JACARANDA KEY CONCEPTS IN VCE

ECONOMICS 1

UNITS 1 AND 2 | TWELFTH EDITION

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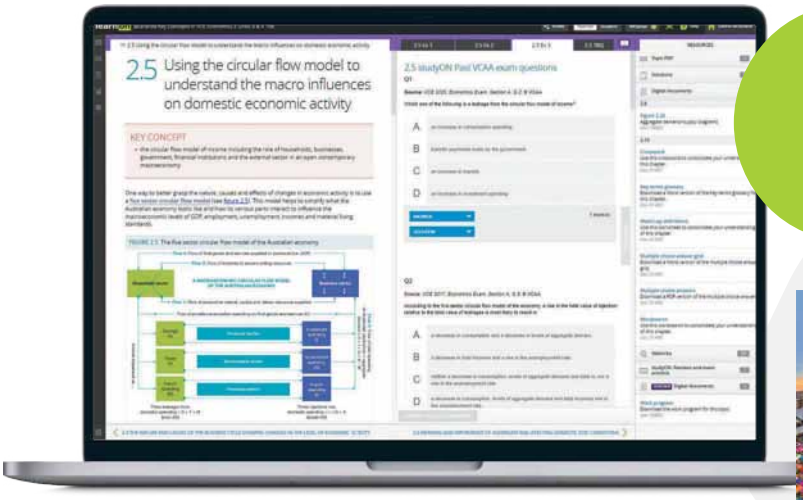

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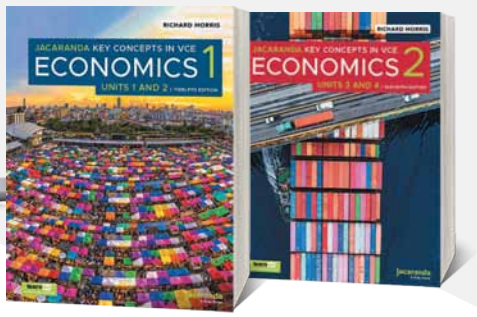

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ECONOMICS UNITS 1 AND 2 | TWELFTH EDITION

Developed by expert Victorian teachers for VCE students

Tried, tested and trusted. The NEW Jacaranda VCE Economics series continues to deliver curriculum-aligned material that caters to students of all abilities.

Completely aligned to the VCE Economics Study Design

Our expert author team of practising teachers and assessors ensures 100 per cent coverage of the new VCE Economics Study Design (2023–2027).

Everything you need for your students to succeed, including:

- **NEW!** Access targeted question sets for every key knowledge point, including quick-quiz questions and exam-style questions with all relevant past VCAA exam questions since 2013. Ensure assessment preparedness with practice SACs for all Areas of Study.
- **NEW!** Contemporary case studies, of both manufacturing and service businesses, are revisited throughout each Area of Study to help students recall real-world examples in their assessments.
- **NEW!** Teacher-led videos to unpack concepts, plus VCAA exam questions and exam-style questions to fill learning gaps after COVID-19 disruptions.

Learn online with Australia's most

Everything you need for each of your lessons in one simple view

- **Trusted, curriculum-aligned theory**
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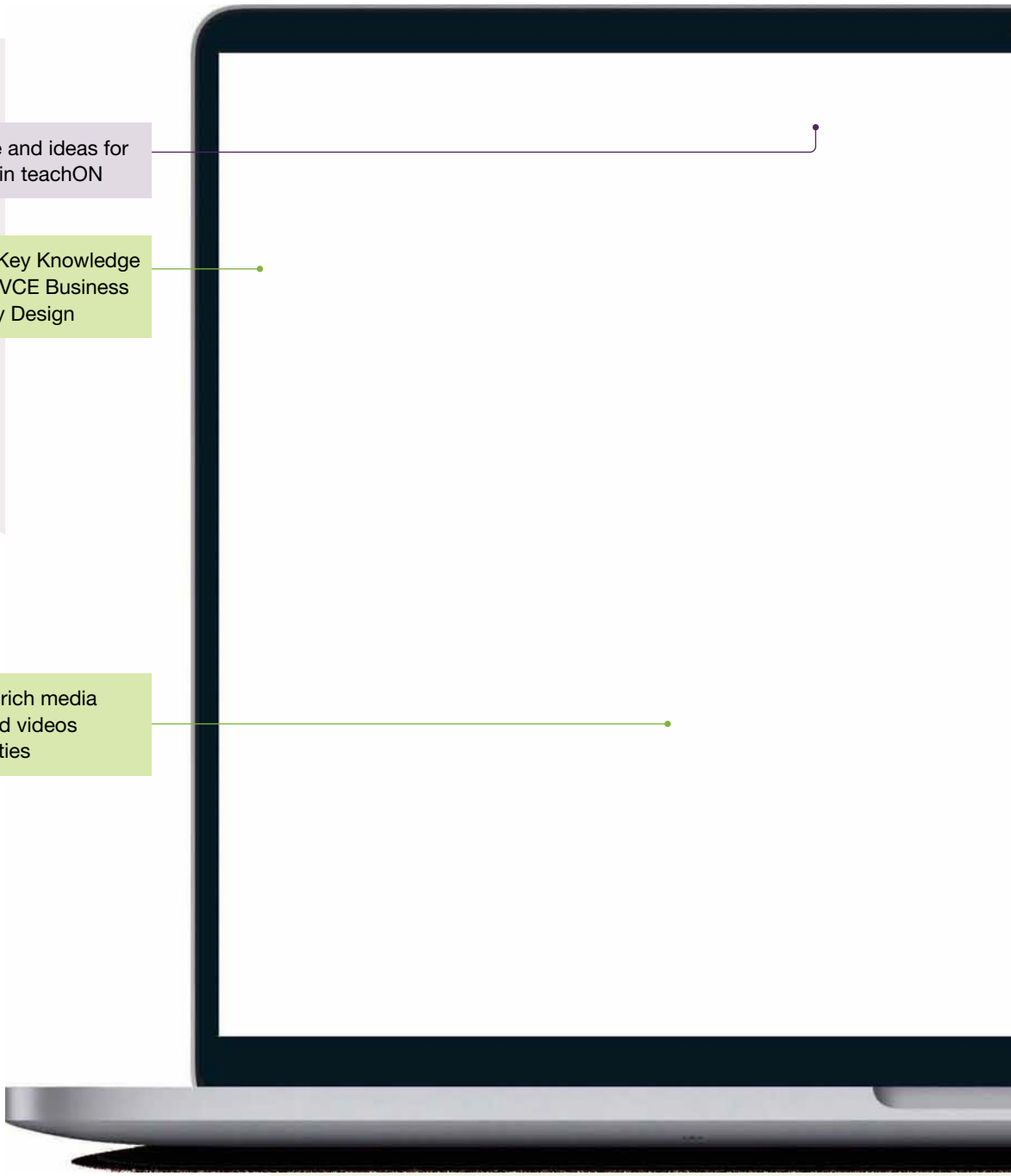

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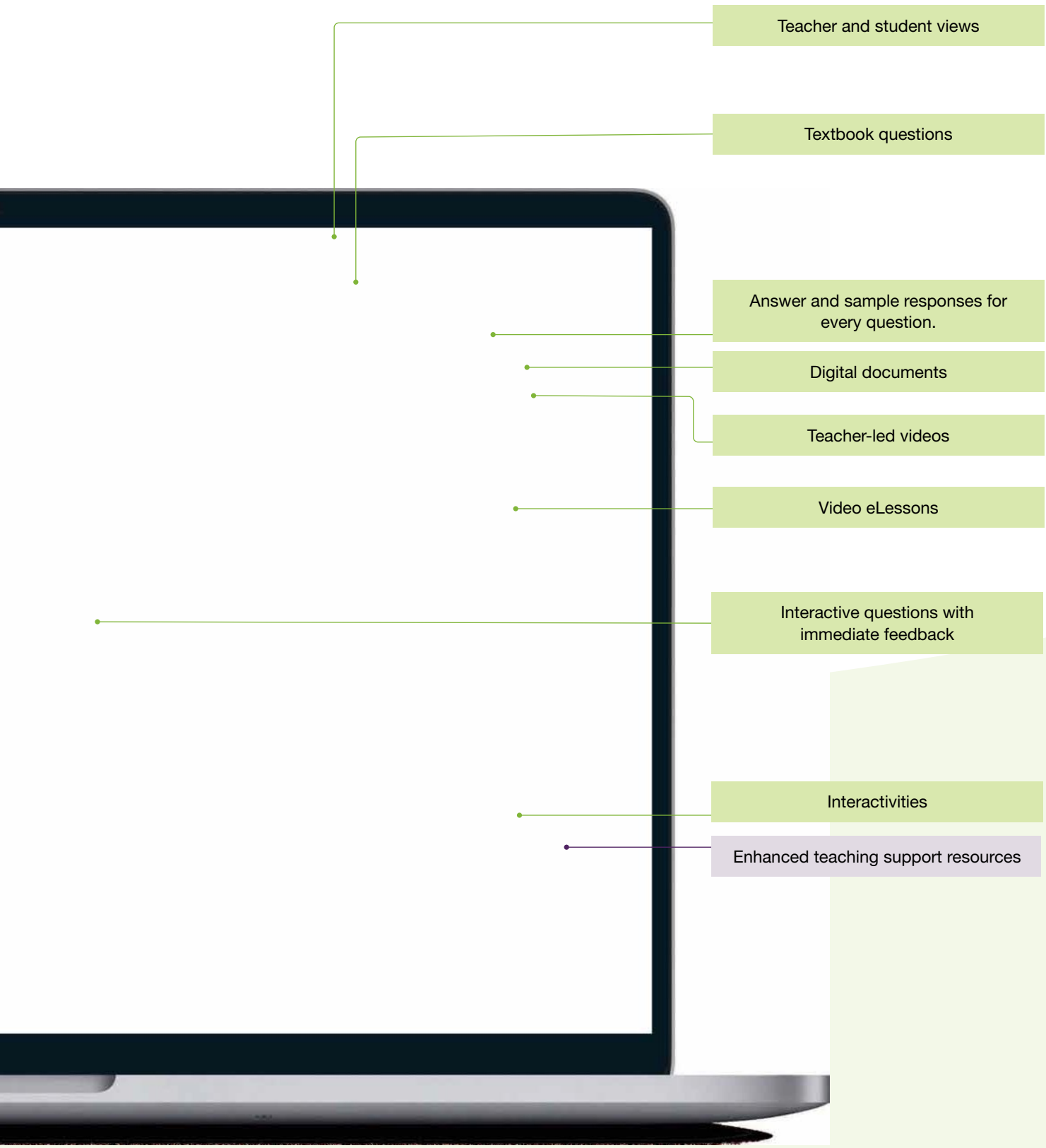


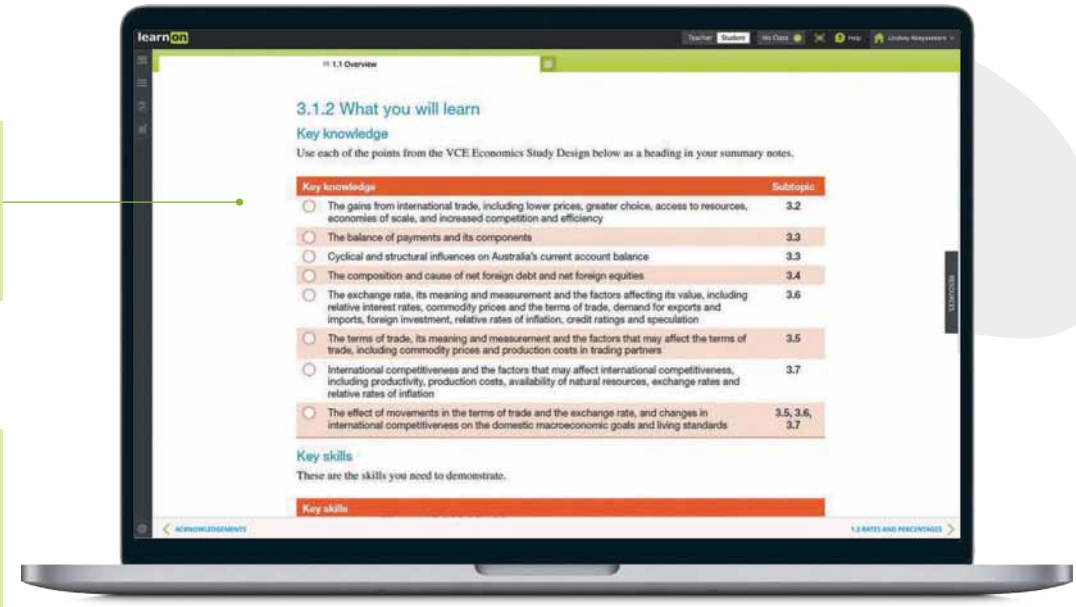
Get the most from your online resources

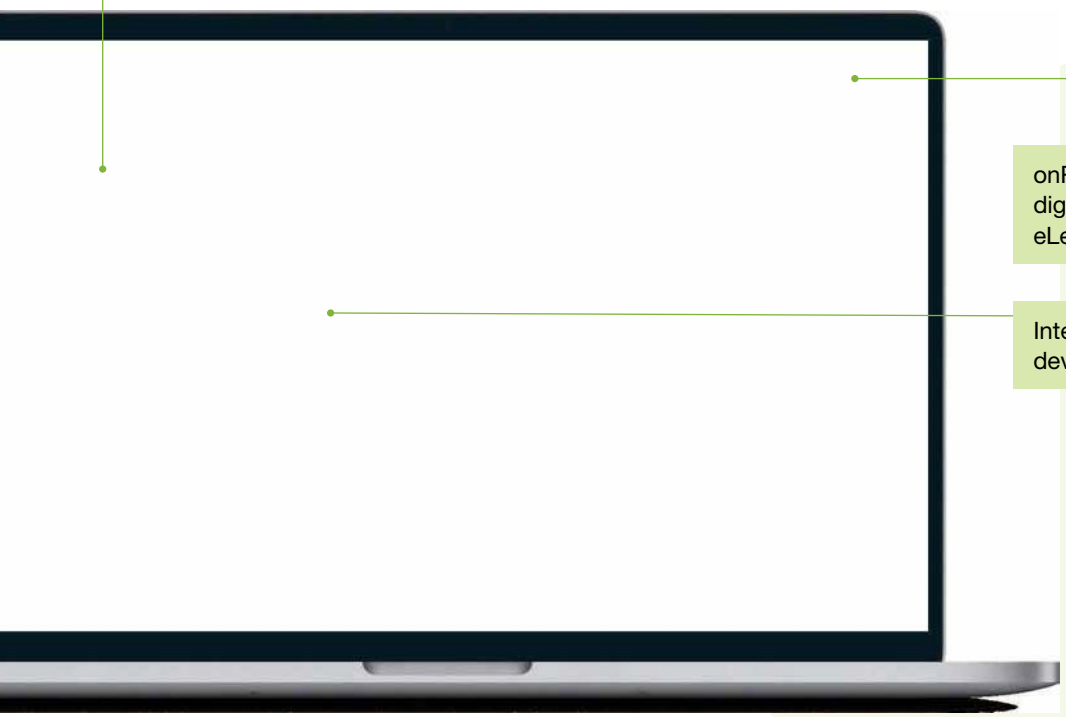
Online, these new editions are the complete package

Trusted Jacaranda theory, plus tools to support teaching and make learning more engaging, personalised and visible.

Each topic is linked to Key Knowledge and Key Skills from the VCE Business management Study Design.

Each subtopic is linked to Key Knowledge and Key Skills from the VCE Business management Study Design.

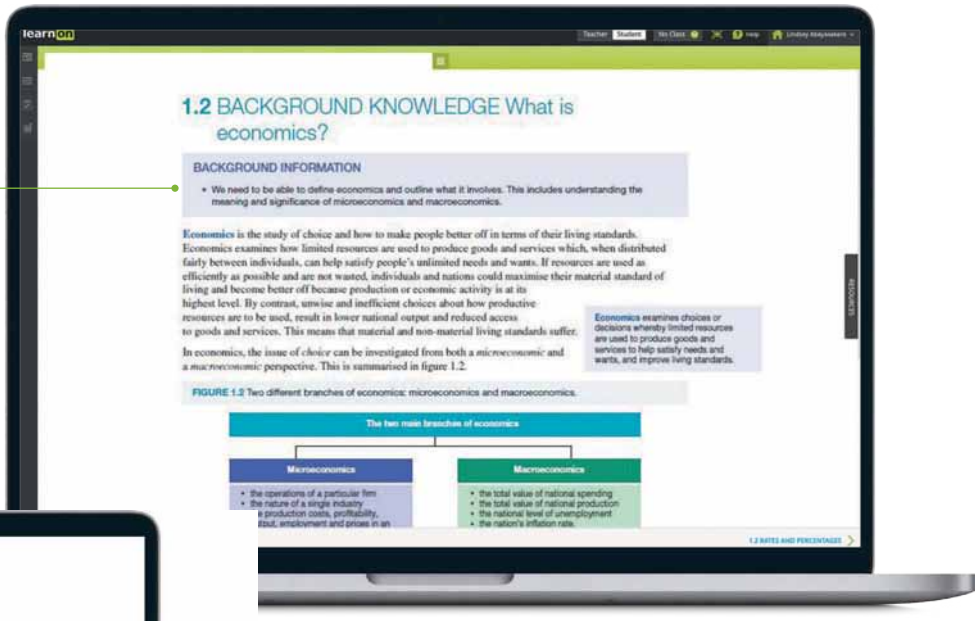




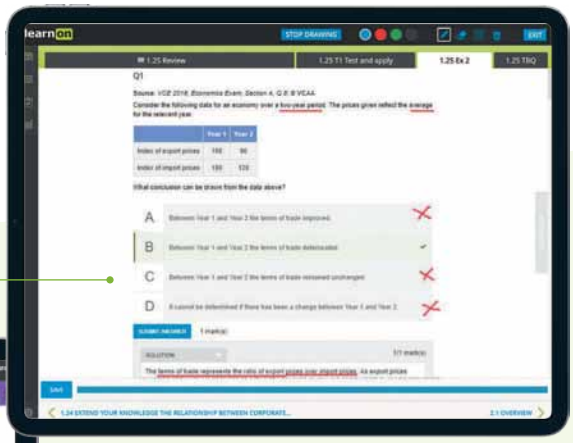
onResources link to targeted digital resources including video eLessons and weblinks.

Interactive glossary terms help develop and support literacy.

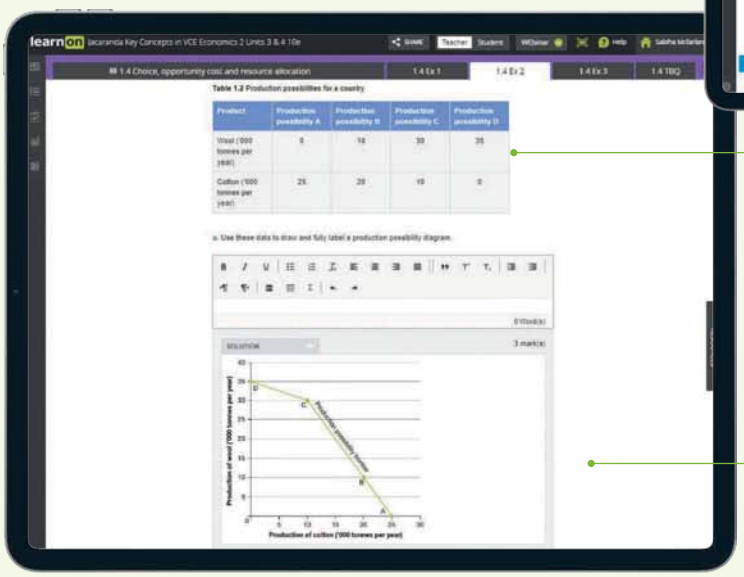
Dedicated Background knowledge subtopics provide additional explanation of concepts, supporting students in filling any knowledge gaps.



Three sets of questions at the end of each subtopic: Quick quiz, Exercise and Exam questions (containing relevant past VCAA exam questions), encourage students to practise and apply the concepts they are studying.



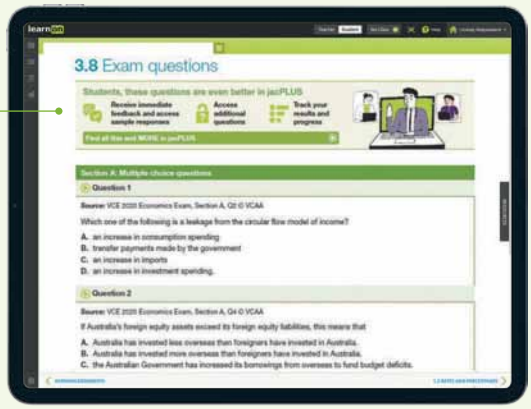
Teacher-led videos that explain how to approach exam questions, including VCAA exam questions



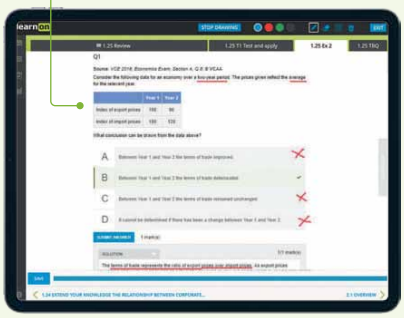
- Online and offline question sets contain quiz questions, practice questions, exam-style questions and past VCAA exam questions with exemplary responses and marking guides.
- Every question has immediate, corrective feedback to help students to overcome misconceptions as they occur and to study independently — in class and at home.

Topic reviews

Topic reviews include online summaries and topic-level review exercises, including quick-quiz and exam questions, that cover multiple concepts.

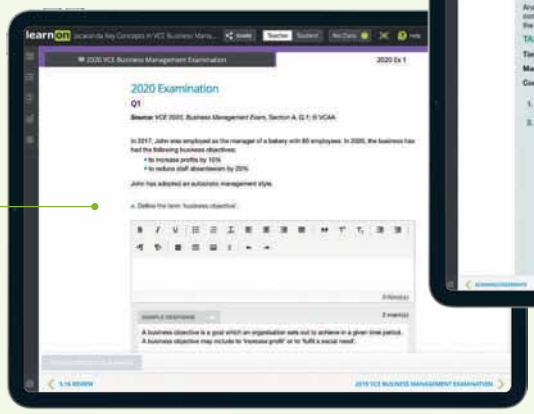


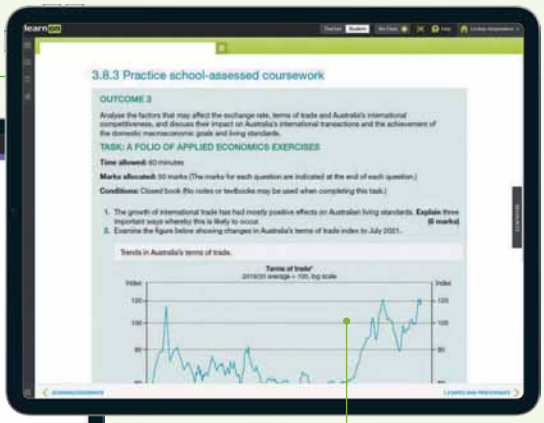
End-of-topic exam questions include relevant past VCE exam questions and are supported by teacher-led videos.



Get exam-ready!

Students can start preparing from lesson one, with exam questions embedded in every lesson — with relevant past VCAA exam questions since 2013.

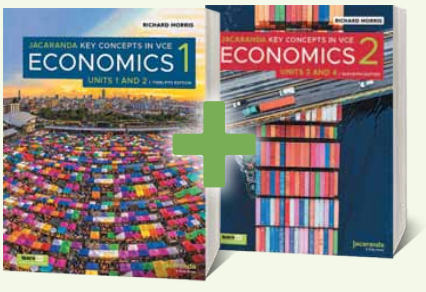




Practice, customisable SACs available to build student competence and confidence.

Combine units flexibly with the Jacaranda Supercourse

Build the course you've always wanted with the Jacaranda Supercourse. You can combine all VCE Economics Units 1 to 4, so students can move backwards and forwards freely. Or combine junior humanities with Economics Units 1 & 2 for custom elective courses. The possibilities are endless!



A wealth of teacher resources

Enhanced teacher support resources, including:

- work programs and curriculum grids
- teaching advice and additional activities
- quarantined topic tests (with solutions)
- quarantined case studies and SACs (with worked solutions and marking rubrics).

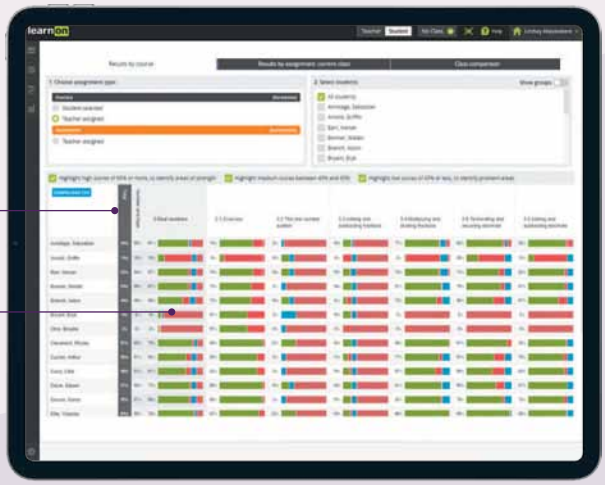
Customise and assigr

A testmaker enables you to create custom tests from the complete bank of thousands of questions (including past VCAA exam questions).

Reports and results

Data analytics and instant reports provide data-driven insights into performance across the entire course.

Show students (and their parents or carers) their own assessment data in fine detail. You can filter their results to identify areas of strength and weakness.



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TOPIC

1 Thinking like an economist

UNIT 1 AREA OF STUDY 1

Thinking like an economist

OUTCOME 1

On completion of this unit the student should be able to describe the basic economic problem, discuss the role of consumers, businesses and the government in the economy, and analyse the factors that affect economic decision-making.

LEARNING SEQUENCE

1.1 Overview 4
1.2 What is economics? 7
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1.1 Overview

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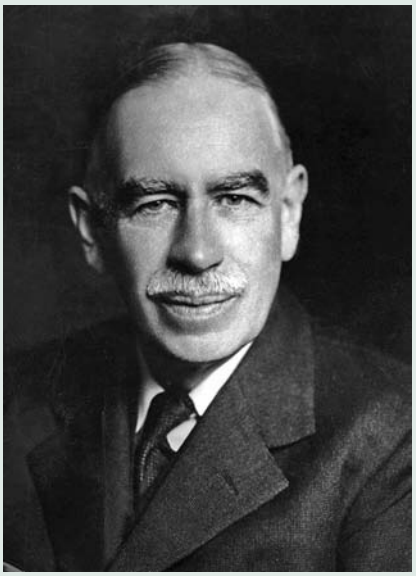
1.1.1 Introduction

Although economics is always in the news because of its importance and relevance to us all, like most students starting their studies in this area, you probably have little or no idea of exactly what you have let yourself in for! No doubt you want to know what this subject is all about and what you will learn. In this topic, we are going to investigate some of the basic concepts of economics like scarcity and making choices, and then drill down a little to try and get inside the minds of economists to see how they think about economic issues.

FIGURE 1.1 Economics is a social science that investigates many issues that affect people's decision-making and general wellbeing.

Famous Economist: John Maynard Keynes



John Maynard Keynes is one of the most influential economists in history. Born on 5 June 1883 in Cambridge, England, Keynes developed ideas that fundamentally changed the economic policies of governments around the world, and the way we view macroeconomics to this very day.

Keynes greatly advanced our understanding of how the economy changes through business cycles, and in the turbulent times of the Great Depression, he argued that governments needed to stimulate the economy through increased spending and lower interest rates. Doing so would increase the overall demand for goods and services produced in the economy and reverse the downward spiral that had been taking place.

Keynes developed an economic school of thought that is commonly referred to as Keynesian economics, and is accepted as a more appropriate way of managing entire economies than was previously suggested by neoclassical economic theory. The impact of such economic theories on the decisions of governments — and in turn on the day-to-day lives of ordinary people around the world — is profound, arguably placing economists such as Keynes among the most influential people of his time.

> 'The ideas of economists … Both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed, the world is ruled by little else …'

Source: John Maynard Keynes, *The General Theory of Employment, Interest and Money*, 1936.

1.1.2 What you will learn

Key knowledge

Use each of the points from the VCE Economics Study Design below as a heading in your summary notes.

Key knowledge	Subtopic
Introductory concepts	
○ The two main branches of economics: microeconomics and macroeconomics	**1.2**
○ The two main forms of economic analyses: positive economics and normative economics	**1.2**
○ Resources (factors of production such as land, labour and capital) used to satisfy needs and wants	**1.3**
○ The basic economic problem of relative scarcity and the need for economic decision-making	**1.3**
○ The concept and applications of opportunity cost	**1.4**
○ The production possibility model to illustrate the concepts of scarcity, choice, opportunity cost, efficiency and under-utilisation of resources	**1.4**
○ The need for trade-offs and cost–benefit analysis and their relationship to opportunity cost	**1.4**
○ The three basic economic questions: what and how much to produce, how to produce, and for whom to produce	**1.5**
○ How different economic systems, including market economies, planned economies, mixed economies and traditional economic systems, may answer the three key economic questions	**1.5**
○ The three sector, four-flow model of the economy, including consumers/households, producers/businesses and government	**1.5**
○ The purpose of economic activity and the effect on material and non-material living standards	**1.5**
The economics agents	
○ Economic agents and the concept of the public and private sectors of the economy	**1.6**
○ The traditional economic viewpoint of consumer behaviour: self-interest, maximisation of utility, rationality, informed decision-making and marginal benefits from consumption	**1.6**
○ The ways consumers and workers might respond to incentives and disincentives, including taxes and tax rebates, subsidies and regulations	**1.6**
○ The traditional economic viewpoint of business in the economy: profit maximisation	**1.7**
○ The ways businesses might respond to incentives and disincentives, including taxes and tax rebates, subsidies and regulations	**1.7**
○ The traditional economic viewpoint of the government in the economy: maximisation of living standards	**1.8**
○ The role of government in economic stabilisation, improving efficiency in resource allocation and redistribution of income to improve living standards	**1.8**

Key skills

These are the skills you need to demonstrate.

Key skills	
◯	Define key economic concepts and terms and use them appropriately
◯	Apply economic theory to make economic predictions and create responses that communicate economic meaning
◯	Gather, synthesise and use economic data and information from a wide range of sources to analyse economic issues and assess the effect of economic decisions on relevant economic agents
◯	Construct, interpret and apply economic models to analyse the consequences of economic decisions
◯	Identify the trade-offs and discuss the costs and benefits associated with a range of economic decisions by drawing conclusions based on economic criteria

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on Resources

Digital document Key terms glossary (doc-37945)

1.2 What is economics?

KEY KNOWLEDGE

- The two main branches of economics: microeconomics and macroeconomics
- The two main forms of economic analyses: positive economics and normative economics

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1.2.1 Definition of economics

'**Economics** is what economists do.' Some people may think that economics is all about money. While it can involve this, it is not always the case. So, let's start with a basic definition.

Economics is a study of human behaviour. It involves looking at the ways individuals, families, businesses and governments make decisions or choices about how to use their limited resources to best satisfy their needs and unlimited wants, and in the process improve their wellbeing or living standards.

Indeed, every day we make all sorts of decisions involving choices between alternative uses of our limited resources including time, skills and energy. For instance:

- Should you and your friends go to a Taylor Swift concert (or some other music icon), or just stay at home?
- Should you continue your education, or get a job?
- Should you have a girlfriend or boyfriend, or just concentrate on your VCE?
- Is it better for you to take risks and invest in shares, or leave your savings safely in the bank?
- Should businesses produce mobile phones, hamburgers, jeans, uranium, or wool?
- Should a firm advertise its products in newspapers, or use social media?
- Is it better for a government to build new childcare centres, or put more resources into sport, roads, or national defence?
- Does Australia benefit from free trade with other countries thereby encouraging competition from imports, or should we seek to be more self-sufficient in our production of goods and services and protect local industry?
- Should mining be allowed on the Great Barrier Reef or on sacred Aboriginal sites, or should we value our cultural and natural environment more highly?

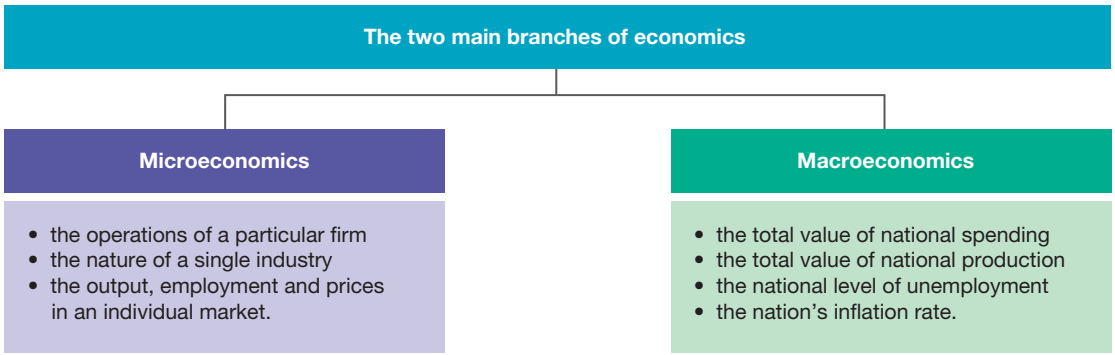
In making these sorts of choices or decisions, economics also studies issues related to the production, consumption and distribution of goods, services and incomes. Essentially, in Australia's **economy** or **economic system**, goods and services are produced or made using the limited resources that we have available. These resources are sold for money or income that is then used to buy or consume those goods and services that best help satisfy our wants and improve our wellbeing, both now and into the future.

Economics is such a broad study with many interesting fields and specialist areas like environmental economics, financial economics, the economics of international trade, economic history, the economics of health, education, welfare or population, economic history, public economics and economic development in low-income countries.

1.2.2 The two main branches of economics

Economic issues are usually examined at *two* different levels — through the study of *microeconomics* and the study of *macroeconomics* (see Figure 1.2).

FIGURE 1.2 Microeconomics and macroeconomics are the two main branches involved in the study of economics.



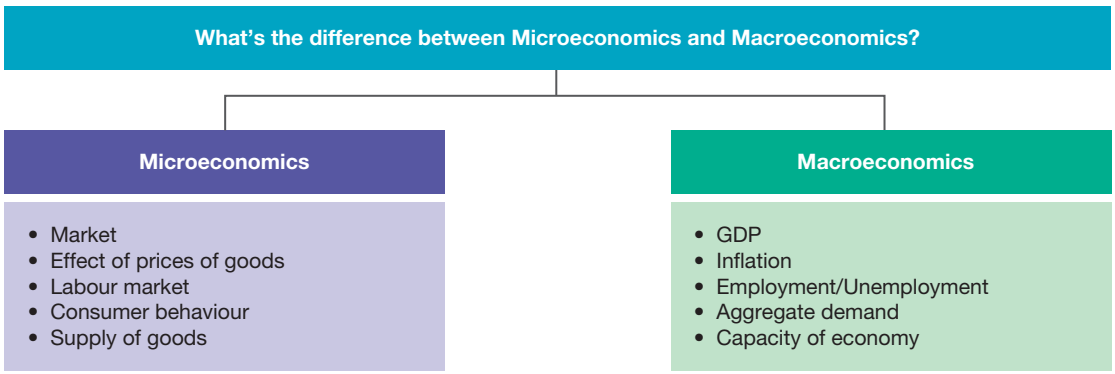
Microeconomics

Microeconomics often looks at the factors that influence the small bits, units or various parts making up the overall Australian economy including the decisions made by individual consumers or single firms. For instance, it may concern the things that affect the operations, production costs, prices or *profitability* of:

- a particular firm (e.g. Woolworths, National Australia Bank, BHP and Myers)
- an industry (e.g. the childcare, fashion, beef, egg and woodchip industries)
- a single market (e.g. oil, barley, uranium, property, labour and wool).

Macroeconomics

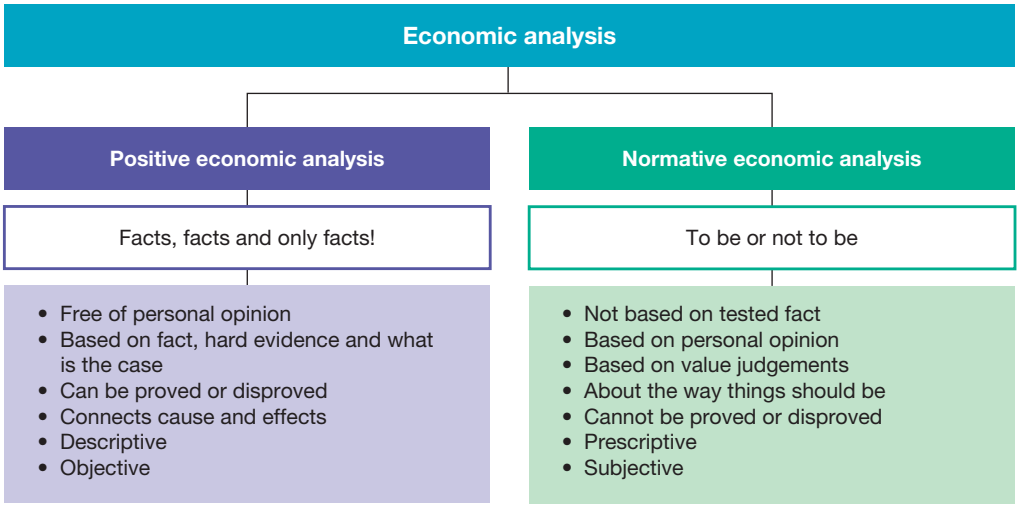
Macroeconomics takes a wider 'bird's-eye' look at the *whole economy* and the larger flows affecting overall economic conditions in the country: booms, when the economy is growing too fast, or recessions, when there is a downturn in the economy. Macroeconomics therefore looks at the bigger picture and is concerned with levels of national spending, national production (measured by **gross domestic product** or **GDP**) and national incomes, as well as the country's overall unemployment and inflation rates.



1.2.3 The two main forms of economic analysis

In addition to the split between *microeconomics* and *macroeconomics*, there is also a division between *positive economics* and *normative economics* (see Figure 1.3).

FIGURE 1.3 Positive and normative economics are two branches of economics.



Positive economic analysis

Most commonly, economics uses **positive economic** analysis of issues or questions that can be either proved or disproved beyond doubt. Positive economics analyses issues where the investigation is largely based on verifiable facts about the way the world is, and that can be tested. It is free of personal values, feelings or opinions. In other words, positive economic analysis often involves basic statements such as, 'If A occurs, then B is the result'. For instance, 'If iPhones become more expensive, then the demand for them will decrease', or 'If tax rates rise, individuals will usually spend less'.

Normative economic analysis

However, in economics it is sometimes difficult to just stick to positive economic analysis. Sometimes, personal, value-based statements are also made about the way the world *should* be. Therefore, **normative economics** involves statements about what should be done, based on personal opinion, likes and dislikes. For instance, to say that the Australian government '*should* increase its spending on defence by cutting outlays on welfare benefits' is a statement of personal beliefs, so this represents normative economics. Being values-based does not necessarily make normative economics inferior to positive economics, as long as the reader is clear which approach is being used.

Combining positive and normative economic analyses

Although textbooks like this one contain mostly positive economics, the distinction can become a bit fuzzy, particularly when it comes to recommending the best government policy for dealing with a particular problem. For instance, imagine there are two economists examining the question, 'Would cutting government unemployment benefits or tightening access to cash welfare payments cause a fall in the number of people who are unemployed?' Using positive analysis, both may come to the same factual or objective conclusion. Even so, they may still disagree about how government welfare policy *should* be changed to make the welfare system more effective in reducing unemployment and making it more financially sustainable for the future, because they have each taken a different normative approach involving different economic, social or political values. It has even been said that 'if you put all the economists of the world end to end, they would not reach a conclusion' — perhaps a light-hearted reference to normative economic analysis!

Resources

Weblinks What is economics?
Microeconomics vs macroeconomics

1.2 Activities

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1.2 Quick quiz on | **1.2 Exercise**

1.2 Exercise

1. **Define** what is meant by the *study of economics*. Give two original examples of what this study might involve. **(2 marks)**
2. Macroeconomics and microeconomics
   a. **Explain** the main differences between *macroeconomics* and *microeconomics*. **(2 marks)**
   b. **Classify** each of the following issues as likely to be primarily macroeconomic or microeconomic in their nature. Be prepared to justify your answer. **(4 marks)**

Economic issue	Is the issue primarily a macroeconomic or microeconomic issue? Why?
i. The pricing of iTunes	
ii. Trends in Australia's unemployment rate	
iii. The drought and debt crisis among farmers in Victoria's north-west	
iv. The closing down of a timber mill in Victoria's Otway forest	
v. The building of a new business making and selling surfboards and clothing in Torquay on Victoria's Surf Coast	
vi. A general fall in the rate of interest charged on loans made to individuals and businesses in Australia	
vii. A cut by the federal treasurer to the top rate of personal income tax from 45 per cent to 40 per cent, and the rate of company tax for large firms from 30 per cent to 20 per cent	
viii. The declining profitability and closure of Australia's car industry	

3. Positive economics and normative economics
   a. **Distinguish** positive economics from normative economics. **(2 marks)**
   b. **Classify** the following economic statements as to whether they are *positive* or *normative*. Be prepared to justify your answer. **(4 marks)**

Statement	Is this statement a positive or normative statement? Why?
i. Multinational companies operating in Australia should pay more tax.	
ii. If Australia's annual inflation rate rose to 3.5 per cent, this would reduce the purchasing power of some individuals.	
iii. Research shows that paying young people a lower wage than that for adults helps to reduce youth unemployment rates.	
iv. Income inequality in Australia is too high and should be reduced.	

Solutions and sample responses are available online.

1.3 The basic economic problem of relative scarcity

KEY KNOWLEDGE

- Resources (factors of production such as land, labour and capital) used to satisfy needs and wants
- The basic economic problem of relative scarcity and the need for economic decision-making

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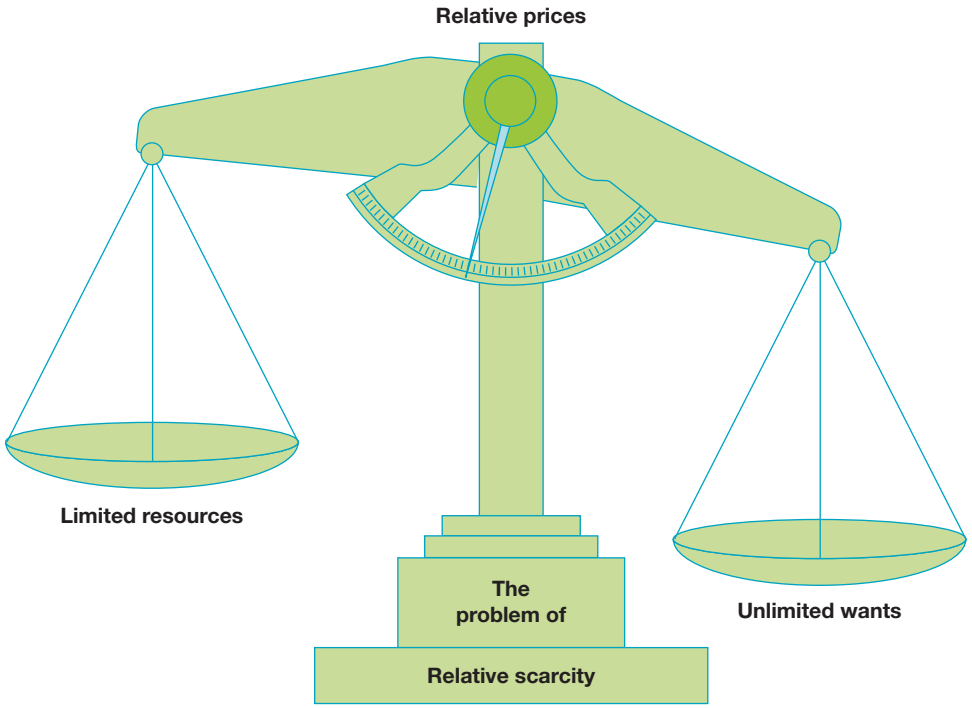
1.3.1 Overview of relative scarcity

In total, we humans have many **wants** ranging from love and friendships, to social status and of course all those material things that make life more pleasant and exciting. Overall, we say that our material *wants* are *unlimited* or infinite. Additionally, to survive we have certain **needs** — we must have a certain quantity of essential food, shelter, healthcare and clothing. It should also be pointed out that our list of needs can change over time. Today, it is likely that some goods that were once seen as luxuries by your parents and grandparents, have now become a necessity for you.

In order to satisfy all these material needs and especially wants, society would have to be able to make infinite quantities of goods and services. Regrettably, this is simply not possible. We lack sufficient resources or productive inputs needed to allow us to produce this massive level of output. As shown in Figure 1.4, this imbalance between unlimited wants on the one hand and limited resources on the other is called the basic economic problem of *relative scarcity*. Because resources are relatively scarce, we can't have all the things we would like. This means that we are forced to make choices about which wants will be satisfied (and which will not).

FIGURE 1.4 The basic economic problem of relative scarcity arises because people's unlimited wants exceed the limited resources available from which to produce goods and services. This means that only some wants can be satisfied and people must choose which wants to satisfy first.



1.3.2 People have unlimited wants

There are several reasons why we say that individuals, businesses and governments overall have *unlimited wants*:

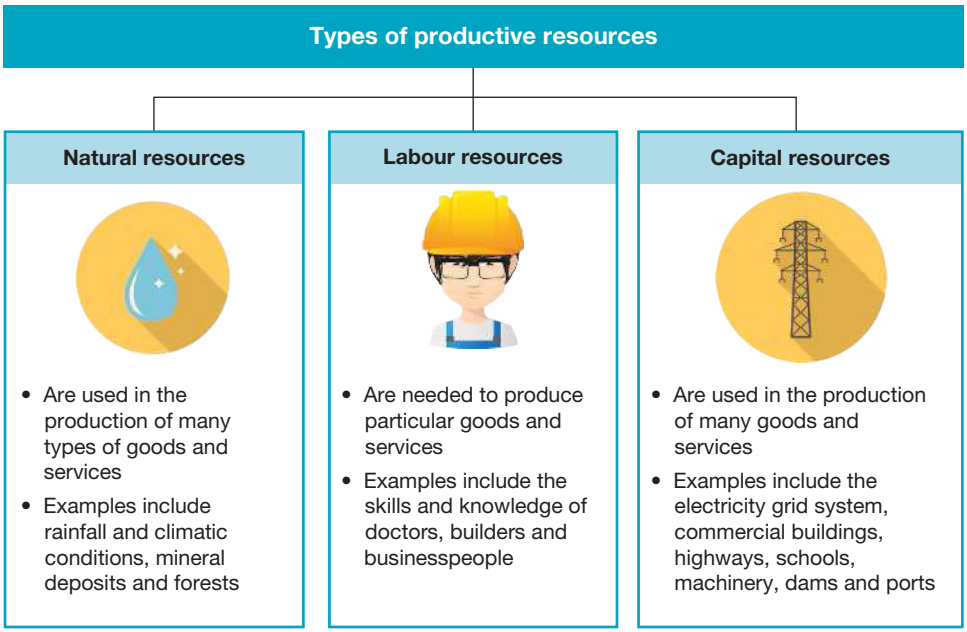
- As one want is satisfied, another appears (e.g. the latest model mobile phone or your next meal).
- The more material things people have, the more they want and expect as a result of advertising, fashions and the spread of materialism.
- The world's population is growing quickly, multiplying the total number of wants.
- **Planned obsolescence** by manufacturers ensures that things date, wear out quickly and cannot be repaired. They need to be replaced with new items.
- Some people try to keep up materially with their friends by owning the latest things.

When individuals try to actually satisfy their wants through spending or using income to buy goods and services, they create a *demand*. In turn, this also creates a *derived demand for the resources* needed to make these things.

1.3.3 Our productive resources are limited

Resources (also called *factors of production*) are the *inputs* used by businesses to produce or supply the goods or services that we need and want. There are *three* main types of productive resource available in an economy — natural resources, labour resources (including entrepreneurship) and resources that involve capital equipment (see Figure 1.5).

FIGURE 1.5 The three main types of productive resource available in an economy



1. **Natural resources** are the productive inputs that occur in nature (e.g. soils for agriculture, mineral deposits, forests, native animals, oceans, climate, rivers, clean air and the environment).
2. **Labour resources** are the intellectual skills, knowledge and manual effort that people provide as members of the nation's labour force (e.g. those of a doctor, mechanic, retail attendant and banker).
3. **Capital resources** (or capital equipment) involve manufactured or producer goods. Here, capital is seen as the stock of past production that is used to aid current and future production. This includes the physical plant and machinery (that may incorporate new technology) used by a firm to help make other finished goods and services. Examples of capital resources include tractors, factories and commercial buildings, industrial robots, highways, wind turbines, schools, dams and ports. Investment in capital equipment (i.e. 'physical' capital as opposed to 'money' capital) is very important because it helps to increase the productivity or *efficiency* of labour and natural resources.

1.3.4 The basic economic problem — relative scarcity

Relative scarcity is called the *basic economic problem*. It is the starting point in economics. It arises because the *volume* (i.e. quantity) and/or *efficiency* (i.e. quality) of resources available for production is finite or *limited*, relative to the level of people's needs and especially their wants — which are virtually *unlimited*. In other words, people demand more goods and services than firms or businesses can supply or produce from the limited resources available. By contrast, if the supply of resources was infinite, all our wants could be satisfied, and goods and services would presumably be available free of charge.

Put another way, the existence of differences between the prices paid for particular goods or services reflects their relative scarcity:

- A relatively high price indicates that the item is fairly scarce (e.g. diamonds, water in the desert).
- A low price means the item is relatively abundant (e.g. bananas following the main harvest).
- Things that are not at all scarce are usually free or have a zero price (e.g. air).

Because of the problem of **scarcity**, individuals and nations cannot possibly have all the material things they desire. They are forced to make choices or decisions as to which needs and wants to satisfy first. This limits a society's *material living standards*. However, those nations that have access to more resources and/or use those resources more efficiently can enjoy relatively better levels of material wellbeing (i.e. economic living

standards), because they can produce and consume a greater quantity of goods and services and satisfy more wants. They can usually avoid starvation and disease, anticipate a longer life expectancy, and enjoy better levels of nutrition, healthcare, education, transport and housing.

FIGURE 1.6 (Left) Natural resources, such as rainfall and climatic conditions that affect water levels in dams, are used in the production of many types of goods such as crops as well as services. (Right) Capital resources like our electricity grid system are also used in the production of many goods and services.

on Resources

Weblinks Scarcity
Economic scarcity and the function of choice
Scarcity, the basic economic problem

1.3 Activities

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1.3 Quick quiz on | **1.3 Exercise**

1.3 Exercise

1. **Needs and wants**
   a. **Distinguish** between something that you *need* and something that you *want*. **(2 marks)**
   b. Giving examples, **explain** why we say that wants are unlimited. **(2 marks)**

c. **Classify** the following as to whether you think it generally represents a *need* or a *want*. Be prepared to justify your answer. **(6 marks)**

Purchases	Is this purchase likely to be a need or a want? Why?
i. A Queensland holiday	
ii. A grand final ticket	
iii. A glass of water	
iv. Bus transport to work	
v. One pair of shoes	
vi. A university education	
vii. One meal a day	
viii. Makeup and cosmetics	
ix. Access to a doctor	
x. A new mobile phone	
xi. Electricity	
xii. A new iPhone	

2. Resources

a. **Define** the meaning of the term *resources* as used in economics. **(1 mark)**

b. Giving at least two examples, **define** each of the following *types* of resources:
   i. natural resources
   ii. labour resources
   iii. capital resources. **(3 marks)**

c. **Explain** why we say that Australia's productive resources are *limited*. **(2 marks)**

d. Giving examples, **explain** the concept of *capital resources*. Suggest reasons why capital resources are so important for an economy. **(2 marks)**

e. **Classify** each of the following resources as *labour, capital* or *natural* resources, briefly justifying your answer. **(10 marks)**

Resource	Labour, capital or natural resource? Why?
i. A new childcare centre constructed in your neighbourhood	
ii. An expanded CityLink freeway system	
iii. The Geelong football team	
iv. Buildings at the Docklands complex	
v. The sun and climate	
vi. Artesian water (high-quality water used for drinking or irrigation) in central Australia	
vii. The twelve years or so you spent gaining an education	
viii. The purchase by a business of robots and an advanced computer system	
ix. Australia's Prime Minister	
x. A dam constructed on a farmer's land	

f. i. **Describe** one type of natural resource that you believe is most needed to improve Australia's capacity or potential to produce more goods and services, justifying your response. **(2 marks)**

   ii. **Describe** one type of natural resource that is most needed to improve the productive capacity of a country like India, justifying your response. **(2 marks)**

3. **The basic economic problem**
   a. **Describe** the *basic economic problem* that is faced by both individuals and countries. **(2 marks)**
   b. A long-lost wealthy aunt generously left you $3 million in her will. Giving reasons, **explain** whether you would still face the problem of scarcity. **(2 marks)**
   c. **Explain** why fresh air is normally a *free good*, while electricity is relatively expensive. **(2 marks)**

Solution and sample responses are available online.

1.4 Making economic decisions

KEY KNOWLEDGE

- The concept and applications of opportunity cost
- The production possibility model to illustrate the concepts of scarcity, choice, opportunity cost, efficiency and under-utilisation of resources
- The need for trade-offs and cost–benefit analysis and their relationship to opportunity cost

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We have seen that, given the basic economic problem of *relative scarcity*, there are limits on the quantity of goods and services that a country can produce. Our potential level of national output (or GDP) is held down. Not all of our wants can be satisfied using the resources currently available. As a result, we are forced to make economic *choices* or *decisions* between the production and consumption of one particular good or service to satisfy one want, and the production and consumption of another to meet an alternate want.

1.4.1 The concept of opportunity cost and its applications

Opportunity cost arises whenever choices or decisions are made between alternative uses of resources. **Opportunity cost** relates to the value of production or consumption forgone (i.e. given up) in one area when resources are allocated or diverted to their next best alternative use. It is the value of the benefits you give up when you choose one thing over another. The concept of opportunity cost or *trade-off* can be applied in every decision made by individuals, firms and governments. The particular choices made will reflect our values and priorities.

Opportunity costs for individuals

Individuals have limited resources and face opportunity costs when they make decisions. For example:

- If you choose to devote your time, energy and money to go surfing or to buy an ice-cream, you cannot then use those same resources to have a holiday or go to the cinema.
- Deciding to do Economics as a subject may mean forgoing the thrills of studying Chemistry.
- Watching a movie on YouTube may mean staying up later to complete your homework, or even getting lower grades.
- Suppose that a hamburger costs twice as much as fries. Here you may choose the fries and forgo the burger because it does not produce twice the pleasure, utility or satisfaction.
- If you were to regularly gorge on luscious chocolate lamingtons filled with jam and cream, the long-term opportunity cost of this moment of pleasure may be your health.

Opportunity costs for businesses

Firms also have limited natural, labour and capital resources available for use and so they too need to make economic decisions and deal with opportunity costs.

- A business that chooses to produce icy poles may forgo production and profits from the sale of ice-cream.
- A farmer that uses more land and other resources to grow barley may need to reduce the production of wheat or beef.
- A manufacturer that puts extra resources into the purchase of expensive new equipment designed to reduce carbon dioxide emissions and pollution may need to accept lower profits in the short-term.
- An international company that produces cars in Australia less efficiently than in another country may be sacrificing profits and higher returns for shareholders, as well as its future financial sustainability, by continuing to operate its business here.

Opportunity costs for governments and nations

Governments face opportunity costs when they make decisions because their resources are also limited. For instance:

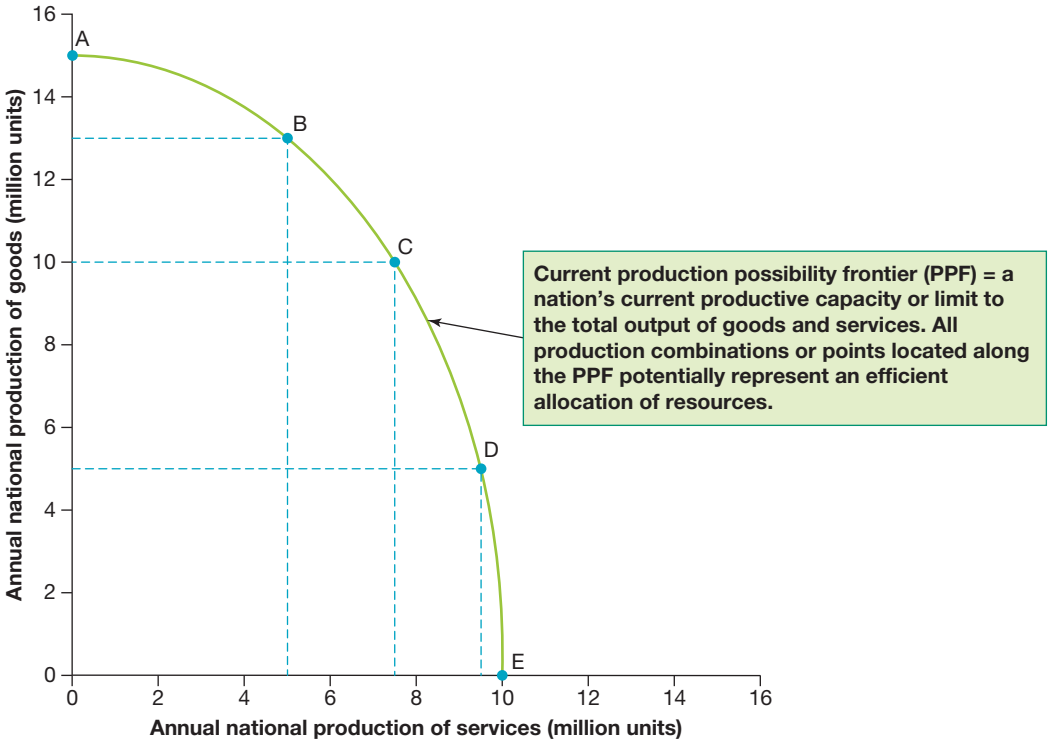
- You might think that governments do not face opportunity costs for increasing spending on defence or welfare because they can simply obtain the necessary money from rises in taxes or by borrowing credit. However, clearly this is not the case since higher taxes mean that the opportunity cost has been passed to firms or individuals that pay taxes, and who are then forced to give up their purchase of something else that can no longer be afforded. Alternatively, if the government has borrowed the necessary money to pay for the provision of these services, the cost may be passed on to future generations who then have to pay higher tax and suffer lower material living standards.
- Opportunity costs would exist in cases where a government decides to protect inefficient local industry from foreign competition by placing taxes (tariffs) on imported items to make them more expensive and the local good relatively more attractive. By encouraging more resources to be used inefficiently, these same resources cannot be employed more efficiently to produce something else. The likely opportunity cost is that the nation's output and living standards will be lower than otherwise because, potentially, production has been forgone. Because of this, governments have tended to reduce tariff protection of inefficient local producers.
- If the government tries to grow the size of the economy so we produce more goods and services with little regard to the environmental impact, the trade-off is likely to be accelerated climate change and even more severe weather events. As a result of this decision, future generations in particular will pay a high economic and ecological cost that will lower their living standards.

1.4.2 The production possibility diagram and its applications

Economists love using models and diagrams to help illustrate and simplify concepts. One such model is the *production possibility diagram* that, among other things, can be used to illustrate ideas such as scarcity, choice in production, opportunity costs, efficiency in the use of resources, a nation's **productive capacity**, unemployment of resources, inflation and living standards.

Let's start our analysis of the **production possibility diagram (PPD)**, illustrated in Figure 1.7, by imagining that this hypothetical country could produce only *two* things with the natural, labour and capital resources at its disposal: goods or services. It could *produce goods* (shown on the vertical axis) or it could *produce services* (shown on the horizontal axis), or combinations of the two.

FIGURE 1.7 The production possibility diagram for a nation — illustrating a nation's limits to production or productive capacity, along with the opportunity costs associated with making economic choices or decisions.



Type of production (i.e. resource allocation)	Some of the nation's efficient production possibilities or output combinations (i.e. A, B, C, D, E) that may be chosen				
	A	B	C	D	E
• Annual production of 'goods' (million units)	15	13	10	5	0
• Annual production of 'services' (million units)	0	5	7.5	9.5	10

Now let's take a closer look at some other interesting features and applications of the PPD shown here in Figure 1.7.

The PPD illustrates a nation's productive capacity

The **production possibility frontier (PPF)** or line in Figure 1.7 traces out the *productive capacity* or *physical limits* of a nation's total production or quantity of goods and services that *could* be supplied. The PPF also shows the country's potential output combinations of goods and/or services. It marks the boundary between *achievable* and *unachievable* combinations of production. The level of productive capacity or *size* of this nation's PPF depends on two things.

- The *quantity* or *volume* of resources available affects our productive capacity. For example, the size of the PPF could grow if there was an increase in the volume of resources, perhaps as a result of new discoveries of mineral resources, population growth due to immigration, or the purchase of more capital resources or equipment.
- The level of *technical efficiency* affects our productive capacity and the size of the country's PPF. Efficiency (i.e. the output gained from a unit of input or resource) might increase over time as a result of businesses applying new technology like robots on an assembly line, or workers increasing their productivity (efficiency or output per worker per hour), skills or training.

Referring to the production possibility diagram and the PPF shown in Figure 1.7:

- **Point A** on the frontier shows where the potential or maximum real level of goods that could be produced, occurs on the PPF. Here, the production of goods is limited to a maximum of 15 million units per year (provided that no services were produced).
- **Point E** on the frontier shows that the maximum possible production of services is only 10 million units per year (provided that no goods were produced).
- Between these two extremes there are many other production possibilities, including **points B, C** and **D**, involving various output combinations of goods and services.

Remember that all points making up the PPF represent a technically efficient and full use of resources, where potential production and employment are at their maximum.

The PPD can illustrate opportunity cost

Any choice or production combination (e.g. A, B, C, D and E) that is located along the PPF involves an *opportunity cost*. That is, output of one type of production (e.g. services) must be sacrificed or given up in order to gain extra resources to lift production in another area (e.g. goods). For example, what is the opportunity cost of a decision by the country to produce at point A? Here, in order to have the maximum of 15 million units worth of goods produced each year, there is the loss of all 10 million units worth of services. Alternatively, a choice made by the country to operate at point E, and to lift the production of services from 0 to 10 million units per year, involves cutting the output of goods from 15 million to 0 units per year. This means that there is an opportunity cost of 15 million units of goods.

The PPD illustrates maximum efficiency in the use of resources

The PPF illustrated in Figure 1.7 shows five different production combinations of goods and services (i.e. possibilities A, B, C, D and E). Each point reflects the highest level of *technical* or *productive efficiency*. In other words, for each possibility the output gained from using the input of resources available is at its absolute maximum. In addition, this means that *potentially* any of these five combinations represent *allocative efficiency* — meaning that the *overall satisfaction of society's wants could be maximised*, ensuring optimal wellbeing or living standards. No one option is necessarily better than any other. In the end, choosing the *best* combination or product mix largely comes down to the *personal values* of those making key economic decisions in an economy — based mostly on *normative* rather than positive economic judgements. For example, point B may be the best option for one country, but another may go for point E to maximise the satisfaction of society's wants and wellbeing.

The PPD can illustrate unemployment and the underutilisation of resources

Unemployment exists when those who want a job can't find work. Looking at Figure 1.8, any point inside the PPF (e.g. at point U), output levels are below the economy's potential capacity or maximum level of production. Low production such as this implies that some resources are not being fully utilised. Put another way, there is unemployment of workers and idle or unused capacity exists in factories, farms and other businesses. Here, we would expect people's incomes and material living standards to fall, and poverty levels may rise.

The PPD can illustrate unachievable output combinations

By contrast to the zone of unemployment located inside the PPF, Figure 1.9 shows that any point *outside* the PPF (e.g. at point) is currently beyond the economy's productive capacity because there are insufficient resources to enable such high levels of output. Any attempt to operate at this level of national production would be likely to cause inflation (where the prices of most goods and services are rising), undermining the purchasing power of wages. This is because there would be general shortages of resources where the demand for goods outstrips their potential supply.

FIGURE 1.8 Using the production possibility diagram to show unemployment in an economy.

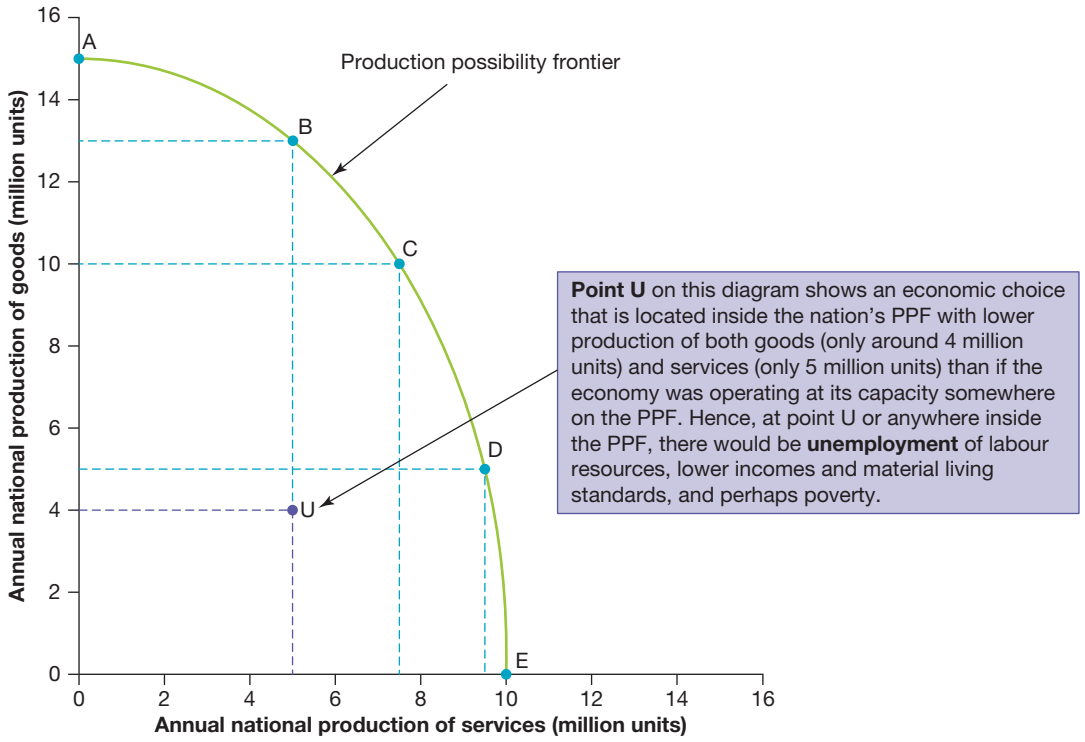
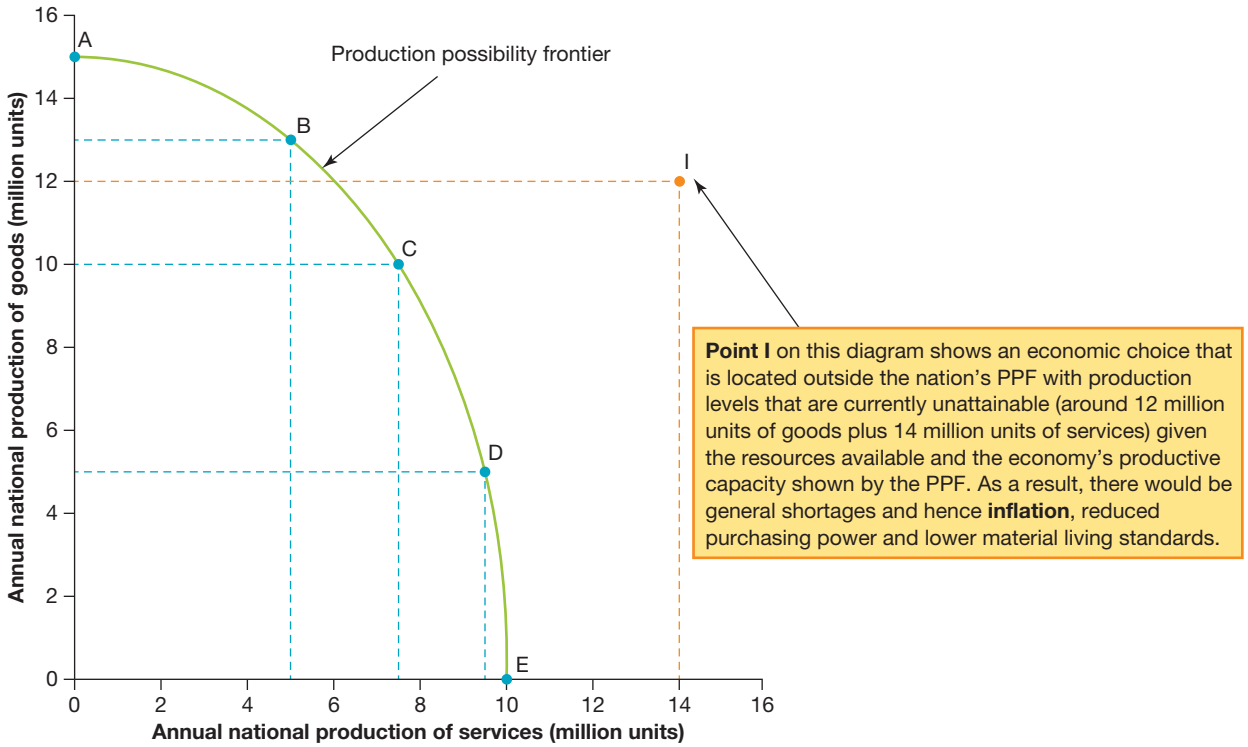


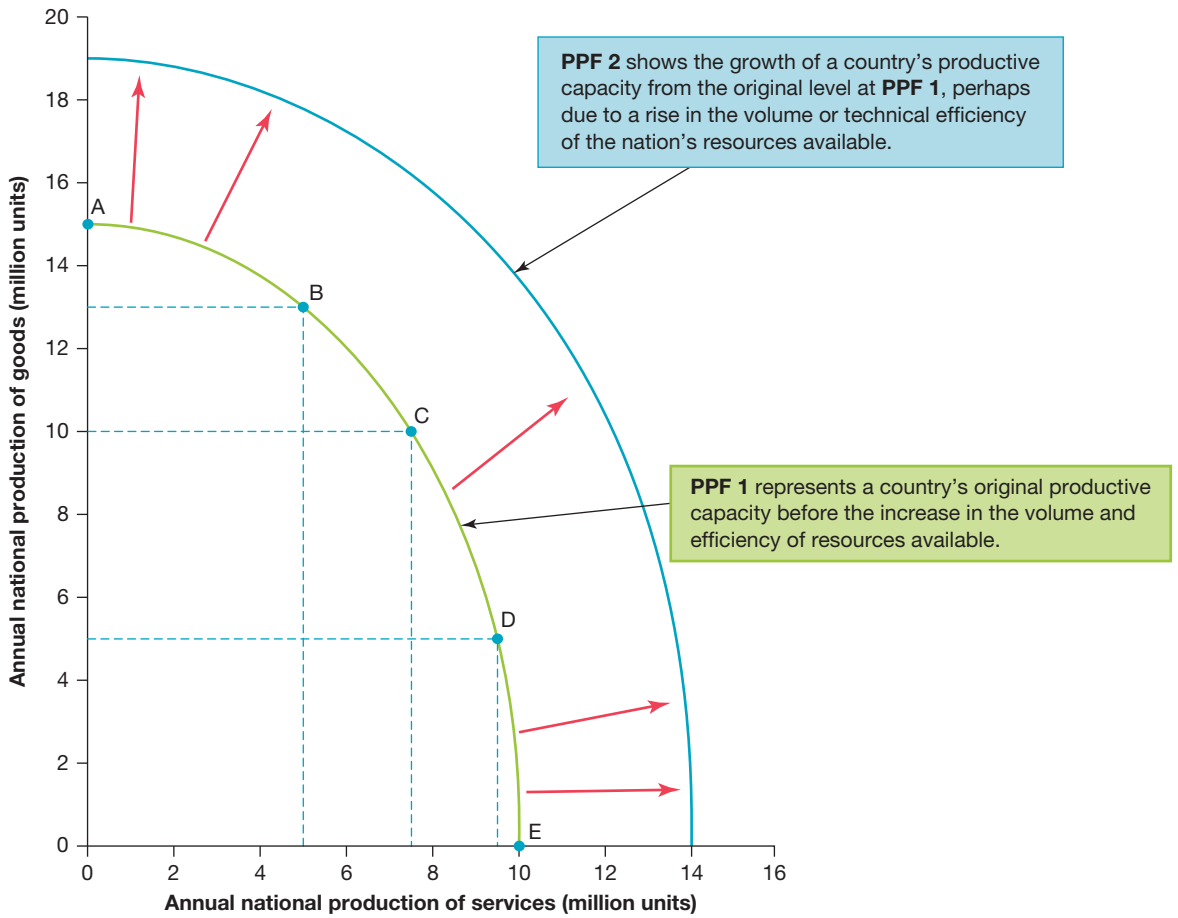
FIGURE 1.9 Using the production possibility diagram to show currently unattainable levels of production in an economy due to the limited resources available.



The PPD can illustrate the growth of an economy

Economic growth occurs when the total volume of goods and services produced *by a nation* rises between one year and the next. For a country already on its PPF, this can happen if the *quantity* (volume) or *efficiency* (quality or productivity reflecting output per unit of input) of resources available to a country increases and there is a rise in technical or productive efficiency. This could occur if there were new discoveries of minerals, better technology, improved worker efficiency, higher levels of foreign investment, immigration of skilled workers, better education or increases in people's skills. Such developments cause a rise in the country's *productive capacity* so that the PPF *(potential* GDP level) grows in size and shifts outwards (perhaps parallel to the original frontier), creating a brand new frontier. This is shown in Figure 1.10 by the shift from PPF 1 to PPF 2. If this occurs, production levels previously unattainable may now become attainable.

FIGURE 1.10 Using the production possibility diagram to show the effect of increasing the volume or efficiency of resources available on the economy's capacity and potential level of national output.



The PPD can help us understand factors affecting living standards

Living standards is a concept used to describe how well-off people are overall. These are affected by both *material* wellbeing and *non-material* aspects.

- *Material living standards* are dictated by our income and the *quantity* of goods and services we can purchase or consume each year.
- *Non-material living standards* relate to the *quality* of daily life and are not directly concerned with how much money people might have. Here, we often think of quality aspects like happiness, low crime rates, long life expectancy, religious and political freedom, peace, a healthy environment, the absence of pollution, involvement in community and so on.

Returning to the PPD shown in Figure 1.10, if the size of the PPF grows at a faster rate than the nation's population, the amount of goods and services produced and income per person should both rise. On average, we should each be able to consume more goods and services. Theoretically, this is likely to make people better off *materially* and raise their *economic living standards*. However, it is also possible that growing the PPF in this way may involve a *trade-off* or cost in terms of reduced *non-material living standards*, potentially as a result of increased carbon pollution of the atmosphere, increased incidence of severe weather events, rising sea levels, poisoning of the soils, rivers and oceans, waste disposal problems, reduced leisure time due to increased work, and the depletion or overuse of non-renewable resources like oil and minerals, leaving less for future generations.

1.4.3 Trade-offs and cost-benefit analysis, and their relationship to opportunity cost

Trade-offs occur whenever individuals, businesses or governments make *choices* between different ways that scarce resources might be used. While some benefit and satisfaction will be gained from a given decision, other things may have to be *foregone* or *given up*; there is a *cost*. In some ways, this concept is a bit like the idea of opportunity cost, but it is a bit broader. Opportunity cost is narrow because it only considers giving up the *one next best alternative* use of our scarce resources. However, trade-offs can involve sacrificing several alternatives.

As economists, we might think of the following examples of *trade-offs*:

- the trade-off between earning more money, or having less stress and more time to spend with family and friends
- the trade-off between promoting faster economic growth and better living standards for the current population, as opposed to the wellbeing of future generations
- the trade-off between having higher wages and material living standards, versus being more internationally competitive
- the trade-off between saving your money for future use, against spending it to satisfy your immediate wants
- the trade-off between the generosity of government welfare support, as opposed to encouraging greater efficiency in our use of labour resources to ensure that government finances remain strong and taxes don't have to rise.

In attempting to fully understand and take trade-offs into account, *economic agents* or decision makers (e.g. individuals, businesses, governments) often use **cost–benefit analysis**. This helps them make better *decisions* that maximise efficiency, satisfaction and wellbeing. So what does this process involve?

- A cost–benefit analysis often starts by researching and consulting with specialists in a variety of fields.
- Next, as shown in Figure 1.11, all the expected direct and indirect costs (e.g. in terms of time, resources, monetary and opportunity costs, direct and indirect) measured over a certain time period are listed and their total value added up. The same is done for all the anticipated benefits.
- As a final step, sometimes a *benefit to cost ratio* is calculated by simply dividing the total value of benefits by the total value of costs. Where the answer is a number that is greater than 1.0, there is a *net benefit*. However, a number less than 1.0 means there is a *net cost*; that is, the decision is not a good one.

