constantly refer to various pieces of the provided stimulus material, clearly identifying which item you are referring to.
 - c End with a brief conclusion. Try to give a concise summary of your entire argument.

- 6 Read the essay after you have finished. Check spelling and tidy up corrections. Ensure that you have answered what the question asked and that you have said what you wanted to say. Look out for ways in which your meaning might be misinterpreted. When necessary, correct the sentence or paragraph.
- 7 Work in a disciplined manner. You cannot exceed the time you have allocated to the answer. Allocate your time carefully and be aware of time throughout the examination.

Research reports

When writing a research report, ensure that you adopt a formal approach. The language should be objective and you should deal with facts and evidence. Use the third person; use economics language.

Read the required task carefully. Pick out the key words (as for extended written responses). Ensure that you know their meanings. Ensure also that you understand the aim or purpose of the task; is it to analyse viewpoints, argue a position, research a problem or case, test a hypothesis? It is useful to highlight or underline these key words.

- Begin your research. Read widely (both print and electronic media), use library catalogues, browse through economics books (their contents and indexes), investigate newspapers and magazines, talk to relevant people and view relevant television programs.
- Take notes – brief or detailed, as appropriate – or photocopy relevant material. Do not forget to include the bibliographical details of sources so you can acknowledge quotations and ideas in your work.
- Plan your outline in note form (as for extended written responses: introduction, body, conclusion) to answer the question or carry out the tasks required.
- Use notes and other collected material to write your first draft. This should follow the requirements of the assignment as closely as possible. It should have a clear structure of introduction, body or development, and conclusion. It should bind together in your own words – and in acknowledged quotations – facts, illustrations, examples, graphs, analysis, views and arguments.
- Reread and make corrections and improvements. It may be useful to consult a style guide used by your school. Your librarian or teacher will be able to help with this.
- Write the final draft in a well-presented form.
- Add appropriate references, appendixes and a bibliography.

The report presentation usually includes:

- **a title page** with title, author, perhaps an abstract, and acknowledgements
- **a Table of Contents page** in which each subsection is identified along with lists of tables and figures
- **an abstract/executive summary** – a short overview of the report
- **an introduction** – a short background, a statement of the purpose of the report and the hypothesis
- **the body** – written using subheadings with supporting economic models, graphs or tables (all referenced within the text)
- **a conclusion** – may include a brief summary, recommendation or forecast based on the preceding argument

- **a reference list** – the bibliographic details of references used in the report, using an acknowledged referencing system such as the Harvard System
- **an appendix** – supporting documents, for example, blank survey documents used to gather data for the enquiry and other supporting material.

You may find two (or even more) forms of assessment combined in one examination (a combination response). For example, it may be that short response questions requiring sentences and short paragraphs are combined with an extended response of 250 to 300 words. When this is the case, make sure that you allocate your time to each section and then stick to it. It is not good practice to spend too much time on one section, leaving you insufficient time to do justice to the other section.

UNIT 1

Markets and models



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1

The economic problem

This chapter examines economics, the economic problem and opportunity cost, and factors of production.

Focus questions and inquiries

- What is economics?
- What do economists do?
- Why do we never seem to have everything we want?
- How does the Australian economy function? How is it different from other economies?

To provide a basis for answering such questions and carrying out such inquiries, this chapter will examine the following:

- the nature of economics
- scarcity and how it affects economic decision making
- opportunity cost
- production possibility frontier
- the factors of production
- the three basic economic questions.

1.1 The nature of economics: the study of scarcity

CONCEPTS



Economics: the study of the ways in which a society decides to use its scarce resources to satisfy unlimited wants

Economic system: the organisational and institutional pattern through which choices are made about which wants to satisfy, and how to allocate resources to do this

Relative scarcity: we do not have enough resources to satisfy all our wants and needs

Scarcity: insufficiency relative to wants. A universal problem because the resources available for the satisfaction of human wants are limited while wants are unlimited.

Value judgement: a judgement that implies a personal evaluation or opinion of the desirability or otherwise of a plan of action or an objective, usually concerned with what ought to be rather than what is

Economics concerns itself with the study of **scarcity** and how we use the world's *limited* resources in an attempt to satisfy what appear to be *unlimited* human wants – televisions, clothing, holidays, entertainment, food, schools, defence forces and so on. Although the production of goods and services has increased greatly, the difference between our wants and their satisfaction remains. The problem of relative scarcity is a universal one. **Relative scarcity** means that we do not have enough resources to satisfy all our wants and needs. All societies must decide how to use their limited resources to satisfy people's wants, and throughout history this has led to the development of a variety of **economic systems**.

The world's resources are limited and yet people have so many wants that need to be met. Economic systems provide a structure to help us understand how to effectively allocate scarce resources to meet a population's needs and wants, and economists use a cost-benefit analysis approach to help resolve problems.

Economists study the way people make decisions about how to allocate scarce resources to provide themselves with goods and services, and the problems that arise in this allocation. They analyse the relationship between the supply of and demand for goods and services, and the ways in which goods are produced, distributed and consumed within an economic system.

- Some economists deal with practical problems such as the control of inflation, the prevention of recessions and the development of trade or tax policies. They might ask a question such as, 'Should Australia reform its taxation system?'
- Others try to develop theories that explain the causes of unemployment, or the ways in which international trade influences world economic conditions. They might ask, for example, 'Should importers of luxury motor vehicles pay higher tariffs?'
- Still others collect and interpret data on widely varying economic problems in fields such as agriculture, business or finance. They are inclined to ask questions such as, 'Should banks be able to charge whatever interest rate they wish?'

They all work within the field of study that we call economics.

The economist's primary role is to figure out the ramifications of alternative courses of action, given a particular set of values and/or goals. For example, an economist may need to make a recommendation regarding the funding of the health-care system. Should emphasis be placed on training more doctors or on the provision of buildings? Should individuals pay for their own treatment or should there be a compulsory health-care insurance system? The decisions made will most likely reflect the beliefs of the economist.

When you try to think as an economist, you should attempt to separate your own biases and beliefs from your analytical thinking about economic problems.

By a process of inductive and deductive reasoning, economists have been able to develop quite a comprehensive understanding of economic behaviour and activity. Inductive reasoning involves the use of specific facts to generate a general law (e.g. we may note that, as people want more of something that is in short supply, the price is likely to rise – the law of supply and demand), whereas deductive reasoning involves drawing conclusions about events according to a particular law that is already established (e.g. if it is noticed that umbrellas are in high demand because of an extended period of rain, it may be deduced that the price of an umbrella will rise until the supply of umbrellas is increased). Because economics is a social science and not a physical science, such as physics or chemistry, economists cannot test their hypotheses under controlled laboratory conditions; and sometimes they also have to deal with irrational human behaviour. Nevertheless, the advice economists can give is very valuable and forms the basis for decision making and policy at a personal, business and governmental level.

- On a personal level, an economist's advice is useful when making decisions regarding purchases of goods and services, or determining investments in the share market or superannuation.
- In business, managers need to consider costs and benefits before making decisions on issues such as the expansion of a firm, agreeing to wage increases for staff or extending domestic sales to the international marketplace.
- Economic decisions in government can involve issues such as the setting of a federal, state or local council budget that will determine the allocation of funds to departments responsible for law and order, transport, agriculture or defence, or the changing of the taxation system.

These decisions may even have ramifications at the international level.

An understanding of economics helps us understand and solve real-world problems, and the more you know about economics, the better the decisions you will make.

Often there are problems and trade-offs encountered when making these decisions and sometimes the government needs to intervene in the process. For example, a firm may wish to transfer its operations from Australia to a neighbouring country where costs are lower. To avoid an increase in unemployment and a loss of investment, the government may provide some taxation incentives for the firm to stay in Australia.

ECONOMICS IN ACTION



Choose *one* of the economic problems listed below, or create your own.

- The government claims too much is being spent on unemployed people and it decides to limit payment of benefits to six months.
- Because of decreasing numbers of students at your school, the principal decides to decrease the number of subjects available to students.
- Because of the increasing number of infants not being vaccinated against diseases, the government decides to limit participation in early childhood education to only those who have been vaccinated.

Analyse the situation and determine the strengths and weaknesses of each side of the argument. This could be done through a PMI (Plus/Minus/Interesting) exercise or a SWOC (Strengths/Weaknesses/Opportunities/Challenges) exercise.

Decide what you think should be done and justify your decision.

1.1.1 Scarcity and choice

KEY IDEA

Economics is concerned with the study of scarcity. It involves decision making that takes place at the individual, national and international level.

Economics is concerned with the fact that humans are plagued by scarcity. Scarcity means insufficiency relative to wants. To say there is a scarcity of something simply means that the amount that is available is limited: there is not enough to satisfy all the wants of all possible users.

Obviously there will be different degrees of scarcity. In a desert, water may be very scarce and you must economise. You will not waste it on any use other than drinking. You may be willing to give up almost anything to get enough water to reach civilisation. Even in a city, water is scarce to some degree and residents have to pay for water by means of water rates. They have to give up something for it; they have to economise to some extent. Nevertheless, city dwellers have many alternative uses for water. Apart from needing water to drink, they will want to take showers, wash their cars, water their gardens and fill their swimming pools. Usually, there is a sufficient quantity available to do all of these things; however, at times, water may be in such short supply that restrictions on water use must be imposed.

The more scarce something is, the higher will be its economic value – its cost, what you have to give up for it – and the more the use of it will have to be rationed. If something is not scarce, and enough is available for all possible users, there is no need to economise, to choose the best use and to conserve it for that purpose. Such things are called ‘free goods’. Water is sometimes a free good and air is usually a free good.

QUESTIONS

- 1 Define economics.
- 2 List at least five examples of where economics is applied to everyday life.
- 3 How is inductive reasoning different from deductive reasoning? Provide your own example of each.
- 4 How are the social sciences different from the physical sciences?
- 5
 - a Compile a list of 10 goods and services that you may want to purchase.
 - b Draw a line similar to Figure 1.1 below and indicate the relative scarcity of the goods and services on your list.



FIGURE 1.1

- c How might this order of scarcity change if:
 - i you were living in a foreign country (choose your own country)?
 - ii you were living in a completely different environment, for example, a rural area rather than the city?





- iii you were living 20 years ago?
- d What principle(s) concerning scarcity does the above exercise demonstrate?
- 6 a Compile a list of wants your class might have for the development of the school.
- b Prioritise the items on the list.
- c Justify your choice of priority for the top five items.
- d How might the school council achieve these wants?
- e What difficulties might be encountered in achieving these wants?
- f How might these be resolved?

Of course, there may be some things available in small quantities that are not considered to be scarce. For example, a few cases of rotten fruit lying around at a market are probably not considered scarce commodities. If something is to be called scarce in the economic sense, two conditions have to be satisfied:

- 1 People must want the item.
- 2 The amount of it must be limited.

Some things have a negative rather than a positive economic value (e.g. polluted air or water) and we may be willing to pay someone to get rid of them. The question of who should pay such a cost is an interesting one. Should it be the business that was directly responsible for, in this example, the pollution, or the consumers for whose benefit the business is run? Or perhaps all taxpayers should share the cost, no matter who the guilty party might be. Like other economic decisions, such questions can be answered only after a party decides what is 'right', 'equitable' or 'fair', or makes some other **value judgement**. Economists make value judgements like everyone else, but the primary job of an economist is to figure out the impacts of alternative courses of action, given a particular set of values or goals.

As mentioned earlier, when you think as an economist during your economics study, you should try to separate your own biases and beliefs from your analytical thinking about economic problems. When you do this and discuss your value judgements with others, you may find that you wish to re-examine some of your own preconceptions.

ECONOMICS CHALLENGE



Beliefs and value judgements

Consider the following economic issues that are often mentioned by the news media:

- migrants and refugees coming to Australia
- the level of HECS fees for university students
- reducing wages for weekend work.

Choose one or more of these issues (or choose a current economic issue in the local newspaper) and conduct the following activities.

- 1 Write your opinion as to what the government should do about one or more of these issues.
- 2 Survey the opinions of other students in your class and people at home.
- 3 Compare the results. Suggest reasons for similarities and differences.
- 4 Draw conclusions about people's beliefs and judgements. How might this influence decisions made by governments?

1.1.2 Wants

CONCEPTS



Ceteris paribus assumption: a Latin phrase that means 'other things being equal'

Competitive wants: goods/services that can be substituted for each other, for example, butter and margarine

Complementary wants: wants that go together, for example, house, furniture and plants

Economic growth: a sustained increase in the productive capacity of an economy over a specific period of time, usually indicated by the increased availability of goods and services in the economy

Needs: things that are essential for life in our society

Opportunity cost: the best alternative opportunity forgone when a choice is made (often referred to as 'real cost' or 'economic cost'), for example, being unable to study chemistry because you chose to study economics

Productivity: a measure of the efficiency of production, expressed in terms of the rate of output per unit of inputs

Recurrent wants: wants that are never satisfied and keep recurring, for example, food

Wants: things we desire because they give us satisfaction – various types of goods and services

The two qualifications for calling a thing scarce are that it must be wanted and it must be limited in supply. Most of the things people use to try to attain personal satisfaction are material things such as food, shelter, medicine, tools and so on. But economics is more than the study of how humans earn their daily bread. In very poor areas this may be people's main objective, but in more affluent locations, people may also want other things such as space travel, a cure for cancer, works of art or better teachers. Economics is about how society uses its scarce resources to try to achieve maximum progress towards all objectives and improve the overall welfare of the community. Clearly some things are more important than others. Air, food, clothing and shelter are regarded as **needs** or necessities for life in our society. But we have many other **wants** or desires that are not quite as important. Wants have a number of characteristics:

- Wants are the various types of goods and services that people, as individuals or collectively, desire.
- Wants are unlimited and insatiable. No society – not even the richest – can satisfy all of its wants: some people miss out and new products are introduced every day.
- Some wants are **recurrent wants** (e.g. food) – they keep needing to be satisfied. They are never fully satisfied.
- Wants vary in intensity and are therefore changeable. They change with fashion, with the season, with age and with people's incomes.
- Some wants (e.g. cars, petrol and tyres) are **complementary wants** – they go together. Once you buy the car, you must also buy other essential items.
- Some wants are **competitive wants** (e.g. beef and chicken) – they are substitutes for each other. In fact, to some extent all wants are substitutes for each other when we only have limited resources and we must choose which wants are the most important to satisfy.

Since there is not enough of everything to go around, all people – householders, businesses and governments – need to make choices. Individuals and families must decide how to use limited income, savings and other resources. Similarly, an economist investigating the funding of the health-care system will have to decide how best to distribute limited income between such things as, for example, the purchase of equipment or the building of new facilities.

Firms make choices based on their costs and profits, while governments are limited by their ability to tax, borrow and spend money. For example, if the federal government chooses to increase its spending on roads, there is not only a monetary cost but also a real or **opportunity cost**. This may be the opportunities forgone, for example, a reduction in the number of university places available for students. Or, if a company manager has to choose between a series of radio commercials and a direct-mail campaign, the opportunity cost of choosing to advertise on radio is the benefit that would have accrued from a direct-mail campaign. In the rural sector, a farmer may have a choice of using the land for growing wheat or grazing sheep. In this case, the opportunity cost of grazing sheep would be the benefit forgone from the next best land use; that is, the growing of wheat.

Opportunity cost can easily be demonstrated by the use of an economic model: the production possibility model.



FIGURE 1.2 Economic wants require the giving up of something of value in order for them to be satisfied.

Production possibility curve

Our choice between competing wants is a choice between alternative uses for the resources required to satisfy those wants. For example, if Australia decides it wants cotton more than wheat, it is at the same time deciding to use labour and other resources to produce cotton instead of wheat. This can be shown with a production possibility graph, as shown in Figure 1.3.

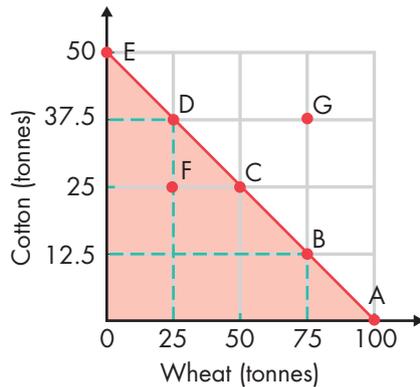


FIGURE 1.3 Production possibility graph for cotton and wheat

The production possibility frontier is a model used by economists to demonstrate the concept of opportunity cost. Using the model involves some assumptions:

- An economy aims to use all resources fully and efficiently.
- There are only two goods produced in this simplified economy.
- All resources can be used to produce each good, and hence there must be some perfect mobility between production of the two goods.
- The level of technology is assumed to be fixed.
- Resources are fixed.

The graph shows the production possibilities of cotton and wheat from the efficient use of a given amount of resources. These resources can be used to produce any combination of cotton and wheat that lies on or below the line A–E. If no wheat is produced, then 50 tonnes of cotton can be produced. If no cotton is produced, then there would be sufficient resources to produce 100 tonnes of wheat. The opportunity cost of producing 50 tonnes of cotton is to forgo the production of 100 tonnes of wheat.

Whenever a choice is made to satisfy a particular want, some other want goes unsatisfied. A more realistic situation to the one described in the graph may be one in which Australia would need to allocate some resources to the production of both wheat and cotton. Some intermediate combination of the production of both goods may be selected; for example, position B on the production possibility curve – 75 tonnes of wheat and 12.5 tonnes of cotton.

The shaded area in Figure 1.3 represents all possible combinations of output of wheat and cotton. This is sometimes referred to as a ‘production possibility map’.

The frontier, the line joining A and E, represents the absolute limit of output possible from a given set of resources at any point in time. If Australia were to decide on a level of production depicted by point F (25 tonnes of wheat and 25 tonnes of cotton), not all of the available resources would be used. A surplus of capacity would still be available in the economy equivalent to 25 tonnes of wheat or 12.5 tonnes of cotton. It should be obvious that this is an under-utilisation of resources. On the other hand, the country might aim to produce at point G. Unfortunately, this cannot be achieved at this point in time, since it lies beyond the production possibility frontier for the resources available.

To move production to G in the future, the economy would need to find additional resources to use (e.g. an increase in the labour force or an increase in the amount of farm machinery available, making the workers more productive, i.e. an increase in **productivity**). Alternatively, a change in the technology available might be achieved, such as genetically modified seeds, the development of improved machinery or the introduction of computer technology to farming.

FIGURE 1.4 Possible combinations of wheat and cotton, assuming all available resources are used

Possible combinations	Tonnes of wheat	Tonnes of cotton
A	100	0
B	75	12.5
C	50	25
D	25	37.5
E	0	50

Note that no dollar values have been used, but costs can still be considered. If Australia decides to change the production combination from B to D, then the nation will gain 25 tonnes of cotton, but the cost of that decision would be a loss of 50 tonnes of wheat. This is called the 'opportunity cost' of producing more cotton. While the graph is, in this case, a straight line, in the real world it is a curved line (see Figure 1.5).

ECONOMICS IN ACTION



Removing assumptions

You have been asked by your teacher to show what happens if one or more of the assumptions is removed. Draw a production possibility curve for each of the following.

- 1
 - a There are two goods produced: computers and breakfast cereal. The level of technology improves, enabling more computers to be produced. How will the production possibility frontier change?
 - b Similarly, a new hybrid breed of wheat is developed, enabling better yields from wheat crops. Show this relaxation of the assumption on the same diagram.
- 2 A new iron ore deposit is discovered, increasing the ability to produce cars. Hence the assumption of fixed amount of resources is relaxed. Show this on a new diagram. Alternatively, what would happen if the mine were flooded as a result of a natural disaster? Show this on a diagram.
- 3 Draw diagrams to show what would happen in the following situations:
 - a There is an improvement in the general standard of education of the population. What assumption would this challenge?
 - b There is a decrease in the health of the population due to the obesity epidemic. How would this affect the production possibility curve?
 - c Australia is attacked by a foreign country. Instead of producing cars, we needed to produce tanks. How would this affect the production possibility curve?

Opportunity cost is a basic concept in every economic decision and you can apply the production possibility curve to many situations.

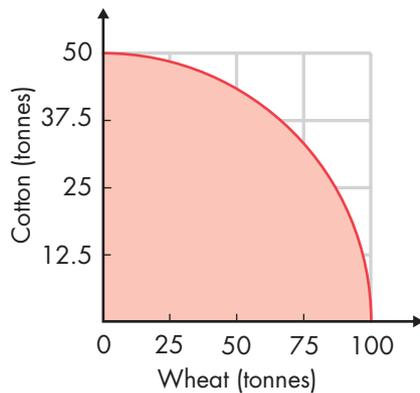


FIGURE 1.5 Production possibility curve for cotton and wheat – a more realistic situation

The production possibility frontier is an example of an economic model. Economists use economic models to attempt to explain concepts and economic relationships. In doing this, they make assumptions about parts of the model, and simplify the model. For example, there is obviously no economy in the world that produces just two products. Yet by assuming these, the model assists to identify some complex economic relationships. Economists call this the **ceteris paribus assumption**. It means that all other things are held equal: that is, other relevant, influential factors are assumed to be constant. You will encounter other economic models, such as the Circular Flow of Income model, later in this course.

Refer back to Figure 1.3 on page 9. Point G can only be reached if one of more of the assumptions is relaxed or removed. If an economy were able to move from point B, C or D to G, then it is clear that it is producing more of each of the goods. When more resources are utilised, or they are utilised more efficiently, the production possibility frontier will move outwards. This would result in more goods being produced and available within the economy. The increase in the amount of goods available within the economy is referred to as **economic growth**.

The production possibility curve for any economy is seldom, if ever, stable. It is constantly changing due to changes in conditions in the economy, such as the following examples.

- Improvements in the health of the population may result in an increase in the number of workers available for work, and a reduced amount of leave taken due to sickness. This may result in improved productivity of workers.
- Increased levels of education among the population would be expected to increase productivity of workers and increase the amount of skills and knowledge within the economy. The effect of this would be to increase the amount of goods and services that can be produced.
- Labour can become more productive due to health improvement, level of education, new ways of doing tasks, moving to more capital- and technology-based production methods such as using robots in production, increased skill levels through training, and increased motivation of the workers.
- In the model, there are only two products (a basic assumption). Changes in the level of technology used in the production of one good will not always be the same as a change in the technology used in the second good. This is called asymmetric technological advances, and would result in the output of one good increasing while the second good might not change at all. This is shown in Figure 1.6. If there is an adoption of improved technology in car manufacturing but no change in mango-production technology, the production possibility curve will change shape, as there are now more cars produced using the same amount of resources.

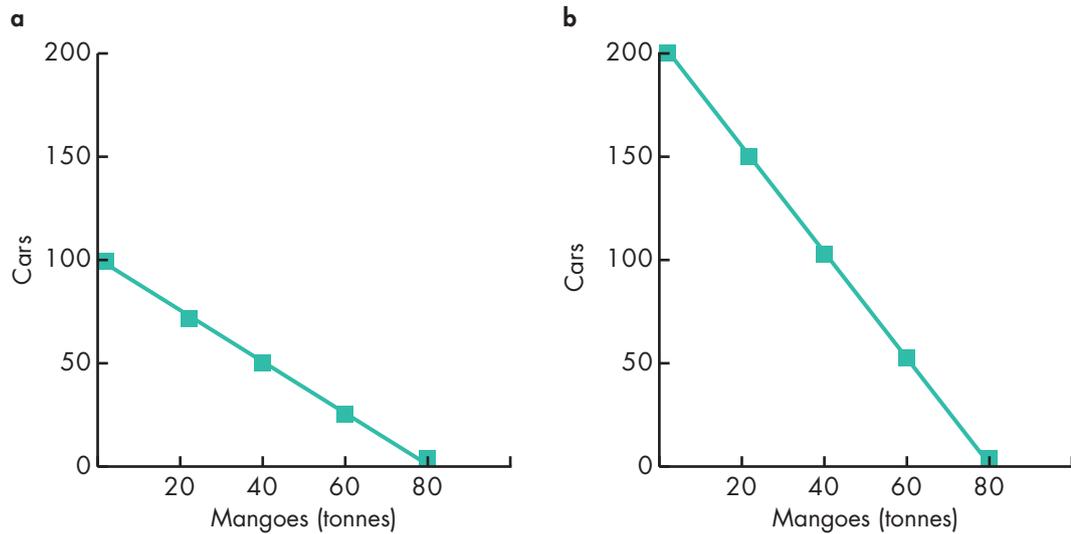


FIGURE 1.6 Asymmetric change

- Should a major war break out, then an increased number of resources will be shifted into the production of weapons and support materials. This will mean fewer resources are available for the production of consumer goods, and hence the production possibility curve will change shape as resources are moved within the economy.

ECONOMICS IN ACTION



Draw a series of production possibility curves to show how a model might change in each of the following circumstances. There are only two products, as shown in Figure 1.3.

- 1 Workers are able to work until they are 70 years old because of improvements in health standards.
- 2 All students will be required to obtain a university degree or TAFE qualification as a result of a shift in government education policy.
- 3 Workers may receive higher pay rates if they increase productivity in the workplace.
- 4 There is a development of higher yielding seeds for wheat but no change in cotton seeds.

ECONOMICS CHALLENGE



While the production possibility curve in Figure 1.3 has been drawn as a straight line, in most cases such curves are drawn as a convex line as in Figure 1.5. Research the 'law of diminishing returns' and determine why this is so.

QUESTIONS

- 1 Describe the assumptions used in a production possibility model.
- 2 Draw one or more production possibility curves to illustrate and explain:
 - a opportunity cost
 - b under-utilisation of resources
 - c efficiency
 - d economic growth.

1.1.3 Factors of production

ECONOMICS DATA

Australian statistics

Use the Internet to find up-to-date information on the following:

- the percentage of Australia that is arable farmland
- the number of people employed in Australia
- the number of people currently unemployed in Australia
- the amount of new private capital expenditure in Australia in the last year, and the trend relating to this (i.e. is it increasing, decreasing or steady?)
- the number of businesses in Australia.

You can use the Australian Bureau of Statistics to locate this information.



Australian Bureau
of Statistics

CONCEPTS

Allocative efficiency: occurs where a country's resources are used in the economy in combinations that generate the maximum benefits for consumers and the country

Capital: the factor of production comprising the stock of human-made resources used to create further goods and services

Enterprise: the factor of production that is the ability to initiate and manage the production process by combining and organising the other factors of production (land, labour and capital)

Entrepreneur: the innovator who supplies enterprise to the productive process

Factors of production: the broad categories under which the resources that go into creating goods and services to satisfy human wants can be classified; that is, land, labour, capital and enterprise

Labour: the factor of production that includes all kinds of human effort, both mental and physical

Land: the factor of production that includes all naturally occurring resources (except human labour); for example, minerals, fuels, plants, water and fish

Productive or technical efficiency: Occurs when use of a country's resources generates the maximum output possible

To satisfy people's wants in an economy, four types of resources are combined to produce goods and services; these are known as **factors of production**.

Land

Land or natural resources are terms used to describe the materials and ingredients provided by nature, which may be used in the production of things people want. Minerals, forests, rivers and soils are all good examples of natural resources. We have large amounts of many of these resources in Australia and we may continue to discover new resources. Changing technology may increase our ability to use existing resources, but the resources are still limited or fixed in amount at any particular time. To be regarded as a resource, a thing must be known and accessible at the point of time in question, and have the potential to satisfy wants. Thus, our ability to produce goods and services depends partly on the availability and efficient use of our natural resources. One role of economists is to determine the best way to allocate these resources in the production process.

Labour

Labour is another type of resource or factor of production. To adapt the land resource for human use, the application of work or labour is required. To some extent, the quantity produced will change with the quantity of labour applied. But we must also consider labour productivity, or average production per worker. Many factors affect productivity. These include the quality of the labour force, the amount and quality of the resources with which the labour force works, and the efficiency with which labour is combined with other resources in production.

Capital

Most people think of **capital** as money but, to the economist, capital is any human-made instrument of production. It comes into existence when goods are not directly consumed but are converted into other goods, such as machinery that will increase future production. So, if we want to increase our wealth or stock of capital, we cannot consume all our production – we cannot consume all our income. We must save part of that income so that it becomes available for investment in capital goods. Examples of such goods would be tools, machinery, factories, railways and port facilities. The ownership of capital and hence resources is very inequitably distributed within Australia with a relatively small number of people controlling a large proportion of the nation's capital and resources.

Enterprise

Enterprise or entrepreneurial ability is the ability to initiate the production process by organising and combining all necessary factors of production in a productive establishment. If this is done efficiently, the establishment will make a profit as a reward for innovation, for taking risks in running the enterprise and helping to satisfy wants. This ability is usually seen as a distinctive type of resource or factor of production, but some economists prefer to classify it as a specialised type of labour.

Each factor of production has a place in an economic system and each has an important function. In the free-enterprise economic system, individuals and companies are able to own productive resources. As owners, they expect a return or reward. This generates income, which, as it is spent, becomes the fuel that powers an economy.

Income from the use of land or natural resources is called 'rent'. The income earned from labour is called 'wages'. Income earned by lending money, or capital, is called 'interest' and the reward to **entrepreneurs** for the risks, innovative ideas and efforts that they have put into their businesses is called 'profits'.

Efficient production in any country depends on the best combination of outputs, using the lowest cost combination of inputs or resources. In the example shown in Figure 1.3 on page 9, it can be seen that the most efficient allocation of resources occurs along the production possibility curve. Any combination of resources that produces less wheat and/or cotton – for example, at F – is inefficient, because at that point not all resources are used. We must learn to economise – to use the resources we have available to their best advantage in producing goods and services to satisfy our wants.

Since the resources with which we can satisfy these wants are limited, we must choose the most pressing wants (the highest on our scale of preferences) to be satisfied. Choosing between wants and allocating our resources most efficiently is what economics is all about.



FIGURE 1.7 Resources

Efficient allocation of resources

It is the aim of any economy to maximise the production of goods and services, or to be producing on the production possibility frontier. This is called **productive or technical efficiency**. At this point, the nation's resources are being used in the most efficient way to produce the maximum amount of goods and services possible at the lowest cost.

Allocative efficiency occurs where the resources are allocated in the most efficient way to generate the maximum possible benefits for both consumers and the nation. It would be wasteful and inefficient if the country produced a good or service in a productively efficient way, but the product was not one that the consumers wished to purchase or consume. An example might be a country that chooses to produce military hardware very efficiently, but this is not wanted by peace-loving consumers.

Hence it is obvious that the values and priorities of consumers help to determine the most efficient allocation of resources.

QUESTIONS

- 1
 - a What resources does Australia have in abundance?
 - b What resources do we have little or none of?
 - c Are any of our resources available in unlimited quantities?
- 2 For this question, keep in mind that for something to be considered a resource, it must be known and accessible and have the potential to satisfy wants.
 - a List the main resources we obtain from the sea.
 - b List what may be a resource from the sea in the future.
- 3
 - a Describe the factors that will determine the quality and quantity of labour.
 - b Is the amount of labour available for use as a resource limited or unlimited?
- 4
 - a List a further five examples of capital equipment.
 - b Is capital limited or unlimited?
- 5
 - a Is entrepreneurial ability a distinct factor of production, or simply a type of labour? Why, or why not?
 - b If entrepreneurial ability is a distinctly different resource, is it limited or unlimited?
- 6 Explain the difference between technical and allocative efficiency?
- 7 Why might a country pursue allocative efficiency rather than technical efficiency?

1.1.4 The economic problem

CONCEPTS



Consumer sovereignty: the ability of consumers to determine the pattern of production through their spending decisions

Economic indicators: economic variables whose patterns of fluctuation portray, in a reasonably consistent and predictable way, the general course and level of aggregate economic activity, for example, employment levels, inflation levels and economic growth

Economic problem: the problem of deciding or choosing how to satisfy unlimited wants with limited resources

Economic system: the organisational and institutional pattern through which choices are made about which wants to satisfy, and how to allocate resources to do this

Government intervention: action by the government that affects economic activity, resource allocation and normal market operations to help achieve economic goals; e.g. provision of subsidies, change of the tax rates, changes in government expenditure, regulation of foreign investment

Interest: the price paid for the use of capital

Market: a place or situation where buyers and sellers interact for purposes of trade or exchange

Market mechanism: the interaction of the forces of demand and supply to determine the price at which a commodity is sold





Profits: payments in return for enterprise or entrepreneurial ability resulting from running a business enterprise in which revenues received exceed costs of running the business

Wages: payments to employees as a return for the provision of labour or human effort to the production process (usually calculated on the basis of actual production or hours worked)

Rent: payments in return for the use of land or other natural resources used in the production process

KEY IDEA

When households, businesses and governments are confronted by the universal economic problem of scarcity, they rely on an economic system to make decisions about the alternative uses of their limited resources. Not all nations approach the economic problem in the same way.

Through history, different types of **economic systems** have used different approaches to solving the **economic problem**. All societies have developed an organisational and institutional pattern called an 'economic system'. Some economic systems are very closely controlled and organised by a collective authority; others operate with much greater individual freedom. Resources are limited, some absolutely and some relative to wants. So, we are faced with the very real problem of scarcity. Scarcity is relative and exists whether we live in a rich or a poor country. All societies must decide how to use their limited resources to best satisfy their wants. Because of the economic problem, decisions must be made about how the factors of production will be used to produce the goods and services people need and want. To accomplish this, every society must answer the following three questions:

- What and how many goods and services are to be produced?
- How are those goods and services to be produced?
- Who will receive and consume those goods and services?

In the Australian economy, what to produce is essentially determined by the consumers. While most production is undertaken by private firms (or entrepreneurs) in an attempt to make a profit from their economic activity, firms are dependent on the public to purchase their goods. If their goods and services cannot be sold, producers will make a loss and be forced out of business. So, consumers determine what will be produced through their decisions as to what they will purchase.

Although decisions regarding how much to produce are made by entrepreneurs, they are also dependent on demand by consumers. If firms overproduce, they may be forced to sell off surplus stock at prices below cost, and so reduce their profit. On the other hand, underproduction will result in a failure to maximise profit. Business people must attempt to gauge the public's demand for their products so they can produce just the right amount; that is, so that supply equals demand.

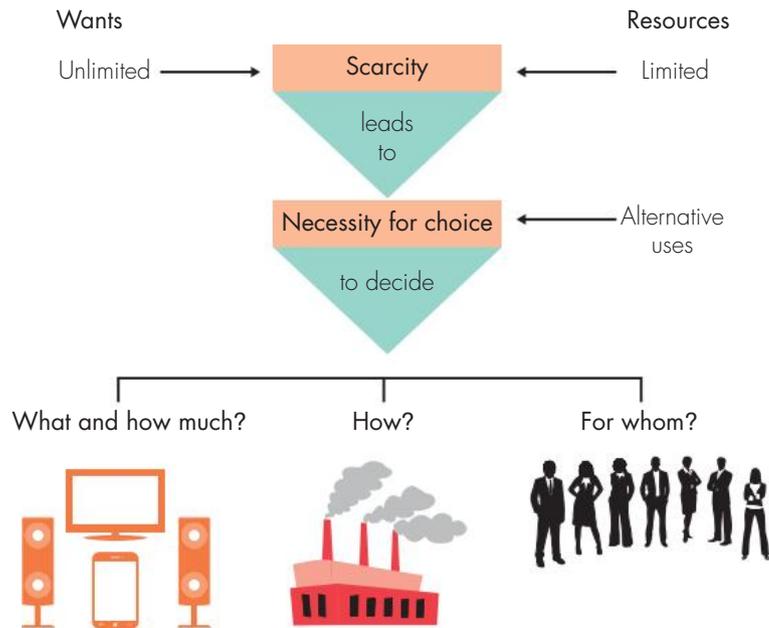


FIGURE 1.8 The economic problem

How to produce goods and services may be decided by a business person, by the government or according to tradition. Motor vehicles can be made using an assembly-line technique or a single-unit method of construction. Aluminium cans may be spun, stamped, extruded or moulded. The production methods used will be decided by the entrepreneurs, who will generally be looking for the method with the lowest cost in relation to the size and quality of their output. The government has some influence in this; it may impose safety regulations concerning machinery and its operation, prescribe the percentage of home-produced raw materials to be used in the production of certain goods, regulate the impact that production can have on the environment or enforce health standards that must be complied with in the manufacture of goods, such as defining the materials that can be used in manufacturing children's toys.

The question of who will use the goods and services produced in an economy is another element of the economic problem. Since there will not be enough produced to satisfy everybody's wants, some way must be found to decide how the output will be divided. Do the goods and services go to those who need them or to those who can afford to pay for them? The basic factor that determines the share of total production each person receives is the income from **wages** (as a return on labour), **rent** (as a return on land and buildings), **interest** (as a return on capital) and **profit** (as a reward for taking risks in the production process). However, governments take a large fraction of this gross income through various forms of taxation. This government income is used partly to provide community goods and services for the general welfare of society and partly to pay for various social services, such as pensions and unemployment benefits.

A family's ability to buy goods and services to satisfy its wants will depend on:

- the total money income received from wages, rent, interest and profit
less
- any taxation paid to governments (e.g. income tax and GST)
plus
- social service payments received from governments, such as cash payments (pensions and textbook allowances).

Some economic systems are very closely controlled while others operate with much greater freedom. Australia has a mixed-market or modified **market** economic system in which there is a mixture of control by the government and freedom of individual enterprise, and in which the three basic economic questions are answered in the marketplace.



FIGURE 1.9 Economic decisions

Solving the economic problem

Who ultimately decides what and how much, how and for whom production occurs? Is it the consumer, the producer or the government, or perhaps a combination of all three?

All three need to make choices. Each will have a different motive for making its choices and, because of this, the final preferences of each will probably differ. Consumers are mainly concerned with obtaining the maximum possible satisfaction from their income. Producers, on the other hand, are interested in maximising profits. They would prefer an allocation of resources that favoured this result. The position of the government is different again, depending on its specific objectives.

1.2 The market or private-enterprise economy

The market or private-enterprise economy is the one with which most of us are familiar. It differs from the subsistence economy because of its extensive development of specialisation and use of money. The market economy is characterised by:

- the ownership of private property
- the use of market pricing
- varying degrees of government control
- self-interest as the motive for, or incentive to, work.

This type of economy is essentially a system in which the nature and price of goods and services produced are determined by dollar votes cast in the marketplace by consumers. In a private-enterprise or market economy, what to produce is determined by the interaction of consumers, business firms and the government in the marketplace. In such an economy, consumers influence what will be produced and how much of it will be produced by the way they spend their income. Of course, business people try to influence the demand of consumers through advertising and other selling activities, but consumers make the final decision. This is sometimes known as **consumer sovereignty**. Consumers decide whether they will or will not buy and, if they buy, in what quantities and at what price.

In a market economy, the market puts different values on the contributions of different people. In a competitive market we are paid for our resources, whether it is labour or materials, according to how they satisfy wants. This means that people who own large amounts of resources (or high-quality resources) will receive more income than others and will be able to buy a larger share of goods and services produced.

This could mean that some people may have to do without things that they need. In Australia, individuals have quite a large degree of economic freedom.

- Entrepreneurs are free to produce almost any goods they wish.
- Wage earners are (theoretically) free to select almost any employment they wish.
- Consumers are free to spend or save largely as they wish.

But we do not have complete freedom, as would be experienced in a completely free-enterprise or laissez-faire type of economy. The Australian economy works within an overall framework of government regulations that safeguard society. Because of the government's regulation and intervention, the Australian economy is often referred to as a modified market economy. The government legislates hours of work and minimum wages. It sets prices for some products and it pays subsidies and social service benefits. The government intervenes in economic life in many ways.

It is the job of the governments, in relation to the Australian economy, to make decisions in the interests of the whole community. Governments have come to believe that the welfare of large and small groups within society is important, so they regulate the economy. The freedom of choice of individual consumers and businesses to act in their own interests is thus reduced.

The allocation of resources and the distribution of what is produced still takes place, largely through the operation of the market (see Chapter 3), but the government intervenes to borrow money, charge taxes, grant cash subsidies and run its own businesses with objects in mind such as:

- maintaining high employment
- helping all members of society to maintain a reasonable standard of living
- producing some financially unprofitable products, such as national defence or police protection, which are important to the welfare of society but which would not be provided by private enterprise. These are called 'collective wants'.

Many advantages are claimed for the free-enterprise system. The profit motive and emphasis on the market-price mechanism are credited with being responsible for innovations and cost reductions in industry, large increases in national output, a great quantity and variety of goods and services, and a high standard of living. Theoretically, the free operation of the price mechanism results in efficient allocation of resources and a very adaptable, flexible system that takes account of changes in consumer demand. It is self-regulating and gives more economic freedom.

But there are also disadvantages. Many inequalities exist in such an economy – poverty, inequalities of opportunity and various forms of discrimination. Losses in production can be caused by industrial disputes. Unemployment, inflation and waste occur as the level of economic activity rises and falls. A freely operating **market mechanism** may fail to supply sufficient collective wants and may result in some social costs that require economic decision making and **government intervention**.

1.2.1 Decision making: the central problem of every economy

The central problem of every economic system is decision making in a context of scarcity. Making a choice between alternatives is essentially what economists do. Every economy has to make economic decisions. It is the way in which decisions are made and their outcome that

shape the nature of an economy. No two economies are the same, though many have similar characteristics.

In a market economy such as Australia's, everyone makes economic decisions and choices. Costs and benefits are carefully examined by individuals, firms and governments, who can then choose the best possible alternatives to achieve maximum satisfaction for their needs and wants. Society must choose a combination of private goods (e.g. food and clothing), which consumers buy as a result of their own individual decisions, and public or collective goods (e.g. schools, hospitals and roads). Public goods are provided through government spending (financed by taxation or government borrowing) to satisfy the wants of society as a whole. If governments did not provide these collective goods to the public, the public could collectively change the government through the ballot box.

When investigating problems or issues, economists use many of the tools of the social scientist. They use graphs, case studies, statistics, **economic indicators**, surveys and models. They use the theories of other economists and social scientists. They use inductive and deductive reasoning to help them make decisions.

Many prominent economists have shaped the way that decisions are made. One of the earliest was Adam Smith.

ADAM SMITH (1723–90)



Getty Images/Culture Club

FIGURE 1.10 Adam Smith

Adam Smith is regarded as the founder of modern economics. His work, *An Inquiry into the Nature and Causes of the Wealth of Nations* (usually called *The Wealth of Nations*), published in 1776, was the first complete study of political economy. It was a massive work consisting of five books, which between them covered all aspects of the subject. Many of the ideas were not original, as Smith freely admitted, but this work was far more than a compilation of existing thought. Smith adapted, analysed, combined and improved the theories of his predecessors and contemporaries, and then added much that was completely original.

His main concern was with the factors that increased the wealth of the community. He believed that labour was the source and also the final measure of value. To increase the wealth of the community it was necessary to improve the skill of the labour force. This could be done by the division of labour, as he showed in the well-known example of pin production. In this, Smith explained that, if one man were employed in all the processes of pin-making, he could, at best, make 20–30 imperfect pins in a day; but when a number of workers were divided into groups so that each performed simple, specialist, repetitive operations, the workers could produce hundreds of perfect pins each day.

In Smith's view, an increase in the total wealth of the community was the natural result of a freely operating market. If left to themselves, producers would make what buyers wanted (consumer sovereignty) in order to make a profit. Buyers would spend their money on what they wanted most. Buyers and sellers meeting in the market would





lead to the evolution of a harmonious social order. In other words, and here we have the crux of Smith's theories, people acting out of personal self-interest actually worked for the betterment of society as a whole, as if, to quote Smith, 'guided by an invisible hand'.

As he saw it, there was no conflict between what was best for the individual and what was best for society. The individual, by attempting to increase their own wealth, would necessarily increase the total wealth or welfare of society.

This argument left no place for the government in the operation of the economy. Smith reacted strongly against the protectionist policies of his time and advocated free trade. In fact, he favoured a full laissez-faire economy. If there were no government interference, the problems of production and distribution would be solved by the operation of supply and demand in a freely competitive market.

This is not to say that he saw no place for the government at all. In his view, the government was necessary for purposes such as defence, but it definitely should not interfere with the operation of the market.

The importance of Adam Smith's contribution to economic thought cannot be exaggerated. For scope of argument, *The Wealth of Nations* is unparalleled. Although many of the theories have had to be modified, the work still stands as a massive foundation upon which other economists have built.

ECONOMICS AND ICT



Economists

If you would like to know more about Adam Smith, follow the link to 'Three economists and their theories'. Compare his thoughts with those of perhaps the greatest economists of the 20th century: John Maynard Keynes, and Karl Marx, the great socialist thinker and economist. Make a brief summary of their lives, works and theories, highlighting differences between the thoughts of Smith, Marx and Keynes. If you don't understand some of the words, an economics glossary or dictionary will help.



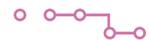
Three economists
and their theories



Adam Smith
Karl Marx
John Maynard
Keynes

1.3 Are all economic systems the same?

CONCEPTS



Capitalism: an ideology based on the importance of the market system, private ownership of most of the means of production and limited government intervention, and underpinned by the belief that economic activity is motivated by individual interests and the profit motive; often used synonymously with the term 'free enterprise'

Capitalist market economy: an economic system in which important economic questions are decided by interaction between individual buyers and sellers in the marketplace

Mixed economy: an economy, or economic system, that relies on both markets and governments to allocate resources





Socialism: an ideology based on the view that most of the means of production should be publicly owned and directed towards the satisfaction of community needs rather than private profit; in theory, an economy that is in transition between communism and capitalism

Socialist/command economy: an economic system in which decisions about what to produce and the way the proceeds of production should be distributed among members of the society are made by a central planning authority

Socialist/market economy: an economic system based on government, rather than individual, ownership of key resources, deemed critical to the operation of the economy; it allows some decentralised decision making

Subsistence economy: an economy in which individuals produce commodities primarily for their own use and not for exchange through the market

KEY IDEA

The economic problem of scarcity is common to all economic and political systems and to all economies, regardless of their level of development.

How do different types of economic systems answer the three basic questions facing any economy – what and how much to produce, how to produce and for whom to produce? To answer this question, different types of economic systems need to be investigated.

The resources available for the satisfaction of human wants are limited, some in absolute terms and some relative to wants that appear to be without limit. There are just not enough resources to satisfy all human wants. We are thus faced with the very real problem of scarcity. Scarcity is obviously relative, but it exists whether we live in a rich or a poor country. All societies must decide how to use their limited resources to best satisfy their wants.

In an attempt to economise and to make the economic decisions necessary to overcome economic problems, all societies have developed an organisational and institutional pattern that we call an economic system. Some economic systems are very closely controlled and organised by central authorities, while others operate with much greater individual freedom, but they all try to choose or decide by answering the same three basic economic questions – what and how much, how to produce, and for whom to produce.

The classification of economic systems is difficult because no two economic systems are identical in every respect. Economies have different histories, cultures, resource endowments and geographical features. People have different objectives and make different value judgements, and these are reflected in the economic behaviour of the people and the economic policies adopted by their governments. The process of classifying economic systems into three or four main groups can be very misleading if it conveys the idea that all economic systems within a group are identical and that all behaviour is highly predictable.

A traditional classification of economic systems uses three broad groupings:

- 1 **subsistence economies** (where traditions determine economic decision making); however, pure subsistence economies no longer exist
- 2 **capitalist market economies** (where the market controls economic outcomes); the dominant system, which can be subdivided into authoritarian and democratic sub-systems
- 3 **socialist/command economies** (where the state plays a major role in the operation of the economy); there are few of these currently in existence.

ECONOMICS CHALLENGE



Research online to determine the ways that the economies of three different countries attempt to solve the economic problem by considering the three basic economic questions: 'what and how much to produce', 'how to produce' and 'for whom to produce'. Select your countries from this list: North Korea, Cuba, Russia, China, France, New Zealand, South Africa, Canada, United States of America and the United Kingdom.

The last two are generally known as 'exchange' or 'modern' economies because they rely on specialisation to increase production, have a large, modern industrial sector and provide surpluses for exchange and investment, using money as a medium. Economies of the first type are known as 'barter' or 'primitive' economies, because goods are commonly swapped directly for other goods. Specialisation, surpluses, industry and a monetary sector are not evident.

In reality, economies and parts of economies usually exhibit features of more than one of these traditional economic systems and are known as **mixed economies**.

Key features that can be used to classify different economic systems:

- the manner in which resources are owned
- the manner in which resources are coordinated and controlled
- the presence or absence of the profit motive as a stimulus to production
- the degree to which market forces dictate the use of resources and production patterns
- the degree of state intervention in the day-to-day operation of the economy
- the process used to distribute the proceeds of production
- the level of economic development.

1.3.1 Subsistence economies

Traditionally, subsistence economies are defined as those in which individuals produce commodities primarily for their own use and not for exchange through the market. They are characterised by a low level of economic development. In such economies, customs and traditions play a large part. Subsistence economies are traditionally characterised by:

- an absence of markets
- an absence of money
- very little specialisation
- a low level of technology or industrial skills
- very little saving and, therefore, little accumulation of capital
- relatively low standards of living
- little scope for trade
- absence of industry and infrastructure.

Subsistence economies were found in isolated communities such as desert, mountain and jungle regions. The attainment of economic growth and development in these areas has proved most difficult.

Within the limitations of scarce physical resources, isolation and lack of technology, the organisation of a subsistence economy represented a system of resource management designed to ensure the survival of present and future generations. A low level of material standard of living is a logical adaptation to these conditions.

'What to produce' was usually based on family or tribal decisions as to what was required for subsistence. 'How to produce' was usually answered by very labour-intensive methods that provided occupation for all members of the group and used simple forms of capital equipment such as nets or hoes. 'For whom to produce' usually had a simple answer: subsistence economies produced for themselves. Wealth in terms of material possessions was determined by a person's status in society. There was no concept of private ownership. Property and resources were 'owned' communally.

Historically, only where specialisation increased and greater production resulted could barter economies develop, eventually leading to exchange economies with highly developed specialisation and the use of money. Figure 1.11 illustrates the various stages through which a subsistence economic system may progress over time.

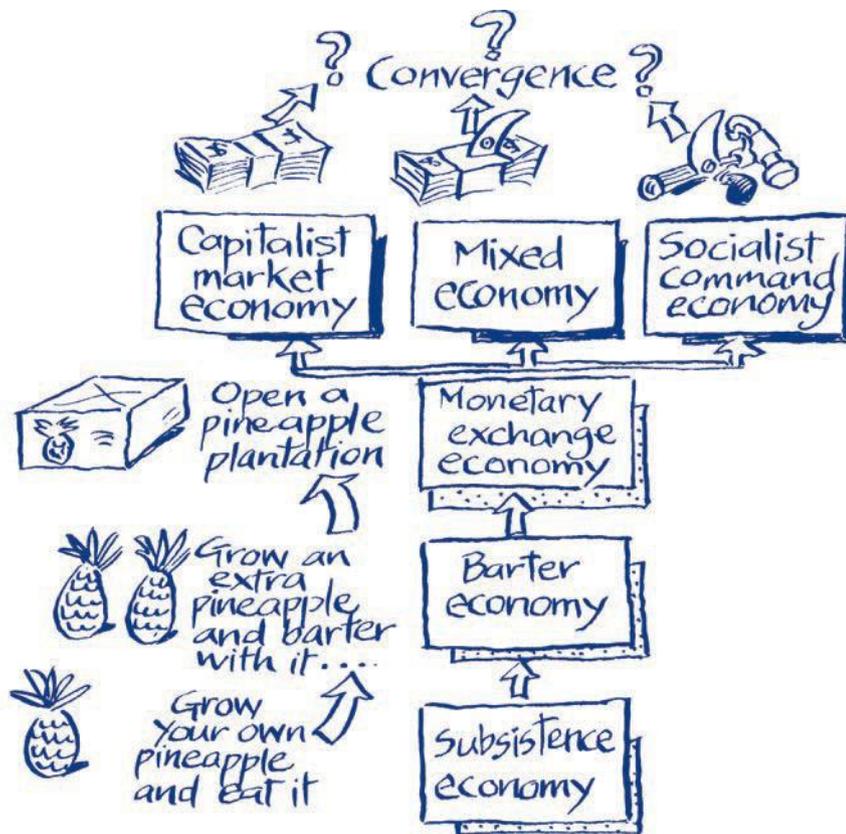


FIGURE 1.11 The progression of economic systems

1.3.2 Socialist command economies

The collapse of **socialism** in Eastern Europe and the USSR in the early 1990s destroyed what was traditionally considered the socialist/command economy. It was similar to the capitalist/market economy in that it was a modern industrial economy with extensive specialisation and monetary exchange. Beyond this basic similarity, however, the socialist/command system differed in many essential respects in its approach to deciding what was to be produced, how production and distribution were to be organised and how efficiencies and economies in the use of productive resources would be achieved. While this model of an economic system no longer applies in its entirety, we will still study its features, advantages and disadvantages to help us better understand the systems that prevail today.

The fundamental characteristics of the socialist/command economy, which help to explain its different approach to the solution of the basic economic problems, are as follows.

- Although consumer goods are privately owned by citizens, profit-making property and capital goods are owned by the state and could not be bought, sold or privately owned.
- Economic decisions concerning what to produce in the economy as a whole (or in some part of it) as well as in each individual enterprise, the location of productive units and retail outlets, the quantity, quality and method of production, and to whom to allocate what is produced, are made by state planning agencies, not by enterprises themselves. Only relatively minor personal consumption decisions are made by individuals.
- All productive resources and capital investments are allocated directly by some central government authority in accordance with and within the framework of an overall central plan.
- By virtue of its ownership of the means of production and distribution, the government takes on the role of a huge business enterprise embracing nearly the whole economy. All major economic relations and interactions, the allocation of resources and the distribution of production, price setting and the flow of funds, take place as if inside one single gigantic enterprise.
- The price mechanism performs only a limited function and the profit motive is not the main stimulus to production. The guiding principle is that the economy should be directed towards socially prescribed goals and that the government planners should devise the measures to attain what is in the best interests of the state as a whole rather than of the individuals who constitute it.

These characteristics are illustrated in Figure 1.12. Socialist/command economies in which these characteristics were found included China, Vietnam, Cuba and North Korea.

Socialist/command economies claimed many advantages over those with lesser degrees of state control and planning. First, many command economies in the early years achieved higher rates of growth than other countries. For example, the Union of Soviet Socialist Republics (USSR) achieved an average growth rate of about 6 per cent in the period 1930–80. (The average growth rate in the USA over the same period was about 3 per cent.) The USSR achieved such economic growth by concentrating very heavily on investment in capital goods at the expense of consumer goods and services.

Second, it was claimed that the socialist/command economy could avoid the wastage of resources common to the capitalist/market economy. For example, it was maintained that there was minimum wastage of resources through economic depressions, unemployment, industrial disputes and advertising. Similarly, efficient central planning was said to prevent resource wastage through unnecessary duplication of production.



FIGURE 1.12 Socialist/command economies

There were, however, many disadvantages associated with such a highly organised and centrally planned system. Production inefficiencies were the major problem. Much power was in the hands of a few people, at the head of the political machinery. Planning a long way ahead may have reduced flexibility, failed to provide what consumers really wanted and hindered adjustments when bottlenecks or natural phenomena caused dislocations.

Some sense of initiative or risk-taking seems to have been missing in a socialist/command economy, perhaps because of a lack of effective reward for innovation. There was much less economic and political freedom in general and freedom of choice in particular. Goods were often rationed or simply unavailable. They may have been inferior in quality and of a standardised nature. The social ownership of resources did not, however, reduce inequalities in the distribution of income and wealth. People with powerful political connections gained and retained wealth and power.

1.3.3 The socialist/market economy

The **socialist/market economy** is the economic model that fits in between the hard-core socialist/command model and the laissez-faire capitalist/market model. Eastern European countries, such as the former Yugoslavia and Hungary, chose to go down this path in managing their economies. More recently, China has instituted economic reforms throughout its provinces that have moved the nation towards this type of model. As mentioned earlier, many of the socialist/market economies are now classified as capitalist—authoritarian or democratic.

The collapse of the USSR in 1991 has seen Eastern European countries grappling with the notion of **capitalism**, while still deeply entrenched in socialist ideals.

The socialist/market models that have operated have allowed a market-driven system to operate within a centrally planned state system. State-run enterprises have tended to focus more on the production of capital goods, while the market-driven sector has been allowed to cater for consumers. We could argue that a similar system existed for years throughout the USSR with the 'black market' or 'second economy' providing desperately sought-after consumer goods.

The main criticisms of the socialist/market model have focused on the difficulties of achieving coexistence between a state enterprise sector and a market-driven sector. A common complaint in all centrally planned economies has been that state-run enterprises remain inefficient, bureaucratic, inflexible and lack commitment to serving the consumers of their products.

A further concern in countries that have experimented with the socialist/market model has been the existence of a tiered price system that has seen the price of some commodities set by a central planning authority while others are allowed to be determined by market forces. Serious imbalances soon emerge when authorities choose to hold some prices at artificially determined levels while other prices are permitted to respond to the forces of supply and demand and to world trends.

QUESTIONS

- 1 Describe the main characteristics of a subsistence economy.
- 2 Suggest reasons for the demise of subsistence economies throughout the world.
- 3 Identify possible social impacts of the transition of subsistence economies to exchange economies.



- ➔ 4 Explain the major characteristics that were common to most socialist/command economies.
- 5 List the main advantages and disadvantages usually associated with a socialist/command economy.
- 6 What are the economic outcomes of giving priority to consumer preferences rather than to planner preferences?

ECONOMICS AND ICT



How should the economic system be classified?

Place each of the following countries in an appropriate position in Figure 1.13, which uses a two-dimensional classification system: the level of economic development and the degree of state control.)

- Australia
- Chile
- China
- India
- Indonesia
- Malaysia
- Poland
- Russia
- Singapore
- South Korea
- Vietnam
- North Korea
- (add other countries of your choice)

To assist your inquiry, visit the CIA and Freedom House websites.

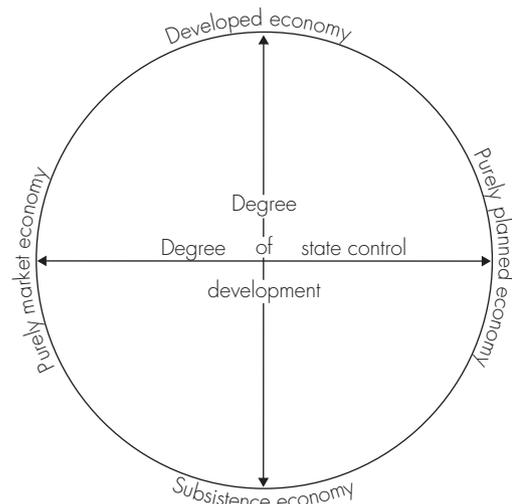


FIGURE 1.13 Spectrum of economic systems

ECONOMICS IN ACTION



Role play: the Island Game

In this game you will form a group with four other students and engage in problem-solving activities that focus on questions central to the organisation of the 'ideal' economy. You will set up an island society, using the University of Minnesota's 'Island Game'.

Log on to NelsonNet and follow the prompts to the various web pages you will need to refer to.

- 1 Familiarise yourself with group roles and set up your island society.
- 2 Choose one or more of the problem-solving cards.
- 3 Collaboratively discuss and resolve the problem(s) and report your response to the class.
- 4 Demonstrate your understanding of key economics concepts by individually, clearly and specifically answering the evaluation questions.



1.1 True/False

For each statement, indicate whether you consider it to be True (T) or False (F).

- 1 Economic wants are limited at any point in time.
- 2 All people are consumers.
- 3 Enterprise is another name for labour.
- 4 The main economic decisions to be made by an economy could be listed as: 'what and how many', 'how', and 'for whom'.
- 5 'Opportunity cost' refers to the monetary price that a consumer must pay for a good or service.
- 6 Wants are unlimited but never change.
- 7 Council libraries are a collective want.
- 8 Australia would be considered a modified market economy.
- 9 Capital goods are used to satisfy wants.
- 10 The four factors of production are land, labour, water and enterprise.

1.2 Terminology

Select the correct term from the list below that describes each statement.

- | | | | | | |
|---|-------------------|---|-----------------------|---|-----------------|
| A | capital | F | resources | J | economic system |
| B | economic method | G | economising | K | wants |
| C | opportunity cost | H | land | L | economics |
| D | subsistence | I | allocative efficiency | M | value judgement |
| E | socialist/command | | | | |

- 1 a study of the ways in which a society uses its scarce resources to satisfy unlimited wants
- 2 materials provided by nature that may be used in production
- 3 the organisational and institutional pattern through which economic choices are made
- 4 alternative opportunities forgone when a choice is made
- 5 making the best use of available resources
- 6 a rational way of thinking about economic problems
- 7 an economic system in which decisions about what to produce and the way the proceeds of production should be distributed among members of the society are made by a central planning authority
- 8 where traditions determine economic decision making
- 9 a country's resources are used in the economy in combinations that generate the maximum benefits for consumers and the country
- 10 a personal evaluation or opinion

1.3 Multiple-choice questions

Select the correct response to each of the following:

- 1 Economics is considered to be a social science because:
 - A it is an analytical, problem-solving discipline.
 - B it deals with human problems in a scientific way.
 - C the economist can test hypotheses under controlled laboratory conditions.
 - D the economist studies problems in the same way as the natural or physical scientist.
- 2 Scarcity means that:
 - A there is not enough of a commodity to satisfy all wants.
 - B everybody wants that commodity.
 - C the cost of pollution must be paid for by all taxpayers.
 - D a commodity has a negative economic value.
- 3 The economic problem is caused by the fact that:
 - A we cannot easily decide what goods and services to produce.
 - B resources are scarce and wants are limited.
 - C resources are limited and wants are unlimited.
 - D resources are unlimited and wants are limited.
- 4 Three people, shipwrecked on a small island with very limited resources, want various things. One wants food, one wants clothing, the other shelter. To satisfy these wants, they will have to decide:
 - A what goods or services to produce first.
 - B how to use their limited resources to produce these goods.
 - C for whom the goods should be produced.
 - D all of the above.
- 5 The economic method of problem solving involves four steps. Which of the following gives these steps in the correct order?
 - A Looking for alternatives, identifying economic aspects, choosing the best solution, defining the problem
 - B Defining the problem, identifying economic aspects, looking for alternatives, choosing the best solution
 - C Identifying economic aspects, looking for alternatives, defining the problem, choosing the best solution
 - D Identifying economic aspects, choosing the best solution, defining the problem, looking for alternatives
- 6 The opportunity cost of purchasing a portable DVD player is:
 - A the purchase price plus the value of the alternative purchase forgone.
 - B the value of the alternative purchase forgone.
 - C the purchase price of the player.
 - D nothing, if the player was a gift from your parents.

- 7 Wants are unlimited because:
- A they vary from person to person.
 - B they are determined by tastes.
 - C incomes keep rising.
 - D they can never be fully satisfied.
- 8 Which of the following would not be classified by an economist as capital?
- A the household washing machine
 - B a supermarket cash register
 - C a factory
 - D a printing press
- 9 If the economy moves along its production possibility curve, then:
- A it must employ more resources.
 - B there is opportunity cost involved.
 - C production of both goods is increased.
 - D some unemployment will occur.
- 10 An economic system is:
- A the way in which a government earns revenue and spends it.
 - B the way a country decides on production, allocation and distribution.
 - C all the financial institutions in a country.
 - D a way the standard of living of people is measured.

1.4 Short response questions

- 1 Explain, using examples, the difference between:
 - a goods and services
 - b individual wants and collective wants.
- 2 Describe the four categories of resources, and the income earned by each.
- 3 Identify how enterprise is different to labour. Give an example to clearly show the difference.
- 4 Define opportunity cost and explain how it is related to the concept of scarcity.
- 5 Describe what a production possibility frontier model is and outline the basic assumptions of this model.
- 6 Discuss the characteristics of wants and resources that make the economic problem inevitable.
- 7 Explain why and how the economy aims at maximum efficiency in the allocation of resources.
- 8 Comment on two important differences between a market economy and a command economy, citing examples of each.
- 9 Define what an economic system is and outline briefly how economic systems can be classified.
- 10 Would a wealthy family face the same economic problems as a poor family? Why?

1.5 Activities

Production possibility curve

What are the assumptions made when using a production possibility curve? Use production possibility curve diagrams to explain the following economic concepts:

- a choice
- b opportunity cost
- c under-utilisation of resources
- d unemployment
- e efficiency
- f productivity
- g economic growth.

Factors of production

Every product you buy or see in a shop has involved the use of all factors of production – land, labour, capital and enterprise. To prove this, select three basic products from the list below and write down the resources needed to produce them and transport them to market. Do not forget to include the energy used to run the factories and machines used to produce and transport the products.

- wooden toothpick
- loaf of bread
- T-shirt
- hammer
- apple
- newspaper or magazine

Scarcity

When you walk through your local grocery store, technology store or mall, it is hard to believe that scarcity is a problem. Are T-shirts and music devices really scarce? But even when store shelves are full, you probably cannot afford all you want, so you make choices about how to spend your limited resources – time, money and energy.

Read the paragraph below and answer the questions that follow it to explain how you might choose to use your scarce resources in this situation.

Holidays are just around the corner. You have been working hard at school and you would really appreciate a rest. You have plans to take it easy and have a relaxing time. Last night, you received two phone calls that made you stop and think. First, one of your best friends called to invite you to spend Tuesday, Wednesday and Thursday at the beach. Your friend will provide transportation, but it will probably cost you \$100 each day for food and entertainment. This is a great deal, but you are saving for a new wardrobe and \$300 will put a dent in your savings account. Next, your uncle offered you the opportunity to paint his apartment. He will pay you \$500, but the job will take four or five days. He wants you to start on Monday.

What will you do? List your choices.

- 1 _____ 3 _____
 2 _____

List the advantages and disadvantages of each choice in the following table.

	Choice 1	Choice 2	Choice 3
Advantages			
Disadvantages			

Clearly listing your choices and identifying their advantages and disadvantages will help you make better decisions. An economist would say that it may help you understand the opportunity costs of each option and identify possible trade-offs.

What will you decide?

In many cases, the opportunity cost and benefits of a decision vary from person to person, depending on a person's interests, needs and wants. Compare your decision with the decisions of your classmates.

Production possibilities

Businesses, nations and individuals make decisions about how to use their resources. Often these decisions can be understood better by plotting a graph showing the production possibilities resulting from different combinations of resources.

- 1 Maria has four hours of free time each day. She can spend it studying or working at Wang's Chinese Restaurant for \$12 per hour. Figure 1.14 illustrates the trade-off between school grades and the wages Maria could earn.
- What are the minimum wages Maria could earn if she works five days a week?
 - What grades can she expect if she works 10 hours each week?
 - What advice would you give Maria if she were interested in becoming a chemist?

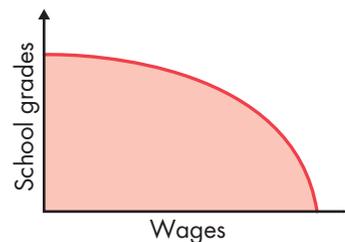


FIGURE 1.14

Review of Chapter 1

Review of Chapter 1

2 The Australian parliament must approve the federal budget. This involves many difficult choices. For example, the parliament can decide to spend money on national defence, health insurance programs, roads and highways, education and many other worthwhile causes. The curve below illustrates a hypothetical trade-off between spending for defence and highways.

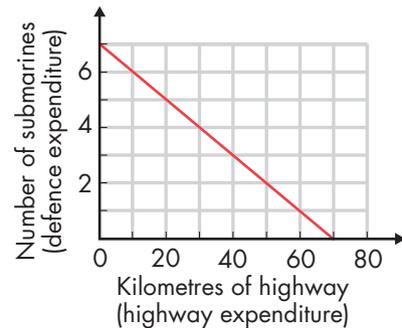


FIGURE 1.15

- What is the opportunity cost of one submarine?
- What is the opportunity cost of 30 km of highway?
- What other information would you need in order to decide on the best combination of defence spending and highway construction?

1.6 Inquiry topics

Select one inquiry topic from the list below (or create your own) and, following a selected inquiry model such as the economic model for problem solving, conduct an inquiry that can be presented to your class.

- Why might some products disappear from the market? Make a case study of one or more products (e.g. vinyl records and VHS video players), and, through economic analysis, decide why these products have failed or been replaced.
- Should the federal government introduce a tax (toll) to fund major upgrades of the national highway system? Analyse the strengths, weaknesses, and challenges of such a toll. Determine whether such a tax should proceed by applying criteria to arrive at a decision.
- Economic systems are constantly changing; that is, they are dynamic. Why do you think economic systems change, and give examples of recent world events. Can an economic system ever be static?
- Imagine you are Z Gambie, President of the newly independent nation of Latafrasia. The parliament of your country has given you the task of recommending the economic system that nation should adopt. Write a brief report to the parliament outlining your choice of economic system, explaining how you would go about deciding how the basic economic functions should operate.

You can find answers to selected review questions within this chapter on NelsonNet.



Review of
Chapter 1
answers



Getty Images/Betsy Van Der Meer

2

Economic flows

Circular flow of income, GDP, aggregate demand and supply and the business cycle are essential components of the economy.

Focus questions and inquiries

- What role do individuals, households and businesses play in the Australian economy?
- What is the relationship between different sectors of the economy?
- How is the circular flow of income reflected in the real economy?
- What causes change to the size of the circular flow?

To provide a basis for answering such questions and carrying out such inquiries, this chapter will examine the following:

- the five-sector circular flow of income model
- the components of aggregate demand and aggregate supply
- impacts on the size of the circular flow
- the role of government in the size and structure of the circular flow.

2.1 The circular flow of income model

CONCEPTS



Consumption expenditure: the total spending on goods and services by the household sector

Disequilibrium: a situation in the circular flow where injections do not equal leakages, causing fluctuations in output, income, expenditure and employment

Economic model: a simplification of a complex situation in the real world, usually represented in the form of a diagram, graph or mathematical equation

Exports: goods or services sold to foreign countries

Imports: goods and services purchased from foreign countries

Income: payments to households in the form of wages, rent, interest and profit

Inequality: a relative concept concerned with differences in welfare, such as in income, wealth and opportunity

Injection: an inflow of expenditure into the circular flow of income

Investment: spending either on new assets or additions to stocks used in the production process

Leakage: an outflow of expenditure from the circular flow of income

Production: the process of combining land, labour, capital and enterprise to provide goods and services in an economy

Savings: that part of present income that is not spent on consumption, but set aside for future use

Sectors: divisions of the economy in the circular flow of income model

Subsidies: grants made by the government to industries whose survival is considered to be beneficial to the public, to enable them to compete with imported goods

Taxation: a method of financing government activities that involves compulsory payments to the government by individuals, companies or other organisations; usually based on income earned, and goods and services sold

Welfare: a measure of how well off people are from both a quantitative and a qualitative point of view

KEY IDEA

The circular flow model demonstrates important relationships between sectors in the Australian economy and can assist in explaining and forecasting changes in the levels of economic activity.

The Australian economy, in common with all national economies, is complex. It has a large number of individual consumers and business firms, while governments, financial institutions and overseas transactions play an important role. It is therefore convenient for study purposes to divide the economy into different **sectors**. In Australia's national accounting system, these sectors are identified as:

- the personal or household sector
- the business sector

- the financial sector, which includes the banks
- the public authorities or government sector
- the overseas, external or foreign sector.

All persons are consumers, even though they may not be producers in the economic sense. Business firms bid for the productive services (labour and skills) of the consumers, and at the same time produce goods and services for consumption by consumer households. In addition, business firms provide consumer households with **income** payments in the form of wages, rent, interest or profit, in return for resources and services provided. The households, in turn, spend most of their income payments (money) on the goods and services produced. This completes a circular flow of both goods and services and of money, as shown in Figure 2.1.

This simplified two-sector model helps us understand the operation of the Australian economy and what determines the value of all that is produced in the economy.

Such an **economic model** is a simplification of reality because, first, the real world is too complex and, second, it groups decision makers into sectors according to common characteristics. Once the model has been established and its operation explained, we can work towards a closer approximation of the real-world situation.

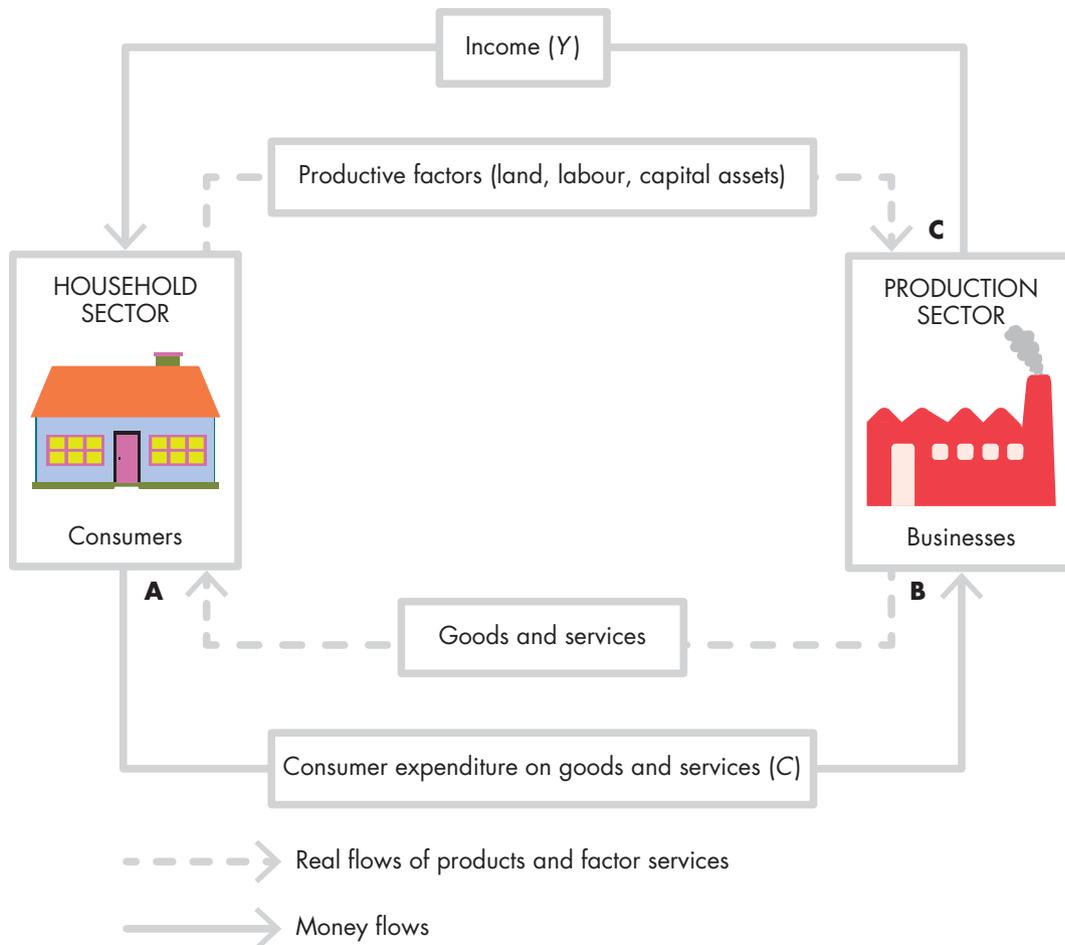


FIGURE 2.1 The two-sector circular flow model

2.1.1 The two-sector economy

KEY IDEA

When consumer demand increases (an increase in total expenditure), an increase in total income results, and this finances greater expenditure, which leads to an increase in production.

The household sector

The household sector consists of the basic consuming units within the economy, but it is also the source of supply of the specialised labour force that is required by firms, and the capital resources needed for **production**.

Some of the units in this sector have a dual capacity within the economy; farmers are generally sole traders operating their farming businesses for a profit, but they are also the customers buying the products of other firms to satisfy the wants of their own households. In other cases, several members of various households own partnerships, and companies may be owned by hundreds or even thousands of shareholders.

In practice, we must distinguish a firm from its owners. A firm is a productive unit set up to supply goods and services, while from the households come the labour, management ability and money capital necessary for the firm to engage in production. In return for their contribution, householders receive monetary income in the form of wages, rent, interest or profit, which allows them to be consumers of the goods and services produced by firms.

The business sector

Business firms are the basic productive units in the economy. Most of the production of goods and services is in the hands of private firms, which are motivated by the desire to maximise their profits by producing goods and services for sale in the market. While their own self-interest is the guiding principle, they must operate within the economic and legal framework laid down by governments.

The business sector includes all those enterprises that are either incorporated (companies) or unincorporated (partnerships and sole traders), as well as government enterprises that are operated to make a profit, such as the state railways. All business enterprises are engaged in either the production or sale of goods, or in the provision of services.

Having established the model, we are able to draw some conclusions from it. For simplicity we will only deal with the money flows. All income is spent and everything that is produced is consumed. All production generates income for those who produce it and all expenditure is income for those who receive it. One important conclusion can be drawn from this: total income is equal to both total production and total expenditure. The reason for this is that we are looking at the same money flow but at different points in the diagram. At 'A' it is called expenditure; at 'B' it is called value of production or output (measured in economics as gross domestic product, or GDP); at 'C' it is called income.

Total income = total product = total expenditure.

Using symbols, this can be expressed as:

$$Y = O = E$$

where	Y	=	total income (\$)
	O	=	total output (product) (\$)
	E	=	total expenditure (\$)

As all income is in a continuous flow, the economy is said to be in equilibrium.

Intermediate goods in the circular flow

Having used our simple model to establish this fact, we can now begin to work towards a more realistic situation. In assuming that no intermediate goods were produced and, therefore, all goods and services produced were sold directly to consumers, we neglected the fact that the output of one producer may be the input of another. For example, steel produced by Bluescope Steel is not sold directly to consumers but to other producers who will use it to produce final consumer goods, such as ships and washing machines. In some cases, there may be many stages of production before a finished or final commodity reaches the consumer. This presents problems in measuring the value of total product, as we will see later. If we included the total output of all producers, we would be counting the value of this output two or three times. For the moment, we will simply include all transactions involving intermediate goods as exchanges that occur within the business sector. The goods and services that flow out to consumers are final goods and services. They are the result of all earlier production stages and so are used to measure the value of production.

2.1.2 The three-sector economy

KEY IDEA

There is a strong link between savings and investment. If householders can reduce their demand for consumer goods and increase their savings, resources can be released from the production of consumer goods and redirected to the production of capital goods. In this way the country's stock of physical capital can be developed and living standards can be increased in the long term.

Savings in the circular flow

In our simple model we assumed that there were no **savings**; that is, all income earned was spent. This is obviously unrealistic and creates a completely static economy in which there is no possibility of **investment** and growth. We will now relax this assumption and see how our model changes with the introduction of saving. Note that we are still considering an economy with no government or foreign sector. We will restrict our discussion to consumer savings, although businesses also save. This means that less of the income as profit is paid to the household sector. The resulting effect on household expenditure is similar to consumer savings.

Savings is the term for income not spent on consumption and represents a **leakage** from the circular flow. Unless this gap is plugged, a situation arises in which producers will not be able to sell all their production to consumers. For example, if producers create \$100 worth of income (wages, rent, interest or profits) for householders but householders save \$20 and spend only \$80, the producers are left with \$20 of unsold product. If this occurs, producers will not continue to produce \$100 worth of final consumer goods.

The leakage or gap can be offset by another expenditure **injection** into the circular flow. This injection takes the form of investment expenditure. Investment expenditure may be either expenditure on capital equipment or an increase in the stocks of unsold consumer goods and services not intended for present consumption. These are final goods, not intermediate goods, but they are final investment goods rather than final consumer goods; for example, bakers' ovens rather than bread, or aeroplanes rather than holiday trips. The capital market (i.e. banks and non-bank financial intermediaries, such as credit unions and insurance companies) makes the savings available for investment in production. Using our simple example, production can still remain at \$100, even with savings, but what has

happened is that the composition of production and expenditure has changed. There is \$80 of **consumption expenditure** and \$20 of investment expenditure – or \$80 worth of consumer goods and \$20 worth of capital or investment goods. Producers can make a profit producing bakers' ovens, just as they can make a profit producing bread. Savings finances the investment expenditure. The leakage gap is plugged.

The receipts of producers are now made up of expenditure on consumer goods and services, and investment expenditure. Businesses in the production sector borrow the accumulated savings and purchase capital goods (investment) from other producers within the production sector. The diagram is simplified by not showing borrowings flowing into the production sector and coming out again as investment expenditure on capital goods from the production sector.

Household income (Y) is now represented by consumption expenditure (C) and savings (S):

$$Y = C + S$$

Production or output of firms (O) can be either in the form of consumption goods and services (C) or investment goods (I), hence:

$$O = C + I$$

From this, it can be deduced that $S = I$.

If the economy is in equilibrium, we have the following:

$$C + S = C + I$$

However, if business investment does not match household savings, then the level of income in the economy will vary and the economy will be in **disequilibrium**, the normal state of the economy. The **inequality** of savings and investment causes fluctuations in the level of economic activity – the level of expenditure, output produced and income earned.

The financial sector

The financial sector comprises mainly banks, which provide the day-to-day requirements of the community for exchange, borrowing and lending, and the central bank, which is responsible for issuing notes and coins and controlling the supply of money.

Other financial intermediaries, such as the short-term money market, insurance offices, building societies, finance companies and credit unions, provide a variety of specialised financial services. They make it easier for households and businesses, governments and overseas enterprises to borrow and lend money to one another, thus increasing the volume of the circular flow.

Households are often able to raise their living standards in the long term if opportunities for saving (deferred consumption) are available. They are able to provide for such things as retirement (through life insurance and superannuation), education and holidays. Similarly, opportunities exist for them to increase consumption by borrowing, which can also raise living standards in the short term.

Likewise, businesses depend very heavily on funds that the financial intermediaries make available. The establishment of a business or its subsequent expansion may be conditional upon obtaining access to funds. This is due to the considerable time that may be involved before there is a cash flow into a business from the sale of its output. Businesses also add to their profits by lending their surplus funds to financial intermediaries until they are required.

ECONOMICS IN ACTION



Using a production possibility curve and what you have learnt about savings and investment, explain why poor countries in the world tend to stay poor and rich countries tend to stay rich.

2.1.3 The four-sector model

KEY IDEA

The government may seek to influence or regulate economic activity by intervening in the operation of the circular flow.

The discussion so far has been confined to the household, production and financial sectors. In the real world, governments exert an important influence on the activities of both consumers and producers. In order to make our model more realistic, we will include the government sector in our discussion. This gives us a four-sector circular flow, as shown in Figure 2.2. Now we can proceed to explain the workings of this expanded model.

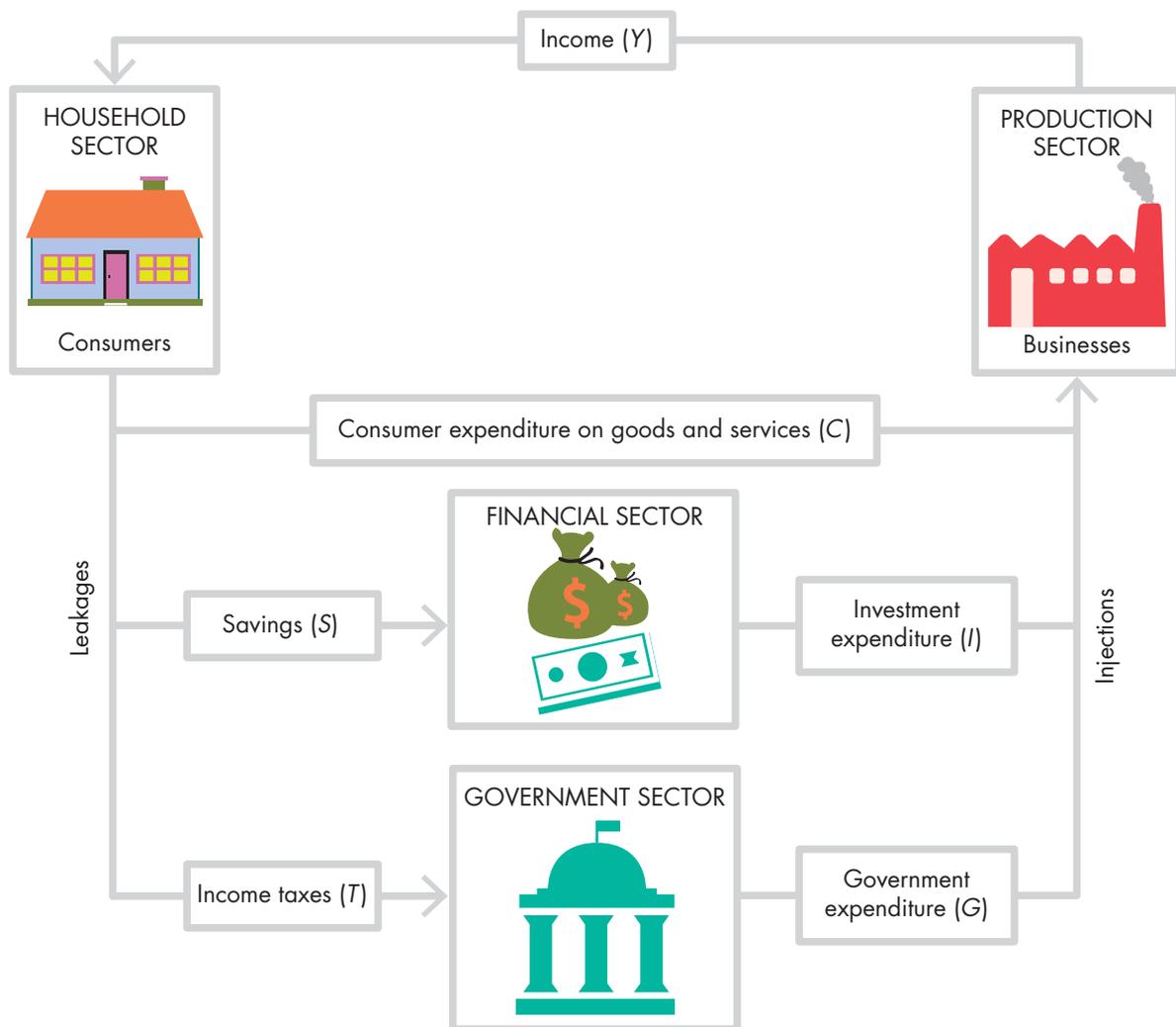


FIGURE 2.2 The four-sector circular flow model

The government sector

When speaking of the government sector in the circular flow, we are referring to all three levels of government – federal, state and local – as they occur in Australia. This includes government departments that provide collective goods and services, such as defence, schools, hospitals and flood mitigation programs.

- The government fits into the circular flow as a receiver and spender of income in much the same way as the sectors already considered. However, government influence on the circular flow goes far beyond this basic role.
- The government receives income from both the household sector (including income tax, GST, excise tax and rates) and from the business firms sector (company tax and payroll tax). Part of this income is used to provide the essential, collective, not-for-fee goods and services, such as roads, railways, schools and hospitals, which are necessary for the smooth functioning of the economy.

If the economy is in equilibrium, then the following will exist:

$$C + S + T = C + I + G$$

where T = taxation

G = government expenditure

- It is not necessary that $S = I$ or $T = G$. It is the combined totals that have to be equal.

The government also has a major influence on the circular flow through its various economic management policies. These policies will bring about changes in the money flows within the economy. Examples of policies that have such effects:

- **monetary policy:** applied by the Reserve Bank to bring about changes in aggregate demand by influencing the supply and cost of funds available through the financial system. If there is a need to contract the economy, then monetary policy can be used to reduce the supply of money in circulation and this leads to an increase in interest rates.
- **fiscal policy:** refers to the government's use of budget deficits or surpluses. This affects the aggregate level of spending, either by changing the net income of the individual or the firm through **taxation**, or by adjusting the level of government spending. In so doing, the government can attempt to maintain the **welfare** of society and to counteract problems such as excessive inflation or unemployment.
- **external policy:** influences the levels of **exports** and **imports**. This can be in the form of changes to tariffs, **subsidies** and exchange rates to influence international payments or receipts by modifying the prices of exports or imports.

The government has become increasingly involved in providing assistance in various forms to the business and household sectors.

In the business sector, the most significant assistance that the government arranges for producers is tariff protection against cheap imported goods. Other assistance includes direct government contributions to industrial and agricultural research, trade agreements, taxation concessions and public investment in marketing facilities. Subsidies are provided out of government funds for a variety of industries.

In the household sector, besides the actual financial assistance given to members of the community in the form of social service payments, the government also helps protect consumers by legislation. This outlaws such practices as resale price maintenance and other restrictive trade practices. Resale price maintenance restricts the price competition of firms when the supplier of goods determines the price at which retailers must sell the product. The Australian Competition and Consumer Commission, the Office of Fair Trading and the Queensland Civil and Administrative Tribunal are further agencies for government activity in the area of consumer protection.

In the community, the government is also in a position to supply a variety of collective goods and services, which, for various reasons, individual firms are not prepared to supply to

the community. These collective goods and services take the form of social overhead capital (SOC) such as roads, railways, libraries, hospitals, power stations and communications, which are essential for the successful operation of a modern, developed economy.

2.1.4 The five-sector model

It is now time to relax the last of our simplifying assumptions. In our analysis so far, we have been considering a closed economy with no foreign trade. This is unrealistic, particularly in the case of Australia, where goods and services bought and sold overseas have a large and important influence on domestic production. In order to prevent the circular flow diagram becoming so complicated that it defeats its purpose, we will assume that only the household sector imports. Of course, the business and government sectors also import. Our focus, however, is to show how the foreign sector may influence the level of domestic business production by causing leakages and injections in the expenditure flow.

The foreign or external sector

The foreign sector represents another set of leakages and injections in the circular flow and, therefore, another opportunity for loss of equilibrium or balance. Leakages take the form of payments for imports. If consumers spend money on goods and services produced overseas, they are satisfying their wants, but this spending does not encourage domestic production. Injections consist of payments received from overseas buyers of exports. Export receipts do not come from the income of domestic residents, but they do encourage domestic production. The impacts of these leakages and injections are shown in Figure 2.3 below.

For the economy to be in equilibrium, the following needs to occur:

$$C + S + T + M = C + I + G + X$$

where M = imports
 X = exports

It is to Australia's advantage to maintain at least a balance between export receipts and import payments. Householders can have considerable influence on this through their pattern of consumption of goods and services. Through its trade policy, the government attempts to ensure that Australia's export receipts exceed import payments, and that capital inflows and interest payments remain at acceptable levels. The government also tries to ensure that our balance of payments – between Australia and the rest of the world – leaves us in a viable position without excessive foreign debt.

QUESTIONS

- 1 What do each of these symbols stand for: C , S , T , M , I , G , X , Y ?
- 2 Why is it necessary to make assumptions when developing a model in economics?
- 3 How does a leakage of savings result in the circular flow becoming smaller?
- 4 How do financial institutions serve as a link between savings and investment?
- 5 What will happen if $S > I$?
- 6 What will happen if $S < I$?
- 7 What conditions are necessary for equilibrium in the four-sector model?
- 8 What will happen, assuming $S = I$, if $T > G$?
- 9 What is an open economy?

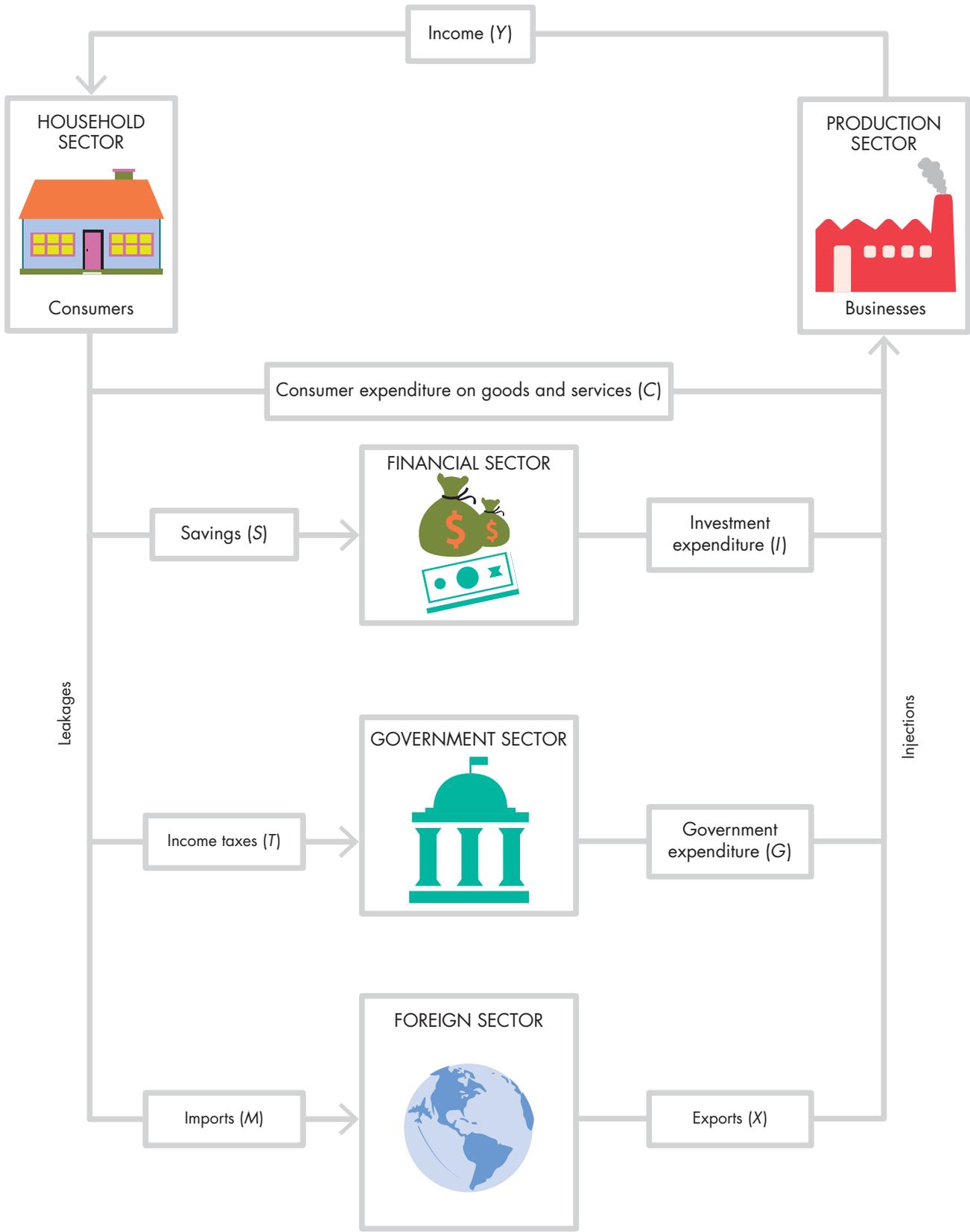


FIGURE 2.3 The complete circular flow model



Review your understanding of the circular flow of income by viewing the Tutor2u presentation on this topic.



Tutor2u Circular flow model

2.1.5 Usefulness of the circular flow model

CONCEPTS



Consumer price index (CPI): measures changes in the average level of prices of goods over a certain period

Current account: measures the inflows and outflows of money resulting from buying and selling goods and services, and from earning income, in the international marketplace

Equilibrium: a situation in the circular flow where injections equal leakages,

causing output, income, expenditure and employment to remain unchanged

Gross domestic product (GDP): a measure of the monetary or market value of goods and services produced in an economy in a given period (usually one year) after deducting the cost of intermediate goods and services used in their production

Unemployment: the state of being out of work or not having paid employment

KEY IDEA

Measurement of the flows between sectors of the circular flow model is fundamental to an understanding of how Australia attempts to solve the economic problem through a mixture of both private and public decision making.

By using the circular flow model we have been able to gain a simplified picture of the working of the Australian economy. A simplified model enables us to see clearly the interdependence of the various sectors of the economy, and the flows between them. We can see how the decisions of producers will, by means of the circular flow, affect the income and the future decisions of the household sector, the government sector and the foreign sector. The model can help demonstrate the following:

- markets that affect the levels of production
- expenditure and income flows that affect the levels of production
- factors influencing the decision makers in the various sectors.

Flows of money from the business sector represent income paid to householders for their labour, while flows of money from the household sector to the business sector represent expenditure by consumers in exchange for goods and services. In the simple two-sector model, these two flows are equal because what is earned in income is spent in consumption.

If the model is expanded and made more like the real world, then some of the householders' money can leak out of the system to the financial sector (as savings), to the government sector (as taxation) and to the overseas sector (as payment for imports) – these are called leakages.

Also, money can be injected back into the circular flow from the financial sector (as investment funds for firms), from the government sector (as government expenditure on goods from businesses) and from the overseas sector (as receipts for exports) – these are known as injections.

ECONOMICS CHALLENGE



Use the Internet to find the size of Australia's GDP for the last five years. Once you have found these, graph these figures using a bar graph or a line graph. What is the trend for Australia's GDP?

For the economy to be in balance, or **equilibrium**, total leakage flows should equal total injection flows. This does not often happen in the real world and the amount of money in circulation (the money supply) may expand if total leakages are less than total injections. On the other hand, the money supply may contract if total leakages are greater than injections.

The circular flow model provides economists with an insight into what determines the level of total national production: **gross domestic product (GDP)**. It shows the total expenditure – that is, $C + I + G + X$ (consumption expenditure plus investment expenditure plus government expenditure plus export expenditure) – by each of the sectors and plays an important role in determining how much the business sector will be willing to produce.

Like any good economic model, it not only gives an explanation of what determines the national product, but also helps us to understand what would happen if certain variables were changed. So, it can provide ideas as to how the government could attempt to manage total economic activity to achieve certain economic objectives. The government has economic objectives such as:

- **stability of prices** (low inflation, measured by the **Consumer Price Index**, or CPI)
- **low unemployment** (measured by monthly unemployment figures)
- **economic growth** (measured by the change in GDP)
- **stability in international transactions** (measured in the balance of payments figures).

For example, suppose there is large-scale **unemployment** because the business sector has cut back production. The government can attempt to stimulate production by stimulating aggregate expenditure (made up of C, I, G and X). The government needs to stimulate one or more of the flows. One possible policy is for the government to cut income taxes. This would reduce the leakage from the expenditure flow, as well as encourage more investment and give the household sector more disposable income to spend. C and I would rise, with more expenditure flowing to domestic production. The business sector may respond to this increase in expenditure by producing more goods and services. To produce more, it employs more people and so reduces the unemployment problem.

Alternatively, if the quarterly CPI figures indicate that the level of inflation is unacceptably high, the government may, in conjunction with the central bank (the Reserve Bank of Australia), seek to increase interest rates. This may encourage householders and business people to invest less money and to save more. This would result in a contraction of the economy through a leakage of funds from the circular flow of income and, all other things being equal, a reduction in the rate of inflation.

Another real-world example of how the government may intervene in the circular flow of the economy is if the foreign sector is in imbalance. Suppose that money flowing out of the economy in payment for imports was unacceptably higher than receipts for exports. This would represent a leakage from the circular flow and could result in a deficit in the **current**

account of the balance of payments. Unless the government does something, a sustained current account deficit could result in a decrease in the standard of living of Australians or a need to borrow from overseas and so contribute to the foreign debt. The government may decide to intervene and assist Australian exporters with subsidies or restrain importers by imposing trade restrictions such as tariffs. In the short term, all other things being equal, the leakage from the circular flow may be stemmed.

QUESTIONS

- 1 What is the use of economic models?
- 2 Why is the financial sector sometimes not considered to be one of the sectors in the circular flow model?
- 3 Why is it important for Australians to increase savings?
- 4 Why might the government wish to influence the circular flow of the economy?
- 5 What options does the government have to influence the circular flow of income?

ECONOMICS CHALLENGE



The table below presents circular flow of income data for six economies.

FIGURE 2.4 Circular flow data for economies A to F

Money flow	Economy					
	A (\$m)	B (\$m)	C (\$m)	D (\$m)	E (\$m)	F (\$m)
Consumption	80	200	100	500	300	1000
Savings	20	50	30	100	60	300
Taxes	10	10	15	60	80	200
Government spending	20	20	30	50	120	200
Imports	30	—	40	100	70	180
Exports	20	—	30	105	60	240
Investment	20	60	25	50	80	250

For each economy, calculate the following:

- 1 number of sectors
- 2 budget deficit or surplus (hint: the budget outlines taxation revenue and government spending)
- 3 balance of payments surplus (hint: exports minus imports)
- 4 total leakages from the circular flow
- 5 total injections into the circular flow
- 6 state of the economy (hint: is it in equilibrium, expanding or contracting?).

2.2 Aggregate demand

CONCEPTS



Aggregate demand: the total expenditure on the goods and services produced in an economy in a period of time

Consumption expenditure: the total spending on goods and services by the household sector

Disposable income: the amount of income available to an individual after payment of tax

Government expenditure: the total spending on goods and services by governments at local, state and national level

Net exports: the income earned by exports less the spending on imports into Australia

Private investment expenditure: the purchase of new equipment and plant, buildings and vehicles to increase the ability to produce goods and services

KEY IDEA

Economists use measures of aggregate demand to show how demand factors interact to change the overall level of economic activity within the economy.

If the demand for goods and services never changed or varied, then the economy would essentially stay in equilibrium. However, this is unrealistic. In reality, the assumptions made in the circular flow of income model are not likely to ever occur.

The constant change in demand from households (consumption), business (private investment expenditure), governments (government spending on goods and services) and export demand (exports minus imports) means the economy is seldom, if ever, in equilibrium. There are always leakages (savings, taxes and imports) and injections (private investment demand, government demand and export demand).

Aggregate demand is calculated by adding **consumption expenditure** by households, **private investment expenditure** by firms or the production sector, **government expenditure** and **net exports**.

This can be expressed as:

$$AD = C + I + G + (X - M)$$

2.2.1 The determinants of aggregate expenditure

Economists study the changes in the level of aggregate demand and why they vary so that the level of economic activity can be explained and managed. To do this, it is necessary to understand why each of the components may vary over time.

Factors affecting consumption spending

There are several factors that determine how much households will spend on goods and services for consumption. Our needs for basic items will come first. Basic items that need to be covered include food, clothing, housing and education, while how much we spend on luxury items such as new cars and durable goods (e.g. electric goods) will be influenced by

factors such as income, wealth, borrowing capacity and consumer feelings about the state of the economy.

The level of **disposable income**, or how much consumers have to spend, is the main factor affecting the size of consumption spending. The higher the level of disposable income, the more likely it is that consumers will demand more goods and services.

The interest-rate level affects the cost of credit: the higher the rate, the more interest that needs to be paid on items purchased by credit. The lower the rate, the more households are likely to spend, as the opportunity cost of expenditure falls.

Consumer expectations of the future affect the level of aggregate demand. If consumers are confident of the economic future, they will tend to spend more. If consumer feelings or sentiment is not so positive, then spending may be more restricted.

Government policies, such as taxation and health costs, affect the price of some goods and services.

Factors affecting investment expenditure

Aggregate private investment can change considerably. The business sector invests more when there is confidence in the future of the economy, and less when economic conditions are not so good. Businesses endeavour to minimise risk, or the loss on their investment.

When a business borrows to invest, the rate of interest will be a determinant of when and how much investment is undertaken. When interest rates are high (i.e. the price of borrowing money is high), there is likely to be a lower rate of private investment expenditure.

Business expectations are what the firm thinks about the current economic conditions, likely future conditions and the effect these have on profitability. If business expects future sales to be positive, it is more likely to invest than if sales outlooks are gloomy.

Government policies relating to taxation, incentives to businesses, subsidies and other similar policies affect business decisions, and may encourage or discourage business investment. An example would be a government decision to allow taxation incentives for investment in technology to improve production and reduce production costs.

Ultimately, businesses make decisions to invest based on perceived profitability. If a business believes investment will increase profitability, then it will invest.

Factors affecting government expenditure

Governments provide many essential services such as health, education, social welfare and defence, and expenditure on these items does not vary much. However, some items of government expenditure vary as economic conditions change (e.g. an increase in unemployment benefits may occur when unemployment levels rise).

Sometimes government policies require additional spending, such as following a natural disaster in Australia or when the government makes a deliberate policy change such as lowering income tax on businesses.

Factors affecting net exports

The economic conditions around the world affect our exports. Agricultural exports depend on world seasonal conditions. A drought overseas may increase our exports; a drought in Australia may decrease them. Strong performing economies may need our mineral products (e.g. China and India because of strong growth in their domestic economies).

Economic conditions in Australia will determine the size of our imports. When our economy is growing strongly, we tend to import more from overseas.

The exchange rate for the Australian dollar also affects net exports. If the Australian dollar falls in value, our imports become more expensive and our exports become cheaper. The reverse situation applies when the dollar increases in value.

QUESTIONS

- 1 What is aggregate demand and how do economists measure this?
- 2 Explain the meaning of private investment expenditure and why it is important for economic growth to occur.
- 3 Explain how the level of consumption expenditure affects the size of GDP.
- 4 List the factors that affect the size of consumption expenditure, and give two examples of this.
- 5 Describe the factors that determine the level of private investment expenditure.
- 6 How might the federal government influence private investment expenditure? Give an example of such a policy.
- 7 Economic conditions affect the size of government expenditure. State one example of how conditions would cause a change in the level of government expenditure.
- 8 Explain how the level of net exports is affected by climatic conditions and the exchange rate for the Australian dollar.

2.3 Managing the flow of income

CONCEPTS



Boom: phase of the trade cycle where the general level of economic activity is above average; it is characterised by full employment and inflationary pressure due to demand being in excess of supply

Downswing/contraction: the slowing down in aggregate output and income levels due to a rise in uncertainty

Paradox of thrift: people try to save more in times of recession, which leads to a fall in both aggregate demand and in economic growth

Recession/trough: the general level of economic activity is below the economy's potential and is characterised by high unemployment, reduced level of inflation and low business and consumer confidence

Upswing/recovery: the economy moves into a period of prosperity and healthy business activity, characterised by increasing confidence on the part of business and consumers

KEY IDEA

The economy tends to fluctuate in a cyclical manner over time. Forecasts of the cycle phases are the basis of appropriate policy response.

From the previous discussion, you should understand that the flow of income within the circular flow varies over time, and according to economic conditions.

Most economists have tended to see fluctuations in the size of the circular flow as being part of a general series of fluctuations in economic activity known as the trade cycle, business cycle or economic cycle.

The phase of the economic cycle can be most easily explained with the aid of a diagram, as shown in Figure 2.5 and in the description below.

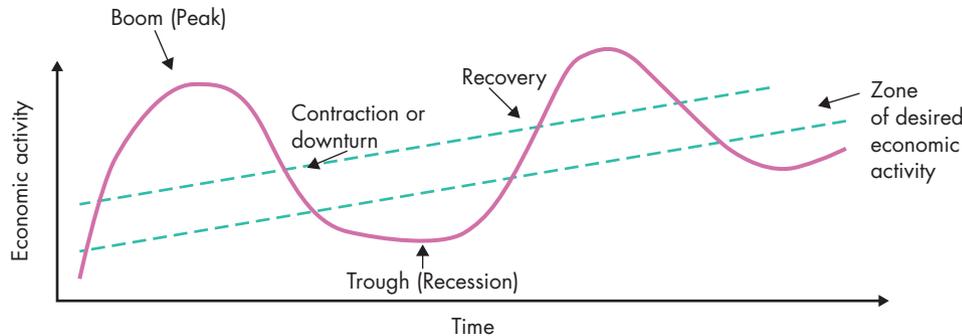


FIGURE 2.5 The trade cycle

- **Upswing/recovery:** The cycle begins with the economy moving into a period of prosperity and healthy business activity, characterised by increasing confidence on the part of business and consumers. Demand will rise, resulting in increases in production and increases in investment.
- **Boom:** As the economy nears the stage where all resources, including labour, are fully employed, the high levels of demand will cause both the price of consumer goods and services and the cost of productive resources to rise. This is the classic boom situation of full employment and inflation.
- **Downswing/contraction:** As productive resources become more costly, producers find profits are being squeezed unless they pass on cost increases as price increases for the finished product. Eventually this, plus the fact that consumers reach a point where they have all the consumer durables they need, will lead to a levelling off of consumer demand. A slowing down in the rate of increase of demand and production will lead to a slowing down of investment. The economy therefore begins to slow.
- **Recession/trough:** Once expenditures begin to fall, production falls. Income and demand also fall. This accelerates the decline in investment in an exact reverse of the upswing situation. Falling demand results in smaller profits and a smaller demand for productive resources. This could result in high unemployment. The **paradox of thrift** was popularised by economist John Maynard Keynes. It states that people try to save more in times of recession, which leads to a fall in both aggregate demand and in economic growth.

ECONOMICS IN ACTION



Visit the RBA Chart Pack to gather data for the following: retail sales growth, housing loan approvals, business investment and employment and hours worked.

Analyse each of these graphs and suggest where the Australian economy would be on the economic cycle at the present time.



RBA Chart Pack

2.4 Government intervention

CONCEPTS



Balanced budget: budget in which current revenue is equal to current expenditure, that is, $T = G$

Basis points: a common unit of measure for interest rates and other percentages in finance; one basis point is equal to 100th of 1 per cent, or 0.01 per cent, and is used to denote the percentage change in a financial instrument

Deficit budget: a budget in which current revenue is less than current expenditure, that is, $T < G$

Discretionary fiscal policy: the deliberate manipulation of government expenditure and revenue to achieve economic objectives

Fiscal policy: measures undertaken by government in relation to raising revenue

through taxation and determining the nature of government expenditure, aimed at influencing a nation's aggregate demand

Internal stability: state of the economy when there is full employment and price stability

Monetary policy: policy measures implemented through the Reserve Bank of Australia to bring about changes in aggregate demand by influencing money supply and interest rates

Public final demand: government spending consisting of both consumption and capital expenditure

Surplus budget: a budget in which current revenue is greater than current expenditure, that is, $T > G$

KEY IDEA

Government spending through the budget affects the size of the circular flow of income and assists with controlling fluctuations within the economy.

To minimise the fluctuations within the business or trade cycle, it is necessary that the government implements policies to overcome these fluctuations. Essentially any government would aim to implement policies to smooth out these fluctuations so that the impact on the various sectors' economies (households, businesses) is minimised.

The government is able to use two broad sets of policy to achieve its aim of **internal stability** (i.e. a situation where there is full employment and price stability).

These sets of policies are:

- fiscal policy
- monetary policy.

2.4.1 Fiscal policy

Fiscal policy (or budgetary policy) is the use of government expenditure and revenue to regulate the aggregate level of economic activity and influence the size of the circular flow of income. In Australia, fiscal policy is implemented primarily through the Australian Government's annual budget.

The principles of fiscal policy have been based on the assumption that the basic economic function of the budget is to control and manipulate the level of aggregate demand, so as to

achieve the government's economic objectives. The deliberate manipulation of government expenditure and revenue to achieve economic objectives is called **discretionary fiscal policy**.

Budget outcomes

The government is both a producer and a consumer in the economy. As a consumer of goods and services, it spends money to employ labour and buy resources. This government spending is known as **public final demand** (G) and consists of both consumption and capital expenditure. It is an important part of aggregate demand.

The government mainly affects the level of aggregate demand and thus the level of economic activity by adjustments in government revenue and expenditure to bring about a desired budget outcome. It does this through its taxation policy, and policy of borrowing funds, usually for capital expenditure.

These adjustments could result in a balanced, surplus or deficit budget.

A **balanced budget** is one in which current revenue is equal to current expenditure, that is, $T = G$. A balanced budget should have little effect on aggregate demand.

A **surplus budget** is one in which current revenue is greater than current expenditure, that is, $T > G$. This results in a decrease in aggregate demand and should result in a decrease in the circular flow, and hence aggregate demand, as income held is a leakage from the circular flow. A surplus budget would be an appropriate government response during an upswing in economic activity to help reduce pressure on inflation by slightly reducing the size of aggregate demand.

A **deficit budget** is one in which current revenue is less than current expenditure, that is, $T < G$. This results in an increase in aggregate demand and a net injection and should result in an increase in economic activity. A deficit budget would be an appropriate government response during a downswing or contraction in economic activity to assist in reducing unemployment.

2.4.2 Monetary policy

Monetary policy is policy measures implemented through the Reserve Bank of Australia to bring about changes in aggregate demand by influencing money supply and interest rates. It brings about changes in aggregate demand by influencing the supply of money and interest rates available to individuals and firms through the financial system. Interest rate changes are measured in **basis points**.

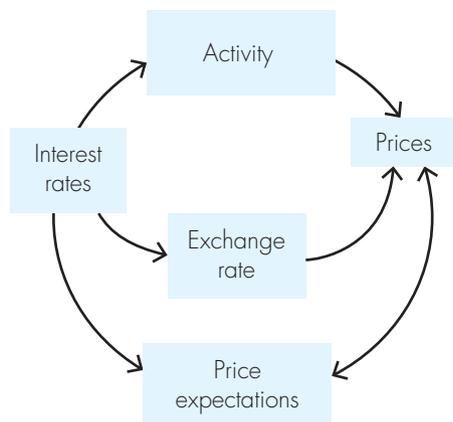


FIGURE 2.6 Monetary policy transmission mechanism

The effect of an increase in the money supply is shown in Figure 2.6. If there were an increase in money supply, then it would be likely there would be a decrease in interest rates and consequently an increase in consumption, an increase in investment and a likely increase in income. There would be an increase in aggregate demand, providing consumer and business expectations for the future are reasonable. This would be an appropriate policy during a downswing or contraction and a recession in the business cycle.

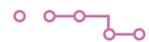
The reverse would apply if there was a decrease in money supply. In this case, interest rates would be increasing and hence a reduction in consumption, a decrease in investment and a likely decrease in income. Overall, aggregate demand would decrease. This would be an appropriate policy during an upswing or boom in the business cycle.

Monetary policy is implemented by the Reserve Bank on behalf of the federal government. If the economy is faced with inflation above the inflation target of 2–3 per cent, in the opinion of the government and the Reserve Bank, the Reserve Bank can attempt to reduce aggregate demand by increasing interest rates, reducing money supply and making credit more expensive. An increase in interest rates may adversely affect some households or consumers, particularly those with housing and other loans, as the repayments they have to make will increase. Conversely, those who have bank term deposits will gain from a higher amount of interest being paid. In the long term, the effect will be to lower inflation.

The reverse can apply if inflation is low and the government and the Reserve Bank wish to encourage an increase in spending, and hence aggregate demand.

2.4.3 Aggregate supply

CONCEPTS



Aggregate supply: the total value of goods and services available for sale in an economy in a given period of time

by the increased availability of goods and services in the economy

Economic growth: a sustained increase in the productive capacity of an economy over a specific period of time, usually indicated

Infrastructure: the basic physical and organisational structures and facilities (e.g. buildings, roads, power supplies) needed for the operation of a society or enterprise

So far we have concentrated on aggregate demand within the circular flow of income, and in particular, demand generated by consumers, businesses, government and the external sector. There is another aspect to be considered and that is aggregate supply.

Aggregate supply is the total value of goods and services available for sale in an economy in a given time period. This can affect the size of the circular flow, especially if there are insufficient quantities of goods produced and available for sale. In this case, demand would not be met. It would be necessary to improve the productive capacity of the economy to produce more goods and services. It may be that there are some under-utilised resources that can be used to do this, such as unemployed workers or land. An increase in aggregate supply to match the amount demanded will boost the size of the circular flow of the economy.

If there are insufficient under-utilised resources, then economic growth will be constrained and some demand will not be able to be met. **Economic growth** is a sustained increase in the productive capacity of an economy over a specific period of time, usually indicated by the increased availability of goods and services in the economy. For economic growth to occur,

there must be an increase in the amount of goods and services produced (i.e. there needs to be an increase in aggregate supply).

The decisions to produce more goods and services are usually made by entrepreneurs and the business sector within the economy. Should a business decide to expand its production, it will contribute to our economic growth.

The government is able to facilitate some economic growth by providing policies that help producers. There are many examples of these policies, which are mainly aimed at assisting businesses through improved supply conditions by improving efficiency, reducing costs incurred in production, and assisting businesses to be more competitive in the marketplace.

There are many examples of these policies:

- investment in **infrastructure** such as ports, railways and roads, which will assist businesses to get their product to market
- the continued expansion of technology such as the NBN, which aims to increase the speed and efficiency of the Internet
- immigration policies designed to attract skilled labour to Australia to fill domestic skill shortages; these may be permanent arrivals or short-term 457-visa workers
- increased funds for training Australian workers, such as TAFE facilities
- encouragement to have more workers enter the workforce, and encouragement to older workers to remain in the workforce (e.g. extending the age at which a worker can access the aged pension)
- tax concessions for businesses, which invest in new technology, thus expanding production.

QUESTIONS

- 1 Define each of the following terms:
 - a budget
 - b fiscal policy
 - c monetary policy
 - d deficit budget.
- 2 When, in terms of the economic cycle, might a government seek to operate a surplus budget? Explain why.
- 3 Explain the effects of a deficit budget on the circular flow of income and the economic cycle.
- 4 Name the organisation that is charged by the federal government to implement monetary policy in Australia.
- 5 How would an increase in the cash rate (interest rate) by the Reserve Bank affect the economy?
- 6 Explain how an interest rate decrease would affect the circular flow of income and the economic cycle.
- 7 What is meant by the term 'aggregate supply'?
- 8 Explain why economic growth is an aim of the Australian government.
- 9 How can the government facilitate the expansion of aggregate supply? Give two examples.

2.5 Current economic conditions affect economic flows

Economic flows within Australia are affected by the constant change in economic conditions, both within Australia and overseas. Any change in economic conditions will inevitably flow on to one or more sectors within the economy and thus the size of the circular flow and economic growth are constantly being challenged by changing conditions.

2.5.1 Factors affecting economic flows in the long term

CONCEPTS



Business confidence: the amount of optimism that businesses hold about the future of their business and the state of the economy

Consumer confidence: how optimistic consumers feel about the state of the economy and their personal financial situation

Exchange rate: the value of a nation's currency expressed in terms of the currency of another nation

Interest rate: the price paid for the use of capital, expressed as an annual percentage of the value of the capital

Productivity: a measure of the efficiency of production, expressed in terms of the rate of output per unit of inputs

Reserve Bank of Australia: the central bank within the Australian economy, which sets the cash rate and aims to maintain financial stability

Subsidies: grants made by the government to industries whose survival is considered to be beneficial to the public, to enable them to compete with imported goods

In the long term, there are several major factors that affect the flow of goods and services, and income, within the Australian economy. They will be discussed only very briefly here, as they will be the subject of major examination much later in your Economics course.

These factors are major determinants affecting economic growth in the long term:

- interest rates
- productivity
- disposable income of the Australian population
- levels of consumer and business confidence
- government policies
- rate of economic growth experienced in our trading partners
- exchange rate.

The first five of these are factors occurring within the Australian economy and the remaining two relate to the external sector of the economy.

The **interest rate** is the price paid for the use of capital, expressed as an annual percentage of the value of the capital. In other words, this is the cost of borrowing money and at the same time it is income for those lending money. In Australia, the interest rate is closely aligned to the cash rate, which is set by the **Reserve Bank of Australia**. A change in the interest rate will affect economic flows.

A lower interest rate should stimulate demand (consumers will pay less to borrow money) and business is likely to invest more as investment costs less. Hence, production is likely to increase. The opposite will happen if interest rates are increased. Consumers will pay more to borrow money and demand will decrease, and businesses will pay more to invest, resulting in lower investment.

Productivity is the amount produced per worker. If productivity were to increase, this would cause the production possibility curve to move outwards. This is economic growth because it means that more is produced using the same quantity of the resource labour. This may encourage higher exports, cheaper prices and an increase in supply. Any combination of these outcomes would stimulate growth, and increase economic flows.

The ability of the household sector to purchase goods and services is determined by disposable income. This is the amount households have left to spend after paying tax. If income tax fell or households received an increase in wages, their disposable income would increase, allowing them to purchase more goods and services.

Consumer confidence refers to how optimistic consumers feel about the state of the economy and their personal financial situation. Similarly, **business confidence** refers to the amount of optimism that businesses hold about the future of their business and the state of the economy. If businesses and consumers are optimistic, they are more likely to spend rather than save. Spending generally increases the economic flows within the economy.

We have already referred to government policy, both fiscal and monetary policy, previously. Government policy can expand or decrease the size of economic flows within the economy. **Subsidies** to a producer that enables a business to compete with imports from overseas, and an increase in the minimum wage for less skilled workers are examples of government policy. Such policies are usually designed to increase the size of the economic flow in an economy.

External conditions can also affect the economic flows within the Australian economy. Of major concern and interest to our country is the performance of our trading partners. If our trading partners, such as China, USA, Japan and South Korea, have strong economies, then their demand for resources from Australia will remain high. If they experience a downturn in their economies, then demand for our exports will fall, affecting the economic flows within our economy.

In addition, the **exchange rate** (the value of a nation's currency expressed in terms of the currency of another nation) affects economic flows. On the demand side, demand for our exports will fall if the value of our currency increases, while imports will become cheaper and hence demand for these will increase. If the value of our currency falls, demand for our exports should increase while demand for imports should increase. On the supply side, an increase in currency value should assist producers who use imported products in their production process, by reducing the cost of production.

QUESTIONS

- 1 List the factors that affect economic growth in Australia in the long term. Explain two of these in a paragraph.
- 2 Explain how factors external to Australia might determine Australia's level of economic growth.

2.5.2 Short-term effects on the circular flow

Almost daily, the size and direction of economic flows is affected by many economic events both within Australia and overseas. These change our economic conditions constantly. These can include changes to consumer and business confidence, decisions about the minimum wages level in Australia, government subsidies might change, the level of a government tax might change, or perhaps there might be a fall in production in China. There are simply too many to cover in a short consideration of them.

We will analyse just one example: consumer and business confidence measures and how changes might affect the economy.

Consumer sentiment is consistently accepted to be shown by the Westpac Melbourne Institute survey of consumers, as shown in Figure 2.7. The graph shows confidence measures fell by 3.9 per cent in December 2016 to 97.3 from 101.3 in November 2016, probably as a result of consumer concern about the state of the economy, the low interest rates, the high cost of housing and the unemployment level.

ECONOMICS DATA



RBA Chart Pack

You need to locate the most recent data for consumer confidence and business confidence. These are usually available in the Reserve Bank of Australia Chart Pack.

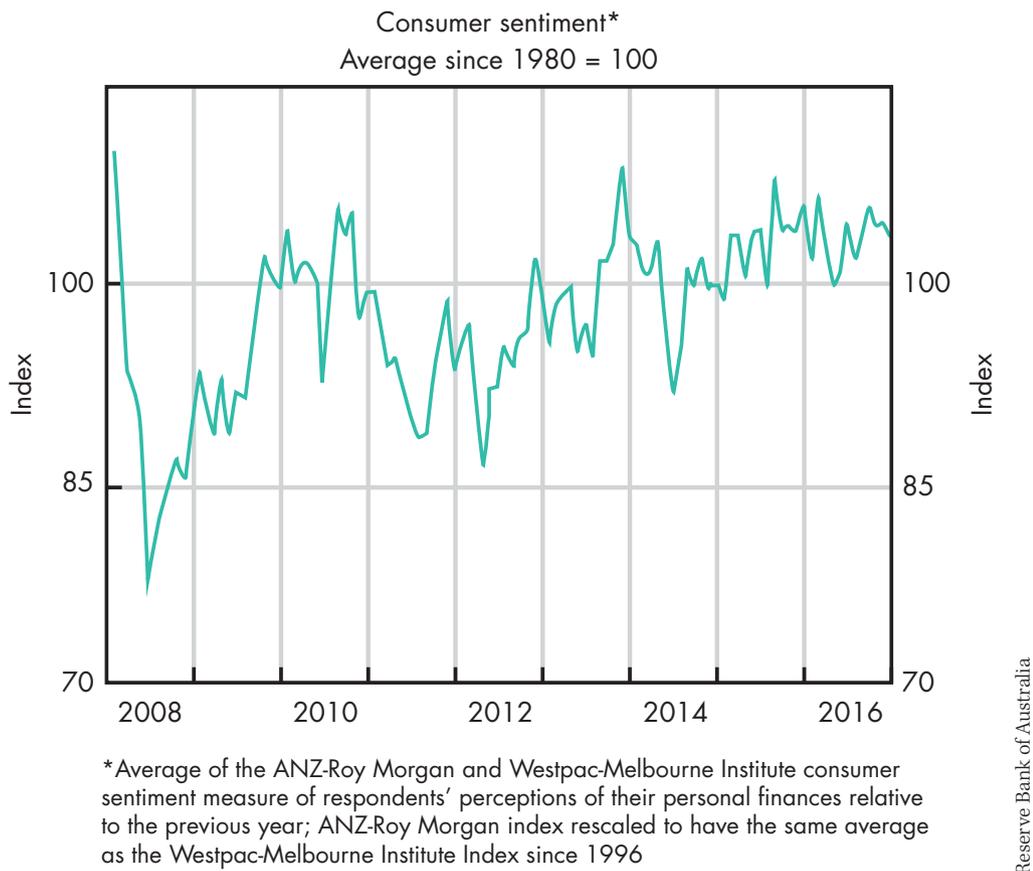


FIGURE 2.7 Consumer sentiment

The fall in sentiment in December 2016 may affect economic spending in many ways. Some of these could include:

- a tendency for consumers to save rather than spend, given the expectation that the economic future will not be as strong as it has been
- the housing market may contract a little, as consumers will be reluctant to fund major purchases, due to decline in confidence, and also the fact that banks were intending to raise home loan interest rates (not shown on the graph)

- credit card purchases may decrease as consumers will be more reluctant to increase their level of debt
- expectations for improvement in employment were low in the survey, contributing to the marked decrease in confidence. This also would restrict consumer spending.

At the same time, the Business Survey showed a decline in business confidence, as shown in Figure 2.8.

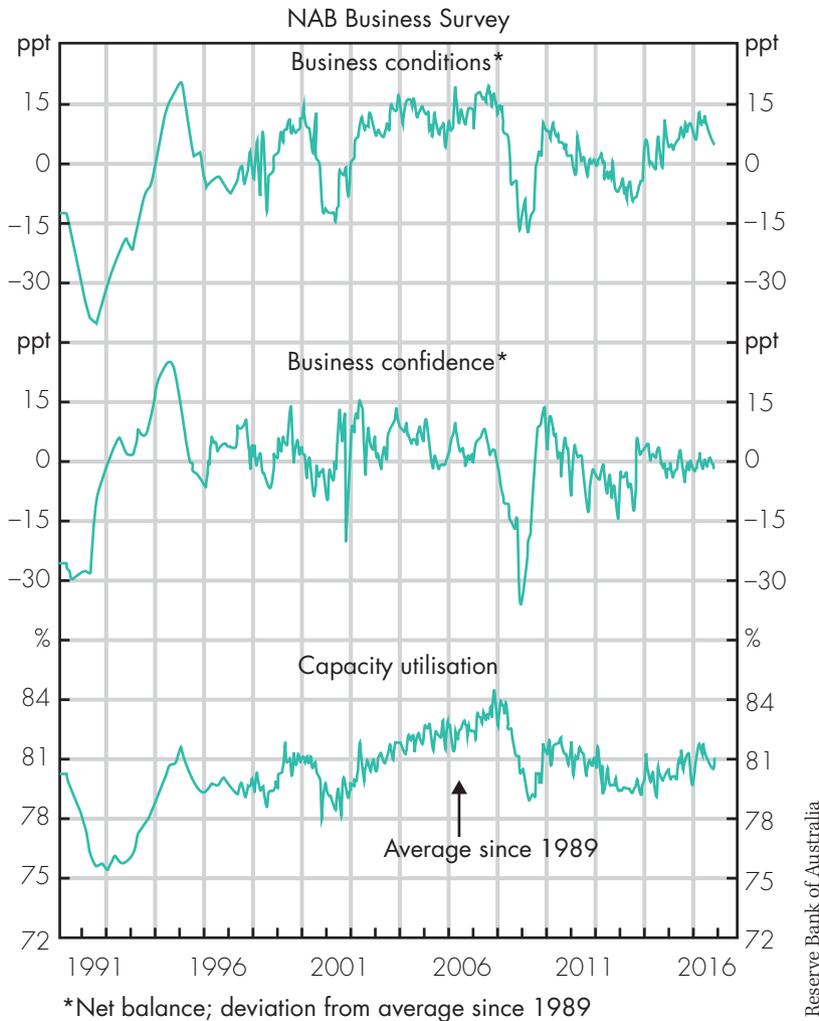


FIGURE 2.8 NAB Business Survey

This graph shows that business confidence is falling as a result of the decline in business conditions at the end of 2016. The lower level of business confidence may have the following results:

- a tendency to not invest while conditions remain relatively poor
 - a slowing in the construction sector, as both business and consumers wait for greater confidence
 - a static level of wage growth, as there is little competition for employment and other resources.
- Thus both consumer and business confidence will have the overall effect of reducing any likelihood of increase in the economic flows within the economy.

ECONOMICS IN ACTION



Locate at least two recent news items from a newspaper or news sources on the Internet (e.g. ABC News online) likely to cause a change in economic conditions.

- 1** Identify the main economic event occurring in each article.
 - 2** Name the sector/s of the circular flow of income that will be affected by the event.
 - 3** Explain how each sector will be affected.
 - 4** Identify whether each event will increase or decrease the size of the circular flow.
 - 5** Explain how each event might affect the position of Australia on the economic cycle.
-

2.1 Identifying economic activity

Where would each of the following be placed on a circular flow of income model?

- 1 interest received from a bank deposit
- 2 government aged-pension payment
- 3 purchase of fighter jets from the US by the Australian government
- 4 dividends from share investment paid to Japanese investors by an Australian mining company
- 5 the Queensland Government borrowing from overseas sources
- 6 a home loan to a married couple by a Brisbane-based credit union
- 7 credit sales of iron ore to China
- 8 incomes received by Australian tennis and golf players while playing overseas

2.2 Terminology

Answer the following questions in regard to the simple circular flow model.

- 1 What is the money flow from households to producers?
- 2 What is the money flow from producers to households?
- 3 What is the real flow from producers to households?
- 4 What is the real flow from households to producers?
- 5 Who provides the demand in the factor or resources market?
- 6 Who provides the supply in the factor or resources market?
- 7 Who provides the demand in the final goods or producer market?
- 8 Who provides the supply in the final goods or producer market?

2.3 Multiple-choice questions

Select the correct response to each of the following.

- 1 In the circular flow model, the real flow from households to producers is:
 - A wages and salaries.
 - B goods and services.
 - C factors of production.
 - D consumption expenditure.
- 2 In a circular flow model, if income is at a level where planned investment is greater than planned savings, then:
 - A total income will fall.
 - B total income will rise.
 - C total income will be unchanged but savings will fall.
 - D investment will fall.
- 3 If exports exceed imports, which of the following is required for the level of income to decrease?
 - A investment to be greater than savings
 - B injections to equal leakages
 - C the government to increase taxation so that it is greater than government spending
 - D investment by firms to be greater than household savings

Review of Chapter 2

- 4 An economic model should be rejected if it:
 - A is based on unrealistic assumptions.
 - B is a simplified version of the complex real world.
 - C generates misleading conclusions about economic behaviour in the real world.
 - D is based on an unrealistic hypothesis.
- 5 Which of the following is an injection into the circular flow of income?
 - A a growing deficit in the balance of payments
 - B an increase in taxes with government expenditure held constant
 - C an increase in household savings
 - D an increase in the level of investment
- 6 If firms produce \$2000 million worth of goods and services, households consume \$1600 million worth of goods and services, and firms want to invest \$200 million in a year, then:
 - A savings are \$400 million and stock will fall by \$200 million.
 - B savings are \$400 million and stock will rise by \$200 million.
 - C savings are \$200 million and inventories will fall by \$200 million.
 - D savings are \$200 million and stock will rise by \$200 million.
- 7 Which of the following is not an assumption of the two-sector circular flow of income model?
 - A There is no taxation or spending by governments.
 - B There is no saving by either households or firms.
 - C All items are made from high-quality materials.
 - D Firms produce only finished items for sale.
- 8 The circular flow of income model demonstrates:
 - A that the total level of income cannot change.
 - B the way income flows between different sectors of the economy.
 - C that all consumers are also producers.
 - D the flow of both intermediate and final goods and services.
- 9 In a simple circular flow where there are just firms, households and a financial sector, equilibrium occurs when:
 - A households are obtaining maximum satisfaction from their incomes.
 - B planned saving equals planned consumption.
 - C there is full employment of resources.
 - D planned investment equals planned savings.
- 10 During a peak in the economic cycle, an economy is likely to be experiencing all of the following except:
 - A growing wages pressure.
 - B lower unemployment.
 - C lower inflation.
 - D higher interest rates.

- 11 A budget deficit *ceteris paribus* will:
- A increase the size of the circular flow.
 - B reduce the size of the circular flow.
 - C will not influence the circular flow.
 - D will increase exports.
- 12 Which one of the following is a necessary condition for the national income of an economy to be in equilibrium?
- A There is full employment.
 - B The budget of the federal government is planned to balance.
 - C There is neither a surplus nor a deficit in the balance of payments.
 - D Planned leakages from the circular flow are equal to planned injections into it.
- 13 In the circular flow model of income, which of the following, everything else being equal, does not represent a leakage?
- A undistributed profits of producers
 - B government expenditure on new national highways
 - C an increase in the government budget surplus
 - D unspent income deposited by households in a bank
- 14 If savings amount to \$100, investment \$150, taxation \$200, government expenditure \$250 and exports \$100, then for the circular flow to be in equilibrium:
- A imports should be \$200.
 - B taxation should be \$250.
 - C investment should be \$100.
 - D savings should be \$150.
- 15 If, in an economy, leakages increase and injections fall, then, *ceteris paribus*:
- A the level of economic activity will increase.
 - B total output and income will decrease.
 - C businesses will find that sales increase because households have more income to spend.
 - D the government will have to consider raising taxes to make up for the lost revenue.

2.4 Short response questions

- 1 Using a diagram, explain the structure and purpose of the five-sector model of the economy.
- 2 In the three-sector model of the economy, discuss the role of the financial sector.
- 3 What is meant by equilibrium in the circular flow of income model? How can the level of income change over time?
- 4 Explain why equilibrium in the circular flow of income model occurs when $S + T + M = I + G + X$.
- 5 List the four assumptions on which the basic circular flow of income model is based.
- 6 Why will business firms reduce production as a result of savings by households?
- 7 Draw a business cycle. How is the period of upswing different from the period of downswing?

Review of Chapter 2

- 8 Describe what is meant by 'injections' to economic activity. Give an example of an injection.
- 9 What is a deficit budget and describe its effect on the circular flow of income in an economy.
- 10 Outline the effect of a decrease in the interest rate (cash rate) set by the Reserve Bank of Australia on the circular flow model.

2.5 Activities

- 1 Develop a PowerPoint teaching resource (such as a computer presentation, board game or website) to help teach a group of younger students about the circular flow of income in the Australian economy. Ensure that all the main sectors and relationships are included in your model.
- 2 Consider the following table for a three-sector economy.

Income	Consumption	Investment
20 000	16 000	10 000
30 000	24 000	10 000
40 000	32 000	10 000
50 000	40 000	10 000
60 000	48 000	10 000

- a What is the equilibrium level of income?
- b What is the level of saving at that point?
- 3 Given the following amounts, calculate the equilibrium level of income.
 - a $C = \$15\,000$
 - b $I = \$3\,000$
 - c $G = \$4\,000$
 - d $T = \$3\,500$
 - e $X = \$2\,500$
 - f $M = \$2\,000$
 - g What will be the value of saving at equilibrium?
- 4 The following data is known about Wealthyland's economy.

	\$m
Total private consumption	3000
Private investment expenditure	750
Government consumption expenditure	250
Government investment expenditure	500
Taxation	800
Exports	500
Imports	600

- a What is the net contribution to the circular flow from the foreign sector?
 - b What is the overall contribution of the government's budget to the circular flow?
 - c What effect does the budget position have on the circular flow?
 - d What is the aggregate demand in the economy?
- 5 For each of the following newspaper headlines, explain which sector of the circular flow would be affected, and outline its impact on the overall level of economic activity.
- a Increased number of Chinese Tourists visit Australia
 - b Drought in rural areas reduces numbers of beef cattle in Queensland
 - c Government income tax on low income earners
 - d Australia's last car manufacturing plant has closed
 - e Interest rate rise of 0.5% by banks following RBA's decision

2.6 Inquiry topics

Select one inquiry topic from the list below (or create your own) and, following a selected inquiry model such as the economic model for problem solving, conduct an inquiry that can be presented to your class.

- 1 What problems arise from injections and withdrawals from the circular flow model? How are these problems affected by such events as:
 - an increase in interest rates
 - a decrease in income tax rates
 - an increase in the unemployment rate
 - hosting major sporting events such as the Olympic Games
 - increases in imports of non-essential commodities?
- 2 Which is the dominant sector of the Australian economy? Investigate historical trends and changes in the flows between sectors, and suggest other investigations or processes by which this question could be answered.
- 3 If the Reserve Bank of Australia decided to increase the cash rate by 0.5 per cent at its next meeting, what effect would that have on current conditions in the Australian economy? Use graphs from the RBA Chart Pack to show where Australia is currently on the economic cycle, and outline what would be an appropriate policy for the government to adopt.

You can find answers to selected review questions within this chapter on NelsonNet.



RBA Chart Pack



Review of
Chapter 2
answers

Review of Chapter 2



3

Market forces

Demand, supply and equilibrium affect market behaviour.

Focus questions and inquiries

- What is the relationship between the price mechanism and the circular flow of income in the economy?
- Why do economists investigate supply and demand?
- How do market forces shape our economy?
- How do non-price factors shape supply and demand?
- Are free goods and services occasionally abused because they are free?
- Is the stock market an example of a typical market?

To provide a basis for answering such questions and carrying out such inquiries, this chapter will examine the following:

- the price mechanism in the circular flow
- the operation of the price mechanism
- changes in demand and supply
- the share market as an example of how a market functions.

3.1 Markets and the circular flow

CONCEPTS



Market: a place or situation where buyers and sellers interact for purposes of trade or exchange

Price mechanism: the system or process by which price changes bring about equality between supply and demand in a market

Price: the sum of money paid for goods or services in a market

KEY IDEA

The price mechanism is a major linking mechanism between sectors of the circular-flow model, and is fundamental to an understanding of how a country such as Australia attempts to solve its economic problems.

We have seen how an economic model can be constructed to simulate the two-way flow of goods and services and money between the various sectors of the economy. Each of these sectors is linked to the others by **markets** of various types; that is, by the workings of the **price mechanism**. These markets are where exchanges of goods and services take place. They are where we buy and sell things – a wide range of things – virtually everything that flows through our economy. So we can talk about many different markets. For example:

- labour markets, where labour is exchanged for money in the form of wages and salaries
- goods and services markets, where goods and services of all types are exchanged for money, including online markets
- financial or capital markets, where access to funds is arranged in exchange for interest payments.

We can also be even more specific and talk about land markets, stock exchanges, the home market, markets for cars or boats, second-hand markets, the wool market, fruit markets and so on. As individuals, workers and consumers, we are involved in many such markets in our everyday dealings. And, of course, so are businesses and governments. Markets can be local, national or international. In the modern world, they do not even have to be in a specific place. Markets and the price mechanism can operate using mail, telephones or computers to assist with making agreements and arranging exchanges.

Markets are vital in determining an economy's answer to the three basic questions an economy must solve – what and how much to produce, how to produce and for whom to produce. Markets allow consumers to show what they want to buy (what and how much to produce); how items should be produced, for example, mass-produced versus handcrafted items (how to produce) and how much producers can charge for an item (for whom to produce).

Goods are items that can be bought, such as food, clothing, toys, furniture and toothpaste. Goods are tangible objects that satisfy people's wants. A service is an action that a person does for someone else, such as haircuts, medical check-ups, mail delivery, car repair, and teaching.

ECONOMICS CHALLENGE



Draw a model of the circular flow of income. Shade in the main places where markets and the price mechanism operate in the circular-flow model. Remember that in most cases, there is a two-way flow, with money in some form flowing in one direction, and goods or services of some type flowing in the other. In each case, name the type of market involved, indicate which people and/or organisations might be involved (e.g. consumers, local businesses, international businesses, governments or financial institutions) and describe exactly what they might be exchanging.

Goods and services may be either public or private. A public good is a commodity or service that is provided without profit to all members of a society, either by the government or by an individual or organisation. A private good is a product that must be purchased to be consumed, and its consumption by one individual prevents another individual from consuming it.

Services (such as education and vaccination) provided free for the benefit of the entire society by a government, because they would be under-provided if left to market forces or private enterprise, are called merit goods.

Substitute goods are close or identical goods available for use by consumers. A good is complementary if using more of one requires the use of more of a second good. For example, the demand for one good (printers) generates demand for the other (ink cartridges).

This chapter will explore the general concept of the price mechanism and how it allows markets to work in our economy, and a specific market called the stock market, and examine how the price mechanism operates in these.

Within a market, there are both buyers and sellers. A buyer in any market comes to that market with the aim of buying a particular good or service at the lowest or cheapest **price** possible. The product or goods and services market is the market with which most people are familiar. It doesn't matter whether a consumer is shopping for groceries, a movie ticket, a mobile phone or an internet subscription, the aim is to procure the item the consumer wants at the cheapest price. In the factor markets (where factors of production are bought and sold), the same principle applies. The buyer (usually a business) aims to procure a factor of production as cheaply as possible.

Sellers on the other hand wish to obtain the best price possible for the goods or services they have to sell. Consumers wish to sell their labour for the best price and obtain the highest return in the form of higher wages. A producer sells a good or service with the aim of obtaining the highest price for the good in the marketplace.

It is obvious that both seller and buyer are unable to achieve their aim – the buyer paying the lowest price possible, and the seller maximising the price for the good or service being sold. It is important to understand that when explaining the price mechanism, it is assumed that when a change occurs in demand or supply, the *ceteris paribus* assumption applies, that is, other things remain constant.

QUESTIONS

- 1 Explain the concept of a market. Describe the various types of markets that we have access to today.
- 2 Describe how markets assist to solve the three basic economic questions.
- 3 List five items your family has purchased in the last few days. Decide which markets they were purchased in from this list: financial market, share market, property market, retail market and wholesale market.

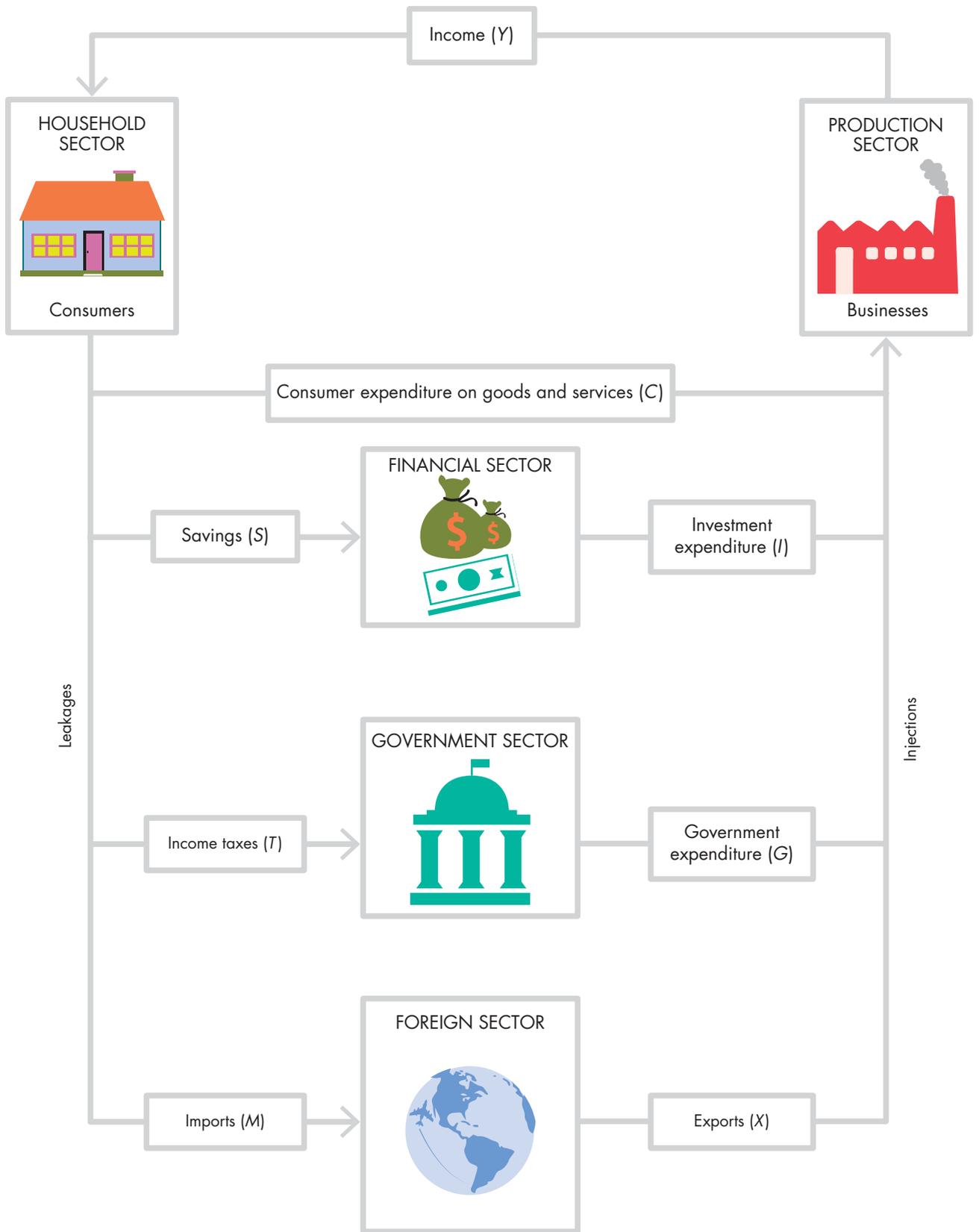


FIGURE 3.1 The circular flow of income

3.1.1 The operation of the price mechanism

KEY IDEA

In the Australian economy, the market and price mechanism provide the basis for resolving the economic problem.

If we lived in a completely competitive or unplanned economy, the price mechanism alone would determine:

- what goods and services would be produced
- what quantities of goods and services would be produced, as consumers demand some products and not others
- how the goods and services would be produced, due to the relative prices of the various factors of production, which could be combined in alternative ways with alternative cost structures
- how the production was distributed, depending on the share each individual received as income for the sale of the resources they made available for production.

In such a situation the price mechanism operates freely, without any restrictions imposed on it by either producers or the government, and price becomes the sole factor responsible for equating supply and demand.

Even in the real world, with all its imperfections, the price mechanism is still the basis on which our market operates, and the basis for resolving our economic problems.

Price is the sum of money paid for goods or services in a market, and it will be determined by what buyers are willing to pay for goods and services and what sellers are willing to accept for them.

If more of particular goods or services are produced (or supplied) than consumers are willing to purchase (or demand) at the price being asked, then either stocks will start to grow and production will have to decrease or the price will have to fall. If less is produced than consumers are willing to purchase at the existing price, either production will be increased or the price will rise. Eventually, the price of all goods will be such that the supply of them will exactly equal the quantity demanded.

3.2 The theory of demand

CONCEPTS



Demand: the quantity of a commodity that will be purchased in a market over a given time at a given price

Equilibrium: a balanced situation from which there is no tendency to change, for example, where supply equals demand in the market

Law of demand: the proposition that the quantity demanded of a good or service is inverse to the price of that good or service

Propensity: a term used to describe a person's tendency or desire to act in a certain way; 'propensity to save' is a person's willingness or desire to save

Utility: satisfaction gained by consumption of goods and services

KEY IDEA

Consumer demand is an important factor in the operation of a market.

3.2.1 Demand

The **demand** for a commodity is the quantity that will be purchased over a given time at a given price. Of course, this must be effective demand, not just desire, or even need. It must be backed by the willingness and ability to purchase.

For most items, consumers will buy less at a higher price than at a lower price. We know this from common sense, but it is also understandable because of the law of diminishing marginal utility. The **utility** we get from consuming something is measured by the satisfaction we get from it. One chocolate bar may give us great satisfaction; a second bar may still be enjoyable, but less so than the first. The utility gained from each additional bar consumed (the marginal utility) will decline. If we continued to consume enough bars, we could make ourselves ill and the marginal utility of the last bar would be negative.

The law of diminishing marginal utility helps explain how levels of demand are reached. If ice creams are priced at \$1 each, we may actually attain something like \$1.50 worth of satisfaction from consuming one. We may get \$1 worth of satisfaction or utility from a second, and 60 cents from a third. So we would not think it worthwhile to buy the third. We could get more satisfaction by buying some other product, thus increasing our total utility. In this way, consumers decide how much of each article to buy. They will buy more of each article until they equate its marginal utility with its price. When we do this for all the goods and services we wish to buy, we can say that, as consumers, we are in **equilibrium**, having achieved the optimum combination of purchases and the highest possible level of satisfaction (utility).

Consumer demand depends on wants and income. To have a demand for something, two requirements must be met: first, we must want it and, second, we must be willing and able to spend some money to get it. If these two conditions are met we have a **propensity** to buy; in other words, a demand.

If we examine the demand for a particular product (such as ice cream), we may be able to see more clearly what happens to demand.

The **law of demand** tells us that consumers will buy more of something at a lower price than they would at a higher price. For example, total demand for ice cream may be 1200 litres a day if the price is only \$1 per litre. It may be 1000 litres a day if the price is \$2 per litre. If we raise the price to \$3, we may sell 800 litres. At \$4, we may sell only 600 litres, at \$5, we may sell 400 litres, and at \$6, we may sell 200 litres. This could be shown in a demand schedule such as that shown in Figure 3.2.

FIGURE 3.2 Demand schedule for ice cream

Price per litre (\$)	Quantity demanded (litres per day)
1	1200
2	1000
3	800
4	600
5	400
6	200

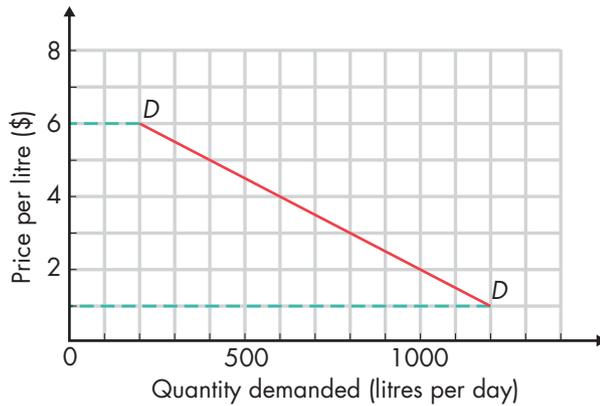


FIGURE 3.3 A demand curve for ice cream

In this schedule we can see very clearly that, as the price rises, the quantity demanded falls and, as the price falls, the quantity demanded rises. This means that the price of an item and the quantity demanded of that item are inversely related, that is, they move in opposite directions.

Such a schedule can also be shown in graphical form, and the result would represent a demand curve, as shown in Figure 3.3.

The demand curve illustrates the law of demand. It simply shows that at lower prices, people will buy more. It illustrates their propensity to buy. Naturally, demand curves will not always be a straight line but, because of the inverse relationship between quantity demanded and price, they will generally slope down to the right.

QUESTIONS

- 1 Draw a demand curve for chocolate biscuits from the following schedule.

FIGURE 3.4 Demand schedule for chocolate biscuits

Price per packet (\$)	Quantity demanded (packets per week)
2.00	1700
2.20	1200
2.40	800
2.60	500
2.80	300
3.00	200

- 2 Over time, demand and consumer preferences for particular products may change. Identify some products for which demand has increased, and some for which demand has decreased, and explain why these changes have taken place.
- 3 We identify value in terms of price. Can you account for the price of the following items?
 - a swimming pools in winter
 - diamonds
 - a day-old loaf of bread

ECONOMICS CHALLENGE



Can rats do economics?

Well, no, not exactly! But over the years they have been subjected to laboratory experiments to test some of our theories.

In the USA, researchers placed two white rats in cages and offered them 'root beer' (a soft drink) and 'Collin's Mix' (a non-alcoholic drink mix). The experimenters already knew that the rats preferred both of these to water.

The rats had to push a lever to obtain either drink. Initially the 'price' of both drinks was set at 20 pushes for each millilitre of drink. The rats were allowed an 'income' of 300 pushes per day. It soon became evident that the rats preferred root beer. The first rat drank 11 millilitres of root beer and 4 millilitres of mix. The second rat drank 15 millilitres of root beer and virtually no mix.

The experimenters then doubled the 'price' of root beer, and halved the price of the mix, by requiring more or fewer pushes of the lever. The rats were given more 'income' so they could drink the same amount as before if they wished, that is, their 'real income' remained the same.

What would economic theory tell us should happen as the price of one product is raised, and that of a substitute lowered? The rats should demand and consume more of the substitute.

And that's exactly what happened. Neither rat was prepared to pay the increased price for root beer any more, and switched to drinking more mix. Rat number one drank 8 millilitres of root beer and 17 millilitres of mix per day, and rat number two drank 9 millilitres of root beer and 25 millilitres of mix per day.

Questions

- 1 Initially, what was the price of root beer?
- 2 What was the initial price of Collin's Mix?
- 3 What was the price of root beer changed to?
- 4 What was the price of Collin's Mix changed to?
- 5 Under the new pricing policy, how much income would the first rat have needed to continue its original consumption pattern?
- 6 How much income would the second rat have needed?
- 7 Why did the researchers give the rats more income?
- 8 How much of their income did each rat use?
- 9 Explain in economic terms what happened.

3.2.2 Factors determining demand

The quantity of a commodity demanded depends on, or is a function of, many factors. The most important of these are:

- the price of the commodity
- the prices of related commodities
- buyers' incomes
- buyers' tastes
- population changes
- buyers' expectations for the future.

As we have seen, if the price of a commodity changes, the demand for it will change. It will expand or contract to different positions along the demand curve, as shown in Figure 3.5. As long as all the other factors remain constant, the curve itself will not shift. But if any of these other factors influencing demand alter, they will cause shifts to the demand curve itself.

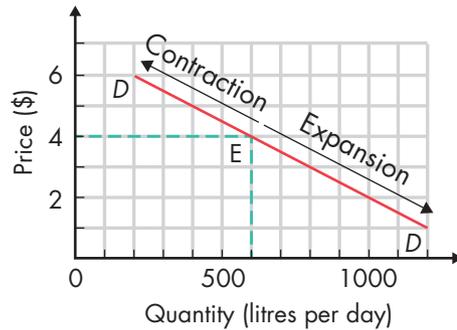


FIGURE 3.5 The effect of a change in price on the quantity demanded

Changes in the conditions influencing demand can cause more of a commodity to be demanded at the same price (demand increases) or they can cause less of a commodity to be demanded at the same price (demand decreases). These changes will be represented by a shift of the demand curve either to the right or to the left, as shown in Figure 3.6.

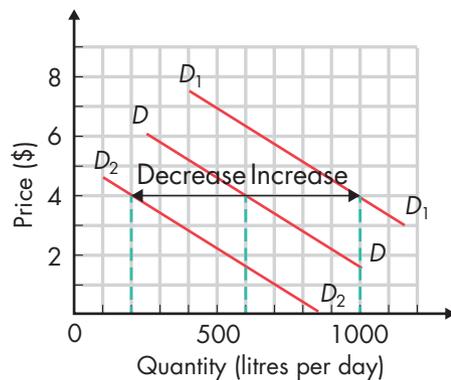


FIGURE 3.6 The effect of a change in conditions influencing demand

Some shifts of the demand curve are caused by changes in the prices of related commodities. Since all goods are really competing with each other for people's expenditure, they are all substitutes for each other to some extent. But some goods are particularly close substitutes, for example, butter and margarine. What will happen to the demand for butter if the price of margarine goes down? The demand for butter will decrease (and the demand for margarine will increase).