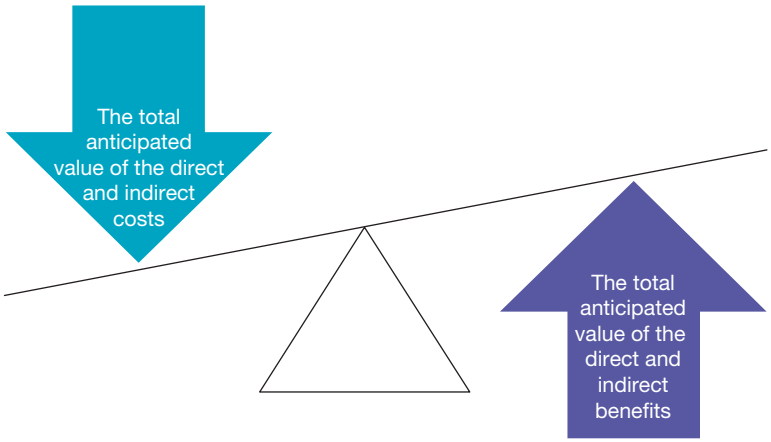
Having said this, conducting a cost–benefit analysis for big projects, can take significant time and money. In addition, some of the expected costs and benefits are extremely hard to value. For instance, what money value might be placed on the loss of a plant or animal species if a road construction project goes ahead? What is the price for the loss of an area of natural beauty, an historical building or a First Nations Australian site of cultural significance? What about the cost of pollution for current and future generations if another coal mining project is allowed to go ahead (or the benefit if it does not)?

Despite the challenges, nowadays, this type of analysis is commonplace and provides an improved basis for making decisions, maximising the satisfaction of wants, and promoting better living standards. For instance:

- *you* might use this approach when making a decision about taking a gap year overseas after the end of VCE
- a *business* would find it useful when choosing between expanding its local plant as opposed to moving offshore to another country

- the *government* could use it when making a decision about a new freeway, the upgrade of the Melbourne–Brisbane rail link, or the expansion of the Snowy Mountains hydro-electric scheme to sustainably boost our power supply.

FIGURE 1.11 Cost–benefit analysis



Resources

Weblinks Individual PPC
Production possibilities curve
PPC and resource changes

1.4 Activities

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1.4 Quick quiz | **1.4 Exercise**

1.4 Exercise

1. **Outline** how economists diagrammatically illustrate the concept of *choice* in economic decision-making, using a production possibility diagram. **(2 marks)**
2. **Explain** what the *production possibility frontier* (PPF) represents, outlining the two *general* factors that dictate the size of a nation's PPF or productive capacity. **(3 marks)**
3. **Identify** and **outline** the important factors or developments that could cause the size of a country's PPF to grow over a number of years and shift outwards on the diagram. **(2 marks)**

4. **Define** the term *opportunity cost*. For each of the following economic groups or agents, provide an original example of how this may apply to decisions made by:
   a. the government **b.** a business **c.** yourself. **(4 marks)**
5. Thinking of the production possibility diagram, **outline** the *problems* that are likely to arise if a country is located:
   a. inside its PPF
   b. outside its PPF. **(3 marks)**
6. Using examples, **explain** how decision makers like yourself, businesses or governments might use the *cost–benefit analysis*. **(2 marks)**
7. This exercise is about *opportunity cost* and the *production possibility diagram*, as it applies to a farmer. **Examine** the data contained in the table below for a farmer who can produce only two products, wheat or oats, with the resources available.

Data relating to a crop farmer's production possibilities

Production type	Production possibility A	Production possibility B	Production possibility C	Production possibility D
Wheat (tonnes per year)	0	90	140	170
Barley (tonnes per year)	70	50	30	0

   a. **Define** the term *resources*. **List** and **explain** the *three* main categories of productive resources required by this farmer to produce crops. For each category of input, define the resource and try to give several specific examples as applicable to crop farming. **(6 marks)**
   b. Use the data in the table above to neatly **draw** and fully **label** the crop farmer's production possibility diagram.
   Your graph can also be completed using your laptop and Excel. **(3 marks)**
   c. **Define** the term *productive capacity*. When referring to this farmer's production possibility diagram, **identify** and **outline** the *two* general types of factor that typically limit the farmer's productive capacity at a given point in time. **(3 marks)**
   d. Referring to your production possibility diagram, **describe** what happens to the maximum production of barley that is possible as the farmer increases the production of wheat. **Explain** why this is the case. **(2 marks)**
   e. Referring to your production possibility diagram, **describe** what happens to the maximum production of wheat that is possible as the farmer increases the production of barley. **(2 marks)**
   f. **Define** the meaning of the term *opportunity cost*. **(1 mark)**
   g. **Calculate** the opportunity cost for the farmer producing or gaining 70 tonnes per year of barley. **(1 mark)**
   h. **Calculate** the opportunity cost for the farmer producing or gaining 170 tonnes per year of wheat. **(1 mark)**
   i. If both crops sell for exactly the same price per tonne, **identify** which of these two crops the farmer is generally most efficient at producing. **Explain** why this is the case and try to calculate how much more efficient the farmer is at producing one crop rather than the other. **(3 marks)**
   j. If the farmer cut total crop production and decided to produce only 50 tonnes of wheat and 20 tonnes of barley per year, **explain** what would happen to the farmer's income and the employment level of resources. **(3 marks)**
   k. **Explain** why the farmer is currently *unable* to simultaneously produce 150 tonnes of wheat and 40 tonnes of barley. **Identify** and **outline** five specific ways in which the farmer might realistically be able to increase total crop production to this higher level in the future. **(6 marks)**
8. This subset of questions is about *opportunity cost*. They are based on *two* case studies:

Case study 1 — Transport options
You are the federal Minister for Transport and Communications and have to choose *one* of the following two best transport options:

Option 1 Provide government assistance of $18 billion to a private consortium to help build a very fast train (VFT) between Adelaide, Melbourne, Sydney and Brisbane	**Option 2** Spend the same amount of money on widening the current highway and building a tunnel to carry an increased volume of trucks and private cars

Case study 2 — Your future options
You are about to start Year 11 and have to choose *one* of the following two best future options for you:

Option 1 Work full-time in a retail shop selling women's clothing where you would earn a steady wage of $40 000 per year	**Option 2** Continue your two years of VCE followed by three years of tertiary study. After five years of education, you will graduate with a degree in commerce. Then you would start on around $70 000 per year and gain rapid rises thereafter.

a. In case study 1, **outline** the opportunity cost of supporting the VFT. **(1 mark)**
b. In case study 1, **outline** the opportunity cost of the freeway upgrade. **(1 mark)**
c. In case study 2, **outline** the opportunity cost of you leaving school immediately and taking up the retail position. **(1 mark)**
d. In case study 2, **outline** the opportunity cost over a five-year period of you staying at school and then going on to university. **(1 mark)**
e. For case study 2, **explain** which option is most attractive economically in the short-term, and which option is most attractive economically in the long-term. **(2 marks)**
f. **Identify** and **explain** the economic concept that these two case studies illustrate and have in common. **(2 marks)**

Solution and sample responses are available online.

1.5 Decision-making in different economic systems

KEY KNOWLEDGE

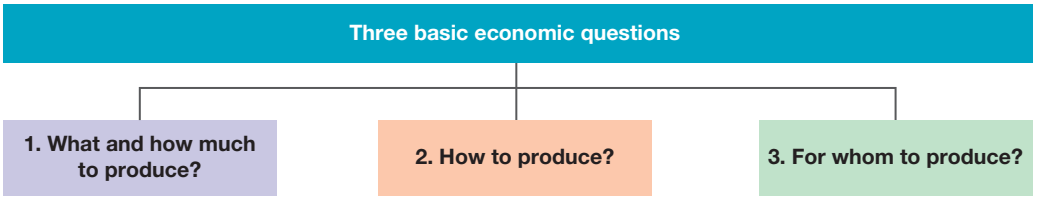
- The three basic economic questions: what and how much to produce, how to produce, and for whom to produce
- How different economic systems, including market economies, planned economies, mixed economies and traditional economic systems, may answer the three key economic questions
- The three-sector, four-flow model of the economy, including consumers/households, producers/businesses and government
- The purpose of economic activity and the effect on material and non-material living standards

Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

1.5.1 Decision-making — the three basic economic questions

All nations face the *basic economic problem of relative scarcity*. Our wants exceed the resources available, limiting national output and the extent to which our wants can be satisfied. Faced with this, all societies are forced to make *choices* and answer the **three basic economic questions** summarised in Figure 1.12.

FIGURE 1.12 The three basic economic questions



1. **The 'what and how much to produce' question**. This question involves making decisions about how resources should be allocated or used so that the right types and quantities of goods or services are

produced. We cannot produce everything in unlimited quantities so, for instance, should we produce rice or fish, guns or butter, education or health, tourism or cars, or perhaps childcare or aged homes?

2. **The 'how to produce' question**. This question is about deciding the best types of production methods to be used in making goods and services. Should this be done by using lots of labour, or by using robots and machinery, or some combination of the two?
3. **The 'for whom to produce' question**. This involves how the goods, services and incomes that are produced in the economy will be divided or shared between individuals. For instance, should they be distributed evenly, or is some inequality a good thing?

At this point, you may well ask how are these three questions answered, and who or what makes the key economic decisions? The answer is that it depends on the *type of economic system* or economy that a country has adopted, of which there are four main categories — traditional, market, planned and mixed economies.

1.5.2 How different economic systems answer the three basic economic questions

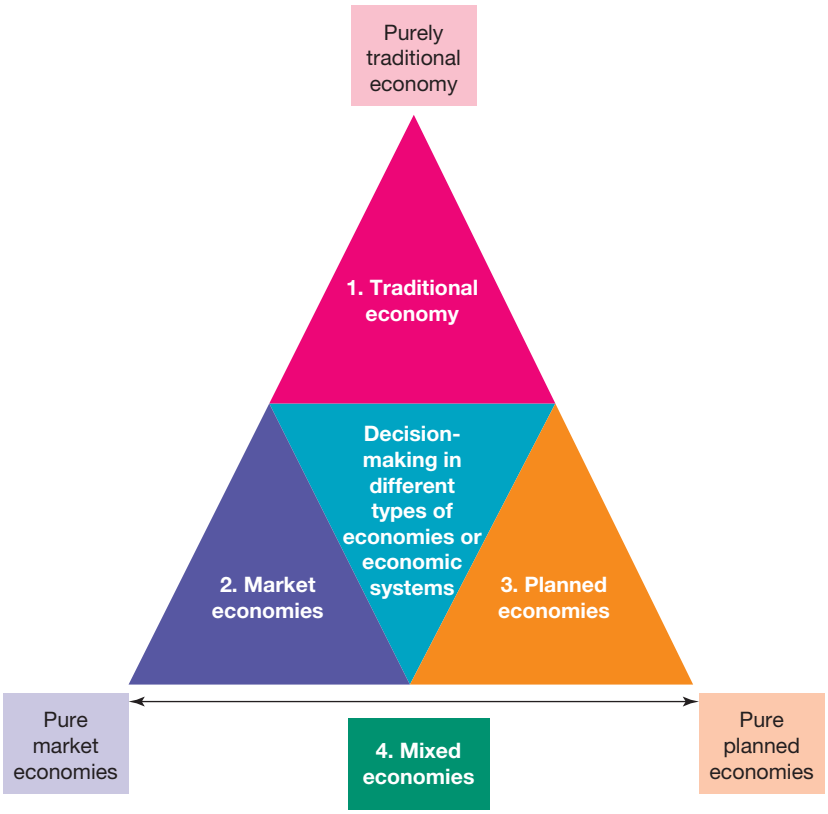
An economic system or economy involves a collection of national institutions or organisations that coordinate the production and distribution of goods, services and incomes amongst the population. Let's now take a quick look at each of the *four* types of systems, and see how each answers the three basic economic questions.

Figure 1.13 shows that there are *three* main types of economic systems and *one* hybrid:

1. Traditional economies
2. Pure market economies
3. Pure planned economies
4. Contemporary mixed economies (a hybrid).

Let's now take a closer look.

FIGURE 1.13 The main types of economic system used to make key economic decisions

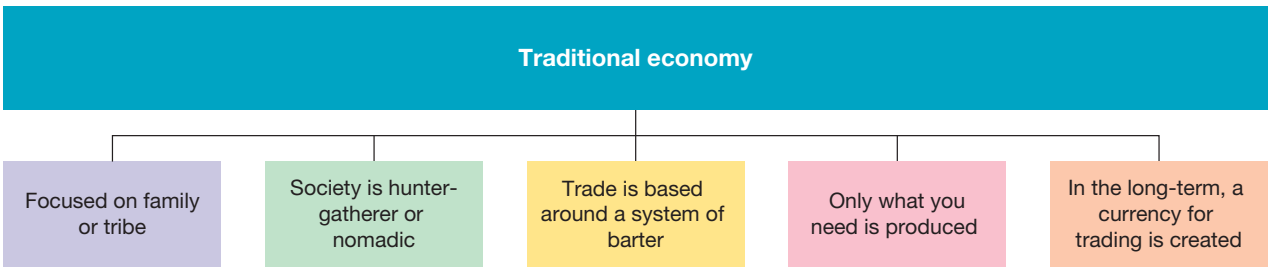


Traditional economies

Traditional economies today are those that exist only in pockets of other economies, mostly in remote parts of Africa, Asia and South America. Here, the *three* basic economic questions are answered by families and tribes guided by long-established and time-honoured customs:

- **The 'what and how much to produce' question:** The *type* of goods and services produced is dictated by what has always been produced. Usually this involves making essential goods and services required for survival — food, clothing, shelter, basic household items and implements for production. However, changes in climatic and seasonal conditions, like the onset of winter in colder regions, have a huge impact on the *quantity* of goods and services able to be made, so living standards are low. If there is surplus production (and this is rare), items are usually swapped using a barter system, rather than money.
- **The 'how to produce' question:** Production methods in traditional economies are usually very basic. They are labour-intensive (production uses mostly labour resources) rather than capital-intensive (using machinery and technology). With only a limited use of basic tools for hunting and gathering, productivity or output per person per day is extremely low, even though nearly all family members are expected to work. Low productive efficiency depresses consumption levels and living standards.
- **The 'for whom to produce' question:** Once the goods (including food) have been produced, they are distributed or shared amongst the family or tribe, according to the well-established formula. For instance, often this reflects an individual's status or seniority in the group. In addition, because there is no government welfare system, the very young and old who are unable to gather food or produce other needed goods depend on the generosity of others for their survival. Because productive efficiency is low, and output and consumption levels are near subsistence, conditions are harsh and life expectancy is relatively short.

FIGURE 1.14 Five features of a traditional economy



Market economies

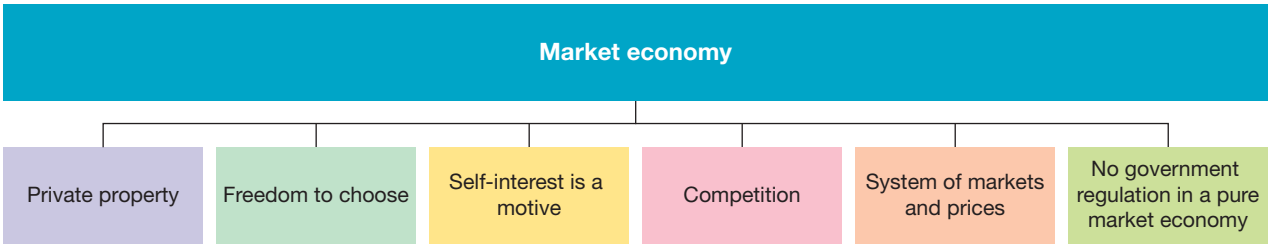
A **pure market economy** relies solely on the operation markets where buyers, sellers and a system of prices answer the three basic economic questions. Self-interest, competition and private ownership of resources (the *private sector*) are important elements in this type of economy. There is no government interference in the free operation of markets. These days, no country has a pure market economy. Most have *mixed economies* where there is a limited degree of government intervention designed to reduce some of the shortcomings of the pure market. However, over the centuries, close approximations (but not exact) can be found (e.g. at one stage Hong Kong and the USA).

- **The 'what and how much to produce' question:** Pure market economies answer the '*what and how much to produce question'* in the following ways:
  - There is *consumer sovereignty* because what people buy or don't buy determines the *types* of goods and services that businesses produce.
  - When consumers choose one good or service over another, their decision is reflected by changes in the *price* of one product relative to that of another (i.e. **relative prices**).
  - For example, when the relative price of one good or service is driven up by strong consumer demand, this shows that people want more of this item produced. Profit-seeking firms and those owning resources

respond to this signal by producing a greater quantity, simply because it is now relatively more *profitable* than previously.
    - In reverse, if consumers stop buying a product and it is no longer wanted, its relative *price* and hence *profitability* will fall. This causes firms to cut their production and reallocate scarce resources elsewhere.
    - In this economy, only the most wanted and profitable goods and services are produced so, in theory, *allocative efficiency,* satisfaction of wants and living standards should be maximised.
- While a pure market approach to decision-making usually allocates resources efficiently, there are some *exceptions*. As we shall soon see, *market failure* can occur where resources are not allocated in ways that maximise consumer satisfaction or society's general wellbeing. In these special cases, government intervention or regulation is required, shifting the economy from a pure market to a mixed economy.
- **The 'how to produce' question**: In answering the *'how to produce question'* about production methods, pure market economies again rely on the operation of the price system to provide firms with the necessary information to make their key economic decisions:
    - Businesses are privately owned (i.e. the private sector) and, when making decisions, are self-interested.
    - Firms therefore seek to maximise their profits by minimising production costs. They try to use the cheapest resources and production methods available to produce the best product at the lowest price, relative to their rival competitors in the market.
    - The operation of markets, involving buyers and sellers of resources who negotiate the relative price of each input or resource, provides businesses with the necessary information to select the best, most efficient or lowest cost production methods available. That is, to survive the competition, firms are forced to produce efficiently.
    - So, for example, if staff wages (i.e. the price of labour resources) in the labour market were relatively expensive, business owners would naturally look for cheaper ways to make their products — perhaps using capital resources, machinery and the latest technology. This approach helps to grow technical efficiency and hence the economy's productive capacity (i.e. the size of its PPF).
- However, in some instances there is *market failure*. Here, the decisions made by profit-seekers to keep costs down can sometimes reduce society's general wellbeing. For example, there may be a temptation for firms to maximise their profits by making products using cheap but dangerous methods that harm workers or the environment. Possibly, too, they may collude with other rival firms to restrict competition so they can charge higher prices. Again, reducing market failure will require some government intervention or regulation and a move from a pure market to a mixed economy.
- **The 'for whom to produce' question**: The pure market economy relies solely on the *price system* to answer the *'for whom to produce question'* — that is, to determine how goods, services and incomes are shared or *distributed* amongst individuals making up the economy:
    - In a market economy, the level of wages (i.e. the price of labour resources) and incomes is determined by buyers and sellers. In other words, the market puts a price on the economic contribution of each individual towards the production process.
    - For instance, those who sell scarce or wanted resources (e.g. those with special skills or talents) and who work longer hours will be rewarded with higher prices or wages for their labour. In contrast, those who have few skills wanted by businesses will be paid lower wages. The unemployed and aged would receive no income, since in a pure market economy there is no government intervention.
    - In turn, the level of wages and incomes received by each person dictates how goods and services are shared, thereby affecting material living standards. Those on higher incomes would be able to buy more than those on lower wages. There would hence be much economic and social inequality.

While pure market economies are fair in one sense because they reward those who make a bigger contribution towards production more generously, an important weakness is that they result in great social and economic inequality where the rich get richer and the poor get poorer. To help reduce inequality, government intervention is needed. This involves a shift towards a mixed economy.

FIGURE 1.15 Features of a market economy



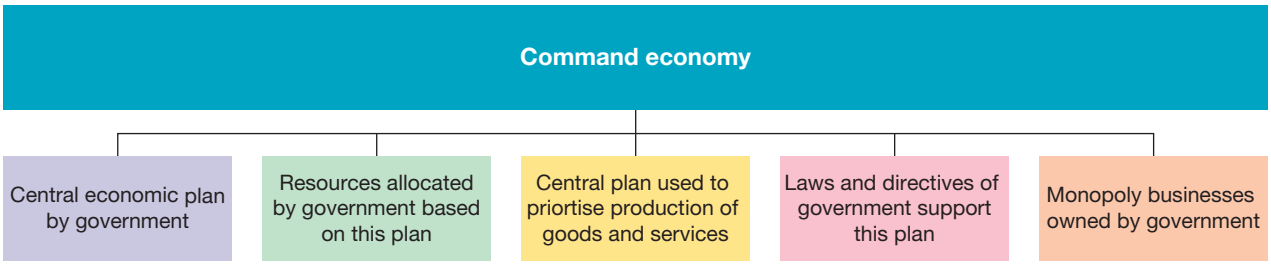
Planned economies

Purely planned economies rely entirely on powerful and often non-democratic, dictatorial, central governments to make key economic decisions about what, how, and for whom to produce. Typically, all businesses are government-owned and make up the *public sector*. While there are no examples of *purely* planned economies today, North Korea comes fairly close. Previously, China, Cuba and the USSR (including Russia) operated systems approximating this approach.

- **The 'what and how much to produce' question:** To answer the *'what and how much question'* relating to the *type* and *level* of output to be produced, the central government relies on its planning agency to work out production targets for all types of products considered important (e.g. education, defence, transport, steel and grain). This typically involves one- and five-year plans. It is a top-down approach controlled by the central elite. Orders are dispatched and government-owned enterprises follow the central command and attempt to meet their production targets. Consumers have no freedom or choice in what is produced, since it is assumed that the government knows best what people need and want. Weaknesses of this approach include the lack of consumer freedom and low allocative efficiency and poor satisfaction of wants.
- **The 'how to produce' question:** Because enterprises are government-owned monopolies with no rival competitors, technical efficiency is often low. Typically, business enterprises have little incentive to cut their production costs, since personal gain or profit is not the main driver of decisions. A failure of this system is that there is a lack of innovation and adaptability in the production methods used, slowing efficiency, limiting productive capacity and restricting the size of the nation's PPF.
- **The 'for whom to produce' question:** Planned economies often seek to answer the *'for whom to produce question'* by attempting to *reduce* income inequality. They do this in two main ways. First, the government directly sets the level and spread of wages rather than leaving this to the market or price system. Secondly, the government usually provides essential goods and services, like health, education and housing, free of charge or at a low cost. Their intention is to increase living standards for all people. A possible downside of the system is that the removal of incentives to work hard, improve skills, and take business risks, tends to depress efficiency, output, incomes and hence living standards.

Because purely planned economies have failings or weaknesses, there is a need to incorporate some reliance on the market to help improve efficiency in resource allocation and decision-making.

FIGURE 1.16 Five features of a command economy



Mixed economies

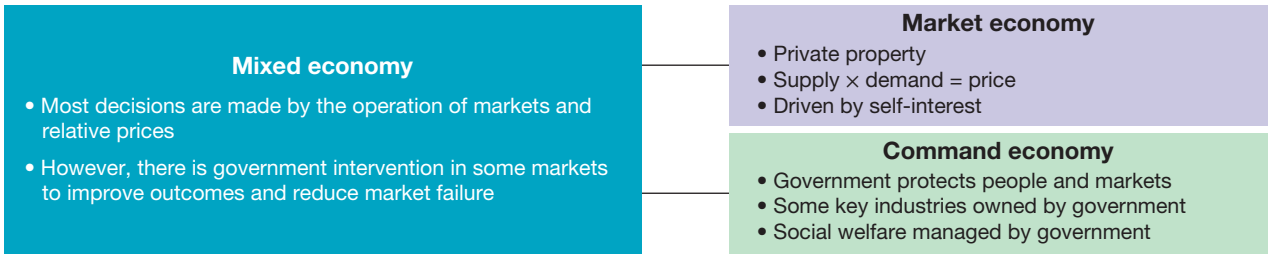
Mixed economies (also called *contemporary market economies*) are a hybrid. They involve combining *most* of the features of market economies (i.e. the ideas of competition, the price system, self-interest, **consumer sovereignty**, private sector ownership of most businesses, and reliance on incentives) with *some* of the features of planned economies (e.g. government or public sector ownership of selected enterprises, the provision of some essential goods and services like education and health, influence in setting minimum wages, the promotion of strong competition, and the enactment of laws). So, mixed economies typically have both a dominant *private sector*, as well as a less important government or *public sector*.

One reason for incorporating *some* government planning and intervention in decision-making is that although the free or unregulated market usually does a great job in allocating scarce resources efficiently, sometimes *market failure* occurs that lowers the general wellbeing and living standards of society. In such instances, *government intervention* can reduce these failures and disadvantages of a pure market economy. However, too much interference by government can mean limiting the advantages of the market. It's a matter of striking the right balance. Today, most of the major economies of the world are classified as *mixed* (e.g. USA, Japan, India, Republic of Korea, Australia, Germany, UK, France, Italy, Argentina, Brazil, Canada, Indonesia, South Africa, Russia and even China). However, having said this, not all mixed economies are identical. Some countries have a greater degree of government planning and regulation than others or, put another way, rely a bit less on the free operation of the market to make key decisions.

- **The 'what and how much to produce' question:** Mixed economies decide the type and quantity of goods and services produced through a combination of the market and consumer sovereignty, along with some government intervention.
  - Faced with the problem of relative scarcity, mixed economies rely mostly on consumer sovereignty, price signals, competition, and the profit motive to make choices about the type and quantity of specific goods and services to be produced. This is because markets, rather than governments, are usually better able to direct resources into areas that maximise consumer satisfaction and society's general wellbeing.
  - However, as mentioned, sometimes a heavy reliance on the free operation of the market or price system used to guide resources into the areas of production that are most wanted results in poor outcomes and inefficiency — wellbeing is reduced. This is called *market failure*.
  - Correcting market failure requires some *government intervention* to re-direct resources into areas of production that help maximise consumer satisfaction and society's general wellbeing. For example, in the free market, businesses are happy to produce any goods or services that are most wanted and are profitable. One problem of this is that in the absence of government laws or regulations, it is likely there would be the *overproduction* of *socially harmful* yet *profitable* things (e.g. dangerous drugs, guns, pollution and prostitution). The government could correct this through passing *laws*, banning or restricting specific goods, or by placing a tax on certain potentially harmful products. This tax would make these goods more expensive to purchase, thereby cutting consumption (e.g. the excise tax on cigarettes and alcohol). Informative *advertising campaigns* would be another government option to educate consumers of the dangers associated with some decisions (e.g. Australia's drink driving campaign, the quit smoking campaign).
  - At the same time, it is also possible that businesses making up the private sector will *under-produce socially beneficial* goods and services (e.g. education, low-cost housing, national defence, affordable healthcare). This is because such things are often very expensive to produce. To make profits, firms cannot sell their products cheaply so that everyone can afford them. The government can solve this failure by using the money collected from taxes, to directly provide some goods and services free of charge or at a lower cost to consumers through the public sector.

- **The 'how to produce' question:** In mixed economies, *how* goods and services are produced is determined mostly by individual firms making up the private sector, with a sprinkling of government-owned enterprises:
  - Private businesses would seek to maximise their profits. Here, competition from rival firms normally means that businesses will try to deliver the best product at the lowest price. To do this, they must employ the most efficient production methods and use fewer resources than their rivals to keep costs down and profits up. The operation of markets usually enables this to occur. However, in the absence of at least some government regulation, market failure can occur. For instance, some private firms may want to cut their costs and boost profits by having dangerous working conditions or releasing pollution into the atmosphere, because these methods are relatively cheaper and more profitable.
  - To solve this weakness, there is some government regulation of production methods (e.g. perhaps enforce occupational health and safety standards, or pass laws about emissions and waste disposal).
- **The 'for whom to produce' question:** In mixed economies, the *'for whom to produce question'* is again answered by a combination of market forces and some government intervention.
  - In general, the distribution of incomes, goods and services largely reflects the market value of resources sold. Those selling wanted and scarce resources receive the highest incomes (e.g. skilled surgeons, successful entrepreneurs and well-known pop stars and sportspersons). This means that they can purchase more goods and services. In contrast, lower wages and incomes would go to people who were unable to work or who had few skills. They would be less able to purchase goods and services. In other words, there would be considerable *inequality* in incomes and living standards.
  - In order to correct this problem and *narrow the income gap* a little between the rich and poor, the government uses *progressive taxes* on the rich (i.e. where the tax rate rises with income). In addition, there are government *welfare payments* to the neediest individuals (e.g. the aged, the unemployed), along with the provision of free or cheap community services like health, housing and education. Yet another option commonly used to reduce income inequality is to set *minimum weekly wages* that help to provide income sufficient for workers to enjoy reasonable living standards.

FIGURE 1.17 Features of a mixed economy



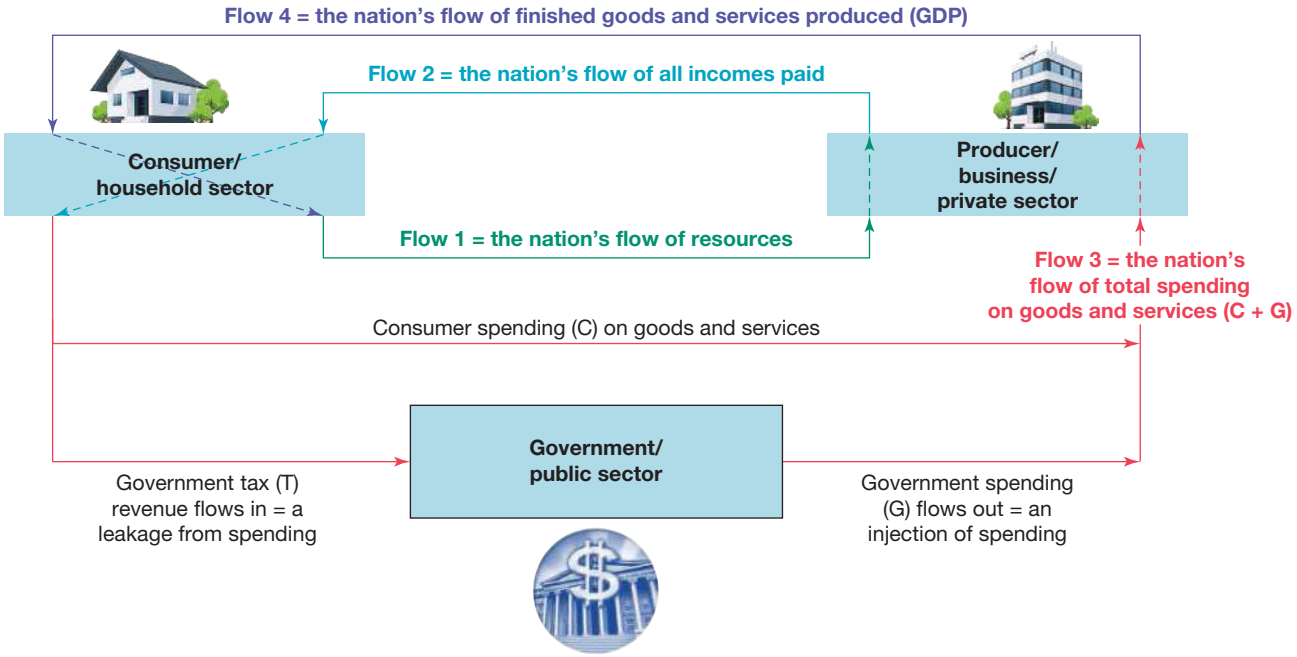
1.5.3 Using the three-sector circular flow model to understand how the economy works to organise the production and distribution of goods and services

As mentioned, Australia has a *mixed economy* designed to coordinate the production and distribution of goods, services and incomes. While the market is given much freedom to operate and make key economic decisions, a limited level of government intervention is needed to help overcome instances of *market failure* and improve the general wellbeing of citizens.

Australia's economy is a very complex with thousands of moving parts. These parts interact. Changes in one area can bring about variations in another. To improve our understanding of how our economic system operates to produce goods and services, economists have constructed *models* to represent the economy. While

all models have limitations and are not totally realistic, they are, nevertheless, helpful. One such diagrammatic representation of the economy is the basic **three-sector circular flow model** shown in Figure 1.18.

FIGURE 1.18 The simple three-sector circular flow model representing Australia's mixed economy



As the name says, the *flows* of money, goods and services in this model move around anti-clockwise in a *circular* way, as the *three* main *sectors* (often referred to as *economic agents*) interact with each other to produce goods, services and incomes:

- The **consumer or household sector** consists of over 26 million Australians. All these people are *consumers* or buyers of goods and services, but some are also the owners or suppliers of resources.
- The **producer or business sector** in Australia comprises around 2.5 million large, medium and small firms making goods and services (from sole traders like the corner shop to large public companies like Wesfarmers, BHP and the Commonwealth Bank of Australia). Most of these are privately owned and hence make up the *private sector* of the economy.
- The **government or public sector** includes the activities and decisions of federal, state and local authorities. This group collects various taxes and other revenue from those households earning income, and then uses these to help pay for government spending on the provision of goods and services for the community (e.g. public roads, health, education, transport and housing). The economic activities of government make up the *public sector* of the economy.

Notice, too, that the model contains *four* main *flows* or types of transactions within the economy. These connect the household, business and government sectors. These flows are *equal* in dollar value. They are also *interdependent* so that when one flow changes, there is a knock-on effect, changing the value of the other flows.

- **Flow 1 — the nation's supply of resources**: The *household sector* supplies or sells wanted resources (i.e. natural, labour and capital resources) to the business sector. Resources are normally sold through *resource markets*.

EQUALS

- **Flow 2 — the demand for resources and the payment of national incomes**: Businesses need to buy or demand resources from the household sector to produce goods and services that are designed to help satisfy our wants. This involves businesses paying incomes to households through resource markets. If firms want to lift production, they usually buy more resources and pay more in incomes.

EQUALS

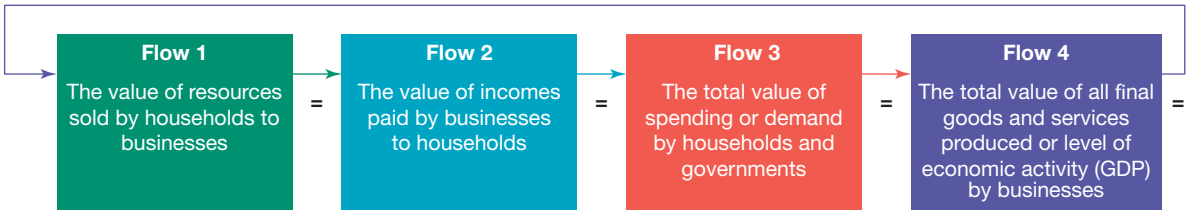
- **Flow 3 — the nation's spending of incomes or demand for goods and services**: In this simplistic model, spending is undertaken by both households (C), and by governments (G). After paying government taxes (T) on incomes, households spend the leftover money to purchase finished goods and services. The government also uses its income from taxes collected to spend on the provision of goods and services for the community. The sum of private and public spending makes up total spending that is often referred to as aggregate demand (AD).

EQUALS

- **Flow 4 — the production of final goods and services or the nation's GDP**: In response to changes in spending by consumers and governments, businesses adjust their production, altering the level of economic activity. For an economy, the size of this flow is commonly measured by gross domestic product (i.e. GDP equals the total value of finished goods and services produced by a nation over a year).

In this simple but partly unrealistic model of our economy (where, for example, there is no overseas trade or the saving of income), these four flows are of *equal value* (measured in dollar terms). As shown in Figure 1.19, this also means that the four flows are *interdependent*, so if the size of one flow changes, the others must also adjust either upward or downwards in value to again restore *equality* between the flows.

FIGURE 1.19 Relationships between the four flows in a three-sector circular flow model representing a simple economy



- If, for example, households and governments decide to spend a total of $1500 billion on finished goods and services per year (flow 3), businesses would attempt to produce $1500 billion worth of finished goods and services or GDP (flow 4) requiring that firms purchase $1500 billion worth of resources (flow 1), for which they pay households a total of $1500 billion of income (flow 2). Notice that the four flows are equal in value.
- However, if households and governments collectively decided to *cut their spending* on finished goods and services to just $1400 billion (flow 3), firms would together reduce the total value of national production or GDP to $1400 billion (flow 4). There would be a **contraction** in the level of **economic activity**, possibly even a **recession**. Firms would also decrease their purchases of resources to just $1400 billion (flow 1), households would receive only $1400 billion of income, and some individuals may even lose their jobs and become unemployed (flow 2).
- By contrast, if households and governments *increased their spending* to $1600 billion (flow 3), firms would try to lift production or GDP, and the employment of resources and incomes would rise to $1600 billion (flows 4, 1 and 2). This would lead to a period of economic **expansion**, possibly even a **boom** where general prices paid for items would start to rise if spending became too strong, outstripping the economy's resources or capacity.

FIGURE 1.20 When the total value of spending on Australian-made goods and services by households and others is down, businesses cut production or even close down. This causes the level of national production and the number of jobs to fall and unemployment of labour resources to rise, as during the Great Depression of 1929–1933. A nation will then be located somewhere inside its production possibility frontier.

Again, referring to the basic three-sector circular flow model, we have seen that the level of production or *economic activity* in a country can rise and fall following changes in total spending or aggregate demand. Figure 1.21 illustrates this instability, hypothetically, using the **business cycle diagram**.

Notice that there are *four phases* making up the business cycle in the level of economic activity:

- The *boom* or peak in economic activity is caused by excessively strong spending that eventually leads to inflation or generally rising prices
- The *slowdown* in economic activity occurs as spending starts to fall
- The *recession* is where economic activity drops, GDP shrinks, unemployment rises and incomes fall
- The *recovery* in economic activity occurs as spending again starts to expand.

We will soon see that as economic activity changes in this cyclical way, living standards are also affected, for better or worse.

FIGURE 1.21 The business cycle diagram: how changes in economic decisions made by households, businesses and governments can affect the nation's level of economic activity

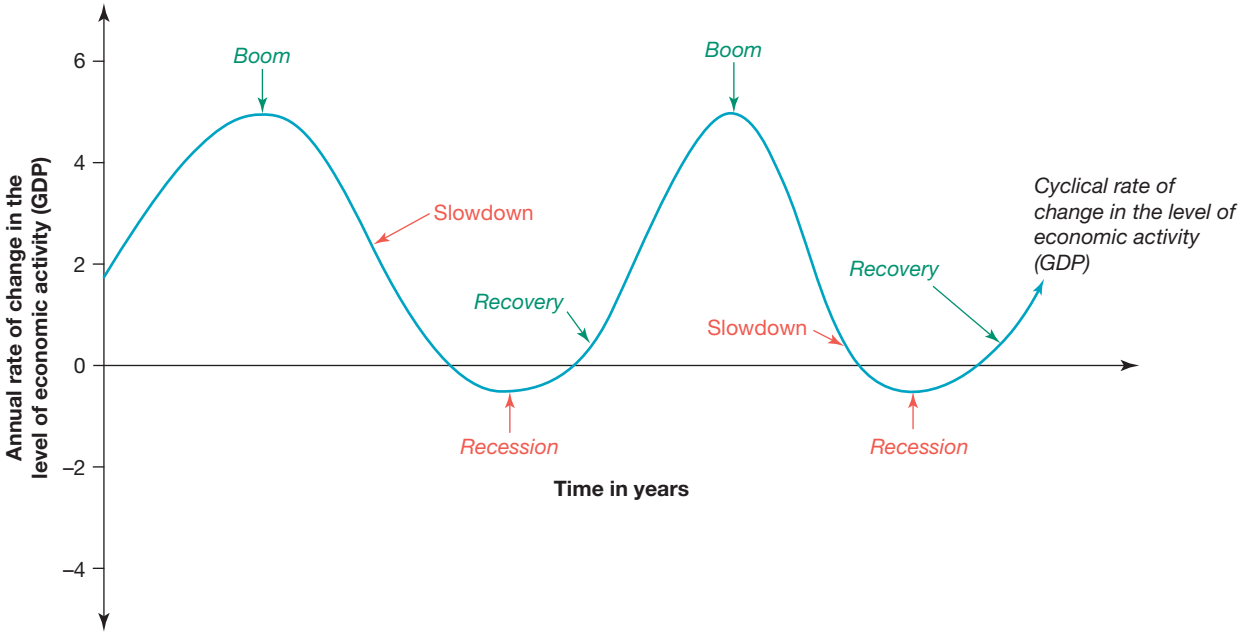
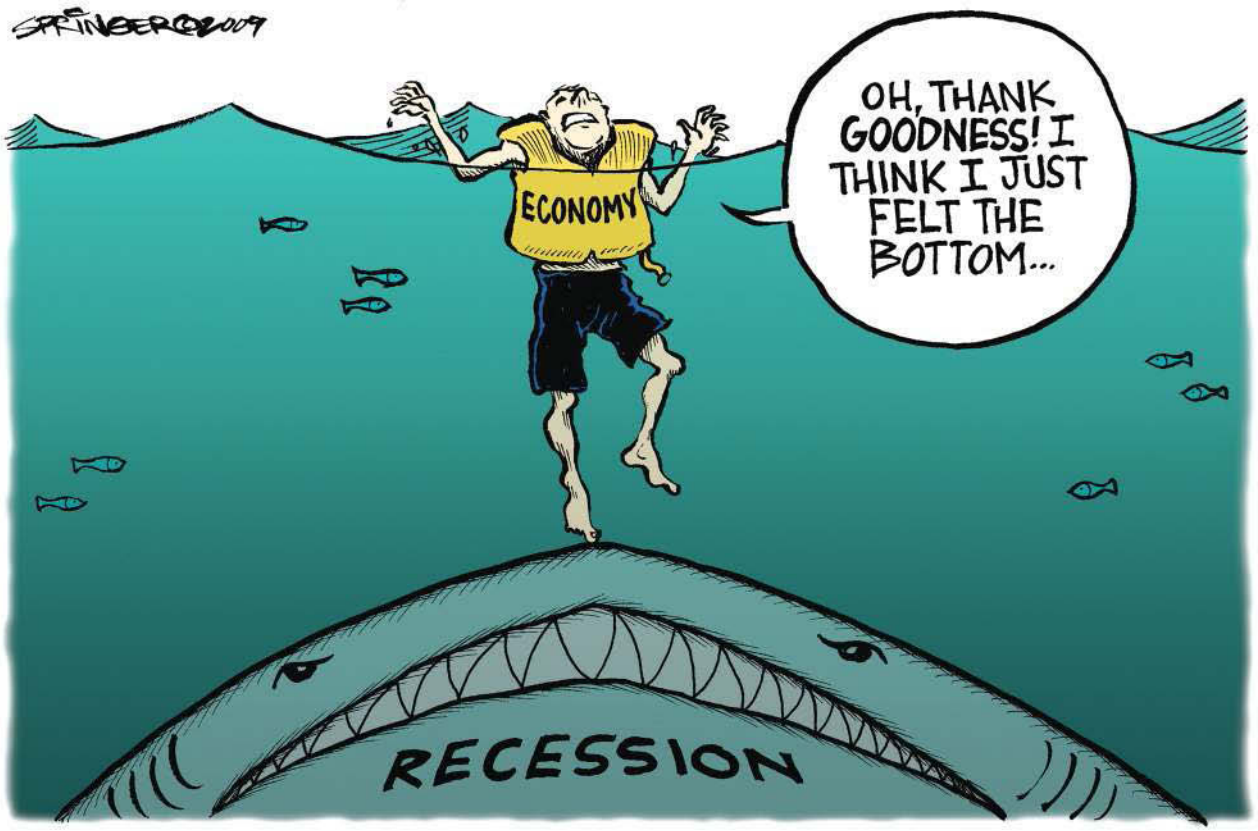


FIGURE 1.22 A recession represents a drop in economic activity with at least two negative quarters (i.e. over a period of at least six months) of GDP growth. Unfortunately, in this economic situation, most people suffer and their living standards fall due to rising unemployment, and a drop in average incomes and purchasing power. Without jobs, some individuals and families cannot afford to buy basic goods and services.

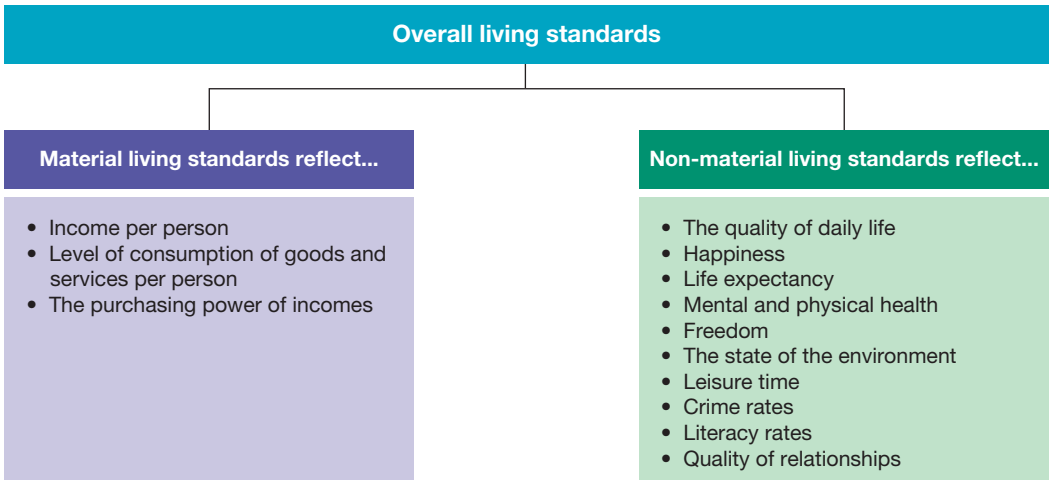


1.5.4 The purpose of economic activity and its effects on material and non-material living standards

In all economies, the main *purpose* of *economic activity* or production is to help satisfy society's many needs and wants using the limited resources available. We have just seen that the pace of economic activity typically moves in a *cyclical* way, in response to changes in national spending — with periods of expansion and contraction. In this section, we will take a quick look at how these ups and downs in activity affect society's living standards. Living standards relate to society's general level of *wellbeing*. As shown in Figure 1.23, there are *two* main elements that affect our general or overall living standards:

- *material living standards* are affected by the annual average level of income and consumption per person
- *non-material living standards* reflect the quality of daily life.

FIGURE 1.23 Factors affecting our living standards



The effects of higher levels of economic activity on living standards

- ***Material living standards:*** When the pace of economic activity gets *stronger* and rises more quickly (but not so fast that there is an inflationary boom that leads to rising prices and reduced purchasing power), this tends to *strengthen* material living standards. Thinking of the circular flow model, this is because higher production results in increased employment of resources. This leads to higher average per capita incomes, boosting consumption spending.
- ***Non-material living standards:*** Most aspects of non-material welfare also benefit from *higher* levels of economic activity. For example, when production is expanding, the unemployment rate falls while incomes rise. Typically, this helps to reduce stress and social isolation, strengthen mental and physical health, and improve the quality of relationships. Even so, environmental outcomes are likely to suffer because of increased pollution, accelerated climate change and the faster depletion of non-renewable resources.

The effects of slower levels of economic activity on living standards

- ***Material living standards:*** When the economy *slows* and perhaps slips into recession, this undermines material living standards. Again, thinking of the circular flow, as firms cut production, unemployment of resources increases, reducing average incomes and consumption.
- ***Non-material living standards:*** Lower levels of economic activity cause higher unemployment and reduced incomes. This mostly undermines the quality of life and our non-material living standards. One problem is that high unemployment often leads to social isolation, reduced mental and physical health, unhappiness, possibly higher crime rate, increased stress and feelings of personal failure. However, a possible upside is that there is less pollution and pressure on the environment.

on Resources

Weblinks The circular flow model of a market economy
Circular flow
Circular flow matrix

1.5 Activities

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1.5 Quick quiz on

1.5 Exercise

1.5 Exercise

1. This set of questions is about *economic systems*:
   - a. **Define** the term, *economic system*. **(1 mark)**
   - b. **Outline** the *three* basic economic questions that all economic systems must answer. **(3 marks)**
   - c. **Contrast** a pure market economy from a purely planned economy. **(4 marks)**
   - d. **Explain** what is meant by *market failure* that can occur in free or pure market economies. **(2 marks)**
   - e. These days, most countries have mixed economies. **Outline** what is meant by a *mixed economy*. **(2 marks)**
   - f. For each of the following areas, **identify** and **outline** one important market failure and suggest how government intervention in decision-making can help to overcome the problem:
     - i. answering the *what and how much* to produce question
     - ii. answering the *how* to produce question
     - iii. answering the *for whom* to produce question. **(3 marks)**
2. This question is about the simple *three-sector circular flow model* for a *mixed* economy:
   - a. **Describe** the operation of this circular flow model. **(3 marks)**
   - b. **Distinguish** the roles of the *household or consumer sector* from those of the *business or producer sector*. **(2 marks)**
   - c. **Outline** the main purposes or roles of the *public* or *government sector* in this economy. **(2 marks)**
3. This is a *problem solving task*. Assume that the small African country of Zenophobia originally had a GDP equal to $3 million in 2023. Referring to parts of a three-sector circular flow model for Zenophobia, **explain** logically, using the correct order or sequence, what would happen to the country's *economic conditions* (i.e. production, employment of resources, incomes and living standards) given each of the following hypothetical events:
   - a. Households and governments decide to reduce their spending to $2.6 million. **(3 marks)**
   - b. The value of GDP increases to $3.9 million. **(3 marks)**
   - c. There is a dramatic rise in the total value of income paid to households by $1.1 million. **(2 marks)**
4. The following *application question* is about economic systems. Imagine you and your friends were stranded on an uninhabited tropical island, without any provisions or money:
   - a. To survive, **identify** the three basic economic questions or choices your group would have to answer. **(3 marks)**
   - b. To organise the production and distribution of goods, services and incomes, **describe** which one of the four types of economic system you believe would be best suited to answer the three basic economic questions. **Justify** your choice of system. **(2 marks)**

Solution and sample responses are available online.

1.6 Consumers and their behaviour as economic agents

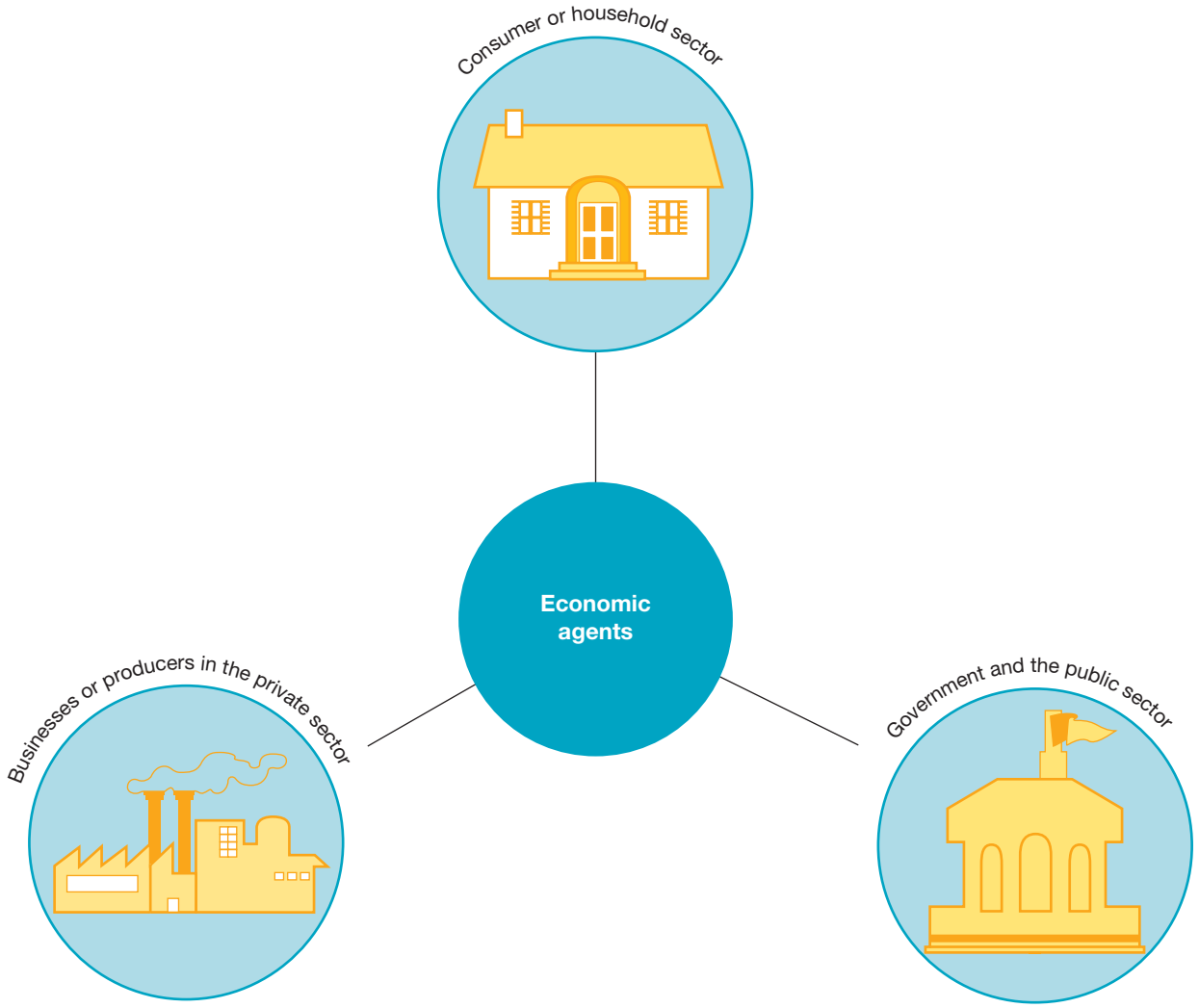
KEY KNOWLEDGE

- Economic agents and the concept of the public and private sectors of the economy
- The traditional economic viewpoint of consumer behaviour: self-interest, maximisation of utility, rationality, informed decision-making and marginal benefits from consumption
- The ways consumers and workers might respond to incentives and disincentives, including taxes and tax rebates, subsidies and regulations

Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

Using the simple three-sector model of a *mixed economy* (like we have in Australia), we have seen that there are *three* main decision makers that play important roles. We call these groups **economic agents**. They include the following:

- Consumers or household sector
- Businesses or producers that make up the private sector
- Government activities and enterprises that make up the public sector.



Over the next few sections, we will look at the factors motivating and affecting the *behaviour* of each of these sectors, starting with *consumers*.

As a study, **consumer behaviour** looks at why, how, where and when consumers choose to purchase or not purchase a good or service.

In an attempt to understand what makes consumers tick, it draws on ideas from psychology, anthropology and economics.

There are over 26 million people making up Australia's household sector, and every one of them is a *consumer* of goods and services. As mentioned, we will attempt to understand consumer behaviour and what motivates them to spend or not spend.

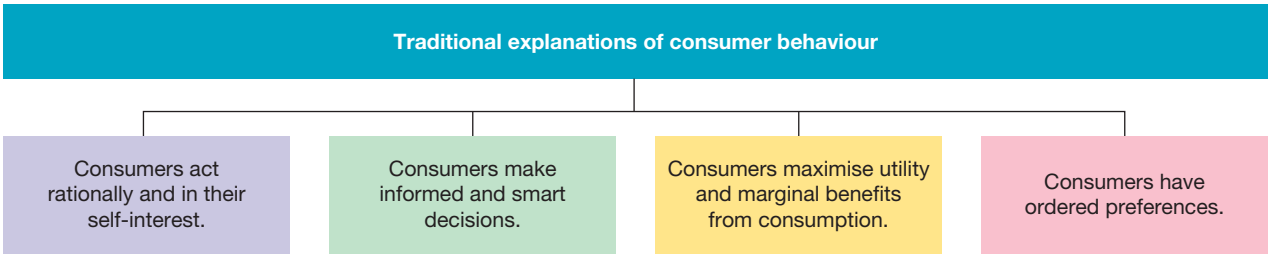
At the outset we need to realise that there are many types of consumers such as the price-conscious, cautious, impatient, impulsive, adventurous and bargain-seeker. This can make them quite unpredictable, so it is difficult to generalise about their behaviour. Despite this, gaining a better understanding of consumers is of great importance for businesses' sales, success and profitability.

FIGURE 1.24 Economists are interested in studying the factors that affect consumer behaviour and their response to changing conditions.

1.6.1 The traditional economic viewpoint of consumer behaviour

In the 1800s and earlier 1900s, economists traditionally assumed that consumers behaved rationally, acted in their own self-interest, had priorities or ordered preferences, made thoughtful and informed decisions and factored in *diminishing utility* or reduced pleasure from increased consumption of a particular good or service. They assumed that consumers sought to maximise their pleasure and minimise their pain. Figure 1.25 summarises these traditional assumptions about consumer behaviour.

FIGURE 1.25 Traditional explanations of consumer behaviour



- **Consumers act rationally and in their self-interest.**
  It is generally assumed that consumers behave rationally or in a logical, self-interested and calculated way. This means that when they spend their limited income, they do this in ways that maximise their overall satisfaction or pleasure by selecting the best mix of goods and services. For example, imagine that you are about to make a small purchase and could have one dollar's worth of lollies or a dollar's worth of text messages. If you liked texting more than lollies, perhaps because you believe it is better for your health, it would not be rational to purchase the lollies because this would lower your satisfaction.
  In addition, it is also rational that consumers shop around for the best deal and the lowest price. Buying cheaply can help your money go further and lead to greater satisfaction. This is why consumers flock to clearance and stocktake sales offered by some retailers.
- **Consumers make informed and smart decisions.**
  Traditionally, it was assumed that consumers make informed decisions and that they had perfect knowledge. That is, before purchasing an important good or service, consumers try to get quality factual information from various sources so that they can weigh up the potential advantages and disadvantages, allowing them to make the best decision possible.
- **Maximisation of utility and marginal benefits from consumption.**
  Consumers consider the marginal benefits gained from each purchase they make. **Marginal utility** is a term used to describe the *extra satisfaction* gained from consuming each additional *unit* of a good or service at a point in time. The *law of marginal utility* states says that as the number of units consumed increases, satisfaction (utility) decreases. The first unit provides more utility than the second, and much more than the tenth unit.
  Imagine, for instance, that it is a really hot day and you are very thirsty. The first icy-cold can of soft drink you slam down provides you with a great deal of utility or pleasure, so you decide to purchase another. This time, it is still satisfying but less so than when you consumed the first. While the *marginal utility* is still *positive*, it is lower. By the time you hit the fifth can, you are feeling really ill, causing you to vomit. By now, the marginal utility of the extra can of soft drink is near zero, or possibly even negative!
  The same principle of diminishing marginal utility or benefit applies to virtually everything we buy, whether that means buying a second sports car, going to the footy or eating potato fries. When it comes to consumer behaviour and maximising utility, the old saying goes that *'variety is the spice of life'*. Most people prefer to have a bit of many things, rather than a lot of one particular good or service. To help counteract the impact of diminishing utility on sales, some retailers offer special price discounts — for example, buy two and get the third one free! So even though marginal utility is lower, this may be offset partly by the fact the next unit is cheaper.
  Exceptions to this theory of diminishing marginal utility in consumer spending are rare. However, they do exist. Take the example of buyers who are addicted to alcohol or tobacco, the compulsive shopper who is excited by the actual act of purchasing something, or those who consume just to impress others (called 'conspicuous consumption') by building massive houses or wearing extravagant jewellery. Despite these special cases, generally individuals make decisions that seek to maximise their utility or pleasure.

- **Consumers have ordered preferences.**
  As consumers, there are lots of things we all need and want, but our ability to satisfy these is limited, partly by our income. After purchasing essential goods and services to satisfy our basic needs for food, shelter, clothing and health, typically attention then turns to other non-essential spending designed to help meet our wants and make life more exciting. In other words, consumers unconsciously rank their spending priorities and first purchase the things that result in the greatest net benefit.

Whilst these traditional assumptions about the factors that influence consumer behaviour are still important, more recently, studies and experiments in **behavioural economics** have found that decision-making by individuals is far more complex — consumers are not always rational and are sometimes misinformed, do not always minimise pain and are not always motivated by self-interest. We will later investigate these ideas when we study behavioural economics in Unit 1, Outcome 3.

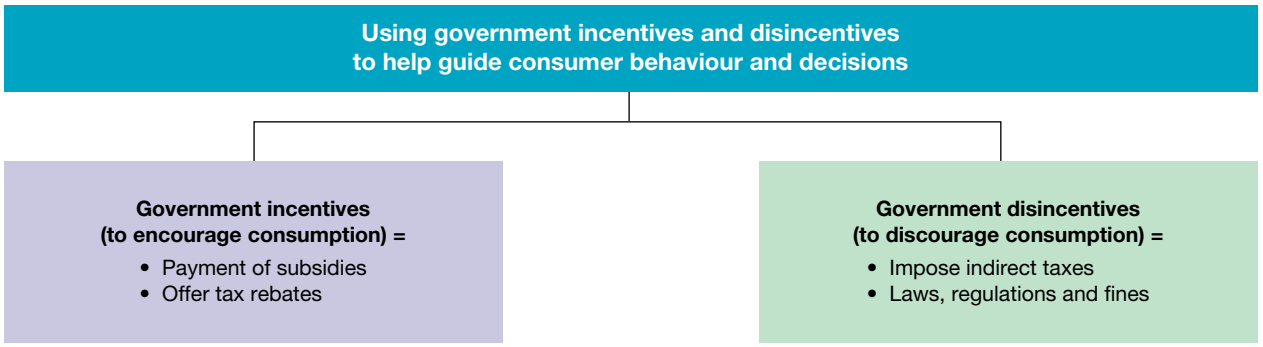
1.6.2 The ways consumers and workers might respond to government incentives and disincentives

An **incentive** is an inducement designed to further encourage behaviour that would otherwise not occur to the same extent. On the other hand, **disincentives** are the opposite. They try to discourage certain behaviour. Both of these assume that most people do what is in their own self-interest, often to maximise their gains and minimise pain. Incentives and disincentives are used in many situations we face in our daily lives:

- At *home* you might get paid for helping to clean up the house, or alternatively after failing your last English essay you are grounded for a week.
- At *school* you might receive a prize for success in sport, or a detention for not completing your homework.
- At *work* you might gain a bonus or a promotion to a more senior position, or alternatively be reprimanded by your supervisor for turning up late with the threat of dismissal next time.
- Out *shopping* there are lots of selling incentives used to encourage spending — special offers such as 20 per cent off when you buy two items, or perhaps receive a bonus gift.

In this section, our focus is on how the *government* (in our *mixed economy*) might use various incentives to encourage the consumption of a particular good or service they believe is beneficial, or alternatively may use disincentives to *discourage* the consumption of something believed to be harmful. Figure 1.26 provides an overview of the main types of government incentives:

FIGURE 1.26 The use of government incentives and disincentives to modify consumer behaviour and decisions



Government incentives for consumers

- ***The payment of consumer subsidies:*** The Australian government frequently pays **subsidies** or cash payments to *encourage* consumers to purchase a product whose consumption brings personal or broader social benefits. Here we might think of subsidised solar energy panels, rainwater tanks and energy efficient LED globes, along with free COVID-19 testing and vaccinations. Subsidies are also provided to help cover the costs of childcare for working parents and training courses for the unemployed. Subsidies like these help to positively change behaviour. They make some goods or services more attractive and affordable, or possibly it may even be provided free of charge. Rational and self-interested consumers are normally keen to take up these offers.
- ***Offer tax rebates:*** The government also uses **tax rebates** (also called tax offsets) as an incentive to try to encourage consumption of a good or service considered desirable or beneficial. Tax rebates are a tax discount — they reduce the amount of tax paid on taxable incomes making the item cheaper and more attractive to purchase than otherwise. For example, there are tax offsets of up to 30 per cent of the cost of premiums for those households taking out private health insurance. By encouraging individuals to take out private health insurance, this makes healthcare cheaper by keeping some individuals out of the public healthcare system. There are also tax offsets for low- and middle-income earners, and for superannuation contributions.

Government disincentives for consumers

- ***Impose indirect taxes:*** Governments sometimes impose **indirect taxes** on the consumption of goods that they want to *discourage* because they are dangerous for buyers or have bad effects on the broader community. The tax is added onto the price of a product at the point of sale, making it more expensive and hence less attractive for buyers. For example, the Australian government has imposed very heavy excise taxes levied from the sale of tobacco, alcohol and fuel. There is also the 10 per cent Goods and Services Tax (GST) that applies to many things we purchase.
- ***Enforce laws and government regulations:*** There are hundreds of government regulations, often *preventing* the consumption of particular goods and services. For instance, there are regulations about underage drinking and smoking, wearing bike helmets, and insider trading of shares to make personal gains (i.e. using special information that is not available to those outside the company). Failure to comply with regulations may result in fines or other penalties for consumers. Because we want to minimise pain and financial expense, most individuals comply with government regulations.

Resources

Weblink Science of persuasion

Digital document The Ultimatum Game (doc-31527)

1.6 Activities

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1.6 Quick quiz on | **1.6 Exercise**

1.6 Exercise

1. This task is about consumer behaviour.
   - a. **Explain** what *consumer behaviour* involves. **(2 marks)**
   - b. **Describe** the *traditional view* of consumer behaviour and the key factors that influence this behaviour. Apply this view to your decision to buy a second-hand car. **(6 marks)**
   - c. **Explain** the concept of *marginal utility* as a factor affecting consumer behaviour. Provide an original example to demonstrate this concept. **(4 marks)**
   - d. **Describe** how you might set up and conduct an actual experiment to demonstrate the concept of diminishing marginal utility for consumers. **(3 marks)**
   - e. **Explain** the concept of incentives and disincentives, noting why they are often used by governments. **(4 marks)**
   - f. Complete the following table by **identifying** the type of government incentive or disincentive, **explaining** how it may work to improve society's general wellbeing. **(6 marks)**

Action	Classify and explain the type of government incentive or disincentive
i. A higher tax imposed on the sale of premixed alcoholic drinks	
ii. The provision of $200 entertainment, hospitality, and travel vouchers for use by consumers after the COVID-19 lockdowns	
iii. The need to have age ID for entering a nightclub	
iv. A police road blitz with booze buses stationed on highways over Easter	
v. Installation of speed cameras	
vi. The distribution of free rapid antigen test kits for COVID-19	

   - g. Litter is a real problem at many schools. The solution is to try to change student behaviour in this area. As a member of the student representative council and a school prefect, **explain** how you could use incentives or disincentives to correct this problem. **(2 marks)**

Solution and sample responses are available online.

1.7 Businesses and their behaviour as economic agents

KEY KNOWLEDGE

- The traditional economic viewpoint of business in the economy: profit maximisation
- The ways businesses might respond to incentives and disincentives, including taxes and tax rebates, subsidies and regulations

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There are about 2.5 million businesses operating in Australia, making up the private sector of the economy. **Business behaviour** looks at the factors influencing the decisions of firms involving the production and sale of goods and services. Over the years our understanding of businesses has grown, and as new challenges arise firms have been forced to adapt their operations.

1.7.1 The traditional economic viewpoint of business

The traditional view of a business is that it generally seeks **profit maximisation** in both the short-term and especially long-term. The gross or pre-tax profit is calculated by simply taking the total value of revenues gained from sales of goods and services, and then subtracting the total value of production costs. Net, or after-tax profit, is what is left after subtracting the value of company tax to be paid.

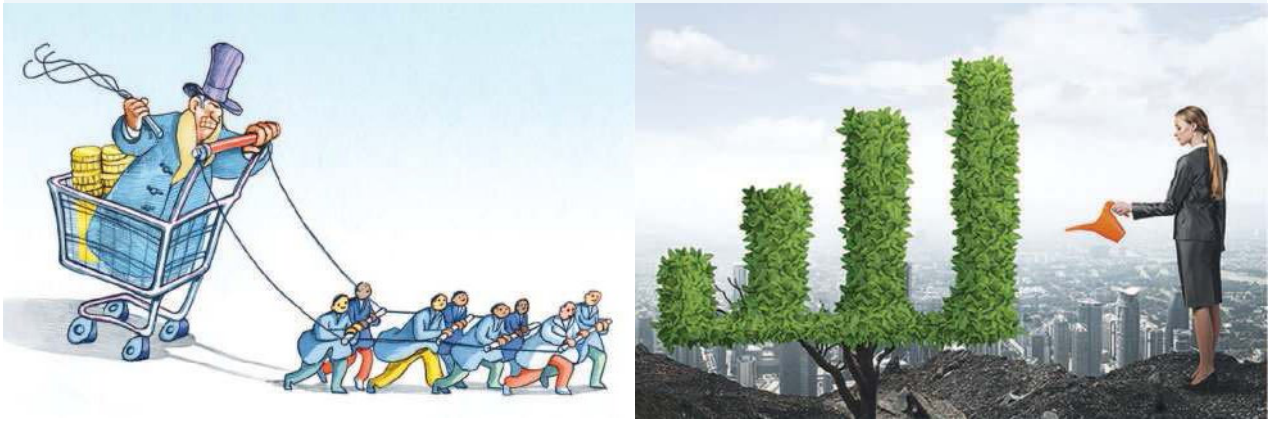
So, in order to maximise their profits, most firms make decisions that seek to do two main things — maximise their sales revenues and minimise their production costs:

- **Maximise sales revenue.** Firms usually make decisions (especially in the long-term) that try to maximise the revenue they receive from selling their goods and services. This means using strategies that seek to capture extra customers (e.g. through advertising or the development of new products through innovation) and try to grow the firm's share of the market in which it sells (e.g. through aggressive pricing in the short-term). It also means giving consumers what they seek — a quality product sold at a competitive price. After all, there is a high degree of *consumer sovereignty* in our economy.
- **Minimise production costs.** The other way for firms to maximise profits is to try and cut production costs — the cost of wages (for staff or labour resources), raw materials, equipment, transport, and utilities like power and water. This means being efficient in the use of resources where the aim is to gain a higher level of output from a given level of inputs.

Providing there is strong competition in markets between rival sellers, this type of behaviour encourages efficiency and checks the self-interest and greed of businesses. However, unfortunately in a number of Australian markets, competition is weak. Some monopoly-type firms and others collude to restrict competition. They have considerable market power — that is, they can charge higher prices without worrying about being undercut by their competitors. We will see shortly that this is another reason why there is a need for government intervention in the economy to promote competition, improve the general satisfaction of society's wants and promote better living standards.

While, traditionally, *profit maximisation* is the focus for most firms, there are other things that influence decision-making. For example, increasingly farming, mining and manufacturing firms are sensitive to their *reputation* and *image*, as portrayed in the media. For example, product sales could drop badly if attention was drawn to CO_2 emissions or pollution. Many firms also try to *give back* to the *community* (e.g. the Wales Rescue Helicopter), although perhaps this might also help boost sales. In addition, firms are affected by *government policies* related to occupational health and safety (OH&S), the setting of minimum wages, and laws relating to competition. Finally, there are around 600 000 Australian businesses that are *not-for-profit* and not motivated by self-interest. Clearly, the traditional economic viewpoint does not explain their behaviour.

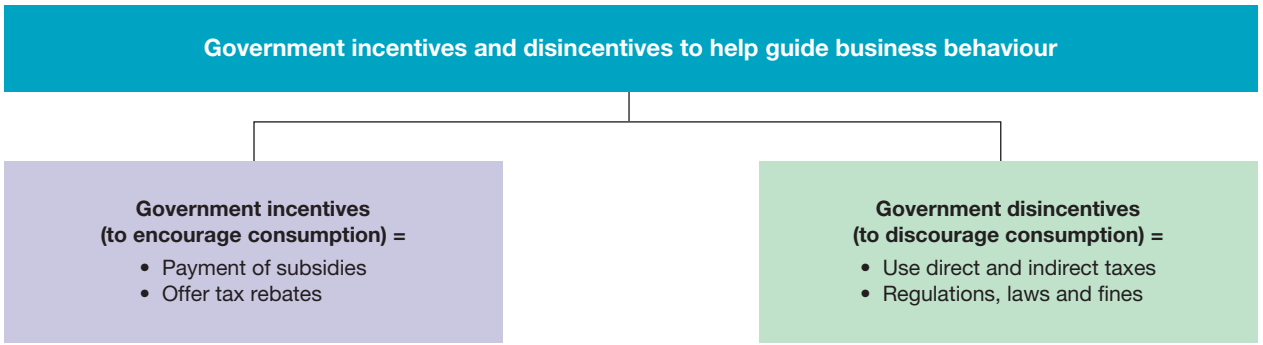
FIGURE 1.27 While most businesses see the growth in profits as important, it is not the only goal used to guide their decisions.



1.7.2 How businesses might respond to government incentives and disincentives

As was the case with consumers, governments also use incentives and disincentives to change the behaviour of businesses as economic agents. An incentive is an inducement designed to further encourage behaviour that would not otherwise occur to the same extent. On the other hand, disincentives are the opposite. They try to discourage certain behaviour. Both these strategies represent forms of government intervention in our economy to improve general wellbeing and assume that most businesses make decisions based on their own self-interest and a desire to maximise profits. Figure 1.28 provides an overview of the government's approach.

FIGURE 1.28 Using government incentives and disincentives to modify business behaviour



Government incentives for business

The payment of business subsidies

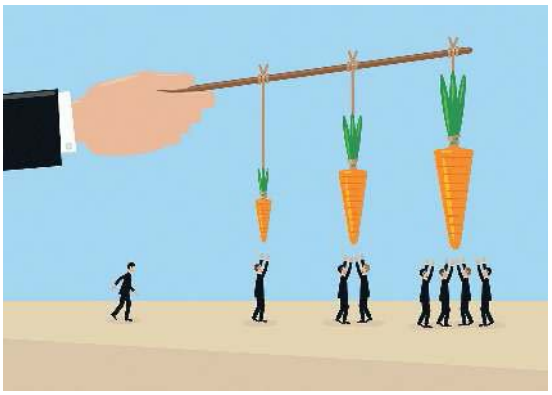
- The Australian government uses *subsidies* or cash payments to businesses designed to influence their economic decisions. These help to cover some production costs, improving profitability. Usually, subsidies target and incentivise the production of goods and services that bring with them broader benefits for an industry, the economy or society generally.

  For example, in 2020–21 during COVID-19 lockdowns, there was the temporary *JobKeeper wage subsidy*. This involved the government paying some of the wage costs for businesses, so they could hang onto their staff ready to start up later. Similarly, subsidies were paid to *airlines and tourist and hospitality operators* struggling to survive because of the lockdowns. There is also the *Tasmanian Freight Equalisation Scheme*

to help reduce business costs for firms in that state, disadvantaged by higher transport costs for moving goods to their markets on the mainland or abroad. In addition, subsidies have been paid for the building of *submarines* and *patrol boats* for the Navy, along with those to private schools and the coal industry. While the latter subsidy unintentionally encourages an industry that is environmentally damaging (by contributing to CO_2 emissions that accelerate climate change), it is used to make our coal prices lower, expanding sales, production and employment.

Offer tax rebates for business

- The government also uses *tax rebates* (also called *tax offsets* or *deductions*) as incentives to influence the decisions made by businesses. By offering tax discounts, rebates increase after-tax profits, encourage the expansion of business, production and employment, and help keep the prices of goods and services lower than otherwise. For example, if a business making a profit was required to pay $10 000 a year in tax and it had $2000 in tax offsets, the number of taxable dollars would be cut by $2000 to just $8000, improving the firm's net profits and survival prospects, encouraging expansion.



Currently, for example, there are many tax offsets offered. One of these is the *Instant Tax Write-offs* for small- and medium-sized businesses purchasing new capital items (e.g. a ute for a builder, a refrigerator or stove for a restaurant). Other tax offsets or deductions might include the cost of *interest* on borrowed credit, the value of depreciation (wearing out of equipment), repairs, costs of emissions reductions and other outlays on running the business and earning income.

Government disincentives for business

Use of taxes

- Government direct and indirect *taxes* can act as a *disincentive* for businesses — they impose costs and/or reduce final profits. Company tax is a levy *directly* on each dollar of profit or taxable income of firms. For large businesses the current rate is 30 per cent while, after recent reductions, for small to medium enterprises it is 25 per cent. Having two tax rates like this provides additional encouragement for the start-up and expansion of smaller firms, creating more jobs. However, because these rates are both higher than those in many other countries overseas, Australian firms are at a competitive disadvantage. Without additional tax cuts, this discourages business expansion.

The government also uses *indirect taxes* to affect business decisions and reduce market failure. These are placed on selected goods, especially targeting those that create social costs to the wider community or that use production methods that harm the environment. These taxes make production more expensive and less profitable. For example, there are especially heavy indirect *excise taxes* designed to make the production and sale of *cigarettes* and *alcohol* less profitable. This is partly because their consumption by some individuals causes great harm to others in the community who then suffer losses and pay costs (e.g. health, medical treatment and loss of life). Another example of an indirect tax designed to alter business decisions was Australia's *carbon tax* (2012–2014). By taxing the worst polluting businesses at the starting rate of around $23 per tonne of CO_2 emissions, the government's intention was to make pollution more costly and hence less profitable for firms, encouraging them to look for cleaner products and production methods.

Government regulations and laws

- Government regulations can also act as a *disincentive* for some business activities. There are hundreds of these that attempt to influence decisions and improve the general wellbeing of Australians. Many ban or restrict the production of certain products that bring harm to society. For instance, there are directives applying to illegal drugs, firearms, gambling, alcohol and prostitution. There are also laws relating to occupational health and safety (OH&S), full disclosure of product information and food labelling, cigarette packaging, industrial waste disposal, paying minimum wages, closures during pandemics, taxation, contributions to staff superannuation, standards for product design and the promotion of competition between firms (e.g. using the **Australian *Competition and Consumer Act 2010*** or ACCA). Failure to comply with regulations or laws may result in heavy fines or other penalties for businesses. Most firms are compliant because they usually want to avoid government fines and other adverse legal consequences.