Goods are also related in other ways. Some goods are complementary – they go together, such as pens and paper, cars and petrol. What will happen to the demand for cars if the price of petrol goes up? This time they move together – the demand for both will decrease.

Any change in income will impel people to demand more or less of a particular commodity than they previously demanded. As their income increases, they are able to spend more on all goods; in particular, they are likely to spend more on luxury or semi-luxury items rather than on necessities. What will happen to the demand for swimming pools as incomes rise? Ice cream? What about bread?

People's tastes also change over time. Changes in social status, fashions, diet or season can cause increases or decreases in demand for certain commodities. Can you think of examples to illustrate all of these?

Demand will also change in the longer term, due to changes in the age and sex distribution of the population. This is particularly important for a country like Australia, which has a steadily ageing population. What are some of the changes this could make to demand and the composition of output?

Changes in expectations held by buyers concerning future price, levels of demand and levels of economic activity will also cause the demand for various commodities to change. What might happen to the present demand for cars if further price rises are expected after a prolonged period of inflation?

QUESTIONS

- 1 Compile a list of the factors that cause a change in demand.
- 2 Explain which factor causes an expansion or contraction in demand and why?
- 3 Explain which factors cause an increase or decrease in demand and why?
- 4 Describe the difference between an increase/decrease in demand and an expansion/contraction in demand.
- 6 Explain some of the things that might have happened to cause the situation shown in Figure 3.7 in a market for meat pies.

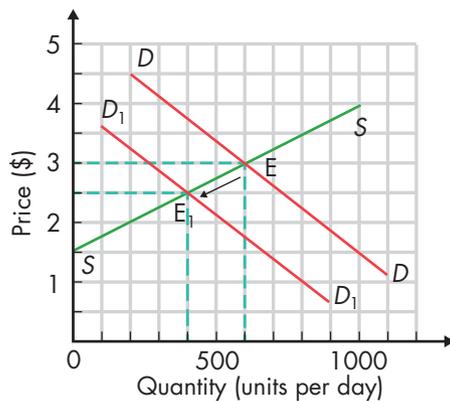


FIGURE 3.7 The market for meat pies

ECONOMICS IN ACTION



Hypothesising about pay TV

The growth of pay TV in Australia gives us the chance to investigate factors determining demand for a relatively new product.

Topic: Factors that influence demand

Objectives: To investigate demand for pay TV and the influence of income on that demand

Hypothesis: Demand for pay TV will increase with income.

Data: Data-gathering and evaluation would be best carried out in pairs or small groups.





You will need to gather data on pay TV: its introduction and its costs to the consumer. You will also need specific data on households: their income and their demand for pay TV. A brief questionnaire or interview would probably be the best way to gather this data. Care must be taken not to invade people's privacy. If they do not wish to disclose their household income, you may need to estimate this on the basis of their jobs, cars and the value of their houses.

The main question you would need to ask is whether, given the price of the pay TV service and installation, they have purchased or would purchase and use pay TV. Other questions could include the following.

- 1 Would their decision change if the price were higher or lower?
- 2 How much television do they watch?
- 3 What type of programs do they watch now?
- 4 Would they watch them on pay TV?

Other factors to consider that might influence demand for pay TV are age, sex, activities other than watching television and future expectations on price.

Testing: The above data can be used to test the hypothesis. You may find that the best way to see the data clearly is in graphical form. The most important graph would show the number of positive responses on one axis according to different income groups on the other axis. Does demand vary with income? What other factors are important?

Conclusions: Can the hypothesis be confirmed and can generalisations be drawn? Or, is it rejected and is further investigation needed?

Presentation: The group could prepare a chart that summarises the inquiry process and the findings. Each individual could also prepare a more detailed written report.

3.3 Theory of supply

CONCEPTS



Law of supply: the proposition that the quantity supplied of a good or service varies positively with the price of the good or service

Supply: the quantity of a commodity that will be offered for sale in a market over a given time at a given price

Marginal producer: a firm whose income just covers costs

KEY IDEA

Producers supply goods to the market to meet demand for that good.

3.3.1 Supply

The **supply** of a commodity is the quantity that will be offered for sale in a market over a given time at a given price. The desire of a producer to supply a commodity is usually referred to as the 'propensity to sell'. As we might expect, the actual quantity each producer will offer for sale will depend on the price.

Generally, the **law of supply** tells us that more of a commodity will be supplied by producers at a higher price than will be supplied at a lower price. This is because different firms operate with different costs of production, and each wishes to operate at a profit. If ice cream sells at \$4 per litre, then a firm whose costs of production are \$3 per litre will make \$1 per litre profit. A firm whose costs are \$4 per litre will just cover costs, and this firm would be known as a **marginal producer**. Another firm may be able to produce at \$5 per litre, but this would cause it to make a loss, so it is unlikely that it would actually decide to produce this product while the price remains at \$4 per litre. It would, of course, only take a fall in price of more than \$1 to force the second firm out of production, and the total supply being offered would decline. If the price should rise to \$5 per litre, then it would become worthwhile for the third firm to begin production. It would then be the marginal firm, and supply would be greater by the level of its output.

In a similar way to demand, the law of supply can be illustrated in a schedule, as shown in Figure 3.8.

This schedule shows that as prices increase, quantities supplied by producers also increase – a direct relationship. As prices fall, so too do quantities supplied. In fact, at a price of \$1 per litre, no producer is willing to supply ice cream. This would indicate that no firm can produce ice cream for \$1 per litre or less. Such information can again be shown in graphical form, as a supply curve (see Figure 3.9).

The supply curve illustrates the law of supply and the propensity to sell. The higher the price, the more ice cream people will try to sell, as they hope to make more profit.

FIGURE 3.8 Supply schedule for ice cream

Price per litre (\$)	Quantity supplied (litres per day)
1	0
2	200
3	400
4	600
5	800
6	1000

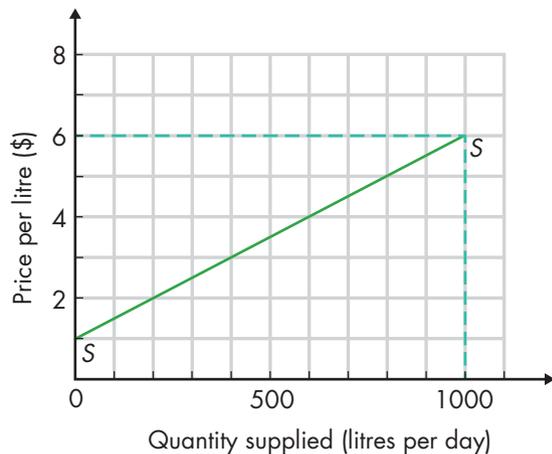


FIGURE 3.9 A supply curve for ice cream

QUESTIONS

- 1 Draw a supply curve for chocolate biscuits from the following schedule.

FIGURE 3.10 Supply schedule for chocolate biscuits

Price per packet (\$)	Quantity supplied (packets per day)
1.0	300
1.2	500
1.4	800
1.6	1200
1.8	1700
2.0	2300

- 2 Explain the meaning of the term 'supply'.
- 3 How do beverage producers ensure an adequate supply of drinks for the Christmas period?
- 4 State the law of supply.
- 5 Discuss what a marginal producer might need to do in order to stay in business.

3.4 Equilibrium market price

CONCEPTS



Equilibrium market price: a price from which there is no tendency to change; a price just high enough for sellers and just low enough for buyers, at which supply and demand are equal

Invisible hand: the unobservable market force that allocates resources based on consumers acting in their self-interest, reaching equilibrium automatically

KEY IDEA

The market or price mechanism achieves balance between the demand of consumers and the supply of producers.

We have seen that if the price of something goes down, people will try to buy more but, at the same time, sellers will not try to sell as much as they would if the price were higher. If the price were higher, buyers would not want to buy as much, while sellers would want to sell more. It seems as though buyers and sellers may never get together, but fortunately they do. There is a 'right price' – a price just high enough for sellers and just low enough for buyers, so that the buyers want to buy exactly the quantity that the sellers want to sell. This is called the **equilibrium market price**.

This is where supply and demand are equal. By combining the supply and demand schedules, we can see which ice-cream price will create this equilibrium position (see Figure 3.11).

The equilibrium price is \$4 per litre, at which 600 litres a day will be demanded and 600 litres will be supplied. This is the only price that can exist for long in our ice-cream market. At any higher price (e.g. \$5 per litre), a greater quantity will be offered for sale than will be demanded. This would result in a surplus of ice cream and create a downward pressure on price.

If the price were too low (e.g. \$3 per litre), demand would exceed supply, and there would be a shortage. Buyers would exert an upward pressure on prices.

Only at the equilibrium price of \$4 does the quantity supplied by sellers exactly equal the quantity demanded by buyers. At this equilibrium price, everyone who wants to sell can find a buyer, and everyone who wants to buy at that price will find a seller.

FIGURE 3.11 The relationship between supply and demand at varying price levels

Price per unit (\$ per litre)	Quantity demanded (litres per day)	Quantity supplied (litres per day)	Resultant situation in market
1	1200	0	shortage
2	1000	200	shortage
3	800	400	shortage
4	600	600	equilibrium
5	400	800	surplus
6	200	1000	surplus

This equilibrium price and the relationship between supply and demand at various price levels can also be readily seen in a graph combining the supply and demand curves as shown in Figure 3.12.

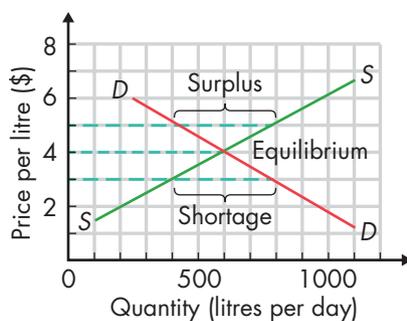


FIGURE 3.12 A market for ice cream

It is clear from the graph that only the price of \$4 per litre can exist for any length of time. As long as conditions do not change, there will be no tendency to change from this equilibrium situation.

However, at any lower price, consumers would be trying to buy more ice cream than suppliers would make available for sale. There would be a shortage. What quantity would be demanded at \$3 per litre? What quantity would be supplied? How much in litres would the

shortage be? With such a shortage, some buyers would not be able to get any ice cream. To get some of the scarce ice cream, these unsatisfied buyers would start offering more money, and this would push the price up.

If the price were too high (e.g. \$5 per litre), sellers would be offering more ice cream than people would be willing to buy. There would be a surplus. How much would this amount to? With such a surplus, some sellers would not be able to get rid of their ice cream unless they offered it at a lower price. This would push the price down.

The price would be pushed down to the equilibrium level, where everyone who wanted to sell at that price would find a buyer, and every buyer willing to pay that price would find a seller.

QUESTIONS

- 1 Explain how the equilibrium price is established under the theoretical model of the market.
- 2 On graph paper or using Excel on your computer, plot the following supply and demand schedules. Let each interval on the price axis represent 20 cents and each interval on the quantity axis represent 200 bottles.

FIGURE 3.13 Schedules for bottles of lemonade

Price per bottle (\$)	Demand (bottles)	Supply (bottles)
3.40	400	5900
3.20	500	4900
3.00	700	4000
2.80	1000	3200
2.60	1400	2500
2.40	1900	1900
2.20	2500	1400
2.00	3200	1000
1.80	4000	700
1.60	4900	500
1.40	5900	400

- 3
 - a In a free-market situation, what would be the equilibrium price?
 - b If a new bottle-filling machine is installed that decreases cost, and supply increases by 200 bottles at each price level, what will be the new equilibrium price?

3.4.1 Changes in equilibrium situation

Suppose the ice-cream market is in equilibrium, with the normal price standing at \$4 per litre while the quantity sold in the market is 600 litres per day. Then, suppose that a government health department report is published, which strongly recommends the consumption of ice cream for health reasons. This report causes many people to want to eat more ice cream. The propensity to buy increases. Demand may increase to 1200 litres a day, creating a temporary shortage. Disappointed buyers willing to pay extra will force the price up. But as the price goes

up, the rationing function of price will force some buyers out of the market. At the same time, the production-motivating function of price will induce producers to increase the quantity supplied. The price will continue to rise until a new equilibrium is reached. Perhaps the equilibrium position is \$6 per litre, with a quantity of 1000 litres being sold daily in the market. These changes are shown in Figure 3.14.

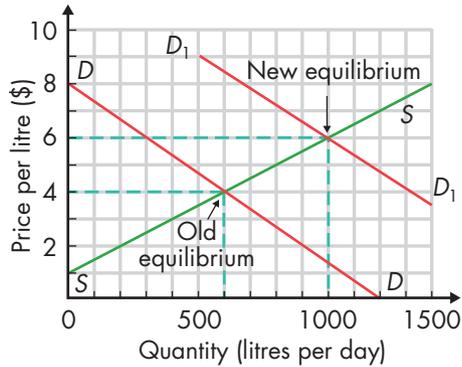


FIGURE 3.14 A market for ice cream – a new equilibrium position

Through such a process, the market system directs more of society's scarce resources into ice-cream production. This happens automatically as the decisions of people are carried out, as if under the guidance of an **invisible hand**.

The concept of the invisible hand was first developed by Adam Smith, an economist regarded as the father of capitalism. According to this principle, it is argued that the economy will work comparatively well if people are left to trade freely, as market participants would compete with each other. Smith believed that it was unnecessary for the government to intervene and regulate the marketplace.

QUESTIONS

- 1 Describe the effect on the demand for fast-food hamburgers of each of the following. Draw diagrams to show this effect.
 - a increased population in the 12–18 age group in the area
 - b reduction of fat content in hamburgers
 - c a pay rise for all workers in the industry
 - d a fall in the price of take-away chicken dinners
 - e higher prices for restaurant meals
- 2 Draw diagrams to show how the market changes in the situations listed below.
 - a the effect on almonds if peanuts and cashews are in short supply
 - b the effect on vegetables if a flood destroys local market gardens
 - c the effect on petrol if LPG gas becomes cheaper
- 3 Discuss the impact of market changes on a business familiar to you, for example, a school canteen, family business or corner store.
- 4 Why might some products disappear from the market? Make a case study of one of these products, for example, audio cassette tapes, typewriters or leaded petrol.

3.5 The stock market

CONCEPTS



Australian Securities Exchange (ASX): a national business that operates the stock market for the trading of shares and other securities

Dividend: payment made by a firm to its shareholders for providing capital; a distribution of a firm's profits to its shareholders

Float: the initial raising of capital for a firm by selling shares in the primary market of the stock market

Primary market: the new-issue market where companies are first floated; their shares are sold by stockbrokers on behalf of the company

Secondary market: the market in which shares in existing companies are bought and sold by stockbrokers on behalf of investors

Share: part ownership in a company

Stockbroker: a member or agent of the Australian Securities exchange, who is authorised to buy and sell securities for investors in the stock market

Stock market: the market that involves an auction of securities such as shares, debentures and bonds

KEY IDEA

The stock market is responsive to both domestic and international influences. Prices of shares change regularly in the stock market.

One of the markets that is very important in Australia is the **stock market**. There are, of course, numerous types of markets. For the rest of this chapter, the stock market will be examined to investigate how the price mechanism operates within this market. Almost every adult Australian has an interest, as superannuation funds invest in the stock market. Students who have a part-time job will also have superannuation.

Not all businesses are listed on the stock exchange – in fact, most aren't. It is large publicly listed companies whose need for capital is often quite large that are listed on the securities exchange. The **Australian Securities Exchange (ASX)** operates the stock market for the trading of **shares** and other securities.

3.5.1 The market for stocks

The stock market operates like any market – there are buyers who come to buy a good (in this case, one or more shares in a company) to invest in a company. The sellers are there to raise capital for a business in the primary market, which is just listing on the stock exchange. This is known as a **float**. Buyers purchase shares in the company directly from the company, in the **primary market**. The seller is investing in that company by owning shares in it.

However, the great majority of trading at the stock market takes place in the **secondary market**. In this case, the buyer is purchasing shares in a company from another person, or another company, for the purpose of investment.

Demand for shares

Shares are purchased by a range of people and companies for the purpose of investment in the hope that they will receive a **dividend** for each share they own and also capital gain (an increase in the sale price of that share). Almost all shares in major companies in Australia are purchased through the ASX.

Individuals can purchase shares in Australian companies. In fact, 36 per cent of the Australian adult population are shareholders. This equates to 6.48 million Australians owning investments either directly or indirectly. Many individuals purchase shares through a **stockbroker** (a member or agent of the ASX, who is authorised to buy and sell securities for investors in the stock market). There are many ‘mum and dad investors’ who purchased shares when Qantas, Telstra and the Commonwealth Bank of Australia were privatised by the Australian Government. Individuals purchased shares as a form of investment in these companies.

In addition, businesses can purchase shares in companies. There are rules set by ASIC (Australian Securities Investment Commission) for businesses to purchase shares in another company if that would give a company a controlling interest in another business. Businesses purchasing shares in Australian companies may be either domestic companies or overseas companies.

There are also companies that are investment companies and purchase shares on behalf of individuals who choose to pool their financial resources, giving them the ability to purchase a greater number of shares as a whole and a wider range of shares, thus reducing the risk of a company collapsing and hence losing their money. Examples of such companies are Citibank and National Australia Bank, Macquarie Bank, MLC and Colonial First State who operate Managed Funds Investments.

Almost every superannuation fund in Australia also invests in the share market. As almost every working Australian has a superannuation fund, almost every Australian with a job has an interest in the stock market and its performance. Superannuation funds may be small or extremely large. An example is QSuper, which currently invests more than \$65 billion on behalf of the superannuation fund covering Queensland public servants and teachers.

The demand curve for the purchase of shares can be drawn the same way as for any other product, that is, it is a demand curve that slopes downward to the right, as shown as in Figure 3.15.

If the price of a share decreases, investors, *ceteris paribus*, will be encouraged to purchase that share, as its potential return is higher when bought at a lower price.

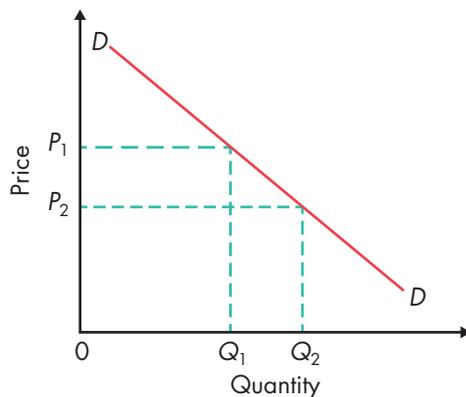


FIGURE 3.15 Typical demand curve for shares

Supply

The supply of shares on the market comes from investors who own existing shares and have decided they wish to sell them for a variety of reasons (secondary market), as well as companies listing on the stock market for the first time (primary market). This makes supply of shares highly variable, as there are numerous reasons why investors might wish to sell shares. These include:

- the desire to 'cash in' on an investment because of a need to access the capital invested, perhaps for a major purchase such as a car or property
- a large decrease in the market caused by a decline in economic conditions and a lower consumer expectation for the future, perhaps during a recession, to avoid a larger capital loss
- a rising interest rate, making term deposits more attractive to the investor.

The supply curve for shares is shown in Figure 3.16

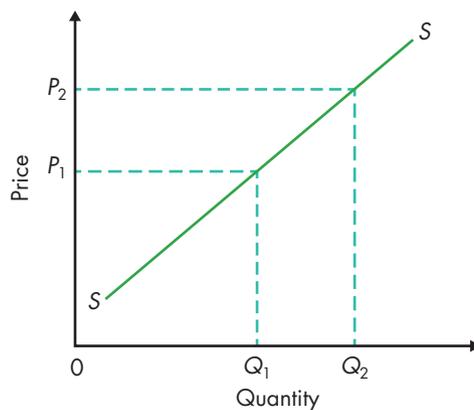


FIGURE 3.16 Supply curve for shares

Equilibrium in the stock market

The price of shares is constantly changing, from minute to minute in some cases, as more buyers and sellers enter the market, and as some buyers and sellers drop out of the market. The equilibrium or market price for shares in any company on the stock market constantly changes. When there is an excess of supply over demand for the shares, the price will fall. Conversely, if there is an excess of demand over supply for the shares, the price will rise.

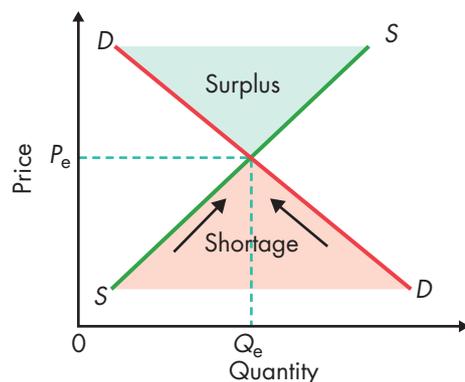


FIGURE 3.17 Equilibrium price and quantity in the share market

The stock market is very responsive to financial news, such as announcements concerning the inflation rate and the balance of payments, the release of budget plans, and changes in interest rates in the domestic and overseas economies. Economic forecasters and company analysts have not had a good record in predicting the effects of changes in the economy on company profits, but they did have sufficient understanding for share prices to rise prior to the release of significant data during recent economic recoveries in the 1990s and 2000s.

Overseas events, such as variations in interest rates in the United States or changes in the exchange rate in Indonesia and Thailand, political factors (e.g. a change of government or new legislation), climatic influences (e.g. drought), or a war (e.g. the war in the Middle East) can also severely influence prices on the stock market.

If an investor understands the connection between global and local events and the effect they may have on the stock market, there is a better chance of the investor being able to understand and predict price movements and perhaps take advantage of rising or falling markets.

ECONOMICS AND ICT

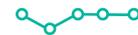


If you would like to find out more about the stock market and how it operates, the ASX website contains a large amount of information. Visit the ASX website, navigate to the 'Get the Basics' section and watch the video tutorials provided.



ASX: Get the Basics

ECONOMICS IN ACTION



Change in the prices of shares on the market depends on the supply and demand for shares. For example, the graph below demonstrates the market for shares in a particular oil-drilling firm. The supply curve is upward sloping to the right because the higher the price of the shares, the more likely it is that shareholders will be prepared to sell and thereby increase the supply of shares on the market. The demand curve is downward sloping to the right because the higher the price of the firm's shares, the less likely it is that investors will be prepared to demand or buy shares from the market. The point where the two intersect is where demand equals supply and is called 'equilibrium'. If the demand for, or supply of, shares from a firm changes, then the price of those shares will change. In Figure 3.18b, there is an increase in supply of shares from the firm, from S_1 to S_2 . This means that more shares are available on the market – perhaps because investors have responded to a drop in profits of the firm, or because the directors have floated a new issue, or because the current shareholders have been issued with bonus shares. As this has not been matched

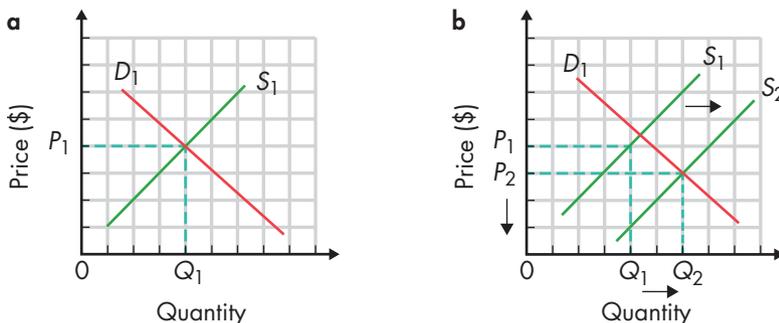


FIGURE 3.18 The effect of changes in price and quantity of shares





with an increase in demand for those shares, there is an oversupply and the price is forced downwards from P_1 to P_2 .

It may be useful to review the theory of supply and demand before you attempt the following questions.

Questions

- 1 Demonstrate your understanding of the theory of supply and demand by applying it to the following situation. What would happen to the equilibrium price of shares of an oil-drilling firm if investors speculated that the firm would discover a large deposit of oil? Draw a fully labelled diagram and explain the new equilibrium process.
- 2 Predict what would happen if, to accommodate this discovery, the directors of the firm decided to issue more shares to raise investment capital.
- 3 Research reports in the newspaper, investment publications and the Internet regarding changing prices of shares for three petroleum exploration firms (e.g. Santos Ltd, Woodside Petroleum Ltd and Cooper Energy NL). Analyse each situation to determine the causes of the change and show the change on a supply and demand diagram.

3.5.2 Changes in the market

KEY IDEA

Market prices rise and fall in accordance with the economic prospects of each company and the economy.

Share prices move constantly. Stock markets experience considerable volatility over time, even in short periods such as a day, as they respond to events. Such volatility is caused by shifts in the demand and supply curves or both.

ECONOMICS AND ICT



The share price of almost every company listed on the ASX would change (probably many times) every day. The prices are shown 'live' on the ASX website. On the home page, there is a section called 'Browse top companies'. Select five of these companies and for each day in a one-week period (Monday to Friday), note the price of a share in each company. Also, try to find the reason why the price increased, decreased or stayed the same, and note this beside each entry.



Movements in the demand for shares

Shareholders, seeking to make a return on their investment, may change their demand for shares frequently, or infrequently, depending on how they perceive the marketplace to be.

Consumer expectations for the future and confidence levels are probably the largest factors affecting demand. If investors believe that the future conditions are likely to be good,

they are likely to increase the demand for shares, believing that dividends and price level of shares may rise, thus enhancing the return on their investment. The opposite will occur if consumer confidence falls.

Factors influencing one company may influence a change in demand for that company's shares. For example, announcements (or merely rumours) relating to a takeover or merger of that company by another company will mean an increased demand for that company's shares because investors will realise that the purchasing company will need to procure the target company's shares. A quick purchase could lead to a good return for the savvy investor.

Term deposits and other investments compete with the stock market for investors' attention. If an interest rate were to decrease, then it may be that investors would prefer to invest in the stock market instead, thus increasing the demand for shares. In addition, lower interest rates may encourage companies to invest, thus needing to attract more capital, perhaps by issuing more shares to investors. An increase in interest rates would cause the opposite effects.

An exchange-rate movement of the Australian dollar may also cause a change of demand for shares. A lowering of the exchange rate may encourage more overseas investors to invest in the Australian stock market as they will be able to gain more shares for the same amount of their own currency. A rise in the exchange rate may have the opposite effect.

Movements in the supply of shares

For the level of supply to change, then existing shareholders need to offer more shares for sale in the market. The factors here are very similar to those that affected demand. To encourage shareholders to sell, they will want to make a capital gain if possible, or at least minimise their losses.

If there is a loss of confidence in economic conditions, then shareholders may want to sell their shares, shifting supply to the right, creating a surplus and causing a decrease in price.

In the event of a takeover bid for the company, shareholders will be keen to offer shares for sale, as the price will almost certainly rise, and they will make a financial gain if it does.

If interest rates change, shareholders may see an alternative investment opportunity as more desirable and seek to sell their shares in favour of another investment opportunity.

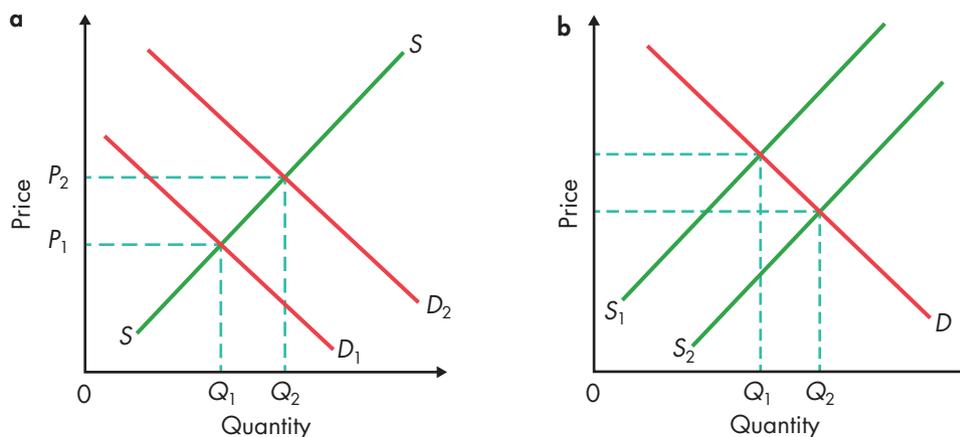


FIGURE 3.19 (a) Change in demand for shares (b) Change in supply of shares



ASX share-market game

ASX share-market game

Establish a syndicate in the ASX share-market game.

- 1 Using fundamental and/or technical analysis, establish a share portfolio and trade in the market.
- 2 Keep track of your share performance and make a judgement as to the factors that influence the prices. Record this information in a trading log for the duration of the game.
- 3 At the end of the game, write a reflective review as to the effectiveness of your decision-making strategies.

QUESTIONS

- 1 Define what is meant by the 'stock market'.
- 2 Explain the difference between the primary market and the secondary market on the stock market.
- 3 Discuss why investors purchase shares.
- 4 Describe the factors that cause a change in the demand for shares. Give one specific example.
- 5 Describe the factors that cause a change in the supply of shares. Give one specific example.
- 6 If ABC petrol made a takeover bid for XYZ petrol, explain what you would expect the outcomes to be in terms of the effects on the share price of XYZ petrol. Show this using supply and demand diagrams.

3.1 True/False

For each statement, indicate whether you consider it to be True (T) or False (F).

- 1 The law of demand tells us that consumers will buy more of something at a lower price than they would at a higher price.
- 2 The supply of a commodity is the quantity of it that will be purchased over a given time at a given price.
- 3 When the price mechanism operates freely in a perfectly competitive market, without any restrictions placed on it, price is the sole factor responsible for equating supply and demand.
- 4 One of the main factors that influences the quantity of a commodity demanded is the sellers' expectation for the future.
- 5 If the price of a commodity changes, the demand for it will change and a new demand curve must be drawn to indicate the resultant increase or decrease.
- 6 Increases or decreases in supply may be brought about by changes in the costs of production.
- 7 The real world behaves exactly like the competitive market model.
- 8 When shares in a company are first issued, buyers are trading in a primary market.
- 9 Consumer expectations affect the demand for shares from investors.
- 10 Investment in property and term deposits affects the supply and demand for shares.

3.2 Multiple-choice questions

Select the correct response to each of the following.

- 1 Demand is measured in terms of:
 - A desire for a commodity.
 - B desire backed by the ability to purchase.
 - C need for a commodity.
 - D wants and income.
- 2 The law of diminishing marginal utility explains why we get:
 - A more satisfaction from each extra unit we consume of a commodity.
 - B more satisfaction from chocolates than from a bread roll.
 - C less satisfaction from each extra unit we consume of a commodity.
 - D less satisfaction from chocolates than from a bread roll.
- 3 A marginal producer is one who:
 - A is just able to cover costs.
 - B runs the firm at a loss.
 - C makes super-normal profits.
 - D purchases in a poor location.

Review of Chapter 3

- 4 The law of supply tells us that:
 - A more of a commodity will be supplied at a lower price than at a higher price.
 - B more of a commodity will be supplied at a higher price than at a lower price.
 - C less of a commodity will be supplied at a higher price than at a lower price.
 - D less of a commodity will be supplied at a moderate price than at a lower price.
- 5 If the quantity demanded of a commodity is higher than the quantity supplied, the resultant situation in the market will be:
 - A equilibrium.
 - B a surplus.
 - C a propensity to buy.
 - D a shortage.
- 6 Changes in the quantity demanded may be brought about by:
 - A the prices of related commodities.
 - B the costs of production.
 - C the effects of nature.
 - D future expectations of suppliers.
- 7 Changes in the quantity supplied may be brought about by:
 - A the prices of related commodities.
 - B buyers' tastes.
 - C the effects of nature.
 - D future expectations of buyers.
- 8 Which of the following would not be regarded as a function of the price mechanism in a perfectly competitive market situation?
 - A production motivation
 - B rationing
 - C resource allocation
 - D restriction of entry into the market
- 9 If there is a decrease in demand, there will be a:
 - A shift to the left of the original demand curve.
 - B shift to the right of the original demand curve.
 - C movement along the demand curve from left to right.
 - D movement along the demand curve from right to left.
- 10 What would be the effect of a general increase in wages on supply and demand curves for most goods?
 - A Supply would move to the left and demand would shift to the right.
 - B Supply would move to the right and demand would shift to the left.
 - C Both demand and supply would shift to the right.
 - D Both demand and supply would shift to the left.

- 11** An oil spill near a beach will most likely cause which of the following changes in demand for hamburgers at a beach café?
- A** a shift in the demand curve to the right
 - B** a shift in the demand curve to the left
 - C** a movement downwards along the demand curve
 - D** a movement upwards along the demand curve
- 12** Which of the following is the most likely outcome of a fall in the price of butter?
- A** an increase in the supply of margarine
 - B** an increase in the demand for margarine
 - C** an increase in the supply of milk
 - D** a decrease in the supply of milk
- 13** The price mechanism:
- A** operates to meet all the needs of producers.
 - B** is a means of ensuring consumers obtain all that they want.
 - C** ensures all people are employed.
 - D** allocates resources on the basis of the free movement of prices.
- 14** The release of statistics showing that the economy is experiencing strong growth in employment and low inflation could be expected to:
- A** boost share prices.
 - B** decrease share prices.
 - C** have no impact on share prices.
 - D** encourage shareholders to sell their shares.
- 15** The ASX is:
- A** a financial intermediary for companies.
 - B** an issuer of new shares.
 - C** a marketplace for banks.
 - D** a marketplace for buyers and sellers of shares and other investments.

3.3 Short response questions

- 1** Define 'supply' and illustrate with a diagram.
- 2** Explain why the supply curve is usually upward sloping to the right.
- 3** Use a diagram to show the difference between an increase in quantity demanded and an increase in demand.
- 4** Describe three events that could cause a supply curve to shift to the right.
- 5** Define 'market equilibrium' and show this using a diagram.
- 6** Draw labelled diagrams to show the following:
 - a** the effect on equilibrium if there is a decrease in demand for a product
 - b** the effect on equilibrium if there is an increase in supply
 - c** the effect on equilibrium if a company increases its price for its product.

- 7 State the effect on the demand for takeaway pizzas of each of the following:
 - a improved quality of pizzas
 - b pizzas shown to be a healthy food to eat
 - c a decrease in price for Asian takeaway in the same area
 - d pizzas delivered by drone, reducing delivery time.
- 8 Explain three factors a person might consider when determining whether to buy shares in a company.
- 9 Both demand and supply factors affect the price of a share. Give examples of both.
- 10 Explain how an upswing in the economic cycle experienced by Australia might affect the stock market.

3.4 Activities

Graphing exercises

- 1 Draw supply and demand curves for motor vehicles based on the following schedules.

Price per vehicle (\$)	Quantity demanded ('000)	Quantity supplied ('000)
16 000	1900	300
20 000	1400	600
24 000	1000	1000
28 000	700	1500
32 000	500	2100

- 2 Explain some of the things that might have happened to cause the following shift in the supply curve for wheat.

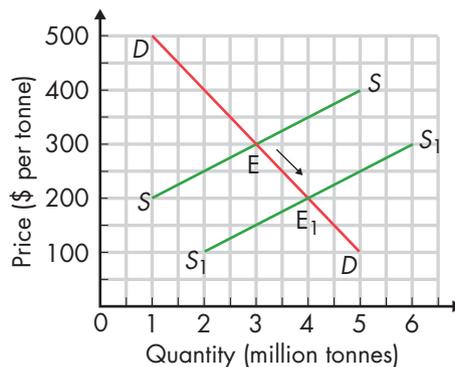


FIGURE 3.20

- 3 Using a supply and demand graph for each, explain how each of the following events would affect the share price of a company, and the volume of shares traded.
 - a Interest rates are raised by the RBA amid fears of inflation.
 - b BHP Billiton reports excellent outcomes from explorations for new mineral deposits.
 - c Several consumers commence legal action against company RST for alleged poor manufacturing standards.
 - d Industrial troubles in the transport sector cast gloom over Western railways' expansion program.

Response to stimulus application exercise

Study these supply and demand schedules for bread below and answer the following questions.

Price (\$)	Quantity demanded (D) ('000)	Quantity supplied (S) ('000)	New quantity demanded (D ₁) ('000)
3.00	20	50	
2.50	25	40	
2.00	30	30	
1.50	35	20	
1.00	40	10	
0.50	45	0	

- 1 In a free market, what will be the equilibrium price?
- 2 What is the measure of price elasticity of demand in the price range \$2 to \$2.50 as price increases?
- 3 What would be the probable size of the shortage if the government intervened in the market to impose a maximum price of \$1.50 per loaf?
- 4 If doctors found that wheat caused health problems in some people, and the demand for bread decreased by 20 000 loaves at each price level, complete the final column in the table to show the new quantity demanded.
- 5 Graph the figures for D , S and D_1 .
- 6 What will be the new equilibrium price?

3.5 Inquiry topics

School canteens – healthy eating and consumer sovereignty

Assume you are a reporter for a daily newspaper or current affairs program. Prepare an investigation of the response of consumers to changed conditions in a small market, such as your school canteen. Apply a cost-benefit analysis to a particular special.

Prepare an article or a script that clearly shows whether the special is a success or otherwise. In this article or script, you should also clearly show how you gathered your information, and how your findings relate to the theory of consumer sovereignty in this situation.

Supermarkets and specials

Examine the 'specials' listed by supermarkets in their weekly specials catalogue. What is the purpose of these specials? How do you think the market is changed by these specials, in both the supermarket that has the specials, and in other supermarkets that do not advertise the same specials?

Review of Chapter 3

Labour market in the mining boom

During the 2000s and 2010s Australia went through several mining booms. These mining booms required a large amount of labour to establish mines and then operate them. How would the labour market have been changed by the increased demand for construction workers? Investigate some of the outcomes of this change in the market.

The stock market

Investigate the stock-market crashes of 1997 and 2008, and subsequent corrections. (You may choose a more recent one if you wish.) Analyse and identify causes and effects of these downturns. Compare these events and identify similarities and differences. Compile a list of recommendations for investors to avoid or minimise the impact of such events.

You can find answers to selected review questions within this chapter on NelsonNet.



Review of
Chapter 3 answers



4

Elasticity

This chapter examines price elasticity of demand, the changing nature of price elasticity and other elasticities.

Focus questions and inquiries

- What is the nature of elasticity in economics?
- Why do economists undertake studies of elasticity?
- How does elasticity change over time?
- How can elasticity influence the extent to which demand changes with an increase in price?

To provide a basis for answering such questions and carrying out such inquiries, this chapter will examine the following:

- price elasticity of demand
- factors affecting price elasticity of demand
- calculating price elasticity of demand
- significance of price elasticity of demand
- other types of elasticity.

4.1 Price elasticity of demand

CONCEPTS



Elastic demand: where the percentage change in quantity demanded exceeds the percentage change in price

Elasticity: the relative amount that one variable changes, given a change in another variable

Inelastic demand: where the percentage change in quantity demanded is less than the percentage change in price

Price elasticity of demand: the responsiveness of quantity demanded to a change in price

Unit elasticity: where the percentage change in quantity demanded is the same as percentage change in price

KEY IDEA

Elasticity measures the degree to which quantity demanded responds to a price change.

Elasticity is one more concept that will prove useful for deeper understanding of the economy. So far, we have seen that price and quantity demanded or supplied are inversely related – when one goes up, the other goes down. But it would also be useful to know just how much the quantity demanded or supplied changes with a given change in price. The tool that is used to measure relative changes between these two variables is called ‘elasticity’.

Economists seek to understand the extent to which consumers and producers respond to a change in price. While this chapter largely focuses on **price elasticity of demand**, there are other elasticities in which economists are interested. These include the price elasticity of supply, the cross elasticity of demand and income elasticity of demand.

A general definition of elasticity is the relative amount one variable changes in response to a change in another variable. Here we are interested in the responsiveness of demand to price changes, or price elasticity of demand. Price elasticity of demand is usually defined as the responsiveness of quantity demanded to a change in price. Working with price elasticity of demand enables us to better understand human behaviour.

Some products are very responsive to price changes. A small change in price will bring about a large (more than proportional) change in the quantity demanded. Such products are said to have a ‘price-elastic’ demand. The demand for T-bone steak, as shown in Figure 4.1,

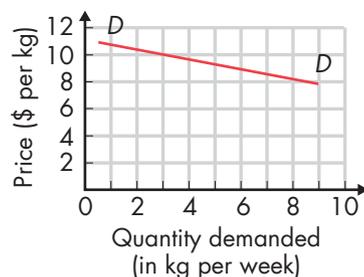


FIGURE 4.1 The elasticity of demand for steak – relatively elastic

is relatively **elastic** since, although it may represent a significant share of the food budget, it is not a necessity, and substitutes can easily be found. For demand to be price elastic, the coefficient of the price elasticity of demand, E , must be greater than one ($E > 1$).

Products that respond very little to price changes are said to have a 'price-inelastic' demand. A given change in price will be accompanied by a smaller than proportional change in the quantity demanded. The demand for a product like salt, as shown in Figure 4.2, is relatively **inelastic** because even though it seems to be a necessity for some people, it represents only a small share of the food budget and substitution is difficult. For demand to be price inelastic, the coefficient of the price elasticity of demand, E , must be less than one ($E < 1$).

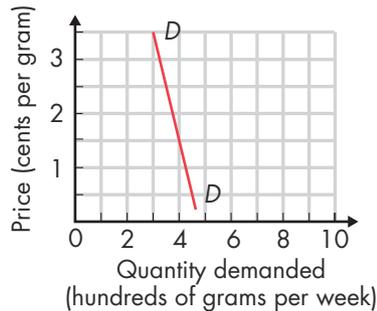


FIGURE 4.2 The elasticity of demand for salt – relatively inelastic

There can also be a situation where the change in the quantity demanded is proportional to the initial change in price. This is called **unit elasticity**.

The two theoretical extremes of elasticity are infinite elasticity and zero elasticity. A demand curve that is infinitely elastic would be a horizontal line, so that even a very small change in price would cause an infinitely large change in quantity demanded. The demand for a product with zero elasticity would be shown by a vertical line, where a change in price, no matter how large, would cause no change in the quantity demanded.

Such theoretical extremes could not exist; no commodity's demand is absolutely elastic or absolutely inelastic. All products are somewhere in between, and we could describe them as relatively elastic or relatively inelastic – whichever is appropriate.

Within a given price range it is possible to give a numerical value to elasticity to decide whether it is elastic or inelastic. Elasticity can be measured by dividing the proportional change in the quantity demanded by the proportional change in price. If you examine graph (a) in Figure 4.3, you can see that, as the price increases from \$3 to \$4, the quantity demanded decreases from 4 units to 2 units. The price elasticity of demand can then be measured as $\frac{1}{2} \times \frac{3}{2}$, which equals $1\frac{1}{2}$ or 1.5 and therefore is greater than unity. The answer is known as the elasticity coefficient. So, we can say that the demand for that product (at least in that price range) is relatively elastic. In graph (b), where a proportional change in quantity demanded results from a change in price, unit price elasticity occurs. In graph (c), where the price change has resulted in a smaller than proportional change in quantity in response to the price change, price elasticity is said to be relatively inelastic.

Do not be misled into believing that we can always tell what elasticity is like by just looking at the slope of the curve, or that we can always describe the demand for a particular product as being elastic or inelastic. Elasticity may vary on the same curve from one price range to another. It all depends on the proportional or relative changes in prices and quantity that occur. When you attempt the next question, this will become clearer to you.

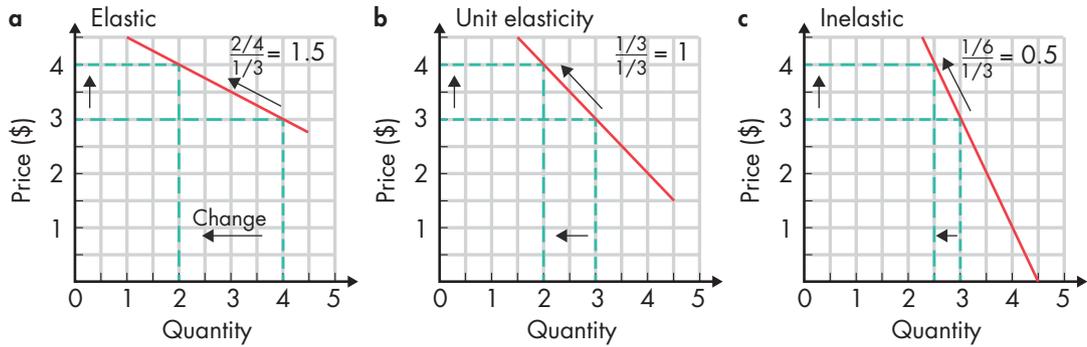


FIGURE 4.3 Price elasticity is the proportional or percentage change (Δ) in quantity, in response to a proportional or percentage change in price:

$$\epsilon_P = \frac{\frac{\Delta Q}{Q}}{\frac{\Delta P}{P}}$$

Note: Price elasticity does not depend only on slope; it will be different at different points on the one curve.

QUESTIONS

- 1 In Figure 4.4, what is the measure of price elasticity in the price range \$4 to \$5 per unit as price increases? What is the elasticity if price rises from \$1 to \$2 per unit?
- 2 Explain what you would expect the price elasticity of demand for the following products to be like, giving reasons for your answers.
 - a a particular brand of chocolate bar
 - b petrol
 - c eggs
 - d clothing
 - e entertainment
 - f sugar
 - g a fast broadband connection

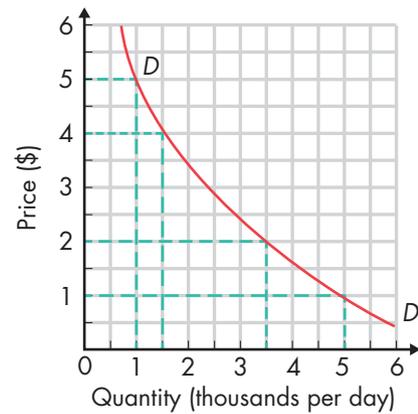


FIGURE 4.4 Price elasticity calculations

4.2 Calculating the price elasticity of demand

CONCEPTS

Point elasticity method: measures the degree of elasticity of demand using the coefficient of elasticity

Total revenue method: calculated by multiplying price (P) per unit and quantity (Q) of the good sold

There are three main methods that economists use to calculate the price elasticity of demand:

- the total revenue method
- the arc method
- the point method.

4.2.1 Total revenue method

This **total revenue method** uses the price and the total amount spent on a product. By calculating the changes in total revenue in response to a price change, the price elasticity can be worked out.

FIGURE 4.5 Measuring elasticity using the total revenue method

Price	Quantity demanded	Total revenue	Price elasticity of demand
\$2	400	\$800	–
\$4	250	\$1000	inelastic
\$6	200	\$1200	inelastic
\$8	150	\$1200	unit elastic
\$10	100	\$1000	elastic
\$12	75	\$900	elastic

In the example in Figure 4.5, we can see that the move from a price of \$2 to \$4 and from \$4 to \$6 result in an inelastic price elasticity of demand. In these cases, the total revenue rises when there is a price rise. It could also be a fall in price and a total revenue decrease that results in an inelastic price elasticity of demand.

As the price moves from \$6 to \$8 in Figure 4.5, there is no change in total revenue, meaning the price elasticity of demand is unit elasticity in this case.

As the price rises further, from \$8 to \$10 and from \$10 to \$12, there is a decrease in total revenue, meaning that demand has become price elastic, as total revenue falls after these price rises.

The **point elasticity method** measures the ratio of the percentage change of one of the variables between the two points to the percentage change of the other variable. Thus,

$$E = \frac{\text{the percentage change in quantity demanded}}{\text{the percentage change in price}}$$

The result of this calculation is called the coefficient of price elasticity of demand. If it is greater than one, it means the percentage change in quantity is more than the percentage change in price, making the demand elastic. The opposite would see the coefficient being less than one, and hence elasticity is inelastic.



ECONOMICS CHALLENGE



Given that there are several methods of calculating and determining elasticity, investigate the advantages and disadvantages of each method, using various sources, including both Internet and text sources.

Which of these methods appears to be the most exact and correct method for an economist to use?

QUESTIONS

- 1 What characteristics do price-inelastic goods generally have?
- 2 Describe how you would tell if a good were elastic, inelastic or of unit elasticity, using the total revenue method.
- 3 Assume that at a price of \$4, 50 units of a good are demanded. When the price rises to \$4.20, 45 units are demanded. What is the economic coefficient of demand using the point elasticity method? Is demand elastic, inelastic or of unit elasticity?
- 4 Explain why the price elasticity of demand will be elastic, inelastic or of unit elasticity in the following circumstances:
 - a The price of Orchard Jam rises by 10 per cent a jar. Other brands of jam stay the same.
 - b There is a general price rise in all brands of soft drink due to increased costs of sugar.
 - c The price of vertical blinds increases by 10 per cent.
 - d The price of toilet paper rises by 10 cents per roll.
 - e The price of tap water increases by 5 per cent.
 - f The price of a laptop computer goes from \$400 to \$450.

4.3 Factors affecting price elasticity of demand

KEY IDEA

Buyers' response to changes in price is affected by factors concerning the goods themselves, the buyers and the prices involved.

There are several factors that are usually acknowledged as having the most influence over price elasticity of demand.

4.3.1 Substitutes

In general, any good that has a close substitute will be relatively elastic. An example would be the demand for different brands of ice cream. If the price of one brand of ice cream increased

relative to other brands, it would be expected that demand would be elastic as consumers switched to other cheaper brands. On the other hand, a good with no close substitute, such as a concert featuring your favourite entertainer, would have an inelastic demand because there is no really close substitute.

4.3.2 Complementary goods

In the case of complementary goods, such as electronic devices and the need for electricity, the demand for electricity (the cheaper of the two goods) is likely to be relatively inelastic, as electronic devices cannot run without being charged by electricity.

4.3.3 Necessities

There are many necessities among the goods consumers purchase. These include milk, bread, accommodation, vegetables and medicines. The demand for these products will be relatively inelastic compared to that of non-essential goods, which people may decide to do without if there is a price increase (e.g. a price increase in cakes and biscuits which are regarded as non-essentials).

4.3.4 Consumer priorities

Consumers are most likely to purchase items such as salt and pepper, and tea and coffee even if there is a small price increase. However, when a price increase occurs on large items that require a larger part of a person's income, such as clothing or entertainment, demand is likely to be more inelastic.

4.3.5 Time

The demand for some products in the short term tends to be less elastic than in the long term, when consumers have had time to adjust to a new consumption pattern. For example, a small increase in the price of a newspaper would make little difference to the demand for that newspaper. Over time however, consumers find alternative ways to gather their news, such as online sources, and the demand for newspapers becomes more elastic.

4.3.6 Habit-forming or addictive goods

In our community, there are some goods that are habit-forming or addictive. These include cigarettes, alcohol, gambling and drugs. Consumers who regularly use these products usually continue with the same habits, even after a price increase. Thus their demand for these products is relatively inelastic.

An example of a good with inelastic price demand is salt. This product has no close substitute, is a minor complementary good to food, is regarded by consumers who purchase it as a necessity and it is relatively cheap. Can you think of another good that meets the same requirements?

Not all goods follow the same rules, however. The demand for Porsche motor cars is relatively inelastic. This is despite them not being a necessity, being relatively expensive and having substitutes available. Why do you think the demand remains relatively inelastic?

QUESTIONS

- 1 Explain the role that price elasticity can play in the seasonal variation in the price of fruit and vegetables.
- 2 Describe three factors that affect the price elasticity of demand and give an example for each.
- 3 Explain why the demand for penthouse suites on the *Queen Mary II* ocean liner would be relatively inelastic.

4.4 Significance of price elasticity of demand

Elasticity of demand affects the amount spent by consumers. This is very important to producers who want to change either the price or quantity supplied of a commodity.

Elasticity of demand helps us to determine whether total outlay by consumers will increase or decrease when prices change.

If producers knew how consumers would react to changes in price (or quantity), they would be able to make better decisions on prices and production to enable them to maximise profits. If a firm is not operating under purely competitive conditions – that is, if it has some monopoly control over its price or output, and demand for its product is inelastic – the firm could increase total receipts (total consumer outlay) by restricting output and increasing price. This would probably mean higher profits because, with lower production, total costs will generally be down.

Elasticity is also significant in the effect of taxes imposed by the government, such as the goods and services tax (GST) or customs duty. These have the effect of raising production costs, shifting the supply curve to the left and increasing prices.

Elasticity will affect the extent to which the tax can be passed on to the consumer. Where demand is relatively inelastic, the quantity demanded will not fall very much and most (sometimes all) of the tax will be borne by the consumer, with a lesser amount being borne by the suppliers. However, where demand for a commodity is relatively elastic, most of the GST will be borne by the suppliers.

Elasticity of demand must also be considered by the government itself in determining its own possible revenue from GST. Where demand is very elastic, the higher price caused by the tax may actually cause demand to contract to such an extent that little revenue is received, and increasing the tax further may only result in even less revenue being received. For this reason, governments tend to levy higher taxes on commodities that exhibit relatively high price inelasticity, for example, alcohol and cigarettes.

The granting of a subsidy or bounty has the opposite effect to the imposition of a tax. A subsidy effectively reduces production costs, shifts the supply curve to the right, and reduces prices to the consumer. The more elastic the supply, the greater will be the benefit to consumers. If the supply is inelastic, the subsidy would have to be larger to make much difference to the price and quantity.

It is thus evident that elasticity is very significant to consumers, to business and to government. It greatly influences their choices when they are making economic decisions.

As well as price elasticity of demand, we can also measure cross elasticity of demand, which measures the responsiveness of demand to changes in the price of related (e.g. complementary) goods, and income elasticity of demand, which measures the responsiveness of demand to changes in consumers' incomes.

ECONOMICS IN ACTION



Access the 'Price elasticity of demand' worksheet.

Complete the worksheet and then access the answers file.

Mark your responses yourself and add up your total. How did you do? If necessary, you should go over questions you were unsure of and revise the relevant work.



Price elasticity of demand (worksheet)



Price elasticity of demand (worksheet answers)

QUESTIONS

- 1 Describe why suppliers would want to know the price elasticity of demand for their products.
- 2 Comment on why the government might be concerned with the price elasticity of demand, and state three examples of this.
- 3 Identify why calculating price elasticity of demand is not undertaken regularly by most consumers.

4.5 Other elasticities

CONCEPTS



Cross elasticity of demand: measures the likely response for the demand of one good to a change in the price of a related good

Price elasticity of supply: responsiveness of quantity supplied to a given change in price

Income elasticity of demand: the way in which demand changes following an increase in household income

KEY IDEA

Economists refer to several types of elasticity.

There are three other elasticities referred to by economists:

- income elasticity of demand
- cross elasticity of demand
- price elasticity of supply.

4.5.1 Income elasticity of demand

Income elasticity of demand refers to the way in which demand changes following an increase in household income and is measured by comparing the percentage change in quantity to the percentage change in income. It is calculated using the following equation:

$$E_y = \frac{\text{the percentage change in quantity}}{\text{the percentage change in income}}$$

4.5.2 Cross elasticity of demand

Cross elasticity of demand measures the likely response for the demand of one good such as strawberries to a change in the price of a related good such as cream. The measure will show whether these goods are likely to be substitutes or complements.

4.5.3 Price elasticity of supply

Just as with demand, we can measure **price elasticity of supply** by measuring the responsiveness of a quantity supplied to a given change in price.

Just as it is with demand, the supply of some products is very responsive to price changes. A small change in price will bring about a major change in the quantity that is offered for sale. For example, as Figure 4.6a shows, the supply of textiles is relatively elastic, because it is fairly easy to increase production in a short time.

Other products respond very little to price changes. For example, the supply of orchids as shown in Figure 4.6b is relatively inelastic because of the time and difficulty involved in increasing production.

Again, such a concept will be important to a government considering such things as price control, subsidies, GST or other taxes with the aim of influencing the quantity of a product offered for sale.

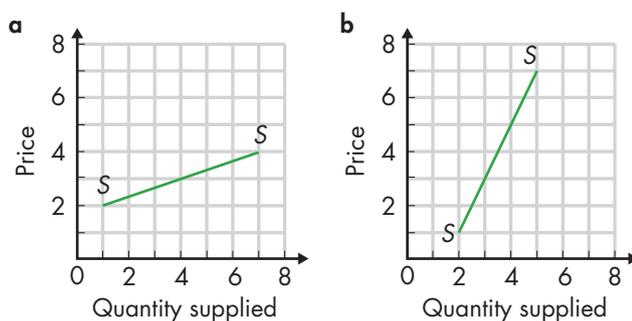


FIGURE 4.6 Elasticity of supply: (a) Textiles (b) Orchids

QUESTIONS

- 1 Explain why the federal treasurer would be interested in the price elasticity of demand for certain products.
- 2 As illustrations of other types of elasticity of demand, explain the effect of:
 - a income changes on quantity demanded
 - b changes in the price of complementary goods
 - c changes in the price of substitute/competitive goods.

ECONOMICS AND ICT



Price elasticity of demand (quiz)

Access the 'Price elasticity of demand' quiz. Remember you must answer each question before progressing to the next question.

4.1 Multiple-choice questions

Select the correct response to each of the following:

- 1 Price elasticity of demand may be defined as:
 - A the quantity that will be purchased after an increase in price.
 - B the quantities that consumers will purchase at various prices.
 - C the responsiveness of quantity demanded after a change in price.
 - D the responsiveness of demand to a change in the availability of a substitute product.
- 2 If a decrease in price of 10 per cent results in an increase in quantity demanded of 8 per cent, the demand is:
 - A elastic.
 - B inelastic.
 - C of zero elasticity.
 - D of unitary elasticity.
- 3 Demand tends to be more elastic for goods that:
 - A are basic necessities.
 - B are very inexpensive.
 - C have a close substitute available.
 - D are complementary goods.
- 4 If a price increase of 10 per cent results in a decrease in demand of 12.5 per cent, the coefficient of elasticity is:
 - A 0.8.
 - B 1.25.
 - C 5.0.
 - D 0.5.
- 5 If an entrepreneur were planning to decrease the price of a product, the entrepreneur would hope that customers were:
 - A irrational.
 - B likely to have a high income elasticity of demand for the product.
 - C on an elastic section of the demand curve for the product.
 - D on an inelastic section of the demand curve for the product.
- 6 When Queensland Rail increases ticket prices, it usually experiences a fall in revenue. This suggests that the demand for public transport:
 - A is inelastic.
 - B is elastic.
 - C is of unitary elasticity.
 - D has increased.
- 7 Supply for a good is said to be elastic if:
 - A quantity changes by a bigger proportion than price.
 - B quantity changes by a smaller proportion than price.
 - C quantity changes by the same proportion as price.
 - D price changes by a smaller proportion than quantity.

Review of Chapter 4

- 8 Which of the following tends to be income inelastic?
 - A champagne
 - B luxury cars
 - C fillet steak
 - D bread
- 9 If fruit growers take fruit to the market and can sell their entire loads at the going price, as far as they are concerned the demand curve on that day is:
 - A perfectly inelastic at the market price.
 - B perfectly elastic at the market price.
 - C unit elastic at the market price.
 - D none of the above.
- 10 To a consumer who uses either butter or margarine, both of these goods will most likely have a demand that is:
 - A very price elastic.
 - B very price inelastic.
 - C slightly price elastic.
 - D slightly price inelastic.

4.2 Short response questions

- 1 Draw a diagram to show the effect of each of the following:
 - a elastic demand – show the effect of a price increase on total revenue
 - b inelastic demand – show the effect of a price fall on total revenue
 - c perfectly inelastic demand – show the effect on total revenue of a price increase.
- 2 Explain the difference between the following terms:
 - a elastic demand and inelastic demand
 - b perfectly elastic demand and perfectly inelastic demand
 - c substitute and complementary goods.
- 3 Apart from price elasticity of demand, name three other types of elasticities that economists use.
- 4 Would the demand for milk be elastic or inelastic? Explain why.
- 5 Explain three factors that affect price elasticity of demand.
- 6 What does a perfectly inelastic demand curve look like? Give an example.
- 7 Describe three characteristics of a product that has relatively inelastic demand.
- 8 Using the factors influencing price elasticity of demand, analyse the elasticity for holiday resort bookings over a year.
- 9 Why would a business be interested to know if its product were price inelastic?
- 10 Explain the difference between income elasticity and cross elasticity of demand.

4.3 Calculations

- 1 Given the following demand schedule:

Price (\$)	Quantity
20	20
18	30
16	40
14	50
12	60
10	70
8	80
6	90
4	100
2	110

- Graph the demand curve.
 - Show on the graph what effect a price decrease from \$18 to \$12 would have.
 - Calculate the total outlay at each price.
 - Indicate whether demand is elastic, inelastic or of unitary elasticity at each price change.
 - Calculate the coefficient of elasticity (arc method) when price falls from \$10 to \$8.
- 2 The following figures represent the demand for seats at a cinema nearby you at various prices.

Price of seats (\$)	Number of seats sold
10	100
8	200
6	400
4	800
2	1000

- Plot the demand curve from the figures given above.
- If the owner of the cinema had to hire the same number of staff regardless of numbers attending, would the owner:
 - drop prices from \$10 to \$8? Why?
 - drop prices from \$4 to \$2? Why?
 - What can we say about price elasticity of demand between \$10 and \$8, and between \$4 and \$2?

3 Examine Figure 4.7.

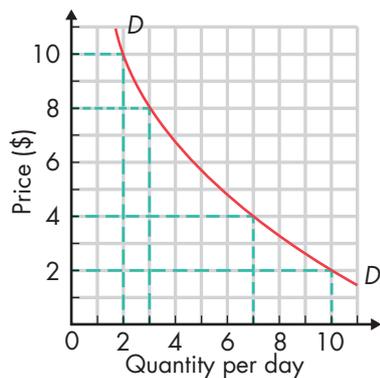


FIGURE 4.7

- What is the measure of price elasticity in the price range \$8 to \$10 per unit as the price decreases?
- What is the elasticity in the price range \$2 to \$4 as the price increases?

4.4 Inquiry topics

- Why might petrol companies increase the price of fuel around peak driving periods of Easter and Christmas? How is the concept of elasticity demonstrated if this does occur?
- The government is considering a 'sugar tax' on all items of food that contain a high amount of sugar. Choose three food items (one of which must be a soft drink, one a muesli bar and one of your choice). For each item, identify the amount of sugar it contains, and predict the likely impact of the sugar tax on each good.
- The transport company Uber has a policy of price surging during busy times. Investigate what this policy is, and explain how this is linked to the concept of price elasticity of demand.

You can find answers to selected review questions within this chapter on NelsonNet.



Review of Chapter 4
answers



UNIT 2

Modified markets



Getty Images/Andrew Watson

5

Market failure

Markets often fail to deliver the most efficient and socially desirable outcomes, so government intervention is necessary to modify markets to address the causes and minimise the current and future consequences of markets failing.

Focus questions and inquiries

- What is a market?
- Can socially desirable market behaviours and outcomes be achieved?
- How are market structures related to outcomes?
- What are the characteristics of a perfectly competitive market system?
- Why do economists, business people and governments present competition as the key element in successful markets?
- What types of failure can be identified in contemporary markets?

To provide a basis for answering such questions and carrying out such inquiries, this chapter will examine the following:

- the nature and purpose of markets
- types of efficiency and how they are achieved
- the benefits of competition
- a range of market structures from competitive to monopoly
- forms of market failure and their effects.

5.1 The nature and purpose of markets

CONCEPTS



Competition: the pressure that market forces place on businesses to reduce prices and improve the quality of their products

Market: a market is any medium used by buyers and sellers to interact for purposes of trade or exchange

Physical markets: places where buyers and sellers actually meet to exchange goods and services

Price signals: the messages that market prices provide to producers and consumers about what to produce, how to produce it and who to distribute the outputs to

Virtual marketplace: an umbrella term for commercial web portals

Markets are where we buy and sell products. They exist whenever two or more parties interact with the aim of exchanging goods, services or information. The potential buyers and sellers may interact directly or through intermediaries. There are markets for almost everything that flows through our economy, so we can talk about many different markets, for example:

- labour markets, in which labour is exchanged for money in the form of wages and salaries
- goods and services markets, in which a specific good or service is exchanged for money
- financial or capital markets, where access to funds is arranged in exchange for payments
- stock markets, in which shares in publicly listed companies are traded.

Market economies rely on the effective functioning of the price mechanism to ensure that each market performs optimally. Markets operating optimally will produce the most efficient solutions to the economic problem. This involves allocating the available resources to their most productive use and producing the goods and services most valued by consumers in the least costly ways. The finished products should be distributed in ways that best satisfy the wants of consumers. Virtual markets are becoming increasingly important in modern economies. It is generally the case that more competitive markets provide the best outcomes. Markets dominated by a few large firms can provide high levels of efficiency and customer satisfaction. Markets often fail to operate efficiently and under-deliver. There is a wide range of reasons for market failure.

We have seen how the circular-flow model simulates the flow of goods and services and money between the various sectors of the economy. These sectors are linked by markets of various types. Markets connect buyers and sellers and allow the outputs of the production process to be traded or exchanged. In market economies, the price mechanism is central to solving the economic problem. It determines who receives the products and factors of production that are offered for sale. The demand curve indicates the value that consumers place on a good or service, while the costs of production including normal profit are reflected in the supply curve. The price mechanism determines the level of output, the price and who is the successful buyer.

The price of inputs and finished goods is a signal to both buyers and sellers in a market. **Price signals** guide the decision-making processes in a market economy. They match output from producers with consumer demand and ration scarce resources and the products made from them. Through changes in demand and supply, prices tell producers and consumers that they need to adjust their economic behaviour in response to changing market conditions.

Markets solve the economic problem

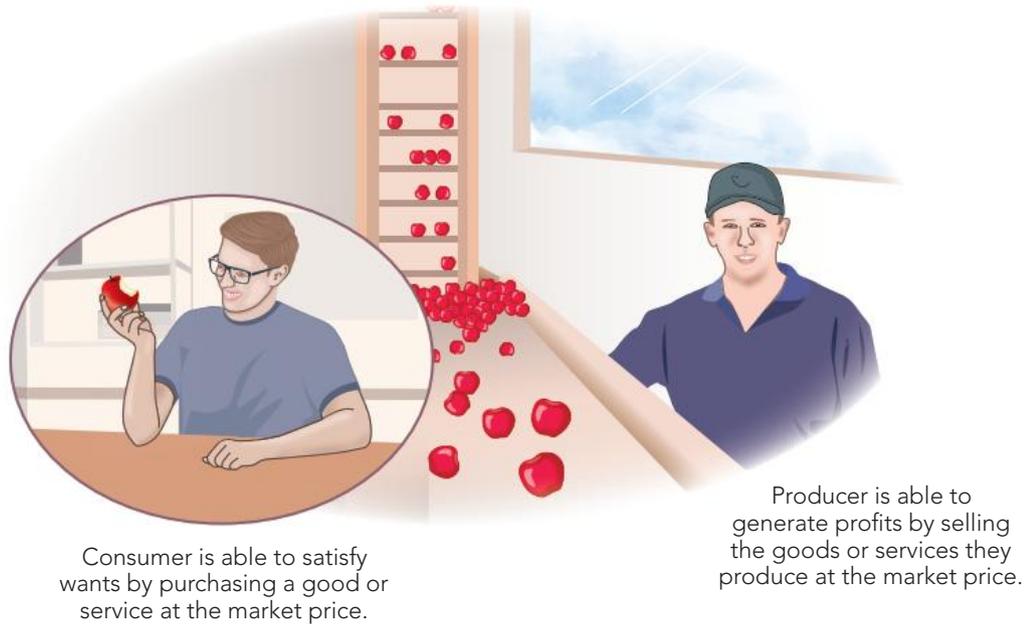


FIGURE 5.1 Markets solve the economic problem.

Traditional economic models assume that more competitive markets will allocate the economy's resources and produce in a way that most efficiently satisfies consumer wants.

Later sections of this chapter will explore how highly concentrated market structures can produce high levels of technical, productive and dynamic efficiency and create high levels of customer satisfaction. However, this concentration of market power often leads to abuses of that power. This can result in markets failing to deliver efficiency and consumer sovereignty, leading to a decrease in community welfare. Market failure is common and has a range of causes.

5.1.1 Types of markets

KEY IDEA

A modern economy is built around many different types of markets. There are both physical and virtual markets. Markets may be for raw materials, labour, intermediate goods or final consumer goods. The products offered for sale may be knowledge-based, financial products or goods and services.

Markets can be broadly categorised as factor markets or product markets. The factors of production (land, labour, enterprise and capital) are bought and sold in factor markets. The goods and services that are the outputs of the production process are distributed through product markets.

Markets connect buyers who have the willingness and ability to purchase with sellers who have a supply and are willing to sell. The price mechanism determines a price and quantity that best matches demand and supply in the market and consumers buy the product, satisfying one of their wants. Price signals in product markets provide information about the

fundamental economic questions of what and how much to produce, how to produce and whom the product will be distributed to. Producers discover what quantities of the product are demanded by consumers and at what price. This helps firms to make decisions about future production levels.

Factor markets also provide producers with information about how to produce. The interaction of demand and supply in the markets for the factors of production indicate the prices of labour, capital and enterprise. This helps producers choose the most cost-effective way to produce.

The prices paid for the factors of production also help determine who receives the goods and services sold in markets. Individuals who supply labour, capital or enterprise that are in high demand will earn high incomes. They will have greater buying power and so will be able to afford scarce or luxury goods and services. Those who produce goods and services that are in high demand will also generally be rewarded with higher returns. Price information from markets decides the share of total output that an individual can demand.

There needs to be more than one buyer and seller for a market to be competitive. The price mechanism cannot operate without a large number of producers competing for the use of the factors of production and a large number of consumers competing for the limited quantity of products offered by competing producers. Non-competitive markets do not provide the price signals that consumers and producers receive in a competitive market.

Markets are usually for a particular good or service, but they vary greatly in their size and reach. Markets can be local, regional, national or international. The markets for gym memberships or hairdressers seem quite small and local compared to the world market for coal. We can visit a local farmers' market, read about the housing market in Cairns or check prices in the second-hand car market in South-East Queensland. Larger markets that play important roles in the Australian economy include state electricity markets, the Australian grocery market and the global market for iron ore. As workers, consumers and investors, we are involved in many such markets in our everyday dealings. So are businesses and governments.

ECONOMICS IN ACTION



Select three products or services that you have used recently and analyse the market in which they were traded. Include at least one purchased on an electronic device, connecting to a seller via the Internet. It does not matter whether it was purchased by you or someone else.

Compare the markets for the three goods or services using the following criteria:

- wants satisfied: What utility does this product have for you?
 - physical or virtual market: Did the purchaser actually meet the seller?
 - reach: Was it a local, city, regional, state, Australian or international market?
 - suppliers: Are there alternative suppliers of that exact product?
 - substitutes: How many other similar products are available as an alternative?
 - price determination: Was the price set by the seller or negotiated?
 - knowledge of product: What information sources informed you about the features of the product, its quality, availability and price?
-

Physical markets

In **physical markets** the buyers and sellers can actually meet each other face to face. The buyers can examine the product, ask for information about it, purchase the good and in most cases, take it with them. If a service is being purchased, it is usually provided to the consumer

at the time and place of purchase. Shopping centres, retail stores, medical centres, educational institutions, sporting and entertainment venues, restaurants and vehicle repairers are examples of physical markets.

Virtual markets

Virtual markets are situations in which goods and services are exchanged without the buyers and sellers meeting or needing to be in the same place to physically interact. Sellers display their wares using online platforms. Buyers interact with them using telephones, by email, through online stores or other electronic means. The transaction is completed online or by telephone. Buyers order what they want and pay for it electronically using electronic transfers of money. Sellers arrange for the goods to be delivered by postal or courier services, usually for a fee.

Developments in technology, telecommunications and financial services have enabled the spread of virtual marketplaces. They are reducing the importance of physical markets in many areas of economic activity. The nature of retailing is being reshaped by online purchases of products such as clothing, footwear, white goods, computers, travel products and accommodation. Online gaming links people from distant locations. Some educational courses and medical services are delivered through virtual marketplaces. Information that was once delivered by newspapers, books or an encyclopaedia can now be accessed through web portals such as Google, Britannica or Wikipedia.

Virtual marketplaces vary in scale and reach. Individuals may deliver a single product or service from their own home. Householders can outsource everyday tasks using online marketplaces, and business firms are able to hire virtual assistants as specific needs arise. Residential property owners can use online marketplaces such as Airbnb to connect with local, national or global travellers wishing to rent accommodation. LinkedIn and Seek provide marketplaces that link employers with potential employees. Physical retail stores can display and sell their products to customers that may live near the store or be from distant parts of the globe. E-commerce websites allow businesses such as Amazon to operate globally without needing any actual stores that buyers can visit. E-commerce marketplaces such as eBay provide a mechanism for any supplier to display and sell products.

The diverse range of goods and services demanded in modern economies, and the variety of ways consumers choose to access them, is reflected in the different markets that have developed to meet this demand.

- Some markets sell intermediate goods rather than finished products. Intermediate goods are the raw materials and manufactured parts that are required for the final production of goods.
- Knowledge markets involve the exchange of information and knowledge-based products.
- There are many types of financial markets, largely distinguished by the type of financial asset being traded. Banks and non-bank financial institutions (NBFIs) lend money to the household and business sectors and take deposits from them in loans markets. Equities or shares of businesses are bought and sold in the stock markets, national currencies in foreign exchange markets and fixed-term securities in bond markets.
- Illegal goods such as weapons, drugs and counterfeit passports are traded in black markets.

QUESTIONS

- 1 The term 'consumer sovereignty' suggests that consumers rule. Describe the ways in which consumers determine what happens in markets.
- 2 Describe the outcomes an efficient market would deliver.
- 3 After discussion with classmates, list:
 - local examples of physical markets
 - five examples of virtual markets where you can shop.
 Do not use any of the examples already given in the text.
- 4 Contrast the information provided to consumers and producers in product markets with the information that factor markets provide to the suppliers of productive inputs and producers.

5.2 Business and the market

CONCEPTS



Average cost: the cost per unit of output

Average revenue: the return per unit of output

Efficiency: using the least amount of resources to produce the goods and services that people value the most; how cheaply and productively firms can combine land, labour and capital resources to maximise output while generating profits

Firm or business: the basic unit of organised production, which can range in size from a sole trader to a global corporation employing hundreds of thousands of people

Fixed costs: those costs that a firm must meet whether or not any production occurs, for example, capital equipment and rates

Industry: a collection of firms that produce the same type of product or service

Marginal cost: the addition to total costs that occurs when one more unit of output is produced

Marginal revenue: the extra (or marginal) revenue obtained by producing and selling another unit of output

Normal profit: the minimum return that a business is prepared to accept to remain in business

Total cost: all the costs involved in producing a given volume of output

Total revenue: the total monetary return to the firm when any volume of output is sold

Variable costs: the costs incurred by a firm whenever production occurs, for example, power and wages

KEY IDEA

Markets can only satisfy consumer wants if there are firms willing to supply goods and services. Firms are motivated to supply markets when this maximises their profits. They achieve this by producing at a level of output where marginal revenue equals marginal cost.

Markets provide information on what and how much to produce, but each business must decide the most cost-effective way to produce and the level of production that will deliver the greatest profit. It is important for a business to understand its cost structures so that the decisions it makes are made with the knowledge of how each decision will affect costs, and hence profit.

Profit is the difference between the **total cost** of producing any output and the **total revenue** obtained from selling the output. Thus, the equilibrium position of the firm will be the point or level of production where the difference between total cost and total revenue is the greatest. At this level of production there is no incentive to either increase or decrease output.

There are a number of cost and revenue concepts that should be understood. Total costs include all of the costs involved in producing a given volume of output, including a **normal profit**. This is the minimum return that a firm is prepared to accept to remain in business and is therefore a necessary cost to be met by the business.

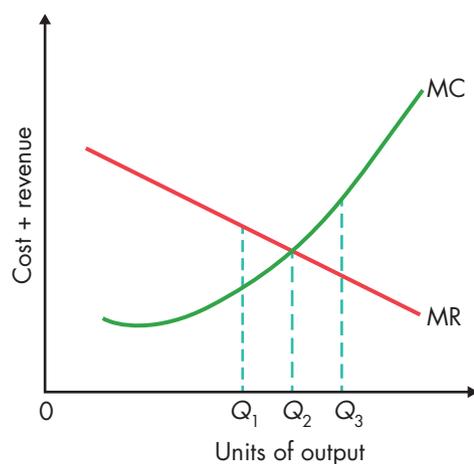


FIGURE 5.2 Equilibrium position of the firm

Hence, the equilibrium position of the firm can now be redefined. The firm always maximises profit when it produces at the point where marginal revenue equals marginal cost. If the firm whose marginal cost curve (MC) and marginal revenue curve (MR) are shown in Figure 5.2 is producing output Q_1 , it can increase its profits by increasing its output to Q_2 because between Q_1 and Q_2 the marginal revenue obtained from selling the extra output is greater than the marginal cost incurred in producing it. Similarly, the firm's profits will fall if it produces an output greater than Q_2 , such as Q_3 , because after output Q_2 marginal costs exceed marginal revenue for all additional units.

It is important to determine the likely shape of the firm's cost curves for various levels of output. Costs are either fixed (they do not vary with changes in output in the short run) or variable. When the business opens its plant and installs its machinery, it finds that costs fall naturally into these two types. **Fixed costs** are all those payments that continue as a constant total amount whether production levels are high or low. Examples include rent on buildings, insurance, electricity and vehicles. **Variable costs** are those that increase or decrease in total amount as production levels rise and fall.

Fixed costs (also called overhead costs) must be met, whatever the level of output is. At higher levels of output, average fixed costs, or fixed costs per unit of output, must fall.

Average variable costs are likely to fall for a time as resources are used more efficiently, but then they are likely to rise after production passes a certain point. This reflects the economies and diseconomies of scale, discussed as part of productive efficiency later in the chapter. Average variable costs will begin to rise because efficiency will begin to fall and, especially, because higher rewards or prices will have to be paid to attract the extra raw materials and labour etc. that are required.

Average total costs (AC) at any level of output will equal average fixed costs (AFC) plus average variable costs (AVC) at that level of output. This is shown in Figure 5.3.

Having determined the likely shape of the average cost curve (AC), we can also consider the shape of the marginal cost curve (MC). The data in Figure 5.4 is based on the 'U-shaped' curve that is the likely shape of the average cost curve of any firm operating in any type of market situation.

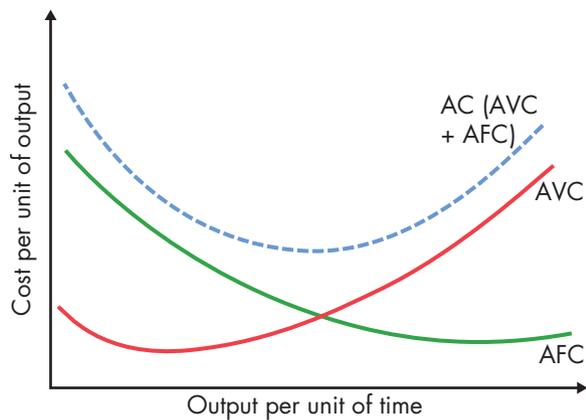


FIGURE 5.3 Variable, fixed and total costs

FIGURE 5.4 Schedule of costs for a business

Units of output	Average cost (\$)	Total costs (\$)	Marginal cost (\$)
1	15.00	15.00	
2	10.00	20.00	5.00
3	7.50	22.50	2.50
4	6.00	24.00	1.50
5	5.00	25.00	1.00
6	6.00	36.00	11.00
7	7.50	52.50	16.50
8	10.00	80.00	27.50
9	15.00	135.00	55.00
10	22.50	225.00	90.00

In all cases, the marginal cost curve (MC) will intersect the average cost curve (AC) at its lowest point. Thus, while marginal cost is less than average cost, the new average cost will be lower; as soon as marginal cost exceeds average cost, then average cost will start to rise.

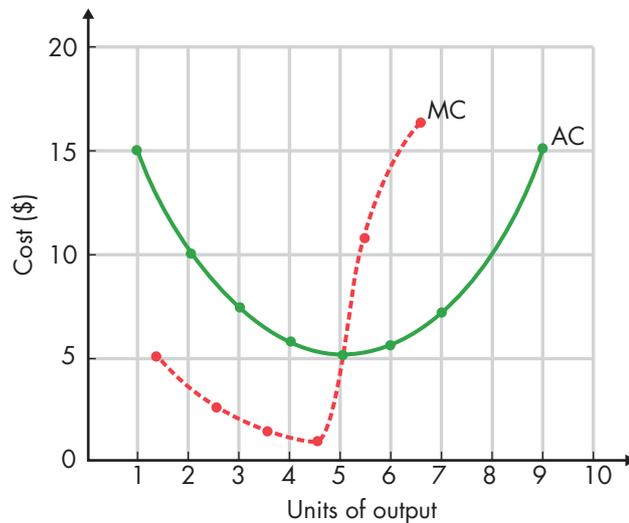


FIGURE 5.5 A firm's cost curve

QUESTIONS

- 1 Is it true that a competitive business will always maximise its profit by producing at the lowest possible cost per unit?
- 2 If advertising increases costs, how can it increase profits?

ECONOMICS AND ICT



Try creating your own data table of a hypothetical set of production costs in an Excel spreadsheet and producing a computer-generated graph.

Creating your spreadsheet

- 1 Create an Excel spreadsheet starting with row 1 by typing the following: Quantity (A1), Average Cost (B1), Total Cost (C1) and Marginal Cost (D1).
- 2 Number your Quantity from 1 to 10 down the first column (A2–A11).
- 3 Number your Marginal Cost column as follows: 0, 20, 16, 13, 7, 10, 16, 28, 31, 33 (D2–D11). Remember that a MC curve begins high, then dips then rises higher.
- 4 Start your Total Cost column with 30 (C2) then type: =C2+D3 then press enter. Now copy and paste C3 into all cells from C4 to C11 (Alternatively, click and drag from C4 to C11 and paste).
- 5 Start your Average Cost column in B1 by typing: =C2/A2 then press enter. Now copy and paste B1 into all cells from B2 to B11 (Alternatively, click and drag from B2 to B11 and paste).





Creating your graph

- 1 Highlight your table (click and drag from A1 to D11), click the insert tab on the top toolbar, under charts select a style of line graph.
- 2 Click on the Total Cost line in your graph (not the table) and press delete, then click on the Quantity line in the graph (not the table) and press delete.
- 3 You should now have a graph featuring only Average Cost and Marginal Cost lines.
- 4 You may need to format your graph by adjusting your settings.

When we draw graphs based on these models they are usually smooth perfect lines and always support the 'rule' that the MC curve always intersects the AC curve at its lowest point.

Questions

- 1 Does your graph have smooth, perfect lines?
- 2 Does the MC curve intersect the AC curve at its lowest point?
- 3 If you change your MC column data, do the curves still cross at the lowest point on the AC curve? If so, how could you change your MC curve data to stop this from happening? (Hint: try different ascending amounts in the Marginal Cost column.)

Challenge

Could you use this same skill to create a simple supply–demand model?

5.3 Efficiency

KEY IDEA

The economic problem cannot be avoided so the objective of economic systems, to achieve optimal satisfaction of wants, necessitates that the goods and services most valued by consumers are produced in the least costly ways. This involves allocating productive resources to their optimum use and combining them in the most productive ways. The finished products should be distributed in ways that best satisfy the wants of consumers. Markets operating optimally will produce the most efficient solutions to the economic problem.

CONCEPTS

Allocative efficiency: occurs where a country's productive resources are used in the economy in combinations that generate the maximum benefits for consumers and the country

Dynamic efficiency: the ability of an economy to respond to changing consumer demands by reallocating resources to new industries or production processes

Economies of scale: the cost-saving advantages that a firm gains by increasing its scale of production

Law of diminishing marginal returns: once the most efficient level of production has been reached, adding an extra factor of production (such as a new employee) will cause a relatively smaller increase in output than that gained from each existing factor of production; the marginal productivity will decrease





Optimal outcome: the best or most favourable outcome under a particular set of circumstances

Pareto efficiency: when the allocation of resources is optimal; one person cannot be made better off without making another person worse off

Productive efficiency: the ability of an economy to achieve the maximum quantity of output from a given quantity of productive resources

Productivity: a measure of the efficiency of production, expressed in terms of the rate of output per unit of inputs

Specialisation: the use of the factors of production to perform narrowly defined, specific functions, such as assigning specific production tasks to a worker

ECONOMICS IN ACTION



Before learning more about efficiency, pause to consider what understanding you already have and what aspects of efficiency you need to gain knowledge of. A useful way to approach this is to describe:

- what efficient production might 'look' like
- what it might feel like to be part of an efficient production process (as business owner, worker or consumer)
- the types of sounds you associate with efficiency.

Efficiency maximises consumer satisfaction and business profits. It promotes economic growth through the more productive use of resources and the development of innovative products and processes. Economists highlight three types of efficiency: allocative, productive or technical and dynamic efficiency.

Perfectly competitive markets, which have large numbers of buyers competing for goods and services supplied by large numbers of suppliers, will generally be more efficient. Later in this chapter, less competitive market structures including oligopoly and monopoly will be examined. An examination of why perfectly competitive markets, and the firms that operate in them, are claimed by businesspeople, economists and governments to be more efficient is essential to understanding the benefits of a perfectly competitive market structure over a less competitive market.

5.3.1 The law of diminishing marginal productivity

KEY IDEA

Increasing the amount of any one resource (e.g. labour) will not necessarily result in an increase in production.

This law of economics, often called the principle of diminishing returns, is an important beginning point to any understanding of how production might be made more efficient. As more and more units of a variable factor of production (e.g. labour) are added to a fixed factor of production (e.g. land), a point will eventually be reached at which the output resulting from each additional unit of the variable factor will start to decline.

We can see this law or principle in operation by analysing the amounts of wheat that can be grown on a particular parcel of land by using more and more labour, together with a constant supply of capital and a given technology. Let us assume we have one person working on 1 hectare of land. They can produce 20 tonnes of wheat a year. Comparisons with neighbouring farmers, indicate that they are not operating at the most efficient level. So, they decide to hire another worker.

Working together, each doing jobs for which they are suited, the two people are able to increase production to 45 tonnes a year. The extra worker has caused production to increase by 25 tonnes a year. The extra output produced by the one extra unit of the variable factor, labour, is called the marginal product. Increasing the labour intensiveness of operations still further by employing more people will allow further specialisation in the work, and may give even greater returns. A third worker may add marginal product of 35 tonnes, increasing output to 80 tonnes. A fourth may increase production to 130 tonnes, adding 50 tonnes of marginal product.

Things look rosy, but the farmer must decide how many extra workers to employ. Will they continue getting increasing returns from every extra worker they employ? Clearly, the answer is 'no'. Employing a fifth worker produces a rise in total output to 160 tonnes. The marginal product, however, is only 30 tonnes, so we are now at the point of diminishing returns. A sixth worker may also increase total output, perhaps to 180 tonnes and a seventh to 190 tonnes, but marginal product will continue to decrease until the addition of a further worker may actually result in reduced output.

This would be due to a 'crowding effect', a situation in which the farm has so many workers in relation to the land (and any other fixed factors) that they actually get in each other's way. Any extra workers would reduce overall efficiency and add little or nothing to total output.

FIGURE 5.6 Wheat production per worker on 1 hectare of land

No. of workers	Total output (tonnes of wheat)	Marginal product (tonnes of wheat)	
0	0	0	Increasing returns
1	20	20	
2	45	25	
3	80	35	
4	130	50	Optimum
5	160	30	Diminishing returns
6	180	20	
7	190	10	
8	185	-5	

5.3.2 Productive efficiency

KEY IDEA

Resources are being used in the most efficient ways when a firm's average costs are equal to its marginal costs, resulting in goods and services being produced at the lowest cost.

Productive efficiency occurs in an economy, industry or firm when resources are used in a way that achieves the maximum quantity of output from a given quantity of productive resources. Resources are being used in the most efficient ways and nothing is being wasted. This will result in goods and services being produced at the lowest cost. Productive efficiency is said to occur on the production possibility frontier.

ECONOMICS IN ACTION



Draw a production possibility graph to illustrate the concept of productive efficiency for an economy.

- 1 Label the horizontal axis 'Goods' and the vertical axis 'Services'.
- 2 Draw a curve showing different outputs of goods and services.
- 3 Mark two points of possible production illustrating inefficient production and three combinations of goods and services being efficiently produced.
- 4 Write a brief explanation that justifies your judgement that the two points are inefficient and the three points are productively efficient.
- 5 Is any one of the three efficient points the optimum combination of goods and services for that economy? Explain.

When looked at in the short term, productive efficiency can be illustrated by the cost curves of an economy or firm. As illustrated in Figures 5.3 and 5.5, the most efficient volume of production is at the lowest point of the short-run average cost curve (where MC cuts the bottom of the AC curve). The firm is productively efficient if $AC = MC$. The marginal cost of producing each unit of output beyond this point rises rapidly, indicating increasing inefficiency and overproduction. The firm is operating on its production possibility frontier; no resources are being wasted or under-utilised. The market price will match the firm's average total costs: $P = MC = AC$.

To remain competitive, the firm must be producing at its lowest total cost. Even if some short-term increase in demand occurred and the firm responded by increasing production beyond its most efficient level, competition from other suppliers would force it back to the productively efficient level of production. Figure 5.7 illustrates this point.

If the firm increases production to Q_1 to exploit a short-run increase in demand that drove prices up to P_1 , it would no longer be achieving productive efficiency. Its marginal costs (MC) would be greater than its minimum average costs (AC), resulting in a lower marginal revenue (MR) for those extra units of production ($Q_e - Q_1$). New firms will be attracted into the market, increasing supply and driving the market price down to P_e where price again equals average cost. All firms in perfectly competitive markets will be forced to be productively efficient in the long run.

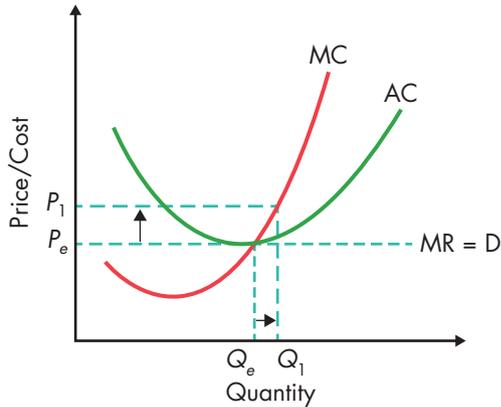


FIGURE 5.7 Productive efficiency of the firm

Productivity

To minimise costs and maximise output from a given level of productive inputs (i.e. achieve productive efficiency) firms must gain maximum **productivity**. Productivity focusses on the volume of output produced from a given amount of inputs and should not be confused with production, which is the total amount of goods and services produced, regardless of how efficiently this was done. A firm’s costs are inversely related to its productivity; improving productivity reduces costs.

Statistical measurement of productivity can be at two levels. It may involve all factors of production, referred to as multifactor productivity (MFP), which would be measured by using:

$$MFP = \frac{\text{output}}{\text{all inputs}}$$

Otherwise it will focus on improvement in any one of the factors of production (single factor productivity or SFP). Output per worker per unit of time is an example of useful SFP data.

ECONOMICS IN ACTION



Productivity data

Use the Internet to discover what productivity data is available to the public. You will find the links to the organisations mentioned below on NelsonNet.

The Australian Bureau of Statistics (ABS) website provides a range of measures that are regularly updated. Other useful government sources include the Department of Industry, Innovation and Science, the Productivity Commission and the Reserve Bank of Australia (RBA). By using a search engine, you will also find links to useful non-government sites.

You may find the following table a useful example of how your findings can be recorded.

Source	Factor(s) of production measured	Unit of measurement	Usefulness

The second column will show whether single or multifactor productivity is being measured.

Base your decisions about usefulness on whether the information would be most relevant to decision makers in individual firms, at an industry level or at the level of the whole economy.



Productivity data research

Specialisation

One of the main ways that firms can increase their productivity is to increase **specialisation** of the factors of production. This involves using land, labour, capital and enterprise in such a way that their roles in the production process are extremely narrow and clearly defined.

- The specialisation of land or industry involves firms focussing on producing only a narrow range of goods or services and firms and industries locating in areas where there are complementary businesses and opportunities to minimise production costs. In urban areas, planning of land use has led to zoning of land for specialised purposes. Areas are zoned for residential purposes, high-rise development, light industry and heavy industry. The infrastructure needed to support specialised industrial production is developed in specific locations to support this localisation of industry. Firms and industries choose locations that will minimise their production costs. Key considerations are access to specialised labour, suppliers, raw materials, markets and infrastructure such as communications, transport and financial services.
- Specialisation of labour, often referred to as 'division of labour', has been a feature of large-scale production since the Industrial Revolution. Rapid advances in technology in recent decades have progressively narrowed workers' roles. The complexity of modern production techniques requires that most individuals become an expert at a specific task to ensure maximum efficiency. The assembly lines used to manufacture vehicles are prime examples of division of labour. As vehicles move along an assembly line, individual workers have a specific task to complete as each vehicle body passes. Other clear examples of specialisation of labour are found in the building industry, aircraft and ship manufacturing and in large hospitals. While division of labour has resulted in the productivity of each worker increasing significantly, numerous problems have arisen. Some of these are explored in Chapter 7.
- Specialisation in terms of capital usage or large-scale production has developed concurrently with division of labour. Manufacturing firms, extractive industries and agricultural producers have exploited advances in technology to produce high volumes of output at the lowest costs possible. By employing highly specialised equipment (capital) to replace costly labour and exploiting the benefits of economies of scale, producers have been able to significantly boost their productive efficiency. The mining of iron ore and coal, and large-scale farming of grains and pulses are good examples of highly specialised, capital-intensive production in Australia. Motor vehicles and their components are manufactured in huge volumes in Asia, Europe and the USA using production lines that combine the use of robots and computer-guided machinery with limited amounts of highly specialised labour.
- Specialisation of enterprise is related to the other three types of specialisation examined above. Entrepreneurs today generally develop high levels of knowledge and skills in a narrow area of economic activity. Managers of entertainers or sporting stars, founders of technology start-up companies and craft brewers are examples.

Specialisation allows firms to improve their productive efficiency by increasing their productivity. It improves the performance of an economy by improving the efficiency of resource use, directs the available skills of the community to their most productive uses and allows goods and services to be produced at the lowest cost.

Technical efficiency

Technical efficiency is related to productive efficiency, but is a more narrow and specific concept. Technical efficiency is concerned with maximising the output possible from a given input such as a particular machine or a combination of inputs (e.g. labour and capital).

Productive efficiency is concerned with minimising costs by producing using the best mix of inputs at the lowest point on the short-run average cost curve.



iStock.com/Opla

FIGURE 5.8 Specialisation of capital

Economies of scale

KEY IDEA

There are both economies and diseconomies of scale associated with large-scale production.

In the long run, a firm can avoid the limitations of the **law of diminishing marginal productivity** by expanding its scale of production. As a firm or an industry grows, there are certain benefits to be gained, called **economies of scale**. Economies of scale result in lower costs per unit of output as total output increases.

Economies of scale are broken down into two types. Internal economies are said to be those that are derived by a firm as a result of an increase in the size of its own operations. As a firm grows, it can eliminate much of the wasted capacity that is often found in small-scale enterprises. It is also able to increase the degree of specialisation among its employees. These economies reduce the average costs of the firm in the medium to long term.

External economies are those benefits that accrue to all firms within an industry and to society as a result of the growth of an industry. For example, the growth of the mining industry throughout Australia has brought with it numerous external economies. Large mining companies have undertaken ‘infrastructure’ investment in order to achieve high levels of efficiency. This form of investment includes the establishment of shops and facilities, houses, roads, railways, dams and port facilities. While the companies that developed the

infrastructure obviously gain from this form of investment, other businesses in the area and society as a whole also benefit.

Economists also draw attention to the diseconomies of large-scale production. Internal diseconomies occur when the problems arising from increased output levels raise average production costs. With large-scale production, decision making can become fragmented and the communication process within a firm can deteriorate. Many modern workers across the globe feel individually unimportant in their workplaces and find their contribution to 'efficient production' is personally unrewarding. This 'de-humanisation' of workers has been apparent in large-scale assembly processes since at least the early 1900s.

Some external diseconomies create widespread social costs. Residents of many major cities in China have been experiencing dangerous levels of air pollution caused by some forms of large-scale production. The move towards large-scale production since the Industrial Revolution has correlated with resource depletion, loss of habitat and species diversity, rising global pollution levels and rapid global climate change. Whether causal links exist between these environmental challenges and large-scale production will be explored in Chapter 8.

QUESTIONS

- 1 Define 'economies of scale'.
- 2 Why are the economies of scale attained by the major manufacturers not available to small producers?
- 3 List at least two specific examples of internal economies of scale and at least two external economies of scale.
- 4 Demonstrate your understanding of the law of diminishing returns (diminishing marginal productivity) by:
 - a giving an example from everyday life of this law in operation
 - b explaining how this demonstrates the principle of diminishing returns.
- 5 Do you think there is a causal link between large-scale production and the environmental problems listed above, as diseconomies of scale? Would a global economy dominated by small firms, producing on a limited scale, avoid these problems?
- 6 Select a local business with which you are familiar and identify the economies of scale that business enjoys. Can you identify any diseconomies of scale in its production process?

5.3.3 Allocative efficiency

Allocative efficiency is achieved when resources go to the production of goods that people most want, in the quantities that provide the greatest social benefits. The market is delivering the socially optimal level of output.

This type of efficiency is concerned with where the available productive resources of an economy are used. It occurs when resources are allocated to the production of the goods and services demanded in the quantities that provide the greatest consumer satisfaction. Resources are being used to produce the greatest possible level of welfare for that society. This means that there is no way that the benefits to consumers or producers can be increased.

Resources are allocated efficiently when the benefit an individual derives from the last item they consumed is just equal to the cost of producing that item.

$$\text{marginal utility} = \text{marginal cost}$$

Only perfectly competitive markets operate in a way that delivers allocative efficiency. To maximise their profits, producers in competitive markets are forced to price their output at the marginal cost of production, so they operate in a way that is consistent with the concept of allocative efficiency. The optimal distribution of resources and the output produced from them is achieved when the marginal cost and market price are at a level that consumers are willing to pay, because it is equivalent to the marginal utility that they gain (see Figures 5.9 and 5.10).

Pricing at marginal costs implies that costs and benefits are valued at their opportunity costs. Outputs of production are valued according to the willingness of consumers to pay for

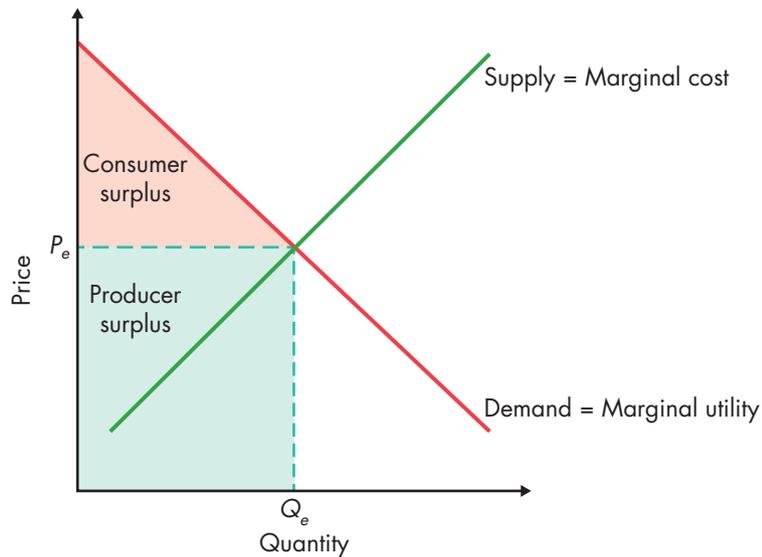


FIGURE 5.9 Pricing at marginal cost

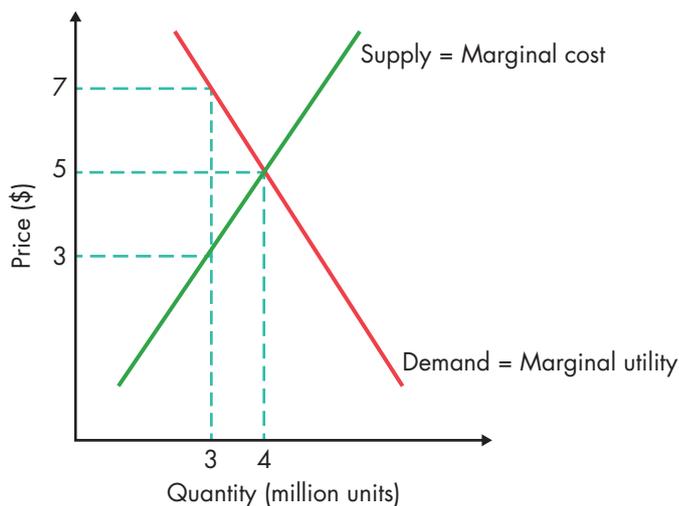


FIGURE 5.10 Allocative efficiency

them – an amount that includes the consumer surplus. This is the difference between the price actually paid (the market equilibrium price) and the amount the consumer would have been willing to pay for them, based on the marginal utility of that product to them. Producer surplus refers to the difference between their costs of production (including a normal profit) and the (higher) market price that they are able to receive for their production. In the long run, a competitive market will produce Q_e and sell it at P_e , maximising the welfare gained by both consumers and producers.

Allocative efficiency is achieved when marginal benefit (utility) equals marginal cost and price equals the marginal cost to firms of producing that output. There is no way that any change in the level of output can increase consumer or producer surplus, or welfare.

If the market produced three million units of this good, the marginal cost would be \$3 but consumers would be willing to pay up to \$7 for the good. This would be an inefficient allocation of resources because the marginal benefit to consumers is greater than the marginal cost to producers. Demand is greater than supply so not all consumers will receive satisfaction. Resources are being under-allocated to this good.

If the price rose to \$5, then output would increase to 4 million units and society would benefit from enjoying more of the good, and producers would increase their surplus and welfare. In this example, allocative efficiency occurs where marginal utility equals marginal cost – at an output of four million units.

ECONOMICS IN ACTION



Draw a demand and supply graph combining the key elements of Figures 5.9 and 5.10 to illustrate a situation of allocative inefficiency caused by marginal cost being greater than marginal benefit.

5.3.4 Dynamic efficiency

KEY IDEA

The technological change and innovation associated with dynamic efficiency are more likely to come from firms with a high degree of market dominance than from small firms in a perfectly competitive market.

Allocative and productive efficiency were the central concerns of classical economic theories from Adam Smith in the 1770s to John Maynard Keynes in the 1920s and 1930s. The explanations of these key efficiencies provided in this chapter drew on their static models of perfectly competitive markets. The concept of **dynamic efficiency** was given prominence by the writings of Joseph Schumpeter in the 1930s and 1940s.

Schumpeter claimed that these models of perfectly competitive markets failed to describe many important aspects of how markets actually worked. He saw the static nature of these economic models as their key weakness (i.e. the assumption that nearly all variables were held constant). Schumpeter saw technological change and progress as the key to understanding the dynamic way that real markets functioned. Entrepreneurs were the drivers of new ideas, technologies and ways of producing. They were motivated by the large profits that could be gained by dominating the competition in existing markets or creating temporary monopolies in entirely new markets.

Dynamically efficient firms or economies develop new products and production processes using new ideas and technologies to meet, or even lead changes in, consumer preferences and tastes. The key to dynamic efficiency is innovation, not just new inventions. Innovation is the ability to put new ideas, inventions or approaches into action, and to commercially exploit them. Applying these new technologies and ways of organising production reduces production costs and therefore increases productive efficiency. Allocative efficiency will also improve because by developing new products or adapting existing products to changes in consumer preferences, firms are producing the goods and services that consumers value the most.

Classical theories assumed that markets dominated by a small number of producers would produce inefficient outcomes, because existing producers were protected from competition by the substantial barriers to new suppliers entering the market. Schumpeter disagreed, making the point that such highly protected firms are more likely to undertake risky and costly innovation, and generate dynamic efficiency. He saw the desire of entrepreneurs for dominance of a new market, and existing firms to dominate their competitors, as the driving force behind innovation and economic progress. The benefits to society are a secondary motivation.

There is some evidence that large firms with dominant market power such as Alphabet, Microsoft, Apple and Nike are global leaders in dynamic efficiency. They can afford expensive and uncertain investment in new technologies or products because they earn super-normal profits that can be 'ploughed back' into research and development, thus benefiting society in the long run. However, some major innovations have come from technology start-up companies such as PayPal, Facebook, Uber and Airbnb. These might be explained as examples of entrepreneurs seeking super-normal profits from dominance of a new market.

Firms in very competitive markets are unlikely to be dynamically efficient because the normal profits they generate do not allow significant investment in research and the development of new technologies. An additional barrier is the assumption that all firms in perfectly competitive markets have perfect knowledge of the other firms and consumers. If this were the case, then any innovation would be copied by all of their competitors and its development would not create any lasting competitive gain for the firm.

5.3.5 Socially optimal level of output

Productive, allocative and dynamic efficiency are concerned with **optimal outcomes**. Allocative efficiency is achieved at a level of output where price equals marginal cost, so it signals the optimal level of output in the sense that it is the level of output that allocates resources to the production of goods that consumers most desire. If all firms in every market were achieving allocative efficiency, then the economy would be operating in what economists refer to as **Pareto efficiency**. This is an optimal outcome in the sense that any change in the way goods are allocated to make some individual better off would be at the cost of making another consumer worse off. However, this is a very narrow understanding of efficiency, as it does not consider whether it is socially desirable to distribute the economy's resources in that way. This distribution of resources may be unequal, inequitable or produce costs for the society that are externalised from the market and considerations of cost.

Economists need to examine whether the most efficient firms and markets are producing the most socially desirable outcomes. It may be productively efficient to produce weapons, electricity from coal or 'fast' foods, but are these efficient allocations of resources? A market maximising the output it generates may not be maximising social welfare. Are all

of the new technologies being developed by the most dynamically efficient firms delivering environmentally optimal uses of the planet's resources? Are workers' levels of satisfaction, health and wellbeing being factored in to the costing of a dynamic, productively efficient new production process? To what extent is consumer demand for 'supersized' meals, greater social media access or latest models of technological devices created by the product design, marketing and advertising of firms seeking to increase demand and profits? Some of these considerations are addressed in Chapters 7–9. This raises consideration of the idea of social efficiency. This would involve consideration of all the private and external costs and benefits of producing in certain ways, producing certain types of goods or producing an extra unit of any good or service. Consideration of social efficiency is not a feature of existing Australian or global markets. Even markets that deliver an optimal level of productive and dynamic efficiency may produce suboptimal and socially undesirable outcomes.

QUESTIONS

- 1 Distinguish between productive and technical efficiency.
- 2 Distinguish between allocative and productive efficiency.
- 3 Explain why economists say that allocative efficiency is achieved when marginal utility equals marginal cost.
- 4 What (statistical) measure would a business use to indicate each of the following?
 - a how productive its use of labour is
 - b how productive its use of capital is

5.4 Market structures

CONCEPTS

Market power: the ability to control and influence the market in one's own self-interest

Market structure: features of a market that determine the level of competition

Monopolistic competition: the market situation in which a large number of buyers and sellers are exchanging similar but not identical products

Monopoly: the market situation in which one seller sells a product for which there is no close substitute, allowing it to be the price setter

Natural monopoly: arises in a market in which the costs of production are minimised when one firm supplies the market

Oligopoly: the market situation in which a small number of firms are selling similar but not identical products

Perfect competition: a theoretical market structure in which many buyers and sellers trade a homogenous product, there are no barriers to entering the market and all producers are price takers

Product differentiation: when producers try to give a good or service some characteristics that make it seem different from essentially similar products of competitors, to lessen the degree of substitutability and increase brand loyalty

KEY IDEA

Markets are structured in a variety of ways between the extremes of pure monopoly and perfect competition. The size and market power of firms supplying a product influences the behaviour and performance of that market.

Markets vary from industry to industry and the behaviour and performance of a market is greatly affected by the way that market is structured. Different structures develop for a variety of reasons. The history of each market's development, the nature of the industry and its production processes are key factors. The size of the market, the amount of competition, the extent of government regulation and technological innovation are also important. Economists generally identify five major **market structures** and describe them on a continuum ranging from **perfect competition** to a **monopoly**.

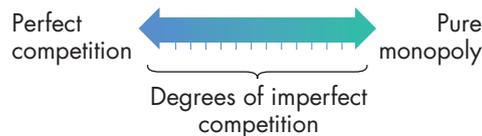


FIGURE 5.11 Models of markets

Perfect (or pure) competition and pure monopoly are simplified, theoretical models that represent the extremes of market behaviour. Few contemporary markets can be described as even approaching perfect competition, and pure monopolies only exist in special situations. Despite this, economists still find them a useful starting point for analysing and evaluating the performance of real markets. Perfect competition provides a model of what a market that provides optimal outcomes might look like.

5.4.1 Perfect competition

Adam Smith argued in *An Inquiry into the Nature and Causes of the Wealth of Nations* in 1776 that the best way to increase the wealth of the community, use resources efficiently and deliver consumer sovereignty was through a free market. He claimed that without government interference, the problems of production and distribution could be solved through the interaction of supply and demand in a freely competitive market. Since then, economic analysis of real markets has been centred on their differences to this 'ideal' type of market.

Perfect competition is a market structure that is assumed to have the following characteristics:

- **A homogeneous product:** All items offered for market exchange by firms in an industry are identical. Products are perfect substitutes for each other.
- **Many buyers and many sellers:** There are so many buyers and sellers that none has the market power to influence the total amount produced or the market price.
- **Perfect knowledge:** Each buyer and seller is fully acquainted with all conditions within the market, including prices, levels of output and the quality of the product.
- **Perfect mobility:** No firm in the industry has any locational advantage over others. Factors of production are free to move throughout the industry.
- **Freedom of entry:** There are no restrictions on the movement of entrepreneurs or other factors of production into or out of the industry.
- **Price equals marginal cost:** The product must be sold at the lowest possible price for firms to remain competitive within the industry.

The good or service will be sold at market price, that is, the price determined by the interaction of market supply and demand. This market price is effectively the demand curve for each firm. It is perfectly elastic because all other competing firms produce perfect substitutes. This means that each firm has to sell at the market price, making them price takers. All firms will earn a normal profit.

ECONOMICS IN ACTION



Australian markets
research

Australians can visit and observe the conduct of markets in action. If you are unable to actually visit a market, use the websites for the organisations mentioned below to gain a basic understanding of the operation of one of the following markets. You will find the links to these organisations on NelsonNet.

- the Brisbane Marketplace fresh produce markets
- Melbourne's Queen Victoria Market
- a local farmers' or produce market
- a livestock auction
- the Sydney Fish Market

Take into consideration the following factors:

- size of the firms operating in this market
- the number of sellers competing in this market
- differences between their products
- number and nature of buyers
- how the price is being set; look for evidence of price competition, fixed prices, bargaining or a seller that seems to set prices that others follow.

As you consider the three types of market structure described below, evaluate their similarity to the market you have investigated. Decide which market classification would best describe the conduct of this market.



iStock.com/PurpleImages

FIGURE 5.12 A wholesale fish market

5.4.2 Monopolistic competition

While there are few examples of perfect competition, there are many markets in Australia and in other economies that match the characteristics of **monopolistic competition**. The market structure of monopolistic competition has similar features to perfect competition. The distinguishing characteristic of monopolistic competition is that firms offer a similar but not identical product for sale. Restaurants, convenience stores, coffeeshops, hairdressers, newsagents, motor mechanics and many independently owned and operated retailers are examples of firms in monopolistic competition.

Characteristics of monopolistic competition:

- **A similar product:** Though there may be little or no real difference between the products offered by different firms, consumers believe that some features of the competing products, or their quality, are different.
- **A relatively large number of buyers and many sellers:** Firms are price takers because they have small market shares, leading to limited market power.
- **Good knowledge:** Participants have good but not perfect knowledge of the market.
- **Easy entry and exit to the market:** The costs of entering or leaving the market are limited because the capital required is relatively small.

In the pursuit of increased profits, market share and stability, firms seek some control over the market. They try to convince customers that their product is different or unique. The strategy of **product differentiation** seeks to give the firm **market power**. If the strategy is successful and customers perceive the product to be different, customers will continue to choose the firm's brand over a competitor. Once customers develop loyalty to the product, the firm may be able to raise its price without fear of losing its entire market share to a competitor.

The product differentiation strategy is a form of competition that is not based on price. Firms prefer not to compete on price. Price wars make doing business and profit planning difficult. They lead to dissatisfied customers when the war is won and prices are returned to the original levels. They are also an ineffective way of gaining long-term market share, as any firm can follow suit and cut prices.

A better way is adopting a strategy that competitors cannot match. Establishing a brand name or a reputation for good after-sales service is one such strategy. Imagine the competitive advantage that a firm has if it owns a brand name such as Ferrari, Nike, Coca-Cola or McDonald's. Most businesses of the scale that operate in monopolistic competition cannot hope to develop such well-recognised brand names, but there are a number of other ways they can differentiate their products to attract customers. These include better customer service (such as after-sales service, personal contact, more locations, and courteous, timely service), building prestige through community involvement, providing guarantees, offering a variety of models and undertaking various promotions.

QUESTIONS

- 1 In what ways is monopolistic competition different from perfect competition?
- 2 Why is advertising important in monopolistic competition?
- 3 Describe three forms of non-price competition and explain how they might increase a firm's market share.
- 4 What freedom does a firm in monopolistic competition have to increase its price? Decide and explain.

5.4.3 Oligopoly

Oligopoly is a less competitive market structure in which a few large firms dominate and make super-normal profits. Oligopolies are common in the markets of small- to medium-sized economies such as Australia, and an oligopolistic structure is evident in many key global markets. Characteristics of an oligopoly:

- **Differentiated products:** Similar but not identical products are offered for sale.
- **A few sellers and a large number of buyers:** A few (about three to eight) relatively large firms dominate the market and there may be market leaders.
- **Substantial knowledge:** Firms will often have a good understanding of the market and the competitive strengths and strategies of rivals, especially if there is collusion.
- **Interdependence of firms:** There is an incentive for firms to match the behaviour of its main competitors, rather than engage in costly competition. Rivals will match most technological breakthroughs and attempts at price competition, reducing the total revenue of all firms.
- **Substantial barriers to entry and exit:** Firms seeking to enter these markets face significant barriers to entry that include the high initial capital costs of establishing a firm of sufficient size to compete.

Global manufacturing of aircraft, cars, container ships, aluminium, steel, oil and gas, pharmaceuticals, and agricultural chemicals is dominated by a small number of very large firms. The markets for computers, computer operating systems, software, smartphones and subscription television are oligopolistic. In Australia, grocery and hardware retailing, mass media and news, movie theatres, take-home alcohol and petroleum retailing are markets dominated by large national brands. Banking, domestic air travel, food processing (including breakfast cereals, dairy products, canned food, biscuits, brewing, confectionery and soft drinks) and the production of chemical fertilisers are oligopolistic industries.

A few firms dominate these industries, even though they may produce a variety of brands and many models of any one product. The extent of this domination is measured by the concentration ratio. A common measure of the concentration ratio is the percentage of an industry's output that is provided by the four largest firms. In oligopolies the four market leaders produce more than 50 per cent of output, but there are industries in which this exceeds 90 per cent. Australian examples include banking and supermarkets.

Price rigidity is a feature of an oligopolistic market. There is little incentive for firms to compete on price to gain additional customers. Rivals would quickly match any price cut. An extensive price war among large firms that each have significant market power would be financially disastrous and result in little or no gain in market share for any individual firm. A price rise from one firm would probably not be matched by competitors, leading to a loss of sales and market share. Firms tend to set prices at the level set by the dominant firm, emphasising that they are price makers. Price leadership avoids damaging price competition. Short-term 'sales' or special prices on a limited range of items give an illusion of price competition. Alternatively, as there are only three or four dominant firms, it is possible for oligopolists to come to an agreed position on fixing prices, market shares and regions. Such collusion among firms to reduce competition, however, is usually illegal.

Product differentiation and advertising play significant roles in the competition between oligopolists for market share. Marketing strategies include product placements in popular movies and television shows and sponsorship of sporting events. Frequent releases of new 'models', new packaging, customer loyalty programs and extended warranties are all examples of differentiation.

Competition from new entrants is limited because entry to oligopolistic markets is difficult. Barriers include high initial capital costs and difficulties in gaining access to specialised technologies, suitable locations, intellectual property rights and government

approval. Lack of experience of the market, and prolonged and seemingly coordinated price cutting and major advertising spending by market leading firms add to the difficulties faced by new firms trying to compete with established brand names.

5.4.4 Monopoly

A monopoly is a market structure in which there is just one seller of a good or service. The total supply of the market comes from one producer. Monopolies can only exist if there are no close substitutes. Such a firm has considerable market power. It can search out and set a price that the market will bear and that will maximise its profits. Monopolies are not a prominent feature of the contemporary Australian economy, but Australia Post, Queensland Rail and Queensland Urban Utilities (water supply and sewage) are prominent government-owned examples.

The monopoly market structure has the following characteristics:

- only one seller of the product
- the product has no close substitutes
- limited knowledge: much of the production and marketing information is not readily available and may be protected as commercially sensitive information
- the potential to earn monopoly profits: market power allows control of pricing or output, allowing the chance to earn super-normal profits
- significant barriers to entry: firms face significant barriers to entry that include high initial capital costs, the market knowledge of the monopolist and their ability to protect their market dominance by developing high levels of technical and dynamic efficiency. These barriers may be insurmountable in the case of government-regulated monopolies.

There are few examples of privately initiated monopolies, because their formation is usually illegal. Interestingly, monopolies have arisen from government regulation or ownership. They have been established with the support of governments because it is considered that the public interest would be better served by having monopolies that are closely regulated. Two examples of regulated monopolies are statutory marketing authorities and **natural monopolies**.

Regulated monopolies

Many statutory marketing authorities (SMAs) have been created in Australia by Commonwealth and state legislation to control the supply and price of selected products in the marketplace. They were prevalent in the agriculture sector. In recent years many of these markets have been opened to competition by government encouragement for competitors to enter the market, often supported by regulatory change. Examples include the Australian telecommunications market and the supply of energy and water in some state and local markets. Many formerly government-owned monopolies are now in private hands. Examples include motorways and bridges, ports, airports, power stations and utilities.

ECONOMICS IN ACTION



You are the owner of the only cinema in a large country town. The nearest cinema is 300 kilometres away.

- 1 Is there any substitute for your product?
- 2 In an advertising program, what features of your product would you promote in order to differentiate it from possible substitutes?





- 3 How would you decide what price to charge for tickets? What factors would you take into account?
- 4 Would the demand curve for your product more closely resemble Figure 5.13a or 5.13b below? Explain.

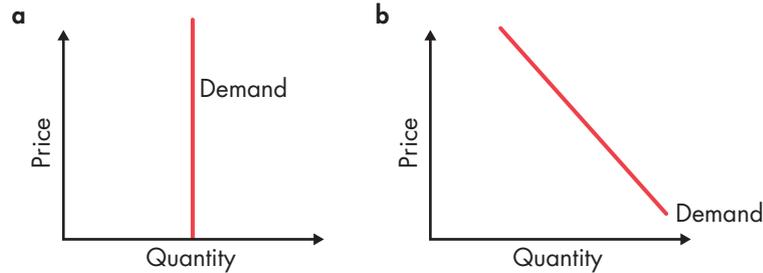


FIGURE 5.13 Demand curves

Natural monopolies

Natural monopolies occur in industries where large and indivisible capital investment is required to produce and deliver goods or services. Provision by more than one firm would usually mean costly duplication. The greater the number of customers that can be served by the one supplier, the lower the unit cost of production due to economies of scale. The least costly means of meeting the market demand is through production by a single firm. Natural monopolies can arise in industries providing railways, telecommunication, gas and oil pipelines, water supply, refuse collection, and electricity generation and supply. Governments have traditionally owned and controlled the enterprises in these industries, which are essential support industries to the rest of the economy. In more recent times, many government-owned monopolies have been sold, entirely or in part, to private interests. This is the process of privatisation.

A summary of features of the different market structures is given below.

FIGURE 5.14 Comparison of market structures

Market situation	Firms	Firm's market share	Products	Entry	Access to relevant information	Demand curve	Advertising
perfect competition	many	small	homogeneous	easy (no barriers)	free		no
monopolistic competition	many	small	some differentiation	relatively easy (some barriers)	restricted		yes
oligopoly	few	large	differentiated	difficult (significant barriers)	substantial		yes
duopoly	two	very large	differentiated	very difficult	variable	variable 	yes
monopoly	one	all	no substitute	very difficult (blocked)	very limited		yes

QUESTIONS

- 1** Test your memory. Attempt to draw and label a continuum describing the five main types of market structure.
- 2** Where would you locate the following markets on this line?
 - a** apples
 - b** new motor vehicles
 - c** electricity
 - d** petrol
 - e** dental services
- 3** How do real-world markets differ from the characteristics of the model of perfect competition?
 - a** Decide what is the (one) key characteristic that distinguishes the behaviour of firms in each of the five market structures.
 - b** Summarise this behaviour in a short sentence.
- 4** Choose a good or service produced in your local area. Compare its market to the characteristics of the model of perfect competition. What type of market is in operation here?
- 5** How does monopoly differ from monopolistic competition?
- 6** What incentive is there for firms to enter an oligopolistic market?
- 7** Do firms compete on both a price and product basis in an oligopoly?
- 8** Why is it so difficult for a new firm to enter an oligopoly?
- 9** Which firm, if any, is a monopoly in the three scenarios below? Discuss.
 - a** Dairy World is the sole producer of ice-cream products in Brisbane.
 - b** Utopia is the sole producer of ice-cream products in Australia.
 - c** Good Food is the sole producer of the brand Goodhealth's ice-cream products in Australia.
- 10** Give three examples of monopolies you consider 'natural'.
- 11** Normal profit is regarded as a cost of production because it is the return to entrepreneurs for the risks they are taking. Explain why oligopolists and monopolists earn an extra (pure) profit that is called 'super-normal' by economists?
- 12** Should the government own and run the following? Explain or discuss.
 - a** water supply
 - b** schools
 - c** banks
 - d** roads

5.5 Which market structure delivers the best outcomes?

KEY IDEA

Greater levels of competition may generally deliver high levels of consumer sovereignty and satisfaction, but the productive and dynamic efficiency of some firms with high levels of market power (and limited competition) and their ability to exploit economies of scale allow them to achieve high levels of efficiency and consumer satisfaction.

Orthodox economic theories hold that the closer a market is to the model of perfect competition, the better the outcomes. Yet many Australian and global markets are oligopolies and some remain monopolies.

The extent of competition in a market often affects the level of economic welfare that one gains from an exchange. For example, if you, as the buyer, had the opportunity to deal with a number of sellers who were competing against each other for your business in the market, you would feel confident that you would be able to get a good deal. You would be confident that you would be able to purchase a quality product at an acceptable price.

Orthodox economic theories, built on the ideas of Adam Smith, hold that competition is an essential ingredient of the effective operation of a market economy. Perfectly competitive markets deliver the greatest efficiency and the greatest consumer satisfaction. So the closer a market is to the model of perfect competition, the better the outcomes.

Competition promotes efficiency and keeps prices down. Competition also encourages producers to be innovative. In order to attract customers to their brands and to increase their share of the market, producers are motivated to develop new products, improve the quality of existing products and provide a greater array of product features. Competition in markets provides direct benefits to consumers.

Competition in markets for raw materials and factors of production benefit producers (which, in turn, means that consumers can benefit). Competition helps ensure that quality supplies are delivered on time and at the lowest price. Competition in the labour market ensures that wages reflect worker productivity and that services provided by professionals such as lawyers, financiers and accountants represent value for money. Competition ensures capital is invested to give the greatest profit return. As a result of competition, producers, consumers and owners of factors of production benefit.

For the nation as a whole, there are higher levels of economic activity, increased national income and improved living standards.

Unfortunately the assumptions on which all of this is based do not match the actual conditions found in many real-world markets. Not all markets are highly competitive, and some of the limitations this places on market outcomes have already been explored. There is a degree of government interference in the price mechanism of many markets. These departures from the model of a perfectly competitive market affect the performance of those markets and their ability to deliver a socially optimal outcome.

Government intervention is aimed at either improving the conduct of a market or the outcomes it delivers. Not all markets operating towards the monopoly end of the market-structures spectrum produce suboptimal outcomes for their consumers and the economy. The quality of outcomes delivered by markets of similar structure but in different industries or nations may be quite different, because firms in oligopoly, duopoly and monopoly can behave in a range of ways. They may collude or actively compete with the existing firms to protect their market domination.

While it is not possible to claim that any particular market structure delivers the best outcomes, higher levels of competition are generally considered to produce greater benefits than costs, but small firms in highly competitive markets cannot produce all of the types of goods wanted by Australian society. The small size of the Australian market for many types of goods limits the number of firms that can profitably produce them.

5.6 Market failure

CONCEPTS



Asymmetric information: the situation where one party to an economic transaction has more or better knowledge than the other party; consumers are less informed than suppliers in almost all economic transactions

Common property goods: goods or resources for which there are no clearly defined property rights, so no price can be attached to their use (e.g. the ocean, the atmosphere, wilderness and space)

Demerit good: a private good with negative externalities

Externalities: indirect costs and benefits associated with the production and consumption of certain goods and services that the market fails to take into account; these benefits or costs are imposed on a third party, who normally cannot pay or be compensated for them through the market mechanism

Factor mobility: refers to the ability of factors of production to move, usually to

an industry or location where they can operate at a higher level of economic efficiency

Market failure: the inability of the market to determine the use and allocation of resources in the way society most desires, because certain conditions are lacking, for example, limited market power, externalities and public goods

Merit good: a good or service that is not produced in sufficient quantities by markets because individuals do not value them highly enough to pay for them; a private good with positive externalities

Public good: goods such as national defence, a beach or road that are non-rival (consumption does not reduce quantity) and can be consumed by people that are not paying for the good

The tragedy of the commons: the overuse or destruction of a common property good because it has no price and so markets do not ration its consumption

KEY IDEA

There are a number of situations in which the market, through the price mechanism, is not able to deliver the socially optimal allocation of resources. There are a range of reasons why markets do not always work efficiently and effectively, so there are many types of market failure. Market failure may be complete or partial.

There is some level of government intervention in the free functioning of the price mechanism in every economy in the world. The main justification for this is **market failure**. Interventions are generally attempts to increase the social benefits resulting from the market system by either:

- improving the efficiency of the market
- influencing the nature or price of the goods and services available to consumers, or
- responding to fluctuations in the level of economic growth.

Government intervention may contribute to market failure or address it in ways that improve social welfare.

5.6.1 Partial market failure

KEY IDEA

Markets for many goods and services develop but fail to deliver the best outcomes. Markets can fail for many reasons.

Some markets do not allocate resources efficiently. Others distribute output and income in ways that leave many members of the community unsatisfied. Many existing markets fail to produce the desired quantity, type or quality of output, or it is not at the 'right' price. Many of the benefits of competition are lost in markets where monopoly power develops and abuses of it emerge. Others fail to maximise community welfare due to structural weaknesses. Instability, especially due to fluctuations in the business cycle, is a feature of all markets.

Negative externalities

The production or use of many goods and services indirectly causes harmful effects to people who may not be consumers of the good. Examples include pollution involved in generating electricity, noise from a major sporting or music venue, and the extra traffic congestion resulting from each new car on the road. Negative externalities occur when goods are sold at prices that do not include the full social cost of the production and consumption of that good. The private cost (purchase price) is less than the social cost because the social costs were externalised from the operation of the price mechanism. The market mechanism fails to compensate the third parties who experience these negative impacts.

The following diagram illustrates this situation.

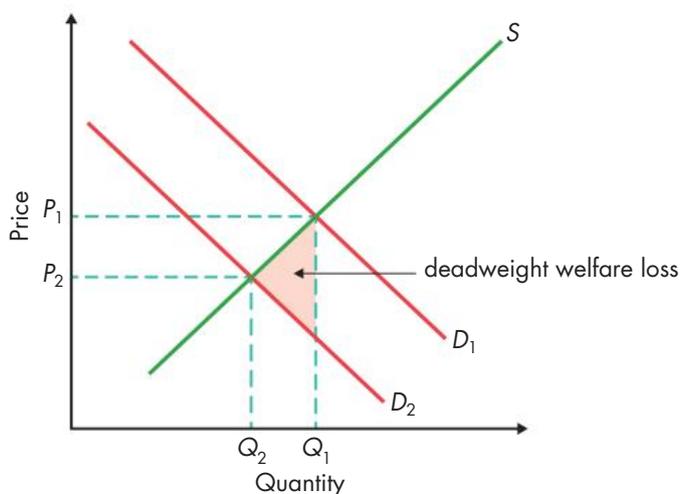


FIGURE 5.15 Negative externalities of consumption

This graph shows the effect of consuming a good that causes a harmful effect to a third party. In a free market, buyers ignore the social costs to others and demand Q_1 of output. The market mechanism is failing as there is over-consumption, resulting in a loss of welfare to third parties who do not consume the product, but suffer the effects of the negative externalities. The social cost of this level of consumption is greater than the social benefit. This creates a deadweight welfare loss, indicated by the shaded area. A socially efficient level of output would be at Q_2 where social benefit equals social cost.

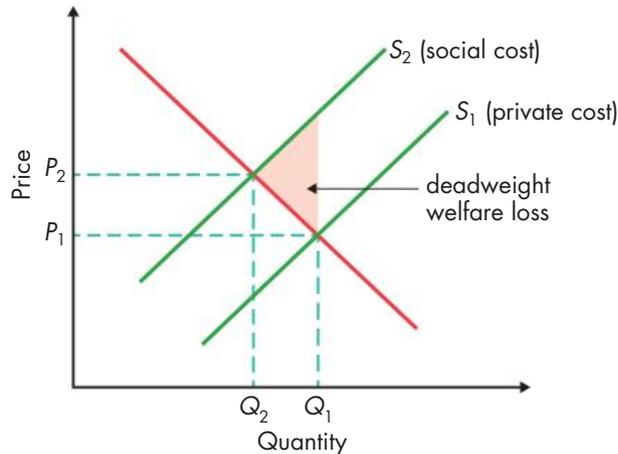


FIGURE 5.16 Negative externalities of over-production

In a free market buyers ignore the social costs to others and buy the product at the private cost (P_1) rather than pay the higher social price (P_2). The market equilibrium (where demand equals supply) is at an output of Q_1 . The market fails to efficiently allocate the resources used to produce this good because at an output of Q_1 the social cost of production is greater than the social benefit. There is over-production (and over-consumption), producing a deadweight welfare loss, indicated by the shaded area. If the market included the full social costs of production and consumption, then the equilibrium price would be P_2 (the social price) and output would be at Q_2 . There would be no market failure as social cost equals social benefit at Q_2 .

Governments are pressured to intervene in markets to help address problems resulting from the negative externalities created by the inefficient allocation of environmental resources. These include resource depletion, loss of biodiversity, pollution and enhanced climate change. The ownership of, or property right to, environmental resources is poorly defined, leading to their overuse or degradation. These goods are commonly owned by the community, rather than privately owned. As a result they have no market price to signal their scarcity, so the price mechanism cannot effectively ration their consumption.

The pollution of the waters surrounding Australia's Great Barrier Reef provides a useful illustration of this **tragedy of the commons** and the effects it can have. An unintended consequence of intensive agriculture, especially sugar-cane farming, is that nutrient-rich soil, herbicides and pesticides wash down the rivers of North Queensland. This pollutes the waters that the reefs grow in and is one of the major factors contributing to the degradation of these ecosystems. Damage to areas of reef, and reduction in the population of marine species it supports, has a negative effect on production in a number of industries. If fishermen, tourist operators or recreational users had property rights to this natural wonder of the world, then they could (theoretically) sue the farmers for the costs that have been passed on to them.

If such private property rights existed, then these externalised costs of producing sugar would be included in the cost curves of farmers and this would either result in higher costs (and presumably lower output) or a change to farming methods or land use.

This tragedy of the commons and the problems that flow from it are addressed in detail in Chapter 8.

Governments intervene in the market to limit the costs of negative externalities to the community. This may take the form of taxes on the use of resources or regulations supported by financial penalties for environmental damage created as a by-product of production. It is adding the user-pays principle to market pricing of environmental inputs and effects. Alternative approaches include bans on use of an environmental resource, subsidies and tax concessions.

Factor immobility

Production is based on specialisation in advanced economies such as Australia, Germany, USA, Japan and China. Specialisation enables available skills to be used to full advantage and helps ensure that productive resources are allocated as efficiently as possible. Increased specialisation leads to greater productive efficiency and provides a greater volume of output from a nation's production process.

Modern economic organisation requires a certain degree of **factor mobility**. Capital or labour may be moved from one industry to another or shifted to a more productive geographical location. If a mine becomes unprofitable to operate, it is usually closed down and the capital equipment is either sold or moved to an alternative location. On an international scale, capital is highly mobile. Large multinational companies shift investment funds and production facilities from one country to another in an effort to maximise profits. Workers are often prepared to move interstate or even overseas to improve their pay and conditions, do more rewarding work or enhance their career prospects. Natural resources are transported vast distances to where they can be used to generate the greatest profits.

There are occupational or geographical reasons for factor immobility. Some workers find that there is no demand for their skills as the nature of production changes. Many manufacturing workers have been made redundant as production has been shifted to cheaper overseas locations or their jobs have been replaced by automation. Their specialised skills may not be employable in industries that are growing in Australia, especially in the rapidly expanding services sector. This structural unemployment wastes scarce human resources and therefore represents a failure of markets. While capital inputs such as buildings, information technology systems and even machines can be adapted for use in different industries, others are less mobile. Coal-fired power stations, specialised mining equipment and railway infrastructure may only be efficiently employed in the industry they were designed for.

There is a range of reasons for a lack of geographical mobility of labour. People may be unable to move to another area to find work because of the costs involved in selling their home and moving their belongings. Housing or the cost of living may be unaffordable in areas where employment is available. Others may be unwilling to move away from their family and friends. Immigration restrictions, and cultural and language barriers prevent the free movement of workers between countries.

Any occupational or geographical restriction on the free movement of the factors of production reduces allocative and productive efficiency and can cause unemployment.

Information failure

Markets may not provide enough information for consumers to make perfectly informed choices. Economists refer to this as the problem of **asymmetric information**. It is not in the

interests of producers to fully inform consumers of the costs and actual benefits they will derive from consumption of a particular good or service. They are in business to maximise the profits earned from production, not educate the consumer or look after their health and the sustainability of natural systems. You are already familiar with how information failure causes **merit goods** to be under-produced and **public goods** to be unable to attract private suppliers. Markets also over-produce many goods that lack merit or have less merit than consumers believe. Examples of **demerit goods** include unhealthy foods, alcohol, tobacco products and many other drugs. The merits of some disposable plastic packaging and shopping bags, agricultural chemicals, biological weapons, nuclear power stations and land mines are also debatable. A major cause of market failure is asymmetric information.

Positive externalities

Many goods and services that are beneficial, or judged by governments to be socially desirable, will not be produced by privately owned and profit-seeking firms without government incentives.

Merit goods and services are under-produced by markets because individuals do not value them highly enough to pay for them or because private firms cannot achieve normal profits from producing them. Examples include public hospitals and schools, housing for low-income earners, sewage and waste removal, symphony orchestras, ballet companies, art galleries, libraries and museums. These goods are either produced by governments or by private firms receiving government subsidies. Governments assist their production because they have merit (i.e. they generate positive **externalities** for those members of the community that consume them) or benefits to third parties. Child immunisation provides future protection against diseases for each child immunised, but it also reduces the chance of major outbreaks of contagious diseases in the community, therefore benefitting people who have never been immunised. Markets develop to provide limited quantities to those consumers who can afford the cost of private education, but public education is provided because of the importance to the society and economy of universal education and to reduce the social costs of inequality in income distribution.

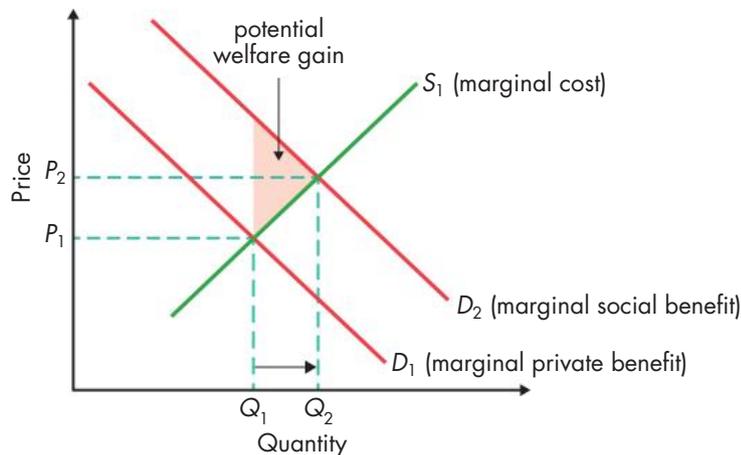


FIGURE 5.17 Positive externalities

Figure 5.17 illustrates the failure of markets to produce sufficient quantities of goods such as education, health care or other merit goods. The market produces only the level of these goods that consumers are willing to pay for (Q_1). This level of demand equals the marginal

private benefit gained by consumers. There may be social benefits gained by production (and consumption) of more childhood immunisations, further education or more frequent health checks by doctors. Q_2 represents this optimal level of production; the most efficient allocation of resources, delivering the greatest social benefit. Without government intervention, the market will produce at Q_1 , leaving this potential welfare gain 'on the table'.

Inequality

Markets distribute income and goods and services unequally, raising concerns about equity (fairness). A freely operating price mechanism distributes the outputs of production to those who can afford to purchase them at market prices. The distribution of the income this generates is determined on the basis of marginal costs and the relative marginal productivities of land, labour, capital and enterprise. The effectiveness of competitive markets is determined by their efficiency rather than the equity of the market's distribution of products and factor incomes. Self-interest is the ideological basis of capitalism and the motivating force in market economies. It is not in the nature of markets to consider issues of equality.

Market concentration

Many markets have developed oligopolistic or monopolistic structures. This concentration of market power reduces the level of effective competition between firms and often leads to abuses of that power. This can result in markets failing to deliver efficiency and consumer sovereignty, leading to a reduction in community welfare.

Market instability

Global, national and regional markets are essentially unstable. The level of economic activity is constantly changing. The business cycle describes the fluctuation in the level of aggregate demand and supply and the rate of economic growth. In peaks or booms the prices of inputs and products become relatively high, disadvantaging some producers and consumers whose incomes do not inflate at the same rate as prices. In periods of low economic activity, especially in recessions, unemployment rises and some businesses fail. People may be unable to meet their financial commitments, resulting in rising levels of bankruptcy or the loss of houses and farms. The standard of living of many people fluctuates during peaks and troughs in the business cycle. The fluctuations in business cycles between booms and busts (recessions) may result in suboptimal and socially undesirable outcomes.

5.6.2 Complete market failure

KEY IDEA

Complete market failure occurs when a market does not form. This leaves an unmet desire in the society for a particular good or service because there is no supply of it.

Public goods and services are not produced by markets because by their nature they are non-excludable and non-rival. Private producers cannot limit usage to those consumers who are able and willing to pay for use of the good. This free riding occurs because there is no clearly defined property right or ownership of public goods. How would a firm exclude non-buyers from using ocean beaches or rivers? This type of good is also described as 'non-rival' because consumption does not reduce the quantity of the good available for others to

consume. Policing, national defence, border control and quarantine are examples of public goods. Governments need to be involved to ensure the production and maintenance of public goods. They must also manage them to prevent overuse because this would reduce the social benefit or positive externality that people gain from consumption.

QUESTIONS

- 1** Classify each of the following as a public good or a merit good:
 - a** highways
 - b** national parks
 - c** search and rescue helicopters
 - d** clean air.
- 2** Write a list of three things you consider merit goods. Do not include any already mentioned in this chapter.
- 3** Write a list of five important environmental resources that are inefficiently allocated due to negative externalities.
- 4** Explain the meaning and significance of the word 'commons' in the term 'tragedy of the commons'.
- 5** Can you think of any free riders, other than cane farmers, on the environmental resources provided by the Great Barrier Reef?

5.1 True/False

For each statement, indicate whether you consider it to be True (T) or False (F).

- 1 A market does not exist if only one buyer and one seller are exchanging a good or service.
- 2 Financial markets allow access to funds in exchange for payments.
- 3 Increasing the amount of labour used in a production process will result in an increase in production.
- 4 Economies and diseconomies of scale develop as firms increase the size of their production.
- 5 Producer surplus is the difference between the price a consumer actually pays for a service and the amount they would have been willing to pay.
- 6 The tragedy of the commons refers to a failure of markets to ration the consumption of demerit goods.
- 7 Markets allow common property goods to be overused or destroyed because there is no market price attached to their use.
- 8 Significant barriers to entering and leaving an industry are features of competitive market structures.
- 9 Natural monopolies occur in industries that require large investments of capital to produce and deliver goods or services.
- 10 Government intervention is a solution rather than a cause of market failure.

5.2 Terminology

Select the correct term from the list below that describes each statement.

- | | | | | | |
|---|---------------------|---|----------------|---|--------------------------|
| A | marginal cost | F | variable cost | K | average cost |
| B | optimal | G | efficiency | L | public goods |
| C | private goods | H | merit goods | M | demerit goods |
| D | physical market | I | virtual market | N | oligopoly |
| E | perfect competition | J | monopoly | O | monopolistic competition |

- 1 using the least amount of resources to produce the goods and services most valued by people
- 2 any place where buyers and sellers actually meet to exchange goods and services
- 3 the use of resources that provides the most favourable outcome
- 4 the costs incurred by a firm whenever production occurs, for example, power and wages
- 5 the addition to total costs that occurs when one more unit of output is produced
- 6 a market structure in which many buyers and sellers trade a homogenous product and all producers are price takers
- 7 a market in which a large number of buyers and sellers are exchanging similar but not identical products
- 8 a market in which a small number of firms are selling similar but not identical products
- 9 a type of good that attracts 'free riders' and can be consumed without reducing the quantity available

- 10** a good or service that is not produced in sufficient quantities by markets because individuals do not value them highly enough to pay for them
- 11** a good that has negative externalities

5.3 Multiple-choice questions

Select the correct response to each of the following:

- 1** Markets:
- A** connect buyers with sellers.
 - B** allow firms to sell the output of their production process.
 - C** facilitate the flow of money between sectors of an economy.
 - D** provide useful feedback to firms about how much to produce.
 - E** all of the above.
- 2** A firm maximises profit by producing at a level of output where:
- A** marginal revenue is equal to marginal cost.
 - B** marginal revenue is greater than marginal cost.
 - C** average revenue is greater than average cost.
 - D** total revenue is greater than total cost.
- 3** The term used to describe a country's resources being used in the most productive combinations, that maximise the benefits to the consumer and the society is:
- A** productive efficiency.
 - B** technical efficiency.
 - C** dynamic efficiency.
 - D** allocative efficiency.
- 4** A business that is minimising its production costs is achieving:
- A** productive efficiency.
 - B** technical efficiency.
 - C** dynamic efficiency.
 - D** allocative efficiency.
 - E** all of the above.
- 5** Allocative efficiency is achieved when:
- A** marginal revenue = marginal cost.
 - B** average revenue = marginal cost.
 - C** marginal utility = marginal cost.
 - D** average cost = marginal cost.
- 6** A market in which many producers sell a homogenous product to many buyers at a price determined by the price mechanism is an example of:
- A** perfect competition.
 - B** monopolistic competition.
 - C** oligopoly.
 - D** monopoly.

Review of Chapter 5

- 7 Restaurants, coffeeshops and hairdressers are examples of which type of market structure?
- A perfect competition
 - B monopolistic competition
 - C oligopoly
 - D monopoly
- 8 The best description of the level of market concentration in the Australian banking industry is:
- A perfect competition.
 - B monopolistic competition.
 - C oligopoly.
 - D monopoly.
- 9 A private good with positive externalities is:
- A a public good.
 - B a merit good.
 - C a demerit good.
 - D a common property good.
 - E none of the above.
- 10 The ocean, the atmosphere and space are examples of:
- A public goods.
 - B merit goods.
 - C demerit goods.
 - D common property goods.
- 11 Moving productive inputs to an industry or location where they can operate at a higher level of economic efficiency is an example of:
- A a diseconomy of scale.
 - B an external economy of scale.
 - C an internal economy of scale.
 - D factor mobility.
- 12 Complete market failure is usually associated with:
- A public goods.
 - B merit goods.
 - C private goods.
 - D demerit goods.

5.4 Short response questions

- 1 List five advantages for consumers of buying a product online in a virtual market, rather than from a local shop. State which advantage is the most important to you and briefly explain why.
- 2 Using an example such as the market for smartphones, laptop computers or cars, contrast the nature and operation of markets for final consumer goods and intermediate goods.

- 3 Explain why firms include an allowance for normal profit in their calculation of the total cost of production.
- 4 After reviewing Figures 5.9 and 5.10, write a short paragraph (80–110 words) that explains why the consumer and producer surplus cannot be increased by producing more in a market that is allocating resources efficiently.
- 5 In a paragraph of 120–150 words, explain what product differentiation is and why it is used by firms in markets that have limited competition.
- 6 Explain why firms in competitive markets are price takers rather than price setters. Contrast this with the situation in a monopoly.
- 7 Explain and analyse how the excesses of boom and bust cycles in economic growth result in inefficient market outcomes.
- 8 Is it accurate to claim that markets that deliver an optimal level of productive and dynamic efficiency will provide the most socially efficient allocation of resources? Debate this using clear definitions of the key terms and supporting arguments with real-world examples.

5.5 Activities

- 1 Analyse the following contentious statements and decide what your opinion on the topic is. Note arguments that support and challenge your conclusion.
 - a The growing importance of virtual markets is providing consumers and online retailers with benefits at the cost of employment opportunities for Australian workers.
 - b Big firms are more efficient because of their greater ability to benefit from specialisation and the economies of large-scale production.
 - c An economy operating in pareto efficiency will be delivering a socially desirable allocation of that economy's resources.
- 2 a Calculate the missing marginal product figures in the following table.

FIGURE 5.18 Coal production per worker with a fixed capital input to one mine

No. of workers	Total output (tonnes of coal)	Marginal product (tonnes of coal)
0	0	0
1		5
2	35	30
3	90	
4	150	60
5		65
6	285	
7	335	50
8	370	35

- b What is the most productively efficient number of workers? Why?

Review of Chapter 5

- 3 Draw a diagram featuring supply and demand curves to illustrate the failure of markets to take negative externalities into account. Follow this with a brief written explanation.

5.6 Inquiry topics

Complete one or more of the following inquiries using a model of inquiry.

- 1 How can market failure create opportunities for innovation and business?
- 2 Should the Australian grocery industry (at the retail level) be classified as an oligopoly or a market in monopolistic competition? Base your decision on the degree of market concentration and the nature of competition between the leading firms in the industry.
- 3 Select a market leading company in a major global market for consumer goods, such as mobile phones, sporting footwear, household appliances or electronic games. To what extent are the new products offered by this company in recent years an example of product differentiation, rather than dynamic efficiency?
- 4 Investigate the provision of a merit good available to Australians. How has market failure been overcome in this case?
- 5 Investigate an environmental issue that is of contemporary relevance in Australia. In what ways can this be explained as an example of market failure?

You can find answers to selected review questions within this chapter on NelsonNet.



Review of Chapter 5
answers



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6

Market modification

This chapter examines the methods available for government to modify markets and correct market failure, and to improve socially desirable outcomes for its citizens.

Focus questions and inquiries

- Why and how do some markets change and modify over time?
- Can and should some markets be modified to correct market failures or reduce their social costs?
- Why is increased competition the key to a successful market economy?
- Can positive and negative externalities be managed through market modification?
- How does government seek to modify and regulate the market? Why is this necessary?

To provide a basis for answering such questions and carrying out such inquiries, this chapter will examine the following:

- modification of markets to correct market failure
- government measures and strategies
- industry factors that modify markets
- limitations and unintended consequences of attempts to negate market failure.

6.1 Why the need to modify markets?

CONCEPTS



Deregulation: a process of removing a set of government laws and rules imposed on a market

Externalities: indirect costs and benefits associated with the production and consumption of certain goods and services that the market fails to take into account

Market failure: the inability of the market to determine the use and allocation of resources in the way society most desires, because certain conditions are lacking, for example, market power, externalities and public goods

Private goods: a product or service provided by the business sector for use and consumption by individual consumers, usually for personal benefit and utility

Public goods: a product or service provided by the government sector for societal use and benefit, usually in response to a market unable to supply that product or service at a reasonable cost

Regulation: a process of imposing a set of government laws and rules on a market

KEY IDEA

The government may seek to regulate economic activity by intervening in the operation of the price mechanism and the circular flow.

As noted in Chapter 5, at the heart of the model market process is the supposition that the consumer is sovereign. The consumers' decisions about how to spend money ultimately determine what goods and services will be produced and, therefore, how production will be distributed. Each dollar spent in the market represents a decision by the purchaser. This delivers a clear message to the production sector to produce more of one particular product over an alternative. In this purely competitive free market model, the consumer would have complete control over the economic choices of society.

However, as we know, the real world does not work exactly like the model, or in exactly the way Adam Smith (considered the father of economics) described in *The Wealth of Nations* in 1776. He suggested that everyone in society would be better off if the government did not impose any controls on the economy. Personal incentive and the profit motive would automatically guide everyone as though 'by an invisible hand'. Society's economic choices would be made automatically over time through the price mechanism, in response to people's demands. But there is something called 'intervention'. Intervention in the price mechanism operates through government measures and the actions of producers. Intervention strategies seek to modify the market in an effort to reduce the chances of **market failure** and improve positive socially desirable outcomes.

It is important to note that consumer choices are influenced by producers who send signals to the market through advertising, guarantees, packaging and other types of non-price competition. As you study markets, you will realise that consumer choice is greater in situations where there is a lot of price competition. Conversely, in a situation in which control over the production of a commodity is concentrated in the hands of a few

producers, then a higher degree of market or monopoly power exists, which limits consumer sovereignty and choice. As you will read in the next chapter on market concentration, some producers may attempt to lessen competition by engaging in restrictive trade practices, that is, arrangements or agreements between producers that reduce effective competition. Some examples include market sharing (where the market is divided between firms who agree not to compete in each other's areas) and resale price maintenance (where the price at which the retailer must sell is set by the supplier).

Consumer choices will also be influenced by the government, which may redistribute income through taxation, social welfare payments and wages policy; impose taxes on certain commodities; apply restrictions to advertising; introduce legislation in relation to how markets will operate and selectively assist producers of some commodities while restricting others. Likewise, it is important to recognise how the government provides some essential services itself, rather than relying on the market to supply them; and how taxes and tariffs raise prices while subsidies and bounties lower them.

The societal goal for markets is to have them work efficiently and effectively to achieve not just the optimal allocation of resources, but also socially desirable outcomes. In this chapter, we will examine why and how markets are modified and review some examples of how particular government policies seek to intervene in and modify some key market areas.

6.1.1 Correcting market failure

KEY IDEA

The government may seek to reduce the likelihood of market failure and improve socially desirable outcomes for society by either regulating or deregulating a market.

As noted in Chapter 5, sometimes the free market fails to allocate resources with optimal efficiency. This is due to the existence of external or indirect costs and benefits known as **externalities**. The challenge for government (and society in general) is deciding whether to live with the consequences of market failure or make a conscious choice to intervene in the market to improve social outcomes. Externalities are indirect costs and benefits associated with the production and consumption of certain goods and services that the market fails to take into account. These indirect costs and benefits can have either a positive or negative impact on third parties who were not part of the original economic transaction. Consider products such as alcohol, cigarettes and poker machines, which are all legally available in our community. The production sector that produces these **private goods** seeks to maximise their profits by lifting the consumption of these products. However, as a society, we recognise that if individual households over-consume such products, then there will be additional negative social costs that affect the broader community. Imagine the extreme impact on our society if there were no age restriction on the consumption of the aforementioned products, and children were permitted to consume alcohol, smoke cigarettes and gamble on poker machines. Accordingly, government will turn to a process of **regulation** as a means of imposing a set of government laws and rules on a market to reduce negative externalities.

Governments will also seek to modify a market to increase positive externalities. In some markets, firms are unable to provide socially desirable goods at a reasonable price. Consider the high-cost examples of health care and education. Firms operating in these markets require significant profit to compensate for the high capital costs in providing the

infrastructure to support their service. Accordingly, if health care and education were left entirely to free market forces, the result would be that significant sections of the population would be unable to afford and access these services. Imagine the long-term implications for economic growth if large proportions of the population cannot access adequate health care and education. So in response, governments will provide **public goods**. Public goods are products or services provided by governments for societal use, usually in response to a market unable to supply that product or service at a reasonable cost. Clear examples include hospitals, schools, universities, parks, ports and infrastructure such as water, sewerage and transport networks. These goods are funded, in large part, by a government's taxation system and in some cases by ongoing direct access charges to the community who use the public goods. In some instances, the government may be the only provider of a good or service, thus creating a monopoly that would then limit the opportunity for the business sector to effectively compete in a market. This sort of monopoly is largely accepted by society due to the improved social outcomes that generally flow from universal access to public goods at a reasonable cost. However, there are instances where a policy of **deregulation** is adopted by government, seeking to open up a market to greater competition and thereby reducing the prospect of market failure. Deregulation is a process of removing a set of government laws and rules imposed on a market that unnecessarily adds to the cost of business and restricts competition. Australian government policy since the 1980s has been one of deregulation. Industries that have been subject to deregulation to improve optimal efficiency include the banking, airline, telecommunications, media, and electricity, gas and water industries. Regulatory proposals that restrict competition now need to be justified by demonstrating that they are in the public interest and will lead to an increase in socially desirable outcomes.

QUESTIONS

- 1 Using real-life examples, distinguish between 'positive externalities' and 'negative externalities'.
- 2 Distinguish between 'public goods' and 'private goods' by providing examples of each.
- 3 Using examples, explain:
 - a under what circumstances might a particular market require regulation
 - b under what circumstances might there be a need for deregulation of a particular market.

6.1.2 Improving distribution of income and wealth

KEY IDEA

The government may seek to intervene in and modify markets when there is growing inequality in personal wealth and income among the population.

An outcome of the market system is the simple fact that income and wealth are distributed unequally. When a private good is traded, there will always be a section of the population who are unable or unwilling to pay the market price. Accordingly, some households will

effectively be excluded from utilising and consuming certain goods and services. The fact that some households are excluded from participating in some markets relates back to how the market price mechanism operates along with control and ownership of the four factors of production (land, labour, capital and enterprise). As you will recall from the circular-flow model (Figure 6.1), the household sector provides labour to the production sector, in return for income (in the form of wages), which is then utilised by the household sector to expend on goods and services created by the production sector. The labour market is a critical feature of every economy and it is often viewed just as another commodity in the market place. As such, labour can be traded in accordance with the market price mechanism principles of supply and demand, which leads to certain types of labour (occupations) being able to command a higher price (i.e. higher wages) than others. Consequentially, individual household expenditure and participation in the goods and services market will be limited by the household's ability to generate income from the labour it offers to the production sector.