1.7 Activities

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1.7 Quick quiz on | **1.7 Exercise**

1.7 Exercise

1. **Outline** what the study of *business behaviour* involves. **(2 marks)**
2. Traditionally, it is assumed that businesses make decisions that help maximise their profits and self-interest. **Explain** what profit maximisation means. **(2 marks)**
3. **Explain** why strong competition amongst businesses in an industry or market is important. **(2 marks)**
4. In terms of their nature and aims, **distinguish** between government *incentives* and government *disincentives* that are applied to businesses. As part of your response, provide two original examples of each. **(4 marks)**
5. This question is about running your own clothing business.
   a. Taking a *traditional view* of your business, **explain** your main aim or goal. **(1 mark)**
   b. **Identify** and **outline** your main production costs. **(1 mark)**
   c. **Explain** how you would calculate your *gross profit* and *net profit*. **(1 mark)**
   d. In order to reduce your retail prices to become more competitive against cheaper imported garments from overseas and yet still make a profit, you decide to try and find ways to cut production costs. Suggest two tactics you might be able to use. **(2 marks)**
   e. **Explain** how the government might be able to use *incentives* to help make your business more competitive and profitable. **(2 marks)**
   f. **Explain** how a *reduction* in government tariffs on clothing (i.e. the tax added onto the price of imports that is designed to make the local product cheaper and to protect firms from foreign competition) would be likely to affect your business. **(2 marks)**

Solution and sample responses are available online.

1.8 Governments and their role as economic agents

KEY KNOWLEDGE

- The traditional economic viewpoint of the government in the economy: maximisation of living standards
- The role of government in economic stabilisation, improving efficiency in resource allocation and redistribution of income to improve living standards

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Australia has a *mixed economy* where the free market operates to make most decisions. However, because of weaknesses and market failure, some level of *government intervention* or direction is necessary to help promote better material and non-material living standards and general wellbeing.

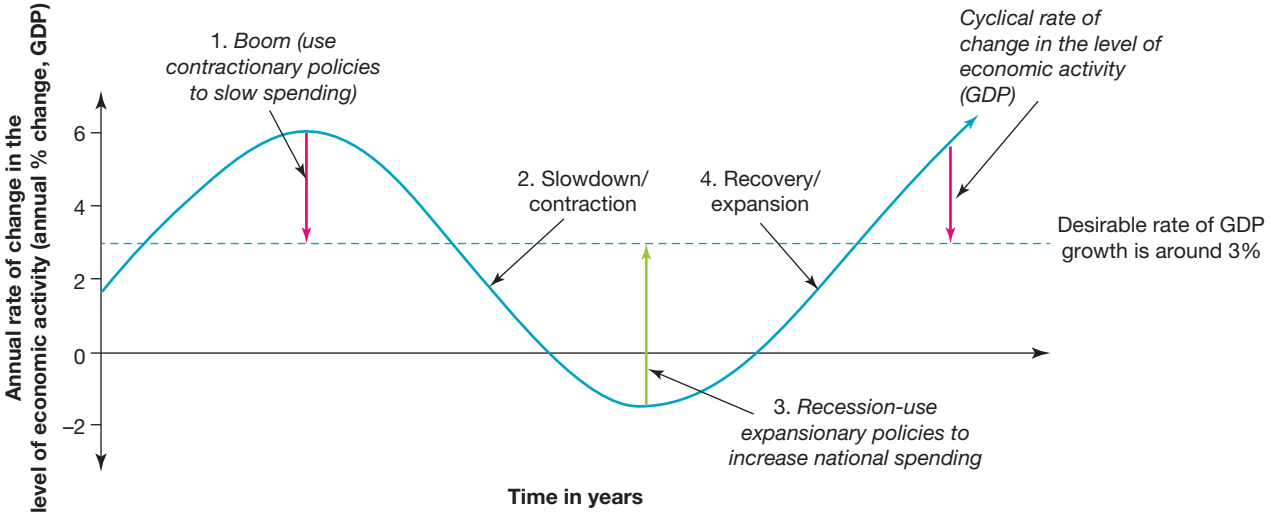
As an economic agent, *government intervention* in the economy takes several forms:

- Stabilisation of economic activity to help improve living standards
- Increasing efficiency in resource allocation to help improve living standards
- Redistributing income more fairly to help improve living standards.

1.8.1 Stabilisation of economic activity to help improve living standards

Earlier we saw that pure market economies are often *unstable*. Typically, they experience a *business cycle in economic activity* involving four phases. These are shown in Figure 1.29:

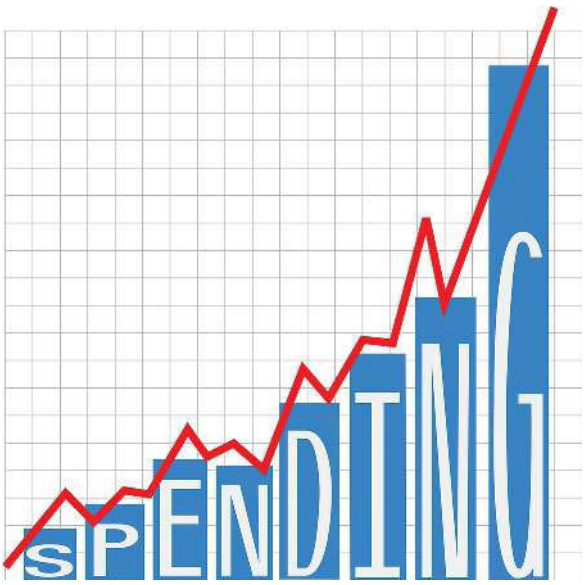
FIGURE 1.29 How governments can use policies that manipulate the level of spending, which can be used to help stabilise the level of economic activity and improve living standards



- At the top of the cycle, there is often a *boom*. Here, national output is stretched beyond the economy's productive capacity. It starts to overheat, and shortages of goods and services appear because output can't keep up with spending. As a result, there is rapid *inflation* where most prices are rising. Unfortunately, this lowers living standards for most people because it erodes the purchasing power of wages and family incomes.
- At the opposite extreme, there may be a *recession*. National output or GDP falls, and this causes a rise in *unemployment*, and hence a drop in average *incomes* and consumption per person. Living standards are depressed and society's overall material and non-material wellbeing is undermined.
- Between these extremes there are periods of *contraction* and later, *expansion*.

Unfortunately, *instability* like this lowers living standards and society's general wellbeing.

However, since World War II, one important role of the government is **economic stabilisation** so that the level of economic activity is neither too strong nor too weak. As shown on Figure 1.29 (see the broken blue line) the *ideal* or sustainable rate of GDP growth is to have a rise of around 3 per cent a year, at a level midway between the boom and recession. This involves using various policies to manipulate the level of spending on Australian-made goods and services or aggregate demand. For example, thinking back to the three-sector circular flow model, budgetary policies could be used to *change the value of taxes* (a leakage that slows spending), and/or *government spending* (an injection that boosts spending). By changing these two things in a *countercyclical* way, the severity of booms and recessions can be reduced, and the level of stability improved.



- *Policy during booms:* As the pace of economic activity quickens and starts to become excessively strong (perhaps where annual rates of GDP growth are above 3–4 per cent), the government could countercyclically slow total spending by increasing taxes and/or cutting government spending. This would help to avoid an inflationary boom.
- *Policy during recessions:* In reverse, as economic activity slows and starts to become too weak (perhaps where annual rates of GDP growth are below 2–3 per cent), the government could countercyclically boost spending by cutting taxes and/or raising government spending. This would help to reduce the severity of a recession and keep unemployment lower than otherwise.

Later we will see that there are other policies that can also be used to help stabilise spending and the economy, like changing interest rates. The main point here is that by stabilising the economy and avoiding severe booms and recessions, economic conditions can become more favourable for material living standards (related to levels of incomes and consumption per person) and non-material living standards (related to the quality of daily life).

1.8.2 Increasing efficiency in resource allocation to help improve living standards

Resources are scarce and need to be used or allocated efficiently — that is, in ways that help to maximise the general satisfaction of society's wants and wellbeing. It has already been mentioned that, usually, the operation of **free markets** and the price system ensure that resources are allocated or channelled to where they are most wanted or most valued by consumers. Goods and services not valued or purchased would not be supplied. Producers simply follow price signals or incentives from the market since these allow them to maximise their profits. In addition, competition between firms selling a particular product ensures that the most efficient or lowest cost production methods are used.

However, you may recall that despite their general efficiency, sometimes there is *market failure* (e.g. when competition between rival sellers is weak). This reduces efficiency in resource allocation because the satisfaction of wants is not maximised, lowering living standards. Again, wellbeing can be improved through government intervention — yet another justification for having a *mixed economy* rather than a pure market economy. Intervention designed to improve efficiency in resource allocation can take various forms.

- *Government laws promote stronger competition:* Strong *competition* among firms helps to increase efficiency in resource allocation. It is also seen as a good thing for consumers because they get a better product and quality service, at a lower price. However, to *increase profits* some Australian businesses have tried to limit competition and collude with rival firms, grow their market power, and raise prices for consumers. By firms limiting competition, efficiency in resource allocation is reduced. No longer is there as much pressure to cut costs, develop improved products and try hard to maximise customer satisfaction. For this reason, the Australian government has passed laws to promote stiffer competition between rival businesses. Here, we think especially of the Australian *Competition and Consumer Act 2010*. Under this legislation, some anti-competitive business activities are illegal; for example, fixing minimum prices in an industry, and collusion between key firms to reduce competition and push up prices.
  If a company is found guilty of these offences, there are heavy fines of up to $10 million for each incident, as well as possible jail sentences for directors. There are also rules about company mergers and takeovers to ensure that these do not reduce market competition and efficiency. In the past few years, the ACCC has conducted high-profile investigations across a range of industries. The enforcement of the Australian *Competition and Consumer Act 2010* is done by the **Australian Competition and Consumer Commission (ACCC)**.
- *The government provides some socially beneficial goods and services:* Normally the free operation of the market, demand and supply, and the price system ensure that resources are channelled into areas where they are most wanted by consumers. However, if left to the free operation of the market and the private sector, failure can occur.
  Insufficient resources may be allocated to the provision of some *socially beneficial* goods and services we all need. Here we might think of things like education, health and housing. The problem is that these goods and services are very expensive to produce and so they cannot be sold profitably at a low and affordable price so that everyone, including those on low incomes, can have an education, receive medical treatment and enjoy a roof over their head. Such goods and services would be *under-produced* unless the government intervenes and makes these available free or at a low price through the public sector. Again, when there is market failure, government intervention is needed to ensure that resources are allocated efficiently to maximise consumer satisfaction and living standards.
- *Laws that discourage socially harmful production:* In a pure market economy, there is consumer sovereignty. Firms are happy to produce whatever people demand, as long as it is *profitable*. Although rational, educated and informed consumers generally make good choices that maximise satisfaction, *market failure* can occur. Some goods and services might be profitable, but their production and consumption cause harm to others and involve costs, lowering society's general wellbeing. Take, for example, the consumption of alcohol. Most people are responsible and know when they have had enough, but judgement is confused when they have had too much. In turn, this can cause the loss of life and property, injury and be an expense to taxpayers and other individuals, who are saddled with medical and repair costs. We might also think about the production and consumption of dirty goods like coal that involve high CO_2 emissions. The production of these goods pollute the environment and reduce the quality of life for current and future generations. They also reduce efficiency in the allocation of resources, because they undermine society's overall wellbeing.
  Again, in these and other instance where *socially undesirable* goods and services are produced that have wider negative effects on living standards, a case exists for *government intervention* in the economy. As we have recently seen, there are things the government can do to improve efficiency in resource allocation and our wellbeing. For one, governments can use *laws* to ban or limit the production of such goods. Alternatively, they can use disincentives like taxing these products heavily, making them less attractive for consumers and producers.

1.8.3 Redistributing incomes more fairly to help improve living standards

The operation of the *free-market economy* is able to distribute or share goods, services and income that have been produced between those who have sold resources. People who sell wanted natural, labour and capital resources are more valued. They are traded at a higher price, receive greater incomes and hence can purchase more goods and services. Those who make no contribution or are unemployed would normally receive no income. Living standards would be desperately low, and many would be forced into poverty and living without dignity. Although in some ways this market-based system might appear fair, especially those on high incomes (some of whom were fortunate to be born into wealthier families), great *income inequality* comes at a high social cost — civil unrest, crime or even revolution could threaten the economic system. If left unchecked, the unequal access to incomes, goods and services becomes even more uneven over time — the rich get richer and the poor get relatively poorer.

To help avoid this and to ensure people can live with some dignity and enjoy fair and equitable living standards, the government intervenes in our mixed economy to *narrow the gap in incomes* and consumption. **Redistribution of incomes** like this might involve using the following policies:

- *The government uses progressive income taxes:* A progressive income tax is one where the tax *rate* rises with income. For example, in Australia during 2022–23, those on relatively low incomes of less that $18 200 per year pay no tax at all. However, as income rises, marginal tax rates step up progressively to 45 per cent of each dollar above $180 000, significantly closing the income gap.
- *The government pays welfare benefits to the neediest:* Again, to ensure that low-income individuals can afford to buy basic goods and services like food, shelter and clothing, cash welfare benefits of perhaps $300–$400 per week are paid to the neediest — for example, the unemployed, aged, carers and families. This is largely funded by progressive taxes paid by those on higher incomes.
- *The government's provision of some services:* The Australian government provides some basic services like access to health (through Medicare and the availability of bulk billing for some doctor consultations), education (in government schools and some free tertiary courses) and housing (through the provision of some low-cost public rental accommodation). Again, progressive income taxes help to pay for these so that more people can enjoy reasonable living standards.

Despite these strategies, today there is still much inequality in living standards. The top 20 per cent of income earners receive around 40 per cent of Australia's income cake, while the lowest 20 per cent of income earners gain only about 8 per cent! Wealth is divided even more unevenly again, with the top 20 per cent owning over 60 per cent of the nation's assets, with those at the lower end holding less than 1 per cent!

1.8 Activities

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1.8 Quick quiz on | **1.8 Exercise**

1.8 Exercise

1. Australia has a mixed economy. **Explain** what this means. **(3 marks)**
2. **Outline** three important roles of the government in a *mixed* economy. **(3 marks)**
3. This question is about government intervention in a *mixed* economy:
   - a. Market economies are typically unstable. **Explain**. **(2 marks)**
   - b. In a mixed economy, **outline** how the government might stabilise the level of economic activity as a way of improving living standards. **(2 marks)**
   - c. In the absence of government intervention, **explain** one way in which there is market failure causing inefficiency in the allocation of scarce resources. **(2 marks)**
   - d. **Outline** two ways the government could help increase efficiency in resource allocation, leading to better living standards. **(2 marks)**
   - e. In a pure market economy, there would be great inequality in income and living standards. **Explain**. **(2 marks)**
   - f. In a mixed economy, **outline** two ways the government could help to reduce the level of income inequality so that more people can enjoy reasonable living standards. **(2 marks)**

Solution and sample responses are available online.

1.9 Review

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1.9.1 Summary

What is economics?

- Economics is the study of how limited resources or productive inputs are used to help make individuals and society better off materially and non-materially.
- Economics includes the study of macroeconomics and microeconomics.
  - *Macroeconomics* looks at the whole economy and the factors that affect the nation's general economic conditions (e.g. rates national spending, output, unemployment and inflation).
  - *Microeconomics* examines the smaller bits that help to make up the overall economy. These include examining the operation of a particular firm, an individual market, a sector or a specific industry.
- As a study, economics is also divided into positive and normative economic investigations.
  - *Positive* economics. Most commonly, economics uses an analysis of issues where the investigation is largely free of personal values, feelings or opinions, and is based on hard factual evidence about the situation as it exists in reality.
  - *Normative* economics. Sometimes personal, value-based statements are also made by economists about what should be done, based on their personal opinions, likes and dislikes. This is called normative economics.

People's unlimited needs and wants

A starting point in the study of economics is that society's wants for goods and services (products) are virtually unlimited due to:

- population growth
- the reoccurrence of some wants after they have been initially satisfied
- materialism
- advertising and planned obsolescence.

The limited supply of resources available for use in production

- *Resources* are the inputs needed to make goods and services. There are *three* types of resource:
  - natural resources (i.e. inputs found in nature)
  - labour resources (i.e. mental talents and the physical power of workers)
  - capital resources (i.e. physical plants and equipment that make other resources more efficient).
- What a country or individual can potentially produce is limited because the volume (quantity) and efficiency (quality) of resources is finite (limited).

The basic economic problem of relative scarcity

- *Relative scarcity* is simply the imbalance between people's unlimited wants on the one hand, and on the other, limited resources available to satisfy those wants.
- Due to the problem of scarcity, economic choices must be made and it is vital that resources are used or allocated efficiently to help maximise the general satisfaction of society's wants to improve its wellbeing.

The nature and purpose of economic activity and the influence on living standards

- *Economic activity* is a term used to describe the production process where firms use resources and convert them into the finished goods and services we need and want.
- The most common *measure* of the level of economic activity or the value of finished goods and services produced by a country in a year is called *gross domestic product* (abbreviated as GDP).

- Nations that have higher levels of production and income per person generally have higher average *material living standards* or wellbeing than countries with lower levels of GDP per head, because they have higher average incomes and consumption levels per person.
- *Non-material living standards* refer to the quality of our daily lives and mostly relate to influences not closely connected to money or income — elements such as freedom, happiness, life expectancy, mental and physical health, relationships, crime rates and the environment.
- Economic activity or production may both help and harm aspects of overall living standards. Sometimes, there are trade-offs between advancing society's material wellbeing as opposed to promoting its non-material wellbeing.

Choice and the concept of opportunity cost

- Given scarcity and the fact that we cannot have everything we want, countries (and individuals) are forced to choose between alternative uses of the available resources.
- A decision to have one thing results in the loss of another; that is, production in one area is forgone to gain the advantage of another area of production. This is called *opportunity cost*.
- The *production possibility diagram* (PPD) illustrates issues related to the economic choices that are made.
- The *production possibility frontier* (PPF) maps out the production combinations or choices that are possible when a nation uses all resources as efficiently as technology currently permits. It also shows the economy's productive potential, capacity or limit.
- The most efficient choice or allocation of resources is an output mix or combination located somewhere on the production possibility frontier. Here, the satisfaction of society's wants is at its maximum.
- A point outside the production possibility frontier is not currently possible due to the lack of resources available. In contrast, at a point inside the frontier, there would be unemployment, poverty and lower living standards.
- A country can cause its production possibility frontier to grow if it increases the volume and/or efficiency of its resources. Having a bigger frontier would enable more goods and services to be produced simultaneously, increasing material living standards. However, sometimes *trade-offs* are involved and gains can be offset by costs (e.g. perhaps the negative environmental impact on non-material living standards of increasing material living standards).
- *Trade-offs* reduce the anticipated gains when making decisions about resource allocation. *Cost–benefit analysis* can be used by individuals, firms and governments to weigh up both benefits and costs so as to arrive at the most beneficial decision overall.

The three basic economic questions and types of economic system

- Given the basic economic problem of scarcity, all countries need economic systems to help organise the nation's production and distribution of goods, services and incomes.
  Relative scarcity means that there are three basic economic questions that all economic systems must answer:
  - The *what and how much to produce* question (i.e. the type and level of particular goods and services to be produced)
  - The *how to produce* question (the production methods to be used to make goods and services)
  - The *for whom to produce* question (how the goods, services and incomes that have been produced are to be divided or shared between people).
- There are *three* main types of economic system, along with a hybrid — traditional economies, pure market economies, purely planned economies and mixed economies (the hybrid).
- The *traditional economy* answers the three basic questions by following long-held customs and rules that determine what is produced, how it is produced and how output is shared. Change is slow and living standards are uncertain.
- The *pure market economy* relies on the operation of the market or price system to answer the three basic economic questions:
  - There is consumer sovereignty and so the types of goods people do or don't buy is reflected in relative prices and profits. Profit-seeking owners only produce what consumers want and, in this way, the market efficiently answers the what question.

- The how question is again answered by competition and the market that enable private-sector firms to pick the cheapest production method and resources available, ensuring productive efficiency.
- The for whom question is again answered by the market that determines the level of personal wages and income and hence affects the quantity of goods and services that each person can purchase.

- The *planned economy* is one where the central government typically owns the means of production and makes key economic decisions.
  - The what question is answered by the government that controls which particular types of goods and services are produced using 1- and 5-year plans.
  - The government answers the how question and controls the production methods used within the public sector to make goods and services.
  - The government also controls the way goods, services and incomes are divided or shared between individuals. Often there is an attempt to minimise wage differences and inequality.
- The *mixed economy* is a hybrid. It relies mostly on the operation of the market to answer the three basic questions, but because of weaknesses there is some government guidance or intervention to help correct instances of market failure.
- Australia, like most other countries these days, has a *market economy* where economic decisions largely depend on the operation of markets (a market system where buyers and sellers negotiate relative prices), and most businesses are privately owned by profit seekers. However, the government attempts to correct some instances of market failure by guiding the way the three basic economic questions (what, how and for whom) are answered.

The three-sector circular flow model

- *Economic activity* refers to the process of production — that is, converting resources into finished goods and services.
- The main *purpose* of economic activity is to help satisfy society's needs and wants. Depending on its success, this influences material and non-material living standards.
- The simple *three-sector circular flow model,* representing a *mixed economy,* is a diagram that shows how the various parts making up the economy interact to organise the production and distribution of goods, services and incomes. In this model:
  - There are three main sectors or groups of economic agents — the household or *consumer sector* that includes all people in the country; the business or producer sector that makes up the *private sector* and includes small, medium and large enterprises; and the government or *public sector* made up of all levels of administration.
  - There are four main interconnecting flows between the three sectors. These show the main relationships between various groups or economic agents.
  - The four flows are equal in value and move interdependently.
  - The model can be used to explain why economic activity (national production or GDP) moves up (a period of expansion leading to a peak, perhaps a boom) and down (a period of contraction leading to a trough, perhaps a recession), largely in response to changes in household and government spending.
  - Changes in the pace or level of economic activity affect both material living standards (by changing employment, income and consumption levels), as well as non-material living standards (by changing happiness, stress, mental and physical health, level of social isolation, pollution).
  - The model can also be used to predict the effects of ups and downs in economic activity on levels of inflation, unemployment, incomes and living standards.

Consumers and their behaviour as economic agents

- Consumer behaviour looks at why, how, where and when consumers choose to purchase or not purchase a good or service, and draws on ideas from psychology, anthropology and economics.
- The traditional explanation of *consumer behaviour* focuses on the following:
  - In making decisions, consumers are self-interested, rational and try to minimise pain.
  - That consumers have complete and accurate information and ordered priorities.

- Marginal utility is a concept that some believe has a great influence on consumer behaviour. *Marginal utility* is a term used to describe the extra satisfaction gained from consuming additional quantities of a good or service over a short period of time.
- Governments in a mixed economy sometimes try to alter consumer behaviour using *incentives* or rewards (like subsidies or tax offsets), and *disincentives* that punish (like indirect taxes and regulations). By changing decisions, the aim is often to reduce market failure and to increase general living standards.

Businesses and their behaviour as economic agents

- Business behaviour looks at what and how businesses produce goods and services, and what motivates them.
- The traditional view is that most businesses seek to maximise their profits. They do this by trying to cut production costs and maximise their sales.
- Governments in a mixed economy sometimes try to influence business behaviour using *incentives* (like subsidies or tax offsets) and *disincentives* (like taxes, laws and regulations). By changing decisions, they aim to reduce market failure and to increase general living standards.

Governments and their role as economic agents

In a mixed economy, there are *three* central roles for governments in a mixed economy:

- *Stabilising the level of economic activity* using countercyclical policies (e.g. changes in tax and government spending) to affect total spending. By using measures to lift spending in recessions and slow it in booms, the government can reduce the severity of booms and recessions. This helps to improve domestic economic conditions needed for better living standards.
- *Improving efficiency in resource allocation* involves the government using policies (e.g. promoting competition through laws like the ACCA, subsidies and taxes), to reduce various types of market failure and thereby improve material and non-material living standards.
- *Redistributing incomes more equitably* using various government policies (e.g. progressive rates of income tax, welfare benefits to the neediest and the provision of free services) helps to ensure that all people can access basic goods and services and enjoy reasonable living standards.

1.9.2 Key terms

Australian Competition and Consumer Act 2010 (ACCA) involves laws or legislation that make price fixing and other forms of collusion by firms illegal.
Australian Competition and Consumer Commission (ACCC) is an institution set up to promote competition in markets and enforce the Australian *Competition and Consumer Act 2010*.
Behavioural economics has sought to better explain consumer behaviour than the simplistic theories traditionally used. It has found that individuals making decisions are guided by *bounded rationality* where they take shortcuts such as adopting *herd behaviour* or applying the *status quo*. This occurs because we have, for example, limited time to complete research and inadequate brainpower to weigh up all the possibilities.
Boom is a phase of the business cycle where output has reached its limit and excess spending causes shortages of goods and services, leading to inflation.
Business behaviour looks at the factors influencing the decisions of firms involving the production and sale of particular goods and services. The main assumption here is that most firms attempt to *maximise profits* by minimising costs and increasing sales revenue.
Business cycle diagrams include four phases — boom, slowdown, recession and recovery in economic activity.
Capital resources (or capital equipment) involve manufactured or producer goods. This includes the physical plant and machinery (that may incorporate new technology) used by a firm to help make other finished goods and services.
Consumer behaviour looks at why, how, where and when consumers choose to purchase or not purchase a good or service. The traditional viewpoint is that consumers are motivated by self-interest, are well informed and seek to maximise utility or satisfaction when they make purchases.
Consumer or household sector comprises all people in the country. They supply resources to businesses and purchase finished goods and services.

Consumer sovereignty is a key feature of *market economies* when key economic decisions are being made. For instance, consumers control what types of goods and services are produced. To maximise profits, producers simply follow consumer wishes and are guided by changes in relative prices.
Contraction is a phase of the business cycle where national production or GDP levels in the economy are falling. This causes a rise in unemployment and slower inflation.
Cost–benefit analysis is a matter of adding up the anticipated value of all the direct and indirect costs of a particular decision (e.g. resource and monetary costs, time, opportunity costs) in both the short-term and long-term, and comparing these against the total value of the anticipated benefits. It is used by individuals, firms and governments to help guide decisions.
Disincentives are used by the government to discourage or punish certain consumer and business behaviour when, as economic agents, they are making economic decisions. Examples include the imposition of taxes or the application of government regulations and laws.
Economic activity occurs when resources are used by an economy to produce goods and services. In the process, this also affects inflation and unemployment rates in an economy.
Economic agents are those groups in an economy that make key decisions. They include consumers, producers and governments.
Economics is a study of human behaviour. It involves looking at the way individuals, families, businesses and governments make decisions or choices about how to use their limited resources in ways that best help to satisfy their basic needs and unlimited wants. In making these sorts of decisions, economics also studies issues related to the production, consumption and distribution of goods and services.
Economic stabilisation is when the level of economic activity is neither too strong nor too weak.
Economy or **economic system** helps to organise the production and distribution of goods, services and incomes.
Expansion is a phase on the business cycle. It is when production levels in the economy are rising, causing unemployment to fall and inflation to slowly increase.
Free markets are those where all decisions are made by the price system without government intervention.
The **government or public sector** includes the activities and decisions of federal, state and local authorities in an economy.
Gross domestic product (GDP) is the most common measure of the level of economic activity and represents the total value of finished goods and services produced by a country normally over three months or a year.
Incentives seek to encourage particular types of consumer or producer behaviour using rewards. These can be either financial (e.g. subsidies or tax rebates) or non-monetary (e.g. special awards).
Indirect taxes are those levied on the sale of a good or service (e.g. the excise on tobacco, alcohol and petrol). They act as a disincentive to consumers and producers to discourage a particular activity.
Labour resources are used in production and involve the various intellectual talents, as well as the physical power, provided by the labour force.
Living standards is a concept used to describe how well-off people are generally. These are affected by both material wellbeing and non-material aspects. *Material* living standards are dictated by our income level and the quantity of goods and services we can purchase or consume each year, while *non-material* living standards relate to the quality of daily life such as happiness, life expectancy, mental and physical health, crime rates, religious and political freedom, and the environment.
Macroeconomics looks at the bigger picture and is concerned with levels of national spending, national production (measured by gross domestic product or GDP) and national incomes, as well as the country's overall unemployment and inflation rates.
Marginal utility refers to the increased satisfaction gained by individuals from the consumption of an extra unit of a product at a point in time.
Microeconomics often looks at the factors that influence the small bits, units or various parts making up the overall Australian economy including the decisions made by individual consumers or single firms in a particular market or industry.
Mixed economies are a type of economic system where most decisions are made by the operation of free markets and the price system, but also where there is a limited degree of government intervention or regulation to reduce market failure and improve living standards. Most countries these days have mixed economies.
Natural resources are the productive inputs that occur in nature — for example, climate, land, minerals, forests, oceans and rivers.
Needs are goods and services essential for life (e.g. basic food, shelter and clothing).
Normative economics involves statements about what *should* be done, based on personal opinion, values, likes and dislikes.

Opportunity cost relates to the value of production or consumption forgone (i.e. given up) in one area, when scarce resources are allocated or diverted to their next best alternative use.
Planned obsolescence is a strategy used by some firms to try to boost sales and profits by deliberately making products that quickly become outdated or wear out, requiring replacement.
Positive economics is based on hard evidence about what *is* actually the case. In other words, positive economic analysis often involves basic statements of fact such as, 'If A occurs, then B is the result'. No values are involved.
Producer or business sector comprises all producers or suppliers of goods and services in an economy.
Production possibility diagram (PPD) is used to illustrate the many production combinations for a country that is able to produce just two products and where all resources are used most efficiently. These combinations are illustrated as points located on a production possibility frontier (PPF). It can also illustrate the concept of opportunity cost.
Production possibility frontier (PPF) shows a nation's productive capacity or physical limits to production when all resources that are available are used to maximum efficiency.
Productive capacity represents the physical limits on the value of a nation's output of goods and services. Its level reflects the quantity and quality of resources available. It is represented by the PPF on a PPD.
Profit maximisation is a common aim of most businesses. It is where a firm tries to make the largest profit it can, by boosting sales, being efficient and keeping production costs low. Some firms seek to maximise short-term profits while others pursue this in the long-term.
Purely planned economy is one where all economic decisions about the production and distribution of output are made by reference to government decisions, without any reliance on the market.
Pure market economy is one where all economic decisions about the production and distribution of output and incomes are made by reference to the price system, without any government interference.
Recession is a phase of the business cycle where the value of output or GDP falls over at least two consecutive quarters. It is associated with higher unemployment and lower inflation.
Redistribution of income is a key function of governments in a mixed economy where policies are used to reduce income inequality so that all people can enjoy reasonable living standards.
Relative prices compare the selling price of one good or service against that of another. This affects the relative profitability of different types of production.
Relative scarcity is the basic economic problem where the resources available for production are limited, relative to society's unlimited wants. Because resources are limited, society must make choices between alternative uses or types of production.
Resources are productive inputs including natural, labour and capital resources (also called factors of production) that are used by firms to make or supply other goods and services.
Scarcity (also called relative scarcity) is the basic economic problem where the resources available for production are limited, relative to society's unlimited wants. Not all our wants can be satisfied. This forces society to make economic choices or decisions involving the three basic economic questions of what, how and for whom to produce.
Subsidies are cash payments or tax offsets from the government to consumers or producers. They act as an incentive to encourage a particular activity.
Tax rebates help to reduce the amount of tax normally paid and hence act as an incentive to encourage an activity.
Three basic economic questions for an economy arise because of the problem of relative scarcity. They include the *what and how much to produce* question (the type and quantity of each good or service), the *how to produce* question (production methods) and the *for whom to produce* question (how goods, services and incomes are distributed amongst the population).
Three-sector circular flow model is a simple diagram that shows the three key economic agents or parts making up a mixed economy (the household or consumer sector, the producer or business sector, and the government or public sector). It also shows the ways these sectors interact with each other through the four main flows (i.e. flow 1 — resources, flow 2 — incomes, flow 3 — spending and flow 4 — production).
Trade-off exists when to gain benefits, other things may have to be given up or sacrificed, resulting in compromise. While there can be differences, in some ways the concept is like an opportunity cost, when to achieve one goal or outcome, another suffers.
Traditional economy is one that today only exists in remote pockets of other economies. The three basic economic decisions are answered according to long-held customs and beliefs.
Wants are goods and services we would like to have that make life more enjoyable. However, they are not essential for survival.

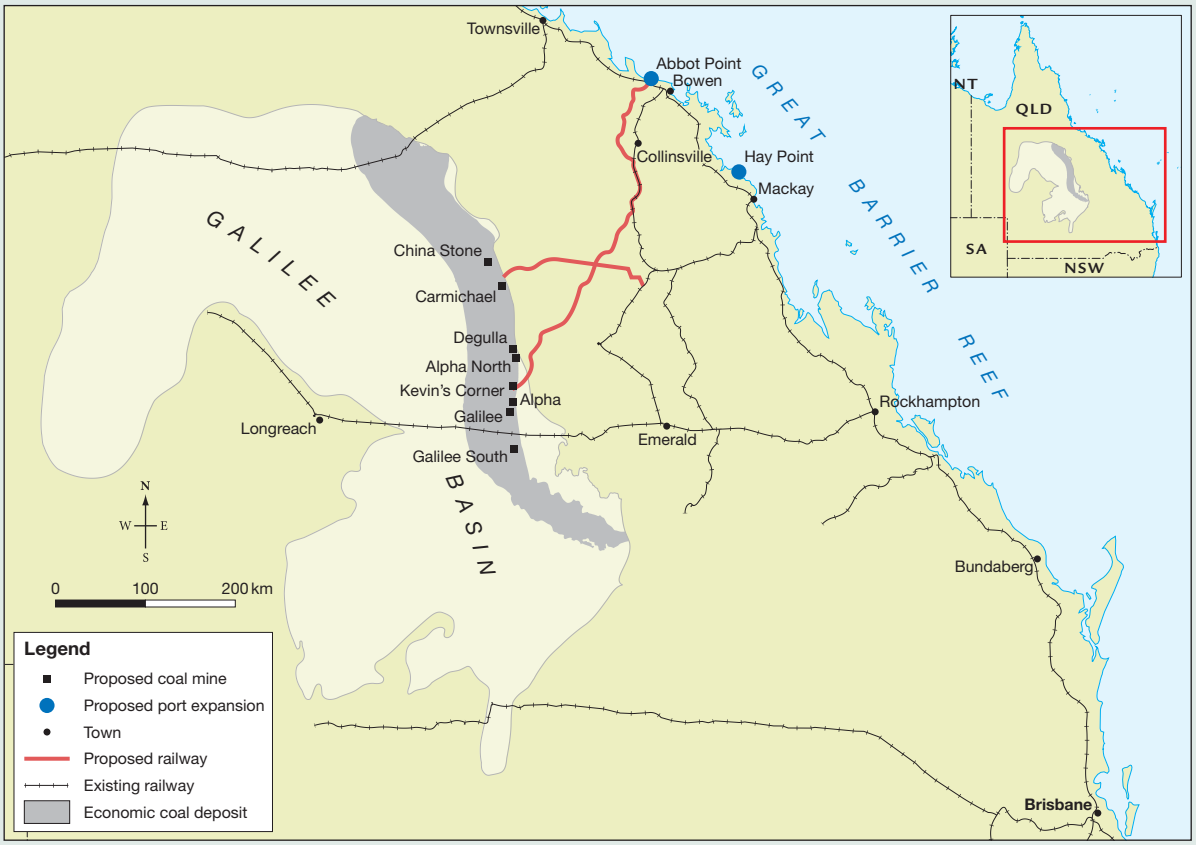
1.9.3 Practice school-assessed coursework

A REPORT ON AN INVESTIGATION INVOLVING TRADE-OFFS AND A COST–BENEFIT ANALYSIS

This research question involves the *preparation of a report* about *trade-offs* and *cost–benefit analysis* associated with a large coal mining project. Review the information below and then respond to the questions that follow:

Case study — the Carmichael coal mine

In 2012, the Adani Group first proposed its giant Carmichael coal mining project for Northern Queensland in the Galilee Basin, inland from the coast and the Great Barrier Reef. After opposition from some environmental, First Nations Australian and political groups, indecision by governments, and a battle in the federal courts to get permission, construction commenced in 2019. The project also involved rail, water, port terminal and other infrastructure. Production and coal exports have now commenced.



Source: Based on data from Department of Agriculture and Fisheries, Department of Resources, Department of Natural Resources, Mines and Energy, © The State of Queensland 2022 and Natural Earth. Map drawn by Spatial Vision.

For additional information about this coal mine, conduct some online research, perhaps starting with the weblinks in the onResources box.

a. **Define** the economic term, *trade-off*. **(1 mark)**
b. **Identify** and **outline** two likely trade-offs associated with the decision for coal mining to start. **(2 marks)**
c. **Outline** what a cost–benefit analysis attempts to do. **(2 marks)**
d. Imagine you are an independent consultant brought in by the government of the day. **Prepare** a detailed cost–benefit analysis report to determine whether the project should have gained the green light to proceed. As a start, you will need to do some online research (see some suggested links above). This report should include the following elements:
   - An outline of at least four important costs **(5 marks)**
   - An outline of at least four important benefits **(5 marks)**
   - An attempt to hypothetically calculate a benefit–cost ratio **(2 marks)**
   - Your conclusion and recommended decision. **(2 marks)**

on Resources

Weblinks
Mining
ABC
Australian Resources and Energy Group
Climate Council Organisation
Environmental Law Australia
Sydney Morning Herald

Digital documents
Practice school-assessed coursework (doc-38074)
Topic summary (doc-37938)
Key terms glossary (doc-37945)
Crossword (doc-31529)
Wordsearch (doc-31530)
Match-up definitions (doc-31531)

1.9 Exam questions

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1.9 Section A: Multiple choice questions

Question 1

Concerning microeconomics and macroeconomics as areas of study, which statement is generally *false*?

A. Microeconomics often studies how particular firms, specific industries and individual markets operate.
B. Macroeconomics may study the operation of the circular flow model of the Australian economy and the role played by the level of aggregate demand.
C. The problem of Australia's car industry being uncompetitive against foreign car makers before it closed down, mostly involves macroeconomic issues.
D. The issue of waterfront or aviation reforms are good examples of microeconomic studies.

Question 2

In economics, the problems of *scarcity* and *choice* arise because:

A. wants are always limited.
B. resources are limited relative to wants, which are virtually unlimited.
C. resources and wants are unlimited.
D. we do not have enough money.

Question 3

Which of the following is *not* generally regarded by economists as a physical capital resource?

A. The artificial snow-making dam and extra snow-making capacity constructed at Mt Hotham
B. Power lines and generators owned by Powercor
C. Manufactured items used by firms to help produce other goods and services
D. A household washing machine

Question 4

If the country represented in the following table was located on its production possibility frontier, the opportunity cost of increasing machine production from 0 to 30 million units per year would be:

A. 50 million units of food production.
B. 10 million units of machine production.
C. 60 million units of food production.
D. none of the above.

Production possibility table for a country that can produce food and/or machines with only the resources at its disposal

	Maximum production combinations or possibilities				
Area of production	**A**	**B**	**C**	**D**	**E**
Annual production of food (million units)	0	50	80	100	110
Annual production of machines (million units)	40	30	20	10	0

Question 5

Concerning the production possibility data in the table in question 4, which statement is *true*?

A. Production of both products could be increased simultaneously if the nation was actually located on its production possibility frontier.
B. The opportunity cost of producing food decreases as more machines are produced.
C. There is no opportunity cost of producing more food.
D. Any combination of food and machines (points A, B, C, D and E) is regarded as an efficient allocation or use of resources since total output is at its maximum.

Question 6

Concerning a production possibility diagram (PPD) and the production possibility frontier (PPF), which statement is *true* when a country has access to extra natural resources and labour productivity rises?

A. There would be no change in the position of the PPF.
B. The country would be located at a point outside the PPF.
C. The country would be located at a point inside the PPF.
D. The country's productive capacity and PPF would rise and shift outwards.

Question 7

Concerning a production possibility diagram (PPD) and the production possibility frontier (PPF), which statement is *true* when a country has high levels of unemployment?

A. There would be an inward move in the position of the PPF and capacity would shrink.
B. The country would be located at a point outside the PPF.
C. The country would be located at a point inside the PPF.
D. The situation of unemployment cannot be shown on the PPD.

Question 8

Concerning a country's production possibility diagram (PPD), which one of the following would have an effect on the production possibility frontier (PPF) that is *different* from the other three?

A. Over 100 000 skilled immigrants arrived.
B. There was foreign investment in a new copper mine in NT worth $4.5 billion.
C. There was severe flooding across eastern Queensland, NSW and Victoria as in 2022.
D. The National Broadband Network (NBN) was finally completed.

Question 9

What is a likely trade-off in the long-term that is commonly associated with growing the size of the economy and the PPF?

A. Increased CO_2 pollution
B. Increased resource depletion
C. Accelerated climate change
D. All of the above

Question 10

Which of the following *can* be easily shown on a production possibility diagram for a country?

A. Currently unattainable output combinations
B. Unemployment and incomes
C. Rises in productivity and economic growth
D. All of the above

Question 11

Which statement about the simple three-sector circular flow model is *incorrect*?

A. There are four flows or streams shown on the model.
B. One sector involves everyone in the country and the other sectors include firms making up the private sector and the public sector.
C. The various flows making up the model are assumed to be equal in value and interdependent.
D. The model shows the effects of spending on foreign goods and services, as well as household savings.

Question 12

Assume that the total value of spending by Australian households and governments fell from $60 billion to $55 billion over a year. Using the three-sector circular flow model, which of the following most logically predicts the correct *sequence* or order of the effects on our economy?

A. National production would be likely to decline by $5 billion, incomes would fall, and unemployment of resources would fall.
B. National incomes would probably rise by $5 billion, along with the purchase of resources and production.
C. National employment of resources would be likely to fall by $5 billion, GDP would decline and incomes would decrease.
D. GDP would fall by $5 billion, and so the demand for resources and hence incomes would also decline.

Question 13

Thinking of the three-sector circular flow model, which statement is *incorrect* following a rise in total spending on final goods and services by $100 million?

A. There would be a period of expansion in GDP, possibly leading to a peak.
B. There is likely to be a slowdown associated with a rise in the unemployment of resources among the household sector.
C. There may be a rise in incomes received by the household sector.
D. The rate of inflation (a general rise in prices) may accelerate if spending rises too quickly.

Question 14

Concerning the *traditional view* of consumer behaviour, which statement is *false*?

A. Consumers behave in rational ways when they make purchases of goods and services.
B. Consumers satisfy their more important needs and wants before their less important wants.
C. Consumers make buying decisions based on a sound knowledge of the associated advantages and disadvantages.
D. Consumers are quite unpredictable when they make purchases.

Question 15

The concept of marginal utility is used to help predict consumer behaviour. Which statement is normally *incorrect*?

A. Consumers gain most satisfaction from eating their second apple of the day, if apples are their favourite fruit.
B. The concept of utility does not apply well to an addicted shopaholic making hundreds of purchases this Saturday morning.
C. On average, the purchase of your twentieth jumper in a week yields less utility than your fifteenth.
D. The consumption of your fifth chocolate milk this week will likely result in less utility than your first.

Question 16

Regarding the weaknesses of a pure market economy, which statement is mostly *incorrect*?

A. The free market always allocates resources efficiently.
B. The free market is likely to create much inequality in incomes and consumption.
C. Economic activity in a pure market economy is likely to be unstable.
D. Consumer sovereignty means that resources are usually allocated to where they are most valued.

Question 17

Which statement about economic systems is *least* correct?

A. Because of scarcity, all economic systems must answer the three basic economic questions.
B. Australia, the USA and Germany have mixed economies that offer the strengths of the market system with government intervention to reduce some of the weaknesses of a pure market economy.
C. Traditional economies ensure that the living standards of people are relatively high.
D. A pure or free market economy does not always use resources efficiently, so living standards may suffer.

Question 18

Traditionally, *business* behaviour is directed towards which of the following?

A. Minimising costs
B. Lifting efficiency
C. Maximising profits
D. All of the above

Question 19

In a mixed economy represented by the three-sector circular flow model, stabilising economic activity is an important government function. Regarding this role, which statement is most *correct*?

A. In a recession, the government needs to use policies to slow household consumption spending to avoid inflation.
B. In a strong recovery, the government should cut taxes and lift its spending.
C. In a boom, the government should raise taxes.
D. Countercyclical policies mean that as economic activity slows, governments need to cut their spending.

Question 20

In a mixed economy, the government redistributes incomes using various policies. Regarding this role, which statement is *incorrect*?

A. In the absence of government intervention, the market would not provide incomes to those who are too old to work.
B. For maximum effectiveness, the rich are normally excluded from receiving welfare benefits.
C. Progressive taxes are those where the tax rate varies inversely with income.
D. Because access to education and health are regarded as necessities and they are expensive to produce, they cannot be sold cheaply by the private sector, necessitating provision by the public sector.

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Digital documents Multiple choice answer grid (doc-37952)
Multiple choice answers (doc-37953)

1.9 Section B: Extended response questions

Question 1 (6 marks)

The nature of economics as a study

a. **Explain** the *differences* between the study of *microeconomics* and *macroeconomics*, giving two examples for each. **(2 marks)**

b. **Outline** the difference between *positive economics* and *normative economics*. **(2 marks)**

c. **Identify** the type of statement (positive or normative) that each of the following represents:

i. Lower interest rates charged on individuals borrowing bank credit will tend to push up house prices. **(1 mark)**

ii. The unemployment benefit is too low and should be raised by $70 per week. **(1 mark)**

Question 2 (6 marks)

Choice and opportunity cost

In 1969, the USA successfully managed to put a man on the moon. The money cost of the project for the government and nation (in today's dollars) was estimated to be around US$160 billion:

a. **Define** the term *opportunity cost*. **(1 mark)**

b. **Identify** and **explain** the realistic *opportunity costs* of this space program (giving likely *examples* of opportunity costs in your answer). **(3 marks)**

c. **Outline** the potential benefits of the US government's decision to put a man on the moon. **(2 marks)**

Question 3 (7 marks)

The production possibility diagram

Economists use the *production possibility diagram* (PPD) to illustrate the consequences of making alternative production choices or economic decisions.

a. Use the table below to accurately **draw** and fully **label** a PPD showing a hypothetical PPF for North Korea in 2023 (*Note:* all values are hypothetical). Assume North Korea can produce only two products: *rice* and *defence equipment*. Use your laptop or graph paper and then start by selecting appropriate scales for each axis. **(3 marks)**

b. Use the table below to **calculate** the potential total level of national output (measured only in millions of units) for each of the following production possibilities or choices: A, B, C and D. **(1 mark)**

North Korea's hypothetical production possibilities, 2023

	Production possibilities			
Production choice (million units)	**A**	**B**	**C**	**D**
Production of rice per year	0	25	32.5	40
Production of defence equipment per year	5	4	3	0
Calculate the country's annual total output	___	___	___	___

c. **Identify** three possible *factors* that hypothetically might help to shift North Korea's PPF outward and to the *right*. **Explain** how this shift in the PPF might affect living standards. **(3 marks)**

Question 4 (9 marks)

The three-sector circular flow model

a. Neatly **draw** and fully **label** a diagram representing a simple *three-sector circular flow model* of Australia's economy. **(5 marks)**

b. In some recent years, the rate of growth in the *total level of spending* by Australian households slowed down. Using the circular flow model that you have drawn, and assuming no change in government taxes or spending, clearly and systematically **explain** (i.e. logically, step by step) the *macroeconomic effects* of this spending slowdown in the Australian economy. **(4 marks)**

Question 5 (7 marks)

The business cycle

a. Accurately **define** what is meant by the *business cycle*. **(1 mark)**

b. Neatly **draw** and fully **label** a typical *business cycle diagram* showing different levels of national economic activity. **(4 marks)**

c. **Outline** three important ways a period of *boom* might differ from a period of *recession*. **(2 marks)**

Question 6 (14 marks)

Consumer behaviour

You have just decided to purchase a new pair of jeans.

a. **Identify** and **outline** the key factors that economists *traditionally believed* would affect your decision (as a consumer) to buy this pair of jeans. **(4 marks)**

b. **Distinguish** between *incentives* and *disincentives*, giving an example of each. **(2 marks)**

c. Incentives and disincentives are used by parents, schools, employers and governments.

i. **Explain** how the government could discourage underage drinking. **(2 marks)**

ii. Supporting charities is beneficial. **Explain** how the government encourages this support. **(2 marks)**

iii. You have a part-time job at McDonald's. **Outline** two strategies that your employer might use to alter your behaviour. **(2 marks)**

iv. Schools often use prizes and detentions to affect student decisions. **Outline** the thinking behind these strategies. **(2 marks)**

Question 7 (7 marks)

Business behaviour

a. BHP has been very successful and is one of Australia's biggest mining companies.

i. **Outline** the traditional viewpoint driving key business decisions by BHP. **(2 marks)**

ii. **Outline** how the government might do each of the following:

- discourage BHP from harming the environment through the release of CO_2 emissions
- encourage BHP to employ young unemployed workers and apprentices thereby reducing unemployment. **(2 marks)**

b. **Classify** each of the following as either an incentive or disincentive, giving a brief explanation of your reasons:

i. Tobacco companies operating in Australia are required by law to use plain packaging. **(1 mark)**

ii. Businesses employing older Australians may be eligible for a government subsidy of up to $10 000. **(1 mark)**

iii. Community award certificates are presented to those businesses involved in community work. **(1 mark)**

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TOPIC

2 Decision-making in markets

UNIT 1 AREA OF STUDY 2

Decision-making in markets

OUTCOME 1

On completion of this unit the student should be able to explain the role of relative prices and other non-price factors in the allocation of resources in a market-based economy and analyse the extent of competition in markets.

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2.1 Overview

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2.1.1 Introduction

A nation's **economy** is simply *an institution or organisation that coordinates the production and distribution of goods, services and incomes.* As we know from our earlier studies (topic 1), Australia has a **mixed economy** (also called a *predominantly* market-based economy or *contemporary* market economy). Here, the three basic economic questions (i.e. what, how and for whom to produce) are *generally* answered by reference to the *market* or *price system*, where consumer sovereignty, competition, price incentives, the private sector and self-interest are important features. Additionally, our economy also involves some *government intervention* to correct instances of **market failure** and other weaknesses of a pure market system.

Our focus for this topic is to drill down to gain a deeper understanding of how different types of *markets* operate to allocate limited resources amongst competing uses. This involves the study of *microeconomics*. We will come across the *demand–supply diagram* used to represent a *single market*. Here, demand by consumers and supply by producers interact to determine the *equilibrium market price* and *quantity traded*. But let's not get too far ahead of ourselves just yet.

FIGURE 2.1 Traditionally, markets took place in a particular location where buyers and sellers would meet face to face and negotiate prices through a process of offer and counteroffer. Increasingly, markets are conducted online and may not involve direct contact between buyers and sellers.

2.1.2 What you will learn

Key knowledge

Use each of the points from the VCE Economics Study Design below as a heading in your summary notes.

Key knowledge	Subtopic
◯ The assumptions of a perfectly competitive market system	**2.2**
◯ The law of demand and the demand curve	**2.4**
◯ The effect on demand and the position of the demand curve by non-price factors, including changes in disposable income, the prices of substitutes and complements, tastes and preferences, interest rates, population and demographics, and consumer confidence	**2.7**
◯ The distinction between a movement along the demand curve and a shift of the demand curve	**2.4, 2.7**
◯ The law of supply and the supply curve	**2.5**
◯ The effect on supply and the position of the supply curve by non-price factors, including changes in the costs of production, technology, productivity, and climatic conditions and other disruptions	**2.7**
◯ The distinction between a movement along the supply curve and a shift of the supply curve	**2.5, 2.7**
◯ The effects of changes in demand and supply on equilibrium prices and quantities	**2.6**
◯ The role of the market mechanism and relative prices in the allocation of resources in a market-based economy	**2.8**
◯ The degree of market power in different markets, such as perfect competition, monopolistic competition, oligopoly and monopoly, and the effect on prices, resource allocation and living standards	**2.2**
◯ The strategies businesses may use to increase profit, including price discrimination, multiple branding or anti-competitive behaviour as outlined in the *Competition and Consumer Act 2010*	**2.2**
◯ One contemporary example of a market, including the degree of competition in that market	**2.9**

Key skills

These are the skills you need to demonstrate.

Key skills
◯ Define key economic concepts and terms and use them appropriately
◯ Gather, synthesise and use economic data and information from a wide range of sources to analyse economics issues and assess the effect of economic decisions
◯ Construct and interpret graphs and diagrams to represent and interpret economic information
◯ Apply economic knowledge, concepts and theories to predict the effect of changes in conditions on market outcomes
◯ Research and synthesise information about a particular market
◯ Analyse the extent of competition in markets by drawing conclusions based on economic criteria

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2.2 The nature of perfectly competitive and other types of markets in an economy

KEY KNOWLEDGE

- The assumptions of a perfectly competitive market system
- The degree of market power in different markets, such as perfect competition, monopolistic competition, oligopoly and monopoly, and the effect on prices, resource allocation and living standards
- The strategies businesses may use to increase profit, including price discrimination, multiple branding or anti-competitive behaviour as outlined in the *Competition and Consumer Act 2010*

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Most countries, including Australia, rely heavily on the operation of markets and the price system to make key economic decisions. There are literally thousands of individual *markets* scattered across the country and around the world. For instance, there are markets for property, beauty products, labour, shares, music, cars, money capital, education, health, international currencies or foreign exchange (including cryptocurrency), carbon emissions, fish, aviation, telecommunications, education, vegetables, sport and many more. Given the importance of *the market* in most countries, a closer examination is necessary.

2.2.1 What exactly is a market?

A **market** is simply an institution or organisation where buyers (who create a *demand* for the item) and sellers (who organise the production or **supply** of the item) of a particular good or service negotiate an agreeable or equilibrium price. Often this process involves some haggling or bargaining with offer and counteroffer. This is because buyers want to purchase at the lowest possible price and sellers want to receive the highest price. However, despite these common features of all markets, there are some differences. For example:

- There are open, legal or free markets, as well as black markets (e.g. for illegal products like non-prescription drugs).
- Some markets can involve face-to-face contact between consumers and producers at a particular location (e.g. the Queen Victoria Market in Melbourne). Increasingly, due to the rapid growth of the internet and improvements in telecommunications, individuals participating in a market may never see each other, may live in different countries and may even use different currencies.
- In some markets, the level of business competition or rivalry is strong with hundreds of sellers of a single product (called perfect or pure competition), while in others it is very weak with only one seller (called perfect or pure monopoly). As we will see, the number of sellers in a market affects the level of *market power* that a business has in setting its prices.

FIGURE 2.2 Markets are where buyers and sellers meet and negotiate prices through a process of offer and counteroffer for goods or services.

2.2.2 The nature of market power and market structure

As the name suggests, **market power** is basically the *ability of a business to set or control the market price at which it sells its good or service*. The degree of power varies between different market structures. Here, **market structure** *is a term that is used to describe the type of competition and level of power found in different markets.*

As shown in Figure 2.3, there are *four* main types of market structure found in Australia, each with unique features.

FIGURE 2.3 The four types of market structure reflect the level of competition, market power and other features.

Stronger competition (little market power) ◀ **MARKET STRUCTURES** ▶ **Weaker competition (much market power)**

Pure or perfect competition	Monopolistic competition	Oligopoly	Pure or perfect monopoly
• Many buyers and sellers in the industry (perhaps hundreds or thousands) • Strong competition • Firms are 'price takers' with little market power to set their prices • No brand names or brand advertising since the product is identical or homogeneous • Perfect knowledge of market conditions exists • Ease of entry and exit by firms because there are no barriers like high start-up costs or government regulation • Closest but not pure examples: some primary products or rural commodities, the share market and property markets	• A moderate number of sellers in the industry (possibly between 20 and 40, but cannot say exactly), each selling similar but not identical products to satisfy the same type of want • Quite strong competition • Product or brand name differentiation is important, as is advertising (e.g. style, design, colour, service and image) • Quite good knowledge of market conditions • Moderate ease of entry and exit by new firms because there are few barriers or restrictions • Good examples: clothing manufacturers, retail trade, furniture, and restaurants	• Relatively few but large sellers (usually up to around 8 or 10, but cannot say exactly) control the industry, with some potential for collusion and abuse of market power. Sellers often watch their rivals when setting prices • Brand and product differentiation are quite important ways of selling, using advertising and development of a certain image • Fairly difficult entry and exit for firms due to high start-up costs and the barriers operated by already well-established companies • Good examples: supermarkets, banks and oil companies	• One seller controls the output of the industry and there is no close substitute product • No competition in pure monopoly markets since there are no rival sellers • Product differentiation is unimportant • Entry and exit are difficult due to high start-up costs and other barriers in the case of natural monopolies (not practical to have many firms selling the product) and well established companies • The firm is a 'price maker' and has a lot of market power given there are no close substitutes or rivals to undercut prices • Closest, but not pure examples: water companies, electricity transmission, the NBN and airport operators

1. **Perfect or pure competition**
   At one theoretical extreme, some markets are characterised by **perfect or pure competition**. Here, there is strong rivalry between perhaps hundreds or thousands of firms selling an identical product. Individual producers are therefore unable to set their own prices and have little or no market power. As a result, they are called **price takers**. This is common in the markets for agricultural commodities like beef, wheat and apples.
2. **Perfect or pure monopoly**
   At the other theoretical extreme to perfect or pure competition, there are markets involving **perfect or pure monopolies**. Here, a single firm controls the output of an industry for which there is no substitute product. These firms have much market power and are able to set or influence prices. They are called **price makers** and might include the markets for some utilities like water, the only general store in a small town or perhaps even your school canteen!

FIGURE 2.4 Perfect competition means there are many business rivals that compete to outdo each other and sell a better and more attractive product at a lower price.

3. **Monopolistic competition**
   Monopolistic competition involves quite a few firms, perhaps 20, 40 or even more (it is hard to give an exact number), operating in a single industry to produce a particular product. However, each firm uses its unique brand name and different product features to sell its items. Products are similar but not identical, giving firms some market power when setting their price. An example might be the clothing industry or restaurants.
4. **Oligopoly**
   An **oligopoly** exists when several large firms, possibly 5–10 (it is hard to give an exact number), control most of the output of an industry. Here, selling often depends on brand names and there is the potential for rival producers to secretly collude in an attempt to limit competition and fix prices (although this is illegal under the Australian *Competition and Consumer Act 2010*). Australian examples of oligopolistic markets might include the oil, banking, aviation or grocery markets.

FIGURE 2.5 Sometimes rival companies secretly collude to push prices and profits up at the expense of consumers.

However, of these four types of market structure, many economists argue that *perfect or pure competition*, where there is little or no market power, is the *ideal*. As we shall soon see in more detail, this is because strong competition can result in lower prices, better quality goods and superior service for consumers; greater *efficiency* in using or allocating our scarce resources; higher levels of production and national output (GDP); and generally better material living standards.

2.2.3 The assumptions of a perfectly competitive market

Given that a perfectly or *purely competitive market* is generally seen as a good thing, the question is 'what are the *preconditions* that must be met for this type of market to exist?'

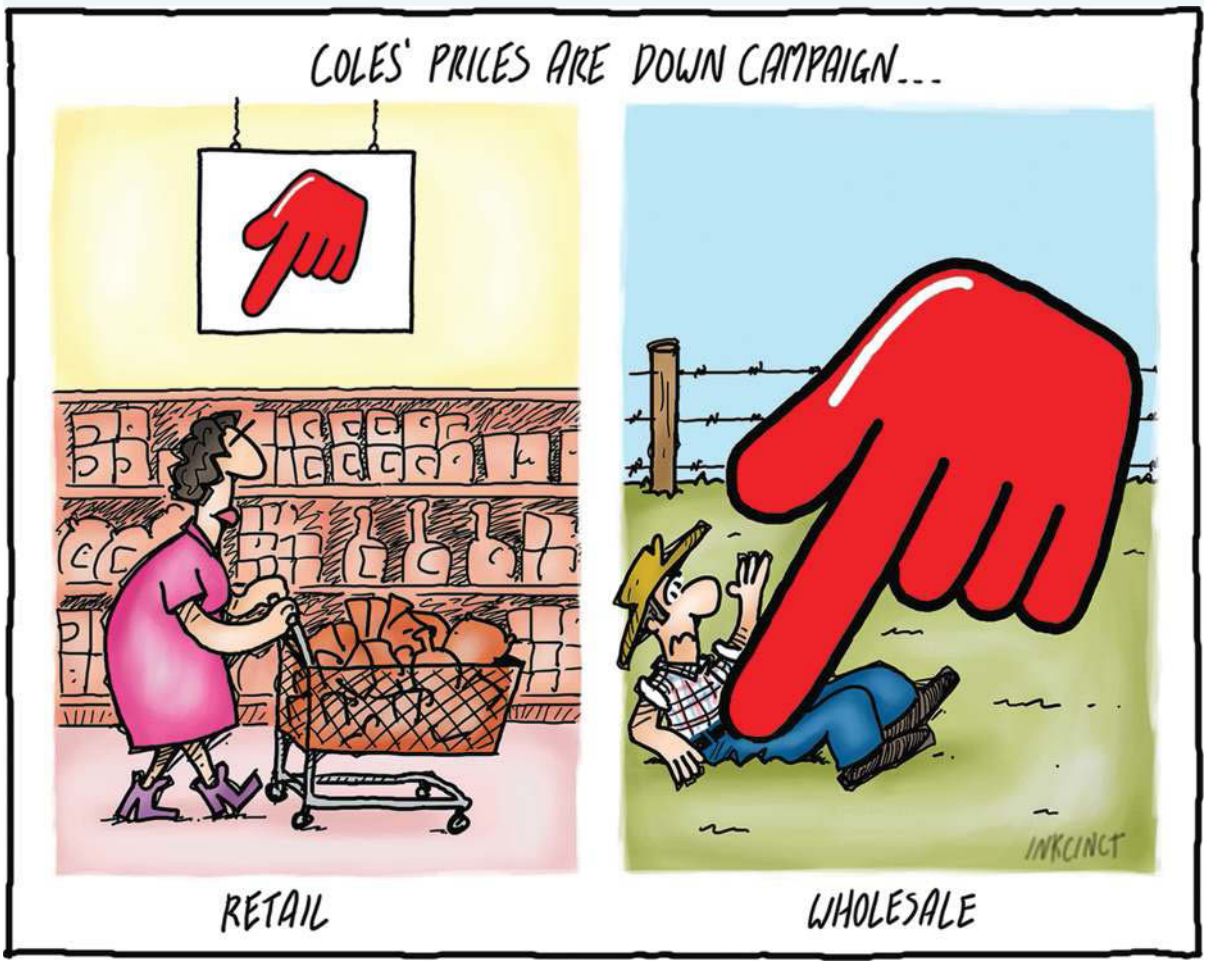
- **Strong competition and the absence of market power**
  Perfectly competitive markets require that there are lots of rival sellers of an *identical* product so that no one seller has *market power* enabling them to fix or set the market price. Firms are simply *price takers* in the market. Of course, in the real world, pure or *perfectly competitive* markets do not usually exist because as we shall soon see, all industries have some **barriers to entry** or there is usually some **product differentiation**. Examples of competitive markets, like the wheat or share market, are only approximate ones. The opposite to the perfectly competitive market is the *perfect monopoly* where a single firm controls the entire output of an industry, has much market power, and is a *price maker*. The closest examples here might include the NBN, Australia Post or Melbourne Water. More commonly we find *oligopolies* (e.g. cardboard packaging, oil, banking, supermarkets, aviation and power companies) and *monopolistic competition* (e.g. restaurants, retail, clothing manufacture).
- **Low barriers or ease of entry into the market**
  There is limited competition in monopoly or oligopoly-type markets because there are significant barriers to entry that restrict the setting up of new competing businesses. A common reason for this is that existing firms are large and well established. New businesses would find start-up costs expensive. In addition, in some industries other barriers exist like government red tape, safety requirements, licensing and paperwork. By contrast, it is generally cheaper and easier for new firms to gain entry into perfectly competitive markets.
- **No product differentiation (homogeneous product)**
  Competition is usually more intense when producers are selling identical products not distinguished by brand names, advertising, product appearance or special packaging. That is, the market is for a **homogeneous product**. Hence, the lack of differentiation in the wheat or wool markets, for example, more closely approximates perfect competition than is found in the market for products such as designer clothes, petrol or cars.
- **Consumer sovereignty exists**
  Consumer sovereignty is where the particular types of goods and services produced (i.e. the 'what to produce' question) closely reflect what consumers purchase, rather than this decision being made through government control or the decisions of firms about what to supply.
- **Absence of government controls and restrictions**
  The *price system* generally works best when there are no government regulations or restrictions affecting prices or limiting competition in an industry. To be competitive, markets must usually be *free* or *deregulated*.
- **Good or perfect knowledge of the market**
  Clearly, the price system can work properly only when both buyers and sellers have complete, accurate or **perfect knowledge** about current trends in market prices and the features of the products involved. A lack of good information by consumers results in poor and irrational decisions being made and resources being misallocated. In such instances the *price signals* coming from the market are not a reliable guide to what consumers actually want firms to produce or supply.
- **Firms use resources to try and maximise their profits**
  It is assumed that business decisions are mainly motivated by self-interest and a desire to *maximise profits* and incomes. Therefore, in perfectly competitive markets, the owners of resources should shift their resources from one use to another, in order to reflect changing prices and fortunes in different industries,

and changes in consumer demand. This requires that there be no major barriers to the entry or exit of firms into or out of an industry. In addition, resources need to be *mobile* so they can be redirected to areas of highest profitability.

- **Consumers behave rationally**
  In a perfectly competitive market, it is assumed that buyers will behave in a financially rational way to promote their own self-interest, by being attracted by low prices for finished products and discouraged by high prices.

In Australia, it is fairly obvious that most of our markets *fail* to fully satisfy all these preconditions required for perfect competition. Perhaps the best examples of *almost* perfect competition in Australia are the markets for fruit, vegetables and some rural products, shares and property. However, pure or perfect competition does not exist in markets involving steel, chemical, banking and finance, petroleum, shipping and transport, groceries, cardboard packaging, glass, the post, the broadband network and water supply. Here, *monopolies* and *oligopolies* are more common. Even the general store in isolated small country towns, or your own school canteen, can face little competition in their respective markets.

FIGURE 2.6 Faced with competition from other stores, coles supermarkets advertise to say that their retail prices are going down, down, down so the consumer supposedly gets a better deal as a result. However, some people believe that Coles have also used their market power to put enormous pressure on their suppliers and local producers, including farmers, paying them lower prices. If this is the case, it may lead to lower profits for producers and, eventually, business closures for some supermarket suppliers.



2.2.4 The effects of market power and structure

Generally, strong levels of competition in markets are seen as beneficial for several reasons:

- **Competition means higher efficiency in allocating resources**
  Where competition is weak among firms selling in a market, there is often less need for firms to use resources efficiently or keep production costs low in order to survive. By contrast, when there is strong rivalry, businesses are usually lean and are forced to cut their costs and organise production as efficiently as possible. An exception to this general rule is when having a monopoly or even oligopoly operating in a single market allows for mass production and bigger-scale operations. Here, average costs per unit of output produced can be lower and spread more thinly over higher production volumes. Bigger firms can achieve higher efficiency and gain **economies of large-scale production**.
- **Competition results in lower prices and greater purchasing power of incomes**
  When there are monopolies and competition is weak in various markets, often prices are higher since there is little or no rivalry between businesses. In addition, firms in an oligopoly-type market are sometimes tempted to collude and use anti-competitive behaviour. This restricts competition, pushes up prices and rips off customers. In turn, higher prices reduce the **purchasing power** of incomes and lower our material living standards. In reverse, when there is strong competition between firms battling to survive by improving efficiency, consumers usually enjoy lower prices and improved purchasing power.
- **Competition means better quality goods and services**
  Strong competition in a market usually means that to survive, sellers are forced to ensure that the quality of their goods is equal to or better than those offered by competitors. By contrast, when there are monopolies and oligopolies, customers have little or no choice of products. They must purchase whatever is available and even put up with poor service and reduced consumer satisfaction. However, there may be an exception in a situation where a large monopoly producer uses its size and financial strength to put money into product research and development (R&D) that would otherwise be beyond the reach of small firms. In this case, customers may benefit from weaker competition.
- **Competition means greater output of particular goods and services**
  When competition is weak (and especially when there are monopolies and collusion among oligopoly-type firms with market power), the total supply of goods and services is lower than otherwise due to higher prices being charged. By contrast, strong competition or rivalry in a market (where firms battle to cut costs and be more efficient in their use of resources than their competitors) usually leads to higher levels of GDP and hence less unemployment of resources.
- **Competition improves international competitiveness of local firms**
  Given that weak competition often leads to lower efficiency and higher prices, it is easy to see how this would undermine the **international competitiveness** of local firms trying to sell their products both here and overseas. This would tend to decrease Australia's exports and, as a result, reduce our levels of national production and income. In contrast, strong competition usually has the opposite effect — costs and hence prices are lower and more attractive to consumers at home and abroad. This strengthens our international competitiveness and therefore boosts exports, national production and income.
- **Competition often lifts material wellbeing and living standards**
  Strong competition in markets helps to ensure that resources are used more efficiently, production costs and prices are lower, international competitiveness is stronger, and national output and incomes are higher. These things help to improve **material living standards**.

2.2.5 Strategies used by some businesses to increase profits

To be successful and profitable, most businesses have to sell their goods and/or services to customers by developing an effective plan or mix of strategies. This is often referred to as the *five Ps of marketing*. They are detailed later in Topic 3 (see Subtopic 3.4), but here is just an outline of how a successful marketing plan can help increase business profits:

- **Product** — To be profitable, businesses must develop a product or service that is better than the rest, meets a need, or solves a problem for consumers (e.g. Apple and Samsung for mobiles and Amazon for online purchases). Some companies, like Nestle, L'Oréal, Volkswagen, Unilever, and Facebook, use *multi-branding* to broaden their market and sales, and drive-up profits. Here, often similar products but with different brand names and packaging come out of the same factory. For those businesses whose products are sold in supermarkets, having this wider range of product gives them more space on shelves and exposure, helping to boost sales and profits.
- **Price** — The price at which firms sell their goods or services needs to be high enough so it is profitable, but it must also offer consumers in the targeted market value for their money. This, too, helps to drive sales and profits.
- **People** — The staff businesses employ are very important and need to be knowledgeable, friendly, and efficient, so they are able to enhance the consumer's shopping experience. Again, this can grow sales and profits.
- **Place** — In years past, most business sales took place at a location or storefront. While this is still important for customers who want to see, feel, and try products, increasingly, many consumers seek the convenience and product range offered by online sellers.
- **Promotion** — Product promotion is critical for business profitability. Traditionally, firms used ads on radio, TV, newspapers, and magazines to inform potential customers of the product being sold. While this is still important for sales in some markets, increasingly, firms have developed an online presence through their website that seeks to positively engage the target consumer audience, drive up sales and generate profits. In addition, promotion can involve various selling strategies (e.g. prompts or nudges) drawn from behavioural economics, to encourage consumers to spend.

Except for firms that have a monopoly, most businesses must work hard to be profitable since they sell in markets where competition is strong. Here, most sellers are price takers, not price makers. They use an effective marketing plan to boost their sales and profits.

However, whilst strong competition is good for consumers, it tends to depress business profits. In response, some Australian firms attempt to use *anti-competitive behaviour* that is designed to soften competition, grow their *market power*, push up consumer prices, and lift company profits.

To protect consumers and improve efficiency, the Australian government has passed laws that help to strengthen competition between rival businesses, through the ***Australian Competition and Consumer Act 2010*** **(ACCA)**. Under this legislation, some anti-competitive business activities, including those listed in Table 2.1, are deemed illegal.

TABLE 2.1 Some anti-competitive business activities that reduce efficiency and are illegal under the Australian *Competition and Consumer Act 2010*

Illegal anti-competitive business behaviour	
Price fixing and misuse of market power	where firms in an industry collaborate to set prices or impose minimum resale prices
Price discrimination	occurs when, for the same good or service, a business chooses to charge different prices to different customers
Exclusive dealing	where companies refuse to supply their products or services to one or more firms due to a special agreement

(continued)

Collusive bidding	when, in submitting a tender or quote for the supply of a good or service, supposedly competing firms meet secretly beforehand to agree on higher more profitable prices for inclusion on their quotes or bids for a contract. Competition amongst rivals is restricted. The successful business that wins the contract might then share their super profits around amongst others who lost the deal due to their even higher prices.
Price leadership	where the dominant or leading firm in an industry sets prices that other firms follow
Predatory pricing	where the dominant firms conduct a price war involving big cuts in prices with the intention of driving rival firms bankrupt, and then later enjoying the market without competition
Market zoning	where competing firms in a region reach an agreement to divide up the market into zones, areas or regions where they do not to compete with each other over prices
Interlocking directorships	where a person acting as a member of the board of directors for one company is also on the board as a director of a supposed rival company
Unconscionable conduct	where a business crosses the line and treats its suppliers or customers very harshly.

The Australian *Competition and Consumer Act 2010* is enforced by the **Australian Competition and Consumer Commission (ACCC)**. After investigations, if a company is found guilty of these offences, there are heavy fines of up to $10 million for each incident, as well as possible jail sentences for directors. There are also rules about *company mergers* and *takeovers* designed to help ensure that these actions do not reduce market competition. In the past few years, the ACCC has conducted many high-profile investigations of anti-competitive behaviour across a range of industries.

on Resources

Weblinks Market structures
Monopoly vs. oligopoly vs. competition: monopolies and oligopolies defined, explained and compared
Types of competition

2.2 Activities

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2.2 Quick quiz on | **2.2 Exercise**

2.2 Exercise

1. **Describe** the main features of Australia's market-based economy. **(2 marks)**
2. **Explain** the main features of a *market* and then name *three* different examples of individual markets found in most cities. **(3 marks)**

3. **Complete** the table by outlining *four* important differences between perfect or pure competition, monopolistic competition, oligopoly and perfect or pure monopoly, providing *one* example of each type of industry. (*Note:* Sometimes it is hard to be precise here.) **(4 marks)**

Some features of a particular market	Perfect/pure competition e.g.....	Monopolistic competition e.g.....	Oligopoly e.g.....	Perfect/pure monopoly e.g.....
a. Level of competition or number of firms				
b. Level of product differentiation				
c. General level of efficiency				
d. Level of influence over prices				
e. Likely level of market prices paid by consumers				

4. **Define** the following terms:
   a. market power
   b. barriers to entry
   c. homogeneous product
   d. perfect knowledge. **(4 marks)**
5. **Distinguish** the terms *price maker* and *price taker*. **(2 marks)**
6. Look at the following list of single industries or markets found in Australia. Select *two* of these, preferably with different market structures, and then describe the *three* most important distinguishing features of each market. **(4 marks)**
   a. Apples at the farm gate
   b. Banking
   c. Beef cattle
   d. Broadband network
   e. Cinema
   f. Container shipping
   g. Labour
   h. Lawyers
   i. Medical treatment
   j. Petrol
   k. Rental property
   l. Restaurants
   m. Retail groceries
   n. Shares
   o. Telecommunications
   p. Water
   q. Wheat
   r. Your school's canteen
7. **Identify** and **outline** what you believe are the *three* most important *advantages* of perfectly competitive markets. **(6 marks)**
8. a. The Australian aviation market is an oligopoly, with considerable barriers to entry by new rival firms, limiting the level of competition. Entry is difficult. **Explain** what is meant by *barriers to entry* and give examples of the types of barriers applicable to the aviation industry. **(2 marks)**
   b. Some firms illegally try to increase their profits by anti-competitive behaviour. Giving examples, **explain** what is meant by anti-competitive behaviour, noting how the Australian government tries to discourage it. **(3 marks)**
   c. **Distinguish** between the following terms:
      - price fixing and market zoning
      - predatory pricing and price leadership. **(4 marks)**
   d. **Outline** why the ACCC does not always allow the merger of two companies to occur. **(1 mark)**
9. Australian clothing manufacturers operate in a monopolistically competitive market.
   a. **Explain** what is meant by the term *monopolistic competition*. **(1 mark)**
   b. **Explain** the significance of *product differentiation* in this industry and how might this be promoted by manufacturers of swimwear. **(2 marks)**
10. In a competitive market, canola producers attempt to use resources in ways that maximise their profits. **Explain** what is meant by the term *profit maximisation*. **(1 mark)**
11. It is possible to get products like snowboards and clothing cheaply using online markets such as eBay. Lower prices are partly due to strong competition among rival sellers. For these products, **identify** and **outline** *one precondition* that is normally required for buyers in a perfectly competitive market that may *not* be fully met using eBay or other online markets. **(2 marks)**
12. In general, it is claimed that *strongly competitive markets* in an economy are most likely to help maximise society's material living standards. **Explain** why this may be the case. **(3 marks)**

Solutions and sample responses are available online.

2.3 BACKGROUND KNOWLEDGE How markets make key economic decisions — the big picture

BACKGROUND KNOWLEDGE

- Overview and introduction to the operation of markets

2.3.1 Overview and introduction to the operation of markets

Australia has a contemporary *market-based* or *mixed economy*. Among other things, this means that the three basic economic questions are largely answered by reference to market prices rather than following the directions of government.

1. **The 'what and how much to produce' question**
   In our economy, consumers decide what types of goods (e.g. chocolate bars, tourist accommodation, butter, guns) or services (e.g. educational, health, financial, entertainment) will be produced by what they demand or purchase in various markets. As a general rule, firms respond to these instructions from the market or price system by only producing wanted and profitable things.
2. **The 'how to produce' question**
   The market provides information that allows businesses to make key decisions about the specific production methods to be used (e.g. the combinations of labour and capital equipment). Generally, businesses select the cheapest, most efficient and most profitable methods.
3. **The 'for whom to produce' question**
   The market helps to make most decisions about how the nation's goods, services and incomes that have been produced, will be shared or divided between members of society. Here, people's incomes and their purchasing power largely depend on the value of their economic contribution, as determined by the market or price system.