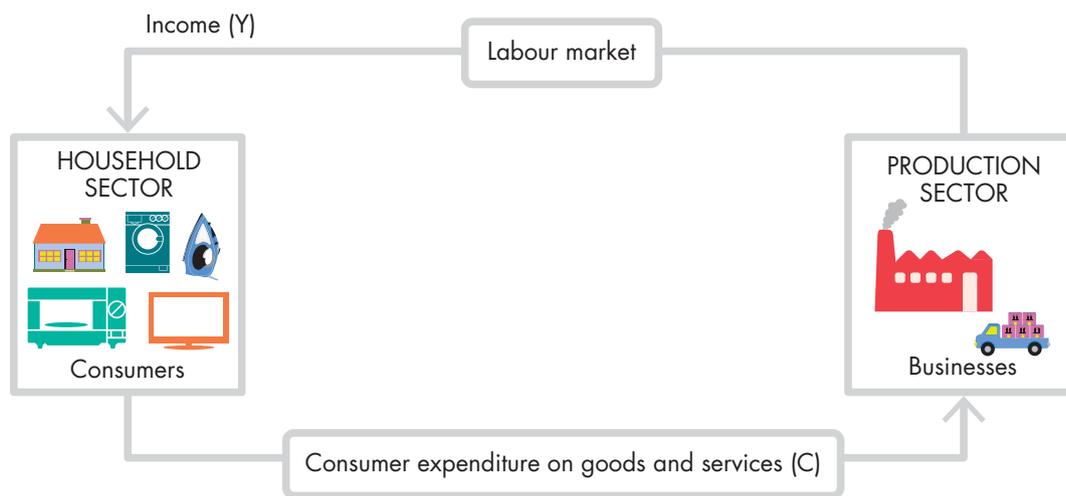


FIGURE 6.1 Connecting the household and production sectors

The demand for labour is a derived demand, meaning the demand for goods and services determines the need for labour. Figure 6.2 shows the main factors that determine the demand for labour. In addition to these factors, technological change and structural change – in firms, industries and the economy as a whole – also determine the demand for labour. Technological change can result in a decrease in demand for labour, as it may result in fewer workers being required to complete a task. Structural change refers to movement of resources to faster growing sectors of the economy from slower growing sectors. Structural adjustment will result in a decrease in demand for labour in some industries (the slow-growing ones) and an increase in demand for labour in the fast-growing industries. Changes in the factors determining demand will cause shifts in the demand curve for labour in that industry. Figure 6.2 also shows the main factors that determine the supply of labour. This can be defined as the total number of hours that the labour force is prepared to work. Changes in the determinants of the supply of labour in an industry will cause shifts in the supply curve for that industry.

In recent decades, we have seen significant changes in the labour market. On the supply side, the quantity of available labour has grown with the increase in population. At the same time, adjustments have occurred through changes in the school-leaving age, changes in retirement age and educational requirements for entry into occupations. Economic growth

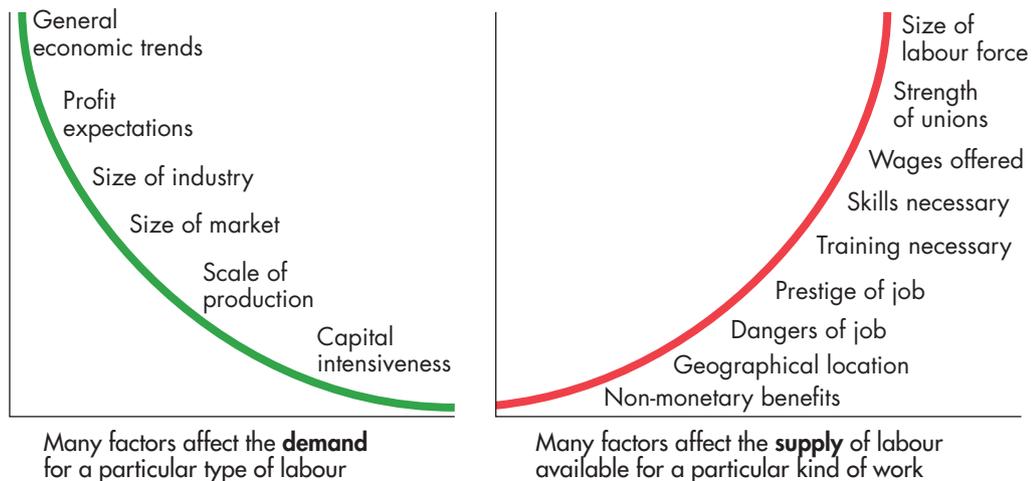


FIGURE 6.2 Factors affecting demand and supply of labour

may lead to increased demand for labour, but the nature of this demand has been complicated by the technological and automation revolution, which has led to the disappearance of many menial jobs and the need for a much more skilled workforce. This has resulted in growing income inequality within our economy as the labour market slowly adapts and changes to the requirements of the production sector. Accordingly, the challenge of government is to try to achieve both optimal efficiency in the labour market via full employment, and the socially desirable outcome of equity in income and wealth distribution. The methods used by government to modify the market to achieve improved income equity outcome will be discussed later in this chapter.

QUESTIONS

- 1 Outline the factors affecting demand for labour in a nation.
- 2 Outline the factors affecting supply of labour in a nation.
- 3 Explain how some households may be excluded from participating in the market system.

6.1.3 Improving economic growth

CONCEPTS

Boom: phase of the trade cycle where the general level of economic activity is above average; it is characterised by full employment and inflationary pressure due to demand being in excess of supply

Contraction: the slowing down in aggregate output and income levels due

to a rise in uncertainty; also known as a 'downturn'

Fiscal policy: measures undertaken by governments in relation to raising revenue through taxation and determining the nature of government expenditure, aimed at influencing a nation's aggregate demand



Mixed economy: an economy or economic system that relies on both markets and governments to allocate resources

Monetary policy: policy measures implemented through the Reserve Bank of Australia to bring about changes in aggregate demand by influencing money supply and interest rates

Recession: a phase of the trade cycle where there is a general level of economic activity below the economy's potential and is characterised by high unemployment, reduced level of

inflation and low business and consumer confidence

Standard of living: a measure of the material wellbeing of individuals within a country, usually measured by GDP per capita; based on material and quantitative indicators such as possessions, income, education and health standards, and quality of housing

Trade cycle (business cycle): alternate but irregular periods of prosperity and recession of an economy

KEY IDEA

The government may seek to intervene in and modify markets to ensure sustainable economic growth and improve standards of living for the population.

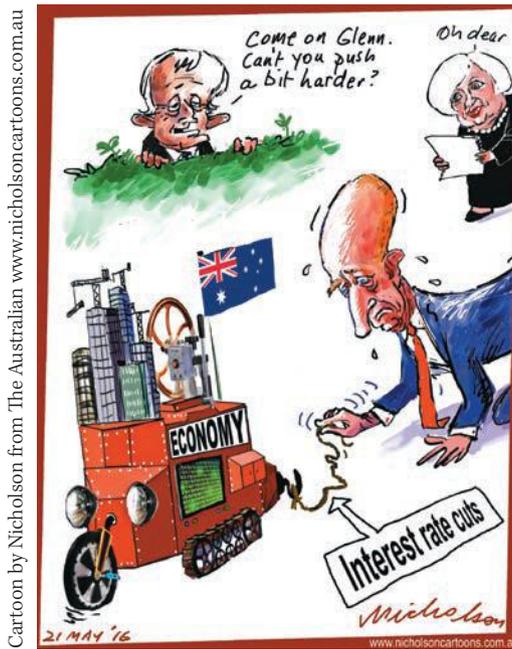
Australia operates as a **mixed economy** where both production (i.e. firms) and government play key roles in the operation of the economy. Each employs labour from the household sector and provides myriad goods and services for general consumption. Accordingly, both sectors participate in the market and engage with the price mechanism process, greatly influencing the general level of activity in an economy. However, it is important to remember that each is driven by very different motives. While the production sector is motivated by the quest for profit maximisation, the government sector is focused on generating positive societal outcomes.

For this reason, government will pursue the key objective of sustainable economic growth, with the ultimate goal of providing an economy that will deliver an improved **standard of living** to the community.

To achieve sustainable economic growth, government will actively monitor the level of economic activity within an economy. The **trade cycle** is keenly scrutinised using various economic indicators, such as inflation, unemployment and production output (e.g. GDP), to ascertain how an economy is performing. Having an understanding of where the economy is placed within the trade cycle allows the government to modify its market interactions. This assists in either stimulating the economy in times of **contraction** or slowing the economy down in **boom** times. This is deemed important to a mixed economy, as an unregulated market can potentially be very unstable and cause exclusion problems for sections of the community. For example, consider an economy in a state of **recession**, which is a phase of the trade cycle where there is a general level of economic activity below the economy's potential, characterised by high unemployment, reduced level of inflation and low business and consumer confidence. In a completely free market economy, the government would not intervene, allowing the market to run its course and correct itself over time via market forces and the price mechanism. The risk of this approach would be significant long-term economic and social hardship for large sections of the population, due to an extended period of high unemployment, as firms close down and industry slowly restructures itself. Contrasting

this, in a mixed economy, government would take action using **fiscal policy** initiatives to stimulate the economy. For example, the government may send a signal to the construction market and increase its spending on national infrastructure. This would lift employment in the construction industry, thus providing a boost to the economy and adding positively to business and consumer confidence, thereby reducing the severity and length of time an economy remains in recession. **Monetary policy** is another economic measure that can be utilised to either stimulate or dampen an economy. It is implemented through the Reserve Bank of Australia (RBA) to bring about changes in aggregate demand by influencing money supply and interest rates. In the case of a recession, interest rates will often be lowered, thus sending a signal to the marketplace to encourage firms and households to borrow and use the funds in the economy.

ECONOMICS IN ACTION



In the daily newspapers, cartoonists effectively comment on a range of issues; often the issues are related to economics. The cartoons have a variety of purposes, such as to entertain, to provoke or to persuade. Examine the 2016 cartoon in Figure 6.3 by Peter Nicholson. The three characters are Prime Minister Malcolm Turnbull, Chair of the United States Federal Reserve, Janet Yellen and Reserve Bank of Australia Governor, Glenn Stevens.

1 Using the Australian Bureau of Statistics (ABS), the Reserve Bank of Australia (RBA) and reputable news websites, conduct online research into the state of the Australian economy from 2013 to 2016 by completing the following table.

FIGURE 6.3 Intervening and modifying the market

Economic indicator	2012	2013	2014	2015	2016
Unemployment rate	5.2%				
Inflation rate	1.75%				
GDP growth for the year	4.25%				
Size of budget deficit	\$43.7 billion				

2 When you have completed the table, compare and contrast the above statistics to reach a conclusion on the state of the economy from 2012 to 2016. With your conclusion in mind and considering the characters in the picture, explain what the cartoonist is trying to convey in the cartoon.



6.2 Methods of market modification

KEY IDEA

The government may seek to intervene in and modify markets, subject to changing economic and social conditions. The two main approaches available to government focus around legislation and taxation.

We have examined ‘why’ there is a need for government to intervene in and modify markets: to deal with issues of market failure, to promote an equitable distribution of income and wealth across a population and finally to promote greater opportunities for sustainable economic growth within an economy. Now we are left with the question of ‘how’ does the government sector intervene and modify markets. The remainder of this chapter will discuss the mechanics of ‘how’ government can modify market outcomes. However, the reader should keep in mind a deeper, perhaps more philosophical question, of whether a government should have a major or minor role with regard to market intervention.

The government clearly has an allocation role in the marketplace and will accordingly influence the economic problem of what and how much, how and for whom various goods and services are produced. The two main broad approaches available to government in modifying market behaviour centre on processes of legislation and taxation. As you will learn, both policy areas are very powerful and allow government to either adopt measures that affect the whole economy or target specific market issues that may only be relevant to certain sectors of society.

6.2.1 Legislation to modify markets

CONCEPTS



Competition policy: all relevant government policies that affect the nature and extent of competition in the economy

Consumer protection: government or legal assistance that, in addition to self-help, may protect consumers from unscrupulous business dealings

Environmental controls: direct regulations that restrain or ban actions harmful to the environment and indirect controls through taxes and charges, which together encourage desirable environmental practices

Import controls: tariffs or other protective devices, such as quotas, which make domestic products more competitive in comparison with imported products

Labour and minimum wage laws: minimum wage levels, conditions and hours of work for various occupations, industries and ages, established by state and federal legislation and tribunals

National superannuation: requirement by the federal government for employers to pay a set percentage of an employee’s pay into a superannuation fund to provide for their retirement

Price surveillance: the overseeing of price rises in markets where competition is not strong by government regulatory bodies

Quality and health standards: standards imposed by governments or standards bodies to ensure safe and high-quality products and services





Restrictive trade practices: actions by people, businesses or governments that restrict competition in a market, and which may increase market power and monopoly control

Trade Practices Act 1974 (Cwlth): legislation promoting competitive behaviour and more competitive market structures

KEY IDEA

Government legislation can modify the marketplace by preventing monopolies and restrictive trade practices to help maintain competition and protect consumers. It can intervene in markets by legislating to regulate foreign investment and ownership. Government can alter market behaviour by creating laws that license and regulate entry into certain trades and professions.

Through the use of legislation, governments try to remedy what they perceive as failures in the market system to ensure that markets work as efficiently and fairly as possible to benefit all of society. Legislation is created by governments at all levels, federal, state and local, in an attempt to regulate many markets. For example, government will try to:

- ensure fair competition among firms in all markets and protect consumer rights
- deal with negative externalities or unintended consequences of market operations
- supervise and regulate labour markets
- supervise and regulate financial markets
- supervise and regulate economic relationships in overseas markets.

Of course, not everyone is happy with the degree of legislative regulation in our economy. So when examining the intended purpose or particular legislation and how it is used to modify and intervene in a market, one must consider the social, political and historical context from which the laws came.

Ensuring fair competition in the marketplace

The government promotes and protects competition against the increase of monopoly or market control, provides information on business conditions and the state of the economy, and establishes laws and courts to set the rules of the game and settle disputes. Governments are particularly active in the areas of:

- **consumer protection**, which works through courts, tribunals and laws to try to prevent misleading advertising, restrictive trade practices and dangerous products
- **quality and health standards**, imposed by governments or standards bodies to ensure safe, high-quality products and services
- **trade practices**, where the *Trade Practices Act 1974* (Cwlth), the Australian Consumers and Competition Commission and the various corporations laws try to ensure fair competition, fair pricing and ethical practices in the sale of goods and services, and discourage monopolisation and unfair pricing and selling practices.

Elements of competition policy

Competition is an essential ingredient of the effective operation of a market economy. **Competition policy** aims at establishing an economic environment that promotes economic

efficiency and growth. It seeks to achieve these aims by preventing firms from obtaining or using excessive market power. By limiting the development and the abuse of market power, competition policy offers protection to small businesses, consumers, workers and the general public from exploitation and the negation of their rights.

Abuse of market power and anti-competitive, **restrictive trade practices** come in many forms. Individual consumers and producers, governments and society as a whole can incur a loss of welfare as a consequence of these practices. Basically, the loss of welfare arises from the loss of the benefits of competition.

The source of the competitive forces comes from both existing firms and the threat of new entrants. When barriers to entry and exit are low, the market becomes 'contestable'. A market is contestable when firms outside the market can enter and challenge existing firms. The mere threat of entry ensures that the incumbent firms act as if they were in a nearly perfectly competitive market structure. The aims of competition policy, therefore, are often able to be achieved by reducing entry barriers or encouraging the threat of new entrants. The arguments for and against allowing some restrictive practices are summarised in Figure 6.4.

FIGURE 6.4 Advantages and disadvantages of mergers, business concentration and market power

Disadvantages	Advantages
<ol style="list-style-type: none"> 1 reduction in competition <ul style="list-style-type: none"> • restriction of entry into business • monopoly price could be unrealistically high • restriction in choice • reduction in service 2 misallocation of resources <ul style="list-style-type: none"> • sub-optimal levels of production • abuse of political power • wasteful advertising and product differentiation 3 reduction in incentive <ul style="list-style-type: none"> • firms become complacent 4 inequity in the distribution of income 	<ol style="list-style-type: none"> 1 economies of scale <ul style="list-style-type: none"> • greater production • lower costs and prices • reduction in duplication of plant 2 incentive to invest <ul style="list-style-type: none"> • more stability for firms 3 resources for research, innovation and new products 4 accords with policy objectives <ul style="list-style-type: none"> • maintaining employment • improving balance of payments 5 managerial improvements

It is important to recognise that the promotion of competition does not necessarily mean forcing industries to change so that they reflect the structural conditions of perfect competition. Cost efficiencies through economies of scale and robust competitiveness through research and development and innovation are usually enjoyed by large firms. In an economy such as Australia's, these competitive advantages may only be available to a few large firms who may then dominate a market. Competitive forces can still exist if the markets remain contestable. Competition policy allows this to occur and has many elements. There are laws that directly address the anti-competitive behaviour of firms, for example, as already noted, the *Trade Practices Act 1974* (Cwlth). While such laws and regulations are important, competition policy embraces other elements of government policy as well. The features of competition policy include the following.

Privatisation

The privatisation of government business enterprises requires the enterprises to behave as private, profit-making enterprises. They are therefore subject to the same tax regimes and are forced to charge prices that reflect full cost and profit considerations. Examples of government enterprises that have been privatised include the Commonwealth Bank of Australia, Qantas and Telstra.

Interstate cooperation

The Australian economy is, for many industries, a single, integrated national market. Greater cooperation among the states and territories to harmonise business regulations facilitates business competition across interstate borders. It reduces regulatory complexity and administrative duplication between the various levels of government.

In 1995, the Commonwealth and state governments endorsed a package of policy reforms known as the National Competition Policy. Underlying this policy was the belief that if Australia were to be able to maintain its competitiveness in international markets and if standards of living were to rise, then the domestic barriers to competition had to be removed. There were three key reasons why the approach to business regulation needed to be national in outlook.

- A single market: Australia is a single, integrated market. With improved transport and communications, firms now trade in national markets.
- Universal application: Many business activities, such as public utilities, the professions and some areas of agriculture, have been protected by legislation from international and domestic competition. It may be in the public interest to shelter some activities from competition, for example, the legal and medical professions argue against open competition on ethical and quality-of-service grounds. The anti-competitive behaviour by these businesses, however, can reduce community and national welfare.
- Interstate cooperation and uniformity: A national competition policy promotes national consistency in approaches to reform and regulations. It avoids the formation of different sets of business regulations on a specific state-by-state or industry-by-industry basis. Regulatory reform and a removal of barriers to competition would be carried out more effectively by economy-wide bodies and a more general rather than industry-specific approach.

Price surveillance

A firm with a high degree of monopoly power may charge excessively high prices. Such abuse of market power is overseen by government authorities and also by private organisations such as Choice. At the Commonwealth level, **price surveillance** is a function of the Australian Competition and Consumer Commission (ACCC), which is empowered by the *Trade Practices Act 1974*. The purpose of the ACCC is to promote competition and to restrain price rises in those markets where competition is not strong.

Consumer protection

Legislative safeguards offer consumers protection from the abuses of market power. Legislation seeks to prevent activities that could mislead or deceive consumers. While the emphasis is on giving protection to the consumer, consumer protection legislation also promotes competition. It prevents unscrupulous businesses using misleading or deceptive conduct to harm the competitive position of more honest businesses.

Competitive conduct rules

Certain anti-competitive behaviours are prohibited by law. These behaviours usually entail some collusion or have some anti-competitive purpose. At the Commonwealth level, Part IV of the *Trade Practices Act 1974* prohibits the following anti-competitive practices:

- agreements that fix prices and contain exclusionary provisions
- the misuse of market power to damage a competitor (e.g. by predatory pricing)
- exclusive dealing, which forces a purchaser to deal exclusively with one supplier
- resale price maintenance, which prevents a reseller selling below a minimum price
- price discrimination, when suppliers charge different prices to different customers for the same item
- mergers between firms that result in market dominance and substantially less competition.

QUESTIONS

- 1 Explain four different elements of competition policy.
- 2 Explain, with the use of real-life examples, the six anti-competitive practices that the *Trade Practices Act 1974* (Cwlth) seeks to eliminate from the marketplace.
- 3 Conduct a class debate using one of the following organisations as a case study: Qantas, Telstra, Medibank Private or the Commonwealth Bank. The debate topic: 'A policy of privatisation has been overwhelmingly good for Australia'.

Dealing with externalities resulting from market operations

As discussed, externalities are the unintended results of production and consumption, for example, smoke and pollution from a steel factory or packaging from fast food. The market mechanism, by itself, provides no incentives to prevent or reduce such harmful effects. Governments can step in with legislation and direct regulation to reduce such effects. Alternatively, as we will discuss later in the chapter, government can pass the costs of externalities on to those who cause them, via a system of taxation. Consequently, the government is especially active in the area of environmental protection, using several methods:

- direct **environmental controls**, such as monitoring pollution emissions, banning fires, logging or mining in certain areas, and requiring restoration when damage is done
- market mechanisms, such as taxes, charges, permits and fines, which increase the costs of pollution or overuse of a resource
- modelling of good environmental practice and encouragement of community improvement schemes.

Supervising and regulating labour markets

Due to the way the constitution is formulated, regulation of labour markets is a task shared by both state and federal governments. Trade unions and the business sector are the main players, with governments only playing an indirect role in legislating laws that help to manage a fair labour market. Their main aims in this area:

- protection of wage earners, through courts, tribunals, establishment of **labour and minimum wage laws** and awards, and through awards and agreements that set out working conditions and wages

- provision for retirement from the workforce through pensions and superannuation schemes (as our population ages, **national superannuation**, under which employers must contribute a percentage of a person's wages to a superannuation scheme, is becoming more and more important)
- wage restraint to help curtail inflation; over recent years, the federal government has moved away from courts and awards towards enterprise bargaining, which it believes more closely approximates the free market and will result in greater productivity
- lower unemployment levels, through training schemes, improved education, appropriate wage levels, and the achievement of improved productivity and economic growth.

Supervising and regulating financial markets

Financial markets consist of a wide group of institutions ranging from banks to non-bank financial institutions – such as credit unions, insurance companies, superannuation funds and the Australian Securities Exchange (ASX) – which act as intermediaries for the borrowing and lending of money. The government can influence, through legislation, the way these markets operate and their effect on investment and consumption in the economy by several methods:

- laws and regulations covering their operation, such as various banking acts and the *Financial Sector (Collection of Data) Act 2001* (Cwlth), to govern their establishment and operation as well as such matters as overseas ownership
- the establishment of supervisory bodies such as the Australian Prudential Regulatory Authority (APRA), which carries out prudential supervision of banks, and the Australian Competition and Consumer Commission (ACCC)
- the establishment of an independent Reserve Bank of Australia to manage monetary policy, which influences the availability of money through open-market operations (buying and selling government bonds) and influences interest rates through its bond rates and the cash rate for bank borrowing.

Supervising and regulating overseas markets

Not all economic activity relevant to a country occurs in its own domestic markets. Today, in a global economy, events in markets overseas have a great influence on activity and growth in our economy. Australia relies very heavily on its overseas trade (imports and exports) and capital investment and borrowing for survival and growth. If the world price of wheat or coal or iron ore goes down, it can affect us greatly. If share prices on the New York Stock Exchange rise, then the Australian Stock Exchange (ASX) will almost certainly follow. The government can have little control over these international events, but it does try to supervise and regulate overseas markets, again via a process of legislation, to influence our balance of payments and benefit our domestic economy by:

- establishing **import controls** and other barriers to trade, such as tariffs, quotas and administrative regulations that can be reduced or strengthened to promote or restrict trade
- making agreements with other countries to increase trade on a bilateral or multilateral basis
- joining international institutions such as the World Bank, Asia–Pacific Economic Cooperation (APEC) or the World Trade Organization (WTO) to promote regional development or world trade
- providing assistance, in the form of lower taxes or construction or infrastructure requirements, to encourage overseas investment or the establishment of import-replacement industries.

QUESTIONS

- 1
 - a Identify the markets that governments significantly intervene in and why they do so.
 - b Explain how governments try to ensure that markets are competitive.
 - c Discuss, using a case-study example, how governments try to deal with externalities resulting from market operations.
- 2 Briefly explain how governments regulate:
 - a labour markets
 - b financial markets
 - c overseas markets.
- 3 Conduct a class debate on one of the following topics:
 - a Import controls, such as tariffs and quotas, only weaken trade and stifle economic growth.
 - b Government should leave the labour market to be managed by trade unions and firms.
 - c Government should take back the management of monetary policy from the RBA.

ECONOMICS CHALLENGE



The Australian housing dream has at its core the principle that everyone has the right to residential property ownership. Coupled with this is the belief that if you work hard, save and invest, then you can create the necessary wealth to be in a position to buy your own home. There has been a significant shift in home-ownership since the 1960s, when just over 50 per cent of the population were outright home-owners or mortgage holders and the rest of the populace were in the home rental market. For the past decade, the real-estate property market has home-ownership or mortgage holders hovering around the 70 per cent mark, with the remaining 30 per cent of the population locked into the rental market. In recent years it has become increasingly difficult for young first-home buyers to gain a foothold in the property market, due in part to the lack of supply of housing stock. Accordingly, first-home buyers have to compete for limited stock with wealthy property investors, particularly in Australia's major capital cities of Brisbane, Sydney and Melbourne.

This economics challenge invites you to find out more about the operation and general nature of the Australian residential property market. Visit the suggested websites (listed below) to establish residential property market trends. Use the following statements to guide your research to compare and contrast the housing market versus the unit market.

Use the nearest Queensland major city to where you live as a case study.

- 1 Graph and compare median property prices in both houses and units for the last 10 years.
- 2 Graph and compare median weekly rental returns in both houses and units for the last 10 years.
- 3 Graph and compare total residential property sales for both houses and units for the last 10 years.
- 4 Graph and compare average mortgage interest rates for home loans for the last 10 years.
- 5 Graph and compare total construction of new dwellings for houses for the last 10 years.





- 6 Graph and compare total construction of new dwellings for units for the last 10 years.
- 7 Research media reports from leading Australian news organisations and real estate associations about changes in Australia's property market.

Suggested websites

Use the search function within the following websites:

- Master Builders Australia
- Real Estate Institute Queensland
- realestate.com.au
- Real Estate Institute of Australia
- Australian Parliamentary Library
- Australian Bureau of Statistics
- Reserve Bank of Australia
- Australian Government Productivity Commission
- Council of Australian Governments
- First Home Owner Grant
- Australian Chamber of Commerce and Industry



Australian
residential
property market
research

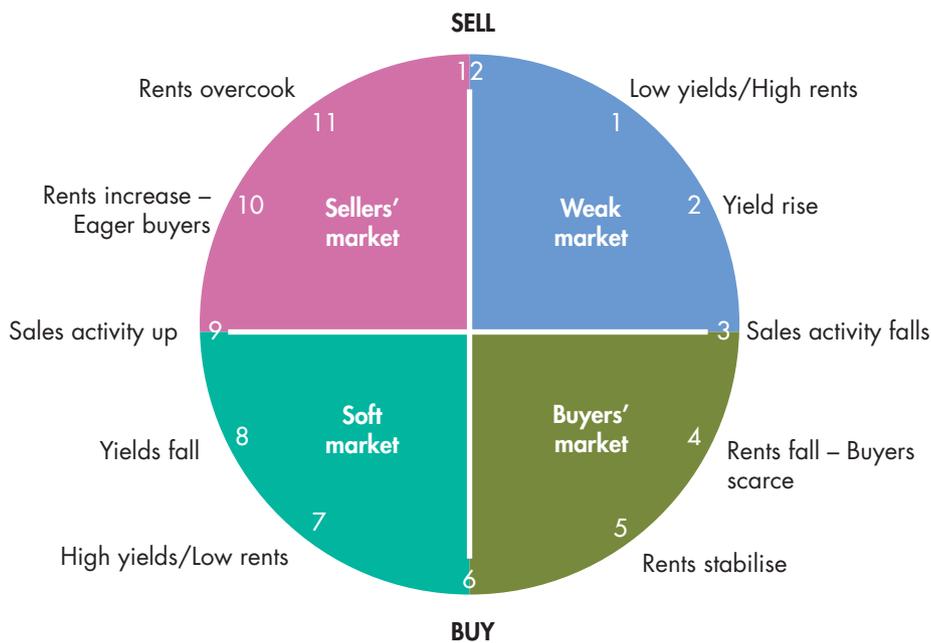


FIGURE 6.5 The property market clock

Now that you have completed some preliminary research into the housing market, construct a synthesised response to the following topic.

Evaluate whether or not governments, at the federal, state and local levels, should intervene in and modify the residential property market to make it easier for first-home buyers to acquire their first home.

Your response should include a discussion on what legislative policies are available to government to modify the property market while explaining the possible ramifications of any market intervention.

6.2.2 Taxation to modify markets

CONCEPTS



Direct tax: tax that is borne by the person or firm on whom it is levied, for example, income tax

Indirect tax: tax that can be passed on to others by the person or firm on whom it is levied, for example, goods and services tax or customs duty

Macroeconomic policy: legislation, taxation or spending measures taken by governments to influence broad variables in the economy, for example, consumption or investment

Price ceiling: a price fixed by the government at a lower level than what would be established by the free operation of the price mechanism

Price floor: a price fixed by the government at a higher level than what would be established by the free operation of the price mechanism

Taxation criteria: criteria for judging whether a tax is a good tax or not, for example, equity, efficiency and simplicity

KEY IDEA

Government taxation can modify the marketplace by generating a form of price control, to either restrict certain market behaviour or create incentives to help maintain competition and improve socially desirable outcomes. Either way, there are always ramifications for markets, consumers and producers when government makes changes to taxation policy.

Through our study of the circular flow of income model and the price mechanism in earlier chapters, we acknowledge the significant and complex roles of both the household and business sectors in determining the success or failure of a market. The government also recognises that the market system has its flaws and will accordingly seek to influence consumer choices and business behaviour. Government can do this via its **macroeconomic policy** measures, which seek to influence consumption and investment within an economy. Examples include the redistribution of income through taxation, social welfare payments and wages policy; the imposition of taxes on certain commodities or business practices; the application of restrictions to advertising; and selectively assisting producers of some commodities while restricting others.

Incidence of taxation

When discussing taxes, it is important to know if the person on whom the tax is levied is the person who ultimately bears the burden of the tax, or whether this burden is shifted onto someone else. The person who does ultimately bear the burden of the tax is the one on whom we say the incidence of the tax falls. Consider income tax, this is a **direct tax** as it is incident on the person on whom it is levied. Personal income tax and company tax are the main forms of direct taxation in Australia. They are long-established and relatively acceptable forms of taxation. They are also important tools used by the Commonwealth government in its efforts to maintain economic stability.

An **indirect tax** is levied on one person and then shifted, so that it is incident on a different person. The main forms of indirect taxation in Australia are the GST (which replaced many different sales taxes), excise tax and customs duty. In each case, the person on whom the tax is originally levied does not bear the ultimate burden of the tax. The wholesaler or retailer (GST), manufacturer (excise duty and GST) and importer (customs duty) eventually pass on part or all of the tax to the consumer in the form of higher prices. In some cases, this will entail the tax being passed on through a number of stages before it reaches the consumer. This can be clearly seen in the case of excise duty. After being originally levied on the manufacturer, the tax is passed along through the wholesale and retail levels to the consumer, on whom it is finally incident. The result, as highlighted by Figure 6.6, can affect demand in a market, affecting both consumption of the household sector and ultimately the production levels of firms.

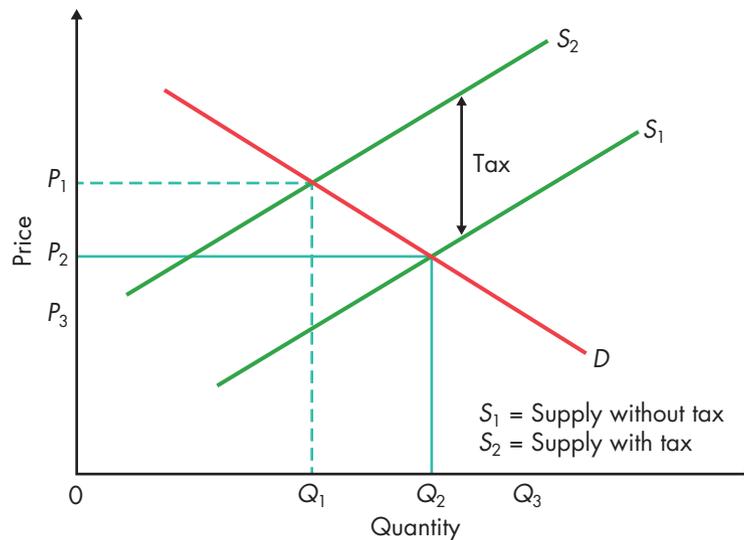


FIGURE 6.6 Tax can affect demand and, subsequently, production of a good.

Indirect taxes are popular with the government for two main reasons. First, they are convenient and inexpensive to administer. Second, they are, to some extent, concealed from those on whom they fall. The average consumer has only a vague idea of what fraction of the price paid for a commodity consists of tax. Do you know how much of the money you pay for the goods you normally purchase goes to the government in one form of tax or another?

However, indirect taxes do suffer from a number of disadvantages. The most important of these is that they are all forms of regressive taxation and therefore are considered by many people to be inequitable. They have a much greater impact on the poor than on the rich, and in recent years, since the introduction of GST, have grown as a proportion of total taxation.

Regardless of whether government applies a direct or indirect tax, a tariff or subsidy, or legislates a minimum wage or a maximum surcharge, all such interventions of this type mean that the real influence of the price mechanism, while still very important, is in fact more limited than the theoretical model indicates.

To highlight this, let us return to the issue of demand and supply in the labour market scenario we discussed earlier in the chapter. If the price mechanism were left free to control wages and salaries, then individual workers would be left at the mercy of the rules of supply and demand. Logic follows that in some industries where there is an under-supply of labour, the average worker in that industry will enjoy higher wages compared to other sectors where

there is an abundance or over-supply of labour. Clearly there are broader social considerations for government in dealing with the labour market, as it seeks to maintain an equitable distribution of income and wealth across the population. So when a government introduces a minimum wage to promote positive social outcomes for the lowest paid workers, it is seeking to establish a **price floor** above the market equilibrium. Likewise, Australian unions hesitate to put their complete trust in the market system. Many wage rates reflect the bargaining power of strong unions. This means that wage rates no longer fall when demand for labour weakens. This is what the unions set out to accomplish, but it usually means that, instead of wages falling when demand for labour falls, the level of employment drops more than it otherwise might. To analyse this attempt to change the outcome of free market operations, we will apply some of the tools and concepts you learnt in Chapter 3.

Price fixing above market equilibrium – minimum wage

Since the early part of last century, Australia has had minimum wage legislation. The purpose of such legislation is to aid the poorest paid workers in society whose bargaining power with firms is comparatively weaker.

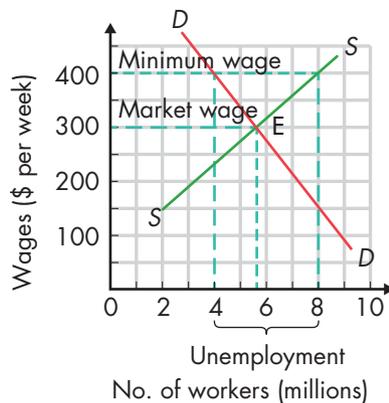


FIGURE 6.7 Effects of minimum wage determination

Let us, for example, assume that an equilibrium level of payment for unskilled labour is \$300 a week, at which a rate of almost six million people are employed. At this wage rate, demand (a 'derived' demand, as labour is a factor of production) is equal to supply.

Now, assume a minimum wage above the free-market equilibrium is set – for example, \$400 a week. More people will now be willing to work at this higher wage. But unfortunately, as shown in Figure 6.7, less labour will now be demanded by employers. There will be a surplus of labour. Unemployment will surely result. What would determine its magnitude? How many people are now willing to work for this minimum wage? How many workers do employers want? What will be the resulting level of unemployment?

Such an analysis does not necessarily mean that minimum wages are a bad idea. Workers remaining in their jobs would have improved rates of pay. Some workers would gain, while others would lose. Clearly, both positive and negative externalities will result from such an intervention to correct a perceived market failure of having very low-paid workers. Through retraining and general economic growth, unemployment may be reduced in the long run. We cannot ignore the fact that the least skilled would be the ones who would suffer most, but government and society may still make the value judgement that such price fixing above the

market equilibrium is worthwhile. Let us now consider an example where price fixing below the equilibrium may be worthwhile too.

Price fixing below market equilibrium – residential rent control

Now imagine a poor inner-city area that has a history of low residential rental vacancies and high rents, which is causing significant social problems for poorer working people living in the area. The government, to tackle this problem, intervenes and modifies the market by imposing rent control in the area so that landlords cannot charge more than \$200 a week. Before this **price ceiling** was imposed, the equilibrium market rate averaged \$300 a week for houses and flats in the area.

What would happen? Probably two things: people from other parts of the city would move to this area to take advantage of the cheap housing, so the quantity of housing demanded would rise; and many landlords would now find that leasing was no longer profitable, so they would begin to move out of the business. They would not maintain their buildings as well as they did previously, and they would build few new houses or flats. There would be a very real housing shortage (see Figure 6.8).

It is likely that a 'black market' for housing would develop, with some of the less poor in the area being willing to pay more, perhaps even more than the previous equilibrium price, in order to secure a house. The very poor people, whom the law was supposed to help, would probably be left with nowhere to live.

Most kinds of price control, where imposed ceilings are below free-market levels, produce results of this kind. They will bring cheaper goods, but perhaps not to those who most need them, unless there is some form of rationing and very strict enforcement of the law.

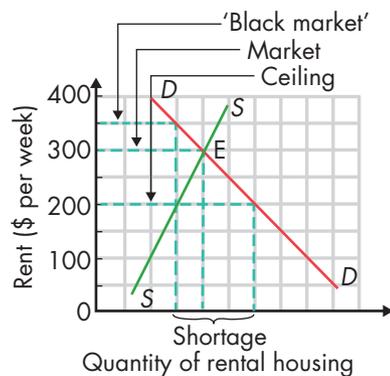


FIGURE 6.8 Effects of price controls

Government may still decide to pursue a policy where imposed price-control ceilings are below free-market levels if they can adequately determine the magnitude of any shortage. Understanding the elasticity of a product in the market is key (remember Chapter 4). If demand is relatively inelastic, there will be only a slight increase in the quantity demanded. If supply is inelastic – if there is little response in the quantity supplied to a change in price – the potential shortage will be quite small. If demand and supply were both relatively more elastic, then significant shortages would occur, creating further unintended costs (negative externalities) for some individuals, and benefits (positive externalities) for others.

QUESTIONS

- 1 Explain the effect on the demand for bread, and the price of bread, if the government attempted to assist the rural sector by setting a floor price for wheat.
- 2 Describe other examples of price fixing in each of the two categories discussed. Use graphs to analyse possible effects of each example you choose.
- 3 Debate the proposition: 'Price control will always result in inefficiency'.
- 4 Explain what is meant by the 'incidence' of a tax.
- 5 Research what are the main disadvantages of indirect taxation as it exists in Australia.
- 6 Which is better, direct or indirect taxation? Examine the question from a range of standpoints and give reasons for your conclusion.

Principles of taxation

As we now recognise the immense power of taxation to alter markets, as citizens we have an obligation to hold elected governments to account, ensuring they acknowledge the significant responsibility they have in developing efficient and equitable taxation policy. Adam Smith first outlined the principles on which all taxes should be based in *The Wealth of Nations* (1776). He put forward four basic principles, which are generally still regarded as the basis of a sound taxation system:

- 1 **The principle of equity.** As Smith stated, 'The subjects of every state ought to contribute towards the support of the government, as nearly as possible, in proportion to their respective abilities'. In other words, the rich should pay more tax than the poor.
- 2 **The principle of economy in collection.** The cost involved in collecting the tax should be kept as low as possible. A tax that is expensive to collect defeats its purpose, as a high proportion of the revenue collected will be used up in the cost of collection.
- 3 **The quality of certainty.** Those from whom the tax is being collected should be certain of three things. They must know when the tax has to be paid, how much tax has to be paid and how the rate of tax is calculated.
- 4 **The quality of convenience.** Both the time and the manner of payment should be selected so as to cause the least possible inconvenience to the taxpayer.

Modern writers sometimes express these as **taxation criteria** – that is, ways of judging whether a tax is a good one or not. The above principles are then usually summarised as equity, efficiency and simplicity. You can see how these have been adapted from Smith's principles and thus how relevant they still are today.

ECONOMICS AND ICT



Starting with the suggested websites, conduct some online research to list as many taxes that you can find that currently apply at a federal, state and local government level. Create a spreadsheet or database of your list and give a brief description of each tax. Categorise the taxes as either 'direct' or 'indirect'. Present your list to your teacher and classmates, then as a group evaluate the purpose of each tax to determine the government's intervention objective for the market. Finally as a class, establish criteria for judging





whether each of the taxes you discovered is a good tax or not. To help, you may like to consider criteria such as equity, efficiency and simplicity.



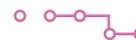
Australian taxation
research

Suggested websites

- Australian Taxation Office
- Queensland Government
- Brisbane City Council
- Australian Government – The Treasury
- ASIC MoneySmart
- Economy Watch

6.3 Difficulties with and implications of market modification

CONCEPTS



Exclusion principle: when consumers or firms who do not pay for a good or service are excluded from any benefits derived from that good or service

Free-rider problem: when consumers or firms in a society can derive a benefit from the consumption of a good or service without having contributed directly to the cost of that good or service

Pigovian tax: a form of taxation that is imposed on any commercial activity in a marketplace that produces negative externalities; the purpose of the tax is to correct a suboptimal and socially undesirable outcome

Property rights: legislated measures created by government to administer the ownership, uses and disposal of property and resources

Tradeable permit system: a government tool where allocated pollution permits are created, allowing firms to emit a certain amount of pollution; these permits are then tradeable on an open market between competing firms

Tragedy of the commons: the overuse or destruction of a common property good because it has no price and so markets do not ration its consumption

KEY IDEA

When a government intervenes in and modifies the market, economists recognise that the results of such interventions will often create positive and/or negative externalities for society. The aim of government is to create more of the former and fewer of the latter.

So far we have examined the reasons ‘why’ governments intervene in markets and the methods of ‘how’ they seek to modify both consumer and business behaviour, through the use of legislation and taxation. In this final section, we discuss the difficulties and implications for an economy when government seeks to modify the market.

6.3.1 Dealing with negative externalities

One of the challenges facing government is how to deal with negative externalities that arise out of some marketplace commercial activities. An example of this is how to tackle the dilemma of pollution within a growing economy. Pollution is deemed a negative externality, as its impact has far-reaching implications for innocent third parties, who were not directly involved in the initial commercial transaction. One tool that can be used by government to tackle negative externalities is to apply a **Pigovian tax**, which seeks to correct a suboptimal and socially undesirable outcome by factoring in the social costs of a private transaction. Consider the following example.

Several years ago, the Australian Government made a decision to phase out leaded petrol. The use of leaded petrol in cars creates pollution. Lead can accumulate in the human body, and high levels of lead can lead to mental illness in children, and illness such as liver failure in later life. We can see from this example that the social costs (negative externalities) of leaded petrol are high. However, leaded petrol is cheaper to make than unleaded petrol. So the quandary for the average household is to choose either a petrol that has a high social cost but low private cost, or a petrol that has a low social cost but a high private cost. Can you guess which petrol product most consumers would select? It is not surprising that in a market where individuals seek to minimise their private costs, most consumers would purchase the leaded petrol. So to change consumer behaviour and have households start to consider the social costs of leaded petrol, government could have applied a Pigovian tax. The tax would correct the inefficient market outcome, by factoring in the social costs of all the negative externalities into the price of the product, in this case the leaded petrol. After considering and calculating the social costs and looking at alternatives, governments could have placed a higher tax on leaded petrol. This higher tax would decrease the negative externality created by the use of leaded petrol and now make the choice of unleaded petrol a far more attractive alternative to the consumer. The tax would shift the supply curve to the left, raising the price of leaded petrol from P_e to P_s (Figure 6.9). Consequently the quantity of leaded petrol demanded would fall from Q_e to Q_s , thus reducing the negative externality of toxic lead in the environment.

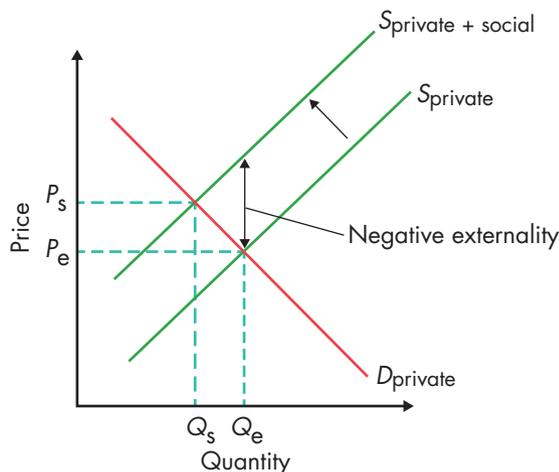


FIGURE 6.9 The supply of leaded petrol, with and without an additional tax

Ultimately the government can use its legislative powers and apply such taxes to any market where there are significant negative externalities to either reduce the consumption of particular goods or move consumer sentiment and behaviour towards other products that have fewer negative externalities or social costs.

Because of the uncertainty of the outcomes of such intervention in the operation of the price mechanism and the circular flow, and the general failure of most highly planned economic systems, not all governments wish to intervene to a greater extent than they feel warranted to by political and social expectations. Indeed, many governments are cutting back on such interventions.

6.3.2 Taxation effects

Taxation is a very powerful tool for government in dealing with both market and social outcomes. It is important to note that while the various forms of taxation levied by the federal, state and local governments affect the economy and the individual in many different ways, all forms of tax have a similar negative effect on the aggregate level of spending. High rates of income and company tax leave consumers and producers with less money to spend. High rates of indirect taxes raise the prices of the goods on which taxes are levied. The overall effect in both cases is a lower level of spending on the part of both firms and individuals. It is then the responsibility of the government to decide what to do with the revenue raised in this way. If it is spent within the economy, there will be no change in total spending. If this does not occur, then aggregate spending will fall. The government will be guided in its decisions with regard to the levels of both taxation and spending by the state of the economy at the time. For example, in times of recession, government might increase its spending to help stimulate growth and employment. Likewise in the 'boom' times, where government revenues would be naturally higher, they might reduce overall expenditure so as not to overstimulate the economy and create inflationary pressure.

One particular aspect of the effect of indirect taxes on spending is particularly worthy of comment. Indirect taxes affect the pattern of spending and, therefore, the pattern of production. The negative aspect of this market effect is evident in the case of excise duty. One of the reasons given for the imposition of excise tax on alcoholic drinks and tobacco products was that the tax would discourage the consumption of these goods. Similarly, a substantial rise in the excise tax on petroleum products helps conserve dwindling reserves.

Taxes can also be used to encourage production. One of the results of customs duty is to increase the cost of imported goods. This may induce consumers to buy Australian-made goods instead, thereby increasing local production. In a similar manner, a temporary cut in sales tax on products has been used in the past to increase sales, which can help an industry out of a slump and maintain local production and employment, at least in the short term. This is why governments spend an extensive amount of time in community consultation to consider the implications of any changes to taxation policy.

6.3.3 Goods and negative externalities

You will recall earlier in the chapter that we discussed the distinction between private and public goods. Private goods, such as cars, clothes and restaurant meals, are provided in the marketplace with a goal to maximise profits for firms and maximise utility for the household sector. Public goods, such as education, health care and defence, are largely provided by government, through the collection of taxation revenue, with the goal of maximising positive social outcomes for the economy and society. It is important to note, however, that some public goods, including some health-care and education services, are also provided by firms with a view to making a profit, through the provision of the public good in return for a fee.

Another distinctive difference between private and public goods centres on the two connected concepts of the **exclusion principle** and the **free-rider problem**. The exclusion principle occurs in the market through the consumption of private goods, when consumers

or firms who do not pay for a good or service are excluded from any benefits derived from that good or service. This, in turn, may lead to the creation of negative externalities for third parties not involved in the market transaction. If we return to our leaded petrol example, we can concede that someone who is unable to afford the cost of running a car is naturally excluded from purchasing petrol and the benefits and convenience of using a car. However, we must also accept that they are not excluded from the health hazards generated by the pollution from the other households who use leaded petrol.

When we examine the free-rider problem, we also find that negative externalities may exist. The free-rider problem, which is a form of market failure, occurs through the consumption of public goods. It becomes an issue when consumers or firms can derive a greater benefit from the consumption of the public good than what they contributed to the cost of that public good through their taxes. In extreme examples, a society may find an individual has derived a benefit from the consumption of a public good without having contributed directly to the cost of that good at all. To highlight the free-rider problem, consider a simple example like the provision of a state library, museum or art gallery. These types of institutions are funded through the taxes of all citizens. Such facilities are often located in major cities. Therefore those of us who live in the city close to these facilities may choose to access and use these services on a monthly, weekly or even daily basis. Now consider those members of the populace who live in rural or provincial areas; their access to these facilities is extremely difficult due to the tyranny of distance. Clearly those citizens who live in a state capital such as Brisbane, close to such institutions, can enjoy the 'free-ride' where they maximise their private benefit with a comparatively low social cost, while individuals living in the central Queensland town of Cunnamulla are paying the same taxes as their Brisbane counterparts but not receiving the same benefits. Both the exclusion principle and the free-rider problem illustrate potential failures in the market and a resulting rise in negative externalities. This leads us to discuss perhaps the biggest challenge for all economies: how to deal with negative environmental externalities.

6.3.4 Environmental externalities and property rights

If we were to begin from the premise that a society and an economy should exist to benefit all its citizens and to improve the standards of life for all its population, then it naturally follows that citizens, via their government, have a responsibility to reduce the negative externalities that arise from market failure. Conceivably, the negative environmental externalities that affect our air, water and land, due to pollution from both production and consumption alike, provide the greatest risk, not only to our current quality of life, but as science reminds us, our long-term viability and existence as a species.

If we examine the problem of pollution from an economic perspective, we can immediately recognise that a significant dimension of the problem is the fact that no single individual or firm owns all the air, water and land resources. Accordingly, if there is no single owner of these resources, then it could be argued that it is not in any individual owner's interest to ensure that these resources are used in an efficient and sustainable manner. Thus a situation arises where all individuals and firms seek to exploit these jointly held resources to secure the greatest possible personal benefit, thus furthering their own needs without concern for other third parties. The irony is that as demand for these resources exceeds supply, the consumption of every additional unit directly harms the long-term availability of that resource and therefore the long-term viability for all the firms and individuals using those resources. This is known as the **tragedy of the commons**, where citizens of a society face difficult and complex choices over the use of commonly held resources such as water, air and public land.

One solution to this problem is to assign **property rights**, which are legislated measures created by government to administer the ownership, uses and disposal of resources by individuals and firms. Let us consider an example illustrating the creation of an environmental externality in the absence of property rights. Imagine that a state government has approved the positioning of an opencut coal mine next to prime rural farming land.



FIGURE 6.10 Rural farming land and an opencut mine

Running throughout this rural district and connecting both the mine and the adjoining farmland is a series of natural aquifers, which currently provide an underground water source for the farms. If no one owns this natural water source, then just like the farmers, the mine operators are free to use the water supply as they see fit, at a zero private cost. As the mine commences operations, it must make myriad decisions, ranging from how to manage the levels of dust going into the atmosphere due to blasting and digging, through to how it will dispose of its waste. The mine operators start to draw on the underground aquifers using the water to spray the mine site to reduce dust entering the atmosphere. Within the confines of the mine site, they also create a ‘waste pond’, which is a dam used to store toxic waste from the mining operations. Can you start to see some of the negative environmental externalities that have been created? First, water that could be used to grow crops is now being depleted to control dust. Second, there is potentially a risk of toxic waste escaping into the underground water system or directly into adjoining farms. So the social costs of the mining operation are not zero. In this example, however, we can correct the negative externality by creating a property right where one does not currently exist. For our example let us assign the property rights of the underground water source to the farmers. Now the farmers own the water source and the mine owners have to pay for the use of that water and pay for any damage caused to the water supply from the toxic waste pond. We now have a situation where the miners’ private costs are directly affected by their decisions relating to the broader social costs and externalities. As a consequence of ‘property rights’, the mine owners will now seek to reduce the externalities of their operation so they can reduce their private costs and risks associated with the water supply. From this example we can see how the assigning of property rights can reduce negative environmental externalities. Follow-on questions for government naturally arise regarding how property rights should be assigned and does it matter who the property rights are assigned to, namely the victim of pollution or the polluter.

6.3.5 Tradeable permits and pollution rights

One solution to the issue of pollution, which is being embraced by a number of economies, is the creation of a market for pollution rights. The justification for this approach stems directly from the fact that our air, oceans, beaches, reefs, rivers, waterways, national parks and many of our forests are communally owned and this has led to the ‘tragedy of the commons’.

As we've discussed, the heart of the problem is the fact that there are no property rights attached to these resources. No single organisation or individual has any economic inducement to keep these resources free from pollution. Consequently our society is faced with a reality of these resources being freely available to all of society's citizens, who in turn are permitted to overconsume these resources and slowly destroy them with pollution.

It would be extremely challenging for government to issue property rights to all our communal resources. Imagine, for example, the controversy of our beaches being owned and operated by private corporations who could then charge beachgoers a fee to access the surf, sand and sun. While we would have cleaner beaches, as it would be in the interests of the owners to keep the environment clean to attract the maximum number of beachgoers, the public outrage and protest in having to pay to go to the beach would be politically damaging to the government that issued those property rights. So an alternative to protecting the environment would be the setting up a market for pollution permits. The **tradeable permit system** is a government tool that creates allocated pollution permits, thus allowing firms to emit a certain amount of pollution. These permits are then tradeable on an open market between competing firms, similar to a share-market exchange. Consequently, as there would be a limited number of permits, the laws of demand and supply would formulate the market price for pollution and thus help cap the damage done to our communal resources.

To further explain this, consider a hypothetical scenario where the federal government, having consulted with the Commonwealth Scientific and Industrial Research Organisation (CSIRO), which is the agency for scientific research in Australia, has determined that 750 units of air pollutants per year can be safely released by industry into the atmosphere in a given area. At this level, CSIRO notes, the environment within that given region can adequately cope with air pollutants and reprocess them into clean air. We now have a situation where there are 750 air pollution permits available for sale to firms in that given district per year. These pollution permits can now be traded on an exchange where buyers and sellers can bid for the permits that they need. Firms are only allowed to release air pollutants in accordance with the number of permits they own. As the supply of permits is fixed, one can predict, using price mechanism theory, what will happen to the value of those permits. Figure 6.11 highlights the perfectly inelastic supply of the fixed amount of pollution rights and the resulting impact on price.

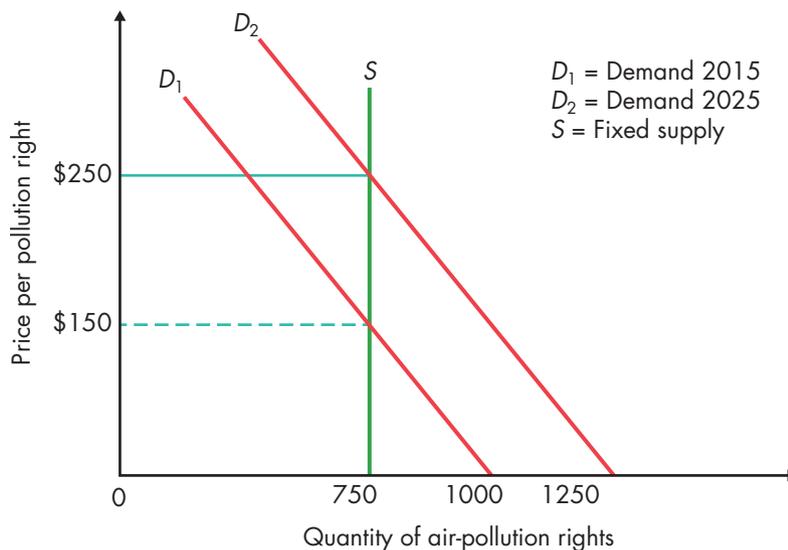


FIGURE 6.11 The market for air-pollution rights

We can see from Figure 6.11 that as the demand for pollution permits rises from 2015 to 2025, so does the price of the permits, as the annual supply of pollution rights does not change. The tradeable permit system now provides an economic incentive for firms to change their behaviour in relation to the release of air pollutants. Accordingly, most firms will seek to instigate production processes that minimise the negative externality of air pollution, thus reducing their reliance on purchasing the necessary pollution permits, which add to their production costs. Most economists recognise the theoretical value of having a tradeable permit system to help manage the pollution problem within an economy, but there are some significant political and social challenges in trying to move from economic theory to reality. The key issues are summarised below:

- For the scheme to work, all nations and all states within a nation would need to agree to the system and participate in the market.
- Firms, industry and government need substantial preparation time to implement the new market system, with some firms requiring initial government support as they adjust to the new market.
- To have a well-informed market, the pollution emissions data used to calculate the number of available permits needs to be accurate and reliable for market participants to have faith in trading on the market.
- To ensure that the relative scarcity of supply of permits, which is crucial to the market's success, the authorities charged with overseeing the market need to ensure that unused permits can be banked and stored by firms. Forfeiture of unused permits would affect the inherent value of all other permits on the market.
- Government would need to be actively involved in monitoring and enforcing pollution emissions levels so that firms do not try to fraud the market system.

Clearly the transition to a new tradeable permit system for pollution emissions will take time, commitment and a comprehensive public policy approach from all levels of government. The scheme is not without its challenges, but without it the tragedy of the commons will continue and pollution, along with climate change, will remain humankind's ultimate dilemma. You can learn more about the emissions trading scheme when you undertake the inquiry topic on the European Union, located in the chapter review section.

ECONOMICS CHALLENGE



The tragedy of the commons

In 1968, an American ecologist, Garrett Hardin, published an article entitled 'The tragedy of the commons'. In the article, he noted that when resources are held commonly, it is in an individual or firm's own self-interest to use as much of the resource as possible to maximise their utility (in the case of an individual) or their profit (in the case of a firm). As we have learnt, where resources are shared with no property rights in place, we end up with everyone tending to undermine their collective long-term interest by over-exploiting rather than protecting scarce resources.

This economics challenge invites you to find out more about the tragedy of the commons as it relates to the world's oceans and the problem of overfishing. Visit the suggested websites to establish an understanding of the problem of overfishing of a particular species of fish, for example, the bluefin tuna. Use the following questions to guide your





research to compare and contrast the various approaches that nations are using to protect precious fish stocks.

- 1 How has the supply of fish changed over the last 10, 20 and 30 years?
- 2 Establish how world demand and prices for fish stocks have changed over the last 10, 20 and 30 years.
- 3 How has technology influenced the finding and catching of fish?
- 4 How has fish farming affected fish stocks over the last 10, 20 and 30 years?
- 5 How has an increase in recreational fishing affected fish stocks?
- 6 What impact has ocean pollution had on fish stocks over the last 10, 20 and 30 years?
- 7 What measures have developed nations put in place to protect fish stocks?
- 8 What measures have developing nations put in place to protect fish stocks?
- 9 What measures do the United Nations want put in place to protect fish stocks?

Suggested websites

Use the search function within the following websites.

- Ocean Unite
- World Wildlife Fund – bluefin tuna
- United Nations
- Fisheries Research & Development Corporation
- National Oceanic and Atmospheric Administration Fisheries
- GreenFacts – Fisheries
- Greenpeace – Overfishing
- Ocean & Climate Platform

Now that you have completed some preliminary research on the overfishing problem, construct a synthesised response to the following statement.

Evaluate whether or not governments from around the world, should agree to intervene in and modify the commercial fishing sector. Your response should include a discussion on what legislative policies, incentives and disincentives are available to governments to restrict and police the commercial fishing sector. Your response should include an explanation of the possible ramifications for any market intervention by the setting of property rights.



Tragedy of the commons – overfishing research



Alamy Stock Photo/Diarmuid

FIGURE 6.12 Commercial haul of fish

6.1 True/False

For each statement, indicate whether you consider it to be True (T) or False (F).

- 1 If the government wants to regulate economic activity in the market, it can do so by intervening in the operation of the price mechanism and the circular flow.
- 2 The government can reduce the likelihood of market failure and improve social outcomes for society by either regulating or deregulating a market.
- 3 Private goods are products provided by the government sector usually in response to a market unable to supply that product or service at a reasonable cost.
- 4 The government does not seek to modify markets when there is growing inequality in personal wealth and income among the population.
- 5 Australia operates as a mixed economy where government seeks to play the dominant role in the operation of the economy.
- 6 A useful criterion to judge whether a particular trade practice is acceptable is whether the practice is contrary to the public interest.
- 7 Monetary policy is implemented by the federal government, while fiscal policy is implemented by the Reserve Bank of Australia.
- 8 The two main approaches available to government to intervene in and modify markets centre on legislation and taxation.
- 9 Government can alter market behaviour by creating laws that license and regulate entry into certain trades and professions.
- 10 The government does not have a responsibility to protect consumers from unscrupulous business dealings.

6.2 Terminology

Select the correct term from the list below that describes each statement.

- | | | | | | |
|---|------------------------|---|-----------------|---|---------------------|
| A | tragedy of the commons | E | monetary policy | I | property rights |
| B | externalities | F | indirect tax | J | exclusion principle |
| C | public goods | G | price ceiling | K | free-rider problem |
| D | fiscal policy | H | price floor | L | price surveillance |

- 1 a price fixed by the government at a higher level than what would be established by the free operation of the price mechanism
- 2 a tax that can be passed on to others by the person or firm on whom it is levied, for example, goods and services tax
- 3 when consumers or firms in a society can derive a benefit from the consumption of a good or service without having contributed directly to the cost of that good or service
- 4 when citizens of a society face difficult and complex choices over the use of commonly held resources such as water, air and public land
- 5 when consumers or firms who do not pay for a good or service are excluded from any benefits derived from that good or service
- 6 policy implemented through the Reserve Bank of Australia to bring about changes in aggregate demand by influencing money supply and interest rates

- 7 indirect costs and benefits associated with the production and consumption of certain goods and services that the market fails to take into account
- 8 a product or service provided by the government sector for societal use and benefit, usually in response to a market unable to supply that product or service at a reasonable cost
- 9 legislated measures created by government to administer the ownership, uses and disposal of property
- 10 the overseeing of price rises in markets, where competition is not strong, by government regulatory bodies

6.3 Multiple-choice questions

Select the correct response to each of the following:

- 1 Which of the following would **not** be an example of deregulation?
 - A The government opens up the banking sector and allows foreign banks to operate in Australia.
 - B The government decides to privatise Australia Post.
 - C The government outlaws compulsory union membership for construction workers.
 - D The government imposes restrictions on the hours of trade for retail shopping centres.
- 2 The pollution generated from a coal-fire-powered electricity station is an example of:
 - A a public good.
 - B a negative externality.
 - C a necessary cost of production.
 - D an intermediate good.
- 3 Which of the following is **not** a valid reason for government to intervene in and attempt to modify a market?
 - A to manipulate prices and increase tax revenue
 - B to correct market failure
 - C to improve economic growth
 - D to improve the distribution of income and wealth
- 4 One of the factors affecting the demand of labour available for a particular kind of work is:
 - A the strength of the unions in the industry.
 - B the wages offered in the industry.
 - C the capital intensiveness of the industry.
 - D the worker skill set required in the industry.
- 5 One of the factors affecting the supply of labour available for a particular kind of work is:
 - A profit expectations of business.
 - B geographical location.
 - C size of market.
 - D capital intensiveness of operations.

Review of Chapter 6

- 6 Which of the following is **not** an example of a fiscal policy measure?
- A Interest rates within an economy fall.
 - B Tax cuts are provided to low-income earners.
 - C A tariff is introduced on imported luxury cars.
 - D An Australian manufacturer is awarded a major government contract.
- 7 Legislation is one way government can modify market behaviour; another way to achieve marketplace changes is:
- A through the *Trade Practices Act 1974* (Cwlth).
 - B through defence procurement policy.
 - C through taxation policy.
 - D all of the above.
- 8 Which of the following is **not** prohibited by the *Trade Practices Act 1974* (Cwlth)?
- A interlocking directorships
 - B monopolisation
 - C discriminatory dealing
 - D resale price maintenance
- 9 Competition policy aims at establishing an economic environment that promotes:
- A an increase in the production of public goods.
 - B an increase in the production of merit goods.
 - C greater government control of markets.
 - D economic efficiency and growth.
- 10 The key reason for Australia introducing the National Competition Policy was:
- A to create a single market.
 - B to ensure interstate cooperation and uniformity.
 - C to reduce anti-competitive behaviour.
 - D all of the above.
- 11 Which of the following are all examples of an indirect tax?
- A income tax, excise, company tax
 - B excise, customs duty, GST
 - C company tax, GST, income tax
 - D customs duty, income tax, GST
- 12 Which of the following is an example of government price fixing above market equilibrium?
- A setting the tax-free threshold
 - B setting a national cap on public housing rents
 - C setting a national minimum wage
 - D setting restrictions on foreign investment
- 13 The purpose of taxation policy is to:
- A raise government revenue, influence consumer behaviour and generate capital investment.
 - B raise government revenue, penalise foreign business activity to help maintain domestic competition and restrict consumer behaviour.

- C raise government revenue, restrict certain market behaviour, help maintain competition and improve social outcomes.
- D raise government revenue, restrict competition and improve social outcomes.
- 14 Which of the following provides the best example of the tragedy of the commons?
- A the overuse of capital goods in an economy
- B the overfishing of the world's oceans
- C the overuse of cheap migrant labour in farming
- D the overgrazing of livestock on a privately owned cattle station
- 15 Which of the following provides the best solution to the tragedy of the commons?
- A Increase government restrictions on business activity.
- B Educate consumers on environmental protection issues.
- C Maintain a totally free market economy.
- D Issue property rights.

6.4 Activities

Class debates

- 'Government intervention is better for the Australian economy than a purely free market.'
- 'A goods and services tax (GST) is a fair tax that has helped the Australian economy grow.'
- 'Australia's National Competition Policy stifles business and restricts consumer choice.'

Simulation

Visit the Learn Liberty website and play the online game 'Tragedy of the bunnies'. Having experienced the game, team up with a classmate and develop an in-class simulation to demonstrate the tragedy of the commons. Your simulation should include a demonstration of how property rights can solve the tragedy of the commons.



Learn Liberty – Tragedy of the bunnies

Group research

In groups of two or three, research the impact of the 2017 Fair Work Commission decision to reduce Sunday penalty rates in the hospitality and retail sectors. Examine the arguments for and against the decision and reach a conclusion on whether the judgement is good for the Australian economy. Your research should include the formation of a list of stakeholders clearly identifying who will be better off and who will be worse off under the new arrangements.

Written responses

Write a 200-word response to each of the following statements.

- 1 The Australian labour market would be better off having one central body to fix wages rather than having each group of employees bargaining with employers.
- 2 Using legislation, the government should maintain the real wages of workers even though some industries may be unable to afford the costs involved.

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Interpretation and research

Australia's low smoking rate is the result of a concentrated long-term and comprehensive public-policy effort from all levels of government. Review the tobacco market intervention timeline in Figure 6.13 and complete the following tasks:

- Create a table and categorise each separate policy action under the headings of health education, taxation and direct legislation.
- Review the graph and decide which form of government intervention had the greatest impact on reducing the prevalence of smoking. Explain your reasoning.
- Review the graph and decide which form of government intervention had the least impact on reducing the prevalence of smoking. Explain your reasoning.
- Research the latest data on smoking prevalence in Australia and decide whether any more government intervention is required to further reduce the prevalence of smoking. Do you think it is possible to reduce smoking prevalence to below 10 per cent? Below 5 per cent? Explain your reasoning.
- Research the latest data on smoking prevalence in a developing economy of your choice. Then research the same economy to establish what (if any) government policy actions are intervening in their tobacco market to reduce the prevalence of smoking within their population.

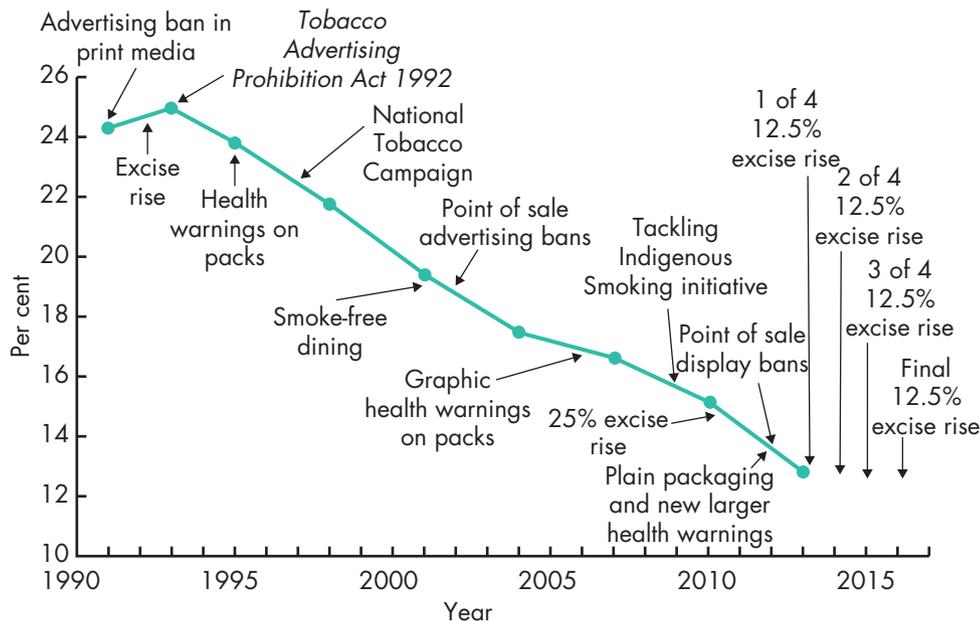


FIGURE 6.13 The decline in smoking prevalence rates for 14 years or older demographic, mapped against key tobacco control measures implemented by the Australian Government since 1990.

Tobacco Control key facts and figures (2016). The Department of Health, Figure 1, <http://www.health.gov.au/internet/main/publishing.nsf/content/tobacco-kff>, Data Source: National Drug Strategy Household Survey reports: 1991, 1993, 1995, 1998 to 2013.

TOBACCO CONTROL TIMELINE

- 1973 – health warnings first mandated on all cigarette packs in Australia
- 1976 – bans on all cigarette advertising on radio and television in Australia
- 1986 to 2006 – phased in bans on smoking in workplaces and public places
- 1990 – bans on advertising of tobacco products in newspapers and magazines published in Australia

1992 – increase in the tobacco excise
 1993 – *Tobacco Advertising Prohibition Act 1992* prohibits broadcasting and publication of tobacco advertisements
 1994 to 2003 – bans on smoking in restaurants
 1995 – nationally consistent text-only health warnings required
 1998 to 2006 – bans on point-of-sale tobacco advertising across Australia
 2006 – graphic health warnings required on packaging of most tobacco products
 2010 – 25% increase in the tobacco excise
 2011 – first complete state or territory ban on point-of-sale tobacco product displays
 2012 – offence for any person to publish tobacco advertising on the Internet or other electronic media
 2012 – introduction of tobacco plain packaging, and updated and expanded graphic health warnings
 2013 – changes to the bi-annual indexation of tobacco excise and the introduction of the first 12.5% tobacco excise increase on 1 December
 2014 – 12.5% excise increase on 1 September
 2015 – 12.5% excise increase on 1 September
 2016 – release of the Post Implementation Review of Tobacco Plain Packaging
 2016 – 12.5% excise increase on 1 September
 Source: Department of Health

Calculations

Using the graph in Figure 6.14, answer the questions below.

- 1 What is the equilibrium wage?
- 2 What is the equilibrium quantity of workers?
- 3 What would be the shortage of workers if there were a wage ceiling in place of \$1000 per week?
- 4 What would be the surplus of workers if there were a guaranteed minimum wage of \$1400 per week?
- 5 Based on your above answers, should government intervene in the labour market to set wages? Explain your reasoning.

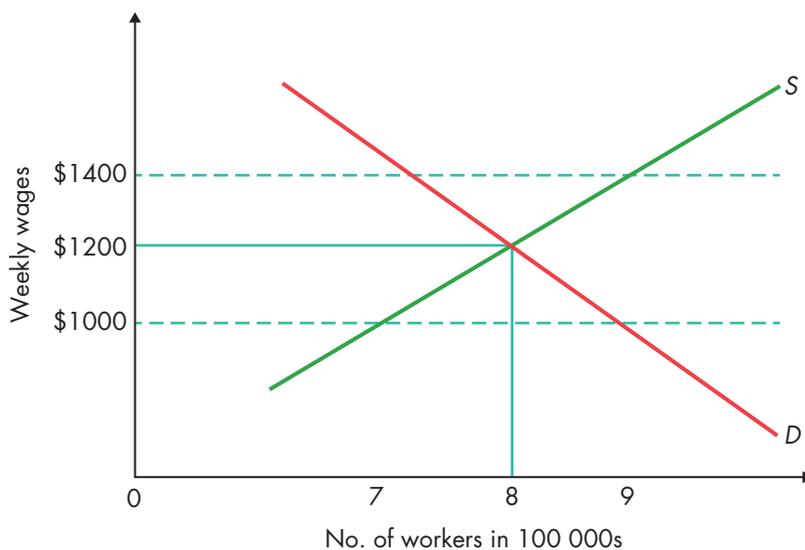


FIGURE 6.14

6.5 Inquiry topics

Complete one or more of the following inquiries using a model of inquiry. Present the outcome of each inquiry as a feature article for a magazine. You should endeavour to illustrate the article with relevant graphs, photos, statistics and other evidence.

- 1 Workers' conditions have improved with government legislation to such an extent, that trade unions are now unnecessary, given the increasing importance of enterprise bargaining. Do you agree with this hypothesis? Justify your decision, using criteria developed during your inquiry.
- 2 If wages for young people were decreased, would employers be more likely to hire them? What would be the costs and benefits of such a policy? If you were the Minister for Employment, would you agree with this policy? Why, or why not?
- 3 Research the Global Financial Crisis, which started in mid-2008. What fiscal policies did the Australian Government pursue to intervene in and modify markets in its pursuit of stimulating the economy and avoiding a recession? Discuss how effective these policies were in coping with the Global Financial Crisis?
- 4 One of the solutions to reducing air pollution is for governments to commit to a worldwide emissions trading scheme. The European Union's Emissions Trading Scheme (EU ETS) is currently the largest current cap and trade emissions trading scheme in operation. Investigate the EU ETS using the following questions as a starting point. Your objective is to reach a conclusion on whether Australia should participate in such a scheme by developing an appropriate set of criteria to judge the success of the EU ETS.
 - A How are the permits allocated between countries?
 - B How were the pollution emission targets set for each country?
 - C Explain how the trading of the permits would occur, identifying what sort of countries would be buying the permits and which would be selling?
 - D Discuss what the implications are when a permit is sold on the emissions trading market.
 - E Decide whether the initial allocation of permits to a country is important to the efficiency of the scheme or whether it is the ongoing trading of permits that will bring efficiency to the market.

You can find answers to selected review questions within this chapter on NelsonNet.



Review of Chapter 6
answers



Getty Images/Dan Dalton

7

Market concentration

Market concentration and market power change over time, affecting the operational efficiency of the market.

Focus questions and inquiries

- Why are some markets dominated by only a few competitors?
- Why do some markets cease to exist over time and new ones commence?
- What are the strategies firms use to try to dominate and control markets?
- Why is competition considered desirable in the Australian economy?
- What are the positive and negative externalities that arise out of market concentration?
- What can the government do to regulate competition? Why is this necessary?

To provide a basis for answering such questions and carrying out such inquiries, this chapter will examine the following:

- the organisation of production
- sources of market power
- the role of governmental regulatory bodies.

7.1 The organisation of production

CONCEPTS



Firm: the basic unit of organised production, which can range in size from a sole trader to a global corporation employing hundreds of thousands of people

Industry: a collection of firms that produce the same type of product or service

Primary production: includes all industries involved in the cultivation of land, grazing of animals and extraction of raw materials from land or sea

Secondary production: includes all industries involved in processing raw materials and producing goods

Tertiary production: includes all industries involved in the production of services rather than goods

Quaternary production: includes all industries involved in the production of services relating to information and communication

KEY IDEA

Industries are broadly classified into four sectors.

To begin to understand how market concentration affects society, we first need to understand how production is organised by firms in our economy. After all, it is firms that produce the goods and services that make up the marketplace. In this section, we will examine four broad categories into which industries are usually grouped: primary, secondary, tertiary and quaternary. We will then look at what is meant by an ‘industry’ and a ‘firm’. Finally, we will consider some of the ways in which firms within industries behave.

7.1.1 Types of production

All economic forms of production can be classified under four headings: primary, secondary, tertiary and quaternary.

Primary production includes all industries that are concerned with the cultivation of land, the grazing of animals and the extraction of raw materials from the land and sea. The output of this form of production is either marketed in its raw state, as in the cases of meat, fruit and vegetables, or it is channelled into further stages of processing, such as the production of flour from wheat.

Secondary production includes all industries that are connected with the processing of raw materials and the manufacture of goods that can be either marketed in their final form or used as inputs for the production of other goods. In the case of motor vehicle production, the large companies involved in vehicle assembly rely on primary industries for raw materials, on other secondary industries for the supply of components that become inputs in the assembly process, and on tertiary industries for the supply of essential services such as power and transport.

Tertiary production includes all industries that provide services rather than produce goods. It includes industries such as the power industry, building and construction, transport, tourism, healthcare and public services.

Quaternary production includes all ICT (information communication and technology) industries that provide services rather than produce goods. It includes firms that

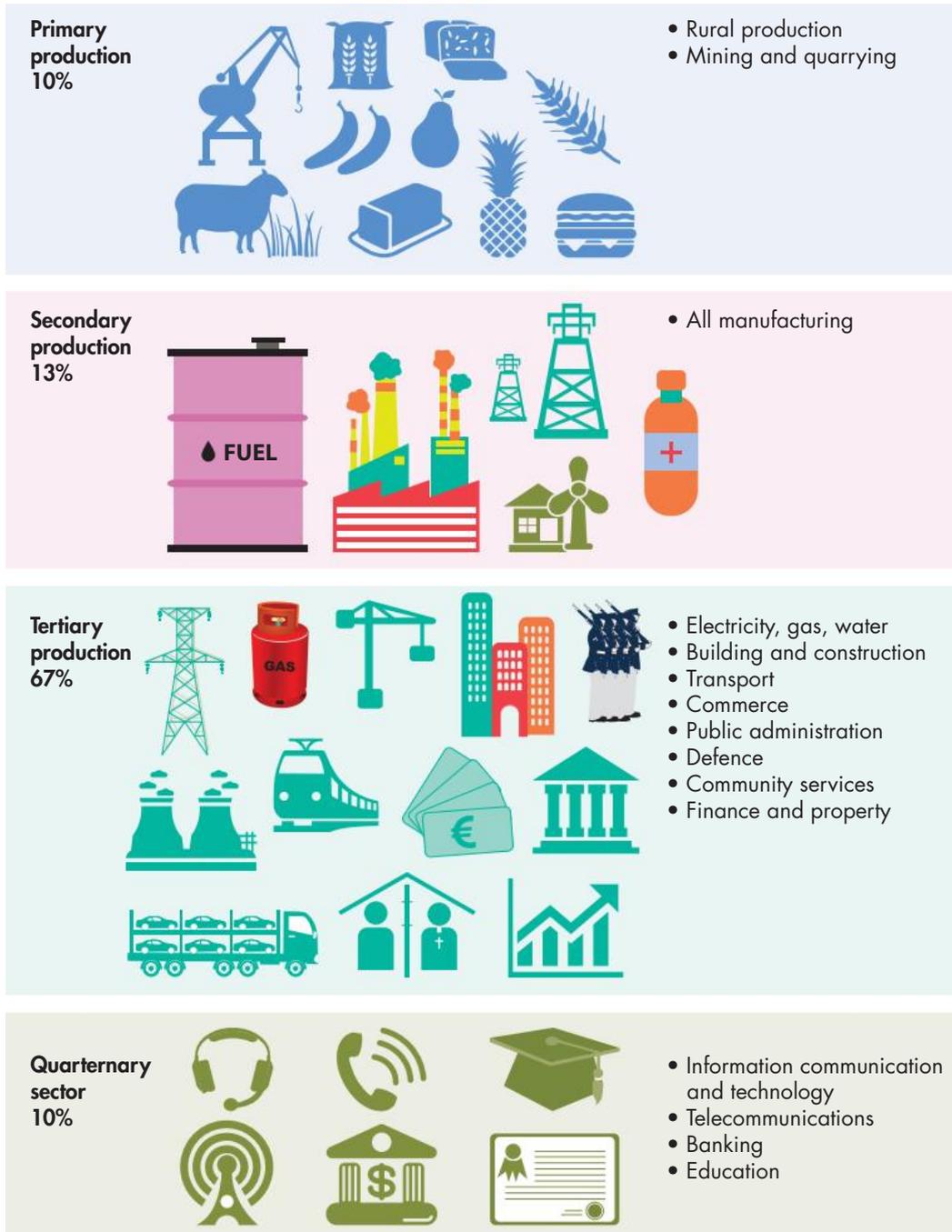


FIGURE 7.1 The contribution of industry groups to GDP

provide services relating to transforming knowledge and information such as the media, telecommunications, banking and education.

Figure 7.1 shows the categories into which production is divided for statistical purposes and the contribution that each of the sectors makes to gross domestic product at factor cost.

KEY IDEA

Firms exist to carry out production. They can be categorised according to type, stage of production, ownership and size.

To further understand how production is organised in our economy, it is essential to understand the difference between a **firm** and an **industry**. The firm is the basic unit of organised production. In its simplest form, it consists of an entrepreneur who uses available resources to produce a commodity that can be marketed.

In the modern economy, production is conducted on various scales. For instance, there is an obvious difference between the scale of operation of your local convenience store and that of BHP Billiton. The size of a firm is usually related to the type of function it performs in the economy. Your local shopkeeper provides a personalised service requiring only a small amount of resources. On the other hand, a company such as BHP Billiton is involved in production on a scale that requires an amount of resources that is so large that it is beyond the means of any one individual to finance. In a free-enterprise economy such as Australia's, entrepreneurs are free to choose the style of operation they think will maximise profits.

KEY IDEA

An industry consists of one or more firms engaged in a similar productive activity in the supply of goods or services.

An industry is said to be a collection of firms involved in the same productive process. For example, when we speak of the Australian mining industry we are usually referring to the firms that mine commodities in Australia. BHP Billiton and Fortescue Metals are firms involved in this industry. When discussing an industry, it is essential to define its boundaries as clearly as possible. This is due to the fact that in some instances, some large firms will have interests in a number of areas that cross over a number of industries. For example, Wesfarmers operates businesses across two industry sectors. Within the retail sector it owns and operates Coles, Bunnings and Officeworks, and within the industrial sector it owns and operates Wesfarmers Energy, Chemicals and Fertilisers.

KEY IDEA

The type of ownership and size of firms vary in different industries to suit the environment in which they operate.

In examining types of firm, we should keep in mind that business organisation is determined by the following factors:

- the function being performed by the firm
- the capital requirements
- the legal constraints.

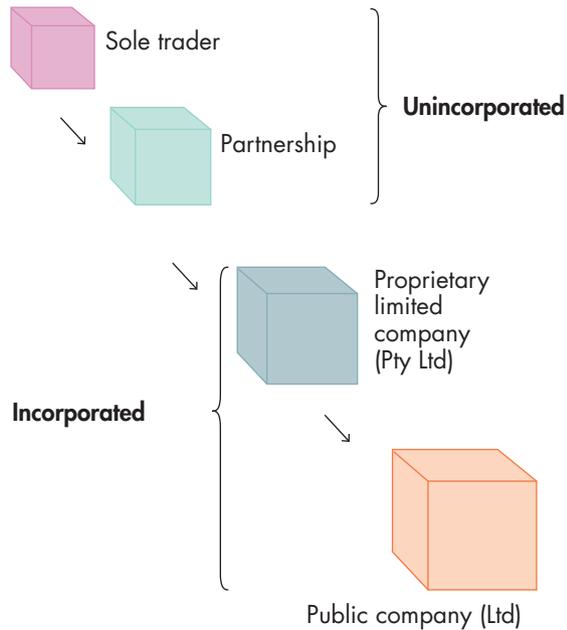


FIGURE 7.2 Some types of firm

ECONOMICS CHALLENGE



Visit the website for the Australian Securities and Investment Commission (ASIC) to search Australian definitions of each of the following forms of firms. You should also note the essential characteristics of each type of firm.

- 1 Sole trader
- 2 Partnership
- 3 Private company
- 4 Public company
- 5 Holding company
- 6 Cooperative
- 7 Government business undertaking



Australian Securities and
Investment Commission
(ASIC)

QUESTIONS

- 1 Distinguish between a firm and an industry.
- 2 Distinguish between unincorporated and incorporated firms.
- 3 Telstra and the Commonwealth Bank of Australia (CBA) were once fully owned and operated by the Australian Government. CBA was listed on the ASX in 1991, and Telstra was also listed as a public company in 1997. What are the advantages and disadvantages of 'privatising' some government enterprises, such as Telstra and the Commonwealth Bank of Australia? Do you think that further privatisation of such enterprises should be allowed? Should the government 'sell off' additional government enterprises?

7.1.2 Productivity

KEY IDEA

The firm provides a means of analysing the production function and the theory of productivity.

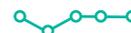
We have seen that production is the process of combining land, labour, capital and enterprise to provide goods and services in order to satisfy wants and needs. We have noted that most of this production is done by firms. The primary goal of firms is to generate profit. Accordingly, entrepreneurs give much attention to issues of productivity and efficiency within the production process, to reduce costs and maximise output, thereby providing a competitive advantage to ultimately increase market share.

In real terms, productivity means the amount of output produced per unit of factor input over a given period of time. It is usually measured as the average rate of output per worker (or labour unit), or per unit of capital employed.

As productivity increases, more goods and services are produced for each unit of input. All firms (and nations), therefore, try to become more efficient in this way. Profit increases, the overall production and prosperity of the nation increases, and firms (and the nation) as a whole become more internationally competitive. Eventually over time, this leads to an efficient allocation and use of resources as dictated by markets and the firms that operate within them.

Whether this is achieved depends on many factors, such as technology and capital equipment used, the size of the firm, the size and efficiency of the market, the size and quality of the labour force, the number and severity of industrial disputes, the size and efficiency of infrastructure, and actions of the government.

ECONOMICS IN ACTION



Gather data on, and test, the following hypothesis:

'Productivity has increased significantly in the last decade.'

Suggested approach:

- 1 Examine production figures, compared with the workforce.
- 2 Survey business people and trade unionists.

QUESTIONS

- 1 Explain the difference between production and productivity.
- 2 How might a local business with which you are familiar increase its productivity? Compare this with how a fast-food outlet manages productivity.
- 3 Business success is primarily measured in profits generated. What other measures could be applied to measure a firm's success?
- 4 How can Australia increase productivity?

7.2 Economies of scale

CONCEPTS



Diseconomies: as overall industry output rises, an individual firm's costs rise due to elements outside of its control

External economies of scale: as overall size of an industry rises, an individual firm's costs fall due to factors outside of its control

Internal economies of scale: as the scale of output for an individual firm increases, a resulting reduction in the costs of production occurs

KEY IDEA

There are economies of scale as well as diseconomies of scale associated with large-scale production.

As a firm grows it will often seek to increase its share of the marketplace by creating a competitive advantage over its rivals. One way of achieving a competitive advantage is to reduce the costs of production. This can be done through a reduction in labour costs, energy costs and raw materials costs. Clearly as a firm or an industry grows, there are certain benefits to be gained through the introduction of new technologies, which helps to both increase productivity and reduce overall production costs. Think of a manufacturing firm that uses robotics in its production process, which eliminates the need for paid workers. The cost savings are readily apparent with robots able to potentially work 24 hours a day without having to be paid or trained for the job, getting sick or going on holiday. Accordingly, for a firm to be able to fully use modern techniques of production, it must establish itself at a size that covers the costs of its production process. For example, an individual sole trader who makes toys could not achieve the economies of scale that are attained by a major toy manufacturer, such as LEGO.

Economies of scale are broken down into two types. **Internal economies of scale** are said to be those that are derived by a firm as a result of an increase in the size of its own operations. As a firm grows, it can eliminate much of the wasted capacity that is often found in small-scale enterprises, thus reducing the fixed costs of the firm. For example, increasing the degree of 'specialisation' among its employees will often lead to an increase in output and fewer faults in the final product.

External economies of scale are said to be those benefits that accrue to all firms within an industry and to society as a result of the growth of an industry. For example, the growth of the mining industry throughout Australia has brought with it numerous external economies. Large mining companies have undertaken infrastructure investment in order to achieve high levels of efficiency. This form of investment includes the establishment of shopping facilities, houses, roads, railways, dams and port facilities. While the companies themselves obviously benefit from this form of investment, society as a whole also benefits through these positive externalities.

Economists also draw attention to the **diseconomies** of large-scale production. In recent years, attention has been drawn to the environmental damage that has been caused by some forms of large-scale production. As a result, more and more companies today take into account the environmental impact of their operations. Large mining companies, for example, undertake extensive land rehabilitation programs after they have completed their mining operations in a region. A further problem that usually arises with large-scale production is

that decision making becomes fragmented and the communication process within a firm can deteriorate. For example, consider large multinational corporations with operational activities all over the world. Clearly there are challenges for management of such organisations, which can potentially result in the generation of negative externalities.

QUESTIONS

- 1 Explain the meaning of the concept 'economies of scale' and provide an example.
- 2 Select a local business with which you are familiar and identify the economies of scale that business has. Does it have any diseconomies of scale?

7.2.1 Specialisation

CONCEPTS



Division of labour: the separation of work into tasks so that each individual worker becomes expert at a specific task, thus ensuring maximum efficiency

Job rotation: a system of moving workers between different duties and tasks to reduce the risk of boredom due to repetitive work practices

KEY IDEA

Division of labour and specialisation are features of modern economic systems.

In advanced economies such as the Australian economy, production is based on specialisation. This means that the factors of production are organised in such a way that their role in the production process is extremely narrow and clearly defined.

Accordingly, the more advanced an economy the more likely it is there will be examples of specialisation across all four factors of production. For example, in terms of land, farmers generally choose to specialise in one or two crops, depending on their location. It is unlikely that you would find a wheat farmer trying to grow apples, or a sugar-cane farmer growing vast quantities of vegetables. In cities, town planning has led to zoning of land for specialised purposes. Areas are zoned for residential purposes, high-rise development, light industry and heavy industry.

In terms of labour, specialisation, or **division of labour** as it is more commonly known, has become more and more apparent with the advance of technology, in particular robotics. The complexity of modern production techniques requires that each individual should become an expert at a specific task to ensure maximum efficiency. A motor-vehicle assembly plant is a prime example of division of labour. As vehicles move along an assembly line, individual workers have a specific task to complete as each vehicle body passes. Another good example of division of labour is in the building industry, with specialist trades completing specific tasks within a construction project.

While division of labour has meant that the productivity of each worker has increased significantly, numerous problems have arisen. Studies have shown that workers tend to 'tune out' when they are required to perform the same mundane task day after day. This may lead to

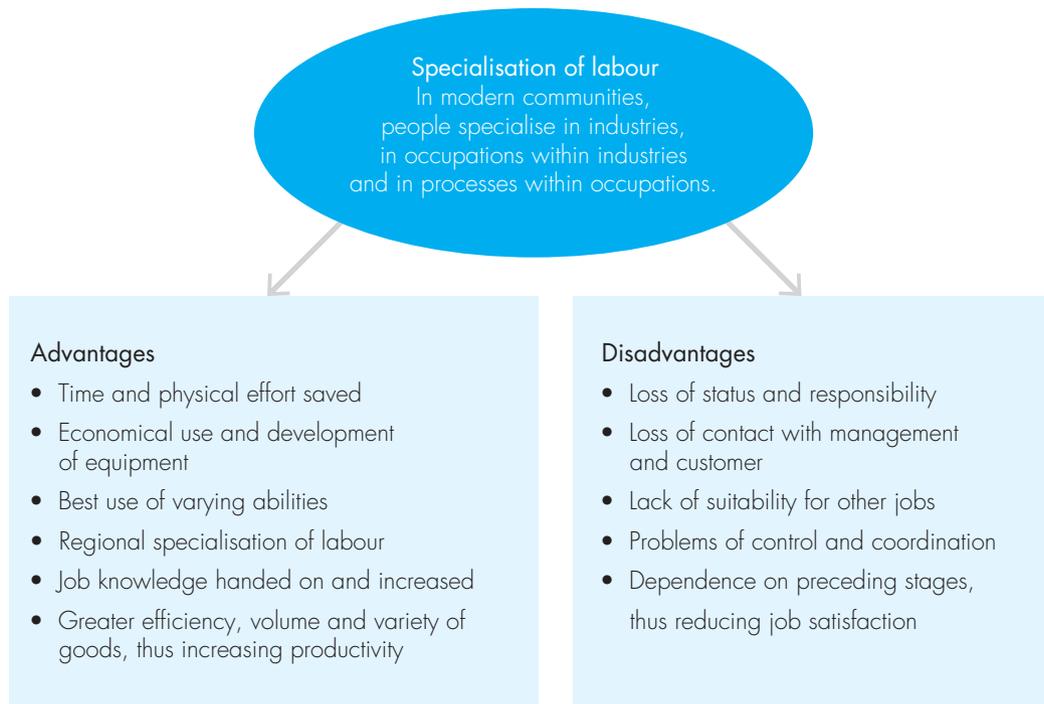


FIGURE 7.3 Advantages and disadvantages of specialised labour

deterioration in the quality of the final product and a decline in productivity. Management has introduced various schemes in an effort to overcome the psychological impact of repetitive work. One technique is to introduce a system of **job rotation** to break the monotony for workers. This system is found in many factories, where workers are given an opportunity to specialise in several skills (known as multi-skilling) and apply those skills across the production process. Another management technique is to utilise ‘work teams’. Some years ago, the Volvo motor-vehicle company in Sweden experimented with an alternative approach to vehicle assembly. The company organised its workers into teams. Each team assembled a complete vehicle. It argued that this approach restored a sense of worker identity with the final product, which is an aspect that tends to be lacking in conventional assembly line techniques.

Specialisation in terms of capital usage has developed concurrently with division of labour. As technology has advanced, highly specialised equipment has been introduced into the production process. A good example of this can be found in the mining sector. In 2015, Australian mining giant Rio Tinto began to use fully remote-controlled trucks to remove iron ore from two mines in Western Australia’s Pilbara region.

Many firms have sought ways of reducing their labour input by incorporating greater capital content in their production process. A modern oil refinery is a good example of highly specialised, capital-intensive production.

Specialisation in terms of enterprise is obviously related to the other three types examined above. Entrepreneurs today tend to be skilled individuals who focus their skills on one aspect of the production process. An examination of the management profile of any large company shows the diversity of skills required in the business world today. Figure 7.4 shows a management structure typical of most companies.

We see, then, that specialisation is an integral part of the operation of the modern Australian economy. Specialisation enables the community to use available skills to full advantage and ensures that resources are allocated as efficiently as possible. Increased specialisation leads to greater productive efficiency and provides a greater volume of output from a nation’s production process.

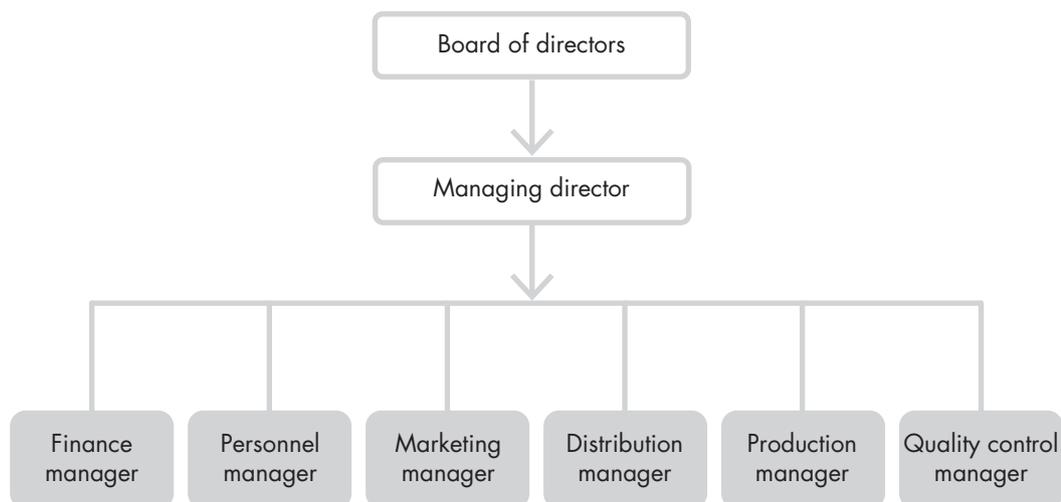


FIGURE 7.4 A typical management profile

7.3 Sources of market power

CONCEPTS

Amalgamation: the combination into a single business entity of firms that were previously independently owned and controlled, in order to enhance competitive strength

Barriers to entry: cost-based, market-based and legal-based factors that prevent the entry of a new firm to an industry on a competitive level equivalent to that of existing firms

Cartel: a formal arrangement among firms to enhance their market power and profits by collectively controlling production levels, prices and market shares

Collusion: cooperation among independently owned and controlled firms to limit competition; for example, by collusive tendering

Concentration ratio: the percentage of the total sales accounted for by the largest four firms in a particular market or industry

Countervailing power: other groups that can exert influence on a firm's decisions; for example, powerful customers, political interest groups or trade unions

Exclusive dealing: imposition by a supplier of conditions on the supply of goods and services that limit the purchaser's freedom to choose alternative suppliers

First-mover advantage: the competitive advantage gained by firms that are first to enter a new market, including getting access to the best customers and suppliers, brand loyalty and economies of scale

Holding company: a company that owns and controls a number of subsidiary companies

Horizontal integration: a single firm gaining control of the one stage of the production that serves many producers or industries; for example, one firm owning all the abattoirs or export finance services

Predatory pricing: a temporary price reduction by a dominant firm to discourage the entry of new firms and to force the less-established firms out of the industry



Price discrimination: the charging of different prices to different customers of the same firm; for example, by way of selective discounts

Price leadership: where the price is set by the dominant firm in an industry that all other firms follow, thereby limiting price competition

Resale price maintenance: where a supplier specifies a minimum price to a reseller, below which goods and services cannot be resold or advertised

Vertical integration: where a single firm gains control of all of the stages of production and marketing distribution

KEY IDEA

Market power can lead to the exploitation of consumers and can restrict competition between firms in the marketplace.

Market concentration can change over time, resulting in changes to market structure. This can affect the broader economy in terms of the allocation and distribution of resources. As noted in previous chapters, a competitive marketplace will generally lead firms to engage in allocative, productive and dynamic efficiency. Accordingly, a high degree of market concentration can potentially lead to inefficient and wasteful use of resources within an industry. It is better for the broader economy to have firms operating in a highly competitive marketplace, as it is through competitive pressures that firms will seek to differentiate themselves from their competitors and attract consumers by increasing their product innovation and investment. This in turn leads to improved resource allocation within an economy and greater market efficiency.

Many private firms can attain a degree of monopolistic power or market power and can act, in part, like a monopolist even though they are not monopolies. Firms may abuse this market power by employing a variety of anti-competitive practices, discussed later in this chapter. Such practices result in a form of market failure and as a consequence, consumers, other businesses and the community at large will suffer a loss of economic welfare. Market power has many different sources and is exercised in a number of ways. The main driving force is fierce competition among firms. Companies in search of maximum profits search for ways to reduce or eliminate competition and gain market share, thus maximising profit opportunities.

The ways to reduce the competitive pressures acting on a firm include forms of integration and cooperation among firms, anti-competitive marketing practices and **barriers to entry**.

7.3.1 Integration

Integration, by which a firm gains ownership and control of its existing competitors, reduces competition and consequently increases the firm's market power. Forms of integration include:

- takeovers, where a firm buys out its competitors
- mergers or **amalgamation** of firms previously in competition, where several firms amalgamate to form one larger firm; firms justify these actions in terms of cost efficiencies, access to new markets, sharing of risks, and access to human and physical assets, but the outcome is increased market power
- establishment of a **holding company** by setting up or purchasing a controlling interest in other firms, called 'subsidiaries'; many different subsidiaries can operate as stand-alone businesses in their own specific industries and markets, but the single holding company ultimately controls and owns them.

- **vertical integration** (as shown in Figure 7.5), when a sequence of stages or processes in the production of a commodity comes under the control of one firm, making it difficult for another firm operating at just one of these stages to compete against the vertically integrated firm
- **horizontal integration**, which occurs when a firm gains control of all other firms at a single stage of production; for example, the mining stage or the fabrication stage as shown in Figure 7.5.

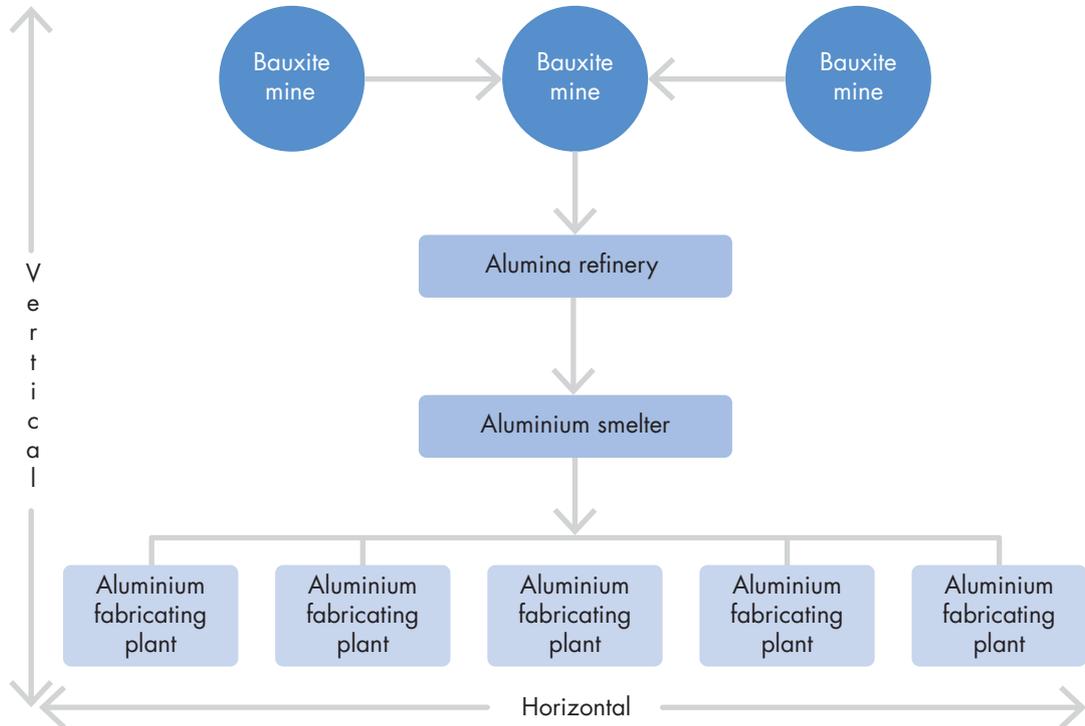


FIGURE 7.5 Types of integration

ECONOMICS DATA



Using online sources, conduct research to establish the size and sales turnover of Australia's retail grocery sector in this current year. Then answer the following questions:

- 1 In 2014–15, the Australian Food and Grocery Council reported that Australia's food and grocery sector turnover totalled \$125.9 billion. What is the current turnover and how much has the market grown since then?
- 2 In 2014–15, it was estimated that Coles and Woolworths had a collective share of the market of 76 per cent. What is their current share of the market and how much has it changed since then?
- 3 In 2014–15, Aldi had 360 stores across Australia with an estimated 8 per cent share of the grocery market. How many stores does Aldi have now and what is their current estimated share of the grocery market?

You may like to use the Australian Food and Grocery Council website as a starting point for your research.



Australian Food and
Grocery Council

ECONOMICS CHALLENGE



Using online sources, visit the suggested websites below to conduct research to compare and contrast the food retail sectors of Australia with either the United Kingdom, Canada or the United States of America. Take into consideration the following factors:

- size of the respective markets in dollar terms
- the number of competitors within each market
- the number of people employed in the sector
- the number of stores per capita of population
- any evidence of firms engaging in 'vertical' or 'horizontal' integration.

Suggested websites

- Grocery News UK
- The Institute of Grocery Distribution UK
- Statistics Canada
- Retail Council of Canada
- Competition Bureau Canada
- United States Census Bureau – American FactFinder
- United States Federal Trading Commission
- United States Census Bureau
- United States Department of Agriculture Economic Research Service
- United States Department of Commerce Bureau of Economic Analysis



Food retail sector
research



FIGURE 7.6 Concentrated market of Australian retail grocery sector

iStock.com/tupungator; iStock.com/Nils Versemann; Alamy Stock Photo/martin berry; Alamy Stock Photo/KEITH MAYHEW

7.3.2 Cooperation among firms

KEY IDEA

A range of practices where competing firms pursue activities that lead to shared profit maximisation within a particular market. These firms may act in a manner to control pricing and production output rather than actively compete against each other.

Collusion and cartels

Collusion occurs when firms in competition enter agreements, formally or informally, to limit the competition among them. A **cartel** is a formal association of firms that aims to control a market for a particular product, such as heavy capital equipment or oil, by eliminating competition and fixing prices. Control can be won by dividing up the market among the cartel members, by setting quotas for each member, by raising prices and, if necessary, by restricting production. The best example of this is OPEC (Organisation of the Petroleum Exporting Countries), which is an intergovernmental organisation of 13 oil-producing nations that seek to influence the supply of oil to the world market and thereby its price. In Australia, the practices of cartels are illegal.

Interlocking directorships

The same directors may sit on the boards of supposedly competing companies. These directors are in a position to restrict or eliminate any real competition among the firms that they direct.

Price leadership

Price leadership occurs when one firm in an industry, often the largest, sets the price for products, and other firms in the industry adhere closely to this price. It does this knowing that, if a 'price war' should ensue, it would probably be driven out of business, or at least suffer some loss of market share and profits.

Collusive tendering or bidding

When called to tender for building or other projects, firms may agree with one another to submit prices that ensure high profits and the sharing of work among them over a period. At auctions or other commodity sales, buyers may agree not to bid against one another, thereby keeping prices down and sharing the available supply among themselves.

Trade and industry associations

A trade or industry association is an organisation of professionals or producers whose aim is to protect the mutual interests of its members and promote their industry. The associations can exert market power by setting conditions of membership, including requirements of standards of fair dealing and quality of work, adherence to ethical codes of conduct and satisfaction of entry qualifications. Associations can restrict competition in their industry by the regulation of entry into the industry. Associations also act as powerful lobby groups to influence and respond to government policy on areas such as taxation, industry regulation and labour relations.

7.3.3 Anti-competitive and marketing practices

Individual firms may engage in practices such as **price discrimination**, product differentiation, **exclusive dealing** and **resale price maintenance** in order to achieve marketing objectives such as increased sales and market share, and the protection of existing sales and share. These practices are both a source of power (by being a barrier to entry to potential competitors) and an outcome of having market power. It can be difficult to assess whether a practice is a legitimate business marketing strategy that one would expect to see in a free-enterprise market economy or whether the practice is aimed at restricting competition by an abuse of market power.

Price discrimination

Price discrimination means the charging of different prices to different groups for a similar commodity or service. This may mean charging different prices to different people, in different places, at different times, or for different uses, when there is no real justification for doing so, at least in terms of the cost of production. Consider the prices charged by universities for higher education: these can differ according to the course of study, the status of the university or for the type of student (foreign or domestic, full-time or part-time).

Product differentiation

Product differentiation is an attempt by producers to lessen the degree of substitutability, by giving their product some characteristic that makes it different from others of the same type in appearance, quality, reliability or availability. The qualities are sometimes exaggerated through advertising and marketing to create a sense of uniqueness about a product. The producers hope to increase sales and profits by inducing consumers to select their product in preference to those of other similar producers. Consider the mobile phone market and the extent to which phone manufacturers attempt to differentiate products that essentially all perform the same function.

Exclusive dealing

Exclusive dealing arrangements exist when a firm requires its product to be purchased to the exclusion of all others of the same type. Consider the way petrol and motor vehicles are usually sold to retailers. This results in a more or less guaranteed market for the supplier and restricts the trade opportunities of the retailer.

Resale price maintenance

Resale price maintenance occurs when the supplier sets the price at which a retailer must resell its products. This effectively restricts competition to features other than price. The supplier could attempt to refuse to sell to any firm that may resell its products at a discount. Consider firms who advertise a 'recommended retail price' on their product packaging, which attempts to lock in retailers to a fixed selling price.

7.3.4 Barriers to entry

KEY IDEA

Barriers can be range of obstacles or elements that exist in a market with few competitors. These elements potentially restrict new firms from entering the marketplace.

As discussed in Chapter 5, when abuse of market power occurs through collusive agreements or monopoly pricing, then existing firms are able to prevent the easy entry into the market of potential competitors. However, the above-normal profits that existing firms are able to attain as a result of their restrictive practices are a powerful incentive for new firms to enter a market. Consider the Australian retail grocery sector. Aldi entered the market because it identified the huge profits that Coles and Woolworths generated in a marketplace dominated by two large competitors.

Large initial capital requirements

New firms have to establish production and distribution facilities of a similar capacity to existing firms' facilities in order to compete.

Economies of scale

Existing firms have larger production units and volumes already in operation. New entrants who start with a smaller production unit cannot produce as cheaply as larger units.

First-mover advantage

Existing firms that have already established brand identity and brand loyalty have **first-mover advantage**. They have tied up the best customers and the best suppliers. They have established their distribution channels.

Information and trade secrets

Existing firms have privileged access to information learnt by being in business. They have learnt, from trial and error, the best way to manage production and to approach the market. They have established contacts with key people in organisations and the government. All this information, at some cost, needs to be gathered by the new entrant.

Predatory pricing

An existing firm could threaten to lower prices, at or below cost, for a considerable period of time. This is known as **predatory pricing**. The existing firm is better able to sustain a low price than a new entrant. The new firm is dissuaded from entry and, when the competitive threat of the new entry has passed, prices are returned to normal levels. In Australia, a firm cannot use its market power to damage an actual or potential competitor.

Privileged access

An existing firm may have access to the only viable supply of a natural resource, or it may own and control a facility that a potential competitor would need to access in order to compete, such as a gas pipeline or a railway line.

Government regulations

Government regulations can create a barrier to entry. A patent gives a firm privileged use of a certain technology or product design. Tariffs are a barrier to entry for foreign competitors. A firm may be the only one given a licence to provide a particular service; for example, catering at a sports venue, gift shops in an airport departure lounge, waste collection and disposal in a city, and taxi licences.

QUESTIONS

- 1 **a** Explain the difference between vertical and horizontal integration.
- 1 **b** Using an example, explain the difference between a merger and collusion.
- 2 Explain how a cartel improves the profit opportunities of its members.
- 3 How can collusive tendering be used by firms to increase profits?
- 4 Describe three barriers to entry that result from a firm being long established in an industry.

ECONOMICS IN ACTION



Sample inquiry: Does the owner of a natural gas pipeline have market power?

To get natural gas from the production wells to the point of consumption requires four types of economic activity: production at the well; transmission of the gas to major users and storage in urban areas; distribution within the towns and cities; and retailing. The gas from the production wells to the cities and towns is usually transported by a network of pipelines. The initial costs of constructing a fully operational pipeline are large and include designing and engineering its capacity and technical standards, identifying and establishing foundation contracts with the major users of gas, gaining access to the easements along the route of the pipeline, preparing the sites and laying the pipes, and installing pumps and storage facilities. Is this situation a natural monopoly? Is the market power of the owner of the pipeline constrained in any way?

Data sources include the Australian Competition and Consumer Commission (ACCC) and the Australian Pipelines and Gas Association (APGA). The inquiry will require answers to the following questions.

- 1 Describe the characteristics of a natural monopoly.
- 2 **a** How could the owner of a gas pipeline abuse the market power derived from the natural monopoly?
- 2 **b** How could users such as the exploration companies and the gas well owners be affected? How could consumers be affected?
- 2 **c** On what terms would other and smaller gas producers and distributors get access to the pipeline in order to transport their gas?



Australian Competition and Consumer Commission (ACCC)

Australian Pipelines and Gas Association (APGA)





- 3 a What are the market characteristics of transmission pipelines?
 b Is investment in pipelines indivisible; that is, does the investment need to be done in large chunks to get an operational pipeline?
 c Do economies of scale exist; that is, does the average cost of transporting the gas decrease as more gas (up to the pipeline's capacity) is transported?
 d Will one pipeline transport gas along a specific route more cheaply than two parallel pipelines?
 e Are sunk costs large; that is, if the venture to build the pipeline fails, how easily can the owner sell the pipeline or change the investment to another productive use without incurring a large financial loss?
- 4 a Does the owner have monopoly power if the characteristics outlined in the previous set of questions exist?
 b Is there any countervailing power, other than the threat of government regulation? The main users of natural gas are manufacturing, mining and electricity generation. How large and concentrated are the users of gas? Are there energy substitutes for gas? Are there alternative transport methods?
 c Are there any competitive threats? How large are the barriers to entry to the transmission business by a new provider?

A conclusion needs to be drawn as to whether or not the existence of market power means that there is no constraining competitive pressure acting upon the owner of the natural monopoly.

7.3.5 Market concentration

The Australian marketplace is small when compared to the economies of major developed countries. With our population of just over 24 million, we depend very heavily on foreign investment. Many large multinational corporations have operations in Australia. These conditions suggest that the Australian economy will often have particular markets that are dominated by a few firms.

A market is 'concentrated' if there are a few firms or suppliers dominating. Concentration may be measured in various ways, using indices based on taxable income, employment, capital employed, output (value added) and sales turnover.

A common measure is the **concentration ratio**. This is the percentage of total market sales (or turnover) accounted for by the largest four firms in a particular market or industry. This ratio serves as a useful indicator of market power or lack of competition, although it is not a complete measure.

Australia has a number of industries and markets that exhibit high concentration ratios. Concentration ratios are very low in the agriculture, forestry and fishing industry, and in the accommodation, cafés and restaurants industry. Concentration ratios are much higher in the mining industry, the retail industry and communication services industry. In this second group of industries, the potential exists for a few large firms to dominate and control a significant proportion of the market. Consider the economics data update below, which is an extract from 'The Conversation – Fact check' service highlighting the high concentration of newspaper ownership in Australia.

ECONOMICS DATA



Read the following extract and then conduct your own 'fact check' to answer the following questions.

- 1 Is Australia's level of media ownership concentration one of the highest in the world?
- 2 In a short letter to the editor of your local newspaper, discuss and explain the implications for the household, business and government sectors, if media ownership is concentrated in the hands of only a few main players.

Newspaper ownership in Australia is particularly concentrated. The Australian section of the University of Oxford's Reuters Institute Digital News Report 2016, which covers 26 countries, said that:

'Australia has a high concentration of traditional media ownership dominated by News Corporation and Fairfax Media who together own the majority of national and capital city newspapers.'

Market research firm IBISWorld noted in June 2016 that:

'The industry's four largest players, News Australia, Fairfax Media, Seven West Media and APN News and Media, are estimated to account for over 90% of industry revenue in 2015–16. The Australian media landscape is one of the most concentrated in the world. An extremely small number of firms, most notably News Australia and Fairfax Media, publish content that reaches the large majority of Australians.'

New Zealand researchers told a New Zealand commission considering a proposed merger between NZME Limited and Fairfax NZ that only five countries have one owner with more than 50% ownership of the daily newspaper market, and that Australia was one of them:

Daily newspaper ownership – Market share of top company, 2016

Country	Owner	Percentage
China	Government of China	100%
New Zealand	Merged entity	89.3%
Egypt	Government of Egypt	72%
Australia	News Corporation and associated Murdoch companies	57.5%
Chile	El Mercurio SAP	54.9%
Ireland	Independent News and Media	52%
Turkey	Dogan Group	46.4%
Switzerland	Tamedia	44.3%
Portugal	Cofina	42.4%
Sweden	Bonnier	41.3%
Russia	Komsomolskaya Pravda	39.6%
South Africa	Naspers Group	35%
UK	Murdoch Group	32.5%
Brazil	Globo Group	28.4%

Source: Submission by Dr Julienne Molineaux *et al.* to the NZ Commerce Commission (July 2016). For overseas market shares academics sourced Noam (2016).

In many cases, there are a few large firms dominating or controlling a significant portion of the market, and usually a competitive fringe of smaller firms sharing the rest of the market.

The concern about business concentration arises from the belief that market domination raises market power and increases the likelihood of collusion and the implementation of unfair and restrictive trade practices. The level of business concentration, for example, that arises from mergers does not, however, necessarily imply reduced competition. As Australia becomes more integrated in the global economy with increased trade and foreign direct investment inflows, the large, dominant domestic firms in Australia remain subjected to the competitive pressures of the possibility that global firms may enter the Australian market. It would be a mistake for government regulators to prevent mergers simply to avoid market dominance by a small number of firms. Other conditions determine whether or not market dominance will substantially lessen competition. These other conditions are:

- the extent of competition from imports
- the potential of competition from new entrants (including foreign multinationals); that is, whether or not there are barriers to entry
- the existence or development over time of substitute products in other industries; for example, a few firms may dominate the steel construction materials industry, but timber, aluminium, clay bricks and concrete products are substitutes
- the effectiveness of regulations to limit the abuses of market power, such as those enforced by the Australian Competition and Consumer Commission (ACCC).

ECONOMICS CHALLENGE



Countervailing power

John Kenneth Galbraith (1908–2006) was an American economist whose books have proved popular with the public as well as having an important influence on economic thought. His writings have always been controversial, questioning many of the basic ideas of orthodox economics. Galbraith has written on a wide range of topics, from the need for more public goods to the decline of competition in private-enterprise economies.

His first major work was *American Capitalism: The Concept of Countervailing Power* (1951), in which he introduced the concepts of **countervailing power**. It had become increasingly obvious during the 1930s and 1940s that, with the development of the large corporation, a drastic rethinking of some areas of economic theory was needed, particularly those related to competition and consumer sovereignty. Galbraith argued that it was pointless to continue discussing relationships between single consumers and small retailers, or individual workers and competitive producers. We now had to consider giant corporations interacting with big unions in the presence of growing government interference. Great power on one side of the market is, as he pointed out, matched by ‘countervailing’ power on the other. Thus, strong labour unions and political interest groups will act as constraints on the power of large producers. Competition still exists, but in an entirely different form from what was envisaged by Adam Smith. Accordingly, two of the foundations of the free-enterprise economy are the price mechanism and the profit motive. Galbraith argued that in the American economy these had both been replaced by the planning of the technostructure (Galbraith’s term for management and the highly skilled and knowledgeable professionals who make decisions about what to produce, how and for whom).





Using online sources, conduct research to examine and evaluate whether significant ‘countervailing power’ exists in the Australian marketplace. Examine one of the following industries and its associated supply chains to determine if any market power exists.

- motor-vehicle industry: Are car retailers in a position to negotiate lower car prices that would ultimately benefit consumers?
- petroleum industry: Are independent service-station owners able to negotiate lower fuel prices that would ultimately benefit consumers?
- retail grocery sector: Are food manufacturers able to negotiate higher food prices with the duopoly of Coles and Woolworths?

A conclusion needs to be drawn as to how countervailing power differs from ordinary competition and whether any increased government intervention would help in managing any limitations in a particular market.

7.3.6 Market regulatory bodies

KEY IDEA

Regulatory bodies are created by government to help control economic behaviour of firms and the operations of a market, with the view to reducing the likelihood of market failure.

In Chapter 6, we examined how competition policy is one of the ways to counter market failure. Similarly, it also assists with reducing a firm’s ability to exercise significant market power. Ultimately, a strongly enforced competition policy is good for markets, as the competitive pressures lead to greater investment and innovation by firms. There are several government regulatory bodies, both at a federal and state level, that provide safeguards for industry and markets alike. At the Commonwealth level, the Australian Competition and Consumer Commission (ACCC) is the regulatory body that administers the competition legislation. It is responsible for ensuring compliance with the *Trade Practices Act 1974*.

The objectives of the ACCC are both regulatory and educational. These objectives aim to:

- improve competition and efficiency in markets
- foster adherence to fair trading practices
- promote competitive pricing and restrain price rises in markets where there is little competition
- inform the community, businesses and consumers about the implications of the Trade Practices Act.

Provisions in the Act prohibit the anti-competitive practices identified in the previous section. Consumer protection provisions of the Act deal with unfair practices, product safety and information, conditions and warranties, and product liability. The aim of these provisions is to strengthen the position of consumers relative to sellers; in other words, to restore consumer sovereignty. The issues of public warnings and product recalls of unsafe goods are executed under the authority of these provisions. These provisions prohibit misleading advertising.

The ACCC has the power to grant immunity from court action for certain practices that would otherwise be in breach of the Act. For example, mergers may be permitted if it can be argued that public benefits exceed the anti-competitive costs. Public benefits taken into account in relation to mergers are the effect of the merger on the international competitiveness of the Australian industry, the increase in the value of exports and the extent of import substitution.

The price surveillance work of the ACCC involves vetting proposed price rises, holding inquiries into pricing practices and monitoring prices, profits and costs in any industry or business. In the areas of fair trading and consumer protection, it complements the consumer affairs agencies in the states and territories. For example, the relevant consumer protection agency in Queensland is the Office of Fair Trading, which seeks to protect and regulate the rights of consumers, business enterprises and not-for-profit organisations. These government agencies, both federal and state, recognise the difficulty for consumers to have perfect and complete information about a market. Accordingly, to help avoid the adverse selection of products by consumers, which then contributes to a misallocation of resources, the agencies provide a necessary safeguard to all market participants. Like the ACCC, the objectives of the Queensland Office of Fair Trading are both regulatory and educational. These objectives aim to:

- educate, advocate and act on behalf of consumer complaints in relation to business practices and or products
- improve competition by creating a fair, safe and equitable marketplace
- investigate unfair market practices and products that do not meet state safety standards
- enforce state legislation in relation to regulated industries where licensing is required to conduct a business
- maintain a public register of business licences, charity organisations and not-for-profit associations.

ECONOMICS AND ICT



People power: the Internet, consumers and market power

Not all instruments for curtailing anti-competitive practices and market power arise in the government sector. Individuals, with the aid of the Internet, have been able to exert power of their own on firms.

Firms with market power can undermine consumer sovereignty. A source of this power is information. Firms are usually better informed about a product and market conditions than a consumer. Firms also have the size and financial resources to withstand any legal action that an individual consumer might take to redress any damage from an alleged abuse of market power. The Internet, however, has allowed consumers to rebalance, to some extent, the power between the consumer and the firm. Consider how the use of social media platforms such as Facebook, Instagram and Twitter have transformed the way consumers interact with not only firms, but other consumers in generating 'likes' or 'dislikes' for a business or its products. Broader interest groups are also using social media to influence firms and consumers, acting as a catalyst for greater social responsibility, particularly in the areas of human rights and the environment. Consider the impact of environmental organisations (e.g. Greenpeace) and consumer advocate associations (e.g. Choice) that seek to educate, influence and lead public opinion on particular products or business practices.

Unlike other mass communication systems, the Internet has a number of peculiar communication properties that individual consumers can exploit to their benefit. These properties include interactivity, whereby people can ask and answer questions rather than one party sending messages and another party only receiving the messages; universality, that allows anyone anywhere to communicate at any time of the day or night; network externalities, that increase the value to users as more people connect to the Internet; and the ready availability and accessibility of information, which enables all parties in a transaction to be well informed, and the information to be shared more equally.



Choice



Consumers
Federation of
Australia



Not Good Enough





Associations for consumer action have arisen and although some did exist prior to the advent of Internet, the Internet has given them extra strength because of its communication properties.

Visit the websites of organisations such as Choice, the Consumers Federation of Australia and Not Good Enough and answer the following questions.

- 1 Describe their function and membership.
- 2 Explain how these sites can bring pressure to bear on large firms.
- 3 Consider and predict how firms may begin to respond to social media pressure and the shift in consumer power.
- 4 Research and examine a recent consumer campaign by one of the organisations noted above that led to a business changing its behaviour or product.
- 5 Discuss, using examples, whether social media platforms are contributing to a reduction or an increase in the amount of asymmetric (imperfect) information about products and markets.

7.3.7 Dealing with the under-provision of goods

CONCEPTS



Demerit good: a private good with negative externalities

Merit good: a private good with positive externalities

KEY IDEA

Governments have the capacity to intervene in markets where there may be the under-provision of a merit good. Governments do this to satisfy their economic, political and social objectives.

One of the great challenges facing the world in coming decades is how to deal with the issue of increasing carbon emissions and the impact of climate change. One of the solutions is for households and firms to install solar roof panels, thereby switching to a renewable energy source and reducing their consumption of electricity from the traditional coal-fired generators. The advantage of this approach is that it provides a positive externality that benefits the rest of society, as fewer carbon emissions are being produced. The disadvantage to the individual household or firm is the high capital cost of installing the necessary solar panels and the ongoing maintenance costs.

A **merit good** is a private good with positive externalities; that is, it provides social benefits to other people. The consumption of renewable energy, education and private health care are all examples of a merit good. Conversely a **demerit good** is a private good with negative externalities; that is, it provides social costs to other people. Some examples include the motorcar, which generates pollution, cigarettes and the excessive consumption of alcohol.

Let us consider a scenario where the government might seek to increase the consumption of a merit good. A modern property developer undertakes the construction of a new building because it sees the potential for a private benefit: profit to the developer. Accordingly, the developer incurs private costs to build the building. The developer may agree that installing solar roof panels provides energy benefits to the home owner, but who is going to pay for it? Will the developer be able to guarantee and command a greater sale price on the property if it has the solar panels?

Markets provide goods at the optimal private level; that is, where the marginal private benefit equals the marginal private cost. Figure 7.7 shows this position at P_0Q_0 . With a merit good that accrues positive externalities, the marginal social benefit will exceed the marginal private benefit (P_1Q_1), and thus the merit good is likely to be under-provided at a socially optimal level; that is, it will be provided at Q_0 instead of the desirable Q_1 .

Governments can influence the supply of merit goods in a number of ways. For example, in relation to the installation of solar panels, both the state and federal governments offer financial assistance. The federal government provides a subsidy towards the initial capital cost and the Queensland State Government provides a reduced ongoing electricity tariff that provides cheaper power to the household. Clearly with this sort of support, you would expect an increase in the fitting of solar panels to both new and existing premises.

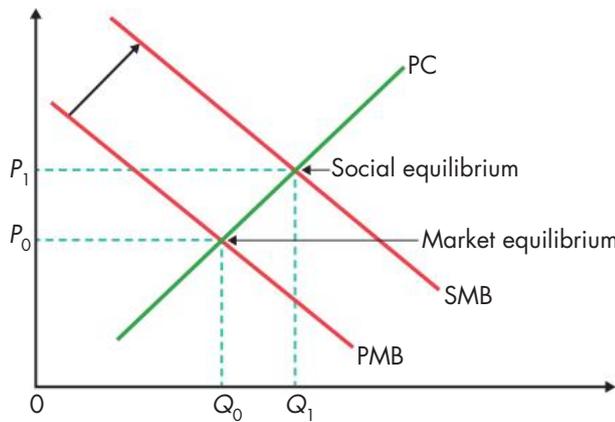


FIGURE 7.7 A positive externality: the supply of merit goods

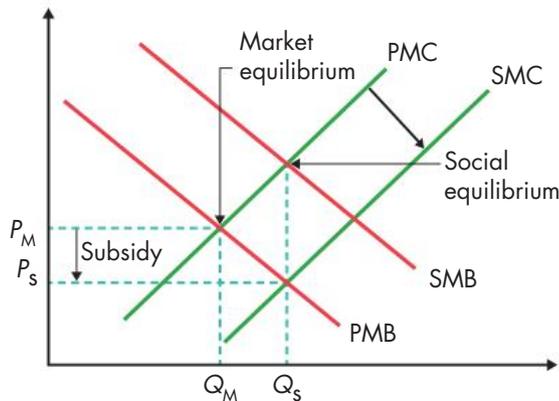


FIGURE 7.8 Capturing a positive externality: the supply of solar panels, with and without a subsidy

A subsidy effectively decreases the cost of installing solar panels and allows the developer to capture and thus internalise some of the positive externality. Figure 7.8 shows that at the lower private cost, the private marginal cost curve (PMC) moves out towards the social marginal cost curve (SMC). This means that the stock of housing with solar panels will be increased from (Q_M) to the socially optimal level (Q_S).

The private cost of buying and maintaining a house with solar panels has fallen because governments are assisting the developer, and ultimately the owner, to maintain a house with a renewable energy source. The effect of this is to move the private cost curve outwards, thus increasing the number of houses with solar panels. In this example, the government is assisting the community to gain the benefits of a positive externality.

QUESTIONS

- 1 Compare the economic and social advantages and disadvantages of large, dominant firms from the perspective of:
 - a a consumer
 - b a small-business competitor.
- 2 Explain what makes a market contestable.
- 3 Provide an example of a 'market regulatory body' and list its objectives to help manage competition policy in our economy.
- 4 Provide an example of a 'merit good' and a 'demerit good' and explain using diagrams how government might seek to increase the consumption of merit goods and decrease the consumption of demerit goods.
- 5 Interview local small-business owners (e.g. retailers, taxi owners and café owners). Identify the number and type of regulations and the amount and type of paperwork that they consider hinders their business. In whose interest have the regulations been imposed?

Write letters to the editor of your local paper expressing your assessment of the regulations from the viewpoint of:

 - a the small-business owner
 - b a customer.

7.1 True/False

For each statement, indicate whether you consider it to be True (T) or False (F).

- 1 Division of labour has provided greater job satisfaction for all workers.
- 2 Increased specialisation leads to greater productive efficiency.
- 3 Productivity means the amount of output produced per unit of factor input over a given period of time.
- 4 To improve market competition, regulatory bodies should increase barriers to entry.
- 5 Internal economies are said to be those benefits that accrue to a firm as a result of an increase in the scale of its operation.
- 6 Collusion only occurs when firms previously in competition enter formal written agreements to limit other competitors.
- 7 Market concentration can change over time, resulting in changes to market structure.
- 8 The business concentration ratio is an incomplete indicator of the degree of competition.
- 9 'Predatory pricing' and 'price discrimination' mean the same thing.
- 10 The Internet and social media platforms have done nothing to improve consumer sovereignty.

7.2 Terminology

Select the correct term from the list below that describes each statement.

- | | | | | | |
|---|--------------------|---|------------------------|---|------------------------------|
| A | production | E | vertical integration | I | efficiency |
| B | collusion | F | horizontal integration | J | capital intensive production |
| C | cartel | G | product discrimination | K | deregulation |
| D | division of labour | H | price discrimination | L | concentration ratio |

- 1 the percentage of the total industry sales accounted for by the largest four firms
- 2 a firm charging different prices to different customers for a similar commodity or service
- 3 the process of combining land, labour, capital and enterprise to provide goods and services in an economy
- 4 a formal association of firms that aims to control a market for a particular product
- 5 each individual worker becoming expert at a specific task to ensure maximum efficiency
- 6 using the least amount of resources to produce the goods and services that people value the most
- 7 processes using a high proportion of capital relative to labour input
- 8 cooperation among independently owned and controlled firms to limit competition; for example, by collusive tendering
- 9 a single firm gaining control of the one stage of the production process that serves many producers or industries
- 10 the removal or reform of government regulations that unnecessarily add to the cost of business and restrict competition

7.3 Multiple-choice questions

Select the correct response to each of the following:

- 1 Production in Australia can best be described as:
 - A labour intensive with a high degree of specialisation.
 - B capital intensive with a low degree of specialisation.
 - C labour intensive with a low degree of specialisation.
 - D capital intensive with a high degree of specialisation.
- 2 Models of an unincorporated enterprise include:
 - A a private company and a cooperative.
 - B a public company and a government-run enterprise.
 - C a sole trader and a partnership.
 - D a holding company and a charity organisation.
- 3 An example of horizontal integration would be:
 - A a furniture manufacturer buying a furniture retail outlet.
 - B a real estate agent buying out a competing agent in an adjoining suburb.
 - C a plumber buying a plumbing supplies business.
 - D all of the above.
- 4 Quaternary production would include firms from the following sectors:
 - A transport, media, tourism and banking
 - B manufacturing, building, retail and health care
 - C mining, farming, energy and media
 - D media, telecommunications, banking and education
- 5 Which one of the following is not true? The Queensland Office of Fair Trading seeks to:
 - A educate, advocate and act on behalf of consumer complaints.
 - B improve competition by creating a fair, safe and equitable marketplace.
 - C enforce state licensing legislation for particular business industries.
 - D advise businesses on how to increase their market share.
- 6 Productivity means:
 - A the amount of output produced per unit of factor input over a given period of time.
 - B the average rate of output per worker.
 - C the average rate of output per unit of capital employed.
 - D all of the above.
- 7 Competition is important because it:
 - A limits the working of the price mechanism.
 - B eliminates the profit motive.
 - C gives producers an incentive to be efficient.
 - D enables producers to control prices.
- 8 A few large firms dominate the motor-vehicle industry. As a result, competition:
 - A does not exist.
 - B is based entirely on price.
 - C results in inefficient production.
 - D emphasises features other than price.

Review of Chapter 7

- 9 Market concentration is measured by the 'concentration ratio', the percentage of total market sales accounted for by the largest four firms in a particular market. Typically in Australia, concentration ratios are very low in which market?
- A mining sector
 - B retail grocery sector
 - C communication services sector
 - D agriculture sector
- 10 Which of the following is an example of an external economy of scale?
- A A firm conducts specialisation via the division of labour.
 - B A firm employs capital intensive production techniques.
 - C A firm expands a local port facility and road network to improve distribution.
 - D A firm buys out one of its key suppliers.
- 11 When a sequence of stages or processes in the production of a commodity comes under the control of one firm, this is known as:
- A price leadership.
 - B vertical integration.
 - C a trade association.
 - D interlocking directorships.
- 12 The general objective of the ACCC is:
- A to eliminate large firms.
 - B to increase government regulation of business.
 - C to privatise government-owned business enterprises.
 - D to increase and maintain competition.
- 13 Which of the following would be deemed a 'barrier to entry' for potential competitors in the retail grocery sector?
- A large initial capital requirements
 - B lack of economies of scale
 - C the two largest competitors control 75 per cent of the market
 - D all of the above
- 14 John Kenneth Galbraith argued that the real controllers of public companies are the:
- A owners.
 - B shareholders.
 - C managers.
 - D technostructure.
- 15 Which of the following provides the best example of 'countervailing power'?
- A a public company versus a national trade union
 - B a multinational versus an individual consumer
 - C a sole trader versus a large government department
 - D a large retail grocery chain versus a small independent farmer

7.4 Short response questions

- 1 Define market failure and give two examples in which it can occur.
- 2 Using examples, suggest two reasons why a government may intervene in a market.
- 3 Explain and distinguish the economic concepts of 'diseconomies of scale' and 'internal economies of scale'. Provide examples of each in your response.
- 4 What is meant by a firm having market power? In your response give an example of how Woolworths and Coles might employ their market power in the retail grocery sector.
- 5 List three options available to government to reduce the market power of a firm.
- 6 Using your understanding of price mechanism theory, explain with a demand and supply graph, how a government providing 'solar panels' subsidy to households, can assist the community to gain the benefits of a positive externality.
- 7 Distinguish the difference between horizontal and vertical integration to explain how firms may gain control of a market and reduce competition.
- 8 Using examples, explain the barriers to entry that may potentially restrict a new firm from entering the Australian telecommunication's marketplace.
- 9 Examine and discuss how technology and specialisation helps firms to achieve economies of scale in production.
- 10 Using an example explain how 'countervailing power' differs from ordinary market competition.

7.5 Activities

Debate

- 'Division of labour has been more of a blessing than a curse.'
- 'Mergers will lessen competition.'
- 'Mergers will result in greater efficiency.'
- 'The Internet and social media platforms have rebalanced the power between consumers and firms.'

Simulation

Develop a simulation to demonstrate that the division of labour will increase the production of an item. In your class, have some students make a simple item, such as a cardboard box with a lid. Do it individually, and as a production line with specialisation. Compare the results.

Research

Select a well-known entrepreneur. Using business magazines, biographies, *Who's Who in Australia* etc., develop a profile of the individual. In groups, discuss the characteristics of entrepreneurs in general.

Calculations

The concentration ratio is used to help identify the level of competition within a given market and it serves as a useful indicator of market power. The ratio represents the percentage of total market sales (or turnover) accounted for by the largest four firms in a particular market or industry. Below is a snapshot of five markets within a small hypothetical economy. The sales of the top four firms within each market are included in the table. Calculate the concentration ratio for each market (the first has been done for you) and answer the questions below.

Market	Total market sales	Firm A	Firm B	Firm C	Firm D	Total sales firms A to D	Concentration ratio
Retail grocery	\$229 million	\$42 million	\$28 million	\$21 million	\$16 million	\$107 million	46.7%

Market	Total market sales	Firm E	Firm F	Firm G	Firm H	Total sales firms E to H	Concentration ratio
Banking services	\$314 million	\$76 million	\$71 million	\$63 million	\$62 million		

Market	Total market sales	Firm I	Firm J	Firm K	Firm L	Total sales firms I to L	Concentration ratio
Beef	\$129 million	\$22 million	\$15 million	\$7 million	\$4 million		

Market	Total market sales	Firm M	Firm N	Firm O	Firm P	Total sales firms M to P	Concentration ratio
Sugar	\$296 million	\$40 million	\$38 million	\$19 million	\$16 million		

Market	Total market sales	Firm Q	Firm R	Firm S	Firm T	Total sales firms Q to T	Concentration ratio
Soft drinks	\$194 million	\$52 million	\$49 million	\$43 million	\$36 million		

- Which market has the highest concentration ratio and thus has the lowest level of competition?
- In which markets would government be reluctant to allow a merger or takeover?
- Which market would have the fewest barriers to entry for new competitors?
- Identify what steps could be taken by regulatory bodies to help reduce market power in the banking services market.

Interpretation

Harry Stanley is a sole trader of a small furniture manufacturing business. He manufactures quality office furniture, ranging from boardroom tables to general office desks and cabinets. The designs are modern, with retailers able to select from more than 20 different finishes and colours. Because Mr Stanley's products are well priced in the market, demand is outstripping his ability to manufacture the products. Each of the 12 workers in the Stanley factory has a complete set of the necessary tools, and each is a highly skilled tradesman.

To manufacture a set of furniture, the following procedure has been adopted.

- i** Select raw materials from the storeroom.
- ii** Move the materials to the work area.
- iii** Mark out the patterns on the raw materials.
- iv** Cut out the various pieces.
- v** Assemble the pieces.
- vi** Sand and polish the units.

Mr Stanley then inspects all of the completed work and arranges shipment to stores.

- 1** What disadvantages are evident from the factory's set-up?
- 2** Recommend how factory efficiency could be improved.
- 3** What would be the benefits from such recommendations?
- 4** Why would (a) the workers and (b) Mr Stanley be likely to object to your recommendations?
- 5** Recently Mr Stanley had an interesting offer from Hills Furniture Barn, a small chain of four retail furniture outlets that specialises in the rental and sale of office furniture. Ms Jodie Hills who runs the enterprise would like to merge the Stanley factory business with her furniture retail business to create a new partnership entity. She believes a strategy of vertical integration would serve both their interests well.
 - a** What advantages would there be for the factory? What advantages would there be for Hills Furniture Barn?
 - b** What disadvantages might there be for the factory? What disadvantages might there be for Hills Furniture Barn?
 - c** Would Mr Stanley improve or weaken his competitive position in the marketplace? Explain your reasoning.
 - d** What other business options could Mr Stanley consider to improve his market power?

7.6 Inquiry topics

Complete one or more of the following inquiries using a model of inquiry.

- 1 For Australian industry to be competitive in a global marketplace, there needs to be continuous adjustment and reform within a market. Analyse how a selected industry attempts to stay competitive, and evaluate the effectiveness of such strategies.
- 2 Conduct an analysis of one industry within the Australian economy. Would this industry be said to be capital-intensive, labour-intensive or land-intensive? Why? How could changing the mix of the factors of production make the industry more efficient?
- 3 Which are the best-known brands in the world? Conduct some online research via Interbrand to find the list of the top 100 global brands. Which of these do you recognise as operating in Australia? Select five that you think don't operate in Australia, and go to their websites. Search their products and their operations to see if they operate in Australia. Judging by the number of companies on the top-100 list that have a presence in Australia, would you say that on a global scale, Australia is part of a global business concentration?
- 4 Investigate and examine the role of the Australian Competition and Consumer Commission (ACCC) in reducing anticompetitive behaviour. Review one of their recent decisions in relation to their role in one of the following areas:
 - airports and aviation
 - the communications sector
 - the energy sector
 - monitoring fuel prices
 - railways
 - waterfront and shipping.
 - a Evaluate the private and social costs and benefits resulting from the ACCC decision.
 - b Conclude whether or not the ACCC has intervened to increase competition to achieve a more efficient market outcome.

You can find answers to selected review questions within this chapter on NelsonNet.



Interbrand – Best global brands ranking



Review of Chapter 7 answers



To come

8

Environmental economics

Markets have delivered economic growth in ways that create environmental degradation and unsustainable use of environmental resources. Government intervention may offer a path to more environmentally sustainable economic activity.

Focus questions and inquiries

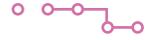
- How can economic growth be achieved in environmentally sustainable ways?
- In what ways are the economy and the environment linked?
- What are the major environmental impacts of economic activities?
- Why does the price mechanism fail to allocate environmental resources in environmentally sustainable ways?
- Can economic growth be achieved in ways that are sustainable and socially optimal?
- What interventions in the operation of markets and government strategies most effectively redress environmental degradation and promote economic and ecological sustainability?

To provide a basis for answering such questions and carrying out such inquiries, this chapter will examine the following:

- the relationship between economic systems and the natural environment
- environmental impacts of economic activity
- ecologically sustainable development
- the failure of markets to allocate environmental resources efficiently and produce sustainably
- the trade-off between economic growth and ecologically sustainable development
- government interventions and strategies to address the failure of markets to deliver sustainable outcomes.

8.1 The environmental impacts of economic activities

CONCEPTS



Biological diversity: the variety of plants, animals and other biological organisms in an area

Ecological footprint: an estimate of how much biologically productive space is required to produce the goods and services a given population demands, and to absorb the resultant wastes, using current technology

Environmental amenity: the sources of satisfaction flowing from the aesthetic qualities of the environment

Environmental degradation: any deterioration in the quality of environmental resources, the destruction of ecosystems and the extinction of wildlife

Environmental resources: the support the environment gives the economy by the provision of natural resources and as a means of waste disposal

KEY IDEA

The nature and scale of contemporary economic activities are causing environmental degradation and depleting many of the resources on which future production will depend.

Environmental economics focusses on the extraction and use of natural resources and the return of waste products from these activities to the environment. This includes an examination of the effects of economic incentives on the environment and their potential to create more sustainable use of resources and to inform government policies that promote efficient and sustainable economic activity.

The economy uses the natural environment as a source of raw materials, as a waste disposal system and as a provider of **environmental amenities**. It is generally recognised that the world is experiencing many environmental problems, including unsustainable use of resources, resource degradation of natural environments and loss of **biological diversity**. Modern industrial economic systems have used the environment to create economic growth and deliver a higher material standard of living with inadequate consideration of the long-term effects.

The existence and persistence of environmental problems show that markets have failed to deliver satisfactory environmental outcomes at the local, national and global levels. Market-based economies are inclined to allocate environmental resources inefficiently and in ways that undervalue environmental resources. The cost associated with the use of environmental resources is often externalised from the market price charged for a good or service. This failure of markets creates a need for consumers and producers to be more environmentally conscious in their decision making and for government intervention to modify markets to deliver more ecologically sustainable outcomes that maximise social wellbeing.

8.1.1 The use of environmental resources

Economic activity involves combining natural resources and capital with the human resources of labour and enterprise to produce the goods and services demanded by consumers and

other producers. Most production involves the use of **environmental resources**. The economy uses the natural environment in three basic ways:

- **as a source of raw materials:** industries and households making use of air, water, minerals, energy, forests, land and biological diversity
- **as a waste disposal system:** industries and households depositing waste into the atmosphere and waterways, and onto land
- **as a provider of environmental amenity:** people enjoying the natural environment for its scenery, its wildlife and its uniqueness.

A resource is anything that can be used to help satisfy the wants of humans and the needs of other living organisms, or to serve environmental needs. Some environmental resources are directly available for use, while others only become useful through the application of human technology and effort. Resources such as solar energy, fresh water, fertile soil and edible wild plants and animals are directly available. Some resources are not directly useful, but become so with human technology and effort. Oil deposits were not valued until people learnt how to extract crude oil and refine it into a range of products such as petrol, aviation fuel, bitumen, plastics and pharmaceutical products. Iron ore (steel), coal, silicone, fibre optics, farm animals and modern food crops are also not directly available. As human knowledge and production methods develop, more things become resources.

The resources we get from the environment are classified in three groups:

- **perpetual:** continually renewed by nature
- **renewable:** can be replenished fairly rapidly (hours, decades)
- **non-renewable:** are not replaced by natural processes (except in the very long term).

Perpetual resources cannot be depleted. No matter how much sunshine or wind power we use, the amount still available is unchanged. These resources are renewed continuously through natural processes.

Renewable resources can be depleted or degraded if human use of the resource exceeds its natural replacement rate. The highest rate at which a renewable resource can be used indefinitely is called its sustainable yield. This applies to forests, grasslands, wild fish stocks, fresh water supplies, fresh air and fertile soil. Overuse leads to **environmental degradation**, a process, where either the available supply of the resource is depleted or the quality of the resource is degraded. Examples of environmental degradation include burying fertile farmlands under cities, freeways and holiday resorts, deforestation and excessive erosion of topsoil.

Resources that exist in a fixed quantity or stock in the Earth's crust are called non-renewable resources. Over millions of years, these resources can potentially be renewed by geological processes. Some non-renewable resources can be recycled or reused to extend supplies. Recycling involves collecting and reprocessing a resource into new products. Aluminium cans and glass bottles can be crushed, melted and reshaped into new items. Reuse involves using a resource over and over again in the same form. Glass bottles and jars can be collected, washed and refilled many times. Metallic mineral resources can be recycled, but energy resources cannot. Once coal, oil or natural gas has been burned, the useful energy is gone, leaving behind waste heat and polluting gases. Many non-metallic minerals are too difficult or costly to recycle.

Non-renewable mineral resources are never completely exhausted, but become economically depleted when the costs of extracting and using what is left exceeds its economic value. A non-renewable resource is usually considered economically depleted when 80 per cent of it has been extracted and used. It generally costs too much to extract and process the remaining 20 per cent.

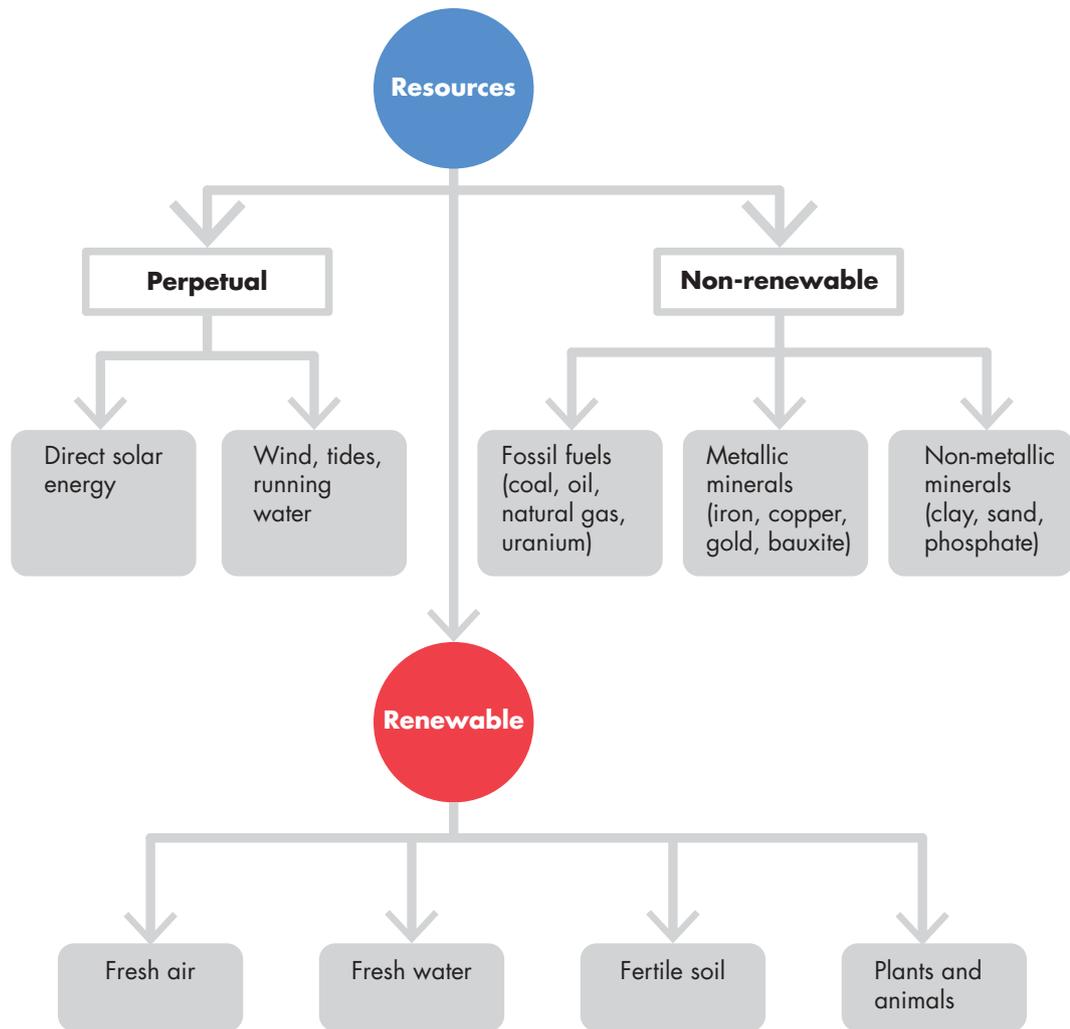


FIGURE 8.1 Types of resources

QUESTIONS

- 1 Scientists expect the sun to complete its lifecycle in five to six billion years. Should it be considered a perpetual resource?
- 2 Explain how you can judge whether a renewable resource is being used in a sustainable way.
- 3 Identify a renewable resource that is being degraded and devise a way of determining the extent of degradation.
- 4 Develop criteria to decide whether a renewable resource is being depleted or exhausted.
- 5 What prevents the recycling of energy resources?
- 6 Create a list of resources that are currently being reused in Australia (apart from glass and aluminium).

8.1.2 Some environmental problems associated with resource use

It is generally recognised that the world is experiencing many environmental problems, including:

- climate change induced by human activities
- rising sea levels
- rising levels of pollution of air, water, soil and oceans
- degradation of farmland
- overcrowding and congestion of many urban areas
- depletion of natural resources
- deforestation
- rapid destruction of flora and fauna leading to a loss of biodiversity.

These problems result from the way global economies are attempting to solve the economic problem in the face of rapid population growth. This is resulting in the production of an increasing variety of consumer goods and services in ever-increasing quantities. This demands increased consumption of non-renewable resources, and renewable resources being used more rapidly than they are replenished.

Some depletion of environmental resources is unavoidable as it is due to the basic economic problem of scarcity. Human wants are unlimited, but the resources used to make products to satisfy those wants are either scarce or non-renewable. Any use of non-renewable resources reduces the amount that remains available for future production, raising concern about intergenerational inequity.

The planet is endowed with vast but finite stocks of fossil fuels such as coal, oil and natural gas. Since the beginning of the Industrial Revolution in the 18th century, these fuels have been increasingly used to provide the energy to power industrial and agricultural production, as a source of heat for domestic users and as raw materials to be transformed into manufactured goods.

The environmental problems associated with resource use are far more extensive than issues of depletion of the Earth's stock of non-renewables. The use of energy derived from fossil fuels degrades the environments from which the oil, coal and gas are extracted. Additional environmental costs are associated with the manufacturing processes to convert these resources into forms of energy that can be used by the business sector and consumers.

The emissions from coal- and gas-fired power stations pollute local environments and are changing the makeup of the gases in the Earth's atmosphere. The distribution of electricity creates high-voltage transmission lines that are hazardous to humans and many species of animals. These transmission lines dissect natural and human environments and are often highly visible.

Gas is a key source of heating for many industries and households. It is also a vital input to many manufacturing processes, including the production of agricultural fertilisers. Storage and distribution of gas places large quantities of very flammable material in close proximity to densely populated areas.

The products refined from crude oil have powered most forms of land, sea and air transport for more than a century. A by-product of oil called bitumen is used to construct the roads on which more than a billion passenger vehicles and trucks travel each year, burning vast quantities of petrol and diesel fuel. The number of cars on the world's roads passed one billion in 2010, and the OECD (Organisation for Economic Co-operation and Development) forecast that figure to reach 2.5 billion by 2050. The Australian Bureau of Statistics data indicates that 18.4 million motor vehicles were registered in Australia in 2016.

The burning of any of these fossil fuels in homes, factories or in vehicles creates emissions that add to air pollution and add greenhouse gases to the atmosphere. Smog is creating major health, environmental and economic problems, especially in China. Greenhouse gas emissions and their role in climate change have become major global environmental and economic issues.

Many of the plastics dumped in landfill sites and the plastic packaging that pollute waterways and endanger marine species are also made by-products of oil – a non-renewable but economically important natural resource.

ECONOMICS CHALLENGE 

Appraise the potential of ride-sharing services or developments in public transport to reduce the numbers of cars on the world’s roads by 2050 to a number well below the 2.5 billion predicted by the OECD.

Construct an argument, based on an investigation of one of these alternatives, and of recent trends in vehicle registrations.

Present your argument in one of the following formats:

- a spoken explanation supported by diagrams or infographics
- a written report
- one side in a class debate.

8.1.3 The ecological footprint

The idea of calculating people’s **ecological footprint** was developed in 1990 by Mathis Wackernagel and William Rees at the University of British Columbia. The idea has been widely used since to monitor human use of environmental resources and promote sustainable development. The calculation of carbon footprints is a useful extension of this idea.