FIGURE 2.7 In answering the 'how to produce' question, the use of robotics and technology is often cheaper for producers than using labour, especially in countries where wage levels are high.

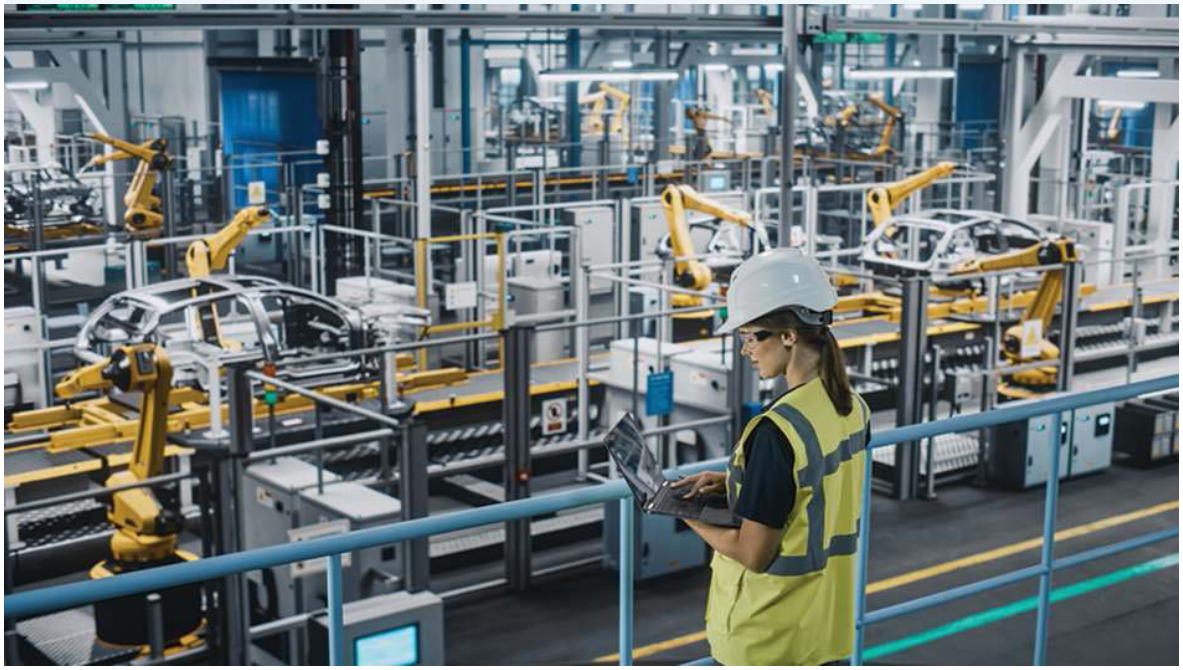


Figure 2.8 illustrates how the market-based system operates to make these three key economic decisions.

FIGURE 2.8 How Australia's price or market-based system makes key economic decisions and allocates resources between alternative uses

Step 1

Because of **scarcity,** people cannot have all the goods and services they would like. This forces them to choose between satisfying competing wants. In a **market-based economy**, these choices or decisions are made through the operation of the **price system** (also called the **market mechanism**) that involves the forces of **demand** and **supply**.

Step 2

Together, consumers or buyers (**demand**) and producers or sellers (**supply**) negotiate the equilibrium **market price** of each good or service, similar to what occurs in an auction. This establishes **relative prices** — the price level of one good or service compared with that of another. However, when non-price **conditions affecting buyers** (i.e. demand) and/or non-price **conditions affecting sellers** (i.e. supply) change in the market, initially there is either a market glut or a market shortage. This causes the equilibrium market price to either fall or rise, creating **price signals** that act as either disincentives or incentives. These signals provide information or instructions to the owners of resources, helping them to make key economic decisions guided by self-interest and their desire to maximise profits.

Step 3

Profit-seeking owners of natural, capital and labour resources watch these **price signals** and use them to help **make key decisions** about how they should allocate resources. The signals help them to select the type and quantity of particular goods or services to produce ('What and how much to produce?'). They also help them to decide the cheapest, lowest cost and most profitable production methods ('How to produce?'), as well as decide how the goods, services and incomes should be shared or distributed ('For whom to produce?').

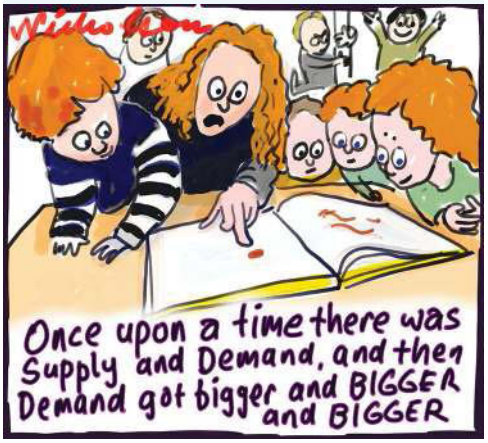
- **If there is a rise in the market price** for a particular good or service, **relative** to the price of other items, the production of this product usually becomes **relatively more profitable**. This is a positive incentive thus attracting more resources into this type of production (assuming that firms' production costs or the prices paid for resources have not changed, especially in an upwards direction). In turn, higher profits lead to higher levels of production and income, rewarding those in this industry.
- **If there is a fall in the final equilibrium market price** of a particular good or service, **relative** to that for producing other items (assuming there is no change in firms' production costs or prices paid for resources, especially not downwards), the production of this item becomes **relatively less profitable** (a disincentive). This tends to repel resources and cut production, along with the incomes of those connected with this industry.

With this general background in mind, we are now ready to drill deeper into our study of microeconomics. *Microeconomics looks at how the smaller units like consumers, producers or firms, an individual market, and a single industry making up our overall economy behave, what motivates their choices and what are the effects of their decisions.* Our study of microeconomics will involve a closer look at the following areas:

- buyers in a market and the law of demand (the demand curve)
- sellers in a market and the law of supply (the supply curve)
- how market equilibrium is reached
- how new non-price factors or conditions affecting the demand and supply curves alter the equilibrium price and affect the key economic decisions that are made
- how changes in relative prices effect the way resources are allocated between different uses.

Economists often use **demand–supply diagrams** or models to better understand how a *competitive market* works, make *key economic decisions* and *allocate resources efficiently* to help satisfy our many needs and wants. Each diagram represents a competitive market for a single good (e.g. sunglasses) or a specific service (e.g. live entertainment). These diagrams or graphs are especially useful when analysing the impact on market prices of non-price factors or conditions that affect the behaviour of buyers (i.e. demanders) and sellers (i.e. suppliers).

FIGURE 2.9 In Australia's market economy, demand and supply help determine prices that, in turn, signal to owners of resources how those productive inputs should be used.



on Resources

Weblinks The market economy
What is a market economy?

2.3 Activities

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2.3 Quick quiz on | **2.3 Exercise**

2.3 Exercise

1. **Describe** the key features of Australia's contemporary market economy. **(2 marks)**
2. **Classify** which of the *three* basic economic questions each of the following decisions best represents: **(5 marks)**

Decision	To which of the three basic economic questions does this decision mostly relate? Briefly justify.
a. How should a hospital produce its health services?	
b. Should a farmer produce wheat or lamb?	
c. How much should a well-known tennis player be paid?	
d. Should a mining company produce iron ore or coal?	
e. Should the government pay a subsidy or cash bonus to Tasmanian companies?	

3. There are not enough resources to produce everything we want, so society has to choose which wants will be satisfied. In Australia, this is generally done using markets and the price system. For instance, when the relative price of a product moves up or down due to changes in demand relative to supply, this *signals* to producers or owners of resources, how resources should be used or allocated.
   a. Assume you use resources to produce strawberries and the market price *fell* relative to that for raspberries. In general terms, **explain** what this tells you about the type of product consumers want produced. **(2 marks)**
   b. If the price of strawberries *went up* against raspberries, in general terms **explain** what type of product the market is telling you to produce. **(2 marks)**
   c. By responding to these price signals **outline** the likely effect on *allocative efficiency* and the satisfaction of people's wants. **(1 mark)**

Fully worked solutions and sample responses are available in your digital formats.

2.4 The law of demand and movements along the demand curve

KEY KNOWLEDGE

- The law of demand and the demand curve
- The distinction between a movement along the demand curve and a shift of the demand curve

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Buyers or consumers are a really important group or economic agent in any market. **Demand** in a market occurs when consumers or buyers use their income to purchase a particular quantity of a good or service. This group might include consumers like you or me, businesses or even governments. Perhaps the most important thing to note is that buyers in a market are more willing to purchase a good or service at a lower price, rather than at a higher price. The price of a product is an important factor affecting how much of a product consumers are prepared to buy or demand. This observation is expressed in the **law of demand**.

2.4.1 The law of demand — how changes in price cause a movement along the demand curve

The *law of demand* simply states that the quantity of a particular good or service that buyers are prepared to purchase, varies *inversely* (in the opposite direction) with the change in price, assuming other factors do not change. Hence:

- As the *price increases*, there is a *contraction* in the quantity demanded, causing a movement upwards along the demand line.
- As the *price decreases*, there is an *expansion* in the quantity demanded, causing a movement downwards along the demand line.

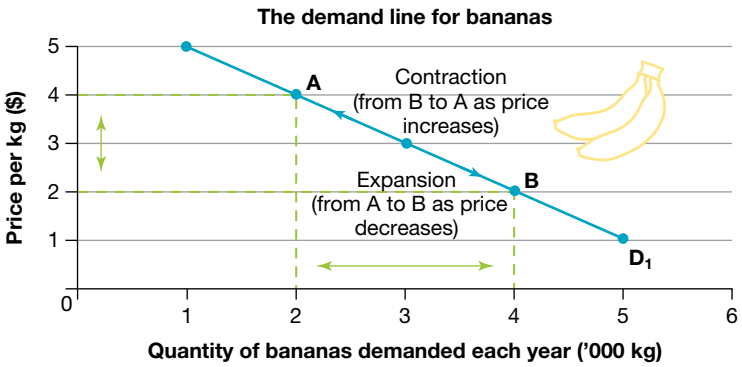
It is hardly surprising that consumers or buyers behave like this, causing the quantity demanded to *contract* or *expand* along the demand curve with a rise or fall in *price*. This change is called a **movement along the demand line**. For example, demand contracts as the price rises because the good or service becomes less affordable for most of us and thus fewer people have the necessary money or desire to spend in this way. By contrast, as the price decreases, demand expands because it is now more affordable and tempting for people.

So, what would a demand curve (representing how consumers respond to price) look like if plotted on a graph or diagram where price is located on the vertical axis and quantity on the horizontal axis?

Imagine there was a competitive market for bananas. Using hypothetical data from the table, Figure 2.10 graphically illustrates the relationship that exists between the *quantity of bananas demanded* and the *price*. For now, we will assume that the change in price is the *only* factor affecting the quantity demanded. In other words, all *non-price influences* affecting demand remain constant.

FIGURE 2.10 The demand line showing the law of demand for bananas where the quantity demanded varies inversely with price

Price per kg of bananas	D_1 = Original quantity of bananas demanded each year ('000 kg)
$1	5
$2	4
$3	3
$4	2
$5	1



Notice that when we plot the quantity demanded at each possible price on a graph (see Figure 2.10), the resulting *demand line* for bananas slopes down and to the right. Here it is worth remembering that, for simplicity, this basic demand line has been drawn *straight* rather than shaped as a concave curve, as might appear in reality. Either way, the line has a negative slope and visually illustrates the *law of demand*:

- A *move downward along the demand line* (or curve) from point A to point B is called an **expansion in demand**. This movement is only caused by a *fall in price.* In our example, demand *expands* from 2000 kg per year at the price of $4 per kg (point A) to 4000 kg at the lower price of $2 per kg (point B).
- In reverse, *a move upwards along the demand line* (or curve) from point B to point A is called a **contraction in demand** and is only caused by a *rise in price*. In our example, demand *contracts* from 4000 kg per year at a price of $2 per kg (point B) to only 2000 kg per year at the higher price of $4 per kg (point A).

It is really important to understand that these movements *along the demand line* (called an *expansion* or *contraction* in the *quantity demanded*) are caused solely by a *change in price*. As mentioned previously, we have assumed that all *non-price factors* have remained constant. We will look at these other factors shortly.

While our example here has been the demand for bananas, the same sort of buyer behaviour could be expected for any other good (such as grapes, hot dogs, soft drinks, mobiles, wheat or iron ore) or service (such as financial, medical, ski instruction, gardening or entertainment) in a fairly competitive market.

2.4 Activities

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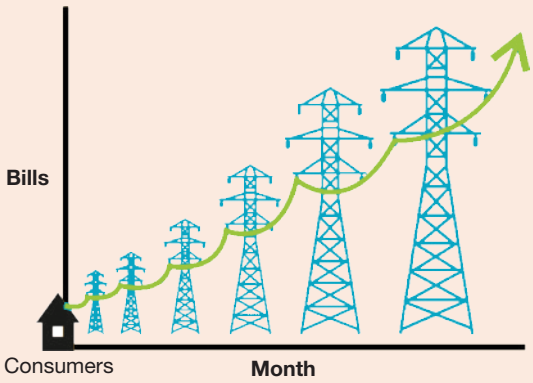
2.4 Quick quiz on | **2.4 Exercise**

2.4 Exercise

1. **Explain** each of the following terms.
   - a. The law of demand **(1 mark)**
   - b. A movement along the demand curve or line involving:
     - i. an *expansion* in demand
     - ii. a *contraction* in demand. **(2 marks)**
2. **Read** *this background information on Australia's electricity market and answer the questions that follow.*

Background: Australia's electricity market

Over the last decade, there has been much media comment and public discussion about the high cost of electricity in Australia (often measured in cents per kilowatt hour or kWh) and the rapid rise, especially between 2008 and 2019, and again in 2022. Power prices in the electricity market are determined by the conditions of demand and supply. The demand for electricity comes from households (e.g. for lighting, heating and cooling) and businesses (e.g. for running equipment and other processes), while supply comes from firms who generate power through a mixture of coal and, increasingly for environmental reasons, through renewable sources such as solar, wind, hydro and geothermal. The need for cleaner energy has led to the closure of some coal-fired power stations. In moving through this topic, the electricity market (along with other examples) will be the focus of several sets of applied exercises that are designed to help you develop an understanding of demand, supply, equilibrium and price changes.



The demand for electricity

Examine the table that follows containing hypothetical data showing the original demand for electricity in the market at various prices.

Possible price per kWh ($)	Original quantity of electricity demanded per day (millions of kWh) at a given price (D_1)
$0.10	35
$0.15	30
$0.20	25
$0.25	20
$0.30	15
$0.35	10
$0.40	5

a. **Define** what is meant by *the demand for electricity*. **(1 mark)**
b. Using the previous table, accurately **construct** and fully **label** a graph showing the *demand* line or curve for electricity. **(3 marks)**
c. **Explain** the *law of demand for electricity*, illustrating your response with data drawn from the table. **(2 marks)**
d. **Distinguish** an *expansion* in demand for electricity from a *contraction* in demand. **(2 marks)**
e. If the price *rises* from $0.20 to $0.30 cents per kWh, **describe** what happens to the quantity of electricity *demanded* using figures to illustrate your answer. Remember to use the *correct word* reserved for describing this particular movement *along* the demand curve. **(2 marks)**
f. If the price *falls* from $0.20 to $0.10 cents per kWh, **describe** what happens to the quantity of electricity *demanded* using figures to illustrate your answer. Remember to use the *correct word* reserved for describing this particular movement *along* the demand curve. **(2 marks)**
g. Other things remaining unchanged (originally from the Latin, economists call this a *ceteris paribus* assumption; i.e. what happens to demand if nothing else changes other than the price), **explain** why the *demand* for electricity *contracts* as the price *rises*, causing a movement *along* the demand curve or line. **(1 mark)**

Solutions and sample responses are available online.

2.5 The law of supply and movements along the supply curve

KEY KNOWLEDGE

- The law of supply and the supply curve
- The distinction between a movement along the supply curve and a shift of the supply curve

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Sellers or producers are also a really important group or economic agent in any market. They **supply** or sell goods and services, and this group might include both small and large businesses. Perhaps the most important thing to note is that sellers in a market are more willing to supply a good or service at a higher price, rather than at a lower price. The price of a product affects how much businesses are prepared to sell. This observation is expressed in the **law of supply**. For now, we will again assume that the change in price is the *only* factor affecting the quantity supplied and that all *non-price influences* affecting supply remain constant.

2.5.1 The law of supply — how changes in price cause a movement along the supply curve

The *law of supply* simply states that the quantity of a particular good or service that sellers are prepared to supply, varies *directly* (in the same direction) with the change in price, assuming other factors do not change. Hence:

- As the *price increases*, there is an *expansion* in the quantity supplied, causing a movement upwards *along* the supply line.
- As the *price decreases*, there is a *contraction* in the quantity supplied, causing a movement downwards *along* the supply line.

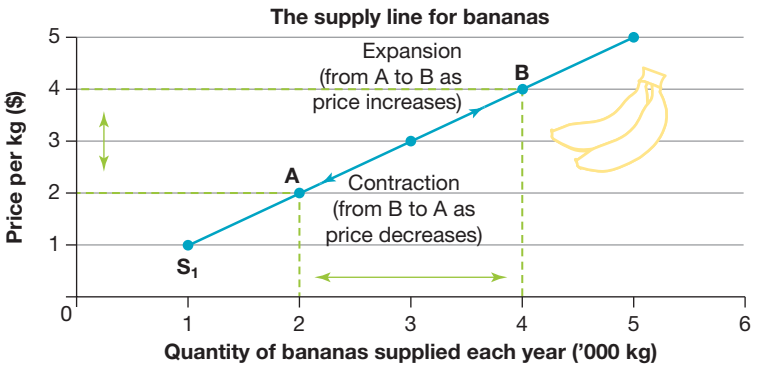
It is hardly surprising that businesses or suppliers behave like this when the quantity supplied contracts or expands *along* the line following a decrease or an increase in price. This is called a **movement along the supply line** and occurs because it becomes less profitable for producers to sell their product or service at a lower price, rather than selling it at a higher price.

So, what would a supply line (representing how sellers respond to price) look like if plotted on a graph where price is located on the vertical axis and quantity on the horizontal axis?

Again, imagine there was a competitive market for bananas. Using hypothetical data from the table, Figure 2.11 graphically illustrates the relationship that exists between the *quantity of bananas supplied* and the *price*, remembering that we have assumed that all *non-price factors* affecting supply are held constant.

FIGURE 2.11 The supply line showing the law of supply for bananas where the quantity supplied varies directly with price

Price per kg of bananas	S_1 = Original quantity of bananas supplied each year ('000 kg)
$1	1
$2	2
$3	3
$4	4
$5	5



Notice that when we plot the quantity supplied at each possible price on a graph (see Figure 2.11), the resulting *supply line* slopes up and to the right. Here it is again worth remembering that, for simplicity, this basic supply line has been drawn *straight* rather than *shaped as a concave curve*, as might appear in reality. Either way, the line has a positive slope and visually illustrates the *law of supply.*

- A *move upward along the supply line* (or curve) from point A to point B is called an **expansion in supply** and is only caused by a *rise in price.* In our example, the quantity supplied *expands* from 2000 kg per year at the price of $2 per kg (point A) to 4000 kg at the higher price of $4 per kg (point B).
- In reverse, *a move downwards along the supply line* (or curve) from point B to point A is called a **contraction in supply** and is only caused by a *fall in price*. In our example, supply *contracts* from 4000 kg per year at a price of $4 per kg (point B) to only 2000 kg per year at the low price of $2 per kg (point A).

Again, it is really important to understand that these movements *along* the supply line (called an *expansion* or *contraction* in the *quantity supplied*) are caused solely by a *change in price*. And again, we have assumed that all *non-price factors* that might influence supply have been held constant. We will look at these non-price factors shortly.

While our example here has been the supply of bananas, the same sort of seller behaviour could be expected for any other good (such as grapes, hot dogs, soft drinks, suncream or deodorant) or service (such as financial, health, educational, gardening or entertainment) in a fairly competitive market.

2.5 Activities

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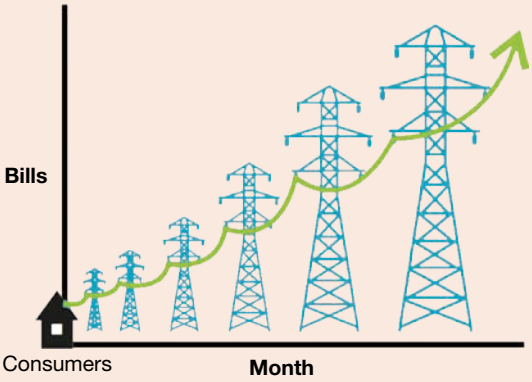
2.5 Quick quiz on | 2.5 Exercise

2.5 Exercise

1. **Describe** what *demand–supply diagrams* show. **(2 marks)**
2. **Describe** what is meant by *supply.* **(1 mark)**
3. **Explain** the *law of supply*. **(1 mark)**
4. **Explain** why sellers behave like this. **(1 mark)**
5. **Read** *this background information on Australia's electricity market and answer the questions that follow*.

> **Background: Australia's electricity market**
>
> Over the last decade, there has been much media comment and public discussion about the high cost of electricity in Australia (often measured in cents per kilowatt hour or kWh) and the rapid rise, especially between 2008 and 2019, and again in 2022. Power prices in the electricity market are determined by the conditions of demand and supply. The demand for electricity comes from households (e.g. for lighting, heating and cooling) and businesses (e.g. for running equipment and other processes), while supply comes from firms who generate power through a mixture of coal and, increasingly for environmental reasons, through renewable sources such as solar, wind, hydro and geothermal. The need for cleaner energy has led to the closure of some coal-fired power stations. In moving through this topic, the electricity market (along with other examples) will be the focus of several sets of applied exercises that are designed to help you develop an understanding of demand, supply, equilibrium and price changes.



The supply of electricity

Examine the following table containing hypothetical data showing the original supply of electricity in the market at various prices.

Possible price per kWh ($)	Original quantity of electricity supplied per day (millions of kWh) at a given price (S_1)
$0.10	5
$0.15	10
$0.20	15
$0.25	20
$0.30	25
$0.35	30
$0.40	35

a. **Define** what is meant by *the supply of electricity*. **(1 mark)**
b. Using the previous table, accurately **construct** a graph showing the *supply* line or curve for electricity. **(3 marks)**
c. **Explain** the *law of supply for electricity*, illustrating your response with data drawn from the table. **(2 marks)**
d. **Distinguish** an *expansion* in the *supply* of electricity from a *contraction* in supply. **(2 marks)**
e. If the price *falls* from $0.40 to $0.30 cents per kWh, **describe** what happens to the quantity of electricity *supplied* using figures to illustrate your answer. Remember to use the *correct word* reserved for describing this shift *along* the supply curve. **(2 marks)**
f. If the price *falls* from $0.30 to $0.10 cents per kWh, **describe** what happens to the quantity of electricity *supplied* using figures to illustrate your answer. Remember to use the *correct word* reserved for describing this shift *along* the supply curve. **(2 marks)**
g. Other things remaining equal, **explain** why the *supply* of electricity *expands* as the price *rises*, causing a movement *along* the supply curve or line. **(2 marks)**

Solutions and sample responses are available online.

2.6 Determining the market equilibrium price and equilibrium quantity

KEY KNOWLEDGE

- The effects of changes in demand and supply on equilibrium prices and quantities

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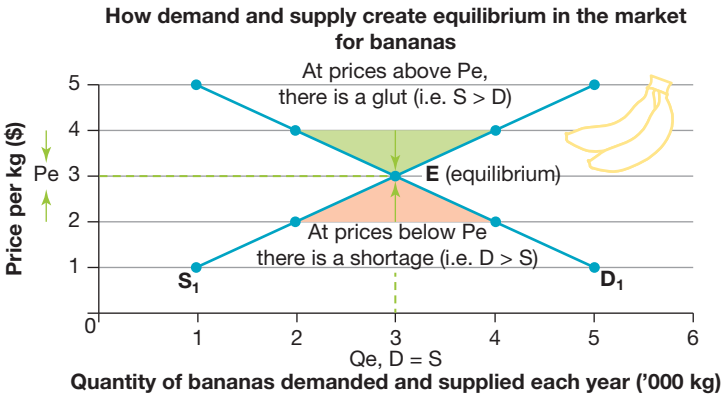
As we have seen, buyers prefer to purchase at a relatively low price, while suppliers prefer to sell at a relatively high price. This apparent conflict of interest or disagreement is resolved by negotiation and haggling — offer and counter-offer — and the operation of a competitive market. Indeed, there is only one price on which both buyers and sellers agree and are reasonably satisfied. This is called the *equilibrium market price. At* **equilibrium**, *the quantity demanded exactly equals the quantity supplied, and there is no force for further change*. The market is currently stable.

As seen in the demand–supply (D–S) graph in Figure 2.12, apart from the **equilibrium price** of $3 per kg of bananas, there is no alternate market price where this compromise can occur. Only at this price are both the quantity demanded and the quantity supplied exactly *equal* — here, both demand and supply are equal to 3000 kg per year. At equilibrium, buyers and sellers are happy with the deal and the market is *cleared* so there is neither a *shortage* nor a *surplus*.

FIGURE 2.12 A demand–supply (D–S) graph showing how the free operation of market forces determines the equilibrium price of bananas

Price per kg of bananas	D_1 = Original quantity of bananas demanded each year ('000 kg)	S_1 = Original quantity of bananas supplied each year ('000 kg)
$1	5	1
$2	4	2
$3	3	3
$4	2	4
$5	1	5



The process of actually reaching market equilibrium in a free and competitive market is a simple one:

- **Prices below the equilibrium**. At a very low price for bananas of, say, $2 per kg, equilibrium cannot occur simply because 4000 kg per year are demanded yet only 2000 kg are supplied. An exceedingly low price like this creates a **market shortage** of 2000 kg, making buyers very unhappy when they go away empty handed. In order for this shortage to be solved, the price of bananas needs to rise. As the price moves upwards, there is a *contraction along the demand line* for bananas, as well as an *expansion along the supply line* (the laws of demand and supply apply here) until this *market shortage* disappears and the market reaches the equilibrium point where the quantity demanded and supplied are exactly equal.

- **Prices above the equilibrium**. Equilibrium is also not possible at an exceedingly high price of, say, $4 per kg of bananas. The problem here is a **market surplus** or **glut** of 2000 kg. This arises due to a demand of only 2000 kg, compared with the supply of 4000 kg at that price. Sellers would be most unhappy because they have unsold stock that would perish. In a free and competitive market, this problem would soon disappear as the market price falls. A *falling* price would cause an expansion along the demand line for bananas while, at the same time, there would be a contraction along the supply line causing the *market surplus* to gradually disappear. Market equilibrium would be restored so that the quantities demanded and supplied were again exactly *equal*.

In our analysis so far, we have seen that market forces involving demand and supply determine the actual *equilibrium price* for bananas. However, the same sort of explanation would also apply to the equilibrium price paid for any type of good or service in a competitive market. All competitive markets basically operate in the same way.

2.6 Activities

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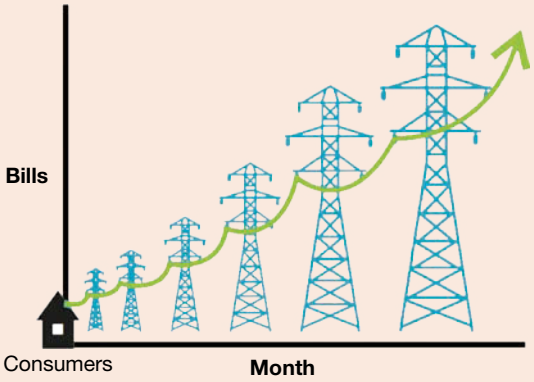
2.6 Quick quiz on | 2.6 Exercise

2.6 Exercise

1. **Define** the term, *market equilibrium*. **(1 mark)**
2. **Outline** the circumstances when a *market shortage* occurs. **(1 mark)**
3. **Outline** the circumstances when a *market surplus* occurs. **(1 mark)**
4. **Read** *this background information on Australia's electricity market and answer the questions that follow.*

Background: Australia's electricity market

Over the last decade, there has been much media comment and public discussion about the high cost of electricity in Australia (often measured in cents per kilowatt hour or kWh) and the rapid rise, especially between 2008 and 2019, and again in 2022. Power prices in the electricity market are determined by the conditions of demand and supply. The demand for electricity comes from households (e.g. for lighting, heating and cooling) and businesses (e.g. for running equipment and other processes), while supply comes from firms who generate power through a mixture of coal and, increasingly for environmental reasons, through renewable sources such as solar, wind, hydro and geothermal. The need for cleaner energy has led to the closure of some coal-fired power stations. In moving through this topic, the electricity market (along with other examples) will be the focus of several sets of applied exercises that are designed to help you develop an understanding of demand, supply, equilibrium and price changes.



Equilibrium price and quantity in the electricity market

Examine the table that follows containing hypothetical data showing both the original demand for and the original supply of electricity at various prices in the market.

Possible price per kWh ($)	Original quantity of electricity demanded per day (millions of kWh) at a given price (D_1)	Original quantity of electricity supplied per day (millions of kWh) at a given price (S_1)
$0.10	35	5
$0.15	30	10
$0.20	25	15
$0.25	20	20
$0.30	15	25
$0.35	10	30
$0.40	5	35

a. Using the previous table, accurately **construct** and fully **label** a combined D–S graph showing the *original demand* (D_1) and the *original supply* (S_1) curves or lines for the electricity market, along with the original *market equilibrium* (E_1). Your labelling must include an appropriate scale and units for each of the two axes (with both scales rising by regular intervals from zero), along with D_1, S_1, E_1, P_1 and Q_1. **(4 marks)**

b. In this example, **explain** what is meant by *equilibrium* (E_1) in the electricity market. **(1 mark)**

c. Looking at the data and diagram, **estimate** the *equilibrium price* (P_1) for electricity in this market. **(1 mark)**

d. Looking at the data and diagram, **estimate** the *equilibrium quantity* (Q_1) for electricity in this market. **(1 mark)**

e. **Explain** why the price of $0.10 per kWh is *not* the actual equilibrium market price for electricity. Quote figures from the table to illustrate your response. **(2 marks)**

f. **Explain** why the price of $0.40 per kWh is also *not* the actual equilibrium market price for electricity. Quote figures from the table to illustrate your response. **(2 marks)**

g. At equilibrium, **explain** why the price would be steady where it neither wants to rise nor fall (assuming all other things remain equal or constant). **(3 marks)**

Solutions and sample responses are available online.

2.7 The effects of non-price factors on demand and supply — shifting the D–S curves and changing the equilibrium price and quantity

KEY KNOWLEDGE

- The effect on demand and the position of the demand curve by non-price factors, including changes in disposable income, the prices of substitutes and complements, tastes and preferences, interest rates, population and demographics, and consumer confidence
- The distinction between a movement along the demand curve and a shift of the demand curve
- The effect on supply and the position of the supply curve by non-price factors, including changes in the costs of production, technology, productivity, and climatic conditions and other disruptions
- The distinction between a movement along the supply curve and a shift of the supply curve

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Looking around us, we notice that the prices of most goods and services, including bananas, are always changing up and down from week to week and day to day. This is the result of changes in the level of demand relative to the level of supply for each good or service, as buyers and/or sellers react to new *non-price* microeconomic *factors* or *conditions* that affect their economic decisions and the quantity they are prepared to buy or sell *at any given price*.

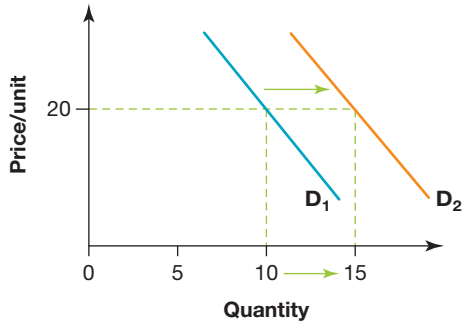
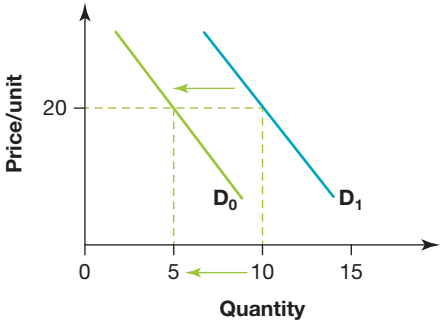
- **New non-price demand-side factors or conditions** can cause buyers to purchase a greater or smaller quantity of a particular good or service at all possible prices. This will either shift the position of the whole demand line on a diagram horizontally to the right of the original line (showing an *increase in the quantity demanded at all possible prices*), or to the left (showing a *decrease in the quantity demanded at all possible prices*).
- **New non-price supply-side factors or conditions** can cause sellers to produce a greater or smaller quantity of a particular good or service at all possible prices. This will either shift the position of the whole supply line on a diagram horizontally to the right of the original line (showing an *increase in the quantity supplied at all possible prices*), or to the left (showing a *decrease in the quantity supplied at all possible prices*).

By altering the position of the demand line and/or the position of the supply line, changes in *non-price* microeconomic **factors** or **conditions of demand** or supply will bring about a change in **relative prices** (i.e. the price level of one particular good or service relative to that of another). This change in relative price also has a knock-on effect and alters the **relative profits** of producing a particular good or service. A higher equilibrium price that makes it relatively more profitable (a positive incentive) will normally attract more resources to be allocated to the production of this product, while a fall in the equilibrium price will usually cause fewer resources to be allocated to the production of this item due to relatively lower profits (a negative incentive). In so doing, it causes scarce resources to be *reallocated* among competing uses by their profit-seeking owners.

2.7.1 How non-price factors can shift the position of the whole demand curve changing the equilibrium price and quantity

Changes in non-price factors can shift the position of the whole demand curve, affecting both the equilibrium market price and quantity traded. Figure 2.13 reveals that there are a number of common *non-price* microeconomic factors or conditions of demand. These can either *increase* or *decrease* the quantity of a particular good or service that buyers are prepared to demand *at a given price*. On a demand–supply diagram, these factors or conditions **shift the position of the demand line** for a good or service horizontally to the right of the original demand line (i.e. an increase from D_1 to D_2), or to the left of the original line (i.e. a decrease from to D_1 to D_0).

FIGURE 2.13 Non-price microeconomic factors or conditions that cause the quantity of a good or service *demanded* at a given price to increase or decrease, shifting the position of the whole demand line

Non-price conditions can increase the quantity demanded at a given price (shifting the whole line from D_1 to D_2).	Non-price conditions can decrease the quantity demanded at a given price (shifting the whole line from D_1 to D_0).
	
This diagram shows an increase in the quantity demanded (D_1 to D_2) at a price of $20, from 10 units to 15 units.	This diagram shows a decrease in the quantity demanded (D_1 to D_0) at a price of $20, from 10 units to 5 units.
A rise in disposable income (income available for spending after receiving welfare and paying income tax) usually increases the quantity of a good or service demanded at a given price.	**A fall in disposable income** usually decreases the quantity of a good or service demanded at a given price.
An increase in population size. Generally, a rise in population, perhaps due to immigration or higher birth rates, will increase the quantity of most goods or services demanded at a given price.	**A decrease in population size.** Generally, a decline in population size, perhaps due to the ageing of the population, might decrease the quantity of some goods or services demanded at a given price (e.g. pop music).
More fashionable and trendy. Over time, some goods and services become more fashionable, perhaps as a result of new technology and slick advertising (e.g. the latest iPhone). This increases the quantity of most goods or services demanded at a given price.	**Less fashionable.** Over time, some goods and services become less fashionable. The quantity demanded by consumers at a given price declines (e.g. DVD players).
A drop in interest rates paid on borrowed credit. Some people and businesses need to borrow credit from banks and pay interest rates, in order to purchase expensive goods or services. When interest rates are lower and borrowing is cheaper, the quantity of most goods or services demanded at a given price increases (e.g. a house, car or electrical appliances, and holidays).	**Higher interest rates paid on borrowed credit.** Generally, higher interest rates will lower the quantity of most luxury goods or services demanded at a given price.

(continued)

FIGURE 2.13 Non-price microeconomic factors or conditions that cause the quantity of a good or service *demanded* at a given price to increase or decrease, shifting the position of the whole demand line *(continued)*

Non-price conditions can increase the quantity demanded at a given price (shifting the whole line from D_1 to D_2).	Non-price conditions can decrease the quantity demanded at a given price (shifting the whole line from D_1 to D_0).
A substitute becomes dearer. Substitutes are a particular good or service that can be easily replaced by another (e.g. margarine is a substitute for butter and cotton for wool) so the price of one affects the demand for the other. For instance, when the price of margarine becomes dearer, the demand for butter is likely to increase.	**A substitute becomes cheaper.** When the price of a substitute product like cotton becomes cheaper, the demand at any given price for the other product like wool decreases, as people switch between products.
A complementary good or service becomes cheaper. Complementary goods and services are those used or bought at the same time as another item (e.g. cars and fuel). Hence, when the price of one complement falls, the demand for the other complementary good is likely to rise (e.g. a fall in petrol prices leads to a rise in the demand for larger 4WD vehicles).	**A complementary good or service becomes dearer.** When the price of one complementary good or service rises, there is usually a decrease in the demand for the other complementary product (e.g. the price of coffee rises and the demand for sugar decreases) at a given price.
Higher levels of consumer or business confidence. Confidence levels relate to how households and businesses feel about their future economic situations. For instance, when households are feeling more confident or optimistic, they often purchase a greater quantity of some types of goods and services at a given price (e.g. luxury cars and holidays).	**Lower levels of consumer or business confidence.** Consumer or business pessimism about the future is often reflected in a decrease in the demand for some types of goods (e.g. appliances and beauty products) or services (e.g. entertainment and restaurants) at any given price.
The onset of summer or winter. In summer, the demand for some products at a given price increases (e.g. ice-cream, surfboards and air conditioners). Furthermore, the onset of winter might see a rise in the demand for other types of goods or services at a given price (e.g. snow skis, cough medicine, doctors, electric blankets, footballs and woollen jumpers).	**The onset of summer or winter.** The onset of winter might see a decrease in the demand for some goods or services at a given price (e.g. air conditioners). Additionally, in summer, the demand for other goods and services at a given price might decrease (e.g. beach towels and insect repellent).
New government policies. Sometimes, new government policies can lead to a rise in the demand for particular goods or services. For instance, a rise in government transport spending might bring about an increase in the demand for building and road making materials. Sometimes, too, the government uses cash subsidies or payments as an incentive to encourage households to increase their demand for socially beneficial items (e.g. solar panels and rainwater tanks).	**New government policies.** Sometimes, new government policies can lead to a decrease in the demand for a socially harmful good or service at a given price (e.g. laws making it illegal for young people to purchase alcohol, or the addition of a tax as a disincentive to purchase a product).

New non-price factors can *increase the quantity demanded* (D_1 to D_2) at a given price

- When *non-price conditions of demand strengthen*, increasing the quantity of a particular good or service that buyers are willing to purchase at any given price (e.g. called an increase in demand), the whole demand line for the market will shift *outwards horizontally and to the right* of the original line (an increase from D_1 to D_2).
- Let us return to the example of the banana market as shown in Figure 2.14. When the demand for bananas at a given price *increases* because of new stronger conditions (perhaps due to more consumers wanting a healthy snack; an increase in disposable income; population growth; or successful advertising by banana growers), this shifts the position of the whole demand line horizontally to the right of the original line, from D_1 to D_2. As a result, there is a rise in the equilibrium price of bananas from $3 (the original

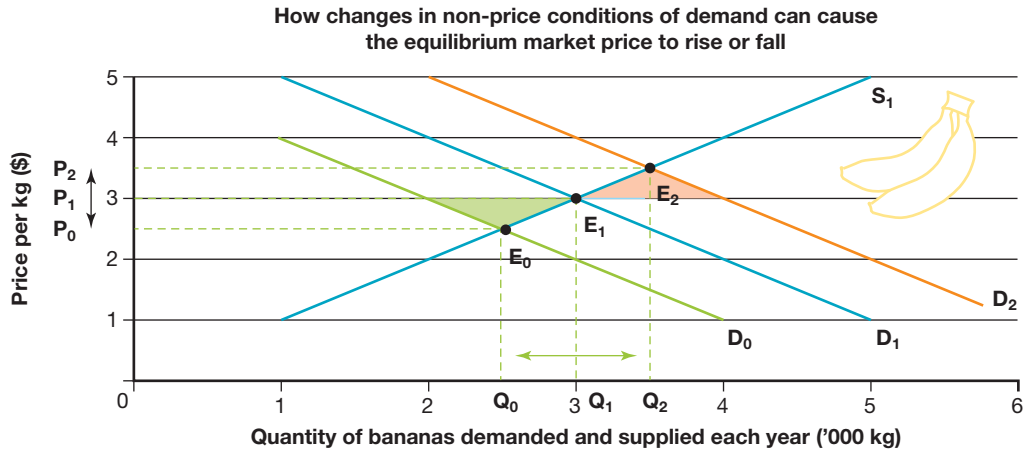
equilibrium price at P_1) to $3.50 a kg (the new equilibrium price at P_2). This rise in the equilibrium price is necessary to clear the *market shortage* (see the triangular area shaded red, where the quantity demanded exceeds the quantity supplied) that would otherwise exist if the price had remained at $3. As the price rises towards $3.50, demand *contracts* while supply *expands* (the normal operation of the laws of demand and supply) until the new higher equilibrium price (P_2) is reached where demand again equals supply. Notice also that there is a rise in the equilibrium quantity from 3000 (the original equilibrium quantity at Q_1) to 3500 kg a year (the new equilibrium quantity at Q_2). These new equilibria will prevail in the market unless non-price conditions of demand again change.

New non-price factors can also *decrease the quantity demanded* (D_1 to D_0) at a given price:

- When *non-price conditions of demand weaken*, decreasing the quantity of a particular good or service that buyers are willing to purchase at any given price (e.g. a decrease in demand at $3 per kg for bananas), the whole demand line for the market will shift *inwards horizontally and to the left* of the original line (a decrease from D_1 to D_0).
- Returning to the banana market and Figure 2.14, when the demand *decreases* because of new weaker conditions (perhaps due to the onset of winter; advertising by pineapple growers; a drop in income; or poorer quality fruit), this shifts the position of the whole demand line left, from D_1 to D_0. As a result, there is a fall in the equilibrium price of bananas from $3 (at P_1) to just $2.50 a kg (at P_0). This fall in the equilibrium price is necessary to clear the *market glut* or surplus (see the triangular area shaded green, where the quantity supplied exceeds the quantity demanded) that would otherwise exist if the price had remained at $3. As the price drops towards $2.50, demand *expands* while supply *contracts* (the normal operation of the laws of demand and supply) until the new lower equilibrium price (P_0) is reached where the quantity demanded again equals the quantity supplied. Notice also that there is a fall in the equilibrium quantity from 3000 (at Q_1) to 2500 kg a year (at Q_0). These new equilibria will prevail in the market unless non-price conditions of demand again change.

FIGURE 2.14 How changes in microeconomic non-price conditions of *demand* can increase or decrease the quantity demanded at any given price, shifting the whole demand line horizontally and causing the equilibrium market price to either rise or fall

Price per kg	D_1 = Original quantity of bananas demanded each year ('000 kg)	D_2 = New increased quantity of bananas demanded each year ('000 kg)	D_0 = New decreased quantity of bananas demanded each year ('000 kg)	S_1 = Original quantity of bananas supplied each year ('000 kg)
$0				
$1	5	6	4	1
$2	4	5	3	2
$3	3	4	2	3
$4	2	3	1	4
$5	1	2		5



2.7.2 How non-price factors can shift the position of the whole supply curve changing the equilibrium price and quantity

In the same way as buyers react to changing circumstances, sellers also respond to variations in *non-price* microeconomic **factors** or **conditions of supply**. These might either increase or decrease the quantity of a particular good or service that sellers are prepared to supply *at a given price*. On a demand–supply diagram, these new non-price conditions cause a **shift in the position of the supply line** horizontally to the right or to the left of the original line. Figure 2.15 shows that there are a number of common *non-price supply-side conditions*.

New non-price factors can *increase the quantity supplied* (S_1 to S_2) at a given price

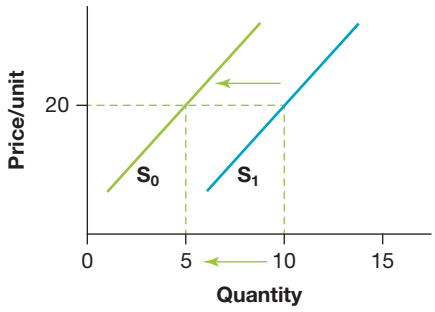
- When *non-price conditions of supply strengthen* or become *more favourable*, there is an increase in supply or the quantity of a particular good or service that sellers are willing to produce at a given price (e.g. an increase in supply). The whole supply line for the market will shift *outwards horizontally and to the right* of the original line (an increase from S_1 to S_2).
- Let us return again to the example of the banana market as shown in Figure 2.16. When the supply of bananas *increases* due to new, more favourable conditions (perhaps reflecting the effects of ideal growing conditions for farmers, or lower costs and better profits), this shifts the position of the whole supply line outwards horizontally and to the right, from S_1 to S_2. As a result, there is a fall in the equilibrium price of bananas from $3 (at P_1) to just $2.50 a kg (at P_2). This fall in the equilibrium price is necessary to clear the *market glut* or surplus (see the triangular area shaded green, where the quantity supplied exceeds the quantity demanded) that would otherwise exist if the price had remained at $3. As the price falls towards $2.50, supply *contracts* and demand *expands* (the normal operation of the laws of demand and supply) until the market comes to rest at the lower *equilibrium price* (P_2). In addition, the *equilibrium quantity* rises from 3000 kg (at Q_1) to 3500 kg a year (at Q_2). These new equilibria will continue to exist unless non-price conditions of supply again change.

FIGURE 2.15 Non-price microeconomic factors or conditions that cause the quantity of a good or service *supplied* at a given price to increase or decrease, shifting the position of the whole supply line

Non-price conditions can increase the quantity supplied at a given price (shifting the whole line from S_1 to S_2).

This diagram shows an increase in the quantity supplied (S_1 to S_2) at a price of $20, from 10 units to 15 units.

Non-price conditions can decrease the quantity supplied at a given price (shifting the whole line from S_1 to S_0).



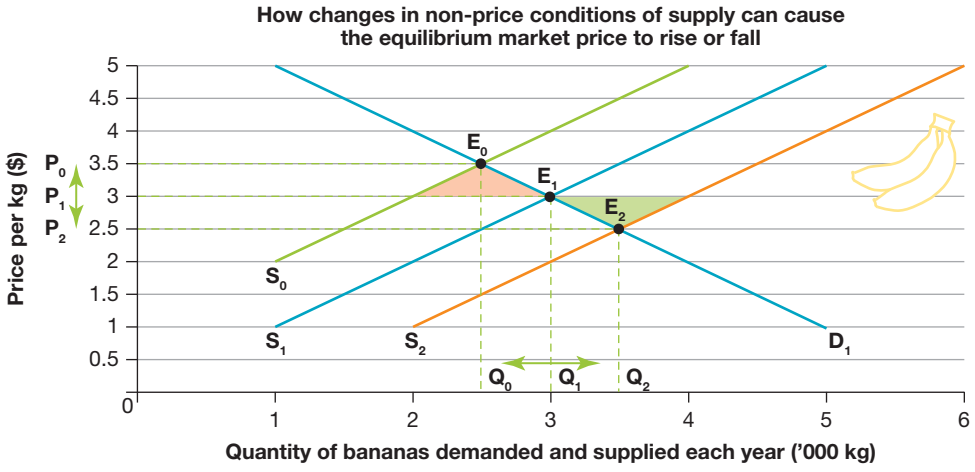
This diagram shows a decrease in the quantity supplied (S_1 to S_0) at a price of $20, from 10 units to 5 units.

FIGURE 2.15 Non-price microeconomic factors or conditions that cause the quantity of a good or service *supplied* at a given price to increase or decrease, shifting the position of the whole supply line *(continued)*

Resources used by businesses become cheaper. Businesses need to purchase natural, labour and capital resources in order to make goods and services. These represent production costs. When costs are cheaper, this makes production more favourable and profitable for businesses. It often causes firms to increase their quantity of a good or service supplied at any given price.	**Resources used by businesses become dearer**. When production costs become dearer for businesses, this is less favourable and profitable for firms, causing them to decrease their quantity supplied at any given price. Disruptions to supply chains, due to pandemics, lockdowns or war, can also increase production costs and cut the quantity supplied at a given price.
Increased productivity or efficiency. The use of improved technology, like automated warehouses, robotics on an assembly line and online trading in an industry, often lifts efficiency, cutting unit production costs. This usually makes firms more willing and able to increase their supply at any given price.	**Decreased productivity or efficiency**. A drop in the efficiency of workers in an industry, or in the productivity of other resources used, will often lead to higher business costs. This is likely to decrease the supply of a particular good or service at any given price.
More favourable climatic conditions. Climatic conditions affect farmers supplying crops. Favourable weather conditions means that more output per hectare can be produced, at lower unit costs. This increases the quantity of some rural commodities supplied (e.g. wheat, beef, barley, fruit and vegetables) at any given price.	**Unfavourable climatic conditions.** Severe weather events, such as cyclones, floods, fires and drought, tend to reduce efficiency and the supply of some fruit, vegetables and other crops. Floods can also hamper mining extraction operations and destroy infrastructure needed to transport minerals to terminals. This can decrease the quantity supplied at a given price.

FGURE 2.16 How changes in microeconomic non-price conditions of *supply* can increase or decrease the quantity supplied at any given price, shifting the whole supply line and causing the equilibrium market price to either rise or fall

Price per kg	S_1 = Original quantity of bananas supplied each year ('000 kg)	S_2 = New increased quantity of bananas supplied each year ('000 kg)	S_0 = New decreased quantity of bananas supplied each year ('000 kg)	D_1 = Original quantity of bananas demanded each year ('000 kg)
$0				
$1	1	2	0	5
$2	2	3	1	4
$3	3	4	2	3
$4	4	4	3	2
$5	5	6	4	1



(continued)

FGURE 2.16 How changes in microeconomic non-price conditions of *supply* can increase or decrease the quantity supplied at any given price, shifting the whole supply line and causing the equilibrium market price to either rise or fall *(continued)*

New non-price factors can also *decrease the quantity supplied* (S_1 to S_0) at a given price

- When *non-price conditions of supply weaken* or become *less favourable*, this decreases the quantity of a particular good or service that sellers are willing to produce at a given price (e.g. a decrease in supply at the price of $3 per kg for bananas). This causes the whole supply line for the market to shift *inwards horizontally and to the left* of the original line (a shift from S_1 to S_0).
- Let us return yet again to the example of the banana market shown in Figure 2.16. When the supply of bananas *decreases* at a given price due to new, less favourable conditions (perhaps reflecting the effects of severe drought; the effect of a cyclone; or higher production costs for farmers), this shifts the position of the whole supply line horizontally to the left, from S_1 to S_0. As a result, there is a rise in the equilibrium price of bananas from $3 (at P_1) to $3.50 a kg (at P_0). This rise in price is necessary to clear the *market shortage* (see the triangular area shaded red, where the quantity demanded exceeds the quantity supplied) that would otherwise exist if the price had remained at $3. As the price rises towards $3.50, supply *expands* and demand *contracts* (the normal operation of the laws of demand and supply) until the market comes to rest at the higher *equilibrium price* (P_0). In addition, the *equilibrium quantity* falls from 3000 kg (at Q_1) to 2500 kg a year (at Q_0). These new equilibria will continue to exist unless non-price conditions of supply again change.

on Resources

Digital document D—S diagrams (doc-32817)

2.7 Activities

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2.7 Quick quiz on

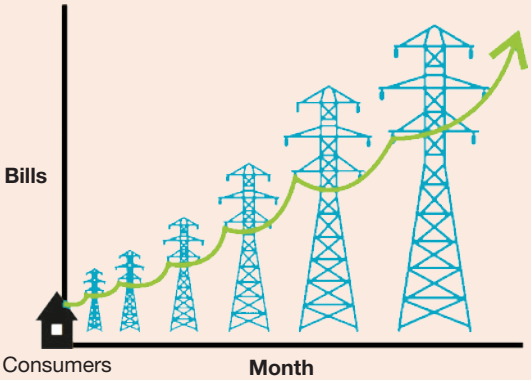
2.7 Exercise

2.7 Exercise

1. Giving examples, **describe** what non-price microeconomic *conditions of demand* involve. **(2 marks)**
2. Giving examples, **describe** what non-price microeconomic *conditions of supply* involve. **(2 marks)**
3. **Explain** how changes in non-price microeconomic conditions affect demand and supply, and the *equilibrium market price* and *quantity* traded. **(4 marks)**
4. **Distinguish** between a *movement* along a demand or supply line, and a *shift* of the whole demand or supply line. **(2 marks)**
5. **Read** *this background information on Australia's electricity market and answer the questions that follow.*

Background: Australia's electricity market

Over the last decade, there has been much media comment and public discussion about the high cost of electricity in Australia (often measured in cents per kilowatt hour or kWh) and the rapid rise, especially between 2008 and 2019, and again in 2022. Power prices in the electricity market are determined by the conditions of demand and supply. The demand for electricity comes from households (e.g. for lighting, heating and cooling) and businesses (e.g. for running equipment and other processes), while supply comes from firms who generate power through a mixture of coal and, increasingly for environmental reasons, through renewable sources such as solar, wind, hydro and geothermal. The need for cleaner energy has led to the closure of some coal-fired power stations. In moving through this topic, the electricity market (along with other examples) will be the focus of several sets of applied exercises that are designed to help you develop an understanding of demand, supply, equilibrium and price changes.



Changes in non-price conditions of demand and/or supply in the electricity market

Market theory suggests that the sharp rise in electricity prices, especially over the period from 2008 to 2019 and again in 2022, reflects the effects of new non-price microeconomic conditions that have increased the quantity demanded relative to the quantity supplied or available.

Examine the table that follows containing hypothetical data showing both the original demand (D_1) for and the original supply (S_1) of electricity at various prices in the market. The table also includes another set of data showing an *increase* in the quantity of electricity demanded at various prices, reflecting new stronger *non-price* microeconomic *conditions of demand* (called D_2). These will shift the position of the original demand curve or line (from D_1 to D_2).

Possible price per kWh	Original quantity of electricity demanded per day (millions of kWh) at a given price (D_1)	Original quantity of electricity supplied per day (millions of kWh) at a given price (S_1)	New increased quantity of electricity demanded per day (millions of kWh) at a given price (D_2)
$0.10	35	5	40
$0.15	30	10	35
$0.20	25	15	30
$0.25	20	20	25
$0.30	15	25	20
$0.35	10	30	15
$0.40	5	35	10

a. Using the previous table, accurately **construct** and fully **label** a combined D–S graph showing the *original demand* (D_1) and the *original supply* (S_1) curves or lines for the electricity market, along with the original *market equilibrium* (E_1). Your labelling must include an appropriate scale and units for each of the two axes (with both scales rising by regular intervals from zero), along with D_1, S_1, E_1, P_1 and Q_1.

On the same graph, **plot** and **label** a second demand curve or line (called D_2), the new equilibrium price (called P_2) and the new equilibrium quantity (called Q_2). Notice how the *new non-price demand conditions* that increased the quantity demanded at a given price have shifted the whole demand line horizontally to the *right* of the original line (from D_1 to D_2). **(5 marks)**

b. **Explain** what is meant by an *increase in the demand for electricity*. **(1 mark)**

c. **List** and **outline** *three* hypothetical non-price microeconomic events or factors that could have increased the quantity of electricity demanded in Australia at all possible prices from D_1 to D_2. **(3 marks)**

d. Quoting figures from your diagram, **explain** what happened to the *equilibrium price* and *equilibrium quantity* of electricity in this market following the increase in demand from D_1 to D_2. **(2 marks)**

e. Referring to relevant parts of your diagram, clearly **describe** the main *steps* whereby there was a move in equilibrium from E_1 to E_2. For instance, why did the equilibrium price of electricity change from P_1 to P_2? **(4 marks)**

Examine the table that follows containing hypothetical data showing both the original quantities of electricity demanded and supplied at various prices in the market, with another set of data showing the effects of new and weaker non-price conditions that *decrease* the quantity supplied at any given price.

Possible price per kWh	Original quantity of electricity demanded per day (millions of kWh) at a given price (D_1)	Original quantity of electricity supplied per day (millions of kWh) at a given price (S_1)	New decreased quantity of electricity supplied per day (millions of kWh) at a given price (S_0)
$0.10	35	5	0
$0.15	30	10	5
$0.20	25	15	10
$0.25	20	20	15
$0.30	15	25	20
$0.35	10	30	25
$0.40	5	35	30

f. Using the previous table, accurately **construct** and fully **label** a combined D–S graph showing the *original demand* (D_1) and the *original supply* (S_1) curves or lines for the electricity market, along with the original market equilibrium (E_1). Your labelling must include an appropriate scale and units for each of the two axes (with both scales rising by regular intervals from zero), along with D_1, S_1, E_1, P_1 and Q_1.
On the same graph, **plot** and **label** a second supply curve or line (called S_0) to show the effects of a reduced supply of electricity on the new equilibrium price (called P_0) and equilibrium quantity (called Q_0). Notice how the *new non-price supply conditions* that decreased the quantity supplied at a given price have shifted the whole supply line to the *left* of the original line (from S_1 to S_0). **(5 marks)**

g. **Explain** what is meant by decrease in the supply of electricity. **(1 mark)**

h. **List** and **outline** two hypothetical non-price microeconomic events or factors that could have decreased the quantity of electricity supplied in Australia at all possible prices from S_1 to S_0. **(2 marks)**

i. Quoting figures from your diagram, **explain** what happened to the equilibrium price and equilibrium quantity of electricity in this market following the decrease in supply from S_1 to S_0. **(2 marks)**

j. Referring to relevant parts of your diagram, clearly **describe** the main steps whereby there was a move in equilibrium from E_1 to E_0. For instance, why did the equilibrium price of electricity change from P_1 to P_0? **(4 marks)**

6. Non-price conditions or factors can affect the quantity of a particular good or service demanded or supplied at a given price.

a. For each of the following markets, **list** the *two* most important non-price factors or conditions that could *change the quantity demanded at any given price*, thereby shifting the position of the demand line causing the market equilibrium price to either rise or fall. **(20 marks)**

Market	Non-price factors or conditions that change the quantity demanded at a given price, horizontally shifting the whole demand line
i. Property	
ii. Hospitals	
iii. Surfboards	
iv. Wool	
v. Travel	
vi. Labour	
vii. Electricity	
viii. Butter	
ix. Milk	
x. Smartphones	

b. For each of the following markets, **list** the *two* most likely non-price factors or conditions that could *change the quantity supplied at any given price*, shifting the position of the supply line and therefore causing either a rise or fall in the market equilibrium price: **(16 marks)**

Market	Non-price factors or conditions that change the quantity supplied at a given price, horizontally shifting the whole supply line
i. Canola	
ii. Doctors	
iii. Iron ore	
iv. Bananas	
v. Workers	
vi. Cars	
vii. Houses	
viii. Televisions	

7. The quantity of a particular good or service demanded at a given price is affected by changing prices in the market for a substitute product or for a *complementary* good or service. In other words, markets for *substitutes* or those for complements are linked to that of the original product or service.

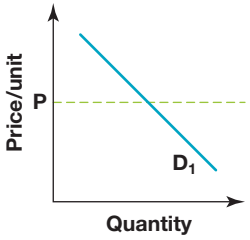
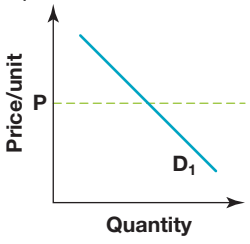
a. Explain what is meant by a *substitute* product. **(1 mark)**

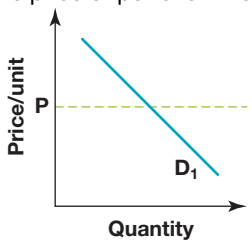
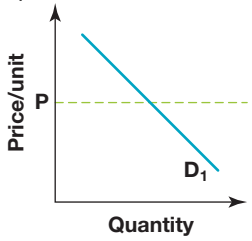
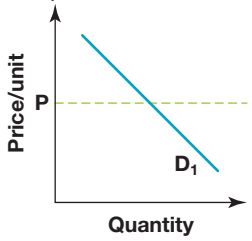
b. Explain what is meant by a *complementary* good or service. **(1 mark)**

8. For each pair of markets shown in the following table:

a. Indicate whether the two products are *substitutes* or *complements*. **(5 marks)**

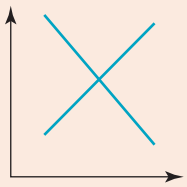
b. Complete each small demand diagram to show the effect of a new non-price factor on the original demand line for a substitute or a complement. **(5 marks)**

a. Substitutes or complements?	b. Effect on the demand for the substitute or complement
i. Butter and margarine are called ----------	Effect of a rise in the price of butter on the demand for margarine: 
ii. Coffee and sugar are called ----------	Effect of a rise in the price of coffee on the demand for sugar: 

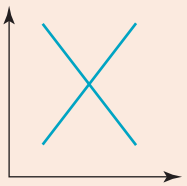
iii. Petrol and cars are called ----------	Effect of a fall in the price of petrol on the demand for cars: 
iv. Beef and chicken are called ----------	Effect of a fall in the price of chicken on the demand for beef: 
v. Coal-fired and solar power are called ----------	Effect of a government subsidy for households installing solar panels on the price of coal-fired electricity: 

9. **Download** the D–S diagrams as a digital document from the Resources tab and use this to complete the question. **Complete** and fully **label** the D–S diagrams that follow, each representing a single competitive market, to show the hypothetical effects of an event that alters the non-price conditions of demand and/or conditions of supply, thereby changing the equilibrium price and quantity. In most cases, you will need to add a second D line (D_2) or a second S line (S_2), along with a new equilibrium price (P_2) and quantity (Q_2). **(18 marks)**

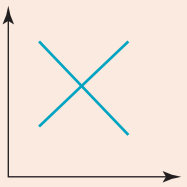
(a) The effect on the market for raspberries of the ending of the growing season



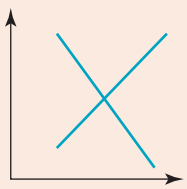
(b) The effect on the market for plastic swimming pools of a heatwave



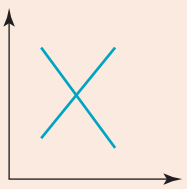
(c) The effect on the market for caged eggs of a successful advertising campaign by the RSPCA



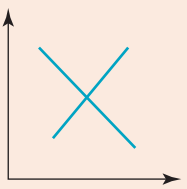
(d) The effect on the market for coal of a slowdown in global economic growth



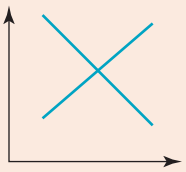
(e) The effect on the market for synthetic fibres (like polyester used in clothing) of a fall in oil prices



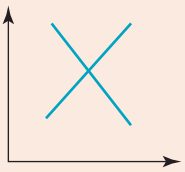
(f) The effect on the market for hotel rooms here and overseas of a rise in consumer confidence



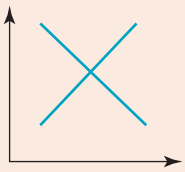
(g) The effect on the market for alcohol of an increase in the government excise tax on sellers



(h) The effect on the market for health care of a rise in the birth rate



(i) The effect on the market for solar panels of an increase in the government subsidy paid to sellers



Solutions and sample responses are available online.

on Resources

Digital document D–S diagrams (doc-32817)

2.8 How changes in relative prices and profits affect Australia's resource allocation

KEY KNOWLEDGE

- The role of the market mechanism and relative prices in the allocation of resources in a market-based economy

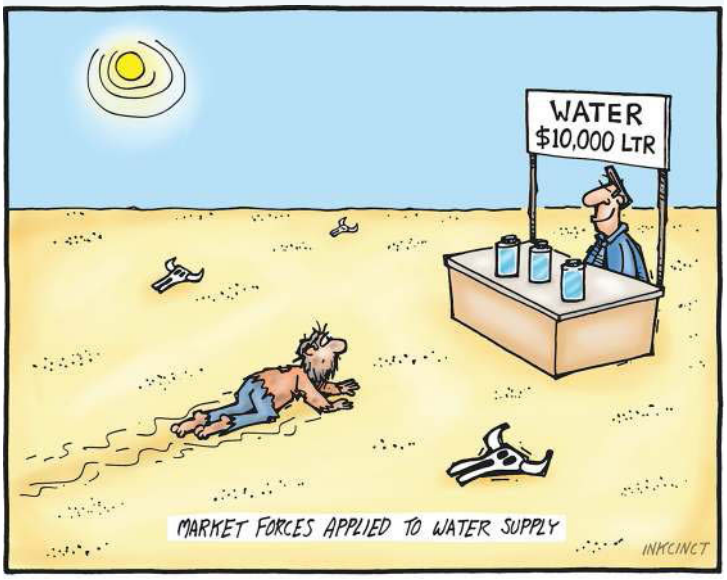
Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

In this section we continue our examination of the operation of the *market mechanism* or *price system* by again making the connection between a change in the *relative price* of one good or service against another, and how this affects the *economic decisions* involving how Australia *allocates* its scarce *resources* between alternative uses.

You may recall that all economies face the basic economic problem of relative scarcity. Because not all wants can be satisfied, we must make choices and answer *three* important economic questions:

- *What* type and *quantity* of goods and services should be produced?
- *How* should these goods and services be produced?
- *For whom* should these goods and services be produced?

FIGURE 2.17 Market forces involve the operation of demand by buyers and supply by sellers. Together, these forces determine the relative market price as an indicator of the relative scarcity of each good or service, such as bananas or bottled water. In a competitive market, strong demand and/or limited supply would cause the product to be scarcer and this would be reflected in a higher price in the market.



As we previously pointed out, in Australia's predominantly *market-based economy*, profit-seeking owners of resources rely mainly on the operation of the price system to guide their decisions and allocate resources between various types of goods and services. Here, market forces

involving demand and supply operate to determine the relative price, at equilibrium, of one good or service against another. Over a period of time, the relative prices of each good or service change due to new *non-price conditions* affecting the level of demand and/or level of supply. In turn, changes in relative prices cause price signals that act as incentives or disincentives for decision makers. These affect the *relative profitability* of each area of production, thereby influencing the way the three basic economic questions are answered.

2.8.1 How the price system answers the 'what and how much to produce' question

Only some wants can be satisfied, so owners of resources naturally opt to satisfy those that are *relatively most profitable* and wanted by consumers.

- **A relatively higher market price**
  Imagine that the equilibrium market price of ice-cream *increased* relative to that for yoghurt due to an increase in consumer demand for ice-cream at all possible prices (perhaps reflecting the operation of non-price factors like successful advertising, population growth or a rise in disposable income) while the demand for yoghurt fell (perhaps due to a non-price condition like a health scare). Here, it is quite likely that ice-cream would become relatively more profitable than yoghurt (assuming no other changes occurred). Higher profits in ice-cream would act as a *positive incentive, attracting extra resources* into this area of production, perhaps pulling resources away from yoghurt.
- **A relatively lower market price**
  Alternatively, what would happen if the equilibrium market price of ice-cream *fell*, perhaps because there was an increase in the supply of ice-cream at all possible prices (perhaps due to lower costs such as milk or transport) relative to its demand? In this case, it is likely that ice-cream producers would face relatively lower profits against those for yoghurt. This *disincentive* would tend to *repel resources* from ice-cream production while encouraging more to move into yoghurt.

In deciding what to produce — whether it be ice-cream or yoghurt, rice or wheat, cars or computers, wool or coal, or childcare or education — the market can usually provide the price signals, incentives or information to help owners of resources make the right production decisions that give consumers the types of goods and services they most want.

One weakness or *market failure* of this system, is that there are situations where *socially undesirable* yet profitable goods and services (e.g. illegal drugs, pollution, guns and prostitution) may be *overproduced*, while low priced, unprofitable or *socially desirable* goods and services (e.g. affordable healthcare, education and housing) are *under-produced*. In these instances of market failure, there is a strong case for *government intervention* in, or regulation of, some markets using taxes to discourage, or government subsidies to encourage, some types of production. This can improve the allocation of resources in answering the *what to produce question*.

2.8.2 How the price system answers the 'how to produce' question

In order to *maximise profits*, private owners of resources usually seek to minimise their production costs and maximise efficiency.

So, for example, if it is cheaper to produce a pair of jeans using mostly labour resources rather than capital equipment like laser-operated machines, then this would normally be the preferred method of manufacture. Again, the market-based system involving demand and supply would provide the necessary price information as to which production method is the cheapest to use. One possible reason why labour might be cheaper in this

example could be that its supply is high relative to demand. This would cause wage costs (the market price of labour) to be relatively lower (against the cost or market price of machinery).

However, sometimes the cheap production methods used by firms could risk the wellbeing, health and safety of workers and the general community. For instance, some firms may cut their costs by having dangerous working conditions or releasing pollution, because these methods are relatively cheaper. Again, there may be a justification for having some government regulation of production methods (e.g. occupational health and safety standards) in cases where the *market fails* to make good decisions.

2.8.3 How the price system answers the 'for whom to produce' question

The matter of how incomes (and hence goods and services) should be shared or divided is also largely answered by the operation of market forces involving demand and supply, and the price system.

Individuals who earn higher incomes by selling their *scarcer* resources can purchase more goods and services than those on lower incomes. For instance, high wages and incomes are earned by skilled surgeons, successful entrepreneurs and well-known pop stars and sportspersons, who can sell scarce resources where there is a shortage and their supply is low relative to demand. By contrast, those with lesser skills or no reputation will usually earn lower wages and income, and be unable to purchase as many goods and services. Again the market allocates scarce resources between alternative uses.

FIGURE 2.18 Inequality in the distribution of incomes, goods and services can be a concern in the free market system.

One problem faced by the free market system when answering the question about how to distribute incomes, goods and services is the likelihood of extreme *income inequality* and poverty, lowering average living standards. Again, when the *market fails* to produce fair or equitable outcomes, the government may choose to narrow the income gap between the rich and poor using heavier progressive taxes (i.e. when tax rates rise with income) on the rich, the payment of welfare benefits to the neediest, and the provision of free or cheap community services like health, housing and education.

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Weblinks

- Market prologue
- Demand
- Change in demand vs change in quantity demanded
- Supply
- Market equilibrium
- Introduction to supply and demand
- Demand and supply explained (1 of 2)
- Demand and supply explained 2
- Shifting demand and supply
- What do prices 'know' that you don't?
- Law of demand
- Demand and supply
- Basic concepts of supply and demand
- Demand and supply (EconMovies 4: Indiana Jones)
- Price signals
- Markets link the world
- The power of the market (featuring Milton Friedman)

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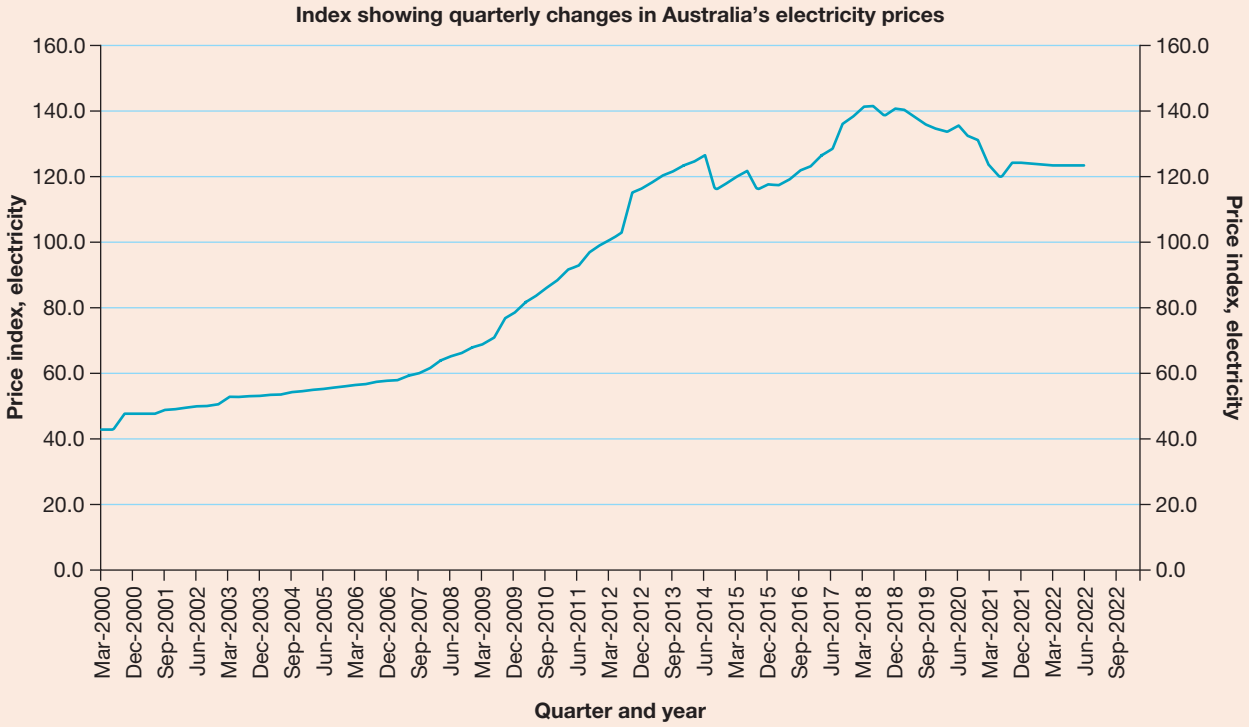
2.8 Exercise

1. **Explain** how, in general, the *market* or *price system* works to answer the three basic economic questions faced by all economies. **(6 marks)**
2. The following graph shows the change in electricity prices in Australia over the past two decades or so.



Source: Derived from ABS, CPI, Data downloads, Table 7, CPI: Group, Sub-group and Expenditure Class, Percentage change from previous quarter by Capital City, see https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/consumer-price-index-australia/latest-release#data-download.

Previously, it was suggested that the overall rise in Australian power prices was partly due to the demand for electricity increasing faster than the supply. Electricity prices affect both production costs for businesses using electricity, as well as household living costs.

a. Using the information in the graph, **describe** the change in electricity prices as measured by the electricity price index. **(3 marks)**

b. The overall rise in the price of electricity, especially in the years preceding 2019, relative to other consumer prices has many impacts on how the three basic economic questions are answered and the way our resources are used or allocated. **Explain** how the rise in the *relative price of electricity* would be likely to affect the following, assuming other things remain equal or unchanged.

i. The level of profits made by power companies and their allocation of resources into power generation including renewable energy **(1 mark)**

ii. The costs for businesses using electricity as an input to make other goods (e.g. aluminium) and services, as well as their level of profits **(1 mark)**

iii. The allocation of resources, production and employment levels for companies using electricity as an input **(2 marks)**

iv. The relative profitability of producing goods and services that do not require electricity as a resource or input **(1 mark)**

To help counteract rising electricity prices for households and to reduce the environmental effects of coal-fired power generation, some governments have given financial assistance such as cash subsidies to households installing solar panels.

c. **Draw** and fully **label** a D–S diagram (use hypothetical data) to show the likely effects of this policy on the *market for solar panels*. Show the D and S conditions both *before* and *after* the introduction of subsidies paid to buyers. Briefly **explain** the key changes shown on your diagram. **(3 marks)**

d. Draw and fully label a D–S diagram (use hypothetical data) to show the likely effects of solar panel subsidies on the national *market for electricity*. Show the D and S conditions both *before* and *after* the introduction of subsidies. Briefly **explain** the key changes shown on your diagram. **(3 marks)**

e. Looking at the graph, **outline** whether you feel that solar panel subsidies have helped to make electricity more affordable for consumers. **(1 mark)**

3. Assume the skateboard market is a fairly competitive one.

a. Use the data in the table that follows to accurately **draw** and fully **label** a demand–supply diagram for skateboards. **(2 marks)**

Price per skateboard	Original demand at a given price (D_1)	Original supply at a given price (S_1)	New increased demand at a given price (D_2)	New decreased supply at a given price (S_0)
$20	100	20	115	10
$40	80	40	95	20
$60	60	60	75	30
$80	40	80	55	40
$100	20	100	35	50

b. **Estimate** the original *equilibrium price* for skateboards resulting from the impact of non-price conditions on D_1 and S_1. **(1 mark)**

c. **Estimate** the original *equilibrium quantity* for skateboards resulting from the impact of non-price conditions on D_1 and S_1. **(1 mark)**

d. **Suggest** *two* non-price microeconomic conditions or factors that might cause the *increase in the quantity of skateboards demanded* at a given price, shifting the demand line from D_1 to D_2. **(2 marks)**

e. Following the *increase in the demand for skateboards* (from D_1 to $D_{2)}$, there was a shift in the equilibrium. Clearly **explain** *how* there was a shift in the equilibrium (from E_1 to E_2), referring to points on your diagram. **(3 marks)**

f. **Suggest** *two* non-price conditions or factors that might cause *the decrease in the quantity of skateboards supplied* at a given price from S_1 to S_0. **(2 marks)**

g. Following the *decrease in the supply of skateboards* (from S_1 to S_0), there was a shift in the equilibrium. Clearly **explain** *how* there was a shift in the equilibrium (from E_1 to E_0), referring to points on your diagram. **(3 marks)**

h. Events that change the relative price (either up or down) for a particular good or service alter the relative profit, and hence the way resources are allocated or used. If the relative price of skateboards *rises*, **explain** (giving reasons) how this would be *likely* to affect each of the following:

i. the level of relative profits from producing skateboards **(1 mark)**

ii. the quantity of resources allocated to producing skateboards and skateboard-related clothing, skate parks and other gear **(1 mark)**

iii. the quantity of resources allocated to other goods and services that had become relatively less profitable than skateboards. **(1 mark)**

4. Changes in *relative prices* in various markets send out signals (incentives) to producers and the profit-seeking owners of resources — indicating the type and quantity of each good or service consumers want to see produced.

   a. **Explain** what is meant by the term *relative prices*, giving an example. **(2 marks)**

   b. For each of the following hypothetical events, **explain** (giving reasons) how producers may change their use or allocation of resources and their level of output, assuming that production costs are unchanged:

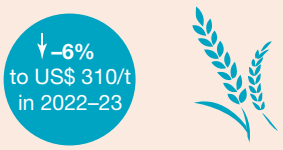
      i. Canola prices rose from $520 to $595 per tonne, but wheat prices fell. **(1 mark)**

      ii. Average weekly wages for unskilled labour rose 2 per cent, compared with a 25 per cent rise for computer technicians. **(1 mark)**

      iii. Increasing awareness about the health benefits of avocados have seen a steady increase in the price of avocados, while health concerns about soy-based products have had the opposite effect on the selling price of rice. **(1 mark)**

   c. The following data shows the predicted change in relative international prices for key commodities for 2022–23.

Wheat



1 March 2022

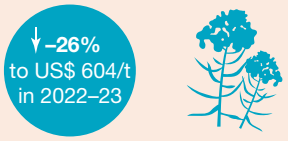
World wheat prices to ease but remain historically high.

Coarse grains

1 March 2022

Coarse grain prices to ease due to increasing global supply.

Oilseeds



1 March 2022

Decreased canola price driven by recovering global canola production.

Horticulture

1 March 2022

Improving labour situation expected to support production prospects over the medium-term.

Wine and wine grapes

1 March 2022

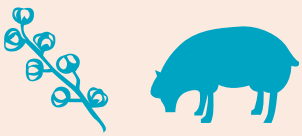
Elevated inventories and disrupted sales to see grape prices fall.

Sugar

1 March 2022

Fall in international sugar price driven by recovering global production.

Natural fibres



1 March 2022

Supply chain disruptions easing and global growth recovering means mixed prospects for fibres.

Beef and veal

1 March 2022

Easing rebuilding sees prices fall, but remain historically high.

Sheep meat

1 March 2022

Strong export demand in the US is expected to support high lamb prices.

Assume you are a farmer and are able to use your resources to produce any of these agricultural commodities.

i. Based on this price information alone, **select** two commodities you would produce and two commodities you *would not* produce. **Justify** your choices. **(2 marks)**

ii. **Suggest** *two* likely non-price conditions or factors that might have caused the relative prices of these agricultural commodities to change up or down. **(2 marks)**

5. Assume that the federal government decided to *provide* special financial assistance like a *cash subsidy* to all private businesses producing or supplying clothing to help them compete and survive. You are a local clothing manufacturer in this moderately competitive market involving other business rivals.
   a. **Draw** a hypothetical *demand–supply diagram* representing the market for clothing *before* the government paid the subsidy. **Label** all data on this diagram (show D_1, S_1, Pe_1, Qe_1, the names and units of the axes, and an appropriate title). On this D–S diagram, **show** the likely effects on the location of the supply line *after* the government gave this financial assistance to firms. Again, ensure that all new data on this diagram are labelled (show S_2, Pe_2, Qe_2). **(4 marks)**
   b. **Explain** why you shifted the location of the supply line in the way you did (i.e. from S_1 to S_2). **(1 mark)**
   c. Carefully **explain** the main steps whereby the equilibrium price would be likely to *fall* from P_1 to P_2. **(3 marks)**
   d. **Explain** how the government's new subsidy would be likely to affect the quantity of resources (i.e. the quantity of labour, capital and natural resources) allocated to the production of clothing. **(2 marks)**

Solutions and sample responses are available online.

2.9 Researching a contemporary example of an Australian or global market

KEY KNOWLEDGE

- One contemporary example of a market, including the degree of competition in that market

KEY SKILL

- Research and synthesise information about a particular market
- Analyse the extent of competition in markets by drawing conclusions based on economic criteria

Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

The market is a living, exciting and rapidly changing institution that operates around the clock. It is of enormous importance to our daily lives. As we know, Australia like most other countries these days, has a predominantly *market-based economy* where key economic decisions are made (sometimes with a limited amount of government guidance).

To connect *market theory* more closely to the world around us, the VCE Economics Study Design (2023–27) suggests that you undertake a *case study* involving *one* the following contemporary local or international markets:

- agricultural markets such as wool, wheat, milk and beef
- other commodity markets such as minerals and energy
- community markets
- utilities markets such as gas, electricity, water and telecommunications
- carbon emissions/carbon trading markets
- finance markets
- cryptocurrency markets
- international education markets
- tourism markets
- share markets
- foreign exchange markets
- labour markets
- property/housing markets
- online markets
- health markets
- any other markets.

In investigating the nature and operation of your chosen market, you will need to undertake research, synthesise information from a variety of sources, construct graphs, and use economic concepts and tools.

To help get you started, the upcoming pages of the text provide a *general introduction* to *ten* of these market case studies. In addition, for each there are suggestions about how to structure your *report headings*, along with a graph(s) showing changes in market prices. It also provides a general outline of each market, along with some questions to guide your internet research outside of this text. Use the **Case study research task** digital document in the Resources tab to download a detailed outline on how to approach this investigation.

on Resources

Digital document Case study research task (doc-37967)

2.9.1 Agricultural commodity markets

CASE STUDY 1: AGRICULTURAL COMMODITY MARKETS

Nature

Australian farmers sell their wheat, barley, wool, canola, beef, lamb, eggs, fruits and vegetables to wholesalers and retailers in **rural or agricultural commodity markets** both here and overseas. The price negotiated by buyers (D) and sellers (S) will reflect the relative scarcity of each rural commodity. Sometimes international selling is done by representative organisations. Again, the prices of agricultural commodities are determined at market equilibrium by the interaction of sellers and buyers. The prices of agricultural commodities change to reflect new non-price conditions of demand and supply. Especially on the supply side, conditions can change as a result of both favourable and less favourable growing conditions (e.g. droughts and severe weather events).

FIGURE 2.19 Conditions of demand and especially supply can affect the market price of agricultural commodities. For example, severe weather events like cyclones, floods and droughts can decrease supply relative to demand and cause a rise in the relative market price.

Structure for your case study research into a selected agricultural commodity market

You might like to use the following section headings to guide your research into a selected agricultural commodity market. In addition, a more detailed template for headings and ideas is provided later in section 2.10.3, Practice school-assessed coursework.

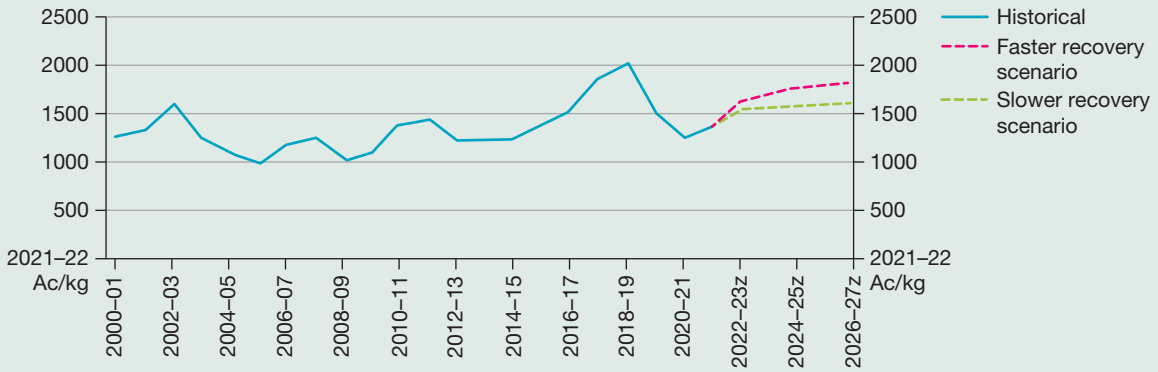
- **Introduction:** What are the *general features* of your selected agricultural commodity market? What type of *market structure* applies in this industry? How have market prices changed over recent years?
- **Demand:** Who are the *demanders*, buyers or consumers of your selected agricultural commodity and what factors affect their decisions? How have non-price *demand conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market demand, and the equilibrium price and quantity.
- **Supply:** Who are the *suppliers* or sellers of your selected agricultural commodity and what affects their decisions? How have non-price *supply conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market supply, and the equilibrium price and quantity.

- **Effects:** What are the likely *effects of changes in the relative market price* of your selected agricultural commodity on the economic decisions and the answers to the three basic economic questions?

By way of example, Figure 2.20 uses three graphs to show recent price changes in a selection of agricultural commodity markets (usually measured in US dollars). You might like to start your agricultural commodity research by following the weblinks in the Resources tab.

FIGURE 2.20 Price changes for a selection of agricultural commodity prices (actual and forecast)

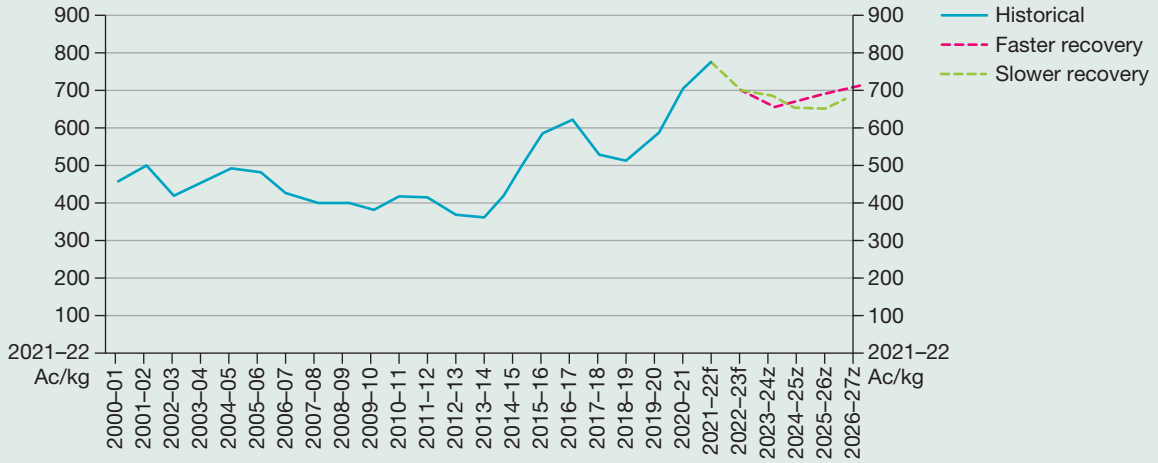
Graph 1 — Changes in wool prices and price forecasts, Eastern market indicator (Ac per kilogram)



f ABARES forecast. **z** ABARES projection.

Source: ABARES, Agricultural Commodities: March quarter 2022, page 63.

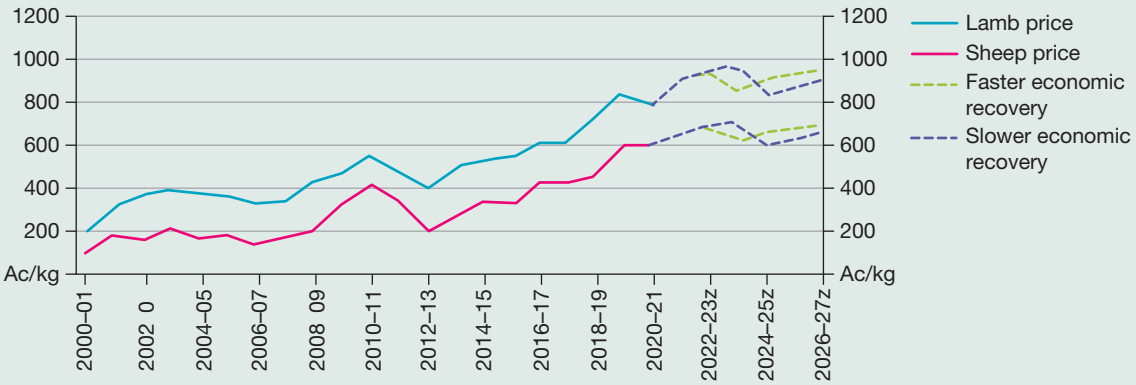
Graph 2 — Changes in beef meat prices and price forecasts (Ac per kilogram)



f ABARES forecast. **z** ABARES projection.

Source: ABARES, Agricultural Commodities: March quarter 2022, page 71.

Graph 3 — Changes in sheep and lamb meat prices and forecasts (Ac per kilogram)



f ABARES forecast. **s** ABARES estimate. **z** ABARES projection.

Source: ABARES, Agricultural Commodities: March quarter 2022, page 77.

on Resources

Weblinks Australian Bureau of Agricultural and Resource Economics (ABARES)
YQ Matrix graphs

2.9.2 Mineral commodity markets

CASE STUDY 2: MINERAL COMMODITY MARKETS

Nature

Non-rural commodity markets involve the selling (S) and buying (D) of raw materials and energy at a negotiated price that will reflect their relative scarcity. Firms producing or supplying commodities sell to other firms who need these materials for making finished products that are sold to customers or buyers. Important internationally traded raw materials include oil, gold, iron, zinc, nickel, timber, diamonds and natural gas. With great emphasis on mining, it is hardly surprising that the value of Australia's exports is greatly affected by trends in commodity prices. Indeed, the A$ is often referred to as a commodity-driven currency.

FIGURE 2.21 Iron ore mines and offshore oil and gas platforms extract the raw materials and energy that form part of non-rural commodity markets.

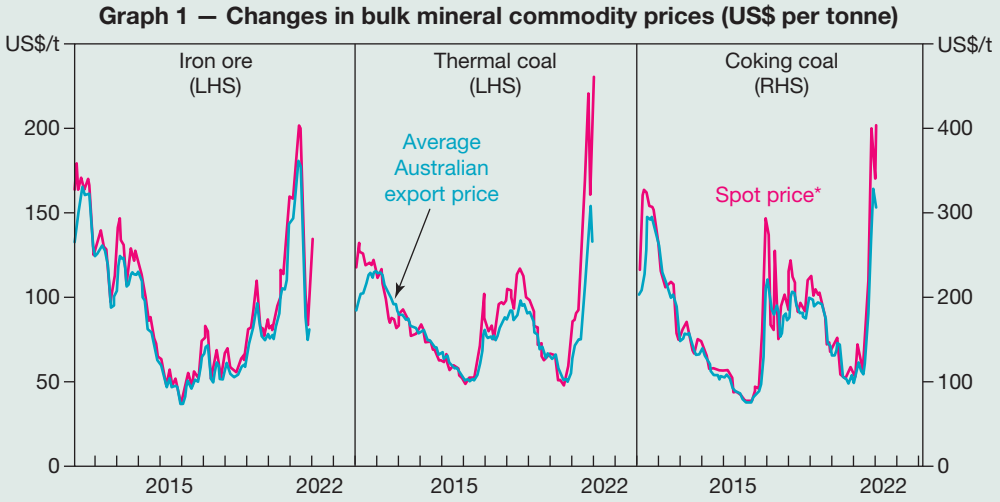
Structure for your case study research into a selected mineral or energy commodity market

You might like to use the following section headings to guide your research into a selected mineral commodity market. In addition, a more detailed template for headings and ideas is provided later in section 2.10.3, Practice school-assessed coursework.

- **Introduction:** What are the *general features* of your selected mineral commodity market? What type of *market structure* applies in this market or industry? How have market prices changed over recent years?
- **Demand:** Who are the *demanders*, buyers or consumers of your selected mineral commodity and what factors affect their decisions? How have non-price *demand conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market demand, and the equilibrium price and quantity.
- **Supply:** Who are the *suppliers* or sellers of your selected mineral commodity and what affects their decisions? How have non-price *supply conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market supply, and the equilibrium price and quantity.
- **Effects:** What are the likely *effects of changes in the relative market price* of your selected mineral commodity on the economic decisions and the answers to the three basic economic questions?

By way of example, Figure 2.22 contains two graphs that show recent price changes in markets for a selection of mineral and energy commodities over the years to 2022. They include mineral commodities such as bulk minerals (used for manufacturing metal products, expressed in US$ per tonne) and Brent oil (liquid petroleum that comes out of the ground before being refined, commonly used to fuel cars and aeroplanes and the like, usually expressed in US$ per barrel).

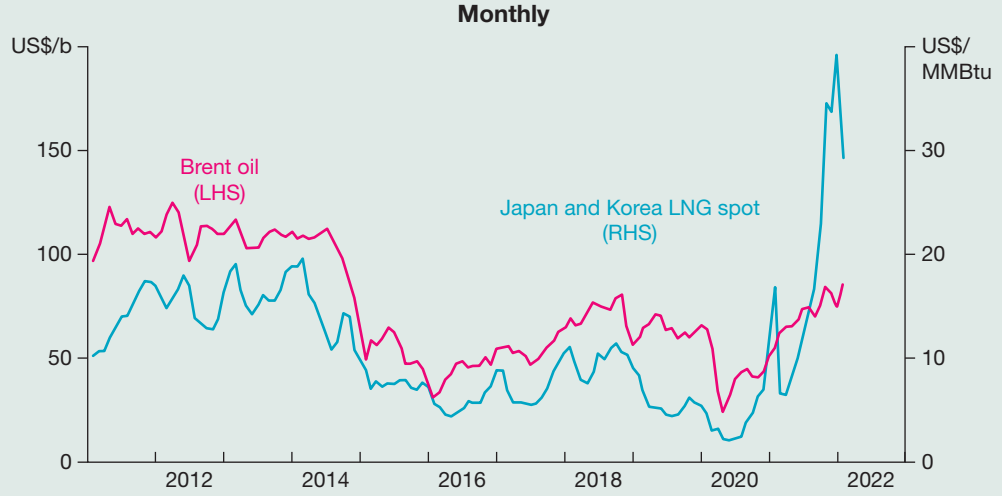
FIGURE 2.22 Price changes for a selection of mineral commodities



* Iron ore 62 per cent Fe fines index; Newcastle thermal coal and premium hard coking coal.

Source: RBA Chart Pack, see https://www.rba.gov.au/chart-pack/commodity-prices.html.

Graph 2 — Changes in global oil prices (US$ per barrel)



Source: RBA Chart Pack, see https://www.rba.gov.au.

on Resources

Weblinks
- Energy Information Administration
- InfoMine.com
- International Energy Agency
- OPEC
- RBA Chart Pack — mineral commodities
- World Gold Council
- YQ Matrix graphs

2.9.3 Community markets

CASE STUDY 3: COMMUNITY MARKETS

Nature

Community markets involve the selling (S) and buying (D) of edible products (e.g. cheeses, breads, cakes, vegetables, chutneys, jams and sweets) and home crafts (e.g. jewellery, leather goods, pottery, art, plants, clothing), along with plants, antiques and collectables. These markets typically occur in suburbs like Fitzroy or Kingsbury Drive in Melbourne, in cities like Geelong and Ballarat, and in small towns like Torquay. Sometimes they run infrequently like once a month, or perhaps every week. Usually sellers produce on a small scale and their products are often unique. This can make them an attraction for buyers and, as is usually the case, prices reflect conditions of demand and supply.

Your case study of a community market might involve research and even an excursion to one of these markets. Here you may have an opportunity to chat with sellers and buyers. To find out what markets are running, follow the **White Hat Guide to Sunday Markets** weblink in the Resources tab.

Structure for your case study research into a selected community market

You might like to use the following section headings to guide your research into a selected community market. In addition, a more detailed template for headings and ideas is provided later in section 2.10.3, Practice school-assessed coursework.

- **Introduction:** What are the *general features* of your selected community market? What type of *market structure* applies in this area? How have market prices changed over recent years?
- **Demand:** Who are the *demanders*, buyers or consumers of the selected goods and services in your community market, and what factors affect their decisions? How have non-price *demand conditions* changed recently? Try to illustrate their effects hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market demand, and the equilibrium price and quantity.
- **Supply:** Who are the *suppliers* or sellers of the selected goods and services in your community market, and what affects their decisions? How have non-price *supply conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market supply, and the equilibrium price and quantity.
- **Effects:** What are the likely *effects of changes in the relative market price* paid for the selected goods and services in your community market on the economic decisions and the answers to the three basic economic questions?

on Resources

Weblink White Hat Guide to Sunday Markets

2.9.4 The stock market

CASE STUDY 4: THE STOCK MARKET

Nature

The **stock market** allows shares (a part ownership of a business) in companies listed on the stock exchange to be bought (D) and sold (S) at a price that reflects relative scarcity and the ever-changing non-price conditions of demand and supply for each stock. Often, speculative buyers will try to purchase shares at a low price and then resell them at a higher price later, in the hope of making a profit or capital gain. Sometimes shares are simply seen as an income-earning investment where shareholders receive dividends or a proportion of the profits made by the company. When companies are floated or first listed on the stock exchange (in Australiacalled the Australian Securities Exchange or ASX), they issue or sell shares to raise finance for their business expansion. However, later these shares change hands, depending on whether the original buyers want to keep them or sell them. On occasion, volatile changes in the conditions of demand and supply by investors can cause share prices to change dramatically.

FIGURE 2.23 Prices of shares in the stock market are nowadays displayed electronically, and can change unexpectedly up or down due to changes in the conditions of demand for and/or supply of shares. In turn, price changes affect the economic decisions of investors and the allocation of resources.

Structure for the case study research into the stock market

You might like to use the following section headings to guide your research into the stock market. In addition, a more detailed template for headings and ideas is provided later in section 2.10.3, Practice school-assessed coursework.

- **Introduction:** What are the *general features* of the stock market or Australian Securities Exchange (ASX)? What type of *market structure* applies in the ASX or stock market? How have share market prices changed over recent years?

- **Demand:** Who are the *demanders* or buyers of company stock, shares and equities listed on the ASX, and what factors affect their decisions (either focus on one listed company or cover shares in general)? Try to illustrate hypothetically the recent effect of these factors, using a *D–S diagram* to show the *before* and *after* situations on market demand, and the equilibrium price and quantity.
- **Supply:** Who are the *suppliers* or sellers of company stock, shares and equities listed on the ASX, and what factors affect their decisions (either focus on one listed company or cover shares in general)? Try to illustrate hypothetically the recent effect of these factors, using a *D–S diagram* to show the *before* and *after* situations on market supply, and the equilibrium price and quantity.
- **Effects:** What are the likely *effects of changes in share prices* (perhaps for different company shares or relative to the attractiveness of other investments like housing, both here and overseas) on the economic decisions and the answers to the three basic economic questions?

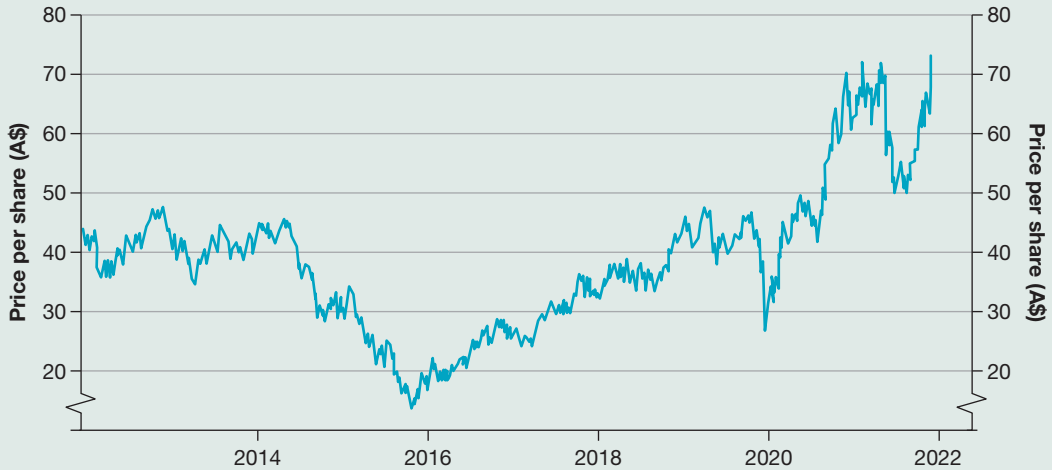
By way of example, Figure 2.24 contains three graphs. One graph shows how the share price has changed for major Australian companies, along with global share prices. Notice how the ASX 200 share price index peaked around 2015 and 2020. The third graph shows general trends in prices of international shares. Here, share prices peaked in 2021 and early 2022. Notice that the COVID-19 global pandemic and ensuing slowdown inflicted much pain on investors.

FIGURE 2.24 Graphs showing changes in Australian and international share prices

Graph 1 — Changes in Australian share prices for the biggest 200 companies (S&P/ASX 200, price index)

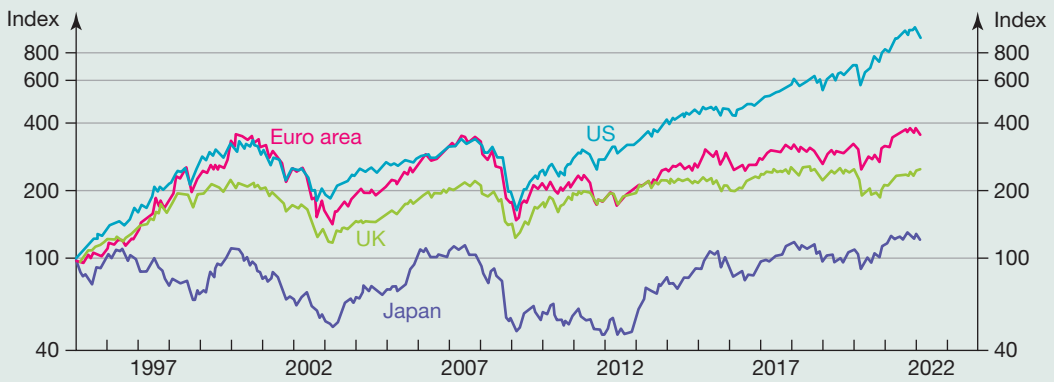
Source: Trading Economics, see https://tradingeconomics.com/australia/stockmarket.

Graph 2 — Changes in the price of BHP shares — Australia's biggest mining company (A$ per share)



Source: Macrotrends, see https://www.macrotrends.net/stocks/charts/BHP/bhpgroup/stock-price-history.

Graph 3 — Changes in the price of international shares, advanced economies (price index, base = 100 points December 1994)



Source: RBA Chart Pack, see https://www.rba.gov.au/chart-pack/sharemarkets.html.

on Resources

Weblinks RBA Chart Pack — share prices
ASX home page
ASX School's Share Market Game
Department of Agriculture, Fisheries and Forestry
National Council of Wool Selling Brokers of Australia
AUSTRADE
Food and Agriculture Organization of the United Nations

2.9.5 The finance market

CASE STUDY 5: THE FINANCE MARKET

Nature

The **finance market** involves financial institutions (e.g. banks, credit unions, superannuation funds). Here, borrowers (demanders, D) and lenders (suppliers, S) of credit negotiate the *rate of interest* — the price or annual cost of credit that is paid. Interest rates largely reflect the relative scarcity of credit and the conditions of demand and supply, even though the Reserve Bank of Australia (RBA) uses special policy measures to influence rates or the price of credit. Households, businesses and governments often need to borrow (demand) money to finance their purchases of goods and services, including capital equipment, property and consumer goods. However, savers of money, including some households who do not spend all their current income, lend money to financial institutions and are rewarded by receiving interest.

Structure for the case study research into the finance market

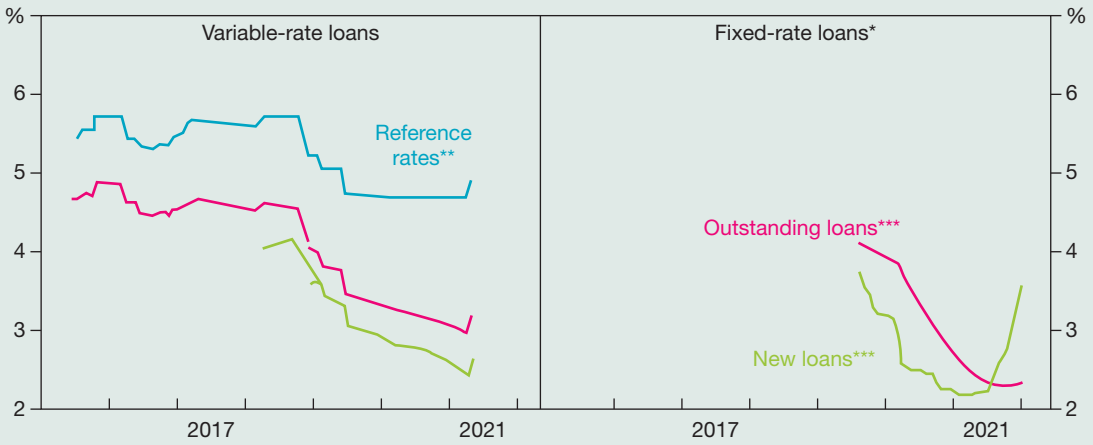
You might like to use the following section headings to guide your research into the finance market. In addition, a more detailed template for headings and ideas is provided later in section 2.10.3, Practice school-assessed coursework.

- **Introduction:** What are the *general features* of the finance market? What type of *market structure* applies in the finance market? How have interest rates or market prices changed over recent years?

- **Demand:** Who are the *demanders* or borrowers of finance, and what affects their decisions? How have *demand conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market demand, and the equilibrium price and quantity.
- **Supply:** Who are the *suppliers*, sellers or lenders of finance, and what affects their decisions? How have *supply conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market supply, and the equilibrium price and quantity.
- **Effects:** What are the likely *effects of changes in interest rates* on the finance market, and on the economic decisions and the answers to the three basic economic questions?

FIGURE 2.25 Changes in selected interest rates in Australia's financial market

Graph 1 — Changes in fixed and variable interest rates on home loans or mortgages



* Weighted average interest rate across all fixed-rate periods.

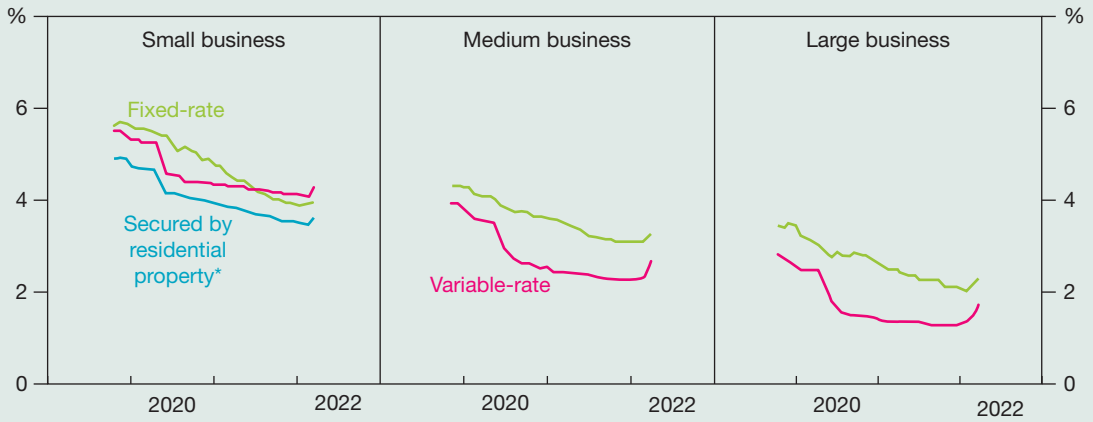
** Major banks' standard reference rates for variable-rate loans.

*** Series break in July 2019; thereafter, data based on EFS collection.

Source: RBA Chart pack, see https://www.rba.gov.au/chart-pack/interest-rates.html.

Graph 2 — Changes in interest rates on loans to different-sized businesses

Average interest rate on credit outstanding



* Small business loans secured by residential property can have fixed or variable interest rate terms and are included in the fixed-rate and variable-rate lines.

Source: RBA Chart pack, see https://www.rba.gov.au/chartpack/business-sector.html.

By way of example, Figure 2.25 contains two graphs showing recent changes in Australian interest rates or the price of credit. Notice that prior to rises in early-mid 2022, home loan and business interest rates came down to historic lows.

You might like to start your research into the finance market by following the weblinks in the Resources tab.

on Resources

Weblinks RBA Chart Pack — interest rates
Trading Economics — interest rates

2.9.6 The foreign exchange market

CASE STUDY 6: THE FOREIGN EXCHANGE MARKET

Nature

International financial transactions involve exports and imports of goods and services, and investment flows between countries. During this process, payments between countries must be made in the currency appropriate for each nation. For instance, Australian exporters generally want to be paid in our currency, not yen or pounds sterling. For this to occur, international currencies (e.g. the A$, US$, pound sterling, euro, rupee and yen) need to be swapped in the FOREX or **foreign exchange market**. The exchange rate is simply the price of one currency in terms of units of another (e.g. A$1 may be worth US$0.70). As occurs in all competitive markets, the price (in this case the exchange rate) is determined by the number of buyers (D) versus the number of sellers (S).

The exchange rate changes with the level of relative scarcity of each currency. In Australia's case, sellers of our currency are often local households or firms wanting to convert our dollar into some other currency to make payments abroad. These actions would increase the supply (S) of the A$, causing the exchange rate to *depreciate* (fall). Sometimes, too, speculators want to sell off the currency, especially if they feel it is soon going to fall. However, buyers of our currency are mostly foreigners wanting to pay someone in Australia, or currency speculators who purchase the A$ thinking it will rise sometime in the future enabling them to make gains. This action would tend to increase the demand (D) for the A$, causing the exchange rate to *appreciate* (rise).

Structure for the case study research into the foreign exchange market

You might like to use the following section headings to guide your research into the foreign exchange market. In addition, a more detailed template for headings and ideas is provided later in section 2.10.3, Practice school-assessed coursework.

- **Introduction:** What are the *general features* of the foreign exchange market for the A$? What type of *market structure* applies in the foreign exchange market? How has the exchange rate for the A$ or market price changed over recent years?
- **Demand:** Who are the *demanders* or buyers of foreign exchange and the A$, and what factors affect their decisions? How have *demand conditions* for the A$ changed recently? Try to illustrate their impact hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market demand, and the equilibrium price and quantity of the A$.
- **Supply:** Who are the *suppliers* or sellers of foreign exchange and the A$, and what factors affect their decisions? How have *supply conditions* for the A$ changed recently? Try to illustrate their impact hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market supply, and the equilibrium price and quantity of the A$.
- **Effects:** What are the likely *effects of changes in the exchange rate for the A$* on the economic decisions and the answers to the three basic economic questions?

By way of example, Figure 2.26 contains one graph. It shows the value of the Australian dollar against the US dollar over the past 50 years. Notice that the price or value of the A$ has fallen considerably overall, despite some occasional rises in the shorter term.

FIGURE 2.26 Changes in the exchange rate or price of one A$ and the US$ over the last 50 years

Source: Trading Economics, see https://tradingeconomics.com/australia/currency.

on Resources

Weblinks RBA Chart Pack — exchange rates
Trading Economics — indicators
Westpac exchange rate converter

2.9.7 The property and housing markets

CASE STUDY 7: THE PROPERTY AND HOUSING MARKETS (LOCAL OR OVERSEAS)

Nature

Residential properties and businesses in Australia are regularly bought (D) and sold (S) in the **property market**. A related market is that for rental properties, where tenants and landlords negotiate the price or cost of rent. Often these markets operate at the local level, but increasingly in capital cities the property market involves national and international customers. Due to changes in a range of non-price conditions of demand and supply, the period between 1995 and mid-2018 saw a remarkable overall growth in rental costs and housing and land prices. This was fuelled by very rapid population growth from natural increase, especially immigration; record low interest rates; and a buying frenzy by speculators, particularly in Sydney and Melbourne. More recently during late 2018 and early 2019, the peak in prices was followed by a downward market correction, before a strong rise in the first half of 2022.

Structure for the case study research into property markets

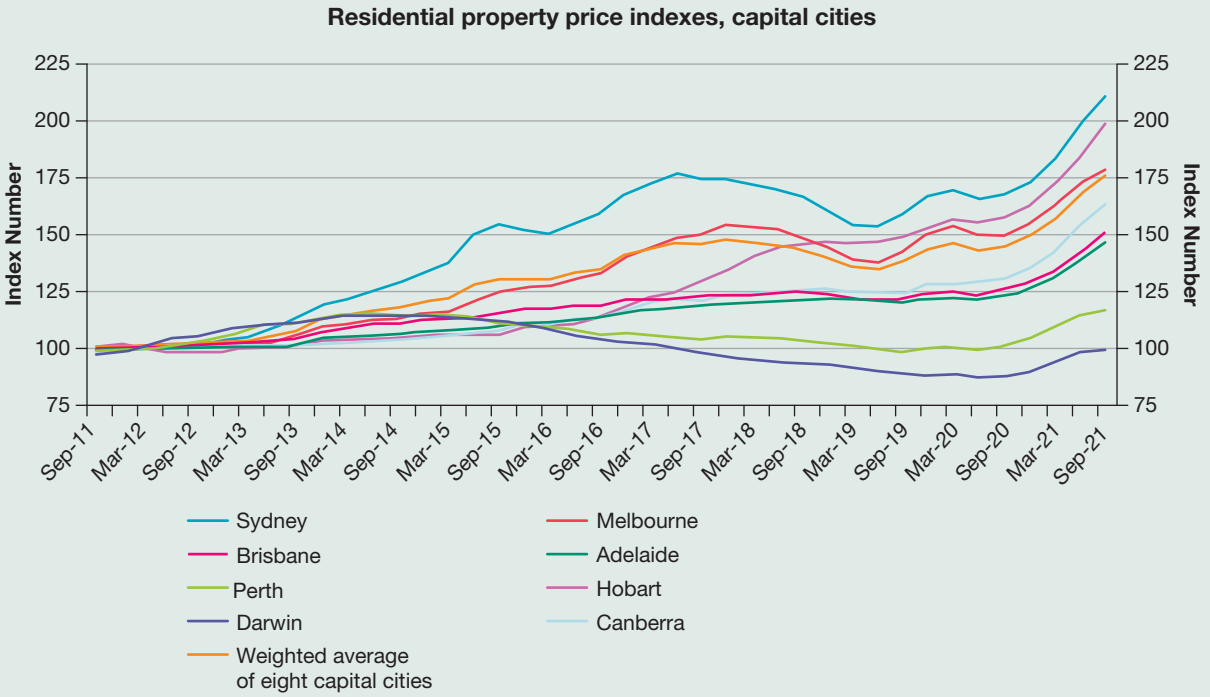
You might like to use the following section headings to guide your research into the property market. In addition, a more detailed template for headings and ideas is provided later in section 2.10.3, Practice school-assessed coursework.

- **Introduction:** What are the *general features* of local and/or national property markets? What type of *market structure* applies in the property market? How have market prices changed over recent years?
- **Demand:** Who are the *demanders*, buyers, consumers or renters of property, and what factors affect their decisions? How have *demand conditions* for property changed recently? Try to illustrate their impact hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market demand, and the equilibrium price and quantity of property.
- **Supply:** Who are the *suppliers* or sellers of property, and what factors affect their decisions? How have *supply conditions* for property changed recently? Try to illustrate their impact hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market supply, and the equilibrium price and quantity of property.
- **Effects:** What are the likely *effects of changes in the market prices of property* (paid by buyers and/or renters) on the economic decisions and the answers to the three basic economic questions?

By way of example, Figure 2.27 contains two graphs. The trends in median property prices (measured by an index with a base year price of 100 points for comparison) across selected Australian capital cities are shown in graph 1. Changes in property prices in Hong Kong are shown in graph 2. Again, price changes reflect the level of relative scarcity of properties, and this is determined by the conditions of demand (D) relative to supply (S).

FIGURE 2.27 Changes in residential property prices in Australian capital cities and in Hong Kong

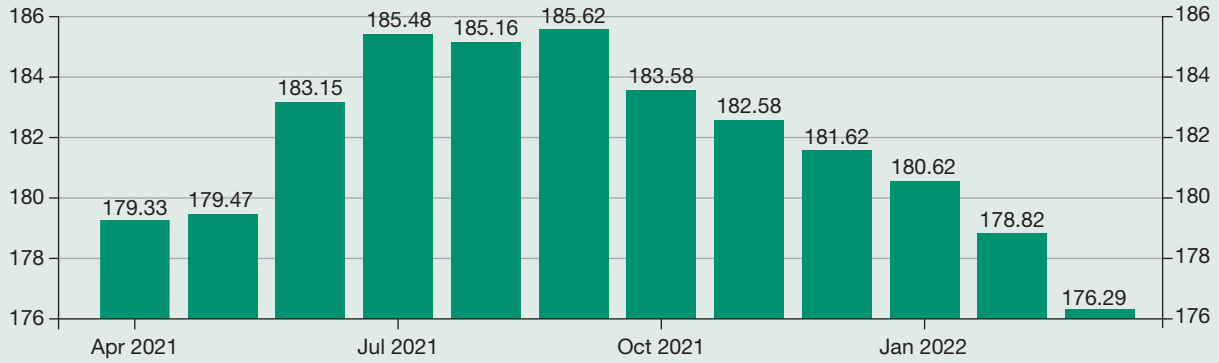
Graph 1 — Change in Australian residential property prices index by capital city (quarterly, base year is 2011–12 = 100 points)



2011–12 = 100.0

Source: ABS, Residential property prices, https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/residential-property-priceindexes-eight-capital-cities/latest-release.

Graph 2 — Index of property prices in Hong Kong



Source: Trading Economics, see https://tradingeconomics.com.

You might like to start your research into the property market by following the weblinks in the Resources tab.

on Resources

Weblinks RBA Chart Pack — household sector
Real Estate Institute of Victoria (REIV)

2.9.8 The labour market

CASE STUDY 8: THE LABOUR MARKET

Nature

Australia's **labour market** is an institution where labour resources (the physical power and mental talents of different types of workers) are bought and sold at various prices or wages that reflect the relative scarcity of each type of worker. The sellers or suppliers of labour (S) come from the household sector and consist of over 13 million Australians aged 15 years and over who are able and willing to work (classified as members of the labour force). The buyers or demanders of labour (D) are firms wanting staff to fill their job positions.

Structure for the case study research about the labour market

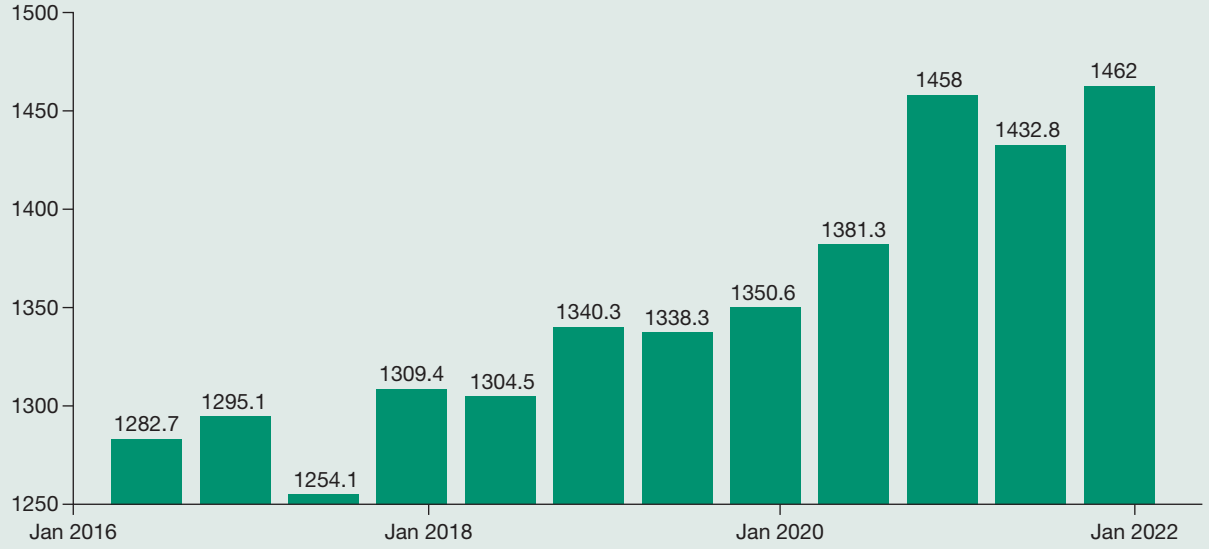
You might like to use the following section headings to guide your research into the labour market. In addition, a more detailed template for headings and ideas is provided later in section 2.10.3, Practice school-assessed coursework.

- **Introduction:** What are the *general features* of Australia's labour market? What type of *market structure* applies in the labour market? How have market prices changed over recent years?
- **Demand:** Who are the *demanders* or buyers of labour and what factors affect their decisions? How have *demand conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market demand, and the equilibrium price (wage) and quantity.
- **Supply:** Who are the *suppliers* or sellers of labour and what factors affect their decisions? How have *supply conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market supply, and the equilibrium price and quantity.
- **Effects:** What are the *likely effects of changes in labour prices or costs* on the economic decisions and the answers to the three basic economic questions?

By way of example, Figure 2.28 uses two graphs to show how average and minimum weekly wages (as the price of labour) in Australia have changed in recent years. In addition, Australian Bureau of Statistics (ABS) data is available for wages in different states, occupations, genders and educational attainment.

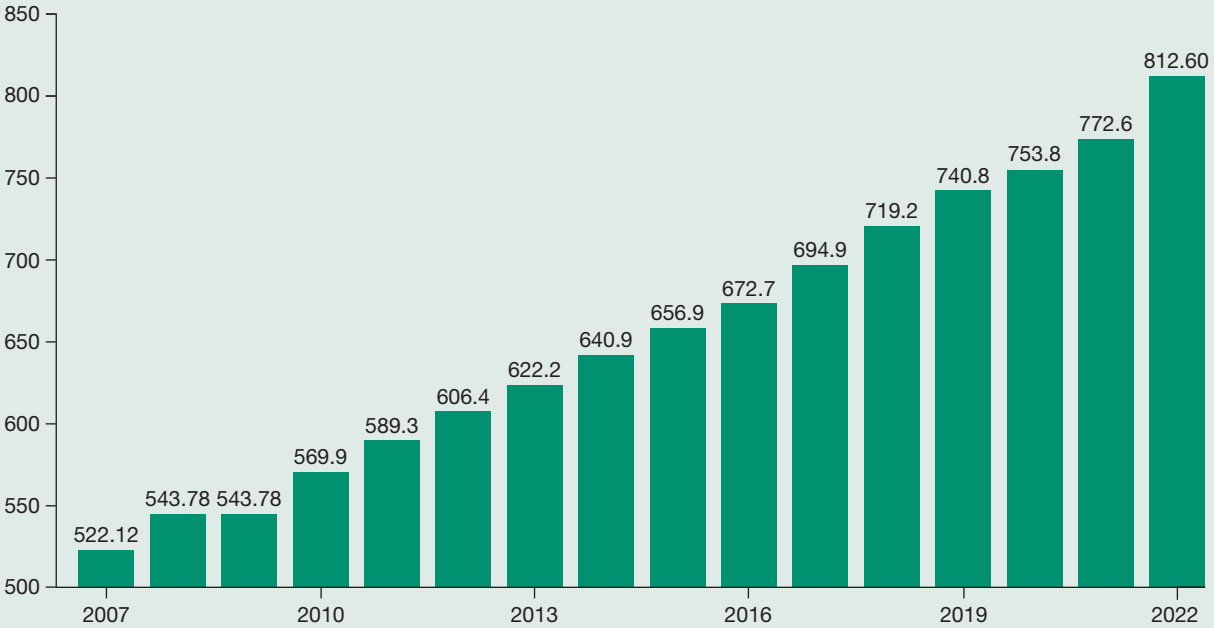
FIGURE 2.28 Changes in wages in Australia's labour market

Graph 1 — Changes in average wages in Australian manufacturing



Source: Trading Economics, see https://tradingeconomics.com.

Graph 2 — Annual changes in Australia's minimum wage set by the fair work commission



Source: Trading Economics, see https://tradingeconomics.com.

You might like to start your research into the labour market by following the weblinks in the Resources tab.

on Resources

Weblinks

- Australian Bureau of Statistics
- Australian Council of Trade Unions (ACTU)
- Centrelink
- Fair Work Commission
- Commodities crash explained in 90 seconds
- Speculation and manipulation of food and commodities
- Commodities supercycle's end is nigh
- How the stock exchange works
- How the stock market works
- The minimum wage
- Foreign exchange (FOREX)
- Wall Street warriors
- Peak oil and possible outcome
- Commodities general introduction
- Oil prices: What's going on?
- Worksite
- Why 2016 could be a turning point in the energy revolution
- $20 oil could be a reality if this happens

2.9.9 Cryptocurrency markets

CASE STUDY 9: CRYPTOCURRENCY MARKETS

Nature

Cryptocurrencies, like Bitcoin, Ethereum, Binance Coin, Solana and thousands more, are mostly used as a speculative investment, often by those who are relatively well-off. Of these, the best known one is Bitcoin that accounts for over 40 per cent of all currency (estimated to be worth over $3 trillion). Some also use cryptocurrencies as a store of value, a medium of exchange, for transferring large sums of money internationally, and (for a few) as a way of laundering dirty money. Essentially, cryptocurrency only exists virtually or digitally. This means that there are no physical coins or notes involved. It is not issued or controlled by central banks, and a decentralised system is used to record transactions on a public ledger (Blockchain), and perhaps issue new units. It uses cryptography to secure these transactions.

Each *currency* has its own *market* where the forces of demand relative to supply determine its value or *price*. As in all free markets, if demand for a cryptocurrency rises relative to its supply, then the price will rise; whereas if demand falls relative to supply, the price falls. As an *investment*, it is possible to make *profits* from price variations (in a way like share trading) — buy cheap and sell dear! Of course, buying and selling at the right time is key for success, but the volatility and unpredictability of these markets (sometimes, for example, due to unfolding events in the news and on social media) mean that profits are certainly not guaranteed.

Structure for the case study research about cryptocurrency markets

You might like to use the following section headings to guide your research into the **cryptocurrency market**. In addition, a more detailed template for headings and ideas is provided later in section 2.10.3, Practice school-assessed coursework.

- **Introduction:** What are the *general features* of cryptocurrency markets? What type of *market structure* applies in the cryptocurrency market? How have market prices changed over recent years?
- **Demand:** Who are the *demanders* or buyers of cryptocurrency and what factors affect their decisions? How have *demand conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market demand, and the equilibrium price and quantity traded.
- **Supply:** Who are the *suppliers* or sellers of cryptocurrency and what factors affect their decisions? How have *supply conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market supply, and the equilibrium price and quantity.
- **Effects:** What are the *likely effects of changes in cryptocurrency* on the economic decisions?

By way of example, Figure 2.29 uses a graph to show the volatile changes in the market price of Bitcoin as a cryptocurrency against the A$ up to 2022.

FIGURE 2.29 Changes in the price of Bitcoin as a cryptocurrency

Source: Trading Economics, see BTCAUD Bitcoin Australian Dollar — Currency Exchange Rate Live Price Chart (tradingeconomics.com).

You might like to start your research into the cryptocurrency market by following the weblinks in the Resources tab.

on Resources

Weblinks
- BYBIT.com
- Statista
- Binance Academy, A Complete Guide to Cryptocurrency Trading for Beginners
- Etoro
- Explain Crypto To COMPLETE Beginners: My Guide!!
- A Beginner's Guide To Cryptocurrency
- How Cryptocurrency ACTUALLY works
- Bitcoin: The Future, or World's Greatest Scam?

2.9.10 Carbon trading markets

CASE STUDY 10: CARBON TRADING MARKETS

Nature

As we know, the free operation of the market system normally means that firms will use the *cheapest* and most *profitable* production methods available to produce goods and services. Unfortunately, this can result in *market failure* because without government regulation, *pollution* is usually *cheaper* than *cleaner* production, and its costs are passed onto others (third parties) including future generations. Pollution, including CO_2 emissions released into the atmosphere, accelerate global warming and lead to climate change and severe weather events that have highly negative effects on both economic and non-economic living standards.

One way to reduce pollution is to get polluters to pay the full cost of their economic activities by putting a *price on their CO_2 emissions*. By making pollution more expensive and undermining their profits, this would encourage businesses to develop cleaner products that cause less environmental harm, perhaps allowing Australia to reach its recent target of *zero net emissions by 2050*.

So, this raises the question — how can a price be put on the carbon emissions of polluters? The answer that is widely being adopted around the world, is to have a system of *tradeable pollution permits* or *carbon credits* that firms are required to purchase — the price of which is determined in a *carbon market* by the forces of *demand* (from polluting firms) and *supply* (usually using a limited or capped number of permits set by the government so it can reach its emissions target). As in most markets, changes in *non-price conditions* of demand and supply would affect the cost or price of carbon pollution.

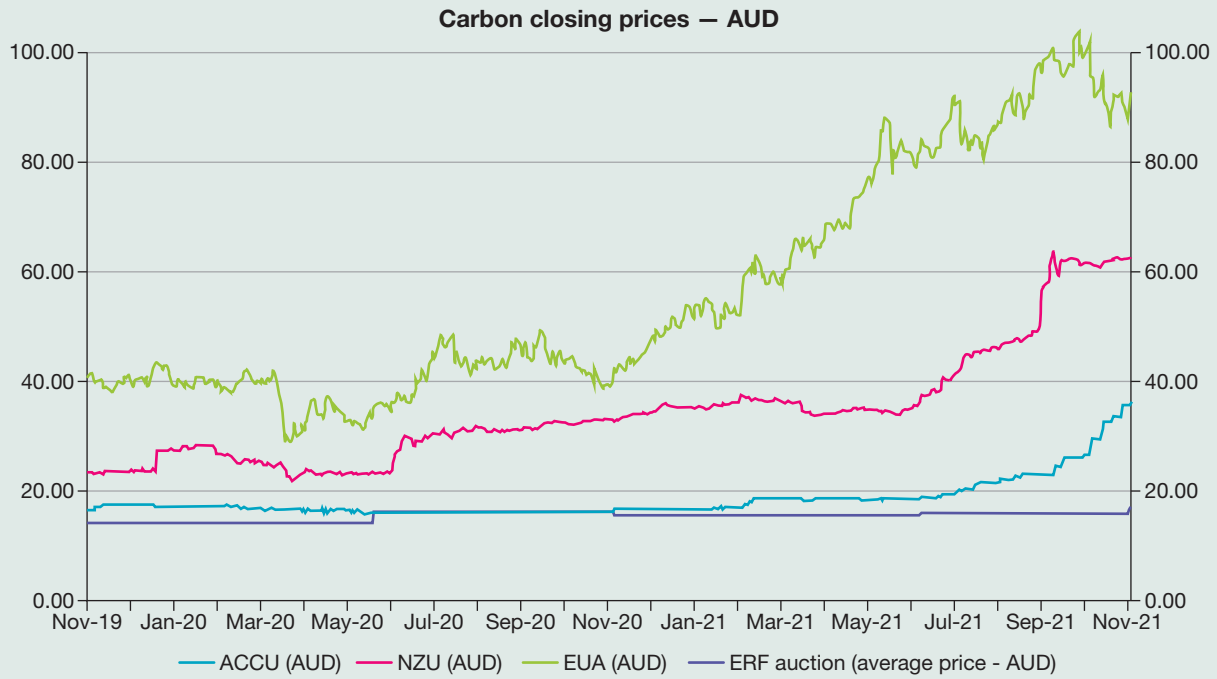
Structure for the case study research about carbon trading markets

You might like to use the following section headings to guide your research into **carbon trading markets**. In addition, a more detailed template for headings and ideas is provided later in section 2.10.3, Practice school-assessed coursework.

- **Introduction:** What are the *general features* of a carbon trading market? What type of *market structure* applies in the carbon trading market? How have market prices changed over recent years?
- **Demand:** Who are the *demanders* or buyers of carbon pollution permits and what factors affect their decisions? How have *demand conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market demand, and the equilibrium price and quantity traded.
- **Supply:** Who are the *suppliers* or sellers of carbon pollution permits and what factors affect their decisions? How have *supply conditions* changed recently? Try to illustrate these hypothetically, using a *D–S diagram* showing the *before* and *after* effects on market supply, and the equilibrium price and quantity.
- **Effects:** What are the *likely effects* of price changes for carbon pollution permits in the carbon trading market on the three basic economic decisions — what and how much to produce, how to produce and for whom to produce?

By way of example, Figure 2.30 uses a graph to show the changes in the market prices paid for tradeable permits or carbon credits for each tonne of CO_2 emissions in Australia, NZ and the European Union.

FIGURE 2.30 Recent changes in the price (measured in A$ per tonne of CO_2) of carbon pollution for selected countries or areas (Australia — ACCCs, NZ, EU)



Source: ABC News, see https://www.abc.net.au/news/2021-11-06/carbon-price-record-but-why-is-australia-behind-/100595060.

You might like to start your research into *carbon trading markets* by following the weblinks in the Resources tab.

on Resources

Weblinks Net Zero, Carbon Credits: Everything You Need to Know
BBC, Carbon trading: How does it work?
Investopedia, Carbon Trade
IG, Carbon trading: how does it work and why has it taken off?
What is carbon trading?
How does the European Union carbon emissions trading scheme work
Carbon pricing: how does a cap-and-trade system work?
Carbon Pricing, Explained with Chickens

2.9 Activities

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Access additional questions

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2.9 Quick quiz on

2.9 Exercise

2.9 Exercise

1. Accurately **define** any *one* of the following markets:
   - **a.** the canola market
   - **b.** the market for iron ore
   - **c.** the market for property
   - **d.** the share market
   - **e.** the finance market
   - **f.** the labour market
   - **g.** carbon market
   - **h.** cryptocurrency market. **(1 mark)**
2. Taking the market you chose in question 1, **construct** a D–S diagram using hypothetical data to show how the equilibrium market price and equilibrium quantity would be determined. **(2 marks)**
3. **List** *two* non-price factors that could cause an *increase in demand* within this chosen market. **Construct** and fully **label** a D–S diagram to illustrate the situation in this market *before* and *after* the impact of these factors. **(2 marks)**
4. **List** *two* non-price factors that could cause an *increase in supply* within this chosen market. **Construct** and fully **label** a D–S diagram to illustrate the situation in this market *before* and *after* the impact of these factors. **(2 marks)**
5. Assume that the market price of your selected product fell relative to other products. As a producer, **explain** how this might tend to affect the way that the three basic economic questions (what, how and for whom to produce) might be answered. **(3 marks)**

Solutions and sample responses are available online.

2.10 Review

Hey students! Now that it's time to revise this topic, go online to:

Review your results | Watch teacher-led videos | Practise exam questions

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2.10.1 Summary

Distinctive features of Australia's economic system

- Australia has a predominantly *market-based economy*. This involves the dominance of the market or price system in decision-making and is used to answer the three basic economic questions (what, how and for whom to produce). Consumer sovereignty and self-interest are important and the profit-seeking private sector is dominant. Even so, the government sometimes intervenes to reduce market failure.
- *Decision-making.* Our system of decision-making relies on the price or *market-based system*, which reflects consumer sovereignty rather than government sovereignty. This is summarised in Figure 2.31. Here, relative market prices move up and down due to new conditions of demand by buyers or supply by sellers. Changes in relative prices create signals for profit-seeking owners of resources to indicate which particular types of goods or services are most wanted or have been under- or overproduced. Owners of resources will follow these price signals, since they want to maximise their profits and incomes. As a decision maker, the market works as shown in Figure 2.31.

FIGURE 2.31 Summary — the operation of the price system as a decision maker in a market economy

- In economics, we all face the problem of *relative scarcity.*
- We cannot have all the goods and services that we want.
- Decision or *choices* have to be made about how limited resources are to be used or allocated (i.e. answer the 'what, how and for whom to produce' questions).

↓

- Australia has a predominantly *market-based* economic system.
- The *market* is an institution that involves buyers and sellers who negotiate relative prices at equilibrium for each good or service.

↓

- Over time, *relative prices change* as a result of new non-price conditions of demand and supply.
- A change in relative prices alters the *relative profitability* of producing one good or service against another.
- Profit-seeking owners of resources respond to these *price signals*, by changing the type and quantity of goods and services they produce, how they produce them, and for whom they are produced.

The nature of markets in Australia

Markets make up the main decision-making institution in the Australian economy and, hence, we have a *market-based system*. There are thousands of markets scattered around the country. They allocate around 80 per cent of our resources.

- *Markets* bring buyers and sellers together where they negotiate prices. Prices for resources are negotiated in factor or resource markets, while prices for finished goods and services are negotiated in final markets.
- *Market structure* (or market power) is a term that describes the type and level of competition between sellers. At the extremes, there is perfect or pure competition (many sellers, strong rivalry, and sellers are price takers), and perfect or pure monopoly (only one firm controlling the market and it is a price maker). Between these extremes are monopolistic competition and oligopoly.
- Perfectly or purely competitive markets involve *special preconditions or features* (e.g. strong competition between many sellers who are *price takers* because they have *no market power*, no product differentiation,

no government controls or regulations, good knowledge of products and market trends, profit maximisation and rational behaviour by buyers and sellers). In reality, examples of perfectly or purely competitive markets are less common than monopolistic competition, oligopolies and monopolies. The Australian Competition and Consumer Commission (ACCC) helps to promote competition among rival sellers, and outlaws anti-competitive behaviour through the *Australian Competition and Consumer Act 2010* (ACCA).

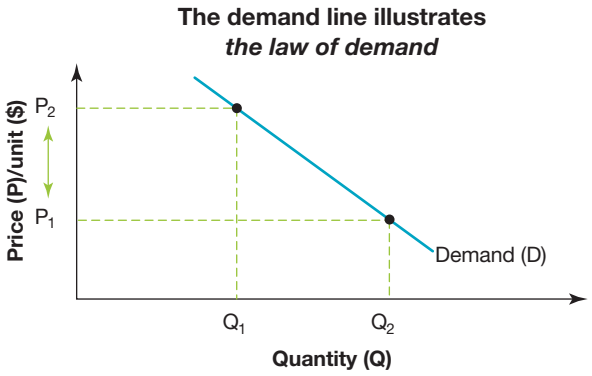
- *Markets tell us what types of things and how much to produce, and how to distribute production and incomes*. They do this through the *price system*. In turn, changes in relative prices affect whether a particular good or service is *profitable* or not. Rising prices act as a positive incentive and usually signal to profit-seeking owners of resources that there has been under-production and that output needs to be lifted. Falling prices in the market act as a disincentive and signal that there has been overproduction and that output should be cut by diverting resources to other purposes.

Looking at markets using demand–supply diagrams

The price or market-based system plays a vital decision-making role in our economy. Economists often use *demand–supply diagrams* to illustrate how various markets work. Several points can be made about these diagrams:

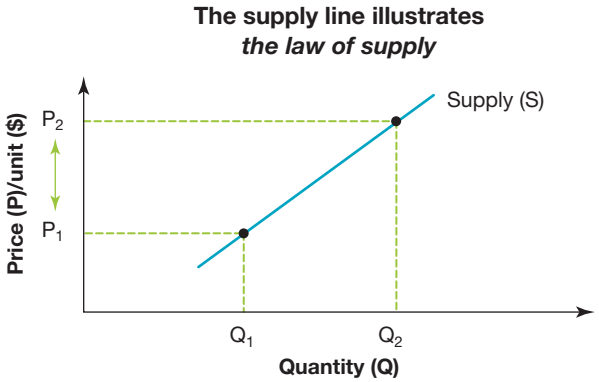
- *The demand for goods and services.* The demand curve or line in Figure 2.32 shows that the quantity demanded by buyers (D) contracts (from Q_2 to Q_1) as the price rises (from P_1 to P_2), and the quantity demanded expands (from Q_1 to Q_2) as the price falls (P_2 to P_1). Movements *along* the demand line illustrate the *law of demand*.

FIGURE 2.32 The demand curve or line for buyers



- *The supply of goods and services.* The supply curve or line in Figure 2.33 shows that the quantity that would be supplied by sellers (S) expands (from Q_1 to Q_2) as the price rises (from P_1 to P_2), and the quantity supplied contracts (from Q_2 to Q_1) as the price falls (from P_2 to P_1). Movements *along* the supply line illustrate the *law of supply*.

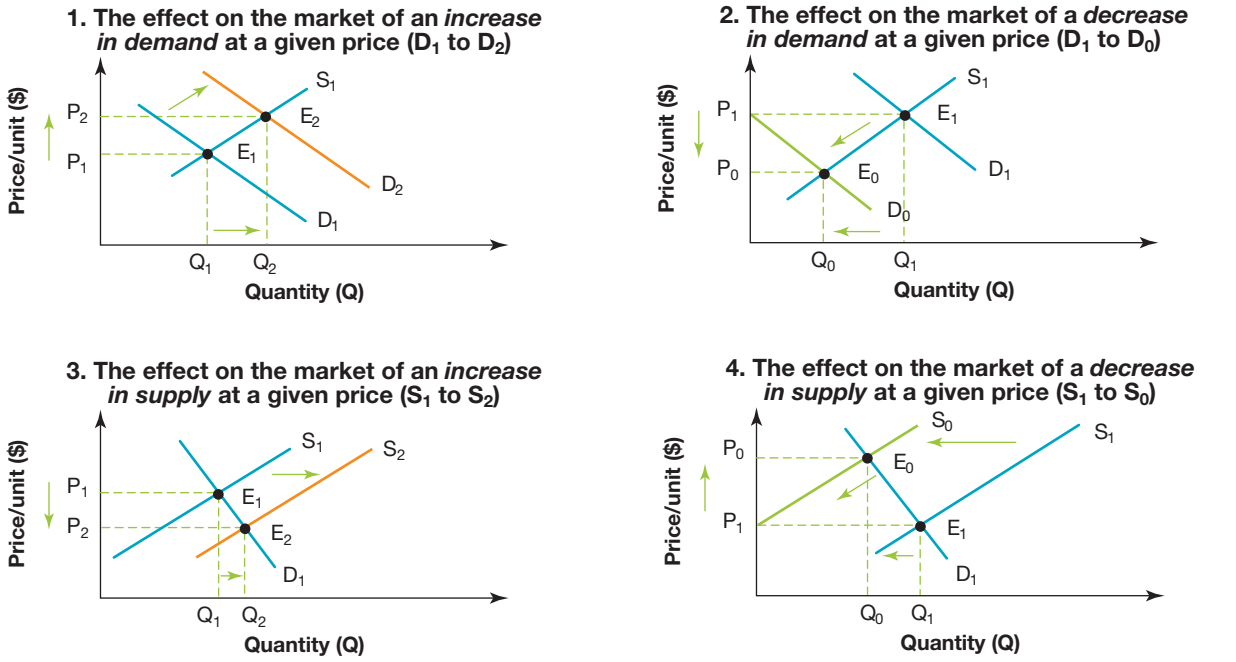
FIGURE 2.33 The supply curve or line for sellers



- *Market equilibrium.* The free market always tries to move to a position of equilibrium (E_1). Only at this point do buyers (D) and sellers (S) reach an agreement about the actual market price (at Pe) and market quantity (Qe_1). Here, S equals D. At prices *above equilibrium*, there will be a surplus or *glut* (overproduction) in the market where S > D. Here, prices will be forced down towards the equilibrium level (i.e. at Pe). However, at prices *below equilibrium*, there will be a *shortage* (under-production) in the market, pushing prices up to the equilibrium level (at Pe).
- *Changes in market equilibrium due to new non-price conditions of demand and supply.* Once an equilibrium market price is established for each item, these prices are unlikely to remain steady for long because buyers and sellers are continually reviewing their decisions and changing their behaviour as a result of non-price factors. Buyers may choose to demand an increased or decreased quantity of a particular good or service at any given price, while sellers may also choose to supply an increased or decreased amount of a particular good or service at any given price. These changes cause a *shift* in the position of the whole demand or supply line horizontally to the right or left of the original line.

- The equilibrium market price can be affected by changes in the non-price *conditions of demand*. These conditions of demand (the quantity demanded at a given price) can alter due to changes in advertising, disposable income, tastes, fashions, interest rates, weather conditions, government taxes and laws, and the prices of complementary and substitute products.
  - Using diagram 1 in Figure 2.34, these new stronger demand conditions can cause the position of the demand curve or line to shift horizontally and increase from D_1 to D_2, causing a rise in the equilibrium market price from P_1 to P_2.
  - Alternatively, using diagram 2 in Figure 2.34, new weaker demand conditions can cause the quantity demanded at a given price to decrease from D_1 to D_0, causing the equilibrium price to fall from P_1 to P_0.
- The equilibrium market price can also be affected by changes in the non-price *conditions of supply*. These conditions of supply that alter the amount supplied at a given price can change due to changing seasonal factors, production costs such as wages, interest rates, altered profitability, pandemics, disruptions to supply chains, tax rates on firms and government assistance to producers.
  - Using diagram 3 in Figure 2.34, these new stronger conditions can cause the whole supply line to shift and increase from S_1 to S_2, resulting in a fall in the equilibrium market price from P_1 to P_2.
  - In reverse, using diagram 4 in Figure 2.34, new less favourable conditions can decrease the quantity supplied at a given price from S_1 to S_0, resulting in a rise in the equilibrium market price from P_1 to P_0.
- In response to rising or falling market prices that act as incentives or disincentives, owners of resources and businesses increase or decrease their allocation of resources to produce particular types of goods or services. They follow these price signals to help maximise their profits and incomes. That is, self-interest causes firms to follow price signals and to produce the things consumers most want to buy.

FIGURE 2.34 How new non-price factors or conditions of demand and new non-price factors or conditions of supply can affect the equilibrium market price and quantity



Background for research case studies about the operation of markets

Given the importance of markets in the Australian economy, you should undertake a research case study approach to illustrate the theory of markets that we have recently been studying. One of the following markets (or others listed in the Study Design) may provide the focus for a case study:

- *agricultural markets* — institutions where the prices of rural commodities like canola or wheat are set by buyers and sellers
- *markets for mineral commodities* — institutions where the prices of commodities like oil and gold are set by buyers and sellers
- *housing and property markets* — institutions where land and real estate prices are determined by buyers and sellers
- *labour market* — an institution where buyers and sellers of labour negotiate wages and conditions
- *share market* — an institution where share prices are determined in the stock market by buyers and sellers
- *foreign exchange market* — an institution where the rate at which the A$ is swapped for other currencies is determined by buyers and sellers
- *cryptocurrency markets* — institutions where virtual or digital money like Bitcoin are traded at a price set by buyers and sellers
- *carbon trading markets* — where carbon pollution permits or credits are bought and sold at a price set by the interaction of buyers and sellers
- *finance market* — an institution where borrowers and lenders of credit or money determine interest rates.

2.10.2 Key terms

***Australian Competition and Consumer Act 2010* (ACCA)** involves laws or legislation that make price fixing and other forms of collusion by firms illegal.
Australian Competition and Consumer Commission (ACCC) is an institution set up to promote competition in markets and enforce the *Australian Competition and Consumer Act 2010*.
Barriers to entry limit the number of producers in some markets and may reflect high start-up costs, government regulations and product patents.
Carbon trading market is a scheme designed to put a price on pollution by firms and consumers of goods and services. Polluters must have permits or carbon credits to cover each tonne of CO_2 emissions. The price of these offsets is determined by demand relative to the supply. By establishing a price and making pollution costly and less profitable, polluters change their behaviour and find cleaner products and production methods.
The **community market** is a local institution, perhaps in a suburb or small town, where buyers and sellers of crafts, foods, used wares and plants meet to negotiate prices.
Consumer sovereignty is where the particular types of goods and services produced reflect what individual consumers purchase, rather than this decision being made through government planning.
Cryptocurrency markets involve buyers and sellers of virtual or digital currencies. Often trading these currencies is seen as an investment where profits can sometimes be made as a result of changes in their price over a period of time.
Demand for a particular good or service represents the amount of a good or service that consumers are prepared to purchase at a given price. The quantity demanded varies inversely with price.
Demand–supply diagrams are used to illustrate, hypothetically, how buyers (demanders) and sellers (suppliers) of a particular type of good or service help determine the market price at which the item sells.
Economies of large-scale production are reductions in average per unit production costs that are gained when a firm's fixed costs (e.g. for product design, equipment, material or advertising) can be spread more thinly across a larger level of output.
An **economy** consists of institutions that help to organise the production and distribution of goods, services and incomes. There are different types of economic systems — traditional, pure market, purely planned, and mixed economy (prominently market-based economies).
Equilibrium is the natural situation towards which all free and competitive markets tend to move. It exists only when the quantity demanded exactly equals the quantity supplied, and there is no market glut or shortage.
Equilibrium price is the unique price for a particular good or service that is determined in a market when the quantity demanded is exactly equal to the quantity supplied. At equilibrium, there is no market glut nor shortage.
Factors or **conditions of demand** are the non-price influences on the quantity of a particular good or service that buyers are prepared to purchase or demand *at a given price* (e.g. changes in disposable income, tastes, confidence, interest rates, seasons, the price of substitutes and complements). When demand conditions change, this shifts the position of the whole demand line horizontally to the right (an increase in the quantity demanded at a given price) or to the left (a decrease in the quantity demanded at a given price) of the original demand line, thereby affecting the equilibrium price.

Factors or **conditions of supply** represent the non-price influences on the quantity of a particular good or service that sellers are prepared to produce or sell at a given price (e.g. production costs like wages, electricity, materials, interest rates, along with government taxes, and climatic conditions). When supply conditions change, this shifts the position of the whole supply line horizontally to the right (an increase in the quantity supplied at a given price) or to the left (a decrease in the quantity supplied at a given price), thereby affecting the equilibrium price.

The **finance market** is an institution where buyers (borrowers) and sellers (lenders) of credit or finance negotiate a price that is called the rate of interest.

The **foreign exchange market** is an institution where buyers and sellers of international currencies exchange or swap currencies at a price that is called the exchange rate.

Homogeneous product is a good that is identical to another and there is no product differentiation. In other words, one good is an exact substitute for another in a given market.

International competitiveness relates to whether a business or country is able to produce and sell its goods and services profitably at prices that are below those for similar goods or services made abroad.

The **labour market** is an institution where buyers and sellers of labour resources (i.e. physical power and mental talents of workers) negotiate a price that is called a wage.

The **law of demand** states that as the price of a particular good or service rises, the quantity demanded contracts; whereas if the price falls, the quantity demanded expands. There is a movement along the demand line.

The **law of supply** states that as the price of a particular good or service rises, the quantity supplied expands; whereas as the price falls, the quantity supplied contracts. There is a movement along the supply line.

A **market** is simply an institution or organisation where buyers (who create a demand for the item) and sellers (who control the supply of the item) of an individual good or service negotiate an agreeable price.

Market failure exists where the operation of demand and supply, and the price system, cause resources to be allocated in ways that reduce the general satisfaction and wellbeing of society. For example, some socially beneficial goods may be under-produced, while socially undesirable goods may be overproduced in the absence of government intervention.

Market power exists when a firm has much control or influence in a market (it is a price maker) because competition is limited and it has a monopoly or is an oligopoly.

Market shortage occurs at a price that is below the equilibrium price, where the quantity demanded is greater than the quantity supplied.

Market structure refers to the nature and level of competition that exists in particular markets (e.g. perfect or pure competition, monopolistic competition, oligopoly and perfect or pure monopoly).

Market surplus or **glut** occurs at a price that is too high and above the market equilibrium price. Here the quantity demanded is less than the quantity supplied.

Material living standards refer to how well-off an individual or society is when measured in terms of its income, production or consumption levels of goods and services per person per year.

A **mixed economy** is the type of economic system found in Australia and many other countries. Here, most decisions about the allocation or use of resources are generally made by consumers through the market or price system, while most businesses or the means of production are owned by private individuals (i.e. capitalism or private enterprise are dominant).

Monopolistic competition occurs when there are quite a few sellers of each product. These products are similar but not identical, since each seller's product is differentiated from that of its rivals by particular features including brand names and design.

Movement along the demand line from one point to another is caused by a rise or fall in the level of prices. Following the law of demand, a rise in price causes demand to contract, while a fall in price causes demand to expand.

Movement along the supply line from one point to another is caused by a rise or fall in the level of prices. Following the law of supply, a rise in price causes supply to expand, while a fall in price causes supply to contract.

Non-rural commodity markets are institutions where buyers and sellers of raw materials extracted from the ground, negotiate prices.

An **oligopoly** exists when the level of competition is limited because a few large firms control the output of an industry.

Perfect knowledge is a precondition for a pure market economy. Here, buyers and sellers have complete and accurate information so they can make rational decisions.

Perfect or pure competition exists when there are many sellers of a good or service in a market and each seller has little market power in setting prices.
Perfect or pure monopoly occurs when competition in a particular industry or market is weak, and a single firm controls the output of an entire industry.
Price makers refer to monopoly-type markets where firms face little or no competition and can set their own prices.
Price takers are those firms operating in strongly competitive markets where there is strong competition and firms have no power to set the prices they receive.
Product differentiation in a given market exists when one good is not an exact substitute for another because of some distinguishing product features. This gives sellers more market power.
The **property market** is an institution where buyers and sellers of land, houses, units and industrial sites (property) negotiate a price.
Purchasing power refers to the quantity of goods or services that can be bought with each dollar of income. It is affected by prices and inflation.
Relative prices is a concept that compares the price level of one good or service against the price of another (e.g. the price of lamb versus the price of chicken). Changes in the relative price of one good against that for another are likely to affect relative profits and hence decisions made about how resources will be used or allocated.
Relative profits is a concept that compares profits gained from producing one particular good or service against those gained from producing another. This is affected by changes in relative prices. Relative profitability is used to help guide most business decisions.
Rural or agricultural commodity markets are institutions where buyers and sellers of farm produce (e.g. grains) negotiate prices.
Shift in the position of the demand line is caused by changes in non-price conditions affecting the quantity of a good or service bought at any given price.
Shift in the position of the supply line is caused by changes in non-price conditions affecting the quantity of a good or service sold at any given price.
The **stock market** is an institution where buyers and sellers of company stocks negotiate share prices.
Supply of a particular good or service represents the amount of a good or service that sellers are prepared to produce or sell at a given price. The quantity supplied varies directly with price.

on Resources

Digital documents Topic summary (doc-37939)
Key terms glossary (doc-37946)
Crossword (doc-31537)
Wordsearch (doc-31538)
Match-up definitions (doc-31539)

2.10.3 Practice school-assessed coursework

OUTCOME 2

Explain the role of relative prices and other non-price factors in the allocation of resources in a market-based economy and analyse the extent of competition in markets.