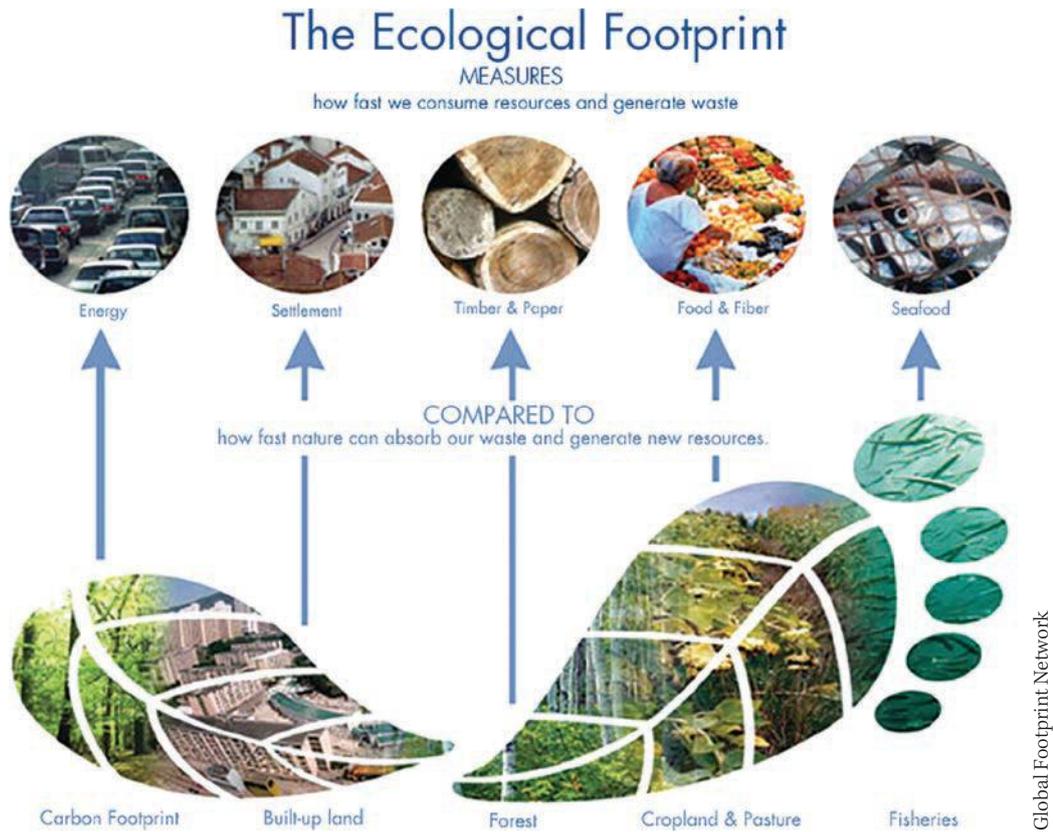


FIGURE 8.2 The ecological footprint



The weblinks provided on NelsonNet will allow you to calculate your ecological footprint by answering the following questions:

- 1 What is the biologically productive space (expressed in hectares) available for every human being?
- 2 Calculate your footprint and assess whether it is a sustainable one.
- 3 Identify personal actions you can take to reduce your personal footprint.
- 4 What is the average Australian footprint?
- 5 Evaluate whether this is fair, given that it implies that other people must have a footprint below the average.
- 6 Identify actions that Australian governments can take to reduce the size of their citizens' footprints.
- 7 What are the long-term implications of the size of the Australian footprint?



The ecological footprint

8.1.4 The environmental performance index

Yale and Colombia Universities, in collaboration with the World Economic Forum, have developed an Environmental Performance Index (EPI) that former Australian Minister for the Environment Greg Hunt rated, 'the most credible, scientifically-based, hard data-based analysis in the world'.

The EPI's authors have published a global and country-level report card every second year since 2006. The 2016 edition ranked 180 countries on their performance on a range of high-priority environmental issues. The EPI rated national performance in nine areas: biodiversity and habitat, forests, climate and energy, fisheries, agriculture, water resources, water and sanitation, health impacts and air quality.

EPI indicators measure how close a country is to meeting internationally established targets. The indicators are aligned with the United Nation's Sustainable Development Goals (SDGs). The SDGs officially known as 'Transforming Our World: the 2030 Agenda for Sustainable Development' is a set of 17 'Global Goals' with 169 targets. The SDGs provide a baseline for evaluating a nation's performance and help indicate the amount of progress needed to reach those global targets. On indicators for which there are no agreed targets, nation-to-nation comparisons are used.

While some of the SDGs have a social rather than economic focus, the later goals (outlined below) and the targets describing success in achieving them form a blueprint for multilateral attempts to move the global economy towards sustainable economic development:

- Goal 6: Ensure availability and sustainable management of water and sanitation for all.
- Goal 7: Ensure access to affordable, reliable, and sustainable energy for all.
- Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.
- Goal 12: Ensure sustainable consumption and production patterns.
- Goal 13: Take urgent action to combat climate change and its impacts.
- Goal 14: Conserve and sustainably use the oceans, seas and marine resources.
- Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss.

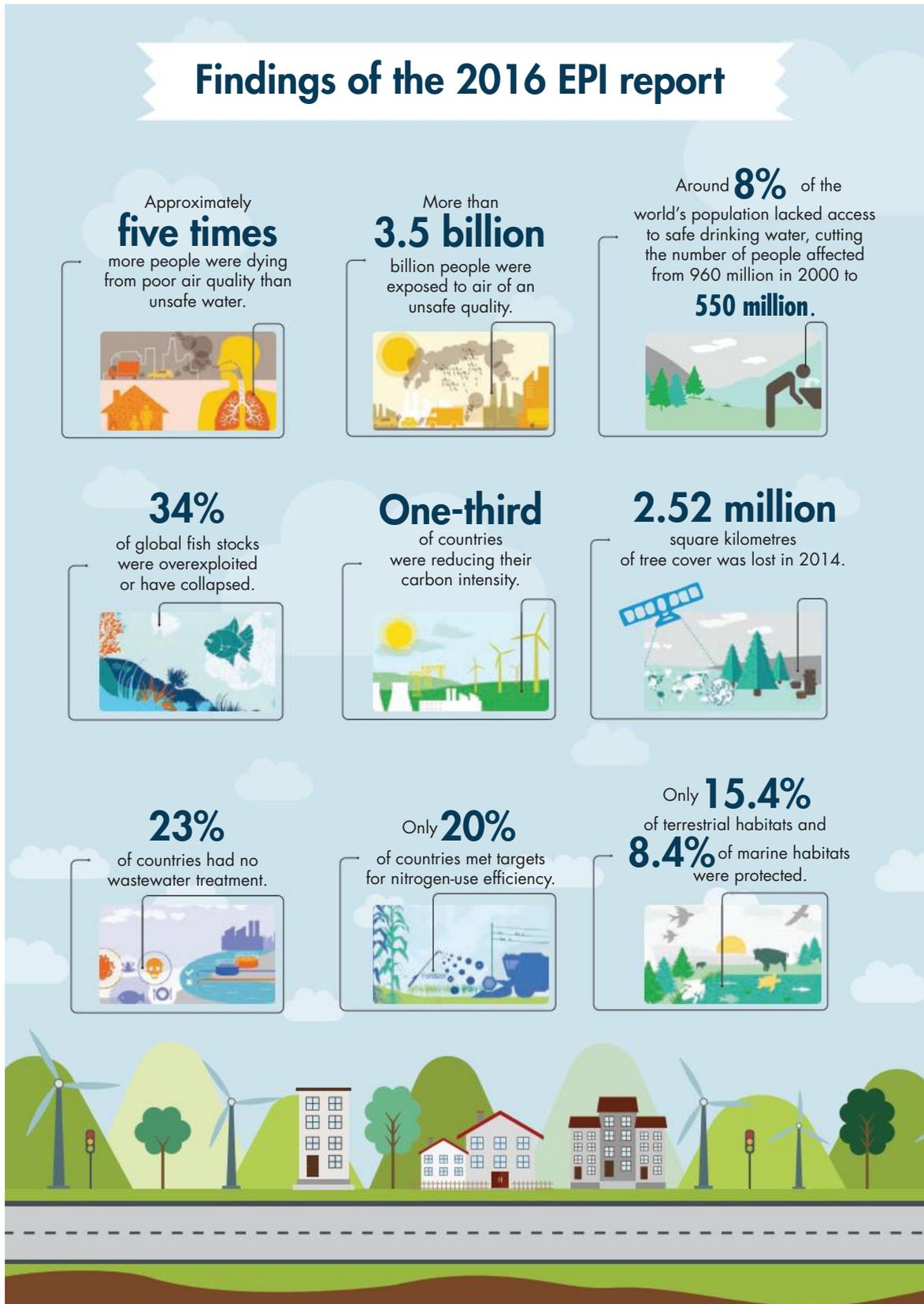


FIGURE 8.3 Findings of the 2016 EPI report

EPI data and the need for the UN to promote and monitor the Social Development Goals indicate that many fundamental environmental problems exist and clear progress is only being made on a few of these key indicators.

The 2016 country ranking put Finland in first place followed by its neighbours Iceland, Sweden and Denmark. European countries ranked next highest, with New Zealand, in 11th position, being the strongest performing non-European country.

QUESTIONS

- 1 Define the term 'fossil fuels' and list the three most widely used types.
- 2 Differentiate between renewable and non-renewable sources of energy.
- 3 Contrast the meaning of 'safe', 'resilient' and 'sustainable' cities in SDG Goal 11.
- 4 Identify and explain the nature of the relationships between the rising level of greenhouse gases in the Earth's atmosphere, the Industrial Revolution and rapidly rising global population since the late 18th century.
- 5 Analyse the findings in the 2016 EPI Report and decide which of them you find most concerning and which the most encouraging. Justify these choices.

ECONOMICS IN ACTION



Use the Internet to locate details of the latest EPI data, then complete the following tasks:

- 1 Update the environmental indicators listed above.
- 2 Identify any new indicators that have been highlighted in the current report.



Environmental
Performance Index

8.2 Ecologically sustainable development

CONCEPTS



Ecological: dealing with the interdependencies between organisms and their environments

Ecologically sustainable development (ESD): the use of resources for economic development in a way that does not compromise the current ecological balance and ensures that the natural environmental resources are maintained to improve the quality of life for present and future generations

Intergenerational equity: the just sharing of economic benefits and costs between the present and future generations

Natural capital: the stock of resources provided by the natural environment from which humans gain amenity and productive inputs; also called ecological or environmental capital

Quality of life: the overall wellbeing of individuals according to their material living standards and a range of other considerations such as health standards, education levels, security and happiness

KEY IDEA

Ecologically sustainable development (ESD) is an economic and social objective requiring government intervention to manage natural resources in ways that ensure the environment's ability to meet present and future needs.

Sustainable development has been defined in many ways, but the most frequently quoted definition is from *Our Common Future, a Report of the World Commission on Environment and Development* set up by United Nations in 1983. Also known as the Brundtland Report after its lead author, it states:

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

This promoted the vision of a new era of economic growth that would be good for the environment. The Brundtland Report also notes:

Our Common Future is not a prediction of ever increasing environmental decay, poverty, and hardship in an ever more polluted world among ever decreasing resources. We see instead the possibility for a new era of economic growth, one that must be based on policies that sustain and expand the environmental resource base. And we believe such growth to be absolutely essential to relieve the great poverty that is deepening in much of the developing world.

In 1992, the Australian government set up a steering committee to address the concept of **ecologically sustainable development (ESD)**. The committee produced a *National Strategy for Ecologically Sustainable Development*, which defined ecologically sustainable development as: 'using, conserving and enhancing the community's resources so that **ecological** processes, on which life depends, are maintained, and the total **quality of life**, now and into the future, can be increased'.

From this concept, five principles were established that were to guide the economic activities and decisions of government, industry and consumers:

- 1 Integrate economic and environmental goals in policies and activities. The goals of economic growth, full employment and an equitable distribution are to be pursued while ensuring adequate protection and maintenance of the environment.
- 2 Ensure that environmental assets are appropriately valued.
- 3 Provide for equity within and between generations. Social equity policies will need to accompany ESD strategies to ensure an equitable distribution of the costs and benefits of production and consumption. The principle of **intergenerational equity** needs to be applied to avoid passing on an impoverished environment to future generations, thus denying them options when deciding the way they wish to live.
- 4 Deal cautiously with risk and irreversibility. The environment is a complex system of interdependencies. Our knowledge of the effects of human activity on the environment is still limited, particularly as it relates to long-term effects. This principle requires that when there is a reasonable risk of unacceptable damage to the environment, this risk

should be avoided or reduced by further research, the application of new technologies and long-term planning.

- 5 Recognise the global dimension. The contribution of greenhouse gases to climate change, radioactive fallout from nuclear accidents and over-exploitation of ocean fisheries are examples of environmental problems that extend beyond the concern of a single nation. The adoption of ESD strategies among a nation's trading partners will also affect international trade and finance. If the ESD policies of one nation drive domestic production overseas to nations with less rigorous ESD standards, a race to the bottom in environmental standards may occur.



Our Common Future
Ecologically sustainable
development

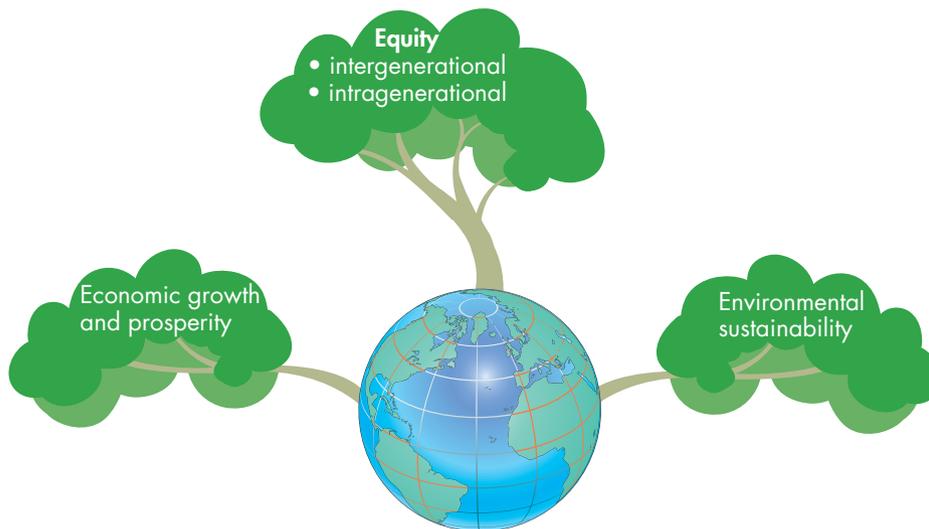


FIGURE 8.4 Management of environmental resources

The ESD guidelines give us a means of assessing how well our economic system makes use of the environment and how environmental resources should be managed. It is a balancing act, as illustrated in Figure 8.4.

8.2.1 The relationship between ESD and efficiency

The understanding of ecologically sustainable development outlined in Australia's *National Strategy for Ecologically Sustainable Development* highlights the potential compatibility of ESD and concepts of economic efficiency. The development of better ways of, 'using, conserving and enhancing the community's resources' is consistent with an understanding that allocative efficiency occurs where a country's productive resources are used in combinations that generate the maximum benefits for consumers and the country. If the full costs and benefits of using environmental resources, including those externalised from market prices, are considered, then the most efficient ways to produce are going to be the most ecologically sustainable. This does not in itself guarantee that the planet's resources can support an unlimited growth in population or a mindset that greater consumption is essential to improve people's **quality of life**.

Productive efficiency is concerned with minimising costs by using the best mix of inputs at the lowest point on the short-run average cost curve. If users of environmental resources had to purchase inputs at a price that reflected their relative scarcity (and importance), many of the planet's environmental problems would be reduced. Private and government-owned businesses would be forced to find ways to use more environmentally friendly production methods. This is a path towards environmentally sustainable production.

Dynamic efficiency has a key role to play in achieving more sustainable economic activity. Dynamically efficient firms or economies develop new products and production processes using new ideas and technologies to meet, or even lead changes in, consumer preferences and tastes. The development of new technologies and ways of organising production are driven by competitive pressures to reduce production costs and therefore increase productive efficiency. It can also improve the sustainability of economic activity. The development of hydrofluorocarbons to replace the use of chlorofluorocarbons in spray cans, refrigerators and air-conditioners in the 1970s has resulted in a substantial repair of the Earth's ozone layer. The development of a range of solar, wind and tidal power technologies has allowed innovation in global energy production that is reducing the emission of greenhouse gases into the atmosphere. A continuing wave of technological development in the design of cars, commercial vehicles, and air and sea transport has enabled an evolution towards more environmentally sustainable movement of people, productive resources and goods.

The most efficient firms and markets at a global and national level do not necessarily produce the most socially desirable outcomes. It may be productively efficient to produce electricity from coal, gas or even nuclear power, but are these the best ways to allocate resources? The same question arises for many industries in which the leading firms operate with high levels of productive and dynamic efficiency. Arms manufacturing, palm-oil production and rainforest logging are not the optimal way to use the planet's resources.

Allocative efficiency is essential to ESD. Allocative efficiency is achieved when resources go to the production of goods that people most want, in the quantities that provide the greatest social benefits. Environmental economics highlights the tendency for existing markets to discount the future by exploiting non-renewable resources, depleting renewable resource stocks and using natural systems for waste disposal. This is an inequitable use of **natural capital**, leaving diminished stocks of environmental resources and degraded environments for future generations. If markets fail to allocate environmental resources in sustainable ways, then they are not truly delivering allocative efficiency.

The optimal distribution of resources and the output produced from them is achieved when the marginal cost and market price are at a level that consumers are willing to pay, because it is equivalent to the marginal utility that they gain. For an increasing number of global consumers, especially those with medium to high incomes, the utility of many products is increased if they are produced in an environmentally sensitive way, using renewable resources sustainably. Consumers make mindful choices about the relative environmental merits of alternative ways to satisfy their wants and are often willing to pay premium prices for the product with the lowest environmental footprint. Ecotourism, electric cars, 'grey water' safe detergents, biodegradable packaging, organically or biodynamically produced foods and low-energy-consuming white goods are examples. Sourcing sustainably grown timbers, building houses that are independent of outside sources of electricity and the urban gardening movement involve consumers making a conscious effort to promote ESD.

Environmentally conscious business owners are able to differentiate themselves from competitors by developing more environmentally friendly production processes or even developing whole new industries. Even if the profit motive is a driving force behind innovation and economic development, if it results in a more efficient use of environmental resources, it helps achieve ecological sustainability.

QUESTIONS

- 1 What three elements need to be balanced in an economic system that sustainably manages environmental resources?
- 2 Draw a Venn diagram that compares the descriptions of ecologically sustainable development outlined in Australia's *National Strategy for Ecologically Sustainable Development* and the United Nations' *Our Common Future*. Use this to write a description of sustainable development that synthesises the two descriptions of ESD.
- 3 Identify the type of efficiency that is essential to achieving ESD.
- 4 Differentiate the contributions that improvements in productive and dynamic efficiency can make to improving ecological sustainability and discuss this in a paragraph of 75–100 words.
- 5 Discuss the range of motivations people may have for being an environmentally conscious business owner.
- 6 Devise a list of ways that you could become a more environmentally conscious consumer.

ECONOMICS CHALLENGE



Select a product you believe is not an efficient use of environmental resources and hypothesise about the following questions:

- 1 Is it manufactured (by a market-leading firm) in a productively efficient way?
- 2 How is it an inefficient allocation of resources?
- 3 What are the main environmental resources that are used to produce the selected good?
- 4 What is the optimal alternative use of those resources?
- 5 Why is it being produced despite being an inefficient and unsustainable use of resources?

Investigate these topics using digital sources to test the accuracy of your hypotheses.

8.3 The trade-off between economic growth and ecologically sustainable development

CONCEPTS



Cowboy economy: the planet is treated as an open system, with access to unlimited resources, from which material can be obtained and into which wastes can be deposited; the goals of economic activity are maximising consumption and

production; the success of the economy is measured by size of the flow of goods and services

Flow: understanding productive resources as income items that can be used to produce goods and services indefinitely





Spaceship economy: the planet is understood as a closed system, with a fixed stock of natural capital; the measure of economic success is maintenance of the nature, extent, quality, and complexity of that capital stock

Stock: understanding productive resources as capital items that need to be maintained for future use

KEY IDEA

A sustainable approach to economic activity needs to be based on an understanding of the world's resources as a capital stock rather than an income flow.

Modern industrial economic systems have used the environment to deliver a higher material standard of living, but have traded off environmental quality and are threatening the sustainability of the environmental resources on which human life depends. Economic systems before the Industrial Revolution also achieved improvement of material wellbeing at the cost of environmental degradation, but their technology and a relatively small world population limited the scale of the problems created. The world's human population has increased from about six million in 1700 to more than seven billion today.



iStock.com/superjoseph

FIGURE 8.5 The consequences of unsustainable growth can be seen in the pollution in China in this photo taken in 2016.

The overriding focus of economic activity in modern market economies is on economic growth. Production and consumption are presented as 'good' things because the goal of an

economic system is to maximise the satisfaction of human wants. Continual economic growth and the income it generates are pursued to meet the increased demand generated by an expanding population. It is also seen as the best way to increase standards of living. Economic success is measured by the amount produced. A national economy that does not produce an increasing gross domestic product (GDP) is ‘underperforming’. There is a widespread belief that economic growth is good and more growth is better.

Since the evolution of modern markets began during the Industrial Revolution, there has been a growing correlation between the scale of economic production and the extent of environmental problems. As a consequence, the environmental sustainability of economic activities has become a pressing issue for many people, businesses and governments. The history of the growth of national and world markets has been a history of market failure and this has led to increasing priority given to attempts to correct these with government interventions.

8.3.1 The relationship between economic growth and the environment

Economic growth involves the use of environmental resources, alteration of the natural environment and the disposal of all wastes into the environment. Whether growth causes environmental problems and more rapid growth causes greater environmental degradation has been a hotly debated topic since the 1960s. A fundamental issue in environmental economics is the exact nature of the relationship between growth, environmental problems and the quality of life.

The cowboy economy versus the spaceship economy

In his 1966 paper, ‘The Economics of the coming spaceship Earth’, Kenneth Ewart Boulding, an economist and philosopher, challenged the traditional view of economics about resource use and economic growth. Boulding argued that a focus on increasing income and production was treating the world as though it were an open system with access to unlimited resources. He suggested that the Earth and its resources would best be viewed as a closed system, a bit like a spaceship.

The closed earth of the future requires economic principles which are somewhat different from those of the open earth of the past ... I am tempted to call the open economy the ‘**cowboy economy**,’ the cowboy being symbolic of the illimitable plains and also associated with reckless, exploitative, romantic, and violent behaviour, which is characteristic of open societies. The closed economy of the future might similarly be called the ‘**spaceship economy**,’ in which the earth has become a single spaceship, without unlimited reservoirs of anything, either for extraction or for pollution, and in which, therefore, man must find his place in a cyclical ecological system which is capable of continuous reproduction of material form even though it cannot escape having inputs of energy. The difference between the two types of economy becomes most apparent in the attitude towards consumption. In the cowboy economy, consumption is regarded as a good thing and production likewise; and the success of the economy is measured by the amount of the throughput from the ‘factors of production,’ a part of which, at any rate, is extracted from the reservoirs of raw materials and non-economic objects, and another part of which is output into the reservoirs of pollution. If there are infinite reservoirs from which material can be obtained and into which effluvia can be deposited, then the throughput is at least a plausible measure of the success of the economy. The gross

national product is a rough measure of this total throughput. It should be possible, however, to distinguish that part of the GNP which is derived from exhaustible and that which is derived from reproducible resources, as well as that part of consumption which represents effluvia and that which represents input into the productive system again.

By contrast, in the spaceman economy, throughput is to be regarded as something to be minimised rather than maximised. The essential measure of the success of the economy is not production and consumption at all, but the nature, extent, quality, and complexity of the total capital stock ... In the spaceman economy, what we are primarily concerned with is **stock** maintenance, and any technological change which results in the maintenance of a given total stock with a lessened throughput (that is, less production and consumption) is clearly a gain. This idea that both production and consumption are bad things rather than good things is very strange to economists, who have been obsessed with the income-flow concepts to the exclusion, almost, of capital-stock concepts.

There are actually some very tricky and unsolved problems involved in the questions as to whether human welfare or wellbeing is to be regarded as a stock or a **flow**. Something of both these elements seems actually to be involved in it ... Is it, for instance, eating that is a good thing, or is it being well fed? Does economic welfare involve having nice clothes, fine houses, good equipment, and so on, or is it to be measured by the depreciation and the wearing out of these things? I am inclined myself to regard the stock concept as most fundamental, that is, to think of being well fed as more important than eating, and to think even of so-called services as essentially involving the restoration of a depleting psychic capital.

QUESTIONS

- 1 Should renewable resources be considered a stock or a flow?
- 2 Should non-renewable resources be considered a stock or a flow?
- 3 Explain what Boulding means by the following phrases:
 - 'If there are infinite reservoirs from which material can be obtained and into which effluvia can be deposited'
 - 'to think even of so-called services as essentially involving the restoration of a depleting psychic capital'.
- 4 Summarise Boulding's interpretation of the traditional goal of economic activity.
- 5 Contrast a 'cowboy economy' and a 'spaceship economy' by describing the two key differences between them.
- 6 Explain how 'cowboy economics' discounts the future.



The economics
of the coming
spaceship Earth

Reclassifying resources as capital not income

The economist EF Schumacher confronted popular notions of economics and argued strongly for a reclassification of the problem of production. In his 1973 book *Small is Beautiful: A Study of Economics as if People Mattered*, he argued that economists had thought the problem of production was solved in a market economy, but this was misguided because markets were treating inputs, such as fuels and other non-renewable resources, like income items instead of capital items. In so doing they were incorrectly undervalued and incorrectly priced.

Schumacher suggested that proper classification as capital would lead to much higher pricing and hence would lead to a different way of thinking that respected the environment and led to more sustainable way of living. He further argued that the scale of production was too large and that localised production was more human and more sustainable. Schumacher said:

A civilization built on renewable resources, such as the products of forestry and agriculture, is by this fact alone superior to one built on non-renewable resources, such as oil, coal, metal etc. This is because the former can last, while the latter cannot last. The former cooperates with nature while the latter robs nature. The former bears the sign of life, while the latter bears the sign of death.

The limits of growth

KEY IDEA

The universal quest for continuous economic growth may be unsustainable. If sustainable development means sustainable growth, then it may be unattainable with existing technology and resources. The key question is not whether to embrace sustainable development but how to.

The 1972 book *Limits to Growth* was largely responsible for bringing to global attention the question of whether the universal quest for continuous economic growth was sustainable. The book's central point is that 'the Earth is finite' and the quest for unlimited growth in population and the production and consumption of material goods would probably lead to a collapse of the existing civilisation sometime this century. Its predictions were based on the research of a team working out of the Massachusetts Institute of Technology that built a computer model, called World 3, to track the world's economy and environment. The book has been criticised as a doomsday fantasy since it was published.

Recent research from the University of Melbourne has found the book's forecasts are accurate, and suggest that if global environmental data continues to track in line with the book's scenario, then we should expect the early stages of global collapse to start appearing soon. Dr Graham Turner gathered data from various United Nations' agencies, the US national oceanic and atmospheric administration, the BP statistical review and other sources. That data showed that the world is tracking pretty closely to the *Limits to Growth* 'business-as-usual' scenario.

These findings suggest that it is unlikely that the quest for ever-increasing growth can continue unchecked to 2100 without causing serious negative effects, and those effects might be already occurring. As the *Limits to Growth* concluded in 1972:

If the present growth trends in world population, industrialisation, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next one hundred years. The most probable result will be a rather sudden and uncontrollable decline in both population and industrial capacity.

The environmental Kuznets curve

The Brundtland Report's vision of a new era of sustainable economic growth that would alleviate poverty and enhance the environment was further developed when the concept of the environmental Kuznets curve (EKC) emerged in the early 1990s. The EKC hypothesis

is that the level of environmental degradation (pollution, resource depletion) increases as economies develop and increase their level of economic growth. As income and production levels rise, they reach a turning point where improved technology, government regulation, de-industrialisation and a greater emphasis on the importance of the environmental elements of living standards result in improving environmental quality.

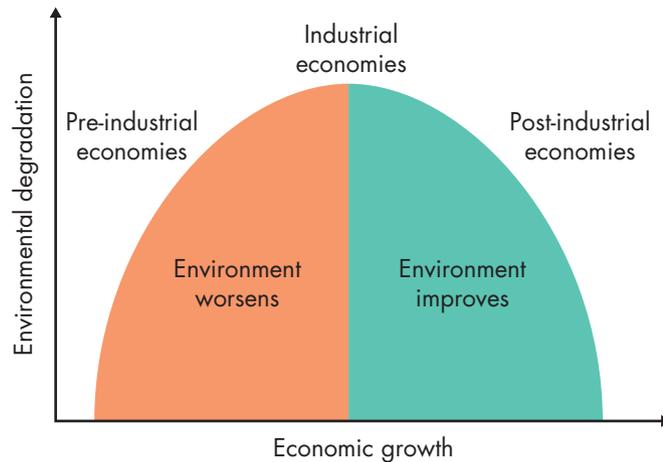


FIGURE 8.6 Environmental Kuznets curve

As economies develop, the focus of their production shifts from farming to manufacturing. This increases environmental degradation and contributes to the steep rise in the environmental Kuznets curve, shown in Figure 8.6. Industrialisation increases productivity and real incomes, leading to a shift of economic activity to service provision. The service sector generally has a lower environmental impact than manufacturing, so as manufacturing's share of economy activity shrinks, so does the level of resource depletion and environmental damage. This is a key reason why the EKC might fall rapidly after passing the turning point.

Improved technology and higher productivity drive long-term economic growth, allowing higher levels of output to be produced using fewer resources. In the most developed economies, increased use of cars and air travel has been accompanied by technological developments that continue to improve the fuel efficiency of cars, trucks and aeroplanes while reducing their emissions of environmentally damaging gases and particles.

Industrial and agricultural processes in the world's most advanced economies also produce more while using fewer environmental resources and may cause less environmental damage per unit of output. In recent decades, a shift to greater use of renewable energy sources in the generation of electricity has begun decreasing the carbon footprint of each unit of energy generated.

The growth of GDP and economic development has been associated with a growth in government influence over the economy. The government sector's share of GDP increases, and taxes and regulations are used in an attempt to reduce harmful environmental externalities.

Testing the EKC hypothesis

A criticism made of the EKC hypothesis is that it suffers from optimism bias; it promotes the idea that continuing economic growth is sustainable based on optimism rather than the evidence. It can be characterised as a 'grow now and clean later' approach. A considerable amount of academic research has tested the EKC hypothesis. There is clear evidence that air and water pollution levels in many developed economies have been reduced. China is an

example of a developing economy that has begun this transition after pollution levels soared with the industrialisation of its economy. Many harmful chemicals used in agriculture, such as dioxin and DDT, have been banned in the USA, the Euro Area and Australia. The level of many environmental pollutants, such as untreated sewage, chlorofluorocarbons, sulfur dioxide, nitrogen oxide and lead have also been greatly reduced in economies that have reached high levels of average income through sustained economic growth.

Many medium- and high-income earners, especially in the world's wealthiest countries, have become activist consumers. They have more discretionary income after paying for basic necessities, and have demanded products that are environmentally 'friendly'. They have been willing to pay a premium for products ranging from household products and food to clothing and cars that have been produced in more sustainable ways. This trend towards demanding an improvement in environmental standards as income levels rise has also led to some shareholders demanding higher environmental and ethical standards from the management of publicly listed companies. Politicians in many of the world's richest nations have been forced to pay greater attention to environmental issues by voters who place a high priority on sustainability and improvements in environmental quality. Climate change and energy generation have become central considerations in many nations.

The traditional focus of economic policies, on increasing rates of economic growth to raise material standards of living, is increasingly being challenged in high-income nations. A growing focus on the quality of life is consistent with rational economic behaviour. Rising income has a diminishing marginal utility. At high income levels, gaining further increases in income is of little consolation if one lives in an increasingly degraded environment.

The evidence for the EKC hypothesis is mixed. There is little evidence that continued economic growth has led to a decrease in the levels of many pollutants. Countries with the highest levels of per capita carbon dioxide emissions are generally those with the highest levels of GDP. The biggest ecological footprints are still those of the high-income countries and there is little evidence that they are falling with rising incomes. The ratio of energy per real unit of GDP has fallen in some high-income economies, but total energy use is still rising in most. Australia illustrates the failure of rising incomes generated by economic growth to improve the health of key natural systems. The erosion of topsoil, degradation of river systems, increased landfill, declining health of coastal ecosystems (including the Great Barrier Reef) and loss of biodiversity all continue, while total greenhouse emissions continue to rise.

Depletion of environmental resources and degradation of environments is not simply a function of income, but many factors. The level and effectiveness of government regulation, the nature of economic development, levels of consumption and population are also key factors. Kuznets curves have been found for some environmental health concerns but not for others.

Much of the reduction in environmental damage in high-income economies is achieved by outsourcing the environmental damage to lower income economies. Australia is closing coal-fired power stations while increasing its exports of coal and gas to developing Asian nations. As restrictions on logging of the remaining Australian forests limit the supply of local timber that is available, the local demand is partly met by importing timber products sourced from the rainforests of Indonesia and Papua New Guinea. Restricting fishing zones and catch limits in Australia has led to unsatisfied demand being met by rapidly increasing imports of seafood. The outsourcing of heavy industrial production from advanced economies to developing ones does not reduce global environmental degradation, it shifts the environmental damage offshore. Many of the developing economies that are producing steel, cars, chemical products and white goods for export have much lower environmental standards and less government regulation than the developed economies that provide their export markets.

The link between levels of income and environmental degradation is quite weak. It is possible economic growth will be compatible with an improved environment, but it requires

a very deliberate set of policies and willingness to produce energy and goods in the most environmentally friendly way. Some economists argue that there is a degree of reduced environmental degradation as economies shift from a manufacturing focus to service provision. It seems inevitable that an economy pursuing continuous economic growth can only achieve it at the cost of depleting and damaging some resources. There is no guarantee that long-term levels of environmental degradation will fall. Acceptance of the EKC hypothesis is based on a very optimistic view of likely environmental outcomes.

Eminent economist, academic and former politician Paul Ekins noted that a sustainable 'consumer' society is actually a contradiction in terms. He pointed to the population having more than doubled and consumption increasing by 600 per cent since 1960. He calculated that at least four more Earths would be needed to enable the world's population to enjoy lifestyles equal to those of the US or Australia. As this is not possible, he concluded that we are rapidly exceeding the Earth's limits. He questioned whether 'sustainability' is the same as 'sustainable development'. *Our Common Future* assumed growth was the only way to reach sustainability. If endless economic growth is actually a key cause of unsustainability, then 'sustainable development' cannot result in genuinely sustainable outcomes. Ekins concluded that 'sustainable growth' is 'really a sleight-of-hand that has been used to justify continuing our unsustainable business-as-usual path'.

In the 2015 text *Demystifying Sustainability: Towards Real Solutions*, Dr Haydn Washington questioned whether sustainability had remained the key concept of our age, or become meaningless.

The planet's current environmental problems are largely by-products of the way in which economies pursue the goal of ever-increasing production and consumption of material goods and services.

In its 2017 *Sustainable Development Overview*, the World Bank gave the following summary of the interaction between economic growth and sustainability:

Over the past two decades, economic growth has lifted more than 660 million people out of poverty and has raised the income levels of millions more, but too often it has come at the expense of the environment and poor communities.

Through a variety of market, policy, and institutional failures, Earth's natural capital has been used in ways that are economically inefficient and wasteful, without sufficient reckoning of the true costs of resource depletion. The burning of fossil fuels supported rapid growth for decades but set up dangerous consequences, with climate change today threatening to roll back decades of development progress. At the same time, growth patterns have left hundreds of millions of people behind: 1.2 billion still lack access to electricity, 870 million are malnourished, and 780 million are still without access to clean, safe drinking water.

Sustainable development recognizes that growth must be both inclusive and environmentally sound to reduce poverty and build shared prosperity for today's population and to continue to meet the needs of future generations. It is efficient with resources and carefully planned to deliver both immediate and long-term benefits for people, planet, and prosperity.

The three pillars of sustainable development - economic growth, environmental stewardship, and social inclusion - carry across all sectors of development, from cities facing rapid urbanization to agriculture, infrastructure, energy development and use, water availability, and transportation. Cities are embracing low-carbon growth and public transportation. Farmers are picking up the practices of climate-smart agriculture. Countries are recognizing the value of their natural

resources, and industries are realizing how much they can save through energy and supply chain efficiency.

The question facing countries, cities, corporations, and development organizations today is not *whether* to embrace sustainable development but *how*.

QUESTIONS

- 1 Summarise the three key points made by:
 - *The Limits of Growth*
 - the World Bank's *Sustainable Development Overview*.
- 2 List at least four reasons why continued economic growth, according to the EKC hypothesis, may lead to a reduction in environmental deterioration.
- 3 Create a table that compares evidence that supports the EKC hypothesis with evidence from developed economies that contradicts this hypothesis.
- 4 Briefly explain why Paul Ekins believes that a sustainable consumer society is not achievable.

8.3.2 The role of market failure in creating environmental problems

CONCEPTS



External costs: the social and environmental costs associated with the production and consumption of a good or service that are not included in the market price

Natural capital: the stock of resources provided by the natural environment from which humans gain amenity and

productive inputs; also called ecological or environmental capital

Private costs: the financial and opportunity costs paid by a firm or a consumer to produce or consume a good or service

Social costs: the total private and external costs of production and consumption of a good or service

KEY IDEA

Markets fail to allocate the Earth's natural capital in a sustainable and socially efficient way when products are sold at their private cost rather than their full social cost.

The **natural capital** of the planet includes the gifts of nature such as clean air, stable climatic conditions, unpolluted oceans, lakes and streams (stocked with fish) and a healthy atmosphere. They are a capital 'stock' that produces a 'flow' of services, which are vital inputs into the productive process.

As modern market economies have evolved, they have increasingly failed to use this natural capital in environmentally sustainable ways. Intervention in markets by government and international organisations such as the United Nations have been unable to stop a continued deterioration of many aspects of the natural environment and depletion of the productive resources derived from nature.

The causes of market failure centre on the externalisation of key social and environmental costs and benefits from the price mechanism. Environmental resources are free goods, resulting in unsustainable use. The stock of natural capital is being used as an income flow instead of a capital item.

8.3.3 The difference between private and social costs

The **private costs** of producing a good or service include the costs paid by the producing firm for capital equipment, labour, enterprise, raw materials, any intermediate goods used in the production process and allowance for a normal profit. The level of these costs and the market price the firm can receive for the finished product determine the quantity they will produce and offer for sale.

The private costs to a consumer include the price of the good or service, the cost of any complementary goods connected with consuming that product and any opportunity costs involved in consuming it. The costs of driving a car include fuel, oil, servicing and repairing the vehicle, road tolls, insurance, registration and allowance for depreciation in the value of the vehicle over time. The time spent driving is an additional opportunity cost.

There are additional, **external costs** involved in the production and consumption of any good or service. The external costs are the social and environmental costs associated with the production and consumption of the good or service. Driving private vehicles on public roads involves the cost of the construction and maintenance of those road systems, the loss of amenity due to their impact on liveability and natural beauty, the social costs of road accidents and the community costs of providing emergency services, policing and traffic management systems. Environmental costs include emission of toxic exhaust fumes including greenhouse gases, noise pollution, habitat destruction, disruption of wildlife movements and injury or death to creatures that are hit by vehicles. These costs are externalised because they are not included in the market price and are not paid for by either the producer or consumer.

The real cost of any product is its **social cost**. This is the sum of private and external costs.

Many environmental resources such as fish, minerals, oil and timber are bought and sold in markets at prices reflecting their private cost. These prices are lower than their actual cost to society. These goods are 'owned' by the firms that extract, process and market them. The prices they are sold for still ration the use of these resources. The scarcer the resource is, the higher its price will be, resulting in less of the resource being used. Increased world oil and energy prices have led to innovations to use less fuel or alternative energy sources. While markets ration the use of these types of natural capital, they are still overconsumed because they are sold at their private cost rather than their higher social cost.

Other environmental resources such as the atmosphere, wilderness areas, oceans and inland waterways are public goods that are nobody's to own or sell. As a result they are viewed as being free goods. Markets do not ration their consumption because they have no market price. This is the 'tragedy of the commons', identified in Chapter 5 as a major source of market failure. Profit-seeking businesses pollute the air and water with industrial emissions because there is no market price for doing so. To do so is cheaper than developing and installing effective anti-pollution systems or developing ways to use more sustainable resources. As the ocean's fish are free and there for the taking, over-exploitation and depletion of stocks is occurring. Natural resources may be overused and abused to the extent that they become depleted or degraded. This reduces people's quality of life and may even endanger human survival.

This is what Boulding called 'cowboy economics'. It is based on the assumption that the Earth is an open system with infinite reservoirs from which raw materials can be obtained and into which agricultural, industrial and consumer wastes can be deposited. Such an approach discounts the future.

If users of environmental resources had to purchase them at a price that reflected their relative scarcity (and importance), many of the planet's environmental problems would be reduced. Private and government-owned businesses would be forced to find ways to use more environmentally friendly production methods. In short, the world would have shifted to Boulding's vision of 'spaceship economics'.

Figure 8.7 illustrates that socially efficient and environmentally sustainable use of natural capital will only be produced when all external costs are included in the price of goods and services.

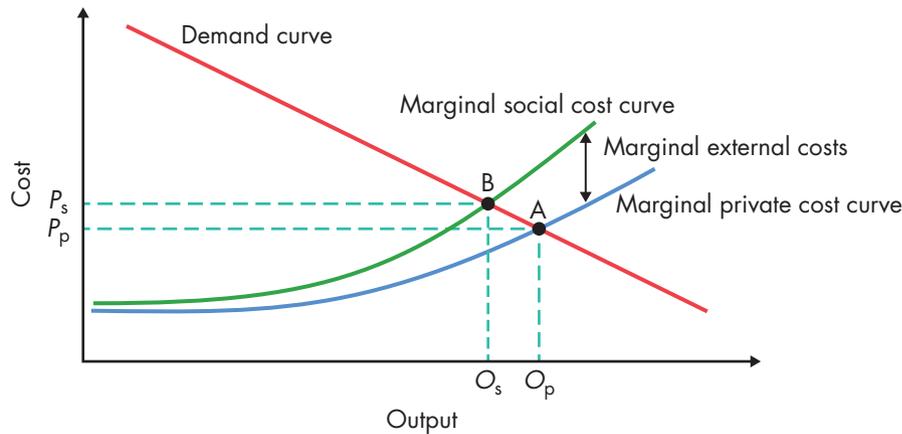


FIGURE 8.7 Internalising social costs in market prices

In Figure 8.7, the marginal social cost curve equals the marginal private cost curve plus the marginal external cost curve.

If firms pay only the private costs of production, then the market equilibrium will be at point A. O_p units of output will be demanded at a price of P_p . This is an example of a market failing to deliver a socially (and environmentally) optimal outcome.

If government policy is effective in forcing firms to pay the private and external costs of producing, then the market will operate at Point B. This is at a higher price (P_s), reflecting the real costs of producing this good, resulting in less output (O_s) being demanded.

Point B indicates a market allocating resources based on their full social cost and delivering optimal levels of output of this good or service. This is the socially efficient rate of production.

QUESTIONS

- 1 Demonstrate your understanding of natural capital by identifying an example of a resource provided by the natural environment and explaining some ways in which humans gain amenity from its use.
- 2 Select one or more of the following products, then list all of the external costs you can think of that are not included in the price consumers pay for that good:
 - a litre of organically produced milk
 - a packet of cigarettes
 - an air flight
 - a wild caught fish.

8.4 Environmental degradation in Australia

Every five years, the Commonwealth of Australia publishes a *State of the Environment (SOE) Report*. The 2016 report provided a comprehensive summary of the extent of degradation of Australian environments, and areas where there has been improvement. A brief overview is provided below:

In the past 5 years (2011-16), environmental policies and management practices in Australia have achieved improvements in the state and trends of parts of the Australian environment. Australia's built environment, natural and cultural heritage, and marine and Antarctic environments are generally in good condition.

There are, however, areas where the condition of the environment is poor and/or deteriorating. These include the more populated coastal areas and some of the growth areas within urban environments, where human pressure is greatest (particularly in southeastern Australia); and the extensive land-use zone of Australia, where grazing is considered a major threat to biodiversity.

8.4.1 Environmental pressures

The report goes on to discuss the key findings.

The main pressures affecting the Australian environment today are the same as in 2011: climate change, land-use change, habitat fragmentation and degradation, and invasive species. There is no indication that these have decreased overall since 2011. Some individual pressures on components of the Australian environment have decreased (e.g. commercial fisheries), and there is evidence that some pressures have increased (e.g. dumped wastes in the marine environment and invasive species generally). The impacts associated with many, however, remain unclear. In addition, the interactions between pressures can result in cumulative impacts, amplifying the threat faced by the Australian environment.

Climate change is an increasingly important and pervasive pressure on all aspects of the Australian environment. It is altering the structure and function of natural ecosystems, and affecting heritage, economic activity and human wellbeing. Climate change will result in location-specific vulnerabilities, and people who are socially and economically disadvantaged are most sensitive to climate change. Evidence shows that the impacts of climate change are increasing, and some of these impacts may be irreversible.

A legacy of extensive land clearing and the current clearing policies in some jurisdictions continue to cause loss of biodiversity (including the loss and fragmentation of native vegetation). These factors also impact on soils, waterways and coastal regions.

Invasive species have a major impact on Australia's environment, threatening biodiversity by, for example, reducing overall species abundance and diversity. They represent one of the more potent, persistent and widespread threats to the environment.

A new and emerging pressure in the coastal and marine zones is the increasing amount of human litter, which affects coastal and marine ecosystems and food webs. Approximately three-quarters of the debris found along the Australian coast is plastic.



State of the
Environment Report
2016

The report details the state of the environment and trends under eight thematic headings. Details can be found by following the weblinks supplied on NelsonNet to explore each of these

eight thematic reports. In addition to the following themes, the report covers heritage and the Antarctic environment. Some key findings are outlined below:

Atmosphere

- Australian average temperatures have increased by 1°C since 1910.
- Australian rainfall has been variable particularly in the past 40 years, with declining long-term rainfall observed across much of southern Australia.

Built environment

- Australia's urban amenity is generally good. Our urban populations continue to consume significant resources, but are using energy more efficiently than in 2011.
- Population growth in our major cities, along with Australia's reliance on private cars, is leading to greater traffic volumes, and increasing traffic congestion and delays.

Biodiversity

- Australia's biodiversity is continuing to decline.
- Rapid improvement in technology is likely to lead to significant improvements in our understanding of Australia's species and genetic diversity.

Land

- We continue to lose agricultural land through urban encroachment.
- In the past five years, land-clearing rates have stabilised in all states and territories, except Queensland, where clearing has increased.
- Although mining developments have slowed in recent years, the ongoing environmental impact of mining sites and the expansion of unconventional gas extraction are emerging concerns.

Inland water

- Since 2011, there have been noticeable local improvements in water quality in the Murray–Darling Basin. In more populated regions, inland water quality is in moderate to very poor condition.
- In most regions, the condition of Australia's groundwater is poor.

Coasts

- The condition of some coastal species and communities is deteriorating. Of most concern is the continued decline of migratory shorebird populations and saltmarshes.
- Coastal waterways are threatened by new classes of pollutants. These include microplastics and nanoparticles, which are largely unregulated and whose effects are poorly understood.
- Since 2011, the coast has experienced several extreme weather events, including cyclones, heatwaves and floods. Climate-related pressures of rising sea levels, more frequent severe storms, and subsequent erosion and recession of the shoreline are expected to become increasingly significant for coastal regions in the future.

Marine environment

- No marine species has been removed from the threatened species list since 2011; eight species and one ecological community have been added.
- Record high water temperatures have caused widespread coral bleaching, habitat destruction and species mortality in 2011–16.

In the 2016 EPI rankings, Australia dropped 10 places overall, leaving it at 13 out of 180 countries examined. Australia was ranked third in terms of our environmental performance. It performed worst in the climate and energy category. It was ranked 150th for its trend in carbon emissions each kilowatt hour. The only other wealthy nation to perform worse on this criterion was Saudi Arabia. Australia was ranked 82nd overall in the climate and energy category.

ECONOMICS AND ICT



Environmental
Performance Index –
Country Rankings

Visit the EPI website to find the latest country rankings to complete the following tasks.

- 1 Investigate the environmental performance of the Australian economy on a range of key indicators.
- 2 Compare Australia's performance with other nations:
 - a of similar income level
 - b that are less economically developed
 - c that have similar levels of GDP growth.

8.5 The path to ecologically sustainable development

World Bank economists set out an economic argument and framework for greening growth in a 2012 report, *Inclusive Green Growth: The Pathway to Sustainable Development*:

The current model is not just unsustainable, it is inefficient. Improving it is good economics, so let's fix market failures, internalize externalities, assign property rights, improve governance, and influence behaviors.

Any solution based on a free-enterprise economic model and retaining the price mechanism as the central tool for economic decision making must begin by internalising the complete costs and benefits of production and distribution in the price mechanism. The alternatives involve high levels of government intervention and a move away from a market economy towards a planned economic model. In theory, the communist economy and society outlined by Karl Marx, Friedrich Engels and others could potentially remove these problems, but it needs to be remembered that this is a utopian vision that may not be achievable in the contemporary world. It requires (probably violent) revolution to overthrow the capitalist system. The experiences of the Soviet economies did not provide positive public relations for the environmental, economic or social potential of central economic systems.

Market economies need to develop strategies that modify market behaviours so that they treat the Earth as a closed system that has limited resources of everything except perennial resources. Markets need to use environmental resources as stocks to be maintained, rather than income flows to be maximised, which is what the current growth-centred approach does. The future needs to be at the forefront of economic decisions; the future lives of humans living today, the needs and aspirations of future generations and the sustainability of natural systems.

8.5.1 The circular flow of income and the environment

KEY IDEA

If an economy is to deliver sustainable improvements in living standards and quality of life, then restructuring expenditures are needed to maintain natural assets and processes.

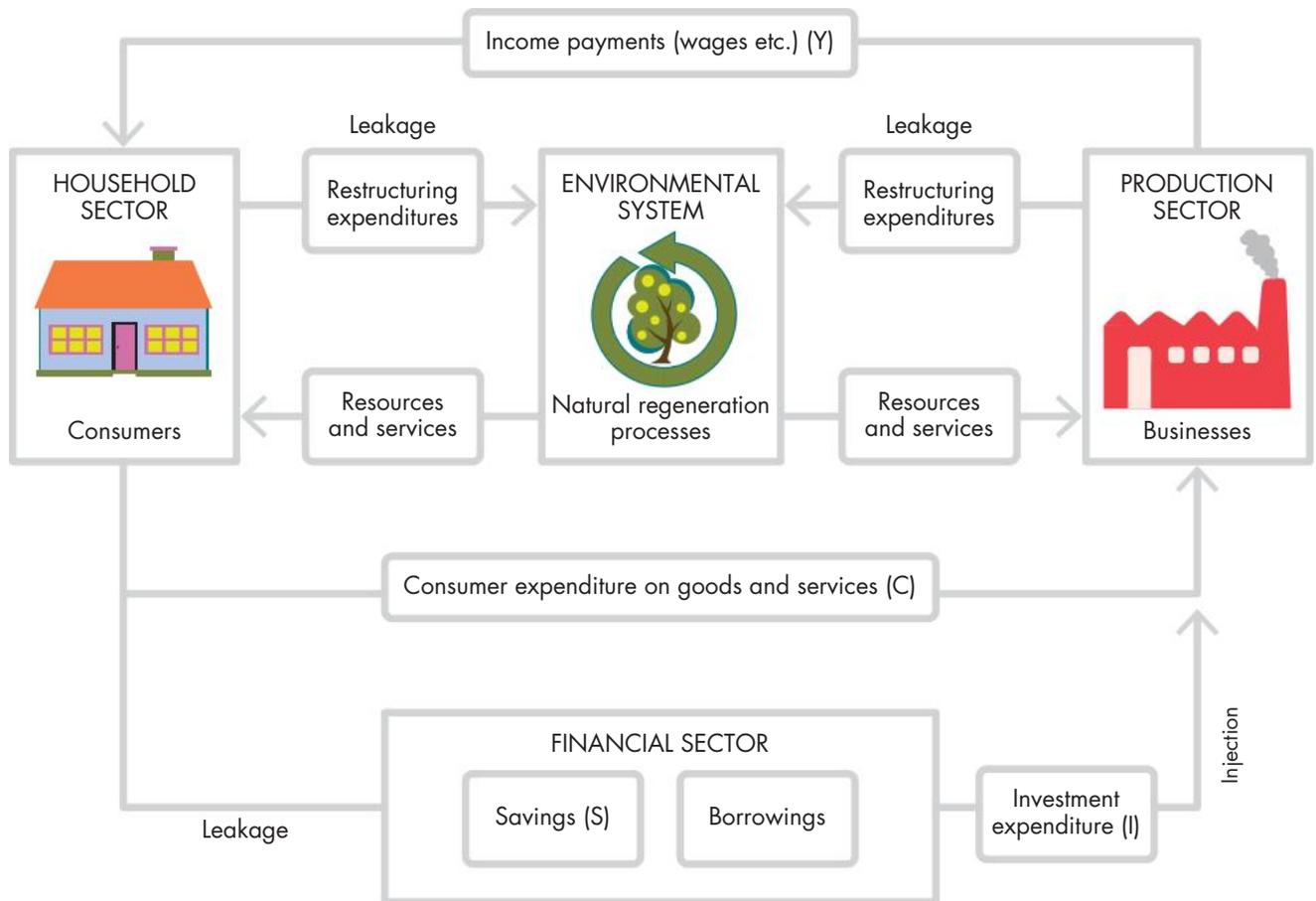


FIGURE 8.8 The environmental system in the circular flow of income

Economic models do not usually include the environment. The following diagram shows how the circular-flow model can be adapted to highlight this interdependence and illustrate the 'restructuring expenditures' that the household and business sectors will need to incur to aid the environment's natural regeneration processes.

Figure 8.8 shows that as a result of the economic activities of the household and production sectors, the economic system draws resources and amenity services from the environment and creates waste. The environmental system has a capacity to regenerate itself to continue to provide these resources and services. However, there are limits. If renewable resources are used sustainably, they can continue to provide inputs to production, and environmental processes can continue to break down and absorb many types of waste.

Non-renewables are exhaustible, but their supply is able to be extended by limiting their use and through recycling. The environmental system needs to be kept in balance if it is to continue to provide the environmental services that enable human life and economic activity. To maintain the environmental balance, the regeneration processes of the environment 'need a hand'. The economic sectors need to incur 'restructuring expenditures'. This spending acts as leakage to the standard expenditure flows. They are expenditures and resources that would otherwise have been spent on increasing production but are now spent on protecting and maintaining the environment. They do not necessarily need to cause a reduction in economic growth, but will redirect economic activity to be more socially and environmentally sustainable and deliver a different type of economic growth.

8.5.2 Government strategies and/or interventions

Three forms of intervention are available to government's wanting to influence the management of environmental resources to redress environmental degradation.

Voluntary action

Governments can encourage consumers and producers to make environmentally conscious actions to limit the environmental effects and future impacts of their economic behaviour. This might involve supporting public education and promotional campaigns, funding research, improving data and information flows and providing support services. Governments need to model environmentally sound practices in their own operations and reflect this in the goods and services they buy.

Voluntary actions are useful when responding to a community crisis such as disaster relief, water shortages, epidemics or an energy crisis. They are vital in areas where regulation of environmental degradation is difficult to enforce such as littering, erosion prevention and maintenance of biodiversity on privately owned lands. A weakness of voluntary action is that initial enthusiasm and levels of cooperation are difficult to maintain over time.



Alamy Stock Photo / Jawad Qasrawi / Alamy Live News

FIGURE 8.9 Public education campaign poster

Direct regulation

Making laws and regulations that limit the activities of consumers and producers are most effective where there is a definite social objective with little room for compromise. They have been applied in Australia with some success to protect valuable species and ecosystems such as the Great Barrier Reef and rainforests, and to reduce harmful emissions from vehicles and industry. Banning the extraction of resources such as uranium, the capture or killing of target native species, and the use of dangerous pesticides and herbicides have reduced certain environmental problems.

Direct regulation can involve restraints or total bans, quality standards, planning requirements or emission controls. Land-use zoning, ecologically centred building codes, regulation of fishing and biosecurity measures can reduce environmental degradation and directly increase sustainability. Governments can provide merit goods such as national parks and conservation areas, and mandate rehabilitation of environments that have been mined or cleared of native vegetation. Urban renewal and environmentally sensitive planning measures can increase the amenity of urban living.

Their application is limited by high enforcement and administrative costs and they are only as effective as the courts that enforce them. Prosecuting breaches of the regulations can be a slow and costly process. Regulations can also be inflexible and politically difficult to change.

Market-based measures

Taxes and charges, quotas, subsidies and tradeable permits work by altering the relative price of inputs and outputs. They aim to encourage individual consumers and producers to change their behaviour and economic decisions to attain a more environmentally desirable outcome. They influence consumption patterns through price signals that reduce the demand for selected goods and services without needing to change their level of environmental awareness or concern. Economists regard incentives for humans to change their decisions and behaviour as more effective than regulation, education or appeals to human altruism. Any changes in behaviour are likely to endure while the incentive remains.

They may be more flexible than direct regulation and have the advantage (except for subsidies) of increasing government revenue that could be spent on environmental projects or to compensate consumers disadvantaged by the higher private costs/prices caused by these measures. A key advantage of this type of government intervention is that it makes the price mechanism work more effectively, allocating resources in a more socially efficient way, rather than replacing it.

A tax on carbon emissions, targeted taxation concessions and tradable permits to emit environmentally harmful materials are examples of market-based measures with considerable potential to improve the ecological sustainability of contemporary economic activity. Quotas are suited to restricting extraction of non-renewable resources such as fossil fuels and minerals. Limiting the use of renewable resources such as fisheries, forest products and agricultural land to their sustainable yield can be achieved by a range of market interventions. The use of quotas, tradeable permits and subsidies for using substitute resources may be effective ways to increase the sustainability of these environmental resources.

In a market where electricity generated using renewable sources is more expensive than energy generated from non-renewable sources such as coal or gas (as the full social costs are externalised from their costs), the aim of the subsidy is to compensate the producers for their higher production costs (see Figure 8.10 on the next page). This would allow them to reduce their price to P_s (the amount of the subsidy is equal to P minus P_s). At a price of P , they would attract some electricity consumers who were not previously prepared to pay a higher price for more sustainably produced energy. The effect would be to increase production from renewable sources from Q to Q_s , thus increasing their market share and decreasing the environmental damage created by producing enough electricity to satisfy market demand.

Market-based measures are not effective for the things that suit direct regulation and can produce inequitable side effects. They generally cause market prices to rise, hurting the poorest people because they spend a higher proportion of their income on consumption. A major danger, especially in the short term, is that firms may move their production to economies that have less interference in the price mechanism and lower production costs. Consumers may also choose imported goods from economies with lower environmental

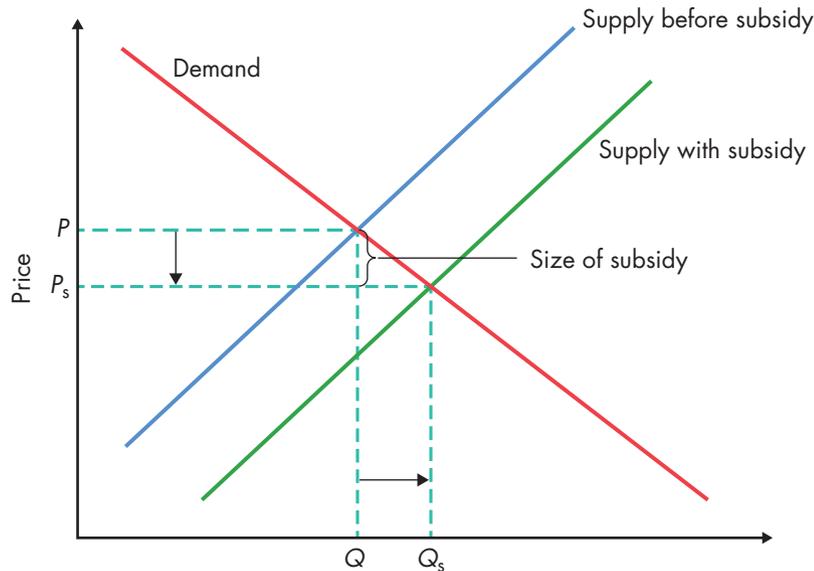


FIGURE 8.10 Subsidy to producers of electricity using renewable sources

standards, creating a 'race to the bottom' in environmental standards. Protectionist policies to counter this have many practical and theoretical disadvantages.

Creating an economy that encourages innovations that reduce the negative impacts of economic activity can involve any of the approaches mentioned above. This type of dynamic efficiency can be fostered by well-focussed education, training and industrial policies. It can be assisted by subsidies, grants and tax concessions. It may come from entrepreneurs motivated by the possibility of super-normal profits in start-up industries or environmentally conscious and activist business owners. Many environmentally friendly products are developed in response to demand from environmentally aware or health-conscious consumers. Organically produced, biodegradable and low-energy-consuming products are examples of these.

QUESTIONS

- 1 Discuss how the circular flow might be adapted to show the role the government sector might play in promoting ESD.
- 2 List five examples of restructuring expenditures (greater costs) for consumers who choose to buy goods and services with lower environmental impacts and carbon footprints.
- 3 Explain why economists argue that market-based measures are more effective in promoting more sustainable use of environmental resources than direct regulation.
- 4
 - a Give two contemporary examples of Australian governments promoting voluntary actions by either producers or consumers that improve environmental outcomes. Evaluate their effectiveness.
 - b Select an environmental problem that concerns you and suggest how government regulations could be used to promote more socially responsible outcomes.
 - c Create a list of five examples of restructuring expenditures for firms that choose to produce goods or services with lower environmental impacts and carbon footprints.

8.1 True/False

For each statement, indicate whether you consider it to be True (T) or False (F).

- 1 Resource degradation means the consumption of resources at a faster rate than they can be replenished.
- 2 Biodiversity, wind and fertile soils are renewable resources.
- 3 Phosphate, oil and copper are non-renewable resources.
- 4 Standard of living refers only to people's material wellbeing as measured by the amount of goods and services they consume.
- 5 It would require two planets with the same resources as the Earth to support the current world population if everyone had the same ecological footprint as average Australians.
- 6 According to 2016 Environmental Performance Index data, more people were dying from disease and infections caught by drinking unsafe water than poor air quality.
- 7 Ecologically sustainable development is concerned with the present, the future and equity.
- 8 Unsustainable economic activity is evidence that resources are not being allocated efficiently.
- 9 Increasing productive efficiency makes it more difficult to achieve ecologically sustainable development.
- 10 If all goods and services are sold at prices that reflect their social cost, then the most efficient ways to produce are going to be the most ecologically sustainable.
- 11 Social cost is the sum of private and opportunity costs.
- 12 Continuing growth in the world's population is not compatible with achieving sustainable economic development.
- 13 A shift away from the use of non-renewable resources to a reliance on renewable resources is incompatible with achieving sustainable development.
- 14 If sustainable development means sustainable growth, then it will only be attainable with more resources or improved technology.
- 15 The environmental Kuznets curve shows that after initial low levels of environmental degradation, economies develop to the point where the level of environmental damage rapidly begins to increase.
- 16 The question facing the world's people, businesses and governments is not whether to pursue environmentally sustainable development, but how to.
- 17 Australia's average temperatures have increased by approximately 1°Celsius in the past 100 years.
- 18 Australian biodiversity is increasing.
- 19 Taxes on emissions of pollutants, tradeable permits for carbon emissions and protection of important ecosystems in national parks are examples of direct government regulation.
- 20 Any tax on carbon emissions will reduce the quality of life enjoyed by Australians.

8.2 Terminology

Write the correct term (may be more than one word) for each of the following definitions.

- 1 a type of resource that can never be depleted because it is continually renewed by nature
- 2 how fast we can safely consume resources and generate waste
- 3 the sources of satisfaction flowing from the aesthetic qualities of the environment
- 4 the overall wellbeing of individuals according to their material living standards and a range of other considerations such as health standards, education levels, security and happiness
- 5 the just sharing of the economic benefits and costs between the present and future generations
- 6 understanding productive resources as income items that can be used to produce goods and services indefinitely
- 7 the economic approach that treats the planet as an open system, with access to unlimited resources, from which material can be obtained and into which wastes can be deposited
- 8 the stock of resources provided by the natural environment from which humans gain amenity and productive inputs
- 9 the financial and opportunity costs paid by a firm or a consumer to produce or consume a good or service
- 10 the social and environmental costs associated with the production and consumption of a good or service that are not included in the market price

8.3 Short response questions

- 1 List the three basic ways in which the economy uses the natural environment.
- 2 Are natural capital and environmental resources different terms for the same idea?
- 3 Contrast intergenerational equity and intragenerational equity.
- 4 Explain why sustainable resource management requires a balancing of economic growth and prosperity, equity and environmental sustainability.
- 5 Why is an understanding of the difference between treating natural capital as a stock or as a flow central to environmental economics?
- 6 In what ways can improvements in dynamic efficiency support the achievement of more environmentally sustainable economic growth? Include real-world examples in your explanation.

8.4 Activities

- 1 Construct a graph that uses demand and supply analysis to demonstrate the effects of the government setting a quota on the amount of fish that can be legally extracted from Australia's ocean fisheries.
- 2 Draw and fully label graphs to illustrate how the imposition of a carbon tax would reduce carbon emissions. This will require two graphs:
 - one based on marginal costs (in the style of Figure 8.7)
 - one based on demand and supply curves (in the style of Figure 8.8).

This should be accompanied by brief explanations of how this tax will achieve its goal.

8.5 Inquiry topics

Complete one or more of the following inquiries using a model of inquiry. Your findings may be outlined in a written report, a written essay or a multimedia presentation. Consult your teacher for guidelines on acknowledgement of sources, referencing and the length of your presentation.

- 1 The nature and source of threats to one of the following natural ecosystems and the most effective management approaches to reduce the level of environmental degradation:
 - a natural system in your local area
 - the rivers of the Murray–Darling Basin
 - the Great Barrier Reef
 - Antarctica
 - remnant native forests.
- 2 The microplastics, their sources and the dangers they pose to Australian marine environments.
- 3 The most effective way to reduce and eventually remove the environmental problems caused by:
 - plastics polluting waterways and oceans
 - carbon emissions
 - lead in soils
 - erosion of topsoil in agricultural areas
 - high ownership rates of passenger vehicles.

You can find answers to selected review questions within this chapter on NelsonNet.



Review of Chapter 8
answers



Getty Images/Gianni Diliberto

9

Inequality

This chapter examines inequality of income and wealth – indicators, causes, costs and benefits and government policies to address such inequality.

Focus questions and inquiries

- Why do the poor tend to stay poor and the rich tend to remain rich?
- Could changes in the tax system alter the distribution of wealth in Australia?
- Should people with higher incomes support people with less wealth and lower incomes?
- Why is the gap between the 'haves' and 'have nots' widening in Australia?
- How can the inequality of income and wealth in Australia be resolved?
- How does the government help lower income families escape poverty?

To provide a basis for answering such questions and carrying out such inquiries, this chapter will examine the following:

- the pattern of income distribution and wealth in Australia and how it has changed in recent years
- the measurement of income distribution and wealth
- the causes and effects of income and wealth inequality
- some possible solutions to income and wealth inequality
- the private and social costs of addressing inequality.

9.1 Income inequality

CONCEPTS



Income: payments to households in the form of wages, rent, interest and profit

Income distribution: allocation of returns (rent, wages and salaries, interest, profit) from the four factors of production (land, labour, capital, enterprise) among the population of the country

Income inequality: the degree to which income is unevenly distributed among people in the economy

Interest: the price paid for the use of capital

Profit: the price paid for the use of capital, usually expressed as an annual percentage of the value of the capital

Rent: payments in return for the use of land or other natural resources used in the production process

Salaries: payments to higher level employees and professionals, calculated

on an annual basis, not usually related to production achieved or hours worked

Transfer payment: payments received by individuals and families from the federal government in the form of cash social service benefits, such as pensions, unemployment benefits and family allowances

Wages: payments to employees as a return for the provision of labour or human effort to the production process (usually calculated on the basis of actual production or hours worked)

Wealth: total assets owned by an individual or income unit, and the nation at any one time; includes physical assets such as real estate and consumer durables (car, boat, jewellery) as well as financial assets (shares, bonds, debentures)

A major objective in managing the Australian economy is to improve the standard of living of everyone in the community. While economic growth provides the means for a rise in the general standard of living, the benefits and costs must be shared equitably before we can be satisfied that there has been a change in living standards. There are two basic factors that determine people's standard of living: their income and their wealth. Access to material goods and services and environmental resources, particularly if market-based methods are used, is determined by income.

The market system, and market failure in particular, is one cause of the unequal distribution of income and wealth in Australia. It does not automatically result in employment for all; it does not automatically result in a fair and equitable allocation of society's income and wealth.

Income inequality refers to the degree to which income is unevenly distributed among people in the economy. The extent of income inequality can range from almost no inequality (where people receive a similar proportion of income) to a high degree of inequality (where there is a large gap between high- and low-income earners).

About one in every eight Australians lives in income poverty today (measured as being 50 per cent of median income). This amounts to just over three million Australians. Poverty risk among children is slightly more severe than among adults. There are almost 600 000 children living in families below the poverty line. About half of those children are in sole-parent families, and one-quarter of people in sole-parent families are living below the poverty

line. These days the issue of equality of distribution of income does not receive the same public attention as unemployment or interest rates, possibly because of its complexity. In this chapter, we will seek to simplify the issue. Before we consider the economic aspects of income and wealth in Australia, it might be useful to consider current attitudes towards poverty.

ECONOMICS CHALLENGE



Beliefs and value judgements regarding poverty

Conduct a survey within your class, among other students in your school and/or in the wider community.

Below are some common views about Australia and about poverty and wealth in our country, published by the Brotherhood of St Laurence. Ask people in your survey to respond to each of the statements (1–14) using one of the following descriptions: strongly agree, agree, neutral, disagree, and strongly disagree.

- 1 Lack of thrift by poor people keeps them in poverty.
- 2 Failure of society to provide good schools for many people causes poverty.
- 3 Most poor people could improve their condition if they only tried.
- 4 The government should reduce poverty by taxing wealth more to increase pensions and benefits.
- 5 Too many people receiving government benefits spend their money on alcohol and cigarettes.
- 6 Generally speaking, the rich have little idea how difficult life is for the poor in this country.
- 7 It is part of the natural order that some people are poor and others are rich.
- 8 In this country there is one law for the rich and one law for the poor.
- 9 There are too many people receiving government benefits who should be working.
- 10 Being rich in this country has to do with knowing the right people.
- 11 When people get things for free, it tends to destroy initiative and makes them lazy.
- 12 Poor people are generally powerless to change their situation.
- 13 People receiving unemployment benefits for more than a few weeks should be compelled to do some sort of community work.
- 14 More often than not, people are poor because of circumstances beyond their control.

Use the results of your completed surveys to:

- collate, tabulate and graph the data
- analyse the results to determine trends and draw conclusions regarding opinions
- hypothesise reasons for similarities and differences
- predict how results such as those you have collected in this survey influence decisions by governments
- reflect on how well your survey was conducted; if you were to conduct this survey again, how might you modify the approach you used in the first attempt?
- conduct further research on the views of people in the community as expressed in newspapers, magazines, on the Internet and on television.

ECONOMICS DATA



Use various Internet sites to update the following economic data for your study. The organisations listed below are particularly relevant.

- Australian Bureau of Statistics
- Australian Council of Social Service
- Queensland Council of Social Service
- Brotherhood of St. Laurence
- Anglicare
- National Centre for Social and Economic Modelling (NATSEM)
- The Smith Family

Questions

- 1 What is the number and percentage of people in Australia living in poverty?
- 2 What is the number of children living in poverty?
- 3 What is the proportion of children living in poverty?
- 4 What is the current Henderson Poverty Line income level?
- 5 What is the percentage share of each source of household income?
- 6 What is Australia's wealth per capita?
- 7 What are the current individual taxation rates?
- 8 What is the average weekly income?
- 9 What is the current Gini coefficient?
- 10 What are the statistics relating to the current level of poverty in Australia?



Income and wealth data

9.2 Sources of household income

In the Australian economy, households have two functions concerned with **income**: receipt of income and expenditure. A market economy such as Australia's distributes income to factors of production – land, labour, capital and enterprise – according to the contribution those factors make to the value of production. The ownership of these factors will therefore determine the primary **income distribution** in the economy in the form of **wages, salaries, rent, interest** and **profits**.

- Wages are a form of payment to workers on an hourly or weekly basis, for example, a worker at a fast-food shop may receive \$18.50 an hour in wages.
- Salaries are a form of income paid to workers, usually in jobs requiring higher qualifications than jobs for wage earners, for example, a business manager may receive a salary of \$100 000 a year.
- Rent income can be received from people using your property.
- Interest is income received from banks or borrowers of your funds.
- Profits can be in the form of dividends earned from ownership of shares or capital gains from selling an asset – for example, land or a work of art – for a sum of money greater than the original purchase price.

In most cases, a person's earnings depend on the supply and demand for that person's labour, which in turn depend on natural ability and human capital. Because labour earnings make up a large part of total income in the Australian economy, factors that determine wages are also responsible for determining how the economy's income is distributed among the various members of society.

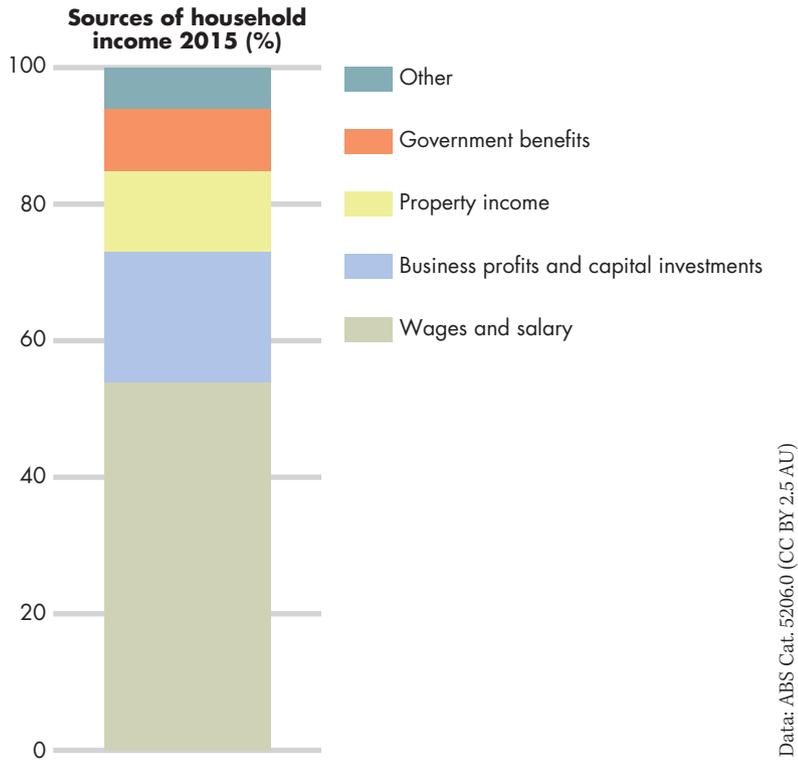


FIGURE 9.1 Sources of household income, 2015

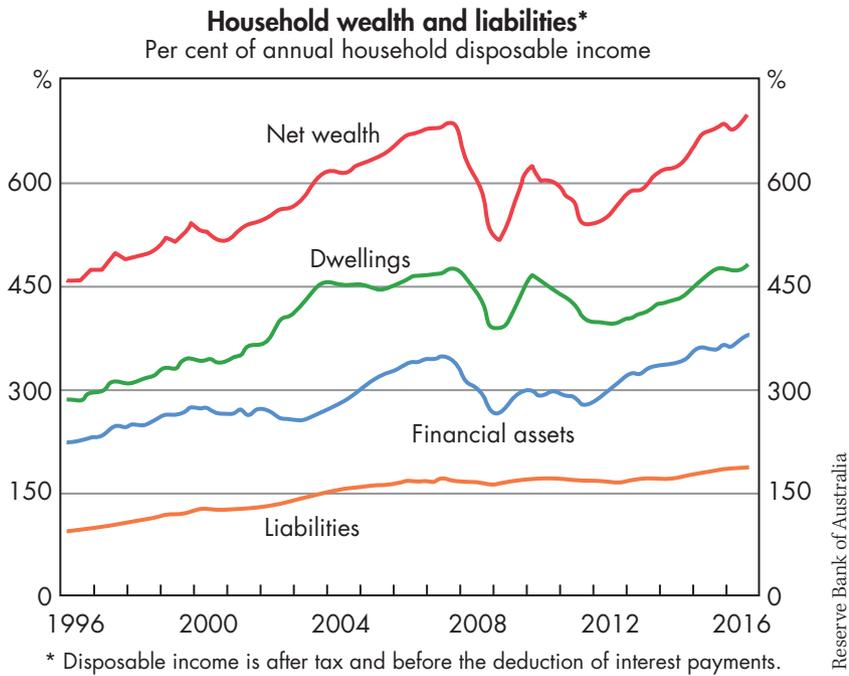


FIGURE 9.2 The growth of household wealth

The secondary distribution of income is in the form of unearned incomes, such as government cash benefits and superannuation.

- Cash benefits are **transfer payments** paid directly to individuals and families in need. These benefits can be spent in whatever way the recipients see fit. Direct cash benefits can be in the form of pensions, sole parent allowances, child care allowances and so on.
- Superannuation consists of payments made to retired or disabled people who have contributed to a superannuation fund while they were working. Recipients of superannuation can also be dependents of the contributor to the fund if the contributor dies. The government encourages contributions to superannuation funds by requiring that employers make a contribution to employee superannuation funds and by providing taxation incentives.