TASK 1 — A REPORT ON AN INVESTIGATION INTO A CHOSEN MARKET

In subtopic 2.9, it mentioned a *case study investigation and report* into the nature and operation of *one* of the following *markets*:

- agricultural markets such as wool, wheat, milk and beef
- other commodity markets such as minerals and energy
- community markets
- utilities markets such as gas, electricity, water and telecommunications
- carbon emissions/carbon trading markets
- finance markets

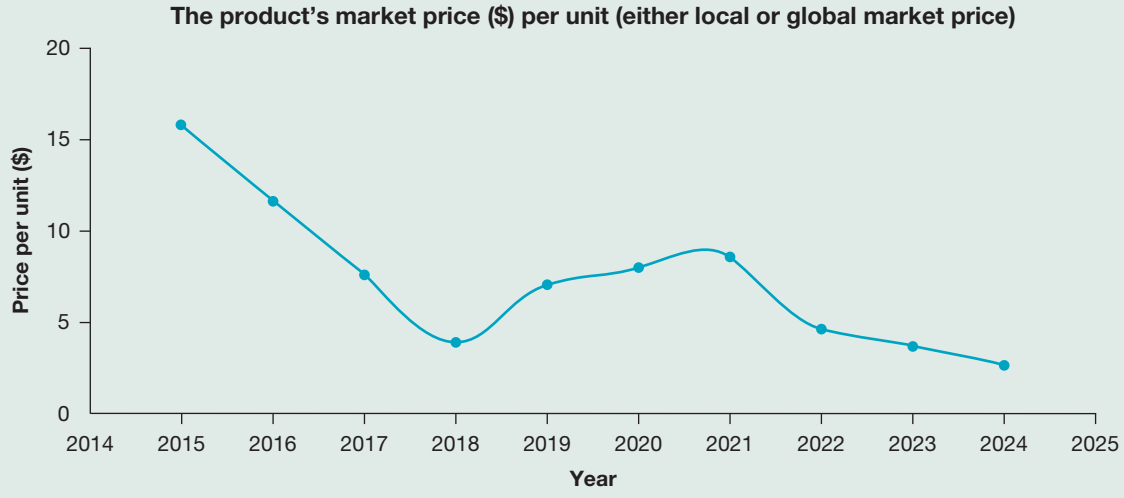
- cryptocurrency markets
- international education markets
- tourism markets
- share markets
- foreign exchange markets
- labour markets
- property/housing markets
- online markets
- health markets
- any other markets.

In subtopic 2.9, you were provided with a *general introduction to ten of these*, just to get you started. So, having chosen your market, it's now time to get underway. Below is a suggested *heading structure* for your report. This template should work for most markets, but you might have to make some adjustments along the way.

Suggested structure for your investigation and report about a market

1. **Introduction:**
   - Background information about the chosen market
     - Identify the name of your selected market
     - Give a definition of this market
     - Where is the market located (is it local, national, or international)?
     - What is the size or annual value ($) of this market?
   - The type of competition
     - Giving reasons, identify the type of competition or market structure that best fits this market.

   - Using a graph, describe the recent changes in the level of market prices.
     - Find and insert a price graph for recent years. For example:



   - As a starter, you may want to explore the weblinks provided.
     - Describe the short-term, cyclical changes in price.
     - Describe the long-term trend in price.
2. **Market demand:**
   - Who are the buyers?
   - Define the term, *demand*.

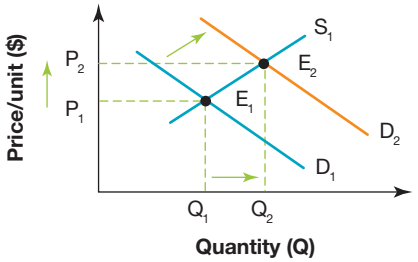
- Where do buyers come from (local or overseas)?
- Why do they want to buy this product or service (is it an input or final product)?

- Recent changes in non-price conditions affecting demand; for example, you might think of one or more of the following:

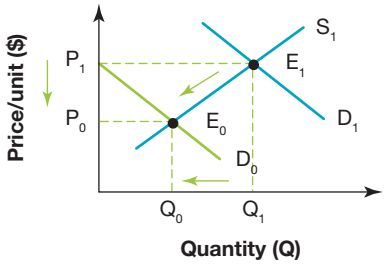
1. Changes in disposable income	**2.** Changes in the season
3. Changes in fashions and tastes	**4.** Changes in population or market size
5. Changes in consumer confidence	**6.** Changes in government policy
7. Changes in the price of a substitute	**8.** Changes in interest rates
9. Changes in the price of a complement	**10.** Changes in future availability

- Referring to completed and labelled demand–supply diagrams, *hypothetically* representing your chosen market, describe the effect of changes in demand on the market price and quantity traded:
  - The effect of any recent conditions that increased the quantity demanded at a given price (D_1 to D_2), relative to supply (S_1).
  - The effects of any recent conditions that decreased the quantity demanded at a given price (D_1 to D_0), relative to supply (S_1).

Factors that increased demand (D_1 to D_2)



Factors that decreased demand (D_1 to D_0)

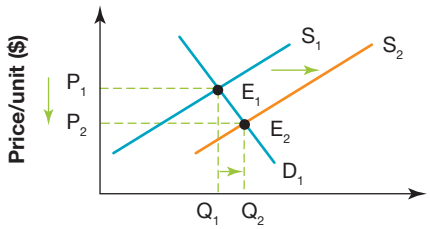


3. **Market supply:**
   - Who are the sellers?
   - Define the term, *supply*.
     - Where do suppliers come from (local or overseas)?
     - Who do they sell to?
   - Recent changes in non-price conditions affecting supply; for example, you might think of one or more of the following:

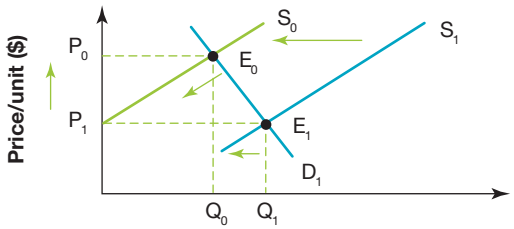
1. Changes in costs of production for firms	**2.** Changes in government policy
3. Changes in resource availability	**4.** Changes in technology
5. Changes in supply chains and other disruptions	**6.** Changes in government policy
7. Changes in climatic events	**8.** Changes in interest rates

   - Referring to completed and labelled demand–supply diagrams, *hypothetically* representing your chosen market, describe the effect of changes in supply on the market price and quantity traded:
     - The effects of any recent conditions that increased the quantity supplied at a given price (S_1 to S_2), relative to demand (D_1).
     - The effects of any recent conditions that decreased the quantity supplied at a given price (S_1 to S_0) relative to demand (D_1).

Factors that increased supply (S_1 to S_2).



Factors that decreased supply (S_1 to S_0).



4. **The effects of recent price changes on economic decisions:**
   - Consider whether recent changes in market prices will have any effect on the decision of what and how much to produce.
   - Consider whether recent changes in market prices will have any effect on the decision of how to produce.
   - Consider whether recent changes in market prices will have any effect on the decision of for whom to produce.

At the conclusion of your investigation, submit the report to your teacher for feedback and assessment.

on Resources

Digital document Practice school-assessed coursework (doc-38075)

Weblinks
- ABARES, quarterly forecasts and agricultural outlook
- RBA, Chart pack
- Trading Economics
- ABS
- Business Insider

2.10 Exam questions

Students, these questions are even better in jacPLUS

- **Receive immediate feedback and access sample responses**
- **Access additional questions**
- **Track your results and progress**

Find all this and MORE in jacPLUS

2.10 Section A: Multiple choice questions

Question 1

Concerning different types of market structure, which statement is *false*?

A. Perfect or pure monopoly exists when there is a single producer or seller in a market.
B. Oligopolies exist when there are many large firms competing strongly in the market.
C. Perfect or pure competition exists when there are many rival firms, each selling an identical or homogeneous product.
D. Monopolistic competition exists when there are quite a few competing producers in a market, each selling a product differentiated by brand names and other elements.

Question 2

In Australia's economy, the *market* as an institution allocates around what percentage of resources?

A. 80 per cent or more
B. 50 per cent
C. 20 per cent
D. 10 per cent or less

Question 3

The market or price system in Australia helps to decide or answer which of the following?

A. The particular types of goods or services to be produced
B. The volume of each type of good or service to be produced
C. How production and income will be distributed or shared between individuals
D. All of the above

Question 4

Which of the following is *not* a precondition of a *perfectly* or purely competitive market?

A. Many buyers and sellers competing
B. The absence of product differentiation
C. The use of regulations and controls by the government
D. Profit maximisation and a good knowledge by buyers and sellers of changing market conditions

Question 5

Generally, firms try to maximise their profits. In general, areas of production that are most profitable are *best* indicated by looking at:

A. the final selling price of the good or service.
B. the costs or prices paid for the resources used in production of the good or service.
C. the difference between the final selling price and the prices paid for resources used in the production of the good or service.
D. national sales levels for the good or service.

Question 6

Which of the following *best* describes the market for factors of production or productive inputs?

A. Where households supply labour, capital and natural resources
B. Where firms purchase or demand resources
C. Where the prices paid for resources used in production are negotiated
D. All of the above

Question 7

For a competitive market, which of the following is *most* correct?

A. Rising prices in a market usually indicate a growing shortage or under-production.
B. Falling prices indicate that demand exceeds supply.
C. Rising prices indicate that supply exceeds demand.
D. Rising prices indicate that the conditions of demand and supply are steady.

Question 8

In a free or competitive market, *rising* prices for toothpaste reflect:

A. a glut or surplus in the toothpaste market.
B. a shortage in the toothpaste market caused by a rise in the number of buyers relative to the number of sellers.
C. an increase in supply because of new cheaper technology that can be used in making toothpaste.
D. too many resources allocated to the production of toothpaste and overproduction.

Question 9

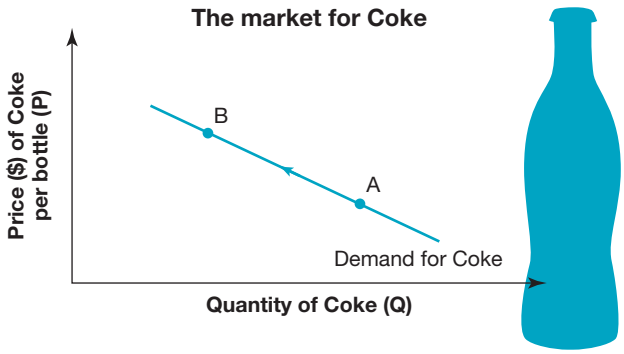
Under-production and a market shortage of bubble gum would be indicated by:

A. falling bubble gum prices.
B. both rising and falling bubble gum prices caused by the erratic behaviour of bubble gum markets and buyers.
C. rising stocks and falling sales of bubble gum.
D. rising market prices for bubble gum.

Question 10

According to the law of demand, a *contraction* along the demand line for Coke from point A to point B (as illustrated here) is *most* likely to be caused by:

A. a rise in the price of Coke.
B. a decrease in the cost of producing Coke, such as cheaper soft drink cans.
C. a disappointing advertising campaign using country singer John Williamson.
D. an increase in the supply of Coke.



Question 11

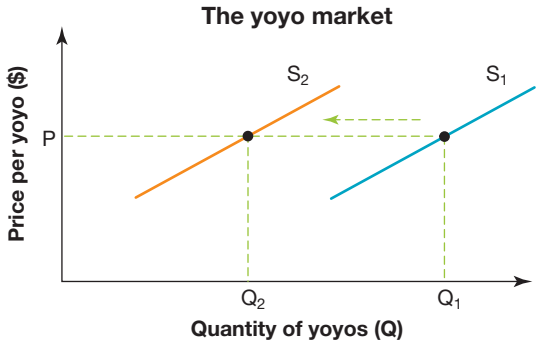
The law of supply states that the quantity of a good or service supplied by producers varies:

A. directly with a rise in price.
B. inversely with a rise in price.
C. proportionally with a rise in price.
D. in response to changes in the conditions of demand.

Question 12

Which of the following *best* explains the shift in supply of yoyos from S_1 to S_2 as illustrated here?

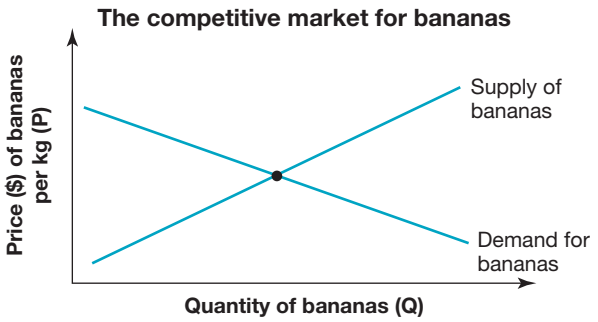
A. Falling wages for workers in yoyo factories
B. Higher costs of materials (e.g. string, plastic) used to make yoyos
C. A fall in the demand for yoyos
D. Rising profits among yoyo producers



Question 13

Recently, banana crops in some parts of the world were devastated by poor growing conditions (e.g. cyclones, cold weather, floods) in the tropics and the effects of a fungal disease that killed plants. Assuming a competitive market for bananas similar to that illustrated here, which of the following descriptions *best* sums up the effects of these events?

A. The equilibrium price of bananas would fall and the equilibrium quantity would rise.
B. The equilibrium price of bananas would rise and the equilibrium quantity would fall.
C. The demand for bananas would fall.
D. The supply of bananas would rise.



Question 14

Assume that the market for air tickets was a competitive one. In terms of market theory, which of the following is *unlikely* to *reduce* the price of Australian airfares to New Zealand?

A. A lower cost of planes purchased by airline carriers
B. Greater competition among airlines to operate on that route
C. A rapid rise in Australian disposable incomes
D. Lower aircraft landing fees in Auckland Airport

Question 15

In 2022, general interest rates in the Australian capital market started to rise. In terms of market theory, which of the following does *not* provide a logical explanation for the *rise* in market interest rates?

A. A rise in the demand for credit by households borrowing credit
B. Decreased savings by households held in various financial institutions (e.g. banks)
C. The failure of the government's policies to encourage superannuation and increase domestic savings levels by households
D. A fall in the level of government borrowing or demand for credit due to the federal government's budget surplus where there was no need for the government to borrow or demand credit

Question 16

Which of the following would *not* explain a *fall* in world wool prices paid to Australian growers?

A. A fall in local production costs for wool growers
B. A fall in the demand for wool, both in Australia and overseas
C. A rise in the world's supply of wool
D. The replacement in fashion of the famous ultra-skimpy miniskirt that uses very little wool, with longer maxiskirts that use more wool to manufacture

Question 17

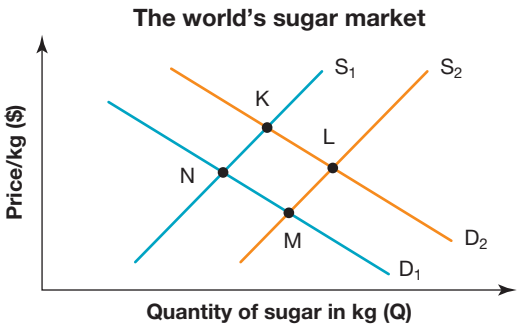
In a perfectly or purely competitive market for sunglasses, equilibrium exists when:

A. there is no shortage or surplus.
B. the quantity supplied equals the quantity demanded.
C. there is no tendency for the market price to rise or fall.
D. all of the above conditions are achieved.

Question 18

Between 2019 and 2020, there was a world record crop of sugar. Prices tumbled in this competitive market. Examine the graph shown here. Which change on the demand–supply diagram illustrates this economic development in the sugar market?

A. The move from market equilibrium K to L
B. The move from market equilibrium L to M
C. The move from market equilibrium N to M
D. None of the above



Question 19

Theoretically, which one of the following would *not* explain the *fall* in world cotton prices, assuming a competitive market existed for cotton?

A. A rise in the costs of machinery for cotton farmers caused by a lower Australian dollar
B. A weaker demand for cotton caused by a recession in Asia and the United States
C. Stronger levels of competition from easy-care synthetic fabrics
D. A drop in the price of land used for growing cotton

Question 20

A rare Australian stamp was sold at public auction for $88 000. Which of the following answers offers the *best* explanation of why the market price for this stamp was so high?

A. Buyers and sellers were misled about the collection's value.
B. The demand for these stamps by buyers was very strong.
C. The supply of these stamps was fixed or limited.
D. Both answers B and C help to explain the high price.

Question 21

Examine the hypothetical data contained in the table that follows for the new extreme form of outdoor entertainment involving 'Wild Activities'. New venues sprang up in Melbourne and Geelong. In order to share these thrills, daily entry tickets must be purchased through the market. Assume that there is a competitive market operating for tickets.

Price per entry ticket into 'Wild Activities'	Demand (tickets per day)	Supply (tickets per day)
$10	9000	5000
$15	8000	6000
$20	7000	7000
$25	6000	8000

Which of the following statements about the ticket market for 'Wild Activities' is *false*?

A. The demand for tickets contracts as the price rises.
B. The supply of tickets expands as the price falls.
C. There would be a market glut of tickets equal to 2000 per day if the price was fixed at $25 per ticket.
D. In a free market, the equilibrium price of tickets would be $20 per ticket.

Question 22

In the Australian economy, which of the following is *most* correct?

A. Decisions are made mostly by the government and there is private ownership of most resources and businesses.
B. It is through the operation of the market system that some decisions are made about how to allocate resources.
C. The government owns most of the means of production.
D. Demand and supply operate to create price signals to the owners of resources to help them answer the three basic economic questions, and there is a dominance of private enterprise or capitalism.

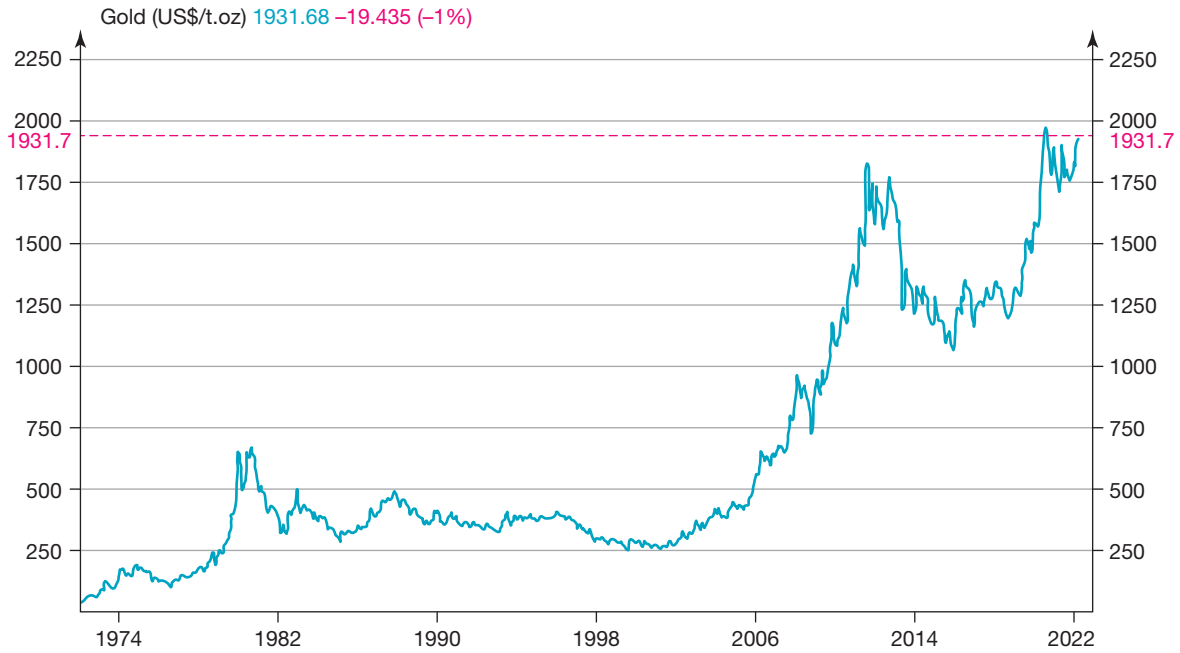
Question 23

The demand line for fresh tomatoes will normally shift to the *left* of the original demand line if:

A. the incomes of consumers increase.
B. the price of a complement like lettuce rises.
C. if there is successful advertising for a complementary good.
D. tinned tomatoes became dearer.

Question 24

Examine the graph that follows showing the world trend in the price of gold (US$ per ounce).



Source: Trading Economics, see https://tradingeconomics.com/commodity/gold.

Theoretically, which one of the following would *not* explain the spike or peak in the gold price in 2022?

A. There may have been an increase in the demand for gold at a given price, perhaps driven by global economic uncertainties.
B. There may have been a decrease in supply of gold at all given prices.
C. There may have been a decrease in the demand for gold combined with an increase in supply.
D. There may have been an increase in the demand for gold combined with a decrease in supply.

on Resources

Digital documents Multiple choice answer grid (doc-37954)
Multiple choice answers (doc-37955)

2.10 Section B: Extended response questions

Question 1 (2 marks)

Identify and **outline** two distinguishing features (other than the product being sold) between the market for beef and the market for electricity.

Question 2 (4 marks)

Market power

a. **Define** the term *market power*. How does greater market power by sellers affect prices in the market? **(2 marks)**

b. **Describe** the ways in which the market power of an Australian wheat farmer might *differ* from that of a major supermarket. **(2 marks)**

Question 3 (3 marks)

Qantas and Jetstar together produce and control perhaps 80 per cent of Australia's domestic aviation industry. **Identify** and then **explain** *three* important and likely *features* of this industry's market structure.

Question 4 (3 marks)

In general, most economists believe that competitive markets are usually beneficial and bring benefits to individuals and the economy overall. **Identify** and **explain** three important *advantages* of highly *competitive* markets.

Question 5 (3 marks)

During 2021 and early-2022, *property prices* in Melbourne and Sydney rose strongly. **Identify** and then **explain** the *three* most important *non-price microeconomic conditions* that are likely to have *increased the demand* for property in these cities at a given price during this period, thereby driving up property prices.

Question 6 (30 marks)

Examine the table that follows and then answer the questions.

Price per avocado	Quantity ('000) of avocados demanded per year (D_1)	Quantity ('000) of avocados supplied per year (S_1)
$0.50	600	200
$1.00	500	300
$1.50	400	400
$2.00	300	500
$2.50	200	600

a. Using the previous table, accurately **construct** and fully label a D–S graph for avocados. Your labelling must include an appropriate scale and units for each of the two axes, and needs to show the demand (D) line and the supply (S) line, as well as the original equilibrium price (Pe_1) and equilibrium quantity traded (Qe_1). **(4 marks)**

b. **Explain** what is meant by the market equilibrium *price* ($/unit) for avocados. **(1 mark)**

c. **Explain** what is meant by the market equilibrium *quantity* ('000) of avocados. **(1 mark)**

d. Quoting figures from the table or your graph, **describe** the situation that would exist in the avocado market at an excessively *low* price of $0.50. **(2 marks)**

e. Quoting figures from the table or your graph, **describe** the situation that would exist in the avocado market at an excessively *high* price of $2. **(2 marks)**

f. **Identify** two *non-price demand factors* and two *non-price supply factors* that might cause the equilibrium market price of avocados to:

i. rise. **(4 marks)**

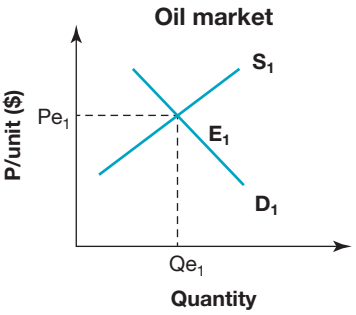
ii. fall. **(4 marks)**

iii. **Illustrate** the effects of changes in these four sets of non-price factors on four fully labelled D–S diagrams (one for the increase in demand, one for the decrease in demand, one for the increase in supply, and one for the decrease in supply). **(12 marks)**

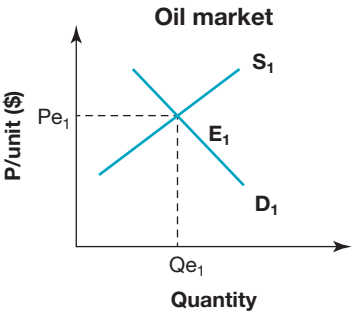
Question 7 (13 marks)

During 2022, the price of crude oil rose sharply, overall, from a low of around US$20 a barrel to a peak in May 2022 of about US$130. Oil is used for making petrol that is needed for road and air transport, generating power, and making plastics, chemicals and synthetic fabrics.

a. **List** and **outline** *two* important and likely *non-price demand* conditions that might help to explain this overall *rise* in the market price of oil. Using the diagram shown here as a template, **construct** a D–S diagram representing the oil market in 2020 (the original situation *before* the rise in price), and then show the hypothetical effects of these two new non-price demand conditions causing the oil price to rise in 2022. **Label** all new lines and points clearly. **(5 marks)**



b. **List** and **outline** *two* important and likely *non-price supply* conditions that might help to explain this overall *rise* in the market price of oil. Using the diagram shown here as a template, **construct** a D–S diagram representing the oil market in 2020 (the original situation *before* the fall in price), and then show the hypothetical effects of these two new non-price supply conditions causing the oil price to rise in 2022. **Label** all new lines and points clearly. **(5 marks)**



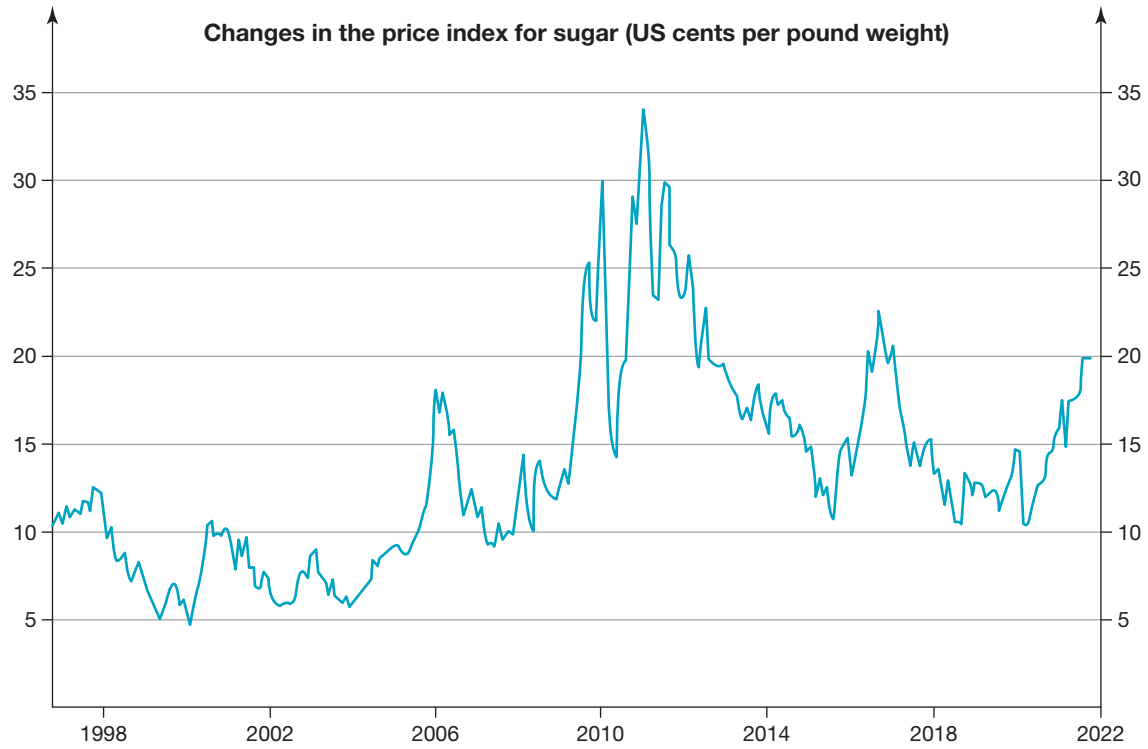
c. Referring to the diagram that you completed for part **b**, **explain** the main steps whereby the equilibrium market price *rose* from Pe_1 to a new higher equilibrium price of Pe_2. **(3 marks)**

Question 8 (9 marks)

Look at the graph that follows showing changes in the price index for sugar (US cents per pound weight). Sugar or sugar cane is used to produce foods and drinks, and even to make biofuel (petrol) for motor vehicles.

a. Quoting figures from the graph, **describe** the *general trend* in the sugar price index between 2020 and 2022. **(2 marks)**

b. Thinking back to basic market theory, suggest *two* possible reasons for the *trend* in the price of sugar between 2020 and 2022 you noted in part **a**. Illustrate this hypothetically by constructing a D–S diagram that shows the *original* market situation for 2020 and then that for 2022. **(5 marks)**



Source: Trading Economics, Sugar, see https://tradingeconomics.com/commodity/sugar.

c. The market provides owners of resources with information that can then be used to make important economic decisions. Giving reasons, explain how the *general trend* in sugar prices between 2020 and 2022 is likely to have an impact on the *profitability* of sugar farmers and on the way their resources are likely to be used or allocated between different types of goods. **(2 marks)**

Solutions and sample responses are available online.

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Weblink Agricultural commodities

Digital documents Simulation — the ASX online Schools' Sharemarket Game (doc-31553)
Fieldwork — Excursion to the nature and operation of the Queen Victoria Market (doc-31552)

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TOPIC

3 Behavioural economics

UNIT 1 AREA OF STUDY 3

Behavioural economics

OUTCOME 3

On completion of this unit the student should be able to explain how behavioural economics complements traditional understandings of decision-making, and analyse the effects of behavioural economics insights on consumers and other economic agents.

LEARNING SEQUENCE

3.1 Overview 150
3.2 Insights of behavioural economics 152
3.3 The effectiveness of strategies used by government to influence consumer behaviour 162
3.4 The effectiveness of strategies used by businesses to influence consumer behaviour 171
3.5 Review 184

3.1 Overview

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3.1.1 Introduction

Behavioural economics seeks to explain why people, as economic agents, behave the ways they do. It builds on the more traditional beliefs held by economists — that we are all rational and purely self-interested when we make choices and decisions in our daily lives — as examined earlier in Unit 1, Topic 1. Indeed, many studies have shown that whilst these long-held beliefs are still important, they don't tell the whole story.

In this topic, we will dive into more recent studies involving economic behaviour to discover the ways in which our understanding has been broadened. In addition, we will also investigate whether particular strategies used by the government, to influence or steer consumer behaviour, have been successful in improving society's general wellbeing, as well as take a look at the approaches used by businesses to win customer support and generate sales.

3.1.2 What you will learn

Key knowledge

Use each of the points from the VCE Economics Study Design below as a heading in your summary notes.

Key knowledge	Subtopic
Key insights of behavioural economics, including bounded rationality, bounded willpower and bounded self-interest	**3.2**
The differences between traditional economics and behavioural economics	**3.2**
The effectiveness of strategies used by government to influence consumer behaviours	**3.3**
The effectiveness of strategies used by producers/businesses to influence consumer behaviours	**3.4**

Key skills

These are the skills you need to demonstrate.

Key skills
Define key economic concepts and terms and use them appropriately
Distinguish between traditional economics and behavioural economics
Apply economic theory to make economic predictions and create responses that communicate economic meaning
Investigate and/or conduct at least one behavioural economics experiment by gathering, synthesising and using economic data and information to report on the findings
Analyse the effectiveness of government and business actions that draw on behavioural economics, using data and economic information to draw conclusions supported by economic reasoning

Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

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Digital document Key terms glossary (doc-37947)

3.2 Insights of behavioural economics

KEY KNOWLEDGE

- Key insights of behavioural economics, including bounded rationality, bounded willpower and bounded self-interest
- The differences between traditional economics and behavioural economics

Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

3.2.1 The differences between traditional economics and behavioural economics

Traditional economics predicts that when making economic decisions consumers:

- behave rationally
- are self-interested and selfish
- want to maximise gains and pleasure or utility
- dislike pain
- have ordered priorities
- have perfect knowledge or information relating to the decision, and
- do not act on impulse.

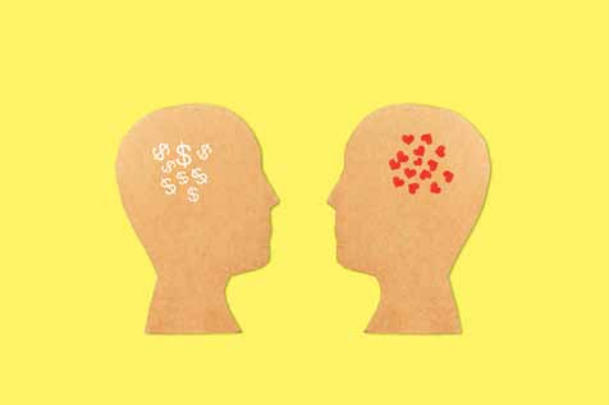
Almost every day we see examples of this *rational behaviour*. For example, if ice-cream became cheaper, demand would expand. If interest rates fall, people will borrow more. If taxes are cut, people will lift spending.

However, are these traditional assumptions realistic? For example:

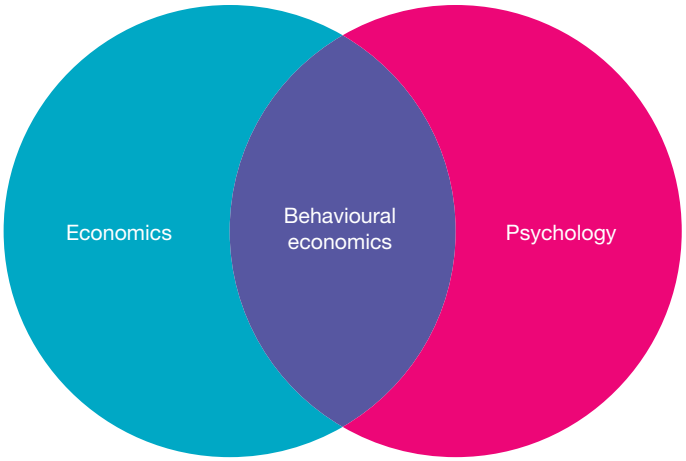
- Some people buy more expensive clothing with a certain label, even if it's no better than the cheaper alternative.
- During the global financial crisis (GFC), why did so many people sell their shares when prices had fallen and were at their lowest level?
- Why do people max out their credit card knowing they will have trouble paying it off?
- Why do shopaholics buy ten pairs of identical shoes rather than maximise utility with one?
- Why do smokers keep on buying cigarettes, knowing they may be fatal?
- In buying a membership to an online service, why would more people be likely to purchase it if advertised for just $1 per day, rather than marketed as $365 for the year?
- Why will people buy more of something that has a sign that says 'a limit of 5 units per customer', even if there is no price discount?
- If a well-known celebrity endorses a product that is inferior to another, why might many still purchase it?
- Why do many in our community do so much unpaid work (e.g. one estimate of the work of volunteers and carers puts this at over $21 billion a year), and why do so many do extra work at home for their employer when it is unpaid?
- Why do people give generously and in an unselfish way to charitable organisations for flood and fire appeals?

Consumer brands often use celebrity endorsements to promote their products. In this example, Sofia Vergara is promoting Diet Pepsi on a billboard.

The point is that although the *traditional assumptions* of rational consumer behaviour *often* apply under ordinary circumstances, people can be inconsistent and quite *unpredictable*. They sometimes make biased and *irrational decisions*. Put another way, there are *limits* or *boundaries* to *rational consumer behaviour* that are largely ignored by traditional explanations.



To fill in the *gaps* in traditional theory, **behavioural economics** is a relatively new, fascinating, and increasingly important branch of study. It tweaks conventional theory and provides a *fuller* and more accurate explanation of consumer behaviour and the way we make decisions. Combining elements from other areas of study (especially *psychology* and *neuroscience* with *microeconomics*), it looks at the mechanisms that drive our choices. A well-known book on the subject is aptly named, *Predictably Irrational: The Hidden Forces That Shape Our Decisions* (by Dan Arieli, Professor of Psychology and Behavioural Economics at Duke University).



Behavioural economics is mostly concerned with the *limits* of our ability to think logically. That is, it studies **bounded rationality** and instances or circumstances when people making economic decisions behave in non-rational ways. It says that we do *not* always undertake a proper *cost–benefit analysis* to optimise the outcomes of our choices and, instead, settle for what will be *reasonably* satisfactory. It is simply not possible to be perfectly rational all the time. So, behavioural economics looks at various *biases* and the *mental short cuts* people take because they:

- *are often time poor*
- *are sometimes lazy*
- *have fake or incomplete information*
- *have personal biases and perceptions*
- *are influenced by others' opinions, and*
- *have a lack analytical skills and academic ability to be able to weigh up all the information.*

The problem with using these *short cuts* is that decisions are *not* always rational. In addition, the outcomes are *not* always optimal in terms of our self-interest, as assumed by traditional explanations of consumer behaviour. So, let's take a closer look at what behavioural economics proposes.

3.2.2 Key insights of behavioural economics

Bounded self-interest

As part of behavioural economics, we need to ask the question: as economic agents making decisions, are individuals *only* driven by *self-interest*? Research has found that although selfishness can be important, it is *not* always the case. There are limits. These are called, **bounded self-interest**. We know this from observations of behaviour.

- For example, think about all the hours of unpaid voluntary work performed each year, along with donations to charitable organisations to help those in need. In addition, many people have an aversion to injustice and unfairness. These attitudes or values seem to defy the simplistic traditional notion of narrow self-interest.
- The idea of *bounded self-interest* can also be observed by playing the *ultimatum game* (you might like to do this a bit later as outlined in section 3.5.3). Here, two people are needed, preferably strangers. Player 1 is given $100 and is required to share it with player 2 by deciding *how* to split or divide the money. Only if player 2 *accepts* the offer made, will either player get to keep any money. The traditional theory of rational behaviour would predict that even if it is split very unevenly where player 1 keeps perhaps $99, and player 2 receives just $1, player 2 *would accept* the offer, thinking that it's better to go away with something than nothing! However, this may *not* necessarily be the case if player 2 is motivated by other values; for example, if player 2 believes that player 1 is being *unfair* and *greedy*. While *not* in their self-interest, player 2 may *reject* the offer of $1 simply because player 1 is seen as selfish. Player 2 may even get pleasure in

rejecting the offer to teach player 1 a lesson! Had the offer been 50/50 or even 60/40, it probably would have been accepted and both players would go away with some of the money. In other words, there are *limits* to self-interest in making decisions, possibly reflecting our personal values like fairness.

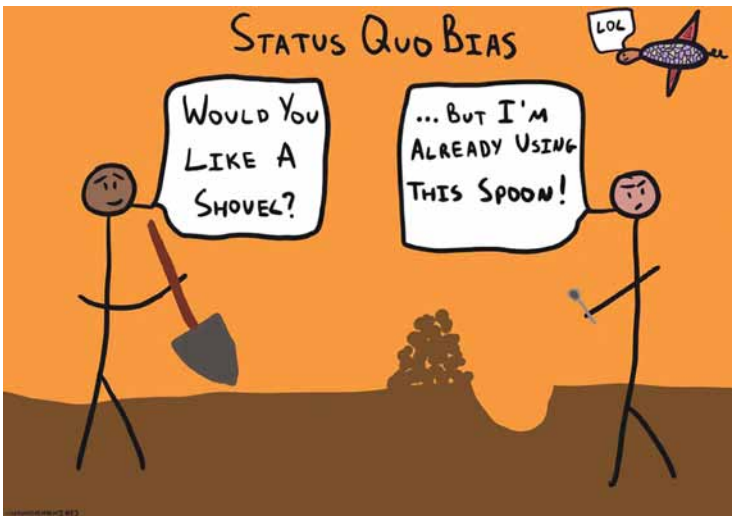
- There is also a message here for businesses. For instance, following an excellent year of trading, owners may be tempted to be greedy and not share the company's profits with its employees. However, this might not be a wise move. Without collaboration, workers might not go out of their way to make the following year as successful!

Status quo bias

Behavioural economics recognises that sometimes we make decisions based on certain *biases*, especially when there is no time to do the research required to optimise our satisfaction. One bias, held by many, is that we follow the **status quo**; that is, we follow the same decisions made previously. For example:

- we purchase the same brand of breakfast cereal
- we use the services of the same energy plan, health insurance premium, internet provider, car dealership and bank
- some even go on holidays to the same destination.

This can be because we feel safe sticking with what we know, or perhaps it is because we are time-poor or lazy. However, as irrational as it is, when consumers are resistant to change, they could well be missing out on far better choices and outcomes.



Bounded willpower

Sometimes, despite putting up a fight, consumers can get carried away and make irrational decisions. They are unable to resist *temptation* and perhaps act impulsively, later to regret their decision because it makes them worse off over the longer term. This is called, **bounded willpower**. Examples include:

- When someone wants to quit smoking or drinking and recognises their willpower to kick the habit is limited, they need to buy medication or join a group that will help boost their resistance.
- To avoid spending all their money and blowing out their credit card balance, shopaholics might feel forced to open a special holiday savings account (money can only be withdrawn at holiday time) or perhaps put their money into fixed-term investments to help reduce their temptation to spend.
- At a celebration where there is beautiful food including lots of tempting cakes and yummy desserts, you may overindulge and later feel sick and have regrets.

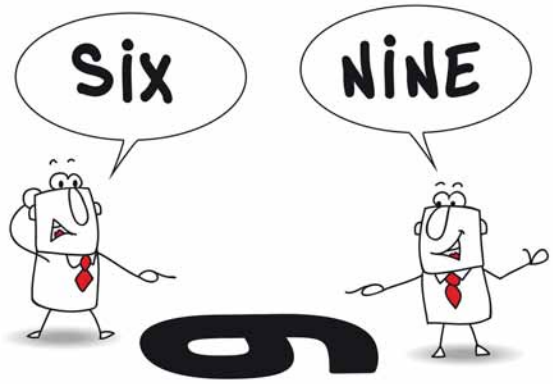
Although people exposed to temptation may resist for a while, some studies have shown that this attempt tires or gets worn down with time, and they give up the fight.

Herd behaviour bias

Herd behaviour is another relatively simple bias that relates to people wanting to follow the trendsetters and the rest of their peers. They don't want to stand out. Rather, they simply mimic or copy what most others are doing and follow the pack like cattle. This is a short cut and allows them to avoid coming to their own decision. They assume the crowd is correct, even though this may be irrational.

- For example, herd behaviour is well demonstrated in the share market. When prices have fallen, it is common to see that lots of people follow the animal spirits of the herd. They jump on the bandwagon and sell their shares, despite the fact they will lock in losses.
- This behaviour is also shown with swings in clothing fashion — a trend possibly started by some popular celebrity sporting a particular look, so others follow.
- Herding is also seen in economic and political forecasting. Here, commentators often feel safer going with the general flow because they won't look as bad if they are incorrect.

Framing bias



Framing bias is the idea that consumer decisions depend on how information is *presented*. It can be used to deliberately manipulate our decisions by positively or negatively affecting our *thinking* and perception of *value*. The *same* facts and ideas that are presented in *different ways* can be made to seem either more or less appealing, depending on the features that are highlighted.

In putting choices to consumers, framing bias can be created by *sound* (e.g. loud volume and harsh tone can seem aggressive and a turn-off), *visual* (e.g. do women

or men prefer pink as a colour preference?), *numbers* (e.g. the size of discounts, higher dollar or percentage numbers are often seen as better), or *positive or negative* (e.g. which is better — the glass half full or is it half empty?). In the case of the last type of framing bias, people generally prefer positive framing where there is a gain or success, rather than a loss or failure. In addition, people often prefer an assured or secure gain, even if it is smaller, than a bigger benefit that is uncertain and not guaranteed.

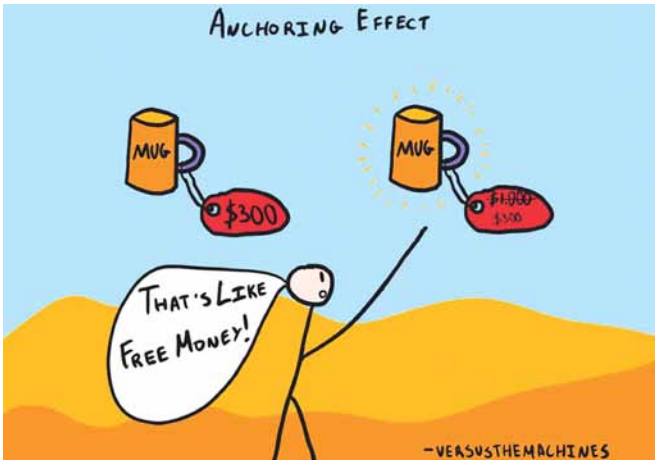
Examples of framing are common:

- Leading up to an election, political advertising tries to frame the opposition in the worst possible light, emphasising their failures or using demonised images, whilst at the same time portraying themselves in a positive light.
- Retailers frequently use framing biases to sell their products. Take two identical packs of cheese — one labelled 10 per cent fat, and the other labelled 90 per cent fat-free. Which one do you think will have the highest sales, despite the product being identical?
- What about the case of a store that has an eye-catching sign advertising two cans of tuna for $2 dollars? You will be tempted to buy two rather than one, even though in small print it says that the unit price is only $1.
- Framing bias has an effect in medical decisions too. If you had to go to hospital for a serious operation and the doctor says the risk of death is 2 in 100, you might decide to delay the operation. Had the information been presented as a 98 per cent chance of making a full recovery, you would probably have gone for it and felt much happier.

Anchoring effect

Anchoring is an arbitrary *reference point* that primes a consumer's perception and decisions. It affects how people rank the presented options, and make judgements, comparisons and assessments. Anchoring is a mental starting point or standard against which consumers compare other information or results. It can represent a bias where we especially remember the *first* bit of information (even if it is irrelevant), thereby distorting our judgement about *subsequent* pieces of information. This can be used by businesses to alter the choices consumers make and to increase sales:

- Take the example of a pair of antique mugs: one is marked at $300, but the other has two prices shown on the tag — the original price of $1000 and a second discounted price of $300. Guess which of the two identical mugs is more likely to sell?
- In looking to buy a car, you are initially told that the price is $25 000. However, in negotiations (and regardless of whether the starting price was inflated or legitimate), the salesperson later offers it to you for a *discounted* $19 999. You end up buying it because it looks much cheaper relative to the starting price and you think you are getting a great deal.



- Supermarkets and other retailers sometimes use *quantity limits* for customers. Most of us tend to think that this is to stop bargain hunters clearing out the shelves. Whilst this can be true (as seen with toilet paper and pasta during the COVID-19 pandemic), the other cunning purpose is to drive up sales. Interestingly, a group of supermarket researchers found that setting quantity limits on the purchase of 12 cans of Campbell's Soup (as opposed to having no quantity limits), actually caused sales or demand to rise from an average of 3.3 cans (where there were no limits) to 7 cans. This is because consumers had locked in or *anchored* the number 12 in their minds and then adjusted their quantity purchased downwards, just a bit.

- You see a sign on yummy doughnuts advertising them at 70 per cent off the recommended retail price. You immediately dive in and purchase a box of them thinking it's too good to miss, irrespective of whether they were really worth the original exorbitant price.

In these examples, our perception of *what* constitutes good *value* has been changed by the way the options have been presented.

on Resources

Weblink A Brief History of Nudge

Overconfidence bias

Some consumers subjectively believe they are better than they *really* are in spotting a bargain, winning a lottery, avoiding a risk, or making accurate estimations. They have an **overconfidence bias** in making good decisions. Behavioural economists sometimes attempt to measure this bias using experiments. They often ask participants to answer general knowledge questions and to *rate* how confident they are about the correctness of their answers on a scale of 1 to 5, against the actual proportion of correct answers. Some studies report that the overconfidence bias is far more common amongst millennials born between 1980 and 1995 (65 per cent have a confidence bias), than amongst older baby boomers born between 1946 and 1964 (23 per cent).

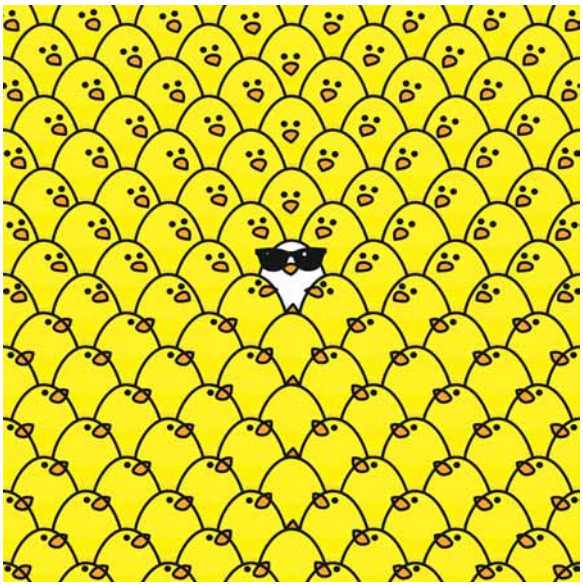
The problem with this bias is that it can lead people to make non-rational choices based on limited knowledge and research that they may later regret.

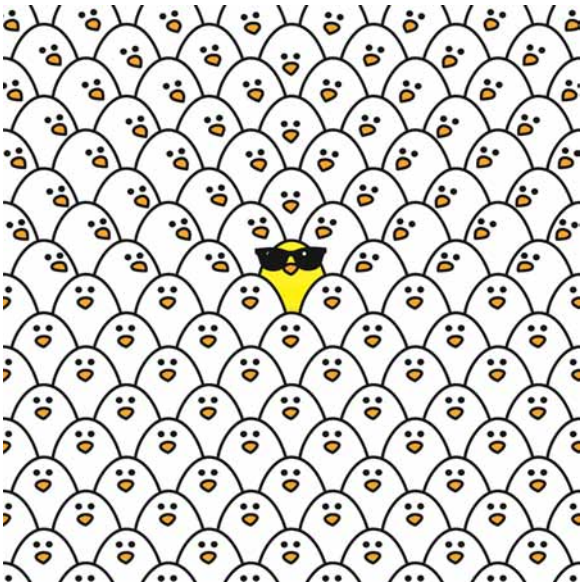
- For example, how often have you predicted that a homework task will take you less time to complete than it does?
- Overconfidence can also lead to lots of optimistic people starting a business, despite the reality of much lower chances of success.
- In driving a car, overconfidence leads to more accidents.
- In finance, overconfidence can lead some investors to make riskier decisions with poorer outcomes than originally expected.

Vividness bias

Sometimes information presented in a *striking* way causes people to focus too much on *one* thing, rather than consider all the other options that potentially could be more beneficial and increase their utility or satisfaction. This is called the **vividness bias** and can lead to silly or irrational choices.

- For example, using highly charged, persuasive or *vivid language*, perhaps even *bold type* on emails, or *callouts* on graphs and other data, can encourage people to make decisions that are not necessarily based on the complete picture or a consideration of all the facts. As a result, the choice made might not be the one that maximises wellbeing or self-interest. What about the common reaction to dramatic front-page headlines about shark attacks in Western Australia? As a result, some decide never to go swimming again at Torquay (Victoria). However, this could represent an incorrect assessment of the actual risk of attack during ocean swimming that is estimated by some to be about 1 in 3 750 000. An incorrect assessment may well deprive some of the joys of surfing. Similarly, heavily focussing on graphic headline reports of an aircraft crash can cause some people to never fly, even though one US study found that, on average, the chance of dying in a car accident is around 1 in 110 as opposed to a 1 in 9800 chance in an aircraft. Remembering a standout piece of information rather than seeking the bigger picture can distort decisions people make and cause them to be substantially irrational.
- Bias could also be the selective use of a *vivid colour* on an image or advertisement designed to focus consumer attention and encourage them to ignore or analyse the other possible options. As a result, the decision made might not maximise self-interest, satisfaction, and wellbeing.





Short-term or present bias is often preferred

Consumers often make choices by reference to the time period over which they gain a benefit or suffer a loss. Behavioural economic theory suggests that in making choices, people typically have a **present bias**. They seek *immediate* reward or gratification. Thinking about *future* consequences (good or bad) is often rated as much *less* important:

- For example, would you rather receive $5 right now or wait two weeks and collect $10? Although using a longer-term time frame would produce double the benefit, this is often undervalued and, consequently, is less attractive as a choice.
- Student attitudes to the completion of homework provide another illustration of the present bias. Studies have shown that many students do less homework than that needed to maximise their results. Often, this is because they disproportionately *overvalue* the *short-term* rewards like going out to a concert or party with friends, and *undervalue* the impact this is likely to have on their career choices and employment prospects over the *long-term* (say, in 5–10 years' time).
- This present bias has also been demonstrated in experiments with children and lollies. A child was told that they could have *one* lolly right now, but by waiting an hour they could have all five. It was found that most went for the immediate or short-term payoff, even though it reduced their overall gain and was not in their self-interest. Clearly, their choice represents an irrational decision.
- Given the volatility of share market prices, investors with a short-term bias are more likely to face higher risks and make losses, than those with a longer-term view.

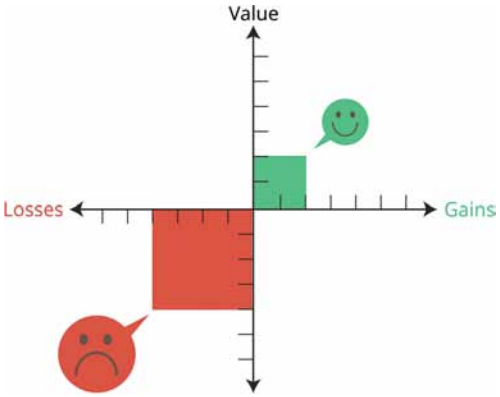
In these cases, the decisions made are not altogether rational nor optimal.

Risk or loss aversion bias

Behavioural economics shows that people tend to place more importance on avoiding losses, than on making equivalent-sized gains. In other words, people have a **risk aversion bias** and as some say, 'losses loom larger than gains'.

- As an example, pretend that there are two unmarked envelopes in front of you — one of which has $100 dollars in it and the other has nothing. You are offered a choice. You could select one of the envelopes and have a fairly good one-in-two chance of winning $100. Alternatively, you could receive a guaranteed $50 cash by *not* choosing either envelope. As an economic agent, which option would you go for?

- Another illustration can be found in the share market. While most investors would experience pleasure from making a capital gain of $1000 (i.e. when they sell their shares at a higher price than that at purchase), some research suggests that their pain or displeasure from the same-sized loss of $1000 is *twice* as great! In other words, this fear causes them to have a loss aversion thereby potentially reducing their returns.
- A loss aversion bias could also mean that with government attempts to influence our behaviour, using disincentives and financial penalties for bad choices, are likely to be more effective than rewards for good ones.



Narrative fallacy

Consumers can be sucked into various scams, simply because of the plausible and impressive way information is presented, often ignoring the absence of a more detailed and analytic approach. The **narrative fallacy** occurs when decision makers put too much importance on the story or narrative, rather than on the cold hard and relevant facts.

- As an example of this approach to decision-making, some Australians have been persuaded to part with millions of dollars that disappear into a black hole, never to be seen again. This type of narrative is often applied to get-rich-quick schemes, ways to avoid tax, and supposedly fail-safe strategies for making money by somehow beating the market.
- After years in the doldrums with huge losses, a large clothing business uses media releases to publicise the arrival of its new CEO who comes with an impressive record of leadership success (but not mentioned in the hype is that this was in a small engineering firm). Does this necessarily mean that her/his arrival will cause the clothing company to be successful as forecast in the media hype or spin?

The nudge

The **nudge** is an idea derived from behavioural economics. It is a gentle strategy that helps to steer people's decisions or behaviour towards a predictable and wanted outcome, while still allowing consumers to have free choice. In this respect, the *nudge* clearly *differs* from more direct disincentives or *punitive methods* such as bans, taxes, fines and laws designed to punish people who fail to make a certain decision (e.g. punishing car drivers for using mobile phones when driving, or banning soft drinks at the school canteen). The nudge or prompt is often applied to help achieve predictable outcomes. For instance:

- Lollies are sometimes displayed at eye level near the checkout queue in some supermarkets to prompt a purchase.
- Automated mobile phone reminders are sent to prompt people that they have a doctor's appointment coming up.
- Free waste disposal vouchers are provided by councils to encourage people to clean up their backyard.
- A default organ donation scheme is used in some countries to encourage donations by requiring people to *opt out* if they do *not* wish to participate, rather than having a default setting that involves an *opt in* decision. Opting-in will be less successful in solving organ transplant shortages for sick patients. This is because it takes time and effort to get out of the scheme, so more people just go along with it.

Artificial intelligence

Increasingly we see an expanded role of artificial intelligence (AI) in making decisions, bypassing independent decisions by consumers. For example:

- There are driverless cars that can navigate with little or no passenger input.
- Large-scale algorithmic share trading is now common. It involves computer codes and chart analysis to enter and exit share trades that are triggered by factors like price changes and the degree of volatility.

While some commentators see this as a threat, other studies have concluded that carefully designed and tested AI can even improve the quality of decision-making, simply because programs can factor in far more variables and thus help to overcome the bias and limitations imposed by bounded rationality in making economic choices.

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Weblinks Behavioural Economics: Crash Course
A Brief History of Nudge
Nudge, the Animation: Helping people make better choices
Nudge Theory Explained with Examples
Behavioural Economics Crash Course
Nudging: The Future of Advertising
Marginal Analysis and Consumer Choice
Marginal Analysis, Roller Coasters, Elasticity, and Van Gogh: Crash Course

3.2 Activities

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3.2 Quick quiz on | **3.2 Exercise**

3.2 Exercise

1. **Outline** four ways that *traditional* explanations of consumer behaviour can differ from those suggested by *behavioural economics*. **(4 marks)**
2. **Set up** and **complete** a table like that below, relating to types of consumer bias in decision-making: **(5 marks)**

Bias or factor	Explanation	An example
a. Status quo bias		
b. Herd behaviour		
c. Framing bias		
d. Anchoring bias		
e. Present bias		

3. This question is about *herd behaviour*:
   a. When thinking about how consumers make decisions, **define** what is meant by *herd behaviour*. **(2 marks)**
   b. When consumers decide to buy clothes, **explain** how their decision, based on the idea of *herd behaviour*, would differ from one based on a traditional viewpoint. **(2 marks)**
4. You have been to a lovely presentation with a free supper and convincing spiel by a smooth-talking expert about how to get quick returns of 125 per cent on an investment in Nigeria that he personally recommends. He recounts his successful experiences where he went from rags to riches in just two years. Along with many others that evening, you decide to immediately invest $50 000 in the scheme. According to the behavioural economic theory, **explain** the ways that this decision differs from the traditional viewpoint of consumer behaviour. **(2 marks)**
5. a. From behavioural economics, **define** what is meant by the *nudge*. **(1 mark)**
   b. As a consumer of goods and services, **outline** two examples of situations where you might experience a nudge. **(2 marks)**
   c. As opposed to a disincentive, fine or other punishment, **outline** one weakness and one strength of using a nudge to influence behaviour related to the problem of leaving litter on the beach or around the school. **(2 marks)**
6. You are an investor and are deciding between two possibilities. One offers a return of 6 per cent a year and the other just 1.2 per cent. By reference to *behavioural economics*, bounded rationalism and types of biases, **explain** why some investors, especially older ones, might settle for the 1.2 per cent option. **(3 marks)**
7. You are about to flip a coin and you say to your friend, 'if it's heads up, I win. You will then have to give me $5. Alternatively, if it's tails up, I agree to give you $5.' According to behavioural economics, **explain** why a typical friend might be reluctant to play the game under these rules or conditions. **(2 marks)**

Solutions and sample responses are available online.

3.3 The effectiveness of strategies used by government to influence consumer behaviour

KEY KNOWLEDGE

- The effectiveness of strategies used by government to influence consumer behaviours

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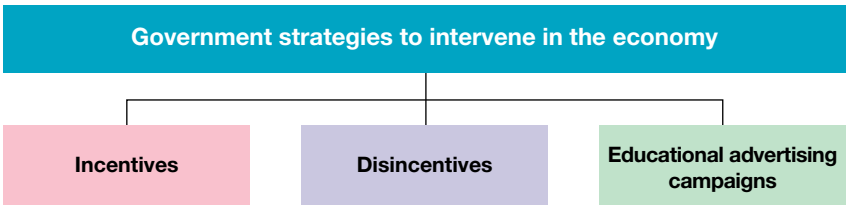
Earlier in our studies (to refresh your memory, please see Topic 1, section on a mixed economy in 1.5.2) we saw that sometimes *governments intervene* in the economy to help reduce **market failure** in allocating resources efficiently and in ways that improve society's general wellbeing. Typically, such strategies might include policies such as:

- *incentives* (e.g. the payment of cash subsidies and allowing tax write-offs to reward certain behaviour)
- *disincentives* (e.g. indirect taxes, laws, fines, and government regulations to discourage or punish undesirable behaviour that lowers society's general wellbeing)
- *educational advertising campaigns* (e.g. to improve the knowledge of decision makers, so they are more likely to make rational and beneficial decisions).



All these strategies are designed to modify the way we behave. To be effective in re-allocating resources efficiently, they draw on ideas from the **traditional viewpoint of consumer behaviour** and more recent studies in *behavioural economics*. In the next few pages, we will look at some of these *government strategies* and consider whether they are effective in improving society's general wellbeing.

3.3.1 The effectiveness of government strategies to reduce alcohol consumption

The Australian government attempts to influence consumer behaviour around alcohol using **excise taxes**, the random breath testing of drivers, and educational advertising campaigns.

Let's start with a look at the *excise tax on alcohol*. While this tax represents a lucrative source of government revenue in the budget raising over $7 billion a year, the more important goal is to reduce the *consumption of alcohol* and the incidence of alcohol-related problems (e.g. accidents and property damage, disease, injuries, health, deaths, lower life expectancy, violence, relationships, child abuse, crime, quality of life). The National Drug Research Institute in Australia put the annual cost of these harms at a staggering $67 billion. Our alcohol consumption is too high with 25 per cent of Australians drinking at risky levels, accounting for 25 per cent of all road accidents, 25 per cent of all police time, 30 per cent of family violence, and 15 per cent of hospital emergence presentations.

Many studies have shown that the use of excise taxes is a *very effective* way of reducing alcohol-related harms for individuals, families, and the wider community. They work by simply making alcohol dearer to purchase and hence, following traditional theory, less attractive for consumers. For example, in the case of full-strength beer, the tax represents over 40 per cent of the price of a carton, while whisky and gin are taxed at around 57 per cent. Estimates also suggest that a tax and hence a further price rise of 10 per cent would reduce alcohol consumption and harm by an average of 5 per cent, especially amongst younger consumers with less income, where demand contracts sharply as the price rises (i.e. the law of demand applies).

Thinking of the *traditional viewpoint* and *behavioural economics*, the excise tax, combined with informative advertising campaigns (e.g. drink driving, you're not drinking alone, alcohol and pregnancy — One Drink) and random breath testing of drivers, acknowledge that some consumers have *limited willpower* to resist excessive alcohol consumption. Not everyone makes *well-informed* and *rational decisions*. In addition, the financial penalties of paying the heavy excise tax and, potentially, the fines, possible jail sentences and licence disqualification, all appeal to the traditional viewpoint of *self-interest*.

Based on the data available, this is what we know about the effectiveness of government strategies in this area:

- Information from the Australian Bureau of Statistics (ABS) suggests that for one reason or another, average alcohol consumption per capita measured in litres per year has fallen to its lowest level since the late 1960s, especially amongst younger age groups that are more sensitive to higher prices.
- Between 2006 and 2020, there was a substantial *fall* in the proportion of adult consumers regularly consuming alcohol, from around 74 per cent to 66 per cent.
- Despite evidence of success, *cost–benefit research* tells us that government policy could be made even more effective. For example, one study claimed that a 75 per cent increase in excise on alcohol would 'maximise the welfare of Australians' and raise billions of dollars in government revenue that could be used to help reduce the adverse social effects of excess alcohol intake, improving efficiency in resource allocation, and limiting market failure caused by poor consumer decision-making.

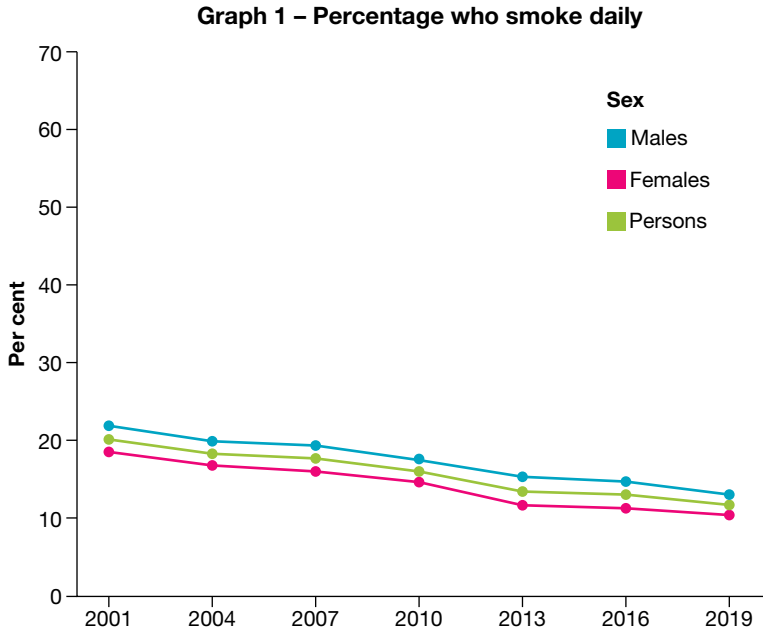
3.3.2 The effectiveness of government strategies to reduce the consumption of tobacco

Smoking is the leading cause of preventable diseases in Australia. It results in a range of cancers (e.g. lung, mouth and throat), heart disease and strokes, stomach ulcers, reduced mobility, and a greatly shortened life expectancy. It also harms the health and wellbeing of passive smokers inhaling second-hand smoke. All up, it kills around 24 000 people each year. Furthermore, it reduces workforce productivity by an estimated $5 billion a year due to increased absences. It is also a burden on our public health system and taxpayers (who need to meet the cost of higher health expenses), it weakens the government's finances and harms the health of family members. Recently, the National Drug Research Institute (NDRI) estimated that the annual cost to the country was a massive $140 billion.

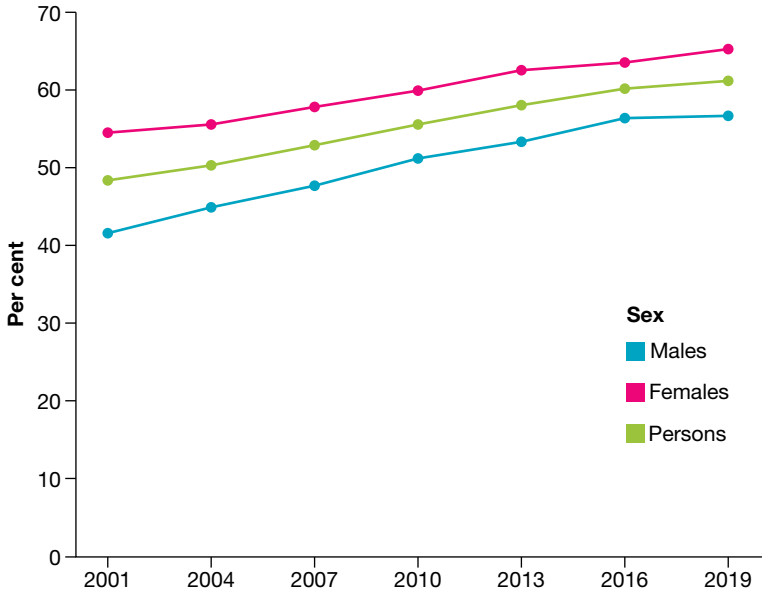
Clearly, smoking is a problem. It is also an example of *market failure* that the government can't afford to ignore. As a result, several strategies have been tried including laws that require plain packaging (with warnings of the dangers of smoking and graphic images of the impacts on our health). There has also been the Quit *advertising campaign* (i.e. to educate people, so they make more informed decisions as consumers), age limits for the purchase of tobacco, and the banning of smoking at indoor venues.

However, most economists believe that the rise in the rate of *excise tax* has had the greatest success in significantly reducing tobacco consumption. For example, in 2010, the government increased the excise on tobacco by 25 per cent in one hit, followed every year between 2013 and 2021 by annual rises of 12.5 per cent. These changes made smoking far less attractive and has pushed up the price of a packet of 20 cigarettes to around $40. This has contracted demand for tobacco. As shown in Figure 3.1, for one reason or another, there has been a significant *reduction* in the percentage of Australians who smoke daily (see graph 1), combined with a rise in the proportion who have never smoked at all (see graph 2).

FIGURE 3.1 Changes in smoking rates amongst the Australian population



Graph 2 – Percentage who have never smoked



Source: Australian government, Australian Institute of Health and Welfare, see https://www.aihw.gov.au/reports/australias-health/tobacco-smoking.

The evidence seems to suggest that the government's strategies have successfully altered consumer behaviour, especially amongst the young. Research also shows that even higher tax rates could further contract consumer demand and improve the health and wellbeing of Australians. However, those who are unable or unwilling to quit smoking face serious opportunity costs and, sadly, their addiction often forces them to cut back on other essentials like food, holidays or electricity.

Thinking of the *traditional viewpoint* and *behavioural economics*, the advertising campaigns also recognise that consumers are *not* always well informed, nor do they always make rational decisions. However, the campaigns have helped to change behaviour by making smoking less socially acceptable and push against *herd behaviour*. At the same time, the excise tax has been a *disincentive*. It appeals to the traditional viewpoint that, financially, it would be logical and in consumers' self-interests to give up smoking.

3.3.3 The effectiveness of government strategies to influence consumers and improve the health system

The Australian government uses a range of strategies to improve the health system. For example, unlike most countries around the world, our Medicare system means that all people can enjoy access to free or heavily subsidised public healthcare. In fact, each year, the federal government spends around $110 billion (around 17 per cent of all budget outlays) on providing healthcare. Clearly this increases the quantity of resources allocated to this area, helping to reduce *market failure* and the *under-production* of a service that we all need. Despite this, there are still reports of long waiting lists in public hospitals and the under-funding of public healthcare for our ageing population.

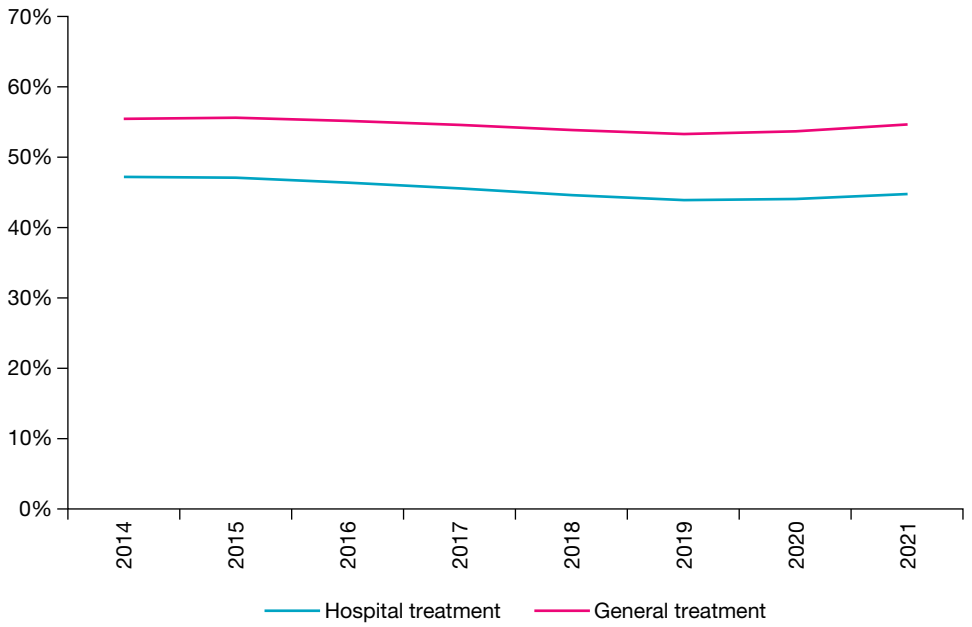
One important government strategy used to reduce this problem and ease pressures on the *public* health system, is to encourage individuals to take out *health insurance*, providing access to the *private* system. As an incentive to join, the government provides *Private Health Insurance Tax Rebates* of up to 32 per cent of the cost of

insurance policies at an annual cost to the budget of around $7 billion. This policy seeks to make private health insurance cheaper for consumers, thereby increasing the demand for policies and, supposedly, making more people less dependent on the public system.

Thinking of the *traditional viewpoint* and *behavioural economics*, the private health insurance tax rebate is an incentive designed to help overcome consumer self-interest where people are mostly happy to use the public health system paid for by all taxpayers, since this involves no extra cost to them. Possibly, too, it helps redirect some people from *herd behaviour* of simply relying on the public system to meet their health needs.

Armed with this background information, we now ask the question 'to what extent have the government's health strategies been successful in modifying consumer behaviour?' Let's start by looking at recent changes in the proportion of the population who have taken out private health insurance. This is shown in Figure 3.2.

FIGURE 3.2 Changes in the proportion of Australia's population with private health insurance (percentage)

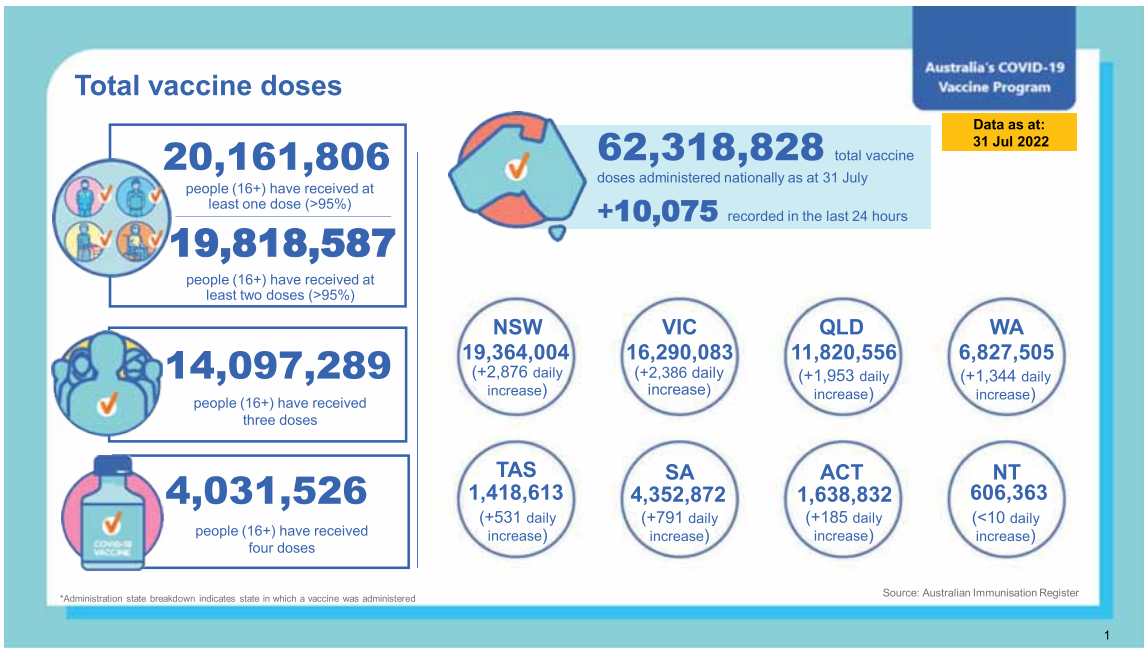


Source: Australian government, APRA, Quarterly private health insurance statistics, see https://www.apra.gov.au/quarterly-private-health-insurance-statistics.

- Notice that subsidising private health insurance has *not* managed to increase the proportion of Australians taking out policies. However, it seems that it may have helped to limit the small fall in participation. Part of the problem is that the cost of healthcare is increasing due to our ageing population, new and more expensive treatments, and the COVID-19 pandemic. Recently, these developments have put a lot of upward pressure on the cost of premiums while average incomes have been fairly static. So, despite the government's tax rebate, private health insurance is less affordable and queues in public hospitals have tended to grow even longer.
- Not shown in Figure 3.2, but around 50 per cent of government rebates went to the highest 20 per cent of income earners. This increased social and economic inequality.
- In addition, critics point out the huge *opportunity costs* of the private health insurance tax rebate scheme. Had the same money been diverted into the public system, there may have been greater benefits for the wider community, not mostly for those who are relatively well-off.

Another government strategy to influence consumer health decisions is the free provision of *COVID-19 vaccinations and testing*. Thinking of the *traditional viewpoint* and *behavioural economics*, this strategy provides an *incentive* for consumers to get vaccinated to help lessen the health emergency and its adverse impact on the economy. It means that cost is not a barrier for individuals. This boosts consumption. The strategy has also been combined with *informative advertising campaigns* to get people to think of others (e.g. family and

friends) not just themselves, and get the jab. In combination, these measures have been highly successful in reducing deaths by perhaps 40 000 and our national fully vaccinated rate is around 95 per cent of those aged 16 and over — one of the highest proportions in the world.



3.3.4 The effectiveness of government subsidies for consumers installing solar panels to reduce emissions

As we know, climate change is a problem closely linked with the production and consumption of some types of goods and services that involve high emissions of CO_2. These discharges of greenhouse gases accelerate global warming and cause more frequent and severe weather events. Over recent years, the Australian government has used several strategies to reduce emissions. One of these was Australia's *carbon tax* (2012–14). This was a levy paid by key polluters. It primarily targeted dirty businesses by putting a cost on their pollution (starting at $23 per tonne of CO_2 emissions). By imposing this tax, it helped to make pollution less profitable, forcing firms to clean up their act.

Another government strategy designed to change the behaviour of *consumers of electricity* and reduce CO_2 emissions, is the payment of *rebates* to households that install rooftop *solar panels*. The strategy started in 2011 and has been part of meeting Australia's Renewable Energy Target.

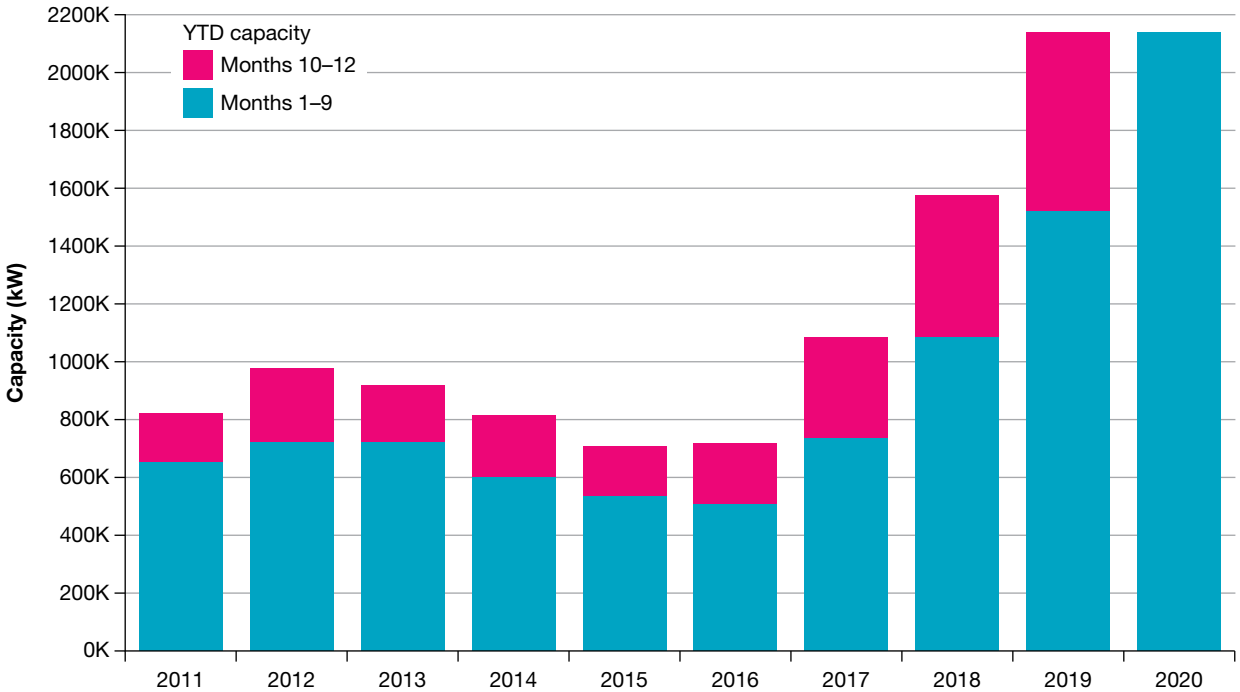
The use of federal and state government *solar panel subsidies* act as *incentive* to make the installation of clean renewable energy cheaper, driving up the demand for solar panels so that one in four houses have taken up the offer. Thinking of the *traditional viewpoint* and *behavioural economics*, this strategy is designed to help overcome the problem of consumer *self-interest* where the cost (and pain) of installation was too high, thereby initially limiting the government's success in reducing emissions. In addition, *promotional advertising campaigns* appealed to consumers doing something for others and the environment, not just themselves. The success of these strategies acknowledges that there is *bounded self-interest;* sometimes, consumers may be prepared to make decisions that benefit others.

Figure 3.3 helps to confirm that, overall, the government's combination of **solar panel rebates** and media strategies has been reasonably successful. In graph 1, for example, notice the steady rise in panel capacity since 2016; and in graph 2, see some of the achievements in renewable energy.

In addition, relative to other countries, Australia has one of the highest rates of take-up for household solar panels. This has helped to reduce emissions by changing consumer behaviour. However, critics point out that because installation is still very expensive, consumer subsidies need to be higher, especially in lower socio-economic postcodes, so they are more affordable. Unfortunately, the government's current intention is to gradually phase out rebates.

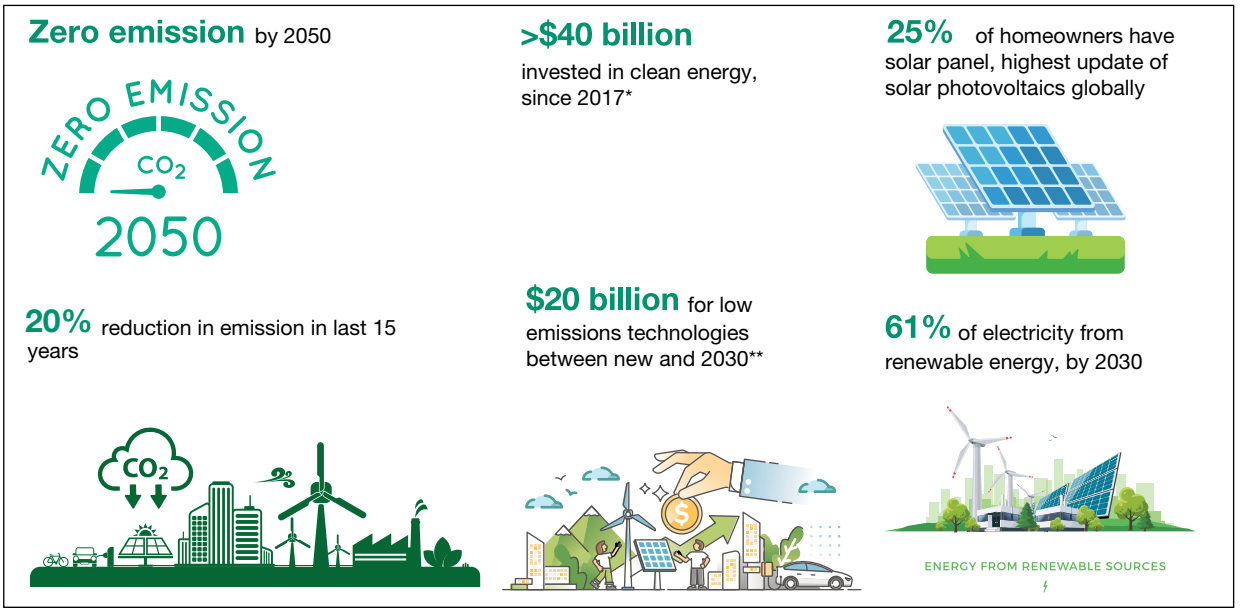
FIGURE 3.3 How the government's strategies to encourage renewable energy using solar panel rebates for households along with other schemes have helped to reduce CO_2 emissions

Graph 1 — The change in the capacity of installed solar panels



Source: Sun Wiz, see https://www.sunwiz.com.au/end-of-year-forecast-for-the-australian-pv-solar-market-2020/.

Graph 2 — The government's encouragement of renewable energy including solar panels



Adapted from Australia's climate change strategies, Australian Government, Department of Industry, Science, Energy and Resources.

3.3.5 The effectiveness of the government's first home loan deposit scheme for consumers

For many, an Australian dream is to own a home. However, ownership rates have been falling now over several decades and record high property prices have made this dream a nightmare for many first-home buyers. The problem is that most people want to live in capital cities. This is where the jobs are located. However, a combination of geography that limits urban expansion, rapid population growth (boosted by mostly high levels of immigration), record low interest rates on borrowing credit, extremely generous tax discounts on capital gains (made from buying property when prices are lower and selling after prices rise), and the use of negative gearing when purchasing property (using the cost of borrowed credit as a tax deduction), have all contributed to the property boom and price hike.

To help home buyers, the Australian government has introduced several schemes including First Home Owner Grants of cash to reduce the cost for consumers, supposedly making ownership cheaper. One important strategy for 2021 and 2022 is the **First Home Loan Deposit Scheme**. This is designed to help up to 10 000 eligible first-home, low-income buyers who have saved as little as a 5 per cent deposit (not the normal 20 per cent requirement) to obtain a bank loan by the government acting as the guarantor. During the federal election in May 2022, the incoming Labor government announced another scheme called, '*Help to Buy*' scheme. Under this scheme, eligible low- and middle-income home buyers only need to save a deposit of at least 2 per cent to qualify for a home loan. This is because the government will become a part owner of up to 40 per cent of the property's purchase price. It means that these buyers would have smaller loans and lower interest repayments so, hopefully, they will be able to buy a property sooner. However, like most

previous schemes, it is likely to increase in the *demand* for housing by growing the number of potential buyers, more than it increases the supply of housing.

Thinking of *behavioural economics*, the *First Home Loan Deposit* and the *Help to Buy* schemes would appeal to consumers who have a short-term or *present bias* and downplay the long-term consequences of their decisions including their ability to repay the loan — a possible problem when they haven't been able to save a reasonable deposit in the first instance. There is also a *framing effect*. Home buyers who initially had to save 20 per cent deposit are now offered a deal involving saving just 5 or even 2 per cent deposit. Possibly *bounded willpower* could also be involved in the government's tempting offer or incentive — luring buyers into a scheme where they may not be able to afford the loan repayments.

But up until now, have various incentives for homeowners been a success from a consumer's point of view? Most commentators believe that, unintentionally, these schemes have made home ownership even *less affordable* by increasing the *demand* for property more than they increase its supply — driving prices even higher. It is therefore not a surprise that despite a range of strategies over the years, home ownership rates continue to fall, and many households have massive mortgages to repay, creating financial stress (especially when interest rates on loans rise as seen in 2022). Some suggest a far better solution to help increase first-home ownership would be for the government to build and sell low-cost housing. This would increase supply relative to consumer demand, perhaps making property more affordable.

3.3 Activities

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3.3 Quick quiz on

3.3 Exercise

3.3 Exercise

1. **Explain** *why* governments sometimes use strategies to change consumer behaviour. **(2 marks)**
2. **Identify** and **outline** three important methods used by the Australian government to alter consumer behaviour. **(3 marks)**
3. The government sometimes tries to change the decisions made by young consumers under the age of 18 years. Giving examples, **explain** *why* and *how* this happens. **(2 marks)**
4. **Outline** why a tax rise of 40 per cent on alcohol is likely to have a bigger impact on those with lower incomes. **(2 marks)**
5. **Explain** why a hypothetical decision by the government to build 20 000 new low-cost homes for young people, may be *more* effective in raising ownership than giving first-home buyers a cash grant of $20 000 or guaranteeing a smaller deposit to facilitate a bank loan. **(4 marks)**
6. If the government provided bike helmets free of charge, **explain** how this could work to change consumer behaviour. **Outline** another option that might also be needed for success in reducing hospitalisations resulting from biking accidents. **(2 marks)**

7. The government decides to pass a law making it compulsory for all people in the public sector to be triple vaccinated against COVID-19. **Explain** *why* this attempt to change behaviour may *not* be totally successful. **(2 marks)**
8. a. **Explain** how the payment of government subsidies to those taking out private health insurance may take the pressure off waiting times and queues in the public health system. **(2 marks)**
   b. **Explain** why some might consider private health insurance subsidies to be unfair or inequitable and involve large opportunity costs. **(2 marks)**

Solutions and sample responses are available online.

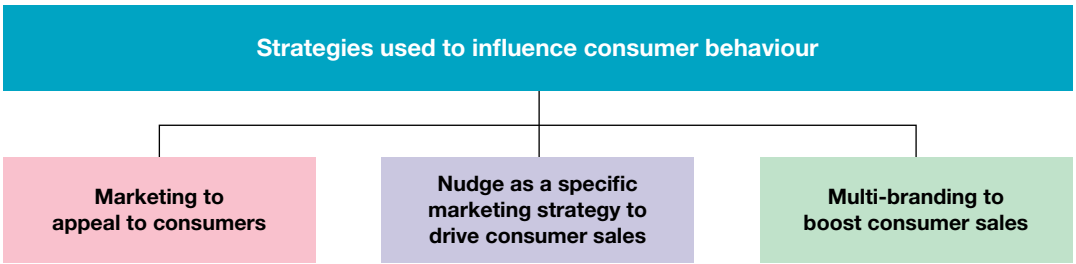
3.4 The effectiveness of strategies used by businesses to influence consumer behaviour

KEY KNOWLEDGE

- The effectiveness of strategies used by producers/businesses to influence consumer behaviours

Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

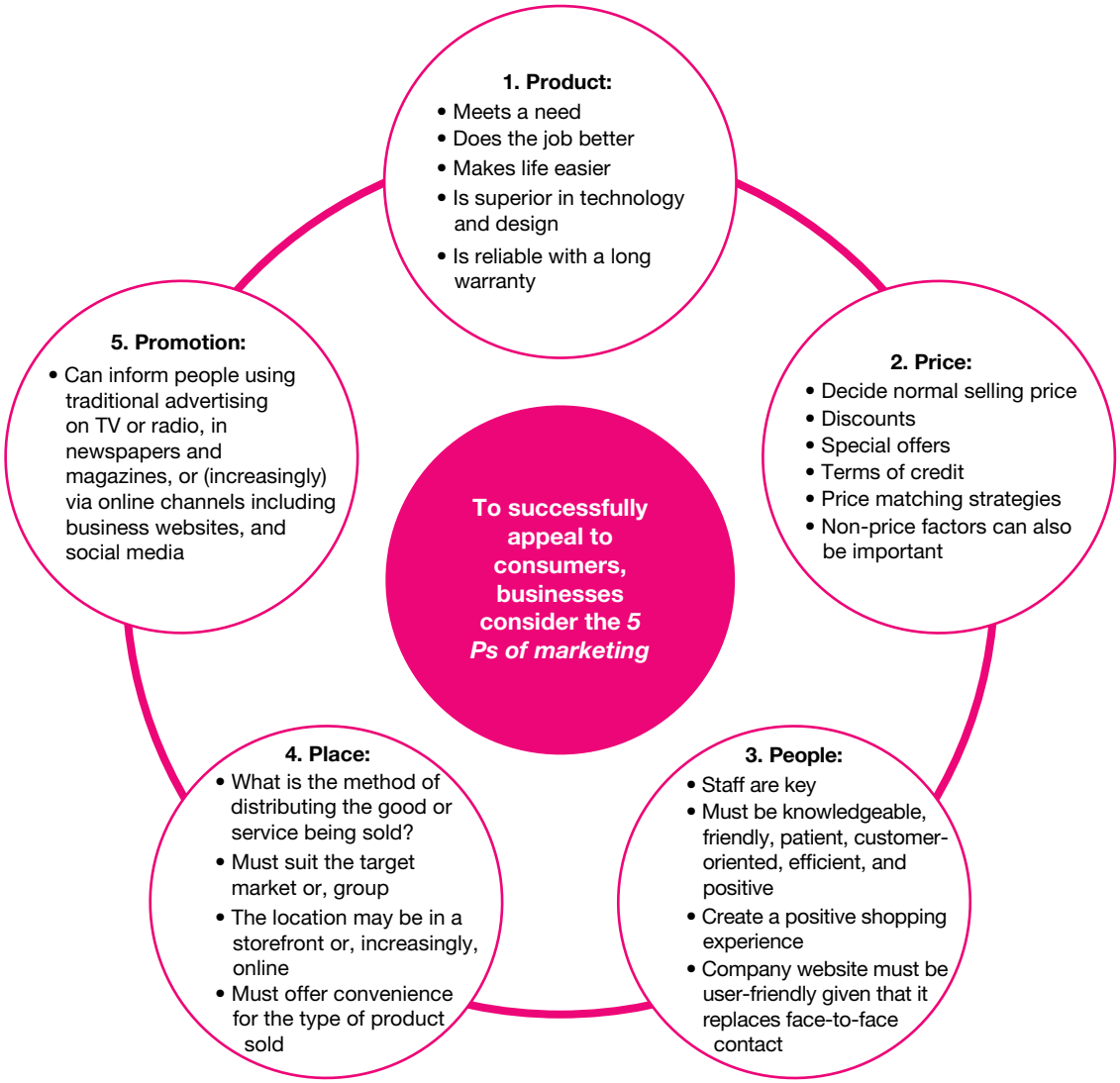
There are lots of successful *strategies* used by businesses to influence *consumer behaviour*. In selling goods and services, some of these tactics are drawn from an understanding of the *traditional viewpoint* of decision-making, and others from *behavioural economics*. Ultimately, firms use these strategies to help drive up company sales and profits.



3.4.1 Marketing to appeal to consumers

Without effective marketing, it is likely that many businesses wouldn't even exist. **Marketing** includes a range of strategies that businesses use to attract consumers, capture their attention, get them interested, and sell products. The process makes use of what is called the *marketing mix* or **the five Ps of marketing**. These are summarised in Figure 3.4.

FIGURE 3.4 The 5 Ps of marketing products to consumers



Product

The first step in the marketing mix or strategy used by successful businesses is to conduct research to discover exactly what *consumers* want. The right product is likely to be one that brings some benefit, solves a problem, makes life easier, or is superior to an alternative in terms of performance, reliability, warranty or guarantee, appearance or style, design, functionality, technology, and quality. For example, as a successful company, Apple only makes products that it believes are better than its rivals.

Apple only makes products that it believes are better than its rivals.

Price

The next part of the marketing mix is to decide how much to charge consumers for the product being sold. This might not only include decisions about the normal selling price, but also special offers or incentives, reward schemes, discounts or specials (perhaps using the *anchoring effect* to encourage sales), procedures related to price-matching against rival sellers, and the terms of payment or credit. While the final price must be high enough to cover costs and make a reasonable profit, it also needs to represent good value for money when compared against that of rival sellers. For example, Amazon is an e-commerce seller that attempts to offer a huge range of products at very low prices. While the profit margin per item is small, it makes up for this since their low prices mean high sales volumes and repeat customers, expanding profits.

In addition, behavioural economics tells us that apart from price, there are also other things that affect consumer decisions. In other words, while the traditional economic viewpoint sees price as the main determinant of the consumer demand, behavioural economics also notes that other things unrelated to price can also be important in affecting sales (e.g. consideration of status quo, framing bias, and anchoring effects). In addition, when setting the price, a business's position in its target market is also a consideration. For example, selling in the top end of the market for mobile phones allows Apple and Samsung to charge higher prices. People will pay more if they feel that they are getting a better product, and/or have an emotional attachment or brand loyalty.

People

When dealing with consumers, businesses need to employ staff who are very knowledgeable about the product they are selling and enjoy working in their job as part of a team. Those dealing with customers must also be helpful, efficient, warm, patient, friendly and trustworthy. If there is a problem, staff need to be able to fix it quickly. Perhaps you have experienced going into a store to buy a mobile or some other item, and you discover that the staff member is disinterested, was too pushy, tried to sell you something that was unsuitable, and in some cases, had even less knowledge than you about its features.

Alternatively, when buying online, have you ever been frustrated by an inability to find the necessary product information that you require to make a decision? Here, the website needs to act as a user-friendly and easy-to-navigate substitute for a face-to-face staff member.

Place

Traditionally, consumers went to a storefront as the point of sale. Indeed, this still suits the selling of some products, especially those where consumers want to inspect or try a good before they buy. For example, Apply and Telstra have set up purpose-built stores for exactly this purpose. They appreciate that when purchasing technology-based devices, consumers (especially those that are not IT-savvy) need to experience, handle, receive detailed information from experts, and try out the product.

However, for other types of products, many consumers want greater convenience. This is offered by e-commerce where shoppers can go online whenever it suits them, 24/7, and then have the item delivered quickly and cheaply to their home. For instance, in some areas, Amazon as a company can deliver goods rapidly within two days, catering better for consumers with a '*present bias*'. Also, having free returns helps to overcome the problem of *loss aversion* if the item is unsuitable. All this enhances the *shopping experience* and encourages repeat customers.

Promotion

Promotion is one spoke making up the wheel of marketing. It involves the strategies businesses use to let consumers know about their product or service. This can take many forms, each finely tuned to target specific markets and consumers.

For promotion, most people think of the traditional methods including advertisements on TV, radio, buildings, and billboards, and in magazines and newspapers. However, increasingly, businesses are forced to embrace internet-based marketing, starting with their own eye-catching, informative, and user-friendly website to make purchasing easy. Some businesses pay search engines money so that when customers are looking for a product, the firm gets higher exposure (called 'pay-per-click'). Then there is *blog marketing* (to nurture interest), *social media marketing* (using Twitter, Facebook, Linked-in, and Instagram), and *video marketing* to inform and educate customers. In addition, there is *influencer marketing* by prominent people with many loyal followers and fans, *green marketing* (to appeal to the environmentally conscious consumer), and even *viral marketing* (to encourage people to pass on information about a product).

Coca-Cola is one of the most successfully marketed products in history. It is also one of the most heavily advertised products in the world, although advertising is just one of a number of marketing strategies.

3.4.2 Nudge as a specific marketing strategy to drive consumer sales

One specific part of a promotional strategy, which is commonly used by firms, is the idea of the *nudge*. Essentially, this notion comes from *behavioural economics* where the decisions made by people are *not* always rational, well-informed, or in their self-interest, as traditionally assumed. The nudge is a gentle strategy, a reminder, a prompt, or something that catches attention. It seeks to alter people's behaviour in a predictable and wanted way, without forcibly limiting their choices. It can also help correct our natural biases and negative behaviour, redirecting this to improve outcomes and wellbeing. Governments and councils use the nudge widely. For instance, there are signs painted on the footpath to remind people to watch their step, along with boldly labelled recycle bins to remind people to sort their waste as they bin.

Businesses, too, use this strategy in the workplace to help keep staff safe (e.g. painted footprints and lines on access routes used by speeding forklifts, pictures of hard hats and other protective gear). They are also used to try and influence consumer choices. Indeed, well-designed *company websites* demonstrate that they understand the *psychology* behind the *nudge*. For example, many have the following features:

- They include review or *star ratings* on products to show consumer popularity and trendiness (for those with a bias towards *herd behaviour*).
- Most have search facilities, and display the product brand or *logo* to make shopping easier for those consumers who know what they want (e.g. perhaps customers who follow the *status quo*).
- Most have smart overlays and *pop-up prompts*. These show the firm's special offers, new products, encourage customer sign-ups for emails, provide the buyer information on how many other people are looking at this product, and the product's green credentials or energy star rating.
- They often apply strategies to prime people's price expectations and decisions (e.g. the *anchoring effect*).
- Many have online *short cuts* or simple suggestions to make consumer decisions easier without limiting their choice. For example, options like:
  - *'The best picks for you'*
  - '*You could also like'*
  - *'Your Favourites'*.

When selling in a normal retail store:

- Some socially responsible supermarkets place *healthy* food with high star ratings at *eye level*, rather than down low on shelves, while others that are less concerned place tempting but unhealthy treats near checkout queues to appeal to impulsive consumers with *bounded willpower* or, perhaps, those with a short-term or *present bias*.
- Some stores place *quantity limits* on the number of units of a product that each customer can purchase at the one time. This is designed to give the appearance of scarcity, motivating increased sales.
- Some businesses advertise in *big print* their special offers like five packets of cereal for $10, when the hidden small print says that the unit price is $2. Again, this is an attempt to nudge consumers into purchasing more by pretending they are getting better value for their money.

3.4.3 Multi-branding to boost consumer sales

Multi-branding is a common selling strategy where one company owns others with different names, even though they may produce a similar product out of the one factory. There are lots of examples of this. For instance:

- L'Oreal owns 36 brands mostly producing cosmetic or beauty products including Garnier, Maybelline New York, and La Roche-Posay.
- Nestle incorporates over 2000 brands including KitKat and Nespresso.

- The Volkswagen group own Porsche and Skoda.
- Unilever includes Dove, Lipton and Magnum.
- Facebook incorporates Instagram, Messenger, WhatsApp and Novi.

What firms are trying to do is to drive up consumer sales. For example, in the kitchen, laundry, biscuit and healthcare sections of supermarkets, companies that multi-brand have more shelf space, attracting extra attention from consumers and higher total sales, without customers being aware that the one company produces several products on display. It also appeals to consumers who like to try new things or buy on impulse. In addition, for those buyers who decide to purchase a product based on a brand's good reputation, multi-branding offers a reliable choice. This can also help to boost profits.

3.4.4 Strategies used by successful businesses to boost consumer sales — case studies

While *not* all businesses are successful, we will take a quick look at how *two* successful companies, Apple Inc. and Amazon.com, have used various *strategies* to influence *consumers.*

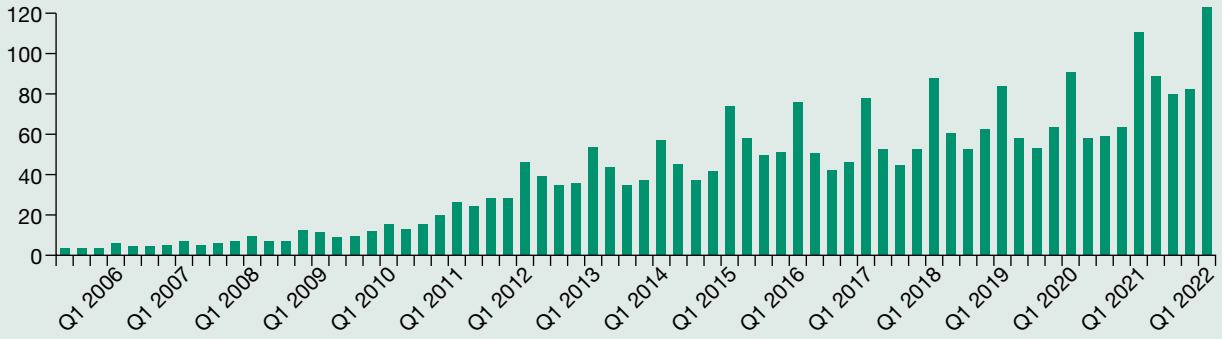
Case study: Apple Inc. — the effectiveness of strategies to affect consumer sales

Starting in 1976, Apple was founded by university dropouts, Steve Jobs and Steve Wozniak. Today, Apple is the dominant company in the market for mobiles, smart watches, and iPads (although it lost in the laptop wars to Microsoft). Apple has grown to be one of the world's most profitable companies making $57 billion in 2021. The business is currently valued at $2 trillion and generated revenue of $365 billion in 2021 (of which over 52 per cent came from the sales of iPhones).

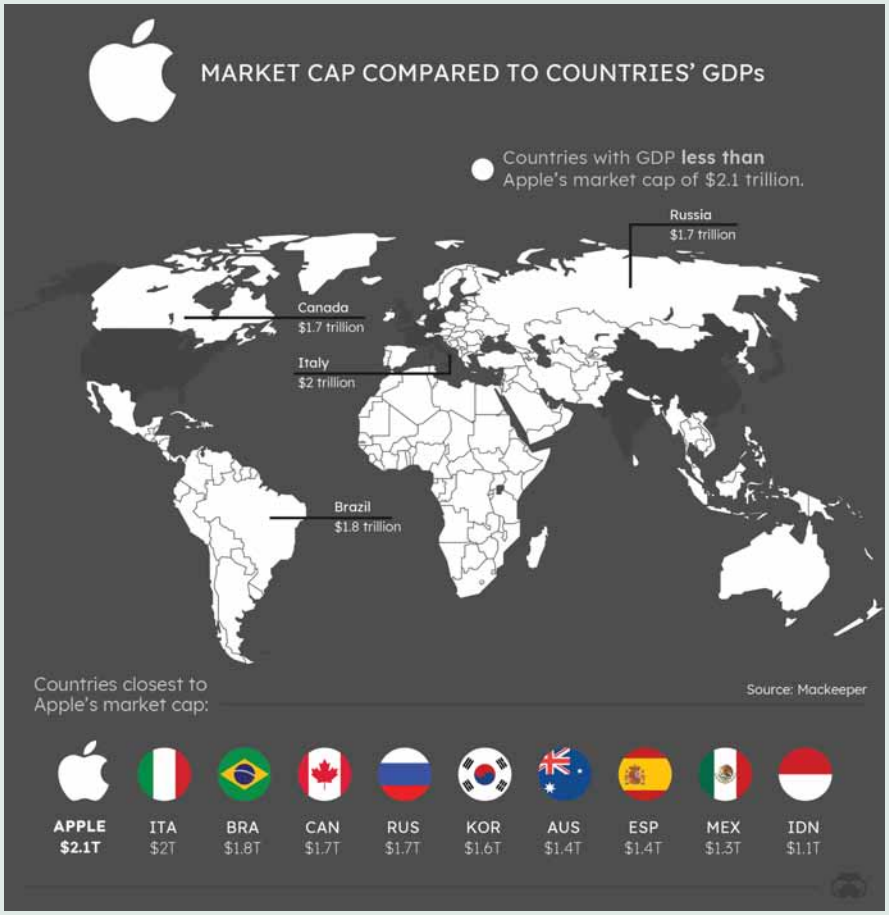
Referring to Figure 3.5, it seems that Apple must be using effective strategies that attract *consumers*. In graph 1, notice the consistent growth of quarterly revenue, while in graph 2, the company's size (measured in terms of the total market value of shares) is bigger than the GDPs of most countries (shown as white shading).

FIGURE 3.5 The growth of Apple as a tech company largely reflects its success in influencing consumers

Graph 1 — Apple's quarterly growth in revenue ($ billions)



Source: https://www.businessofapps.com/data/apple-statistics/.



Source: Visual capitalist, see https://www.visualcapitalist.com/the-tech-giants-worth-compared-economies-countries/.

Apple makes a product if it believes it can do it better than rivals

Although some firms appeal to consumers by inventing a new product, Apple tries to focus on making things that are better than its rivals. If that can't be done, typically, the product is not made. This attracts customers and builds a strong and trustworthy reputation, successfully driving up consumer sales. For example, with over 1 billion active iPhones in the world today, consumers must feel that it readily meets their needs.

The product is stylish, standardised, and easy for consumers to use

To have a wide appeal for consumers (many of whom are *not* tech savvy), Apple tries hard to design beautiful products that are simple and intuitive to use, even when moving between its range of items. This also helps to grow consumer loyalty and appeals to those who follow the *status quo* when they are purchasing their next mobile.

Consumers expect top service and an impressive in-store hands-on experience with knowledgeable service

Many consumers want to try before they buy and have a real *hands-on* experience, especially when buying technology devices. With this in mind, Apple set up its own purpose-built retail stores. Here, sales staff are more likely to ask, '*what would you like to experience today?*' rather than, *'what would you like to buy?'*. Clients get the impression they are special and are purchasing no ordinary product. The strategy is to appeal to consumers and meet their practical and emotional needs better than other brands. Apple knows that at the top end of their market, products are not just sold on price.

Keep ahead of rivals in product development

Today, Apple spend around $20 billion annually on research and development (R&D) so that they are a couple of years ahead in their product ideas against some of their rivals. Being innovative like this sets the industry standard. It appeals to consumers and helps to grow product trust, identity, and loyalty — developing a cult following, perhaps to encourage *herd behaviour*.

Social responsibility

Many consumers these days consider a range of factors, not just price, that influence whether they purchase a product. Companies with a poor reputation are often shunned if rival firms are adopting more socially responsible and environmentally friendly practices. Apple is trying to move in these directions. For example, it has a $350 billion commitment in the USA to promote greater racial equality. It has also moved towards using more recycled materials and no plastics in packaging, and has greatly improved energy efficiency for its product operations.

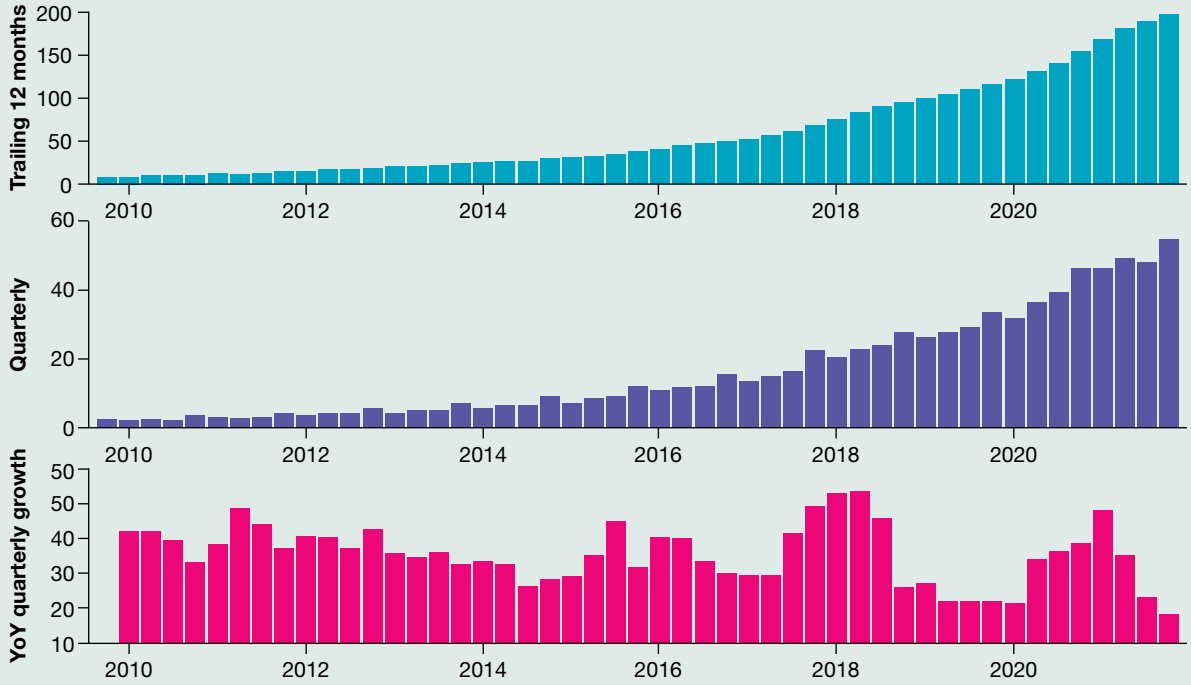
Case study: Amazon.com — the effectiveness of strategies to affect consumer sales

Amazon.com started in Jeff Bezos' garage in 1995 only selling books that he posted off to customers through the mail. Subsequently, Amazon has become the biggest e-commerce company in the world, marketing millions of different products that can be delivered to almost anywhere. Its website has over 5 billion site visits by consumers each month and so it should be no surprise that Amazon has quarterly sales revenues of around $130 billion, and annual gross profits of around $55 billion.

Figure 3.6 helps to illustrate some aspects of Amazon's remarkable success, including the expansion of gross profits (graph 1), its size against countries GDPs based on its capitalisation (graph 2), and the value of sales by global market zone (graph 3).

FIGURE 3.6 The growth of Amazon.com driven by consumer sales and customer satisfaction

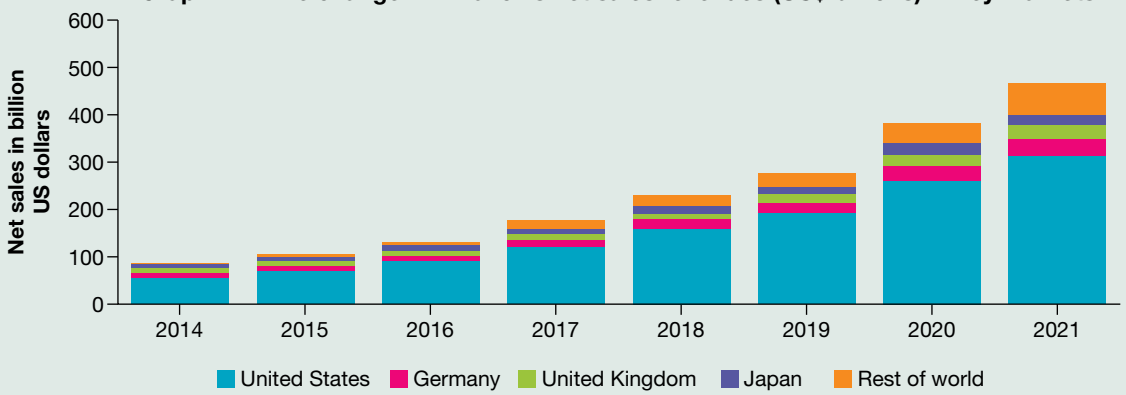
Graph 1 — The change in Amazon's quarterly and trailing annual gross profit, 2009–2022 (US$ billions



Source: Macrotrends, see https://www.macrotrends.net/stocks/charts/AMZN/amazon/gross-profithttps://www.macrotrends.net/stocks/charts/AMZN/amazon/net-income.

Source: Visual capitalist, see https://www.visualcapitalist.com/the-tech-giants-worth-compared-economies-countries/.

Graph 2 — The change in Amazon's net sales revenues (US$ billions) in key markets



Source: Graph copied from Statista, see https://www.statista.com/statistics/672782/net-sales-of-amazon-leadingmarkets/.

Amazon's expansion has been driven by a business model involving a *consumer-centered* approach. The centrepiece here is a selling and growth strategy called, the **Amazon flywheel**. This was unveiled in 2001 by the company's founder Jeff Bezos, and is illustrated here in Figure 3.7.

FIGURE 3.7 The Amazon flywheel concept for growing the company, which starts slow and gains momentum

The *Amazon flywheel* involves:

- having a wide product range
- maximising the customer's online shopping experience
- boosting sales and traffic volumes
- attracting more sellers who want to be listed on the site so as not to miss out on sales
- broadening the selection or product range available and further enhancing the consumer's experience.

In addition, growing using a business model like this, allows for:

- a lower cost structure (with smaller profit margins but bigger volumes) enhancing greater economies of large-scale production or operations
- using profits in the shorter term to lower prices
- further improving the experience for consumers, and
- boosting traffic volumes, adding to Amazon's momentum for its ongoing growth.

Consumer-focused and the consumer shopping experience

Shopping online, consumers want to conveniently and easily view the range of products available and find what they are looking for, go to the check-out and then monitor the despatch and arrival of their purchase. The Amazon website is set up to do this in a user-friendly way, even for those not well acquainted with online shopping. This enhances the experience for customers who will return for their next purchase and recommend Amazon to friends. It helps to grow the traffic volumes and the company's momentum and expansion. Customer service is an especially critical part of the shopping experience, including simple to use tracking tools and arrangements for returns. Problems are mostly dealt with promptly by effective customer service that has won various awards.

Diversification and a wide selection of products for consumers

Starting with selling books online, Amazon has certainly diversified. Nowadays, the company does this with over 350 million products, each containing photos and complete product information. This allows customers to choose and readily compare reviews. Sellers, too, are keen to get listed on the firm's site because otherwise they will miss out on sales. Partly because of the wide selection of products (for example, including over 3000 results for vegetable soup, or 35 000 results for nuts), Amazon has become the default shopping channel for many consumers.

Cheaper consumer prices

Customers often want the best product at the lowest possible price. Amazon does this by making a tiny margin on each sale, but then making up for this with huge sales volumes that then provide cost savings or economies of large-scale for their operations. In addition, with so much choice, sellers are even more conscience of their competitors, knowing consumers will make product comparisons.

Faster customer delivery

Consumers have a strong preference for fast access to their purchases, rather than face long delays and delivery times with expensive add-on shipping costs (i.e. they have a present bias). In general, Amazon offer two-day processing and shipping, sometimes free of charge, depending on the buyer's location. There are several reasons why this is possible ranging from its extensive warehouses network, operations that run around the clock (not just within normal work hours), the ownership of fleets of trucks and planes, the chartering ocean shipping, and the employment of over 1.6 million staff. These unrivalled logistics add to the positive shopping experience for consumers, ultimately driving success.

3.4 Activities

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3.4 Exercise on | **3.4 Quick quiz**

3.4 Exercise

1. **Explain** why it is important for firms to have a customer, or consumer-centred focus. **(2 marks)**
2. **a.** Drawing on the traditional viewpoint of consumer behaviour and on more recent behavioural economic theory, **identify** and **outline** the strategies used by firms to influence consumers. In your answer, refer to the 5 Ps of marketing and multi-branding. **Illustrate** your answer by referring to specific businesses. **(5 marks)**
   b. **Explain** what is meant by the concept of the *nudge*, when firms attempt to influence consumer behaviour. **(2 marks)**
   c. **Identify** and **outline** two examples of a nudge that might be used to sell trendy clothing. **(2 marks)**
3. This question is about Uber that has recently generated around $17 billion in revenue annually from transporting passengers, the delivery of Uber Eats, and other services.
   a. Using online research, **describe** the general nature of Uber Technologies, Inc.'s operations. **(4 marks)**
   b. Again, using research, **explain** how Uber has managed to appeal to so many consumers. **(4 marks)**
   c. **Examine** an Amazon flywheel type diagram adapted to Uber's operations. Referring to this diagram, **explain** how you think this strategy has helped to grow its customer base. **(3 marks)**

4. McDonald's is a successful business in Australia. Using online research, **identify** and **explain** *three* important strategies used by this company to affect the behaviour of consumers. **Explain** whether these methods differ from those used by its rival, Hungry Jacks. **(3 marks)**

Solutions and sample responses are available online.

3.5 Review

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3.5.1 Summary

The differences between traditional economics and behavioural economics

- *Traditional economics* predicts that when making economic decisions, consumers:
  - behave rationally
  - are selfish and self-interested
  - have ordered priorities
  - want to maximise personal gains, pleasure, or utility
  - always have perfect knowledge or complete information relating to the decision and do not act on impulse
  - dislike pain.
- *Behavioural economics* fills in the gaps left by the traditional viewpoint of consumer behaviour, to deepen our understanding. It proposes that consumers sometimes take *short cuts* and have *biases* that are used in decision-making. These lead to *less* predictable outcomes. The ideas include the concepts of:
  - bounded rationality
  - bounded self-interest
  - bounded willpower
  - herd behaviour
  - framing bias
  - anchoring effect
  - status quo
  - vividness
  - overconfidence
  - present or short-term bias
  - narrative fallacy
  - the nudge.

The effectiveness of strategies used by government to influence consumer behaviours

- When there are instances of *market failure* caused by particular consumer decisions, the government often uses strategies including:
  - *incentives* (to reward or encourage certain decisions)
  - *disincentives* (to punish or discourage certain decisions)
  - *educational advertising campaigns* (so people are better informed and make improved decisions).
- These policies consider both the traditional viewpoint of consumer behaviour, as well as the theories of more modern behavioural economics. In this context, the aim of government intervention is to increase efficiency in resource allocation and improve society's general wellbeing.
- Government strategies to influence consumer behaviour include:
  - the *excise tax on alcohol*, making it more expensive to buy, contracting consumer demand and reducing personal and social harm (e.g. considers ideas of self-interest, bounded willpower and perhaps herd behaviour)

- the *excise tax on tobacco*, making it more expensive to buy, contracting consumer demand and reducing personal and social harm (e.g. considers ideas of self-interest, bounded willpower, and perhaps herd behaviour)
- *educational advertising campaigns* used to provide improved knowledge and alert people to the dangers of smoking, drinking, COVID-19 threats, and sun exposure (e.g. considers self-interest and/or bounded self-interest, bounded willpower, and perhaps herd behaviour)
- *private health insurance tax rebate* and free COVID-19 vaccinations and testing seek to make it cheaper and more attractive for consumers, increasing demand and easing pressures on the public health system (e.g. appeals to self-interest)
- *rebates or subsidies for rooftop solar panels* to make them cheaper and more attractive for consumers, along with advertising that is designed to help reduce CO_2 emissions from burning fossil fuels so as to improve economic and environmental outcomes (e.g. appeals to self-interest and/or bounded self-interest)
- being guarantor under the *first home loan deposit scheme* for consumers (who are finding it impossible to meet the normal 20 per cent deposit requirement by banks) so they can get a loan with as little as 5 per cent deposit, supposedly making it easier for some to own their home (e.g. appeals to the ideas of self-interest, and those with a short-term or present bias). The recently announced *Help to Buy* scheme acts as an incentive to help low-income, younger buyers into the property market by the government becoming part owner of the house.

- Some of these government strategies have been quite effective. For example:
  - the rise in the rate of excise tax on tobacco and alcohol, along with laws limiting their purchase
  - some campaigns involving educational advertising
  - free COVID-19 vaccination and testing programs
  - solar panel rebates or subsidies.

The effectiveness of strategies used by businesses to influence consumer behaviours

- All businesses use strategies to affect consumers and increase sales. However, some are more successful than others.
- Successful businesses are *consumer-centred* and try to make the shopping or buying experience a very positive one.
- To steer consumers towards buying their product and increasing sales, firms use marketing ideas drawn from both the *traditional viewpoint* of consumer behaviour, as well as the more recent ideas drawn from *behavioural economics*. These include:
  - Applying the right mix of *the 5 Ps of marketing*:
    - Product — a product that is better than the rest, meets a need, and solves a problem for consumers
    - Price — must be profitable but also offers consumers value for money
    - People — able to enhance the consumer's shopping experience
    - Place — convenience for consumers and depends on the product or service sold
    - Promotion — appropriate and positively engages the target consumer audience.
  - Using various *nudges* to gently push consumer decision in the required direction so they purchase the company's products and services.
  - Utilise *multi-branding* to attract more consumers and drive up sales.
- One company that has successfully attracted many customers is *Apple Inc*.
  - Typically, Apple only makes a product if it feels that it will be better than its rivals.
  - The product is stylish, standardised, and easy for consumers to use.
  - Consumers expect top quality service and an impressive in-store, hands-on experience with knowledgeable service.
  - The company tries to keep ahead of rivals through product research and development.
  - The firm is attempting to become more socially and environmentally responsible to help increase its acceptance.

- Amazon.com is another company that has been successful by trying to make consumers its number one focus. Growing success is based on the concept of the so called, Amazon flywheel:
  - Amazon's flywheel gains momentum
  - Has a wider product range
  - Improves the consumer's shopping experience
  - Grows traffic volumes
  - Attracts even more sellers seeking increased sales, which adds to competition, increasing the product range
  - Even more economies of large-scale production, lowering average costs
  - Cheaper consumer prices
  - Further improves the shopping experience, and so on, growing the business.

3.5.2 Key terms

Amazon flywheel is the model currently used to progressively grow online sales and the company, by maximising the customer's online shopping experience, boosting sales and traffic, attracting more sellers and competition, broadening the selection or product range available, further enhancing the consumer's experience, and so on. In addition, growing the business like this allows for greater economies of large-scale production or operations. It means a lower unit cost structure (with smaller profit margins but big volumes) and reduced prices, growing the company.

Anchoring comes from behavioural economics. Anchoring is an arbitrary starting or reference point that affects a consumer's perception. It is used by consumers to make a judgement, comparison, assessment or ranking of possible choices. It can be used by businesses to manipulate consumer choice.

Behavioural economics is a relatively recent field of study based on the ideas drawn from psychology and economics. It proposes that consumers do not always make rational and self-interested decisions. Instead, they often take short cuts and have biases that affect their choices.

Bounded rationality is an important theme in behavioural economics. It suggests that in making decisions, there are limits on consumer rationality. Consumers do not always have complete information for every decision. Sometimes they do not act in a self-interested way, and often they take short cuts and have biases that can reduce the quality of their decisions.

Bounded self-interest is an idea that comes from behavioural economics. It says that while consumers can be selfish, this is not always the case. Their decisions can be affected by other beliefs like fairness and a desire to help others.

Bounded willpower is an idea from behavioural economics, and says that sometimes consumers do not have the necessary willpower or determination to make rational decisions. Instead, they can end up taking the easy and less rational option, which may not be in their best long-term interest and, hence, may later regret their choice.

Excise tax is an indirect levy used by the government to affect people's behaviour by making the consumption of some potentially socially harmful goods, like alcohol and tobacco, more expensive and less wanted. By acting as a financial disincentive to consumers, it can change their behaviour.

First Home Loan Deposit Scheme is used by the government to help up to 10 000 eligible first-home low-income buyers to purchase their home sooner with a saved deposit of as little as 5 per cent of the purchase price (normally the required deposit for a bank loan is $20 000). It aims to be a financial incentive for home ownership.

Framing bias is an idea from behavioural economics. It says that consumer choices can depend on how the *same* information, facts or ideas are presented. It can be used to increase the likelihood that a particular choice will be made.

Herd behaviour is an idea from behavioural economics and suggests that, sometimes, consumers just follow what the rest of their peers are doing, rather than reaching their own rational decision.

Market failure exists when the free or unregulated operation of the price system (demand and supply) causes resources to be used inefficiently and in ways that reduce society's general satisfaction and wellbeing. Examples of market failure can include situations where there is weak competition, incomplete or inaccurate information, the under-provision of public goods, negative externalities, and the use of common access resources. It is normally lessened by government intervention to change behaviour (e.g. pass laws, use regulations, run educational advertising, use of an excise tax or pay subsidies).

Marketing includes a range of strategies that businesses use to attract consumers, capture their attention, get them interested, and sell products.
Multi-branding is a common selling strategy where one company owns others with different names, even though they may produce a similar product out of the same factory.
Narrative fallacy is an aspect of behavioural economics where consumers can be sucked into various scams, simply because of the plausible and impressive way information is presented, often focusing on a story with few facts.
Nudge is a marketing idea drawn from behavioural economics. It involves providing a gentle reminder, a prompt, or something that catches attention and seeks to alter people's behaviour in a predictable and wanted way, without forcibly limiting their choices.
Overconfidence bias is an aspect of behavioural economics where in making decisions, consumers overestimate their current state of knowledge or skill and, hence, sometimes make ill-founded and non-rational choices.
Present bias is an aspect of behavioural economics where in making a decision, consumers have a bias towards those that provide more immediate benefits, rather than being more patient and taking a long-term assessment that may ultimately be more beneficial and rational. Also known as short-term bias.
Risk aversion bias is an aspect of behavioural economics where some people make choices that place more weight on avoiding making a loss, rather than making an equivalent gain.
Solar panel rebates are a government financial incentive using subsidies to encourage households to install solar roof panels, by making them cheaper. The scheme is designed to help reduce CO_2 environmental emissions and slow climate change.
Status quo is a short cut and an aspect of behavioural economics where consumers fail to examine all the options — instead, sticking with what they have previously decided.
the five Ps of marketing involved in selling to consumers includes consideration of the Product (i.e. one that is better than the rest, meets a need, and solves a problem for consumers), Price (i.e. must be profitable but offer value for consumer's money), People (i.e. staff who are able to enhance the consumer's shopping experience), Place (i.e. convenience for consumers), and Promotion (i.e. appropriate strategy that engages the target consumer audience).
Traditional viewpoint of consumer behaviour is that when making economic decisions, consumers are rational, self-interested, knowledgeable or well informed, try to maximise marginal utility or satisfaction, and have ordered preferences. This means that their actions are predictable.
Vividness bias is an aspect of behavioural economics where in making decisions, consumers place undue weight on just a small piece of information that stands out and catches their eye. Other important considerations in a decision are downplayed, so this can lead to irrational decisions.

on Resources

Digital document Topic summary (doc-37940)
Key terms glossary (doc-37947)
Crossword (doc-38871)
Wordsearch (doc-38872)
Match-up definitions (doc-39028)

3.5.3 Practice school-assessed tasks

OUTCOME 3

Explain how behavioural economics complements traditional understandings of decision-making, and analyse the effects of behavioural economics insights on consumers and other economic agents.

TASK: AN INVESTIGATION AND REPORT — EXPERIMENTS WITH BEHAVIOURAL ECONOMICS

Part A — Do people always make self-interested and rational decisions? As an experiment in behavioural economics, play the *Ultimatum Game.* **(10 marks)**

Behavioural economists have conducted experiments to demonstrate that individuals do not always act rationally, as traditionally assumed. We are going to *test this theory of behaviour*. Here, two people are needed, preferably strangers. Player 1 is given $100 and is required to share it with player 2 by deciding *how* to split or divide the money. *Only* if player 2 *accepts* the offer made by player 1, will either player get to keep the money. The traditional theory of rational behaviour would predict that even if the split is very uneven, where player 1 perhaps keeps $99 and player 2 receives just $1, player 2 *would accept* the offer thinking that it's better to go away with something than nothing! However, this may *not* necessarily be the case if player 2 is motivated by other values; for example, perhaps player 2 believes that player 1 is being *unfair* and *greedy*. So, while *not* in their self-interest, player 2 may *reject* the offer of $1 simply because player 1 is seen as unreasonable. Player 2 may even get pleasure in rejecting the offer, perhaps to teach player 1 a lesson! Had the offer been 50/50 or 60/40, perhaps it would have been accepted. In other words, there are limits to self-interest in making decisions, possibly reflecting personal values like fairness.

To complete this research task, you (and perhaps with the help of a partner) will need to complete this game *five* times, asking 5 different people to be player number 2. As player 1, you will trial your offer (or split of the money) differently for each game, recording results in a table similar to that below:

Record of student results		
Game number 1–5	**The offer or split of the $100 for each of the 5 games**	**Result for each game (player 2 agrees/disagrees, plus a comment about the reaction of player 2)**
Game 1/first player 2	Offer 1 — $99 to you, $1 player 2	
Game 2/second player 2	Offer 2 — $90 to you, $10 player 2	
Game 3/third player 2	Offer 3 — $80 to you, $20 player 2	
Game 4/fourth player 2	Offer 4 — $60 to you, $40 player 2	
Game 5/fifth player 2	Offer 5 — $50 to you, $50 player 2	

Using this research data, you will be able to draw conclusions about whether most consumers behave rationally (i.e. the traditional viewpoint). In writing up your report on the experiment, you might like to set it out under the following headings:

1. Title of the task
2. Aim of the task
3. Setting up the experiment
4. Table of results for the 5 games
5. Conclusions (about the extent to which people acted in a rational, self-interested way).

Part B — When making decisions, do people have a short-term or present bias, or a long-term preference?

There are two options here from which to choose.

Option 1: Student study preferences **(10 marks)**

The traditional viewpoint is that people behave rationally, although behavioural economics has challenged this. The task here involves completing research using a simple *questionnaire* designed to test student attitudes about receiving financial incentives to lift their grades in Economics. The reward for action will either be paid over the short-term or over a longer term. The research task seeks to test whether students have more of a short-term, immediate, or *present bias*, as opposed to a receiving a greater reward over the longer term. You (and perhaps a partner for assistance) need to ask 10 students to complete the *questionnaire*. While the sample size is small, let's see if any conclusions are possible and whether they match what behavioural economic theory predicts.

Here are the two deals for each student to consider before giving their response:

- Deal 1 — Would the student prefer to get $10 as a reward, on condition that they manage to lift their score in next week's Economics test by one grade above their previous running average? The reward for success would be paid immediately after results are available (assuming a successful outcome).
  OR
- Deal 2 — Would the student prefer to get $500, but only on condition that they successfully manage to lift their end-of-semester Economics score by one grade (assuming they are not already on an A grade)?

Record of survey results			
Student number 1–10	**Student answers: Deal 1 (smaller immediate reward)**	**Student answers: Deal 2 (bigger long-term reward)**	**Any comments**
Student 1			
Student 2			
Student 3			
Student 4			
Student 5			
Student 6			
Student 7			
Student 8			
Student 9			
Student 10			

Again, in writing up your report on the experiment, you might like to set it out under the following headings:

1. Title of the task
2. Aim of the task
3. Setting up the experiment
4. Table of results for the 10 students surveyed
5. Conclusions (to test the extent to which Economics students have a present or short-term bias).

OR

Option 2: Children's reward preferences **(10 marks)**

As an alternative to test present bias, this experiment could be conducted with a group of 5 young children in a room and some yummy lollies that everyone is sure to love (e.g. snakes). Each child will have a bowl with 5 lollies in it sitting in front of them (**Warning: You must first check carefully with each person to ensure that they have no allergy concerns or reactions to these lollies**). The offer is that the children are told they have a choice in their behaviour:

- Option 1 — Would you like 1 lolly after you wait 5 minutes (in which case you would be disqualified from receiving even more later)?
  OR
- Option 2 — Would you like to receive all 5 lollies, but only on condition that you are prepared to sit there patiently and wait for 15 minutes?

The survey results could be recorded on a table similar to that below:

Record of survey results			
Child number 1–5	**Child answers: Option 1 (smaller immediate reward)**	**Child answers: Option 2 (bigger long-term reward)**	**Your comment**
Child 1			
Child 2			
Child 3			
Child 4			
Child 5			

Again, in writing up your report on the experiment, you might like to set it out under the following headings:

1. Title of the task
2. Aim of the task
3. The process and setting up the experiment
4. Table of results for the 5 children
5. Conclusions (to test the extent to which children have a present bias or short-term bias).

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Digital document Practice school-assessed coursework (doc-38076)

3.5 Exam questions

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3.5 Section A: Multiple choice questions

Question 1

Which of the following descriptions is *not* applicable to the *traditional viewpoint* of consumer behaviour?

A. Consumers have ordered preferences.
B. If they can, consumers stick to the status quo when faced with decisions rather than consider other options.
C. For consumers, the maximisation of marginal utility is important.
D. Consumers spend much time researching their options.

Question 2

Which of the following statements about business *behaviour and decision-making* is *least* correct?

A. Most firms only seek to maximise profits over the short-term and not the long-term.
B. Profit maximisation typically means that most businesses seek to minimise their costs.
C. To maximise profits over the long-term, many firms need to use strategies that grow their customer base and level of sales.
D. Experience from some successful companies like Amazon shows that firms are often more likely to succeed by putting the customer first and creating a positive shopping experience.

Question 3

Governments sometimes intervene and use incentives and disincentives to change behaviour and reduce *market failure*. Which of the following statements is *least* correct?

A. Market failure occurs when price signals cause resources to move into areas that reduce society's general wellbeing.
B. Market failure can mean that the production of profitable goods can sometimes reduce society's general wellbeing.
C. Market failure can result in the production of goods and services that involve wider social costs and reduce wellbeing.
D. Market failure cannot occur when firms are price makers.

Question 4

Which statement in relation to *behavioural economics* is *least* correct?

A. Most consumers have bounded rationality and take short cuts in making decisions.
B. Most consumers have biases that can cause them to be non-rational when they make decisions.
C. Consumers only seek to maximise satisfaction and utility when they make decisions.
D. Sometimes, consumers think of other people when making decisions, even if this means a loss for them.

Question 5

Feeling hungry after school, you go to the supermarket and instead of buying fresh fruit, you purchase and immediately consume two giant blocks of chocolate, later having regrets after feeling ill. This is most likely to be an example of:

A. narrative fallacy.
B. overconfidence.
C. market failure.
D. bounded willpower.

Question 6

There are two identical glasses of soft drink — one is labelled 'half full' and the other is labelled 'half empty'. You choose the one marked 'half full'. Behavioural economics would be most likely to say that this is an example of:

A. bounded self interest.
B. bounded rationality.
C. framing effects.
D. herd behaviour.

Question 7

Referring back to question 6 above, this decision could *best* be viewed as an example of:

A. rational behaviour.
B. irrational behaviour.
C. maximising utility.
D. bounded willpower.

Question 8

After hearing many news reports of lots of investors selling their shares during the collapse of the stock market, you also decide to sell. This would be *best* described as an example of:

A. framing bias.
B. herd behaviour.
C. vividness.
D. rational decision-making.

Question 9

Running up a huge credit card debt for non-necessities when you know you will struggle to meet repayments is *most likely* to be an example of:

A. vividness.
B. overconfidence bias.
C. anchoring effect.
D. bounded willpower.

Question 10

The government decides to pay students $500 at the end of each year if they successfully complete Years 11 and 12 with scores of at least a B average. This could be seen as:

A. an incentive to help overcome the problem of present bias.
B. a policy to help reduce a market failure where too few resources are allocated towards gaining skills and knowledge.
C. a measure designed to encourage students to do more homework.
D. all of the above.

Question 11

You are shopping in the supermarket for steak. On the food label, one packet is marked, 'contains 20 per cent fat' and the other is marked, 'is 80 per cent fat free'. You go for the latter pack of steak. This is an example of:

A. framing bias.
B. anchoring effect.
C. bounded willpower.
D. all of the above.

Question 12

It's a hot day and you would love an ice-cream. Your mother said, '*yes* you can do that', but also made another offer that if you immediately clean up your disgusting room first (that will take you about 2 hours), you can have a can of soft drink as well. You decide to just go for the ice-cream now. This is most *likely* to be an example of:

A. framing bias.
B. anchoring effect.
C. rational decision-making.
D. none of the above.

Question 13

To do their bit for the environment, one supermarket is trying to decide which option is likely to be more successful in changing consumer behaviour — either charging $0.50 for each plastic carry bag, or if consumers bring their own giving them a discount off their total bill of $0.50. Based on behavioural economic theory, they decide that the $0.50 per bag would be a more effective way of reducing plastics than offering the discount. Their reasoning is likely to be based on the idea that:

A. consumers have a greater aversion to loss than gain.
B. consumers will do as others do and display herd behaviour.
C. the anchoring effect will make it more effective.
D. the status quo will make it more effective.

Question 14

A store selling electrical appliances marks down a TV from $1000 to $999.99. Their reasoning *could* be based on:

A. many consumers make rational decisions.
B. consumers want to maximise utility.
C. consumers are influenced by the anchoring effect.
D. all of the above.

Question 15

Insurance companies are most likely to charge young drivers more for premiums because:

A. the overconfidence by some young drivers means higher average accident rates and payouts.
B. they want to keep premium rates lower for experienced and more cautious drivers.
C. young people are more likely to travel greater distances and use their vehicle more frequently than old people and hence have a greater chance of accidents.
D. all of the above are likely.

Question 16

Amazon.com has used various strategies to attract customers, grow profits and expand their business. Which answer is *least* correct?

A. Amazon takes a very low profit margin on each sale, keeping prices down.
B. Amazon's low prices attract extra consumers or traffic so more sellers want to be listed, adding to greater consumer choice and price competition.
C. Amazon sells mostly poor quality, dodgy products because of weak competition.
D. Amazon gains economies of large-scale operations, cutting unit costs and allowing them to keep prices lower.

Question 17

Which of the following is *not* classified as a *nudge*?

A. Putting up signs drawing attention to the free fresh fruit for children to eat whilst parents are shopping at the supermarket
B. Well-known sporting personalities endorsing the consumption of Performance Lite Milk
C. The anti-drink drive advertising campaign
D. The excise tax on petrol

Question 18

Which of the following *is* seen as a *nudge*?

A. A law requiring that all bike riders wear helmets
B. Fines for leaving litter on the beach
C. A fitness club allowing free trial sessions for potential patrons
D. An automatic homework detention after school when tasks are not completed on time

Question 19

The government introduces a tax on sellers of sugary soft drinks. This would change consumer decisions and behaviour by:

A. pushing up the price to act as a disincentive.
B. depressing consumer demand.
C. making these drinks less profitable to sell, reducing the number of sellers and supply.
D. all of the above.

Question 20

Which statement is *most* correct about the likely impact of a $5000 government subsidy paid to unemployed individuals who undertook and successfully completed a two-year, skills training course that was designed to reduce market failure?

A. There would be an increase in the demand for skills courses at tertiary institutions and training colleges.
B. It would be seen as an incentive for consumers of education, possibly changing their behaviour.
C. It might be less effective and popular than originally hoped because of its long-term nature and the present bias of many individuals.
D. All of the above responses to this subsidy may apply.

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Digital documents Multiple choice answer grid (doc-37956)
Multiple choice answers (doc-37957)

3.5 Section B: Extended response questions

Question 1 (4 marks)

Clearly **distinguish** the traditional viewpoint of consumer behaviour and decision-making from that proposed by behavioural economic theory.

Question 2 (4 marks)

Distinguish the following terms:

- Bounded self-interest and anchoring effect
- Bounded willpower and herd behaviour

Question 3 (3 marks)

You are about to purchase a new electric scooter for getting around the neighbourhood with your mates. Referring to behavioural economic theory, **identify** and **outline** three non-rational *biases* that would be likely to affect your decision between brand A (the Segway Ninebot Kickscooter Max) and brand B (the Glion Dolly).

Question 4 (3 marks)

Assume that as part of its promotional advertising campaign, the company selling the Razor E100 electric scooter was desperately trying to lift its profile amongst potential scooter consumers. Identify and outline three *nudge* strategies that the company may try.

Question (5 marks)

The Australian government often intervenes to affect our behaviour and reduce market failure.

a. **Explain** the meaning of *market failure*. **(1 mark)**

b. **Identify** two important examples of market failure that the Australian government attempts to fix through its policy intervention. **Explain** why these problems exist. In each case, **outline** an appropriate corrective policy that has been used by the government. **(4 marks)**

Question 6 (3 marks)

Examine the three images relating to Burger King. Assume these were used as part of an advertising campaign to boost sales. Referring to the explanations proposed by behavioural economic theory, **identify** and **outline** the type of bias or irrational behaviour that may cause some consumers to take short cuts and purchase this product:

a.

b.

c.

Question 7 (5 marks)

Examine the images below for two advertisements for the same vehicle, before answering the questions that follow.

Just The Facts

Effective Framing

a. **Explain** what is meant by a *framing bias* as a concept used in behavioural economics. **(2 marks)**

b. **Explain** the nature of the advertising framing bias in the lower part of the image, and how this might affect the decision made by consumers. **(3 marks)**

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UNIT

2 Economic issues and living standards

AREA OF STUDY 1

Economic activity

OUTCOME 1

Explain the purpose of economic activity, the distinction between material and non-material living standards and the factors that may affect levels of economic activity and growth, discuss the costs and benefits of economic growth and examine the impact of economic activity on living standards using alternative measures.

4 Economic activity 199

AREA OF STUDY 2

Applied economic analysis of local, national and international economic issues

OUTCOME 2

Explain the factors that affect two economic issues at a local, national and international level and evaluate actions to address the issues.

5 The changing labour market 287

6 The economics of international trade 341

7 The distribution of income and wealth 395

8 Economics and the environment 455

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TOPIC

4 Economic activity

UNIT 2 AREA OF STUDY 1

Economic activity

OUTCOME 1

On completion of this unit the student should be able to explain the purpose of economic activity, the distinction between material and non-material living standards and the factors that may affect levels of economic activity and growth, discuss the costs and benefits of economic growth and examine the impact of economic activity on living standards using alternative measures.

LEARNING SEQUENCE

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4.1 Overview

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4.1.1 Introduction

In Economics Unit 1, we investigated *microeconomics* and the operation of individual markets, and the behaviour of consumers, businesses and governments as economic agents making decisions within those markets. Now it's time for some *macroeconomics* where we look at the bigger picture of the whole economy that reflects the *collective* impact of decisions made across the hundreds or individual markets.

Our studies will start with a look *economic activity*, and the main drivers that influence levels of national spending, production, employment, and incomes, and see how these factors greatly influence material and non-material living standards. We will especially focus on economic growth — its measurement and determinants, and its impacts — both good and bad on our general wellbeing.

Along the way, you will develop important economic skills including the use of models and be able to collect and analyse data.

4.1.2 What you will learn

Key knowledge

Use each of the points from the VCE Economics Study Design below as a heading in your summary notes.

Key knowledge	Subtopic
The purpose of economic activity	4.2
The meaning of material and non-material living standards	4.3
The five-sector circular flow model of the economy	4.4
The business cycle	4.5
Types of economic indicators, such as leading, lagging and coincident	4.6
The relationship between the business cycle and economic indicators	4.7
The meaning and importance of aggregate demand and its components	4.9
The factors that may affect the level of aggregate demand and the level of economic activity	4.9
The meaning and importance of aggregate supply	4.10
The factors that may affect the level of aggregate supply and the level of economic activity	4.10
The measurement of economic growth using changes in real Gross Domestic Product (GDP)	4.11
The potential benefits of economic growth, such as growth in material living standards, improved non-material living standards, employment opportunities and economic development	4.12
The potential costs of economic growth, including boom and bust economic cycles, congestion and pollution, environmental damage, potentially widening inequality and 'affluenza'	4.13
The limitations associated with using real GDP and real GDP per capita to measure changes in living standards	4.14
Alternative measures of economic activity and living standards	4.15

Key skills

These are the skills you need to demonstrate.

Key skills
Define key economics concepts and terms and use them appropriately
Construct and interpret economic models including the business cycle and the five-sector circular flow model of the economy
Gather, synthesise and use economic data and information from a wide range of sources to analyse economic issues
Identify trends, patterns, similarities and differences in economic data and other information
Discuss the potential costs and benefits associated with increasing economic activity

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Digital document Key terms glossary (doc-37948)

4.2 The nature and purpose of economic activity

KEY KNOWLEDGE

- The purpose of economic activity

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In each economy, lots of people are involved in producing and selling goods and services that we need in order to help satisfy our many needs and wants. We call this production process, *economic activity*.

4.2.1 Definition of economic activity

Economic activity *is simply a term used to describe the process of making or selling goods and services*. Each day, most of us perform *two* main types of *activities*, but for measurement purposes, only some are classed as *economic*:

- ***Economic activities:*** With the odd exception, *economic* activities are those that use scarce resources to produce and sell goods and services in exchange for money, to earn **income** and to make a living. At the national level, activity involves the output of primary (rural and mining), secondary (manufacturing), and tertiary (services) industries. So, a farmer producing wheat, a teacher taking a class, a plumber fixing a tap, a doctor operating on a patient, a check-out person in a supermarket, a council employee collecting waste, a builder constructing a house, or the CEO of a company like Qantas or BHP making decisions — all are performing *economic activities* because they are producing and selling goods and services that are exchanged for money or income.
- ***Non-economic activities:*** In contrast, **non-economic activities** are generally not sold for money but are done for emotional reasons, concern for others, or on a volunteer basis. Here we might think about cutting the lawns at home, painting the house, donating blood at the Red Cross, cleaning up your bedroom, looking after your younger brother, volunteering for the Salvation Army's door knock collection, playing basketball for your local team, helping a friend with their homework or cooking the evening meal. These are classified as non-economic activities, partly because they are often done to help others and are not designed to earn money. Of course, had you received money for doing the lawns or tutoring your friend, these non-economic activities might then be seen as economic in nature.

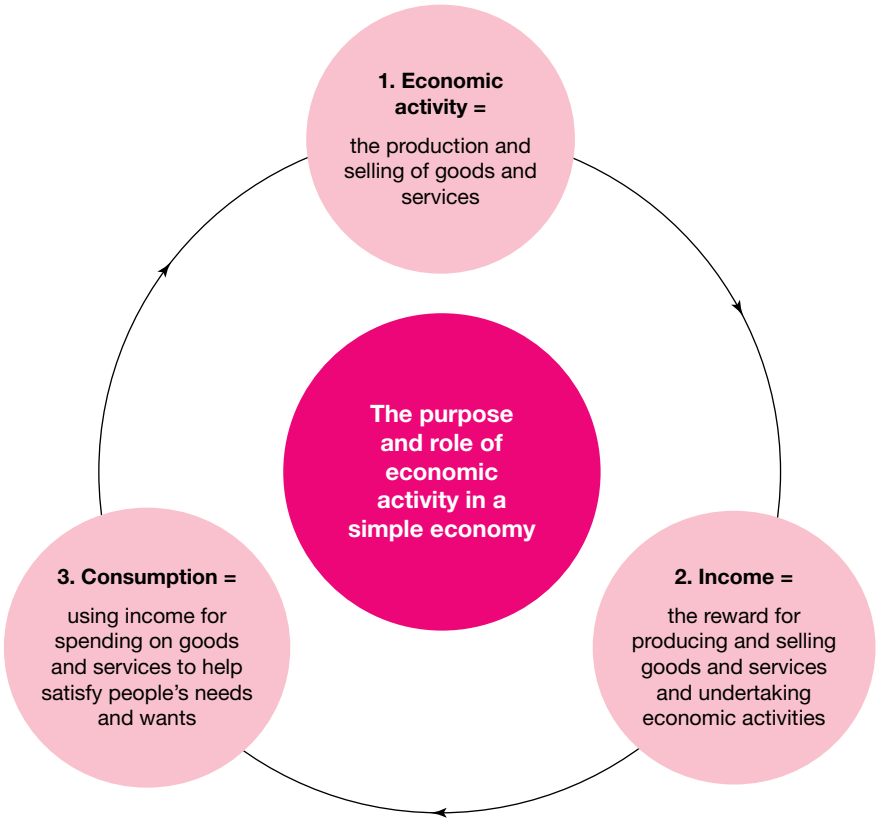
As we shall detail later, *Gross domestic Product* (GDP) is a commonly used measure of the total value of a nation's output of finished goods and services resulting from all types of economic activities. It is measured over either a 3-month or 1-year period. As such, GDP *excludes* the sort of non-economic activities just mentioned, even though both types of activity can impact our *overall living standards*. In addition, while some things like the sale of illegal drugs, crime money, selling on the black market, and undeclared work done for cash, all represent economic activities and involve the payment of incomes, they are not included in the *official* GDP data, because their value is usually unknown.

4.2.2 The purpose of economic activity

From our earlier studies, we realise that people (individuals, families, businesses, and governments) have almost infinite wants, but unfortunately, the resources available to satisfy these wants are relatively limited. This gives rise to the basic economic problem of *relative scarcity*. Scarcity forces us to make choices between alternative uses for our natural, labour and capital resources. Despite our best efforts to use these resources efficiently, not all wants can be satisfied. There are *not* enough resources to go round, and this *limits* the level of *economic activity* or production. So, *the main purpose of economic activity is to use our available resources efficiently to produce and sell those goods and services that best help to maximise the general satisfaction of society's wants and wellbeing*.

In Australia's predominantly market economy involving the operation of the price system, consumers largely direct resources into economic activities that are most valued or wanted. In other words, different types of economic activity or production allow people to earn *income* that can then be used to help satisfy their many needs and wants through the *consumption* of goods and services. This has an important influence on Australian *living standards. Consumption* (influencing living standards) is the ultimate purpose or goal of economic activity. So, up to a point, *higher* levels of economic activity (production) can allow for higher consumption, improving most (but not all) aspects of *living standards*. In contrast, *lower* levels of economic activity restrict our incomes and consumption, and can have mostly negative effects on living standards.

FIGURE 4.1 The end purpose of economic activity is to use the incomes generated to help satisfy our needs and wants through the consumption of goods and services.



4.2 Activities

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4.2 Quick quiz on | **4.2 Exercise**

4.2 Exercise

1. **Define** the term, *economic activity*. **(1 mark)**
2. **Examine** the figure below. **List** six economic activities represented in the image. **(3 marks)**

3. **Distinguish** economic activity from non-economic activity. **(2 marks)**
4. **Examine** the table below. Briefly **outlining** your reasons, **classify** each item as to whether it is an *economic* activity or a *non-economic* activity. **(5 marks)**

Item	Classification and reasons
a. You have a job at McDonalds on Saturdays	
b. A farmer sells 300 sheep to another farmer in NSW	
c. You attend a day event run by Clean Up Australia Limited	
d. Cathy spends 3 hours a day looking after her mother	
e. After John hurt his wrist playing footy, he saw his doctor and had an x-ray	

5. **a. Name** the measure used by a country to estimate its overall level of economic activity. **(1 mark)**
   b. Outline why it is not possible to accurately measure the total value of all economic activity in a country over a period. **(1 mark)**
6. **a. Explain** the end or ultimate *purpose* of economic activity. **(2 marks)**
   b. Outline the links between the level of economic activity and material living standards. **(2 marks)**

Solutions and sample responses are available online.

4.3 The meaning of material and non-material living standards

KEY KNOWLEDGE

- The meaning of material and non-material living standards

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4.3.1 Definition and nature of living standards

In all economies, the main *purpose* of *economic activity* is to help *satisfy* society's needs and unlimited wants using the limited resources available. The *extent* to which this satisfaction is successful will have a direct impact on *Australian living standards*.

Living standards relate to our general level of *wellbeing*. As shown in Figure 4.2, there are *two* main elements that affect our general or *overall* living standards:

- **Material living standards** are affected by the annual average level of income and consumption per person per year.
- **Non-material living standards** reflect the quality of daily life.

FIGURE 4.2 Factors influencing our overall living standards and our general wellbeing

Overall living standards

Material living standards reflect . . .

- Income per person
- Level of consumption of goods and services per person
- The purchasing power of incomes.

Non-material living standards reflect . . .

The quality of daily life
- Happiness
- Life expectancy
- Mental and physical health
- Freedom
- The state of the environment
- Leisure time
- Crime rates
- Literacy rates
- Quality of relationships

FIGURE 4.3 Internationally, every country faces decisions about how to use scarce resources in order to produce goods, services and incomes. In Malaysia, Borneo rainforests are being cleared to make way for palm oil plantations. Are there benefits to having a strong economy if it is destroying its environmental base, threatening future living standards?

4.3.2 How changes in the level of economic activity can affect living standards

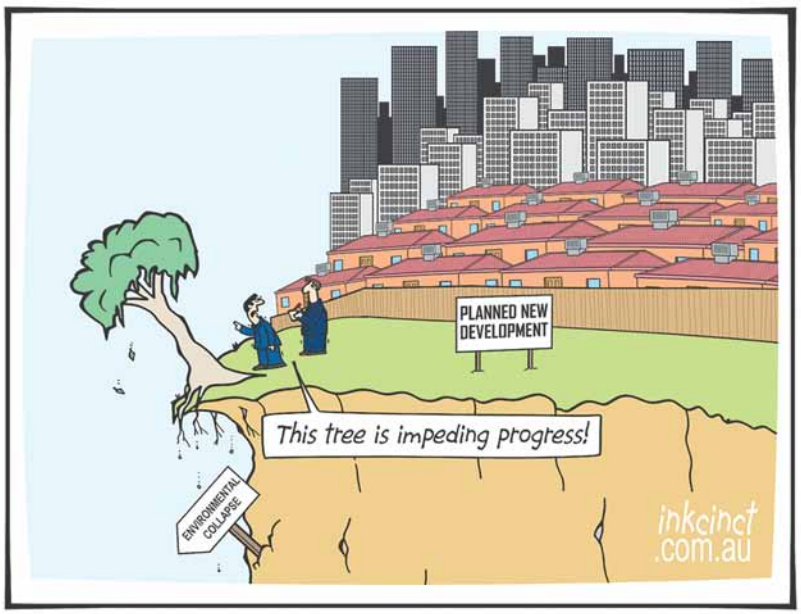
As mentioned, changes in the level of economic activity can have both *positive* and *negative* effects on living standards. Sometimes, there are *trade-offs* (costs or the things we would need to give up when we decide to use resources in a particular way). For example, more economic activity might improve *material* living standards, but at the expense of some aspects of *non-material* wellbeing. In reverse, lower economic activity will undermine material living standards although in some ways, non-material, environmental outcomes may be better.