Unlike income, **wealth** is the stock of goods and assets owned by individuals and the nation as a whole at a given period of time. As well as actual possessions, individuals may have human capital that can contribute to their incomes, such as education, or particular skills in sport, art or music. Because the latter is difficult to measure, we will concentrate on the more tangible elements. These and the incomes of individuals determine who is rich and poor in the community.

QUESTIONS

- 1 What are the major objectives of the Australian economy?
- 2 What is income?
- 3 How important is the public attitude in shaping government policy regarding income distribution?
- 4 How are wages different from salaries?
- 5 How are savings different from superannuation?
- 6 Which sector in the household wealth graph would you expect to grow most in the future? Why?

9.3 Measurement

CONCEPTS

Equivalence scales: scales that indicate the income levels needed by different types of family units to attain the same, or equivalent, standard of living

Gini coefficient: a numerical measure of the degree of inequality involved in any income distribution of a country, based on the areas under the Lorenz curve

Henderson poverty line: the minimum desirable level of household income established by Professor Henderson in the Commission of Inquiry into Poverty in 1975; these minimum levels are revised to accommodate changing economic conditions

Lorenz curve: a graphical representation of the inequality of a nation's income distribution





Poverty: the situation of people whose resources (material, social and cultural) are so limited as to exclude them from the minimum acceptable way of life in the country in which they live

Poverty line: a level of income giving a minimal standard of living for a particular group of people in a society

KEY IDEA

Income and wealth inequality in the Australian economy can be measured in a variety of ways.

When economists seek to measure and analyse household income distribution, they sort income into four basic categories: wages and salaries, remuneration from own business trade or profession, other private income, and government pensions and benefits.

Wages and salaries are the most important determinants of income and the next most important category is government pensions and cash benefits. The latter have become increasingly critical in the 21st century as the unemployed, the aged and sole-parent households become reliant on income support and non-wage benefits. In 2016, 26.2 per cent of the federal budget was spent on social assistance benefits in cash to Australian residents.

Non-wage benefits received by social security recipients may include transport, housing, health and subsidies of a telephone service.

9.3.1 Poverty

Statistics used for comparing incomes are arranged into categories such as incomes of individuals, income units, families and households. The incidence of **poverty** can be seen in Figure 9.3. This table shows the number of people in poverty, using half the average income (before-housing) as the measure of poverty. By analysing the data, we can see the numbers of people in various groups whose incomes demonstrate that they live below the **poverty line**.

FIGURE 9.3 Number and proportion of people below the 50 per cent and 60 per cent of median poverty lines

	50% of median	60% of median
Percentage of people below the poverty line	13.3	20.1
Percentage of children below the poverty line	17.4	24.9
Number of people below the poverty line	2 990 300	4 534 700
Number of children below the poverty line	731 300	1 048 900

Source: ACOSS Poverty in Australia 2016

Another way of looking at income distribution is by dividing income units into quintiles according to ascending order of income. (An income unit is a group of people living together to form a spending unit, for example married couples, single-parent families and individuals.

A quintile is a grouping of 20 per cent of a population.) What patterns emerge from studying Figure 9.4? Consider which quintiles have increased their share of income, and which quintiles have had their share of income decreased. Why do you think these changes have happened?

FIGURE 9.4 Average Australian household income by quintile (\$)

	Income	Lowest	Second	Third	Fourth	Highest	All households
2011–12	Mean household annual gross income	21 476	46 800	79 196	122 304	234 624	100 880
2013–14	Mean household annual gross income	22 620	47 944	80 704	124 956	260 104	107 276
	\$ increase	1 144	1 144	1 508	2 652	25 480	6 396
	% increase	5%	2%	2%	2%	11%	6%

Source: ABS 6523.0

Some of the key income outcomes for Australia are listed below.

- For households with middle and high income levels, wages and salaries are the principal source of income; for low-income households, government pensions and allowances are the principal income source.
- Middle-income households contain more people on average than both high- and low-income households, but contain fewer employed persons than high-income households.
- Low-income households have on average 0.7 employed persons.
- People living in households where the household head is aged 65 and over have the lowest mean incomes per week.
- People aged 65 and over who live alone are more likely than couples to have government pensions and allowances as their principal source of income.
- People aged 65 and over who live alone are less likely than older couples to own their own home without a mortgage.
- Average disposable household income in the capital cities is 25 per cent above that outside the capital cities.
- Average disposable household incomes in Tasmania and South Australia are below the national average.

9.3.2 The Lorenz curve

A convenient way of showing the degree of inequality of income is through a visual technique known as the **Lorenz curve**. The set of data in Figure 9.5 is hypothetical data for personal income distributions for Australia. The data has been simplified to make the exercises and explanations easier, but it is still a good representation of actual distributions. The percentage shares of total income are based on actual figures.

Australia is assumed to consist of 20 people. These people are ranked in ascending order according to their incomes. The first column is the ranking of the individuals and the second column is the actual income in dollars earned by each person. The lowest income recipient earned \$14 000 per annum and the highest received \$121 000 per annum (income units are in thousands). Adding the second column gives a total or national income of \$1 000 000 or 100 units. In the third column, the income earners are grouped into quintiles – that is, each group is one-fifth of the total population – which is a group of four individuals. This grouping

is necessary to deal with actual populations of millions of people. Another grouping could be deciles – that is, tenths – which in this example represents groups of two individuals. Deciles are shown in the fourth column and a cumulative percentage in the fifth column.

FIGURE 9.5 Hypothetical data approximating personal income distributions for Australia

Individual	Income (\$000)	Quintile (%)	Decile (%)	Cumulative percentage (%)
1	14	8.7	3.2	3.2
2	18			
3	25		5.5	8.7
4	30			
5	32	14.4	6.7	15.4
6	35			
7	37		7.7	23.1
8	40			
9	42	18.0	8.5	31.6
10	43			
11	46		9.5	41.1
12	49			
13	51	22.6	10.5	51.6
14	54			
15	57		12.1	63.7
16	64			
17	68	36.3	14.1	77.8
18	73			
19	101		22.2	100.0
20	121			
20 (people)	\$100.00 (national income)	100.0	100.0	100.0

The third column is the total income earned by each group of four. The first quintile earns in total \$8.7 income units out of a national total of \$100. In other words, the lowest fifth or 20 per cent of the population earns 8.7 per cent of the national income. The second quintile, or next lowest 20 per cent, earns 14.4 per cent and so on up the ranking. The richest 20 per cent of the population earns 36.3 per cent of the national income. The ratio of incomes of the top earners to the bottom earners can be used as an indicator of inequality. In this example it is 4 to 1. Other common measures are derived from the deciles (fourth column) by comparing

the incomes of the top 10 per cent to the bottom 20 per cent, that is, 22.2 compared to 8.7, a ratio of 2.6 to 1, or by comparing the top 20 per cent to the bottom 40 per cent; using the third and fourth columns, a ratio of 36.3 to 23.1 (1.6 to 1).

The Lorenz curve provides a visual technique of measuring inequalities. The Australian data from Figure 9.5 has been drawn as a Lorenz curve in Figure 9.6. The Lorenz curve is set in a square (axes of equal length). On the horizontal axis, the cumulative percentages of income recipients are entered from the lowest to the highest, left to right; that is, the point 30 represents the bottom 30 per cent, 60 represents the bottom 60 per cent and 100 is the bottom 100 per cent, which of course is the total population.

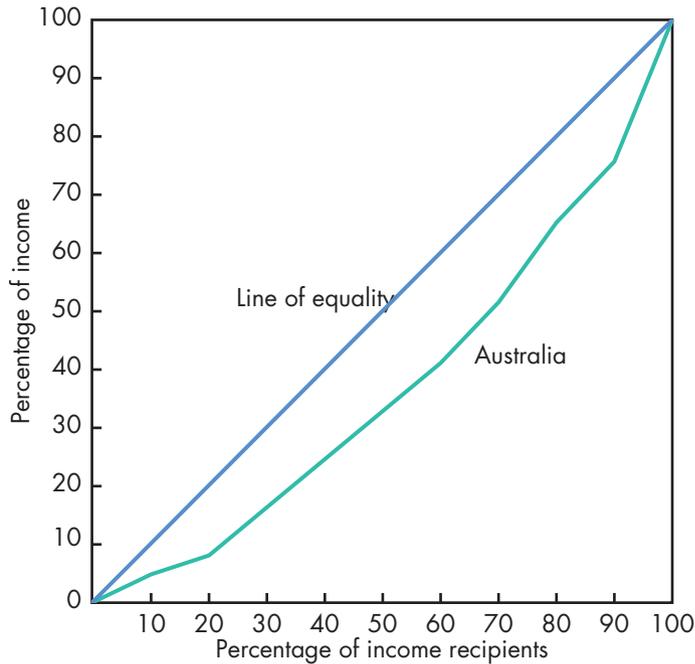


FIGURE 9.6 A hypothetical Lorenz curve for Australia

On the vertical axis, the cumulative percentages of total income are entered. These have been calculated in the fifth column based on the deciles. They can be derived from the fourth column or directly from the second column (e.g. the bottom 30 per cent of people earn 1.4 per cent + 1.8 per cent + 2.5 per cent + 3.0 per cent + 3.2 per cent + 3.5 per cent = 15.4 per cent). On the graph, 15.4 per cent would be plotted on the vertical axis against 30 per cent on the horizontal axis. From the fifth column, a series of points can be plotted (bottom 10 per cent of income recipients and 2 per cent of income, bottom 20 per cent and 8.7 per cent, bottom 30 per cent and 15.4 per cent, bottom 40 per cent and 23.1 per cent and so on). A smooth curve is drawn to link up all the plotted points. Two plots are common to all Lorenz curves: 0 per cent of the population get 0 per cent of the income and 100 per cent of the population get 100 per cent of the income.

The diagonal drawn from the origin (bottom left corner) to the top right corner has a special meaning. It represents the line of equality in the distribution of income. Reading points on the diagonal, the bottom 10 per cent of the population receive 10 per cent of the income, the bottom 20 per cent receive 20 per cent and so on up the ranking. The ratio of the incomes of the top 20 per cent to the incomes of the bottom 20 per cent would be 1 to 1.

The further the Lorenz curve deviates from the diagonal, the greater the degree of inequality in the income distribution. This is shown in Figure 9.7.

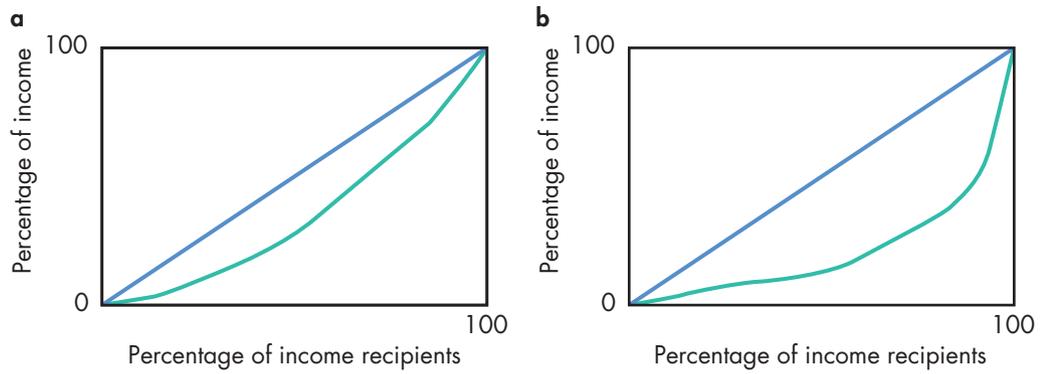


FIGURE 9.7 The Lorenz curve as a measure of inequality (a) Relatively equal distribution (b) Relatively unequal distribution

Figure 9.8 shows the Lorenz curve situation for Australia in 2013–14.

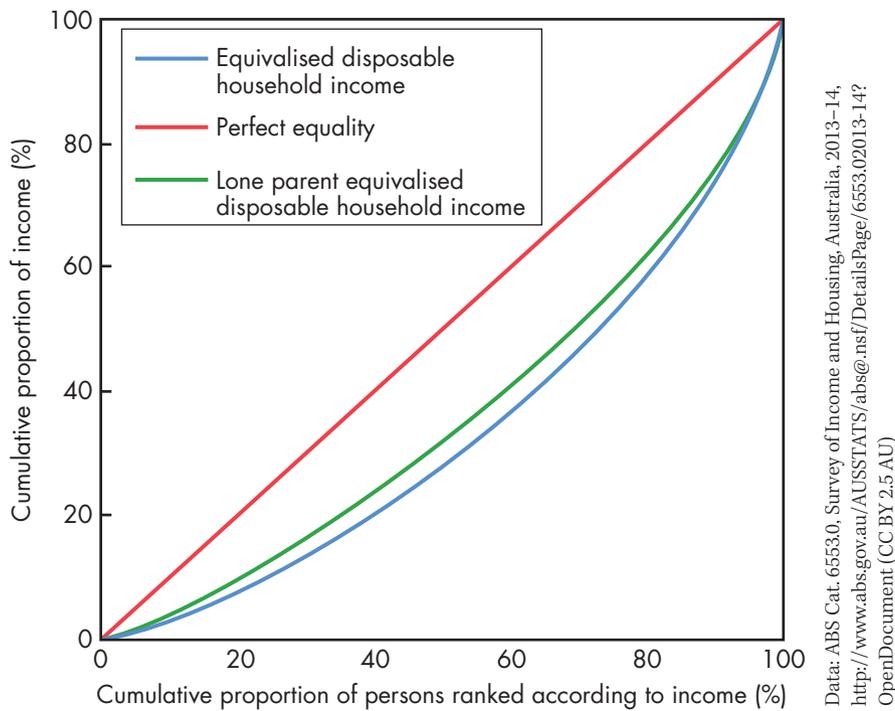


FIGURE 9.8 The Lorenz curve situation for Australia in 2013–14

9.3.3 The Gini coefficient

An alternative method economists can use to obtain a numerical measure of inequality for a given distribution of income is the **Gini coefficient**. This provides a ratio of area between the Lorenz curve and the diagonal line to the total area under the diagonal line.

$$\text{Gini coefficient} = \frac{\text{area between the Lorenz curve and the diagonal}}{\text{total area under the diagonal}}$$

The Gini coefficient measures the degree of variance of the Lorenz curve from the diagonal line of perfect equality. The greater the bow in the Lorenz curve, the greater the level of inequality. The Gini coefficient is measured on a scale between 0 (perfect equality; the Lorenz curve overlays the diagonal) and 1.0 (perfect inequality). The higher the Gini coefficient, the greater the degree of inequality.

In Australia, the Australian Bureau of Statistics has conducted income distribution surveys and has found variations in the Gini coefficient from year to year. Figure 9.9 shows the Gini coefficient for Australia. Although statistical changes mean the lines cannot be joined, over the long term we can see a slight positive trend in the Gini coefficient. This suggests that the income distribution in Australia has become more unequal over the last 35 years.

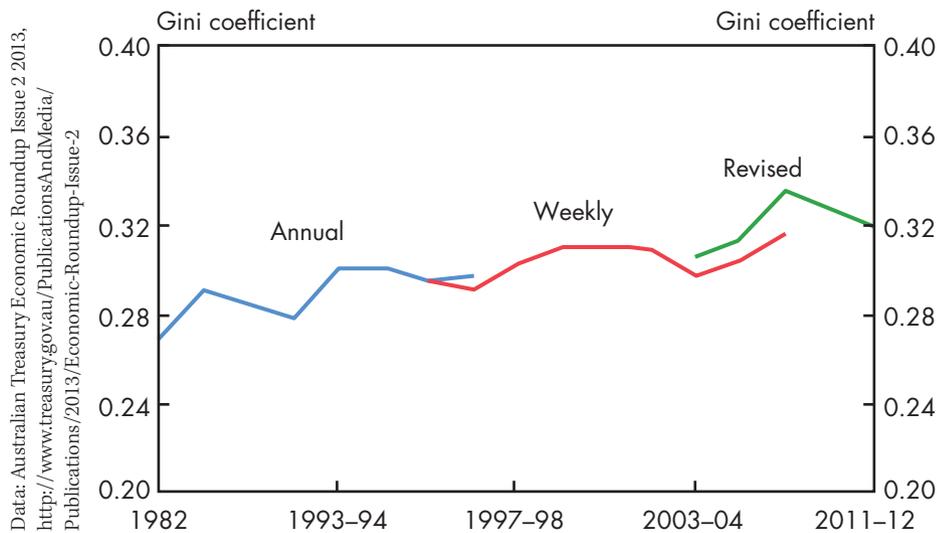


FIGURE 9.9 Gini coefficient for Australia, 1982–2012

9.3.4 Henderson poverty line

The basis for measuring the extent of poverty in a nation using an income measure is the establishment of a poverty line for each of the different income units. This poverty line is the income that enables the unit to afford what is considered to be a minimum standard of living. It needs to vary from unit to unit to account for such circumstances as the number of income earners, the number of dependents, whether the head is working or not and whether the unit owns its own home. Poverty lines are established on the basis of surveys of current living standards. The most widely used poverty lines in Australia are those developed by the Commission of Inquiry into Poverty headed by Professor Henderson in 1975 (the **Henderson poverty line**). Each quarter, the poverty lines are adjusted to take account of changes in average incomes. They could be adjusted according to changes in the CPI.

Many so-called poor Australians are self-employed people who invest much of their earnings back into their businesses and receive non-cash incomes. Many elderly people have relatively low incomes but may be able to live on the pension adequately because their needs are not great. They usually do not have to pay off their homes or their cars and they do not have families to support.

This difficulty can be addressed with the use of **equivalence scales**, which take into account the circumstances of a family, and group families according to their size and needs. But when

equivalence scales are used, it is important that definitions are consistent; in Australia, the Henderson scales and a set of scales produced by the Organisation for Economic Cooperation and Development (OECD) deliver different sets of results.

ECONOMICS IN ACTION



Melbourne Institute
of Applied Economics
and Social Research

You can find the current levels for the Henderson poverty lines by accessing them at the Melbourne Institute of Applied Economics and Social Research. Visit this site and find the current levels for the Henderson poverty line. Choose the most recent edition.

Once you have found this, comment on how easy it would be to live in Australia on this amount for:

- 1 a person/family living the same as yours
- 2 for a single person
- 3 a couple.

QUESTIONS

- 1 What is meant by the terms 'decile' and 'quintile'?
- 2 What is measured on the horizontal axis of the Lorenz curve?
- 3 Why is the diagonal of the Lorenz curve described as the line of equality?
- 4 How does a comparison of the Lorenz curves of two countries show that the income distribution of one country is less equal than the other?
- 5 Describe some of the difficulties encountered in measuring income distribution and poverty in Australia. Is deprivation a more useful measure?
- 6 Suggest why there might be variations in the Gini coefficient over time.
- 7 Investigate the measurements of poverty used by different bodies and organisations. Include in your research the Australian Bureau of Statistics, the Smith Family, Anglicare, the Salvation Army, St Vincent de Paul, Centrelink and the Australian Council for Social Service. Why do you think organisations use different methods of measuring poverty? Which organisations tend to use broader measures of poverty?

ECONOMICS IN ACTION



- 1 Examine your personal expenditure and living patterns for four weeks (as if you were living independently with no income).
- 2 Derive a personal poverty line, that is, establish the minimum amount of money with which you could reasonably live.
- 3 Compare it with poverty lines from other students and discuss the differences.
- 4 Establish an average poverty line for your class.
- 5 Compare this with a national poverty line.

9.4 Income and wealth distribution: an economic problem

Wealth is the accumulated stock of assets in the economy. Wealth is measured in terms of monetary value given to natural resources, produced assets (capital), enterprise (goodwill), labour-force quality and net debt to or from foreigners.

9.4.1 Wealth accumulation and distribution

The wealth of a nation changes over time due to a number of factors. These include increases in the production of capital (increased investment), increases in the quality and quantity of the factors of production, higher levels of economic growth, an increase in foreign trade, investment, or borrowings, and foreign entrepreneurs who can stimulate economic growth in the domestic economy by providing investment and technology.

Wealth is very unequally shared in Australia. Accumulated earnings are best represented by net wealth, and this is where the changing economic landscape is even more dramatically presented. While the average Australian household has net wealth of \$809 900, the highest quintile household on average has a net wealth more than three times this (\$2 514 400), while the lowest quintile household wealth is just a fraction of this (4 per cent of the average wealth, or \$35 500). The lowest 20 per cent of Australian households own just 0.9 per cent of the national private wealth while the highest 20 per cent own 62 per cent of the national private wealth.

Personal wealth is accumulated by individuals and households as a result of:

- a surplus of income over expenditure, which facilitates savings; this obviously depends on the size of income, and the level of needs and wants of the individual or household, and savings can be invested to generate more individual wealth
- family inheritance of wealth; children of wealthy parents can expect to inherit more than those from lower income families
- personal qualities such as motivation, willingness to take risks, skills and level of education, and personal contacts, which can assist in wealth creation.

It should be understood that there is a connection between income and wealth, and that personal wealth is the result of many factors.

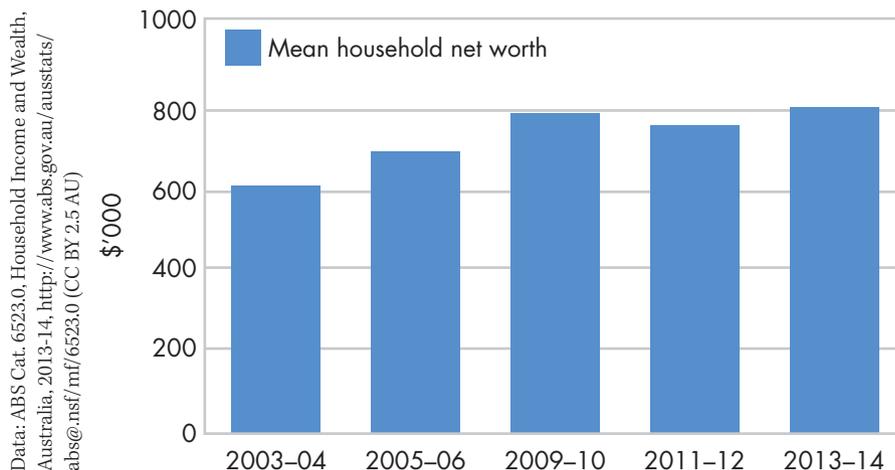


FIGURE 9.10 Mean household net worth 2003-04 to 2013-14

There is ample evidence to suggest that inequality in the distribution of wealth in Australia is much greater than inequality of income distribution.

QUESTIONS

- 1 *Business Review Weekly* publishes an annual list of Australia's wealthiest people. Find the most recent 'Rich list', and note the degree of wealth of these people. Do you think it is fair that some are so wealthy while many live in poverty?
- 2 What is the difference between income and wealth?
- 3 For many Australians, the level of education attained is the single greatest determinant of likely future wealth. How do you think education level determines wealth?

ECONOMICS CHALLENGE



Examine the data presented in Figure 9.11.

FIGURE 9.11 Distribution of personal wealth in Ozland Year X, Year X+10, Year X+20, Year X+30

Wealth quintiles and percentages	Year X (%)	Year X+10 (%)	Year X+20 (%)	Year X+30 (%)
1st quintile	0.0	0.9	0.4	1
2nd quintile	0.4	7.8	4.0	6
3rd quintile	2.0	15.1	11.1	12
4th quintile	7.8	22.7	21.6	20
5th quintile	89.7	53.5	62.8	61
Top 5%	66.2	24.6	28.8	n.a.
Top 1%	39.5	9.3	10.4	n.a.

Use Figure 9.11 to respond to the following.

- 1 Graph the figures shown for each quintile.
- 2 What changes were evident between Year X and Year X+30? Suggest reasons for these trends.

FIGURE 9.12 Gini coefficient for wealth, Ozland

Year	Gini coefficient
Year X	0.339
Year X+10	0.341
Year X+20	0.333
Year X+30	0.360





Use Figure 9.12 to respond to the following.

- 3 Do these figures suggest that wealth will become more concentrated or more evenly distributed over time? Why do you think this will happen?
- 4 Which quintile is likely to gain most as a result of these changes? Which quintile is likely to benefit least? Why?

ECONOMICS AND ICT



Using the Internet, obtain up-to-date statistics showing four different aspects of income and wealth distribution in Australia. Copy and paste, or enter these statistics into an Excel spreadsheet. Use Excel to generate graphs illustrating these statistics. Use these graphs as the basis of a PowerPoint presentation to your class.

9.5 Causes of income inequality

CONCEPTS



Mobility of labour: ease with which the labour force can be transferred from one occupation to another or from one geographic region to another

Primary labour market: part of the labour market that has little likelihood of unemployment, defined career paths, high and rising real wages, and skilled and well-educated workers

Relative poverty: the situation of people whose income and lifestyle have fallen below, by more than a certain degree, the average income and lifestyle enjoyed by the rest of society

Secondary labour market: part of the labour market that has frequent unemployment, casual employment, low and declining real wages, no career path and unskilled workers with minimal education qualifications

Underemployment: when workers in a labour force are employed at less than full-time or regular jobs or in work that is inadequate with respect to their training or economic needs

Unemployment: the state of being out of work or not having paid employment

KEY IDEA

Any explanation of inequality needs to take account of market factors as well as social and institutional influences.

There are many causes of **relative poverty** in Australia today. When evaluating any change in the distribution of income, policy makers must look at the reasons for that change before deciding whether it presents a problem for society. The main factors are discussed below.

Standard of education attained

Access to education and training has a significant influence on the ability to earn an income and, consequently, on income distribution in Australia. Workers with a higher level of education and training tend to be paid higher wages and salaries. Those who do not have education and training beyond the compulsory years of schooling will often be on lower wages. The inequality in access to education may be due to lack of individual motivation and initiative, an inability to afford access to 'optional' education, an inability to satisfactorily complete education and training programs, peer group and family pressures discouraging education and training, or medical disability.

Such workers will often be part of the **secondary labour market**, which usually has frequent **unemployment**, casual employment, lack of career paths and low and declining real wages. This results in income instability and high income insecurity. Such instability and insecurity is seldom found among those in the **primary labour market**, where workers tend to be skilled and well educated, and operate with high levels of technology.

Occupational conditions

The number of hours worked, the degree of danger and risk, the amount of shift work involved, and the extent of unpleasant working conditions will all affect the amount a worker is paid. The more these factors are involved, the higher amount the worker is paid.

Personal attributes

The personal attributes of workers affect their ability to be employed. These include factors such as innate talents, developed skills, interpersonal relationships, communication abilities, managerial abilities and many other workplace skills and talents.

Work opportunities, unemployment and underemployment

Unemployment is the main cause of poverty in Australia. The lack of work experience and fewer educational opportunities reduce the chances of low-income people finding a job even further. The very fact that a person is in poverty can affect their ability to be able to seek employment. Globalisation and the economic restructuring of the past 20 years have greatly affected jobs across both industries and regions. The decline of primary industry and the manufacturing sector has meant that some suburbs and towns formerly reliant on these industries have become pockets of unemployment and disadvantage. Cities such as Newcastle, Maryborough, Geelong and Whyalla have suffered the effects of economic change more than most. They have seen substantial increases in long-term unemployment and in the accompanying demand for social services.

The increasing use of casual labour instead of full-time employment has resulted in **underemployment**. Being underemployed reduces the ability of a worker to earn higher levels of income.

New jobs have been created but they tend to be for more highly skilled workers and the disadvantaged once more miss out.

Involuntary factors such as physical disability

The inability of many people to participate fully in the workforce has obvious impacts on their ability to earn enough income to survive. This inability may be a result of becoming unemployed, or because of ill-health or disability.

Age and gender

In recent years, there has been a huge change in the role of women in the Australian economy. The percentage of women in the labour force is increasing and this means that women's income has become an important contributor to the total income of a family. The rise in the participation of women in the labour force has had a mixed impact on family incomes. While women in low-income households have continued to participate in the labour force, it is particularly women in high-income households who have made the greatest impact on the overall distribution of income. In the past, these women have remained at home, occupied with domestic duties. Today, they are just as likely to be business executives or in one of the professions, similar to their partners. This has resulted in the rich becoming richer. So, while greater opportunities for women in the labour force may lead to greater inequality in income and wealth, this situation is not necessarily considered to be undesirable.

Australia's population is growing older and living longer. By 2056, people aged 65 years and over will make up 25 per cent of the population. Retirees will increasingly be dependent on superannuation savings and welfare assistance as their savings are exhausted. The incomes of the elderly will largely depend on their savings habits in earlier years, and the amount of superannuation they have accumulated.

Geographical location

The differences in the income going to the different units of labour are due in part to the restrictions on the **mobility of labour** between different areas and different occupations. This lack of mobility means that, in certain locations or more profitable industries, labour can command and obtain higher incomes than in other locations and industries. The differences may also be due to the fact that the incomes for some types of work are increased by various other factors, such as overtime rates, danger money and bonuses. Differences may arise for other reasons as well.

Migrants and minority groups

Cultural factors may influence the distribution of income and wealth. Various cultural groups in our society have different attitudes to such issues as women in the workforce, acceptance of typical Australian work practices, sharing of income earned and the value of education. Thus, some cultural groups that retain cultural attitudes that are different from the rest of Australian society will be relegated to the secondary labour market and probably into the cycle of self-perpetuating poverty.

Indigenous Australians may be discriminated against when seeking employment. It is estimated that 70 per cent of Indigenous Australians live below the poverty line. Social, cultural and economic factors contribute to this.

Differing returns on capital

The property that people own may be in the form of either capital or land. Different incomes from land may be due to differences in fertility or situation, or in the prices offered for the products grown on the land. They may also be due to some windfall, such as rural land being re-zoned for residential or industrial purposes.

Different incomes from capital are largely due to the immobility of capital between different uses, which means that it cannot always be readily transferred from lower to higher profit uses. However, the greatest single factor responsible for the differences in the incomes people receive from capital is probably the fact that different people own different amounts of this factor of production.

There are numerous reasons for differences in the incomes from businesses, which in turn affect the incomes of their owners. The actual size of the enterprise and the demand for its product will be important. Some business owners are people of greater energy and expertise than others, or they may be the first to exploit new methods or produce new products. In addition, lack of competition and the extent to which any one producer has monopoly control over the supply and therefore the price of a product or service will greatly influence the income an owner will ultimately receive from the business.

QUESTIONS

- 1 What determines the amount of a person's earnings?
- 2 To what extent are women discriminated against in the distribution of income? You may need to do some research to find relevant statistics.
- 3 Find the relative proportion of wealth of people in different age brackets for the total population. Are there any age groups that appear to have an inequitable share of income?
- 4 How does unemployment affect income distribution? Is it correct to say that a recession would worsen the inequality of income in Australia?
- 5 Explain why some workers receive very high incomes compared to others. Use demand and supply diagrams to support your explanation.
- 6 Why does discrimination often result in a more unequal distribution of income?
- 7 To what extent does the Australian government have a responsibility to maintain economic conditions that assist low-income earners to improve their standard of living?

9.6 Effects of inequality of income and poverty

Economists argue that there can be costs and benefits of inequality of income.

Essentially, inequality in income and wealth tend to divide the population into distinctive social classes and to place some people in a situation of poverty with all of its associated difficulties. Relative poverty is one of the most difficult problems that policy makers face. Poor families are more likely than the overall population to experience homelessness, drug dependency, domestic violence, health problems, illiteracy, unemployment and low educational attainment. Members of poor families are more likely to commit crimes and more likely to be victims of crimes. The poor are often helpless against those who control economic power and the stigma associated with being dependent on welfare services.

People who are economically disadvantaged may also suffer from social isolation. Many people who live in poverty may feel excluded from mainstream society. They cannot afford to go out with friends and keep up regular social contacts. This leads to social isolation and loneliness. In addition, those in poverty are increasingly forced to live in the outer fringe suburbs of Australia's major cities because housing costs are lower than in inner suburbs.

Economically, if there is less income equality in a community, there will be less income available for consumption and so aggregate demand would decrease. Reduced demand could

lead to a slowing of economic activity and a reduction in employment. Reduced income equality would place higher demands on the welfare component of the federal budget, which could be as high as 60 per cent of the total budget. So, a smaller pool of funds would be available for other government expenditure such as health care, education and industry development.

There is, however, an alternative view. The opportunity to achieve greater rewards for developing skills, taking on added responsibility and working longer hours serves as an incentive for workers to achieve their needs and wants through their work. In addition, higher wages can be an incentive that will encourage workers to move to new work locations where and when they are needed. This can result in more efficient allocation of resources, increased competitiveness and economic growth, improving the community's overall standard of living. The incentive of higher wages is also an incentive for workers to improve their skills. Such training adds to the productivity of the workforce. Equality of income between highly skilled and unskilled jobs would remove the incentive for workers to improve their skills and raise their productivity, and economic growth would be affected.

Income inequality can also encourage entrepreneurs to take risks. Removing the incentive of high income for successful decisions will result in fewer entrepreneurs. This would result in lower production levels, a loss in the quality of finished products, fewer jobs and a lower rate of economic growth.

Higher income earners tend to save a higher proportion of their wages and salaries. Such savings are an important source of investment in the economy, as they increase the capacity of the economy to produce goods and services.

The adoption of technology is also increased as a result of income inequality. The higher level of savings facilitates the more rapid adoption and replacement of technology, increasing the economy's ability to satisfy consumers' needs and wants. There is also encouragement for workers and management to improve their skills to advance and speed up the pace of technological change.

It can also be argued that inequality of income has social benefits. Inequality can promote change in society by encouraging innovation (for example, the adoption of air travel), which makes the society a dynamic one, and encouraging beneficial social change. Additional motivation is given to members of a society to fulfil their individual goals.

The government is faced with policy decisions relating to equity and economic efficiency. Clearly, the government is responsible to some extent for social justice.

Analysis of the groups that are experiencing changes in the level of poverty provides a guide to the types of government assistance that could be most beneficial for reducing poverty. For example, people with dependants, single parents, and non-working people suffer a high incidence of poverty. Income-enhancing policies such as retraining and child-care facilities, together with increased dependant allowances and a general upturn in the economy, would assist people in these groups.

ECONOMICS AND ICT



Use a selection of Internet sites to develop an infographic that shows the effects of income inequality in Australia.



Income and wealth data

9.7 Redistributing income

CONCEPTS



Absolute poverty: the situation of people whose deprivation is extreme because they do not have access to the basic necessities of food, clothing and shelter

Egalitarian society: a society that believes in treating people equally through giving people equal rights and opportunities

Merit good: a good or service that is not produced in sufficient quantities by markets because individuals do not value them highly enough to pay for them; a private good with positive externalities

Progressive taxation system: tax system in which the percentage of tax payable

increases as income rises (as opposed to proportional taxation, where the percentage remains constant, and regressive taxation, where it decreases)

Redistribution of income and wealth: transfer of money and assets from one group in the economy to another

Taxation: a method of financing government activities, which involves compulsory payments to the government by individuals, companies or other organisations, usually based on income earned and goods

KEY IDEA

Governments intervene in an economy to redistribute income in a modified market economy. Consideration of equity, social justice and welfare, and the terms of intervention, are debatable.

Given that in Australia the degree to which there is an inequitable distribution of income and wealth is increasing, there is often debate as to the private and social benefits of the government's policy relating to social security and the **redistribution of income and wealth** within the economy.

The objectives of income redistribution are to increase economic stability and opportunity for the less wealthy members of society. Those in the lower income groups, such as the unemployed, pensioners and the poorly educated, benefit from a redistribution of income. Such benefits accrue from having a greater purchasing power and they can therefore purchase more goods and services within our economy.

Any movement of income to those on lower incomes is designed to give them an economical advantage and thus result in a more **egalitarian society**. Usually such redistribution involves the government transferring income from those receiving higher incomes to those with lower incomes through **taxation**. Such payments are referred to as transfer payments. The benefits of these payments are that those on no or low incomes are able to participate more fully in the economy, enabling them to purchase goods and services, and contribute to economic growth.

Those on lower incomes also benefit through the provision of **merit goods** by the government. Again, the government uses money collected through taxation to provide services such as public libraries, state primary and secondary schools, employment services and defence forces.

9.7.1 Costs and benefits

While those on lower incomes benefit from receiving a transfer payment to maintain a basic standard of living, those on high incomes are taxed more highly, thus reducing their purchasing power in the economy. When a good or activity is taxed, people will often reduce the amount of that good or activity that they use. That's not always true. If you tax people's labour, they may work less because of the decreased value of an hour of work, or they may work *more* because they're poorer than they were before. But in general, taxation reduces economic activity. Taxing investment reduces investment, and taxing consumption reduces consumption.

Redistribution of wealth allows citizens to feel that a sense of fairness is established. It is good for both the poor and the rich. When the disparity between the rich and poor is too large, economic inefficiencies occur. Redistribution can also help contribute to the peace and stability of the nation. When the disparity between the rich and poor is too great, society falls out of balance.

Redistribution works against Australia's economic system of free market capitalism. Government interference and calls for redistribution oppose the fundamental values of capitalism. Also, redistribution may take away from a society's growth opportunities. Redistribution may mean that the rich cannot start new businesses or hire new employees, and ends up hurting the economy.

Another argument against redistribution of wealth is that it may cause laziness. Those who are dependent upon the redistribution of wealth might become reluctant to do their fair share, as they no longer have to work in order to live.

9.8 Government policies to redistribute income

Governments have a variety of policies they can use to reduce **absolute poverty** and reduce income inequality. The aim of each policy is to achieve the same outcome – enhance the standard of living of those on lower incomes. These policies are:

- providing cash payments to lower income recipients
- providing non-cash benefits to lower income recipients
- implementing a progressive tax system
- upskilling lower income people to make them more employable.

Cash payments are made to lower income households in the form of transfer payments. These include the aged and invalid pension, the baby bonus, child care and the carers' pension. Such payments are means tested to prohibit higher income households from gaining these benefits. These payments are vital as they give the recipient the ability to purchase goods and services to maintain a basic standard of living.

Non-cash benefits are also provided to most people of low incomes. These benefits are not paid in cash but are provided in the form of free or subsidised services, or discounted services. Example of these include subsidised public transport services, discounts or rebates on rates and electricity, subsidised medical prescriptions and merit goods such as library services, health care and education services. These benefits are usually subject to age limitations (e.g. seniors' bus discounts) or are means tested, meaning higher income earners cannot receive these services, with the exception of health care and education, which are free to everyone.

A **progressive taxation system** is used in Australia. A progressive personal income tax is one in which the percentage of income paid in tax progressively increases with increases in income. In Australia in 2016–17, all taxpayers were allowed a tax-free threshold of \$18 200 per year and then for personal incomes in excess of this limit, there were four marginal rates of tax (see Figure 9.13).

FIGURE 9.13 Australia’s personal income taxation rates, 2016–17

Taxable income	Tax on this income
0–\$18 200	Nil
\$18 201–\$37 000	19c for each \$1 over \$18 200
\$37 001–\$87 000	\$3572 plus 32.5c for each \$1 over \$37 000
\$87 001–\$180 000	\$19 822 plus 37c for each \$1 over \$87 000
\$180 001 and over	\$54 232 plus 45c for each \$1 over \$180 000

Source: Australian Taxation Office, Individual income tax rates

Such an income tax system ensures that higher income earners pay more tax, thus redistributing some of their income to allow payments to lower income recipients.

From time to time, governments run programs to allow workers and potential workers to gain skills, education and motivation to allow them to be better equipped to gain employment. This makes the workforce more productive and more competitive on a global scale and boosts Australia’s living standards. Most Australians who participate in these programs come from lower income groups, thus resulting in them being more able to earn a higher living.

QUESTIONS

- 1 List two positive and two negative effects of income inequality.
- 2 How does a progressive taxation system result in a redistribution of income?
- 3 Is it fair that high-income earners should, in effect, subsidise low-income recipients? Why?

ECONOMICS AND ICT



Tutor2u Wealth and income inequality

View the presentation from Tutor2u. This is a UK site, but the principles of income inequality are the same. Review the presentation on wealth and income inequality, and make a summary of the major ideas discussed in it.

ECONOMICS IN ACTION



Analysis, comparison and induction

Economists frequently use the skills of analysis, comparison and induction. Use the graphs in Figure 9.14 relating to the hypothetical economy, Ozland, to answer the questions that follow.



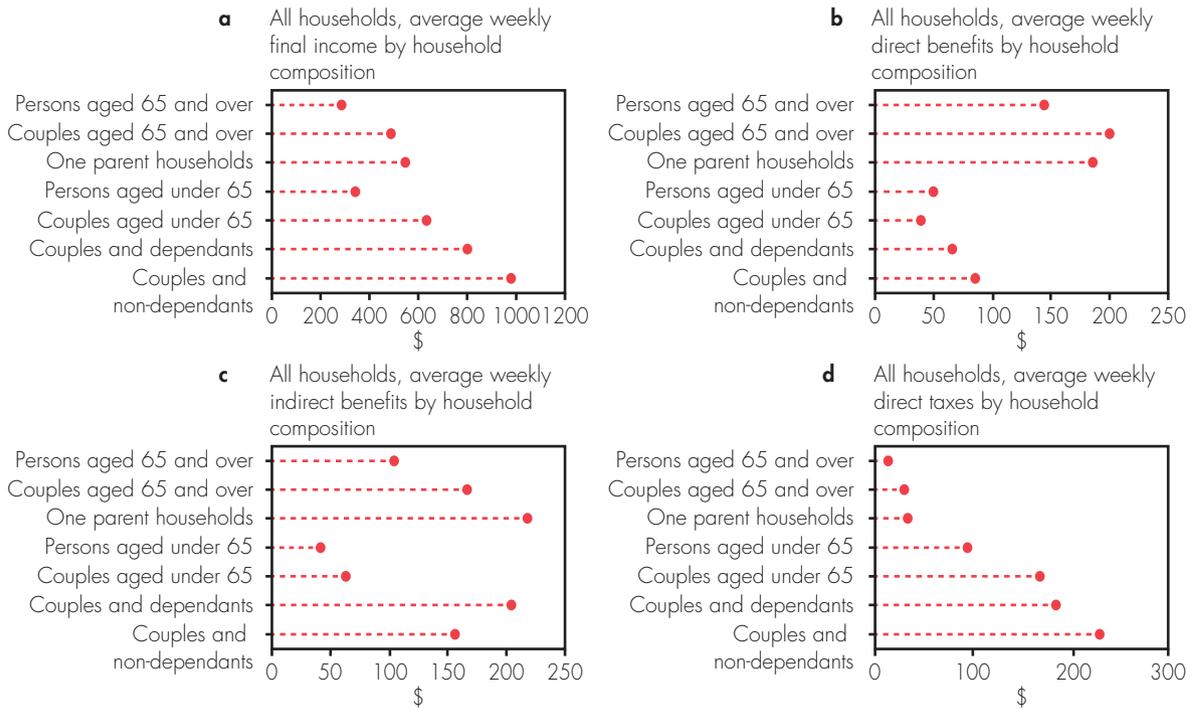


FIGURE 9.14 Incomes for select groups within Ozland

Questions

- Analyse the data provided in the four graphs in Figure 9.14 by answering the following questions:
 - What is the average weekly final income for persons aged 65 years and over?
 - What is the average weekly direct benefit for couples under 65?
 - What types of households, on average, receive more than \$200 worth of indirect benefits per week?
 - Which types of households, on average, pay direct taxes between \$100 and \$200 per week?
- Compare income, direct and indirect benefits and direct taxes by choosing a range of particular household types and complete the table below.

Household type	Income	Direct benefits	Indirect benefits	Direct taxes
Persons aged 65 and over				
Couples aged 65 and over				
One-parent households				
Persons aged under 65				

- Induce the government’s approach to redistribution of income for one or more household types in Ozland. You should have enough observations in order to make a simple induction. Make more comparisons if you feel you have insufficient data.

9.1 True/False

For each statement, indicate whether you consider it to be True (T) or False (F).

- 1 Income inequality refers to the degree to which income is unevenly distributed among people.
- 2 The Gini coefficient is a graphical representation of the degree of income inequality in an economy.
- 3 Wealth is relatively evenly distributed in Australia.
- 4 Household wealth is largely held as real estate.
- 5 One of the benefits of inequality is that it creates an incentive to become more educated.
- 6 Indigenous Australians are over-represented in the nation's poor.
- 7 Regressive income taxation reduces the level of inequality in income and wealth.
- 8 Inequality results in lower work efficiency.
- 9 Two major social costs of inequality of income and wealth are social class divisions and poverty.
- 10 Those Australians born overseas tend to receive lower weekly income levels than those born in Australia.

9.2 Terminology

Select the correct term from the list below that describes each statement.

- | | | | | | |
|---|--------------|---|------------------|---|------------------|
| A | poverty line | E | Gini coefficient | I | tax avoidance |
| B | means test | F | absolute poverty | J | progressive tax |
| C | wealth | G | income | K | tax evasion |
| D | Lorenz curve | H | negative tax | L | relative poverty |

- 1 the act of using illegal efforts to circumvent the paying of tax
- 2 a tax system in which low-income earners receive a subsidy determined by their income
- 3 a numerical measure of the degree of inequality involved in income distribution
- 4 a set of rules applied to a person's income and assets that is used to determine who is eligible for welfare assistance
- 5 the total assets owned by an individual
- 6 a level of income giving a minimum standard of living for a particular group of people in a society
- 7 the act of using legal tax minimisation practices
- 8 returns obtained from sources such as work or property
- 9 a tax system in which the ratio of tax paid is higher with large incomes than with small incomes
- 10 a situation where deprivation is extreme because people do not have access to the basic necessities

9.3 Multiple-choice questions

Select the correct response to each of the following:

- 1 An area of social service payments in Australia that has a distribution function is:
 - A family allowances.
 - B single parents' benefits.
 - C aged pensions.
 - D all of the above.
- 2 A common measure of poverty is:
 - A the Lorenz curve.
 - B income gap index.
 - C GDP per capita.
 - D shadow prices.
- 3 What is the main reason put forward as to why inequalities of income should be maintained?
 - A Very few people actually starve in Australia.
 - B Women are discriminated against in the distribution of income.
 - C Inequality rewards initiative and promotes incentive.
 - D Inequalities can be reduced through redistribution.
- 4 What would it mean if the redistribution of income leaves the top 20 per cent of income earners with less than 20 per cent of total income?
 - A The top 20 per cent of income earners must have lower living standards.
 - B The lowest 20 per cent of income earners must have higher living standards.
 - C The lowest 80 per cent of income earners must be relatively better off.
 - D The distribution of income must be more equal.
- 5 Real GDP per capita figures tell us nothing about a nation's:
 - A standard of living.
 - B income distribution.
 - C rate of economic growth.
 - D level of economic development.
- 6 The government could encourage income earners to prepare for their retirement by:
 - A indexing pensions.
 - B extending people's working age.
 - C providing tax incentives for people to take out superannuation policies when they commence work.
 - D developing facilities for aged care.
- 7 In Australia, the poverty line is:
 - A the cost incurred for buying basic needs.
 - B the minimum award wage.
 - C the income that provides a minimum acceptable living standard for a family.
 - D the number of people classed as poor.

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- 8 A situation in which a pensioner loses a considerable amount of income through tax and loss of pension if they take a part-time job is known as:
- A an equivalence scale.
 - B vertical equity.
 - C a poverty gap.
 - D a poverty trap.
- 9 Indexation of pensions means that they are:
- A means tested for income and assets.
 - B adjusted for changes in average weekly earnings.
 - C kept at a rate just above the poverty line.
 - D increased regularly in line with CPI increases.
- 10 Relative poverty is a situation in which:
- A poverty in one country is compared with that in another country.
 - B the incidence of poverty is measured relative to a standard unit of measure.
 - C people's level of poverty is measured relative to their income distribution.
 - D deprivation is extreme because people do not have access to the basic necessities.
- 11 Which of the following statements is true for Australia in relation to the distribution of wealth and income?
- A The inequality in wealth has been stable in the last 10 years but income inequality has fallen.
 - B Income is less evenly distributed than wealth.
 - C Wealth is less evenly distributed than income.
 - D Income inequality has been stable in the last 10 years but wealth inequality has risen.
- 12 Why do people in cities tend to have higher average incomes than people living in rural areas?
- A Employees in major cities face greater competition for jobs.
 - B Rural areas have higher unemployment rates than cities.
 - C Businesses pay higher wages to workers to entice them to work in rural areas.
 - D Rural workers have a higher level of skill and education than their city counterparts.
- 13 Income inequality in Australia would widen if this policy were introduced in Australia.
- A a decrease in interest rates
 - B deregulation of the labour market
 - C a lowering of the age for the aged pension
 - D the introduction of increased superannuation rates
- 14 Equity in the distribution of personal incomes does not mean:
- A everyone should have an equal amount of money as income.
 - B everyone should be able to have access to basic needs.
 - C the elimination of poverty.
 - D the rich should be taxed at a higher rate than people on lower incomes.

- 15** The market economy does not have income and wealth equality because:
- A** high unemployment levels may occur at various times.
 - B** some goods are too expensive to obtain for workers on a wage.
 - C** lower income workers are unable to save as high a proportion of their income as salaried professionals.
 - D** all of the above.

9.4 Short response questions

- 1** Define 'income inequality'.
- 2** Describe three ways that income inequality can be measured.
- 3** Identify the four main sources of household income.
- 4** Explain the difference between absolute poverty and relative poverty.
- 5** Describe the difference between income and wealth.
- 6** List two reasons for income inequality and explain how each contributes to such inequality.
- 7** Select two effects of income inequality. Explain and give an example of each.
- 8** Explain how progressive taxation assists the redistribution of income in Australia.
- 9** Compare cash payments and non-cash benefits. Which one is the more effective way of redistributing income?
- 10** In what ways could the federal government use monetary policy as an instrument to reduce income inequality?
- 11** Explain possible effects on the distribution of income in the Australian economy of the following scenarios.
 - a** There is a return to centralised wage-fixing in the labour market.
 - b** The Reserve Bank of Australia increases interest rates by more than 5 per cent in 12 months.
 - c** The government abolishes negative gearing for investment properties in the housing market.
 - d** Unemployed youth are entitled to unemployment benefits for only six months.
 - e** The inflation rate doubles.

9.5 Statistical exercise

- 1** Examine Figure 9.15 and complete the following activities.
 - a** Construct Lorenz curves for countries X and Y.
 - b** Compare the hypothetical curves for the two countries. Which country has the greater inequality of distribution of personal income? Explain your response.

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FIGURE 9.15

Decile class	Actual income share (%)	Actual income share (%)	Cumulative income share (%)	Cumulative income share (%)
	Country X	Country Y	Country X	Country Y
Lowest	0.5	1.0	0.5	1.0
2nd	2.4	3.2	2.9	4.2
3rd	3.6	4.7	6.5	8.9
4th	4.7	6.1	11.2	15.0
5th	6.9	8.3	18.1	23.3
6th	9.5	12.6	27.6	35.9
7th	12.0	14.3	39.6	50.2
8th	14.5	15.8	54.1	66.0
9th	17.8	16.0	71.9	82.0
Highest	28.1	18.0	100.0	100.0

9.6 Group work

The class should work in groups. Each group should take one of the ACOSS recommendations (stated below) and develop a PowerPoint presentation on how this recommendation might be implemented. When all groups have presented their strategies, the class will have an overview of how poverty might be reduced.

To reduce poverty and address its causes, ACOSS recommends:

- a National Anti-Poverty plan to take coordinated action across all levels of government to meet targets which reduce poverty and alleviate the causes of poverty
- an increase in the rates of the lowest social security payments (mainly those for unemployed people, students and lone parents) with new supplements for costs of disability and caring for children alone
- additional employment assistance for long-term unemployed people to help them become ready for work
- an adequate minimum wage to reduce poverty among working households
- increased access to affordable housing including by an expansion of investment in social housing, improvements in private rent assistance, and expansion of the National Rental Affordability Scheme (NRAS)
- improved affordability of essential health and community services such as dental care, child care and respite care.

Source: ACOSS, *Poverty Report*, October 2010

9.7 Inquiry topics

- 1 As an investigative reporter for your local newspaper, radio station or TV station you have been given the following tasks.
 - a Research the current state of poverty in Australia/your state/your local area. Refer to information/data provided by the government (federal/state/local) and social service groups (e.g. the Salvation Army).
 - b Interview government and/or community representatives concerning the problem. What are the main issues involved?
 - c Write an article or prepare a broadcast account of your findings, and propose some tentative solutions to address the issues your research has revealed.
- 2 Invite a representative from a community welfare group (e.g. Salvation Army, a local church) to speak to your class regarding:
 - the incidence of poverty/deprivation in your local area
 - causes and effects of this problem
 - solutions by government, welfare agencies, community.
- 3 Select a group of people within the community, for example, the elderly, single parents, under-25 singles. Prepare a report on the selected group's wealth and income. The report can be in a written or a non-written form. Decide on an appropriate genre, such as:
 - a news report (audio, video or newspaper)
 - a formal report written by a government official (e.g. a social worker)
 - an emotive report written by an activist in support of the group.
 - a Investigate their relative wealth compared with the average for the Australian community. It may be useful to speak to a local politician or an accountant for some real-world opinions.
 - b Analyse the data to determine causes and effects of the situation.
 - c Propose remedial action to alleviate the situation.
 - d Evaluate these solutions and make recommendations regarding the best course(s) of action.
- 4 Over the last two decades, Australia has seen a widening gap between the 'haves' and 'have nots'. Provide data to support this view. Why has the gap widened? What are the effects of this widening gap on children, families and the aged? Should the government undertake measures to reduce the impact of the gap on the 'have nots'?
- 5 How do various government and non-government organisations assess the distribution of income and wealth? Compare the variables used and highlight the differences between the different approaches.

You can find answers to selected review questions within this chapter on NelsonNet.



Review of
Chapter 9
answers

Review of Chapter 9

Glossary

Absolute poverty: the situation of people whose deprivation is extreme because they do not have access to the basic necessities of food, clothing and shelter

Aggregate demand: the total expenditure on the goods and services produced in an economy in a period of time

Aggregate supply: the total value of goods and services available for sale in an economy in a given period of time

Allocative efficiency: occurs where a country's productive resources are used in the economy in combinations that generate the maximum benefits for consumers and the country.

Amalgamation: the combination into a single business entity of firms that were previously independently owned and controlled, in order to enhance competitive strength

Asymmetric information: the situation where one party to an economic transaction has more or better knowledge than the other party; consumers are less informed than suppliers in almost all economic transactions

Australian Securities Exchange (ASX): a national business that operates the stock market for the trading of shares and other securities

Average cost: the cost per unit of output

Average revenue: the return per unit of output

Balanced budget: budget in which current revenue is equal to current expenditure, that is, $T = G$.

Barriers to entry: cost-based, market-based and legal-based factors that prevent the entry of a new firm to an industry on a competitive level equivalent to that of existing firms

Basis points: a common unit of measure for interest rates and other percentages in finance; one basis point is equal to 100th of 1 per cent, or 0.01 per cent, and is used to denote the percentage change in a financial instrument

Biological diversity: the variety of plants, animals and other biological organisms in an area

Boom: phase of the trade cycle where the general level of economic activity is above average; it is characterised by full employment and inflationary pressure due to demand being in excess of supply

Business confidence: the amount of optimism that businesses hold about the future of their business and the state of the economy

Capital: the factor of production comprising the stock of human-made resources used to create further goods and services

Capitalism: an ideology based on the importance of the market system, private ownership of most of the means of production and limited government intervention, and underpinned by the belief that economic activity is motivated by individual interests and the profit motive; often used synonymously with the term 'free enterprise'

Capitalist market economy: an economic system in which important economic questions are decided by interaction between individual buyers and sellers in the marketplace

Cartel: a formal arrangement among firms to enhance their market power and profits by collectively controlling production levels, prices and market shares.

Ceteris paribus assumption: a Latin phrase that means 'other things being equal'

Collusion: cooperation among independently owned and controlled firms to limit competition; for example, by collusive tendering

Common property goods: goods or resources for which there are no clearly defined property rights, so no price can be attached to their use (e.g. the ocean, the atmosphere, wilderness and space)

Competition: the pressure that market forces place on businesses to reduce prices and improve the quality of their products

Competition policy: all relevant government policies that affect the nature and extent of competition in the economy

Competitive wants: goods/services that can be substituted for each other, for example, butter and margarine

Complementary wants: wants that go together, for example, house, furniture and plants

Concentration ratio: the percentage of the total sales accounted for by the largest four firms in a particular market or industry

Consumer confidence: how optimistic consumers feel about the state of the economy and their personal financial situation

Consumer price index (CPI): measures changes in the average level of prices of goods over a certain period

Consumer protection: government or legal assistance that, in addition to self-help, may protect consumers from unscrupulous business dealings

Consumer sovereignty: the ability of consumers to determine the pattern of production through their spending decisions

Consumption expenditure: the total spending on goods and services by the household sector

Contraction: the slowing down in aggregate output and income levels due to a rise in uncertainty; also known as a 'downswing'

Countervailing power: other groups that can exert influence on a firm's decisions; for example, powerful customers, political interest groups or trade unions

Cowboy economy: the planet is treated as an open system, with access to unlimited resources, from which material can be obtained and into which wastes can be deposited; the goals of economic activity are maximising consumption and production; the success of the economy is measured by size of the flow of goods and services

Cross elasticity of demand: measures the likely response for the demand of one good to a change in the price of a related good

Current account: measures the inflows and outflows of money resulting from buying and selling goods and services, and from earning income, in the international marketplace

Deficit budget: a budget in which current revenue is less than current expenditure, that is, $T < G$.

Demand: that quantity of a commodity that will be purchased in a market over a given time at a given price

Demerit good: a private good with negative externalities

Deregulation: a process of removing a set of government laws and rules imposed on a market

Direct tax: tax that is borne by the person or firm on whom it is levied, for example, income tax

Discretionary fiscal policy: the deliberate manipulation of government expenditure and revenue to achieve economic objectives

Diseconomies: as overall industry output rises, an individual firm's costs rise due to elements outside of its control

Disequilibrium: a situation in the circular flow where injections do not equal leakages, causing fluctuations in output, income, expenditure and employment

Disposable income: the amount of income available to an individual after payment of tax

Dividend: payment made by a firm to its shareholders for providing capital; a distribution of a firm's profits to its shareholders

Division of labour: the separation of work into tasks so that each individual worker becomes expert at a specific task, thus ensuring maximum efficiency

Downswing/contraction: the slowing down in aggregate output and income levels due to a rise in uncertainty

Dynamic efficiency: the ability of an economy to respond to changing consumer demands by reallocating resources to new industries or production processes

Ecological: dealing with the interdependencies between organisms and their environments

Ecological footprint: an estimate of how much biologically productive space is required to produce the goods and services a given population demands, and to absorb the resultant wastes, using current technology

Ecologically sustainable development (ESD): the use of resources for economic development in a way that does not compromise the current ecological balance and ensures that the natural environmental resources are maintained to improve the quality of life for present and future generations

Economic growth: a sustained increase in the productive capacity of an economy over a specific period of time, usually indicated by the increased availability of goods and services in the economy

Economic indicators: economic variables whose patterns of fluctuation portray, in a reasonably consistent and predictable way, the general course and level of aggregate economic activity, for example, employment levels, inflation levels and economic growth

Economic model: a simplification of a complex situation in the real world, usually represented in the form of a diagram, graph or mathematical equation

Economic problem: the problem of deciding or choosing how to satisfy unlimited wants with limited resources

Economic system: the organisational and institutional pattern through which choices are made about which wants to satisfy, and how to allocate resources to do this

Economics: the study of the ways in which a society decides to use its scarce resources to satisfy unlimited wants

Economies of scale: the cost-saving advantages that a firm gains by increasing its scale of production

Efficiency: using the least amount of resources to produce the goods and services that people value the most; how cheaply and productively firms can combine land, labour and capital resources to maximise output while generating profits

Egalitarian society: a society that believes in treating people equally through giving people equal rights and opportunities

Elastic demand: where the percentage change in quantity demanded exceeds the percentage change in price

Elasticity: the relative amount that one variable changes, given a change in another variable

Enterprise: the factor of production that is the ability to initiate and manage the production process by combining and organising the other factors of production (land, labour and capital)

Entrepreneur: the innovator who supplies enterprise to the productive process

Environmental amenity: the sources of satisfaction flowing from the aesthetic qualities of the environment

Environmental controls: direct regulations that restrain or ban actions harmful to the environment and indirect controls through taxes and charges, which together encourage desirable environmental practices

Environmental degradation: any deterioration in the quality of environmental resources, the destruction of ecosystems and the extinction of wildlife

Environmental resources: the support the environment gives the economy by the provision of natural resources and as a means of waste disposal

Equilibrium: a balanced situation from which there is no tendency to change, for example, where supply equals demand in the market, or in circular flow where injections equal leakages, causing output, income, expenditure and employment to remain unchanged

Equilibrium market price: a price from which there is no tendency to change; a price just high enough for sellers and just low enough for buyers, at which supply and demand are equal

Equivalence scales: scales that indicate the income levels needed by different types of family units to attain the same, or equivalent, standard of living

Exchange rate: the value of a nation's currency expressed in terms of the currency of another nation

Exclusion principle: when consumers or firms who do not pay for a good or service are excluded from any benefits derived from that good or service

Exclusive dealing: imposition by a supplier of conditions on the supply of goods and services that limit the purchaser's freedom to choose alternative suppliers

Exports: goods or services sold to foreign countries

External costs: the social and environmental costs associated with the production and consumption of a good or service that are not included in the market price

External economies of scale: as overall size of an industry rises, an individual firm's costs fall due to factors outside of its control

Externalities: indirect costs and benefits associated with the production and consumption of certain goods and services that the market fails to take into account

Factor mobility: refers to the ability of factors of production to move, usually to an industry or location where they can operate at a higher level of economic efficiency

Factors of production: the broad categories under which the resources that go into creating goods and services to satisfy human wants can be classified; that is, land, labour, capital and enterprise

Firm or business: the basic unit of organised production, which can range in size from a sole trader to a global corporation employing hundreds of thousands of people

First-mover advantage: the competitive advantage gained by firms that are first to enter a new market, including getting access to the best customers and suppliers, brand loyalty and economies of scale

Fiscal policy: measures undertaken by government in relation to raising revenue through taxation and determining the nature of government expenditure, aimed at influencing a nation's aggregate demand

Fixed costs: those costs that a firm must meet whether or not any production occurs, for example, capital equipment and rates

Float: the initial raising of capital for a firm by selling shares in the primary market of the stock market

Flow: understanding productive resources as income items that can be used to produce goods and services indefinitely

Free-rider problem: when consumers or firms in a society can derive a benefit from the consumption of a good or service without having contributed directly to the cost of that good or service

Gini coefficient: a numerical measure of the degree of inequality involved in any income distribution of a country, based on the areas under the Lorenz curve.

Government expenditure: the total spending on goods and services by governments at local, state and national level

Government intervention: action by the government that affects economic activity, resource allocation and normal market operations to help achieve economic goals; e.g. provision of subsidies, change of the tax rates, changes in government expenditure, regulation of foreign investment

Gross domestic product (GDP): a measure of the monetary or market value of goods and services produced in an economy in a given period (usually one year) after deducting the cost of intermediate goods and services used in their production

Henderson poverty line: the minimum desirable level of household income established by Professor Henderson in the Commission of Inquiry into Poverty in 1975; these minimum levels are revised to accommodate changing economic conditions

Holding company: a company that owns and controls a number of subsidiary companies

Horizontal integration: a single firm gaining control of the one stage of the production that serves many producers or industries; for example, one firm owning all the abattoirs or all the export finance services

Import controls: tariffs or other protective devices, such as quotas, which make domestic products more competitive in comparison with imported products

Imports: goods and services purchased from foreign countries

Income: payments to households in the form of wages, rent, interest and profit

Income distribution: allocation of returns (rent, wages and salaries, interest, profit) from the four factors of production (land, labour, capital, enterprise) among the population of the country

Income elasticity of demand: the way in which demand changes following an increase in household income

Income inequality: the degree to which income is unevenly distributed among people in the economy

Indirect tax: tax that can be passed on to others by the person or firm on whom it is levied, for example, goods and services tax or customs duty

Industry: a collection of firms that produce the same type of product or service

Inelastic demand: where the percentage change in quantity demanded is less than the percentage change in price

Inequality: a relative concept concerned with differences in welfare, such as in income, wealth and opportunity

Infrastructure: the basic physical and organisational structures and facilities (e.g. buildings, roads, power supplies) needed for the operation of a society or enterprise.

Injection: an inflow of expenditure into the circular flow of income

Interest: the price paid for the use of capital

Interest rate: the price paid for the use of capital, expressed as an annual percentage of the value of the capital

Intergenerational equity: the just sharing of economic benefits and costs between the present and future generations

Internal economies of scale: as the scale of output for an individual firm increases, a resulting reduction in the costs of production occurs

Internal stability: state of the economy when there is full employment and price stability

Investment: spending either on new assets or additions to stocks used in the production process

Invisible hand: the unobservable market force that allocates resources based on consumers acting in their self-interest, reaching equilibrium automatically

Job rotation: a system of moving workers between different duties and tasks to reduce the risk of boredom due to repetitive work practices

Labour: the factor of production that includes all kinds of human effort, both mental and physical

Labour and minimum wage laws: minimum wage levels, conditions and hours of work for various occupations, industries and ages, established by state and federal legislation and tribunals

Land: the factor of production that includes all naturally occurring resources (except human labour); for example, minerals, fuels, plants, water and fish

Law of demand: the proposition that the quantity demanded of a good or service is inverse to the price of that good or service

Law of diminishing marginal returns: once the most efficient level of production has been reached, adding an extra factor of production (such as a new employee) will cause a relatively smaller increase in output than that gained from each existing factor of production; the marginal productivity will decrease

Law of supply: the proposition that the quantity supplied of a good or service varies positively with the price of the good or service

Leakage: an outflow of expenditure from the circular flow of income

Lorenz curve: a graphical representation of the inequality of a nation's income distribution

Macroeconomic policy: legislation, taxation or spending measures taken by governments to influence broad variables in the economy, for example, consumption or investment

Marginal cost: the addition to total costs that occurs when one more unit of output is produced

Marginal producer: a firm whose income just covers costs

Marginal revenue: the extra (or marginal) revenue obtained by producing and selling another unit of output

Market: a place or situation where buyers and sellers interact for purposes of trade or exchange

Market failure: the inability of the market to determine the use and allocation of resources in the way society most desires, because certain conditions are lacking, for example, limited market power, externalities and public goods

Market mechanism: the interaction of the forces of demand and supply to determine the price at which a commodity is sold

Market power: the ability to control and influence the market in one's own self-interest

Market structure: features of a market that determine the level of competition

Merit good: a good or service that is not produced in sufficient quantities by markets because individuals do not value them highly enough to pay for them; a private good with positive externalities

Mixed economy: an economy or economic system that relies on both markets and governments to allocate resources

Mobility of labour: ease with which the labour force can be transferred from one occupation to another or from one geographic region to another

Monetary policy: policy measures implemented through the Reserve Bank of Australia to bring about changes in aggregate demand by influencing money supply and interest rates

Monopolistic competition: the market situation in which a large number of buyers and sellers are exchanging similar but not identical products

Monopoly: the market situation in which one seller sells a product for which there is no close substitute, allowing it to be the price setter

National superannuation: requirement by the federal government for employers to pay a set percentage of an employee's pay into a superannuation fund to provide for their retirement

Natural capital: the stock of resources provided by the natural environment from which humans gain amenity and productive inputs; also called ecological or environmental capital

Natural monopoly: arises in a market in which the costs of production are minimised when one firm supplies the market

Needs: things that are essential for life in our society

Net exports: the income earned by exports less the spending on imports into Australia.

Normal profit: the minimum return that a business is prepared to accept to remain in business

Oligopoly: the market situation in which a small number of firms are selling similar but not identical products

Opportunity cost: the best alternative opportunity forgone when a choice is made (often referred to as 'real cost' or 'economic cost'), for example, being unable to study chemistry because you chose to study economics

Optimal outcome: the best or most favourable outcome under a particular set of circumstances

Paradox of thrift: people try to save more in times of recession, which leads to a fall in both aggregate demand and in economic growth

Pareto efficiency: when the allocation of resources is optimal; one person cannot be made better off without making another person worse off

Perfect competition: a theoretical market structure in which many buyers and sellers trade a homogenous product, there are no barriers to entering the market and all producers are price takers

Physical markets: places where buyers and sellers actually meet to exchange goods and services

Pigovian tax: a form of taxation that is imposed on any commercial activity in a marketplace that produces negative externalities; the purpose of the tax is to correct a suboptimal and socially undesirable outcome

Point elasticity method: measures the degree of elasticity of demand using the coefficient of elasticity

Poverty: the situation of people whose resources (material, social and cultural) are so limited as to exclude them from the minimum acceptable way of life in the country in which they live

Poverty line: a level of income giving a minimal standard of living for a particular group of people in a society

Predatory pricing: a temporary price reduction by a dominant firm to discourage the entry of new firms and to force the less-established firms out of the industry

Price: the sum of money paid for goods or services in a market

Price ceiling: a price fixed by the government at a lower level than what would be established by the free operation of the price mechanism

Price discrimination: the charging of different prices to different customers of the same firm; for example, by way of selective discounts

Price elasticity of demand: the responsiveness of quantity demanded to a change in price

Price elasticity of supply: responsiveness of quantity supplied to a given change in price

Price floor: a price fixed by the government at a higher level than what would be established by the free operation of the price mechanism

Price leadership: where the price is set by the dominant firm in an industry that all other firms follow, thereby limiting price competition

Price mechanism: the system or process by which price changes bring about equality between supply and demand in a market

Price signals: the messages that market prices provide to producers and consumers about what to produce, how to produce it and whom to distribute the outputs to

Price surveillance: the overseeing of price rises in markets where competition is not strong by government regulatory bodies

Primary labour market: part of the labour market that has little likelihood of unemployment, defined career paths, high and rising real wages, and skilled and well-educated workers

Primary market: the new-issue market where companies are first floated; their shares are sold by stockbrokers on behalf of the company

Primary production: includes all industries involved in the cultivation of land, grazing of animals and extraction of raw materials from land or sea

Private costs: the financial and opportunity costs paid by a firm or a consumer to produce or consume a good or service

Private goods: a product or service provided by the business sector for use and consumption by individual consumers, usually for personal benefit and utility

Private investment expenditure: the purchase of new equipment and plant, buildings and vehicles to increase the ability to produce goods and services

Product differentiation: when producers try to give a good or service some characteristics that make it seem different from essentially similar products of competitors, to lessen the degree of substitutability and increase brand loyalty

Production: the process of combining land, labour, capital and enterprise to provide goods and services in an economy

Productive efficiency: the ability of an economy to achieve the maximum quantity of output from a given quantity of productive resources

Productive or technical efficiency: Occurs when use of a country's resources generates the maximum output possible

Productivity: a measure of the efficiency of production, expressed in terms of the rate of output per unit of inputs

Profits: payments in return for enterprise or entrepreneurial ability resulting from running a business enterprise in which revenues received exceed costs of running the business

Progressive taxation system: tax system in which the percentage of tax payable increases as income rises (as opposed to proportional taxation, where the percentage remains constant, and regressive taxation, where it decreases)

Propensity: a term used to describe a person's tendency or desire to act in a certain way; 'propensity to save' is a person's willingness or desire to save

Property rights: legislated measures created by government to administer the ownership, uses and disposal of property and resources

Public final demand: government spending consisting of both consumption and capital expenditure

Public goods: products or services provided by the government sector for societal use and benefit, usually in response to a market unable to supply that product or service at a reasonable cost

Quality and health standards: standards imposed by governments or standards bodies to ensure safe and high-quality products and services

Quality of life: the overall wellbeing of individuals according to their material living standards and a range of other considerations such as health standards, education levels, security and happiness

Quaternary production: includes all industries involved in the production of services relating to information and communication

Recession/trough: the general level of economic activity is below the economy's potential and is characterised by high unemployment, reduced level of inflation and low business and consumer confidence

Recurrent wants: wants that are never satisfied and keep recurring, for example, food

Redistribution of income and wealth: transfer of money and assets from one group in the economy to another

Regulation: a process of imposing a set of government laws and rules on a market

Relative poverty: the situation of people whose income and lifestyle have fallen below, by more than a certain degree, the average income and lifestyle enjoyed by the rest of society

Relative scarcity: we do not have enough resources to satisfy all our wants and needs

Rent: payments in return for the use of land or other natural resources used in the production process

Resale price maintenance: where a supplier specifies a minimum price to a reseller, below which goods and services cannot be resold or advertised

Reserve Bank of Australia: the central bank within the Australian economy, which sets the cash rate and aims to maintain financial stability

Resource depletion: the consumption of a resource at a faster rate than it can be replenished

Restrictive trade practices: actions by people, businesses or governments that restrict competition in a market, and which may increase market power and monopoly control

Salaries: payments to higher level employees and professionals, calculated on an annual basis, not usually related to production achieved or hours worked

Savings: that part of present income that is not spent on consumption, but set aside for future use

Scarcity: insufficiency relative to wants. A universal problem because the resources available for the satisfaction of human wants are limited while wants are unlimited

Secondary labour market: part of the labour market that has frequent unemployment, casual employment, low and declining real wages, no career path and unskilled workers with minimal education qualifications

Secondary market: the market in which shares in existing companies are bought and sold by stockbrokers on behalf of investors

Secondary production: includes all industries involved in processing raw materials and producing goods

Sectors: divisions of the economy in the circular flow-of-income model

Share: part ownership in a company

Social costs: the total private and external costs of production and consumption of a good or service

Socialism: an ideology based on the view that most of the means of production should be publicly owned and directed towards the satisfaction of community needs rather than private profit; in theory, an economy that is in transition between communism and capitalism

Socialist/command economy: an economic system in which decisions about what to produce and the way the proceeds of production should be distributed among members of the society are made by a central planning authority

Socialist/market economy: an economic system based on government, rather than individual, ownership of key resources, deemed critical to the operation of the economy; it allows some decentralised decision making

Spaceship economy: the planet is understood as a closed system, with a fixed stock of natural capital; the measure of economic success is maintenance of the nature, extent, quality, and complexity of that capital stock

Specialisation: the use of the factors of production to perform narrowly defined, specific functions, such as assigning specific production tasks to a worker

Standard of living: a measure of the material wellbeing of individuals within a country, usually measured by GDP per capita; based on material and quantitative indicators such as possessions, income, education and health standards, and quality of housing

Stock: understanding productive resources as capital items that need to be maintained for future use

Stock market: the market that involves an auction of securities such as shares, debentures and bonds

Stockbroker: a member or agent of the Australian Securities exchange, who is authorised to buy and sell securities for investors in the stock market

Subsidies: grants made by the government to industries whose survival is considered to be beneficial to the public, to enable them to compete with imported goods

Subsistence economy: an economy in which individuals produce commodities primarily for their own use and not for exchange through the market

Supply: the quantity of a commodity that will be offered for sale in a market over a given time at a given price

Surplus budget: a budget in which current revenue is greater than current expenditure, that is, $T > G$

Taxation: a method of financing government activities, which involves compulsory payments to the government by individuals, companies or other organisations, usually based on income earned and goods

Taxation criteria: criteria for judging whether a tax is a good tax or not, for example, equity, efficiency and simplicity

Tertiary production: includes all industries involved in the production of services rather than goods

Total cost: all the costs involved in producing a given volume of output

Total revenue: the total monetary return to the firm when any volume of output is sold

Total revenue method: calculated by multiplying price (P) per unit and quantity (Q) of the good sold

Trade cycle (business cycle): alternate but irregular periods of prosperity and recession of an economy

Trade Practices Act 1974 (Cwlth): legislation promoting competitive behaviour and more competitive market structures

Tradeable permit system: a government tool where allocated pollution permits are created, allowing firms to emit a certain amount of pollution; these permits are then tradeable on an open market between competing firms

Tragedy of the commons: the overuse or destruction of a common property good because it has no price and so markets do not ration its consumption

Transfer payment: payments received by individuals and families from the federal government in the form of cash social service benefits, such as pensions, unemployment benefits and family allowances

Underemployment: when workers in a labour force are employed at less than full-time or regular jobs or in work that is inadequate with respect to their training or economic needs

Unemployment: the state of being out of work or not having paid employment

Unit elasticity: where the percentage change in quantity demanded is the same as percentage change in price

Upswing/recovery: the economy moves into a period of prosperity and healthy business activity, characterised by increasing confidence on the part of business and consumers

Utility: satisfaction gained by consumption of goods and services

Value judgement: a judgement that implies a personal evaluation or opinion of the desirability or otherwise of a plan of action or an objective, usually concerned with what ought to be rather than what is

Variable costs: the costs incurred by a firm whenever production occurs, for example, power and wages

Vertical integration: where a single firm gains control of all of the stages of production and marketing distribution

Virtual marketplace: an umbrella term for commercial web portals

Wages: payments to employees as a return for the provision of labour or human effort to the production process (usually calculated on the basis of actual production or hours worked)

Wants: things we desire because they give us satisfaction – various types of goods and services

Wealth: total assets owned by an individual or income unit, and the nation at any one time; includes physical assets such as real estate and consumer durables (car, boat, jewellery) as well as financial assets (shares, bonds, debentures)

Welfare: a measure of how well off people are from both a quantitative and a qualitative point of view

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Overview

- Fully updated for the QCAA Economics General Senior Syllabus implemented at Units 1 & 2 in 2019 and Units 3 & 4 in 2020
- Comprehensively covers the syllabus and unit objectives using the inquiry approach valued in the syllabus, with integration of the underpinning factors throughout
- Reflects changing Australian and global economies, with current data, statistics and real-world applications
- 'Economics in Action' sections provide realistic economics scenarios and allow students to learn through inquiry
- Clear definitions of key concepts provided throughout each chapter and in a complete glossary
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