The effects increased economic activity on living standards

- ***The effect on material living standards:*** Up to a point, when the pace of economic activity gets *stronger*, this tends to lift material living standards. This is because higher production generally results in increased jobs and incomes, boosting consumption spending. Of course, if economic activity becomes too strong, this can cause prices to rise reducing the purchasing power of incomes.
- ***The effect on non-material living standards:*** Most (but not all) aspects of non-material welfare, also benefit from *higher* levels of economic activity. For example, when production is expanding, and employment and incomes rise, this helps to reduce stress and social isolation, strengthen people's mental and physical health, and improve the quality of relationships. Even so, environmental outcomes are likely to suffer because of increased pollution, accelerated climate change, and the faster depletion of non-renewable natural resources.

The effects of decreased economic activity on living standards

- ***The effect on material living standards:*** When economic activity falls, this undermines material living standards because of lower employment, incomes, and consumption.
- ***The effect on non-material living standards:*** Lower economic activity that causes higher unemployment and reduced incomes, tends to undermine the quality of life and most aspects of non-material living standards. One problem is that if activity is lower and more people are unemployed, this often leads to social isolation, reduced mental and physical health, unhappiness, possibly higher crime rate, increased stress, and negative feelings of personal failure. However, a possible upside of lower economic activity is that there is less pollution and pressure on the environment—things that are beneficial for our wellbeing.



4.3 Activities

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4.3 Quick quiz on | **4.3 Exercise**

4.3 Exercise

1. **Define** the term, *standard of living*. **(2 marks)**
2. Relatively, Australia has a high standard of living. **Explain** exactly what this means, referring to various indicators. **(2 marks)**
3. **Examine** the table below. **Classify** each item as to whether it is something that is likely to increase or decrease *material* living standards and/or *non-material* living standards. Briefly **explain** your reasons. **(6 marks)**

Item	Classification of the impact and your reason
a. There was a rise in Australia's average life expectancy	
b. Average incomes fell during the COVID-19 pandemic	
c. Australia's CO^2 emissions fell	
d. For your job on weekends, you were paid $1500 for the year	
e. Literacy rates have increased, and crime rates decreased	
f. Julia loses her full-time job at the pizza shop	

4. Australia experienced a recession in the first half of 2020. Giving reasons, **explain** how this would be likely to affect:
   a. Material living standards **(2 marks)**
   b. Non-material living standards. **(2 marks)**

Solutions and sample responses are available online.

4.4 The five-sector circular flow model

KEY KNOWLEDGE

- The five-sector circular flow model of the economy

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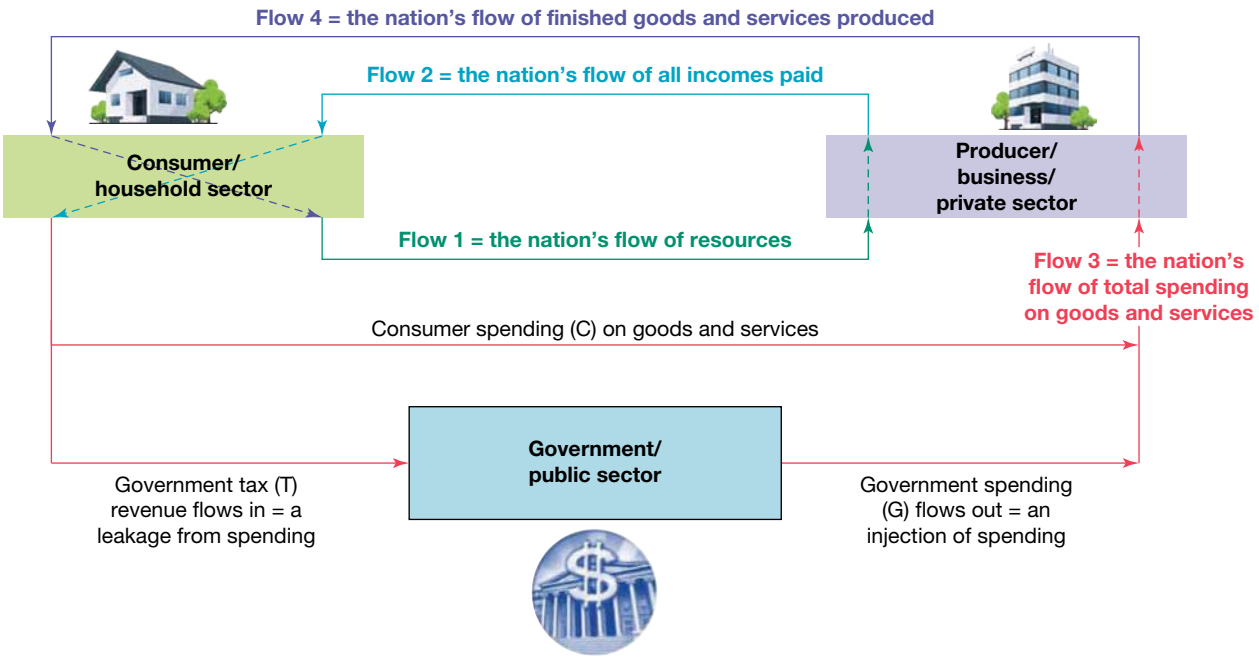
We have recently learnt that people are involved with economic activities so they can earn income, allowing them to consume goods and services. In turn, this means that they can usually satisfy their most pressing needs and wants, and enjoy reasonable living standards. To better understand this process, economists use models or diagrams representing how the economy works and economic activity occurs. In Chapter 1, we introduced a very basic three-sector circular flow model. This is again shown in Figure 4.4.

FIGURE 4.4 The simple three-sector circular flow model representing Australia's mixed economy.



However, while useful, the three-sector model has limitations. It is not all that realistic because it doesn't allow for the saving of some household income and international trade between nations, both of which impact the level of economic activity, employment, incomes and living standards.

To help reduce these shortcomings and better understand the drivers of economic activity, let's now look at the improved **five-sector circular flow model**. It simply builds onto the basic three-sector model by adding two additional sectors — the *financial sector* and the international trade or *overseas* sector.

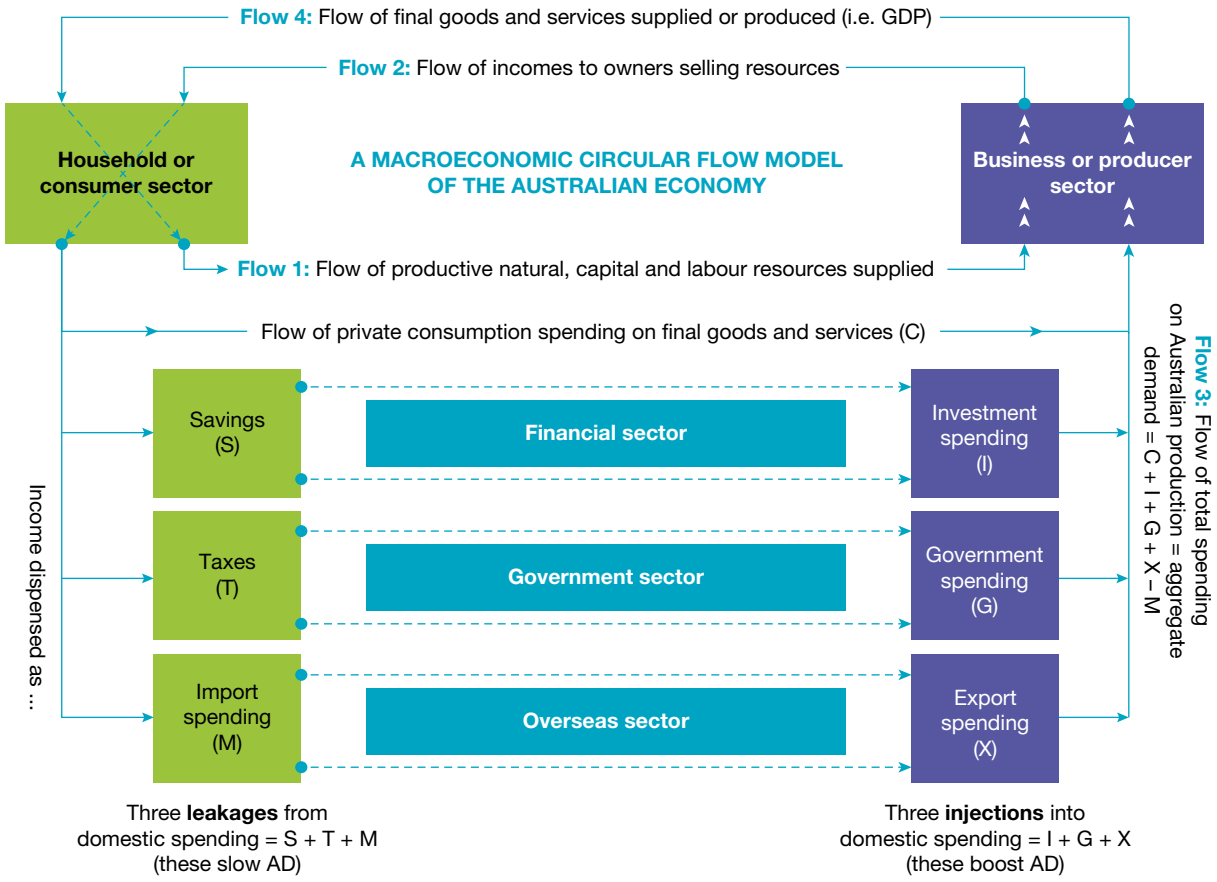
4.4.1 The five-sector circular flow model of an economy

As evident from Figure 4.5, notice that although this model has *two* main sectors (the *household* and *business* sectors), along with *three* lesser sectors (the *financial, government* and *overseas* sectors), making five in total.

The consumer or household sector

This *consumer* or *household* sector includes around 26 million consumers or spenders, making up Australia's entire population. Everyone in the country belongs to this sector. Apart from making decisions about spending, some households also supply or sell resources to the business sector.

FIGURE 4.5 The five-sector circular flow model showing the basic working of the Australian economy



The producer or business sector

The *producer* or *business* sector consists of over 2.2 million trading enterprises (e.g. sole traders, partnerships, public companies). They supply or sell finished goods or services, using resources purchased from households. Businesses also make decisions about investment levels, production and how many staff they employ.

The financial sector

The *financial sector* consists of organisations such as banks, credit unions, building societies, the stock exchange and life insurance companies. According to this model, these institutions collect or borrow household savings from some individuals and re-lend them as credit to businesses wanting to expand their operations through investment spending involving the purchase of new plant and equipment.

The government sector

The *government sector* includes the activities and decisions of federal, state, and local governments. It collects various types of tax revenue from those earning income and then uses this to help pay for government spending on the provision of goods and services for the community (e.g. public roads, health, education, transport and housing).

The overseas sector

The *overseas sector* involves spending by Australian residents on imports of goods (e.g. cars and phones) and services (e.g. international travel), along with spending by people in overseas countries on our exports of goods (e.g. iron ore and beef) and services (e.g. tourism and education).

You may have noticed that the five-sector model also has *four* main *flows* or streams that link the sectors of the model:

Flow 1 Resources available

Flow 1 represents the supply of *resources* (labour, capital and natural resources) over a period of time from the household sector to the business sector. Ultimately, a nation's productive capacity, potential output or supply of goods and services is determined by the volume and efficiency of these productive resources. As mentioned earlier, it is *not* possible for countries to produce more than their resources will permit. This limits a nation's productive capacity. Hence, the **expansion** of resources is vital if the supply of goods and services produced in an economy is to grow between one year and the next.

Flow 2 Total incomes

Flow 2 is the payment of **total income** over a period of time (e.g. made up of wages, profits, interest and rent) to those households that have sold resources. As such, it represents the demand by businesses for resources. The more resources bought by firms each year, the higher the employment rate and the total level of national income. However, total incomes fall when there are fewer resources wanted or employed by firms. This causes unemployment to rise.

Flow 3 Total spending

Flow 3 represents **aggregate demand (AD)** or total annual value of spending on *Australian-made* goods and services measured over a period of time. This reflects the spending decisions made by households, businesses, and governments, both here and overseas. AD is made up of components of expenditure including private consumption spending (C), *plus* private investment spending (I), *plus* government spending (G), *plus* overseas spending on Australian exports of goods and services (X), *minus* Australian spending on imports of goods and services (M).

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

The level of AD is determined by the value of total **leakages** (i.e. the withdrawal of income consisting of S + T + M), relative to total **injections** (i.e. additions to the overall spending stream consisting of I + G + X). Leakages act like a *brake* and slow the economy, but injections work like an *accelerator* and speed up economic activity or GDP. In this model, total leakages are not always equal to total injections— they can sometimes be higher or lower. This causes AD to rise or fall. Hence, decisions that raise leakages relative to injections will slow C, and thus AD. However, decisions that cause leakages to fall relative to injections will tend to accelerate the level of AD. Only when the total value of injections equals the total value of leakages will AD and the economy be stable.

Flow 4 Total production

Flow 4 is the annual value ($) of a nation's production or supply of finished goods and services. The size of this flow is measured using *gross domestic product* (GDP) which is commonly used as a general *indicator of the level of economic activity* in the Australian economy. Whether the *actual* GDP of the economy is at its maximum or *potential* level, depends on the strength of spending or AD. Sometimes there is unused productive capacity because spending is too weak.

It is also important to note that according to this model, the money values of these flows are *equal* and are *interdependent* — so if one changes, all change. That is:

AD or national expenditure (i.e. C + I + G + X – M)

= The national value of goods and services produced (GDP or level of economic activity)
= The national value of resources employed
= The national value of incomes paid (e.g. wages, rent, interest, dividends)

4.4.2 How to use the five-sector circular flow model to explain changes in economic activity

Over a period of years, the size of the economy changes in a *cyclical* or wave like manner. Sometimes the level of economic activity (measured by the value of GDP or flow 4) increases, perhaps causing a boom, while at other times it shrinks, possibly causing a recession. The five-sector circular flow model shown in Figure 4.5 can be used to explain these changes:

Using the model to explain an increase in economic activity

How does the model help us to explain the causes of an *increase* in *economic activity* (the size of GDP or flow 4)? As we know, individuals, businesses and governments have many needs and wants that they try to satisfy through *spending*. In the model, this spending is represented by AD — that is, the total value of all spending on Australian made goods and services. AD consists of consumer spending (abbreviated as C), plus business spending on equipment (I), plus government spending (G), plus net export spending (X – M). The model also shows that the value of AD (C + I + G + X – M) is affected by the *total value of leakages* made up of savings (S) plus government taxes (T), plus our spending on imports (M), and by the *total value of injections* made up of business investment spending (I), plus government spending (G), plus overseas spending on our exports (X).

When the total value of injections *rises* relative to total leakages, *AD increases* (shown as a rise in flow 3 on the five-sector circular flow model). Here, businesses notice that there is more spending by seeing that their sales and orders for goods and services are up, and their stocks of unsold items sitting on shelves and in warehouses are down. As a result, collectively firms will try to lift output, *boosting the level of economic activity* and GDP (shown as a rise in flow 4). These steps in thinking are illustrated in Figure 4.6 that only focuses on some of the key elements of the circular flow model so that we can more clearly see the basic sequence in the explanation.

Stepping further through the five-sector model, *higher economic activity* (flow 4) then has knock-on effects:

- Higher levels of activity mean that businesses will need to purchase more resources including labour (shown as a rise in flow 1). This raises the value of incomes paid to those selling resources (shown as a rise in flow 2) allowing again for more spending (shown as a rise in flow 3), and so on through the circular flow cycle.
- In addition, it is possible that higher spending might sometimes cause widespread shortages of goods and services, thereby driving up consumer prices and accelerating the inflation rate and causing a boom.

Using the model to explain a decrease in economic activity

In reverse, the five-sector circular flow shown in Figure 4.5 model can also help to explain a *decrease* in the level of *economic activity*. When the total value of leakages *rises* relative to total injections, *AD slows* (shown as a drop in flow 3). Here, businesses see that there is less spending because their sales and orders for goods and services are down, and their stocks of unsold items sitting on shelves and in warehouses rise, as new orders decline. As a result, firms collectively cut production, *reducing the level of economic activity* and GDP (shown as a fall in flow 4). This is illustrated in Figure 4.7 where only some of the key elements of the circular flow model are used to visibly expose the basic sequence or steps in the explanation.

Stepping further through the five-sector model, *declining economic activity* also has other knock-on effects:

- Lower levels of economic activity mean that businesses will purchase fewer resources including labour (shown as flow 1). Incomes paid to those selling resources (shown as a drop in flow 2) will fall, slowing spending (shown as a drop in flow 3).
- In addition, it is likely that reduced spending will cause inflation to slow as businesses discount or cut their prices to clear their excess stocks of unsold goods.

FIGURE 4.6 Explaining the causes and effects of higher levels of economic activity in an economy

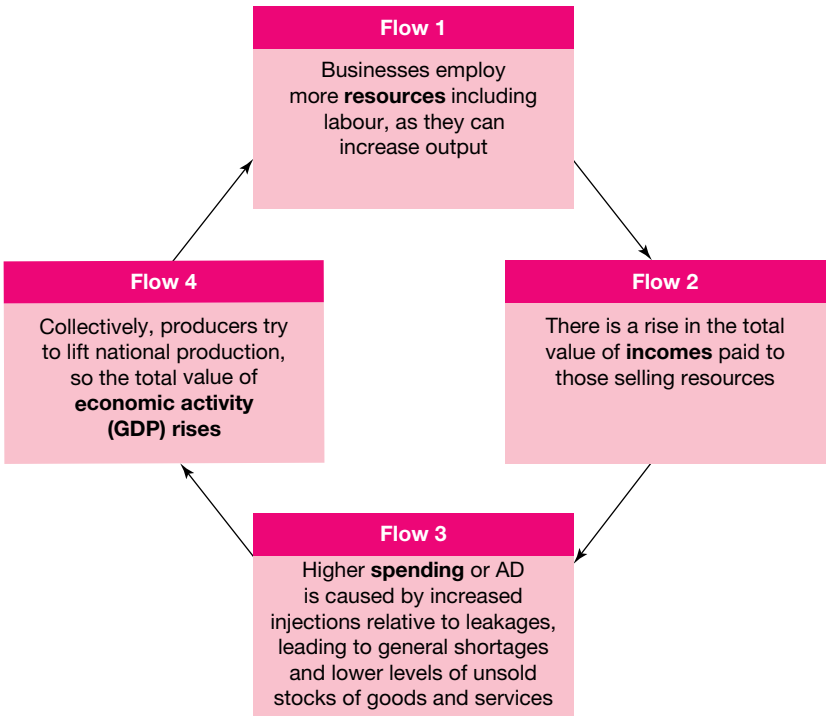
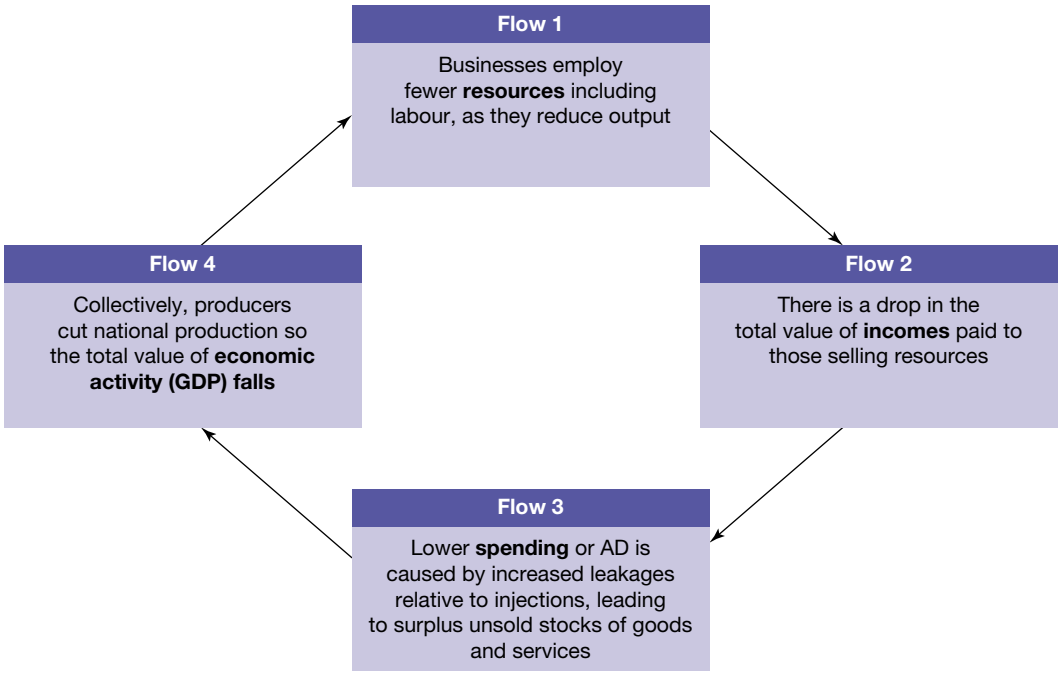


FIGURE 4.7 Explaining the causes and effects of lower levels of economic activity in an economy



This model allows us to better understand the *process* of *economic activity* and how resources are used to generate incomes that ultimately help people to satisfy their many needs and wants. Using this model also assists us in explaining *why* economic activity moves up and down in a cyclical or wave-like manner. Additionally, it allows us to step through the *effects of changes* in key variables, on domestic macroeconomic conditions and living standards. Remember that it's just a matter of moving forward one step at a time, through each of the flows making up the model. It is a good idea to keep this five-sector model in your mind as we move to investigate the *business cycle* of economic activity in the upcoming section.

4.4 Activities

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4.4 Quick quiz on

4.4 Exercise

4.4 Exercise

1. **Draw** and fully label a *five-sector circular flow model* (preferably from memory) representing Australia's economy. **(4 marks)**
2. Briefly **define** each of the following terms used in the circular flow model: **(11 marks)**
   - a. aggregate demand
   - b. gross domestic product (GDP)
   - c. leakages
   - d. injections
   - e. household consumption spending
   - f. business investment spending
   - g. savings
   - h. spending on exports
   - i. spending on imports
   - j. taxes
   - k. government spending.
3. Using the *five-sector circular flow model:*
   - a. **Identify** and **outline** the possible *causes* of a *rise* in the level of economic activity, perhaps leading to an inflationary boom. **(2 marks)**
   - b. **Identify** and **outline** the possible *causes* of a *fall* in the level of economic activity, perhaps leading to a recession. **(2 marks)**
4. The *five-sector circular flow model* is especially useful in understanding the impacts of changes in an economy. **(26 marks)**

a. What are the main economic functions of the household sector?
b. What are the main functions of the business sector?
c. What are the main functions of the financial sector?
d. What are the main functions of the government sector?
e. What are the main functions of the overseas sector?
f. Who are the suppliers of resources?
g. Who are the buyers of resources?

h.	How are the suppliers of resources rewarded for their efforts, skills, and risk?
i.	Who are the demanders of finished goods and services?
j.	How might households dispose of the income they receive?
k.	What is the main general determinant of the level of C?
l.	What are leakages?
m.	How is the impact of leakages different from that of injections?
n.	What are savings and why are they regarded as a leakage?
o.	What are imports?
p.	Define what is meant by AD.
q.	What are the immediate determinants of the level of AD?
r.	What might cause AD to fall?
s.	What are three main macroeconomic effects of a rise in AD by $100 million for an economy that has unemployed resources or unused productive capacity?
t.	What is the immediate effect of a decision by the business sector to increase its production or supply of goods and services?
u.	What is the main cause of an increase in incomes?
v.	What may cause some people to receive no income at all?
w.	In this model, what is the immediate cause of reduced employment of resources and rising unemployment in an economy?
x.	What are the likely effects on the economy of AD rising faster than the productive capacity of the country?
y.	What is the likely impact on the level of AD of a rise in imports?
z.	What are the likely effects of an increase exports?

5. The *five-sector circular flow model* is especially useful in understanding the impacts of changes in aggregate demand factors on the economy. **(4 marks)**

a. According to the model, what is the general cause of a contraction or recession in the level of economic activity (GDP)?

b. According to the model, what is the general cause of an expansion in the level of economic activity (GDP)?

c. According to the model, what can be said about the values or size of the flows of AD, GDP, and total incomes in an economy in a given year?

d. What is the name of the flow that measures the general level of economic activity in an economy?

Solutions and sample responses are available online.

4.5 The business cycle

KEY KNOWLEDGE

- The business cycle

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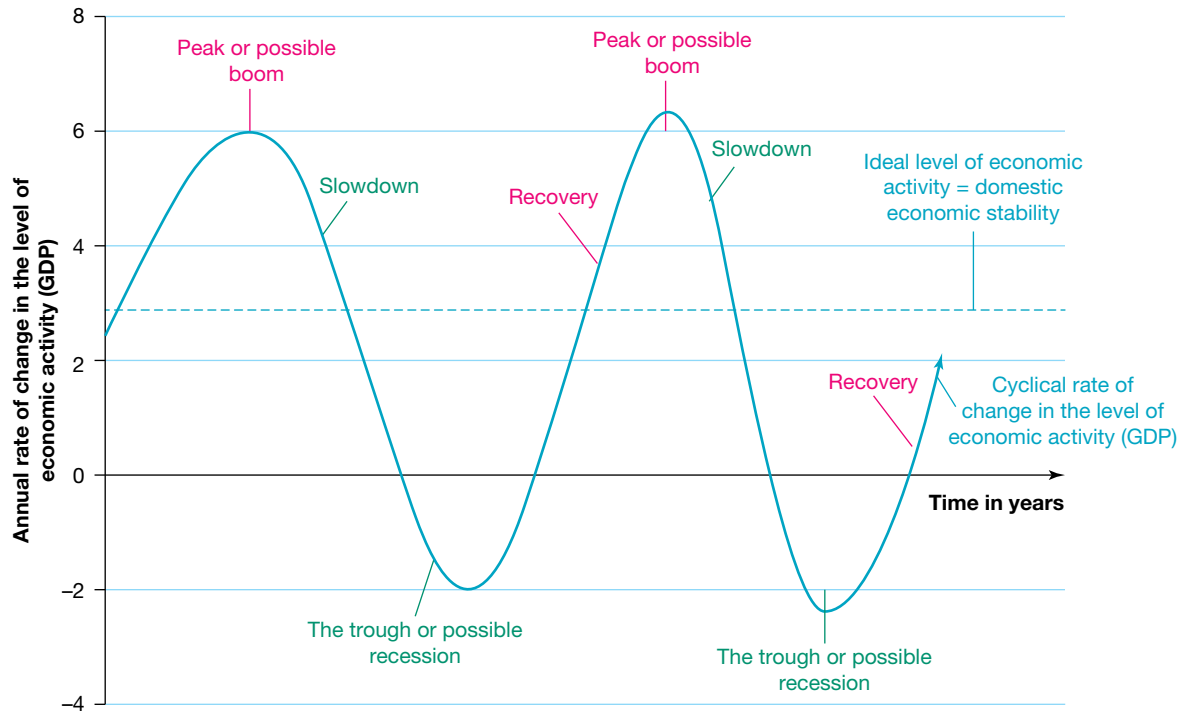
Look at the news headlines from around the world; most days you quickly realise that it is quite normal for economies to experience *instability* in *economic activity*. Often good times follow bad ones, almost like day follows night! To help illustrate *instability* in the level of economic activity, economists use the **business cycle diagram** that we introduced earlier in our studies. This is shown in Figure 4.8.

FIGURE 4.8 The business cycle diagram illustrating instability in a nation's level of economic activity



Notice that over a period of some years, the *pace of economic activity* (measured by the quarterly or annual percentage *change* in the value of GDP) rises and falls. Over a typical cycle, there are *four phases*, speeds, or rates of GDP growth — the peak, slowdown, trough and recovery:

- ***Phase 1:*** The **peak** in the speed of economic activity occurs when GDP is growing at its fastest rate. Sometimes this is too fast given the economy's productive capacity, and there will be a **boom**:
  - The peak is *caused* by strongly rising levels of spending on Australian made goods and services or increasing levels of AD (C + I + G + X – M).
  - The peak *results* in firms employing more resources so, typically, unemployment rates are very low and incomes rise. However, if spending grows too fast and outstrips the economy's productive capacity, inflation will accelerate. This undermines the purchasing power of incomes and hence material living standards.
- ***Phase 2:*** The **slowdown** occurs when the speed of the rise in economic activity and GDP lessens to rates below those in the peak:
  - The slowdown is *caused* by softer rises in sales, spending and AD (C + I + G + X – M).
  - The slowdown *results* in firms cutting jobs, so unemployment rises and inflation slows as firms hold prices down to try to clear their surplus stocks of unsold goods.

- ***Phase 3:*** The **trough** is the lower turning point on the business cycle where economic activity and the rate of GDP growth are at their slowest. If the size of GDP shrinks over two or more consecutive quarters (i.e., a 6-month period), this is called a **recession**:
  - The trough or recession is *caused* by very weak or falling levels of spending or AD (C + I + G + X – M).
  - The trough *results* in relatively high rates of unemployment as firms cut production, reducing incomes, purchasing power, and living standards. It is even possible that there will be deflation or falling prices as firms discount their prices to clear excess stocks of goods.
- ***Phase 4:*** The **recovery** in economic activity occurs when the rate in GDP starts to accelerate:
  - The recovery is *caused* by stronger rises in spending or AD (C + I + G + X – M).
  - The recovery *results* in firms employing more staff, lowering unemployment and raising incomes. It can also mean that inflation starts to pick up.

As the economy moves through the business cycle and the speed of economic activity changes, so too do the country's domestic macroeconomic conditions and living standards — sometimes in a favourable direction, but at other times, negatively. The *ideal* level of economic activity is somewhere between the peak and the trough. This *favoured situation* is called **domestic economic stability**. Here, *three* things are *simultaneously* achieved:

- There is a *strong and sustainable rate of growth in economic activity* and GDP (where GDP is rising steadily, perhaps by an average of around 3 per cent a year).
- There is *full employment* with low unemployment rates of perhaps 4.0 to 4.5 per cent of the labour force. This grows incomes.
- There is *low inflation* where general consumer prices are rising slowly by an average of between 2.0 to 3.0 per cent a year over time. This helps to ensure that incomes keep their purchasing power.

While we aspire to achieve this blissful situation because it is conducive to better living standards, it is seldom achieved fully.

4.5 Activities

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4.5 Quick quiz on | 4.5 Exercise

4.5 Exercise

1. **Describe** the business cycle. **Illustrate** this on a fully labelled diagram. **(2 marks)**
2. **Describe** the main macroeconomic features or characteristics (i.e. refer to levels of spending, GDP, inflation, unemployment) of each of the following situations found along the business cycle:
   a. expansion
   b. peak or boom
   c. contraction
   d. trough or recession. **(4 marks)**

3. **Outline** why a *recession* is mostly bad for the living standards. **(1 mark)**
4. **Outline** why a *boom* can be bad for the living standards of some people. **(1 mark)**
5. **Explain** what is meant by the term *domestic economic stability*. **(3 marks)**

Solutions and sample responses are available online.

4.6 Types of economic indicators

KEY KNOWLEDGE

- Types of economic indicators, such as leading, lagging and coincident

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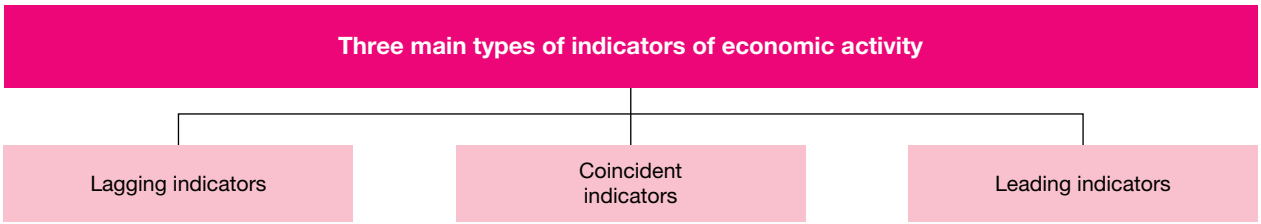
As we know, the level of economic activity is often *unstable*. This has knock-on effects on other parts of the economy that, in turn, impact on our living standards. Economists use a range of *statistical indicators* like GDP, unemployment, incomes, and inflation, to monitor these changes, and to evaluate the success or otherwise of government policies. Sometimes, they also look for trends in current data to forecast what lies ahead in the next few months or years.

4.6.1 The three main types of indicators of economic activity

There are *three* main types of indicators of economic activity that can shed light on our changing conditions — lagging, coincident and leading indicators.



Lagging indicators of economic activity

Lagging indicators of economic activity only tell us the level of activity that occurred some time ago. While generally more accurate or certain than leading indicators (described shortly), these statistics do not tell us what the economy is doing right now. They only look backwards to where we were once located. GDP figures fall into this lagging indicator category, since by the time quarterly production statistics are collected by the ABS, processed and released, typically three months or so have elapsed. Apart from GDP, other lagging indicators of changing levels of economic activity might include:

- the unemployment rate (takes time for firms to hire or fire employees after a change in sales and output)
- the inflation rate (the general change in the prices paid for a basket of goods and services takes time to reflect changes in economic conditions)
- average weekly earnings (wages are sticky and take time to respond to changes in the business cycle)

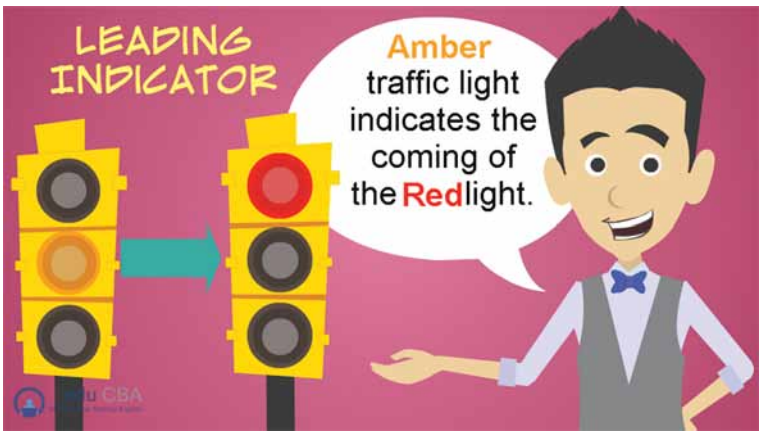
Coincident indicators of economic activity

Coincident indicators move very closely with actual changes in the level of economic activity. These allow us to locate our current position on the business cycle. They are collected and published regularly at shorter intervals and thus more or less tell us what is happening right now. Examples might include:

- Share prices
- Monthly retail sales
- New car registrations.

Leading indicators of economic activity

Leading indicators can help to predict where the economy may be heading in the near future. While not completely reliable, they can often forecast a change in activity before it occurs. Indicators in this category could include:



- **consumer confidence** index (measures how optimistic or pessimistic households feel about their upcoming employment, income and spending prospects)
- **business confidence** (reflects the level of optimism or pessimism by firms about their future levels of sales and profits)
- index of new housing approvals (measures the upcoming intentions of individuals to commence building activity)
- yield curves or the returns on bonds (can help to predict whether inflation and the economy are expected to get stronger or weaker in the future).

4.6.2 Looking for patterns in indicators

When examining statistical indicators related to changing economic conditions, economists are on the lookout for *patterns* in the data. As illustrated in Figure 4.9, when graphed, these could show long-term, short-term, seasonal or erratic behaviour.

Long-term trends

The **long-term** refers to changes in economic activity over perhaps 10 or 20 years, or more. Often it can represent a straight line of best fit sitting midway between the peaks and troughs on a graph (see graph 1).

Short-term cyclical swings

The **short-term** *cycles* in economic activity are the wave-like changes in direction, lasting perhaps between 1–5 years. Typically, these can be seen in data like GDP, unemployment, and inflation rates (see graph 2).

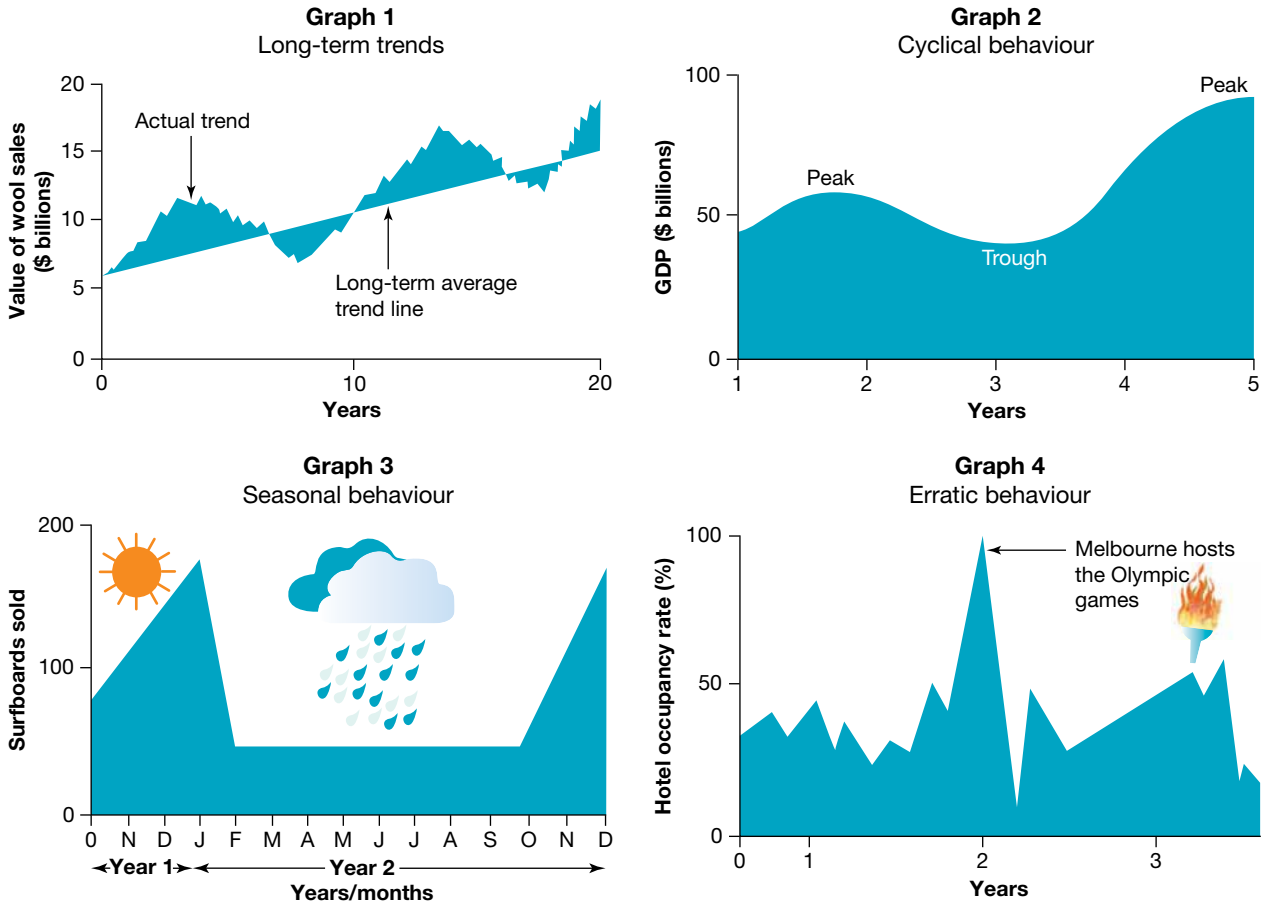
Seasonal patterns

Some data displays a **seasonal pattern** that occur in the same month or time each year. An example could be the spike in sales of snow skis in winter each year, toy sales before Christmas, and chocolate at Easter (see graph 3).

Erratic behaviour

Erratic behaviour is where there is no obvious pattern because the data are reacting to one-off events like the effects of the Olympic Games on the demand for accommodation, or the impact of widespread fires on national output (see graph 4).

FIGURE 4.9 Looking for patterns in statistical indicators



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4.6 Quick quiz on

4.6 Exercise

4.6 Exercise

1. **Distinguish** between *lagging* and *leading* indicators of economic activity, giving one example of each. **(2 marks)**
2. **Classify** whether each of the statements about economic indicators in the table below is generally *true* or *false*. Be prepared to defend your responses. **(12 marks)**

Statement	True or false
a. In a recession, the employment rate is high.	
b. GDP is a lagging indicator of economic activity.	
c. Inflation is high in a boom due to limited spare capacity and widespread shortages.	
d. Booms in economic activity are good for everyone.	
e. The unemployment rate can be too low in booms adding to inflationary pressures.	
f. The wild weather and floods in NSW and Queensland in 2022 tended to slow economic activity.	
g. St Valentine's Day in February each year would have a seasonal impact on chocolate sales and economic activity.	
h. Consumer confidence can help reveal the likely direction of consumer spending and economic activity into the future.	
i. New building approvals are a lagging indicator of changes in economic activity.	
j. Leading indicators are usually more accurate than lagging indicators.	
k. Lagging indicators tell us what was happening to economic activity some time ago.	
l. Coincident indicators give a better guide to where the economy will be in a few months' time.	

Solutions and sample responses are available online.

4.7 The relationship between the business cycle and economic indicators

KEY KNOWLEDGE

- The relationship between the business cycle and economic indicators

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Mention has already been made that as the economy travels *along* the business cycle from boom, to slowdown, recession and recovery, the level of economic activity changes. This alters economic conditions and will be reflected in various indicators, some of which are summarised in Table 4.1.

Starting with some key indicators in column 1, we see how these change over the business cycle during the boom, slowdown, recession, and recovery. Column 1 also describes what the *ideal* statistic may be for an economy enjoying *domestic economic stability*. This serves as a *benchmark* for other conditions.

TABLE 4.1 The relationship between the business cycle and key economic indicators

Common indicator	Phase of the business cycle			
	1 — In a boom	2 — In a slowdown	3 — In a recession	4 — In a recovery
The growth rate in economic activity reflected in AD and GDP (The ideal rate of increase in AD and GDP is an average rise of around 3% per year).	In response to excessively strong spending/AD and low stocks of unsold goods and services, economic activity/GDP eventually becomes unsustainably rapid (e.g. perhaps rising by an average of 5% or more per year).	In response to gradually weaker spending/AD and reduced orders for goods and services, the growth in economic activity/GDP starts to slow (e.g. perhaps a rise of only 1–2% per year).	In response to deficient spending/AD, reduced orders and high stocks of unsold goods and services, output is cut and economic activity/GDP is negative over at least 2 consecutive quarters (e.g. perhaps a fall of -2% per year).	In response to stronger spending, new orders, and lower stock levels, firms lift output and economic activity/GDP starts to accelerate (e.g. perhaps a rise of 1–2% per year).
Unemployment rate (The ideal rate that is described as *full employment* is an unemployment rate of around 4.0–4.5% of the labour force).	In response to very strong spending/AD and higher production, the unemployment rate falls to very low levels causing labour shortages (e.g. perhaps with only 3% of the labour force unemployed).	In response to slower spending/AD and lower production, the unemployment rate starts to rise (e.g. perhaps with 5% of the labour force unemployed).	In response to deficient spending/AD and cuts in production, the unemployment rate rises quickly to high levels (e.g. perhaps with 7% or more of the labour force unemployed).	In response to stronger spending/AD and rising output, the unemployment rate gradually starts to fall (e.g. perhaps with 5% of the labour force unemployed).
Inflation rate (The ideal rate that is seen as *low inflation* is an average rise in consumer prices of between 2–3% per year).	In response to excessively strong spending/AD that is beyond the economy's productive capacity, there are widespread shortages of goods and services, so consumer prices rise quickly (e.g., perhaps 5% per year or more).	In response to slower spending/AD and the gradual disappearance of shortages of goods and services, inflation starts to slow (e.g. perhaps to 3–4% per year).	In response to depressed spending/AD, firms are forced to cut or discount their prices to clear rising stocks of unsold goods, causing inflation to slow or become negative (e.g. perhaps a rise of only 1% per year or even -1% per year).	In response to gradually strengthening levels of spending/AD and falling stocks of unsold goods, inflation gradually starts to increase (e.g. perhaps rising by around 2–3% per year).

4.7 Activities

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4.7 Quick quiz on

4.7 Exercise

4.7 Exercise

1. **Examine** the hypothetical data for an economy for *four* separate financial years. **(4 marks)**

Year	2020–21	2022–23	2024–25	2026–27
Rate of change in economic activity/GDP (%)	-1.9	3.0	7.1	2.0
Unemployment rate (%)	9.4	4.3	2.8	5.1
Inflation rate (%)	-0.9	2.8	6.1	1.9

In terms of the business cycle, **classify** the most likely *type* of *economic situation* in each of the following years, **explaining** your reasons:

a. 2020–21
b. 2022–23
c. 2024–25
d. 2026–27.

Solutions and sample responses are available online.

4.8 BACKGROUND KNOWLEDGE: Overview of factors that may affect Australia's level of economic activity

BACKGROUND KNOWLEDGE

- An overview of aggregate supply and aggregate demand factors that can affect the level of economic activity and domestic macroeconomic conditions

There are *two* main reasons why the level of economic activity may rise or fall. Over the short-term, there are changes in *aggregate demand factors*, while in the longer-term, there are changes in *aggregate supply factors*. It is also possible for some factors to have an effect on *both* aggregate demand and aggregate supply.

These big ideas are illustrated in Figure 4.10.

- **Aggregate demand factors** or conditions influence the total value of *spending* on a nation's goods and services. They can be very changeable especially over the *short-term* and cause AD to rise or fall:
  - *Stronger aggregate demand factors* cause the value of total spending to accelerate (shown as flow 3 on the circular flow model), along with the levels of economic activity or GDP (flow 4), employment of resources (flow 1), the payment of incomes (flow 2), and the inflation rate.

- *Weaker aggregate demand factors* cause total spending to slow (flow 3 on the circular flow model), along with the levels of economic activity or GDP (flow 4), employment of resources (flow 1), the payment of incomes (flow 2), and the inflation rate.

- **Aggregate supply factors** influence the economy's *long-run* productive capacity and potential level of GDP. They can change the conditions that alter the ability and/or willingness of producers to supply goods and services:
  - *More favourable aggregate supply conditions* make producers *more* willing and/or able to expand productive capacity and hence increase the potential rate of economic activity.
  - *Less favourable aggregate supply conditions* cause producers to become *less* willing and/or able to supply, causing some firms to close, contracting productive capacity and the potential rate of economic activity.

FIGURE 4.10 Overview of factors affecting Australia's rate of economic activity

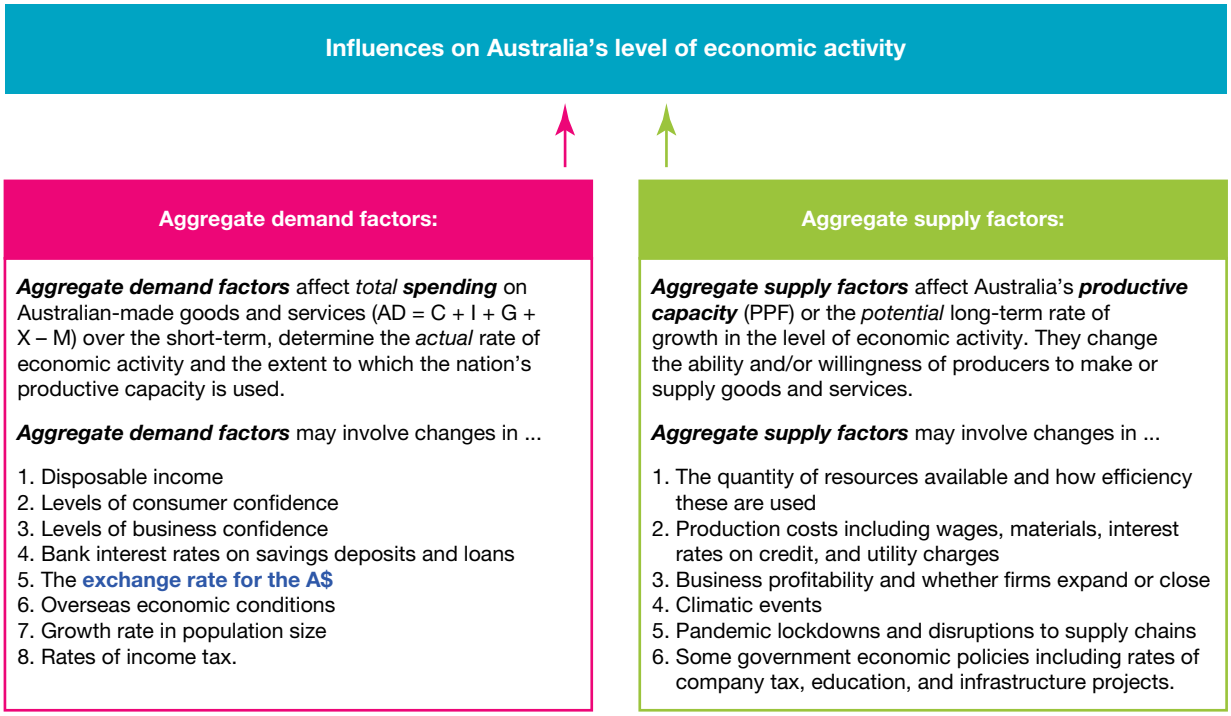
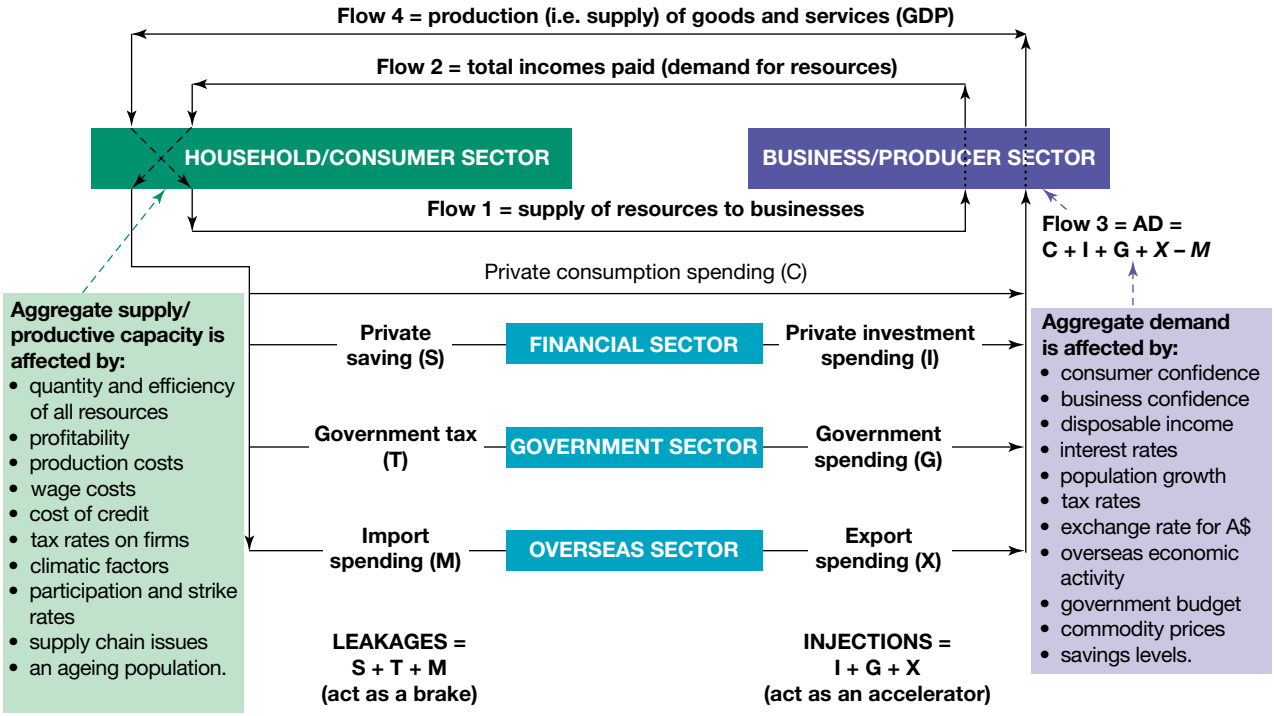


Figure 4.11 (the five-sector circular flow model) shows how these *two* sets of factors can impact the economy. Aggregate supply factors especially affect the size of flow 1 (i.e., the quantity and quality of resources available that in the long-term affect the *potential* level of production), while aggregate demand factors change the size of flow 3 (i.e. total value of spending on a nation's goods and services), the *actual* value of GDP and the extent to which productive capacity is used.

FIGURE 4.11 How changing aggregate supply and demand factors can impact economic activity and macroeconomic conditions generally



4.8 Activities

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4.8 Quick quiz on

4.8 Exercise

4.8 Exercise

1. **Identify** and **explain** the two main influences of economic activity. **(4 marks)**
2. **Define** the following terms:
   a. aggregate supply **(1 mark)**
   b. aggregate demand. **(1 mark)**

Solutions and sample responses are available online.

4.9 Aggregate demand — its meaning, importance and factors affecting its level and economic activity

KEY KNOWLEDGE

- The meaning and importance of aggregate demand and its components
- The factors that may affect the level of aggregate demand and the level of economic activity

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When we see newspaper headlines about the latest recession or boom, we realise that Australia's rate of economic growth can alter quite suddenly. This is often the result of changes of *aggregate demand* or the decisions made by households, businesses, and governments about their overall level of spending on Australian-made goods and services.

4.9.1 The meaning and importance of aggregate demand

Aggregate demand (abbreviated as AD) represents the total value of all spending by households, businesses, and governments, on finished Australian-made goods and services measured over a period of time. It is made up of various *components* or types of spending:

- Private or household consumption spending (C) or outlays on day-to-day purchases PLUS
- Private business investment spending (I) or outlays on physical capital goods PLUS
- Government spending on goods and services (G) for the community PLUS
- Foreign spending on our exports of goods and services (X) MINUS our spending on imports (M).

We can express this as follows: AD = C + I + G + X – M. Thinking of the five-sector circular flow model, the value of AD can rise or fall due to changes in the total value of leakages (i.e. S + T + M) relative to the total value of injections (i.e. I + G + X). Over the short-term, changes in the value of AD (think of flow 3) determine the level of economic activity (think of flow 4 on the circular flow model), inflation, unemployment, and incomes. They also dictate the *extent* to which the economy's productive capacity or *potential* output is used (think of the production possibility diagram and the PPF). Clearly, AD is one of the most important variables in the economy.

4.9.2 How aggregate demand factors affect the level of AD and economic activity

The level of AD (C + I + G + X – M) and economic activity over the short-term is determined by the strength or weakness of *aggregate demand factors* or *conditions.* These might include changes in the following:

- the level of household **disposable income**
- the level of consumer confidence or pessimism of households about their future employment and income prospects
- the level of business confidence about their future sales and profits
- the impact of changes in budget taxes and government spending
- the level of **interest rates** paid to banks by those people borrowing credit to finance their spending
- the value of the Australian dollar when it is swapped or exchanged for other currencies
- general **overseas economic activity** (e.g. booms or recessions) in countries to whom we export
- the size and growth rate of our population.

Let's take a closer look at how *stronger* or *weaker* aggregate demand factors can affect each of the components of spending that make up AD (i.e. AD = C + I + G + X – M).

Aggregate demand factors affecting household consumption spending (C):

Private consumption spending (C) by Australian households on food, clothes, electrical goods, entertainment, and holidays, for example, is the biggest single component of AD. As a result, it can have a huge effect on total spending. A rise in C for instance would directly stimulate AD (flow 3 on the circular flow model), economic activity, GDP (flow 4), employment of available resources (flow 1) and incomes (flow 2), while reduced spending slows economic activity. As summarised in Table 4.2, the value of C can be affected by changes in several *aggregate demand factors*:

TABLE 4.2 Aggregate demand factors that can affect the level of private consumption spending and AD

Disposable income	Household *disposable income per head* represents money available for spending per person, after the payment of tax and the receipt of any government welfare benefits. A drop in disposable income per head, for example, tends to slow private consumption, while higher disposable income accelerates consumption spending and hence AD.
Consumer confidence	*Consumer confidence* is the degree of optimism or pessimism about future household incomes and employment prospects. Greater optimism leads to stronger consumption spending and reduced savings, while general pessimism, slows consumption and increases savings.
Interest rates	*Interest rates* received by households on their bank savings deposits, or those to be paid on credit borrowed from the banks, affect both the level of savings and spending. Higher interest rates encourage savings and discourage borrowing to buy expensive consumer items such as a house or car, while lower interest rates help to lift consumption spending and discourage savings. This boosts AD.
Rate of population growth	The *rate of population growth* (i.e. the excess of births over deaths and immigration levels) influences consumption spending. For instance, a slower growth in population tends to slow consumption and AD.
Government budgetary policies	*Government budgetary policies* affect the levels of tax, government spending and other outlays. Cuts in personal income tax rates, for example, can help to increase disposable income, and hence consumption spending and AD.

Aggregate demand factors affecting private investment spending (I)

Businesses make spending decisions that affect AD and the level of economic activity. For instance, as an *injection* on the circular flow model, higher level of **private investment spending** (I) by businesses on new plant and equipment such as computers, factory buildings and trucks, would tend to increase AD, economic activity, GDP, employment and incomes, while reductions have the reverse effect. As shown in Table 4.3, the level of I can reflect the influence of changes in various *aggregate demand conditions*.

TABLE 4.3 Aggregate demand factors that can affect the level of private business investment spending and AD

Business confidence	The level of *business confidence or optimism* signals firm's expectations about the level of future sales and profits. Business pessimism leads to reduced investment spending on new plant and equipment, while optimism leads to increased investment spending and AD.
Interest rates	*Interest rates* charged by banks on loans to firms can alter levels of private investment spending. Higher interest rates tend to discourage investment spending on new equipment because it becomes dearer for firms to borrow and repay credit, while lower rates help to encourage investment spending and AD.
Company tax rates	*Company tax rates* affect the after-tax profits of businesses. Lower tax rates for businesses help to lift after-tax profits and hence encourage new investment spending designed to expand operations. Rises in tax rates have the opposite effect and slow AD.

Aggregate demand factors affecting government spending (G)

Australian **government spending** (G) and other outlays on the provision of goods and services for the community (e.g. health, transport, education, defence and childcare) represents an *injection* on the circular flow model that can alter the level of AD. For example, increases in the value of G in the budget tends to boost AD, economic activity, GDP, employment, and incomes, while cuts in G slow AD. Table 4.4 shows that the level of G can be affected by a range of *aggregate demand conditions*:

TABLE 4.4 Aggregate demand factors that can affect the level of government spending and AD

The level of unemployment	The level of G often increases when the unemployment rate rises because through this approach, the government can help lift AD and reduce the severity of a recession. In reverse, during inflationary booms, the government may slow its spending to help stabilise AD and the economy.
The level of inflation	The level of G often decreases or slows when inflation is rising because this helps the government restrain AD and reduce shortages of goods and services that cause inflationary pressures.
The speed of population growth	The level of G often rises faster when population growth is more rapid following a rise in the birth rate or an increased level of immigration. This is because more community services are needed.
Concern about the level of government debt	If the government spends more than it receives in taxes, it will have to borrow money. This adds to its level of public debt. Concern about high debt levels can act to help slow the level of government spending.

Aggregate demand factors affecting export spending (X)

Decisions made by overseas consumers also affect Australia's AD and level of economic activity. If there is an increase in **export spending (X)** abroad on Australian made goods and services (e.g. cotton, wool, minerals, manufactured items and travel) as an *injection* on the circular flow model, this would tend to increase AD, economic activity, GDP, employment and incomes. In reverse, a decrease in the value of our X sales abroad or injections would have the reverse effects. Table 4.5 shows that changing *aggregate demand conditions* can influence whether the value of overseas spending on our X rises or falls:

TABLE 4.5 Aggregate demand factors that can affect the level of overseas spending on our exports and AD

The exchange rate or the value of the A$	The *exchange rate* or the value of the A$ when swapped or converted into other currencies affects the value of our exports. A rising A$ tends to slow our exports because they become dearer to people overseas, while a fall in the A$ makes our exports cheaper, leading to an increase in sales and hence AD.
Overseas economic conditions	Changes in *overseas economic conditions*, involving booms, recessions, and pandemics can change the value of our exports. For instance, a recession or slowdown abroad among our major trading partners like China, Japan or the US, slows overseas spending on our exports, while a boom overseas tends to raise the value of foreign spending on Australian exports.
Natural disasters	Natural disasters and severe weather events in Australia alter our capacity to export. Floods, drought and fires reduce exports of agricultural and mining products.

Aggregate demand factors affecting import spending (M)

Spending decisions made by local consumers affect AD and the level of economic activity. The level of **import spending** (M) by Australians (e.g. on oil, computers, business equipment and overseas holidays) represents a *leakage* on the circular flow. When we spend more on imports, this tends to slow AD, economic activity, GDP, employment and incomes. In contrast, a fall in imports lifts AD. The value of import spending can reflect changes in *aggregate demand conditions*, as seen in Table 4.6.

TABLE 4.6 Aggregate demand factors that can affect our level of spending on imports from abroad and AD

The exchange rate or the value of the A$	A *fall in the exchange rate* for the A$ tends to make imports dearer and less attractive for Australians to purchase, lifting AD while a *rise in the A$* tends to make imports cheaper and more attractive for local consumers, slowing AD.
Local economic activity	If there is stronger consumer and business confidence and high levels of economic activity locally, this often results in more spending on imports where leakages slow AD. In reverse, weaker conditions and recession here in Australia usually mean lower spending on imports.
Consumer and business confidence	Greater household and business optimism locally usually result in more spending on imports, slowing AD, while pessimism tends to lower our spending on imports of goods and services, boosting AD.
Our inflation rate relative to that overseas	For instance, higher inflation rates at home make overseas goods and services relatively more attractive, increasing imports and leakages, slowing AD.
The exchange rate for the A$	Changes in the *exchange rate for the A$* against the value of other currencies will affect the price or cost to us of imports of goods and services. A fall in the A$, for example, tends to make imports dearer, slowing their relative attractiveness. This boosts AD, while a rise in the A$ encourages us to buy more imports and travel abroad, slowing AD and economic activity.

4.9.3 How changing aggregate demand factors can determine the level of economic activity and macroeconomic conditions

As we have seen, generally stronger or weaker *aggregate demand factors* cause instability in spending, bringing about changes in the level of economic activity and other domestic macroeconomic conditions.

The effects of stronger aggregate demand conditions on the economy

Over the short-term, generally *stronger aggregate demand conditions* will stimulate spending or AD, because of falls in the value of *leakages* (lower S + T + M) relative to *injections* (I + G + X). Because the size of the four flows making up the circular flow model are *equal* in value and *interdependent*, GDP, employment of resources and incomes will all need to increase to help maintain equality. However, if the economy is already operating at or near its productive capacity (close to the PPF on the production possibility diagram), *stronger* AD can sometimes mean that spending will outstrip national production or aggregate supply. Normally, this would cause widespread shortages of goods and services, leading to increased inflation and boom conditions in the business cycle. Using the circular flow model to guide your thinking, Figure 4.12 provides a step-by-step explanation of the effects of generally *stronger* aggregate demand conditions that can cause booms.

FIGURE 4.12 How generally stronger aggregate demand factors can increase Australia's economic activity and impact other domestic macroeconomic conditions

Stronger aggregate demand factors:	*Stronger AD:*	*Increased inflation:*	*Increased production:*	*Lower unemployment and higher incomes:*	*And so on,*
Stronger demand-side conditions can include … • higher consumer confidence • increased business confidence • rising overseas economic activity • weaker A$ • lower interest rates • cuts in taxes • increases in government spending.	Stronger aggregate demand conditions mean an increase in the total value of the components making up AD or spending on Australian-made goods and services — AD increases (flow 3).	When AD rises, sales and new orders increase. However, stocks of unsold goods may fall, and widespread shortages can sometimes develop if there is no unused productive capacity available. This could lead to increased inflation.	When AD and sales increase, business firms will try to expand GDP (flow 4), to replace their falling stocks. This accelerates the rate of economic growth, providing there is some spare or unused productive capacity available.	When AD increases and businesses need to lift production, firms will generally attempt to buy or employ more resources including labour (flow 1). This causes unemployment to fall and total incomes to rise (flow 2).	through the circular flow model.

The effects of weaker aggregate demand conditions on the economy

By contrast, generally *weaker aggregate demand conditions* will slow spending and AD reflecting *rising leakages* and/or *lower injections*. To restore equilibrium between the four flows in the model, GDP slows creating more spare capacity. Unemployment of resources would rise, and incomes fall. Additionally, with slowing economic activity, **inflation** is likely to fall. This is because firms are likely to discount their prices to clear unwanted stock caused by the drop in sales. Using the circular flow model to help guide your thoughts, Figure 4.13 provides a step-by-step explanation of the impacts of generally *weaker* aggregate demand conditions and activity that can possibly lead to a recession.

FIGURE 4.13 How generally weaker aggregate demand conditions can slow Australia's rate of economic activity and impact other macroeconomic conditions

Weaker aggregate demand factors:	*Weaker AD:*	*Lower inflation:*	*Lower economic activity:*	*Increased unemployment and lower incomes:*	*And so on,*
Weaker aggregate demand conditions can include … • Lower consumer confidence • Reduced business confidence • Falling overseas economic activity • Rising A$ • Higher interest rates • Rises in taxes • Decreased government spending.	Weaker aggregate demand conditions mean a decrease in the total value of the components making up AD or spending on Australian-made goods and services — AD (flow 3) slows.	When AD drops, sales and new orders fall. Stocks of unsold goods and services start to increase. With rising stock levels, sometimes a glut or market surplus develops, so firms often cut or discount their prices. This slows inflation.	When AD and sales decrease, business firms will reduce their output to avoid excess stock levels. GDP (flow 4) falls. This slows the rate of economic growth. If GDP falls over two or more consecutive quarters (6 months), this is called a recession.	When AD decreases and businesses need to cut their output, firms will employ fewer resources including labour (flow 1). Unemployment rises and so total incomes fall (flow 2).	through the circular flow model.

4.9 Activities

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4.9 Exercise

4.9 Exercise

1. 'The level of aggregate demand helps to determine the rate of economic growth and the extent to which the economy's productive capacity is actually used.' **Define** what is meant by the term *aggregate demand (AD).* **(2 marks)**
2. **Explain** what is meant by *aggregate demand factors.* **Define** each of the following aggregate demand factors and **explain** how each could affect the level of AD:
   a. consumer confidence
   b. business confidence
   c. disposable income
   d. the exchange rate for the A$
   e. interest rates
   f. overseas economic activity. **(6 marks)**
3. Use the five-sector circular flow model of the economy to help **predict** (in a logical and step-by-step way), the likely cyclical effects of the ten economic events listed in the table that follows:
   a. AD
   b. inflation or generally rising prices
   c. economic activity measured by GDP
   d. employment or unemployment of resources
   e. incomes and material living standards.

Start each answer with a brief *definition* of the *italicised* term (see the *Economics dictionary*), and then step through your explanation. In answering the question, remember that many of the listed events change the size of leakages, injections and hence AD (i.e. the size of flow number 3). In turn, this alters sales, orders and unsold stocks of goods and services, perhaps affecting inflation. And so, the next flow in order to be affected is the level of production or GDP (i.e. flow number 4), then the level of resources purchased and perhaps the unemployment rate (i.e. flow number 1), and finally the total level of incomes paid to households (i.e. flow number 2).
The order or sequence of your step-by-step explanation here is important. Try not to get sidetracked by changes in things about which we may be very unsure. To help with this aspect and to guide your response, read the sample answer provided at the end of the table below. As a shorthand approach here, you may also use official abbreviations, horizontal arrows (indicating 'leads to'), and vertical arrows (meaning 'increase' or 'decrease'). Notice how the explanation works its way around the circular flow model in a forward direction. **(20 marks)**

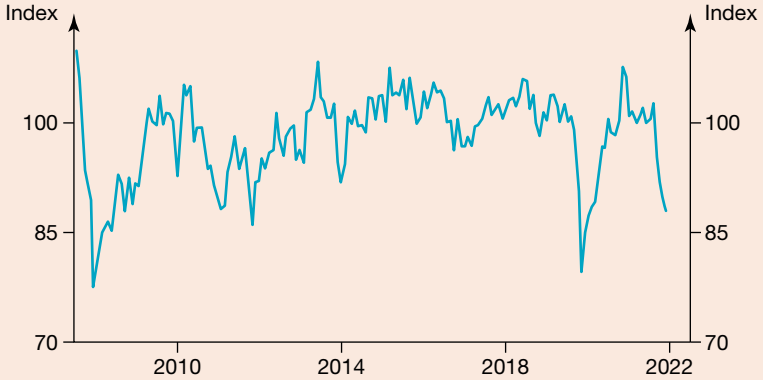
Aggregate demand factor or event	Explanation of the likely macroeconomic effects of the aggregate demand event
a. *Consumer confidence* falls.	
b. *Household disposable income per person* falls.	
c. There is a *slowdown overseas* in China's rate of economic growth.	
d. The *exchange rate* for the A$ rises or appreciates against other currencies.	
e. Interest rates fall and remain low on bank credit that is borrowed by business firms.	
f. More free trade agreements are signed, abolishing tariffs on imported goods and opening up new export markets.	
g. A decision was made to stage the World Soccer Cup in Melbourne, attracting overseas tourists, and involving increased investment in new facilities.	
h. You decide to spend your week's wages on a big night out in Melbourne and reduce your level of savings by $250.	
i. The government pays health workers a special one-off bonus of $200	
j. Australian households recently increased their savings ratio (i.e. the percentage of income not spent).	

SAMPLE ANSWER
Predict the likely economic effects on Australia's economy of a large fall in business confidence

Definition: *Business confidence* relates to the general level of business optimism or pessimism about their future sales and profits. This affects businesses' investment decisions.
Step-by-step explanation: If there was a collapse in business confidence, firms would be pessimistic and feel that their future sales and profits will fall → ↓ investment spending (I) or injections by firms on new plant and equipment since there would be no need to expand their capacity → ↓ AD or total spending on Australian-made goods and services (flow 3) → ↓ sales of goods and higher stocks perhaps leading to price discounting and lower inflation → ↓ production by Australian firms, hence slowing the rate of growth in national output or GDP produced (flow 4) → ↓ amount of resources needed by Australian firms (flow 1) → ↓ employment and increasing unemployment → ↓ total incomes paid to Australian households (flow 2) and perhaps lower material living standards.

4. Examine the following graph showing changes in Australia's *index of consumer confidence* where the base reading of 100 points indicates a neutral situation (i.e. the number of optimists equal the number of pessimists). An index of less than 100 points shows overall pessimism about the future, while one above 100 points shows general optimism.

Consumer sentiment*
Average since 1980 = 100



* Average of the ANZ-Roy Morgan and Westpac-Melbourne Institute consumer sentiment measure of respondents' perceptions of their personal finances relative to the previous year; ANZ-Roy Morgan index rescaled to have the same average as the Westpac-Melbourne Institute index since 1996.

Source: RBA Chart Pack, https://www.rba.gov.au/chart-pack/household-sector.html.

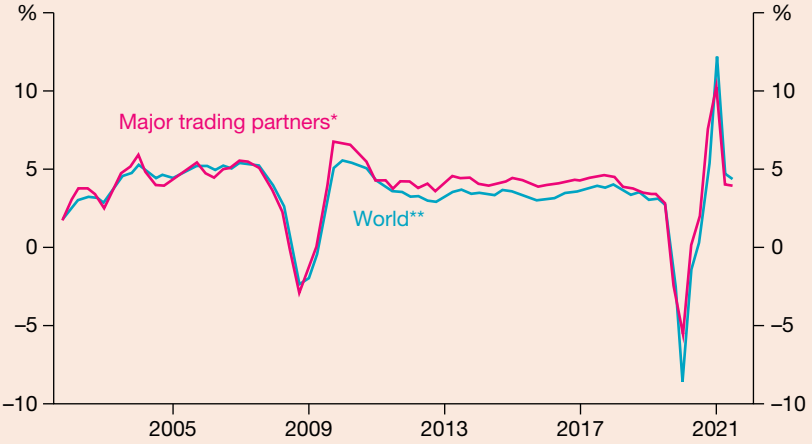
a. Referring to the graph data, **describe** the change in consumer confidence between 2021 and 2022. **(2 marks)**

b. Other things remaining equal, **outline** the macroeconomic effects of the change in consumer confidence between 2021 and mid-2022 on each of the following (remember to step your explanation in the correct order or sequence, following the flows around the circular flow model):

- AD (and selected components)
- Economic activity
- Inflation
- Unemployment and incomes. **(4 marks)**

5. Examine the graph below showing changes in overseas economic activity amongst Australia's major export markets and globally. **(4 marks)**

GDP growth – World
Year-ended



* Weighted using Australian export shares.

** PPP-weighted; accounts for 85 per cent of world GDP.

Source: RBA Chart Pack, https://www.rba.gov.au/chart-pack/world-economy.html.

a. Referring to the graph data, **describe** the change in *overseas economic activity* between 2019 and 2020 and 2021–22. **(2 marks)**

b. For each of the following, **outline** the likely macroeconomic effects for Australia of the change in economic activity amongst our major trading partners during 2020 and 2021–22 (remember to step your explanation in the correct sequence following the circular flow model): **(4 marks)**

- AD (and a selected component)
- Economic activity
- Inflation
- Unemployment and incomes.

Solutions and sample responses are available online.

4.10 Aggregate supply — its meaning, importance and factors affecting its level and economic activity

KEY KNOWLEDGE

- The meaning and importance of aggregate supply
- The factors that may affect the level of aggregate supply and the level of economic activity

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The demand for goods and services can *only* be satisfied if producers are able and willing to match this with adequate levels of supply or production. However, we know that because people's wants are unlimited and the quantity and or quality of resources available is inadequate, there are restrictions or limits to how many goods and services can be supplied.

4.10.1 The meaning and importance of aggregate supply

Aggregate supply (abbreviated AS) represents the total volume of goods and services that all producers in the country can make available over a period of time. It strongly relates to the nation's *productive capacity* or the *potential* level of national output and is designed to help satisfy the demand for goods and services. You might remember that this is shown on the production possibility diagram as the PPF.

The level of aggregate supply reflects the impact on producers of aggregate supply conditions or factors. These can include:

- the *quantity* or *efficiency* of natural, labour and capital *resources* available for production
- business *production costs, profitability* and whether firms close down, open up, or expand
- climatic events
- pandemic lockdowns, wars and disruptions to supply chains
- various government economic policies including rates of company tax, education and training, and improvements in **infrastructure**.

By affecting the availability of resources, production costs, and business profits, aggregate supply factors can greatly affect the country's productive capacity, potential level of economic activity or GDP, and other domestic macroeconomic conditions.

4.10.2 How aggregate supply factors affect the level of AS and economic activity

Over the longer-term, *aggregate supply conditions* determine Australia's productive capacity and the potential level of AS. These factors usually do this by affecting the quantity and quality of natural, labour and capital resources available, production costs of firms, and business profitability. In turn, aggregate supply factors influence the willingness and ability of producers to supply goods and services. We will now take a look at a few of these factors. As a starter, Table 4.7 summarises just a few aggregate supply factors that can affect economic activity.

TABLE 4.7 Some aggregate supply factors that can affect productive capacity and the potential level of economic activity

The labour resources available (Provide mental talents and physical power)	Demographics and the population's age structure: The size of the population and its age distribution affect the size and growth of the nation's labour force. Population can grow because of the excess of births over deaths and because of net migration. For example, immigration can increase the number and skills of the labour force available. In contrast, Australia's *ageing population* (where there is a rising proportion of the population in older age groups and retiring) is causing *labour shortages* that limit the expansion of our productive capacity and the level of aggregate supply.
	Education, skills, and labour productivity: High labour efficiency or productivity allows for a greater level of output per worker. This is often measured by the annual percentage change in GDP per hour worked. Many factors affect labour efficiency, including the levels of education, training, skills, and innovativeness. Here, there is an important role for government spending. This might include the use of financial incentives (free and subsidised education and training courses) that could help to grow our productive capacity, potential GDP, and AS.
The capital resources available (Investment in new or better plant and equipment)	Investment levels: The quantity and quality of capital resources is increased through high levels of private and government investment in new plant and equipment. Increased investment can also come from foreign capital inflow used to set up or finance new firms. These grow productive capacity and AS.
	Interest rates: Interest rates are the cost of borrowing credit used by firms to purchase new, more efficient plant and equipment. Borrowing credit can help expand productive capacity and perhaps grow business profitability. Lower interest rates tend to increase investment in new equipment, while higher interest rates deter investment, slowing the growth in productive capacity and AS.
	Outlays on technology and R&D: The use of new technology like robotics in various industries such as manufacturing, warehousing, and medicine, along with investments in research and development (R&D), can help increase the volume and efficiency of capital resources, adding to productive capacity and AS.
The natural resources available (Productive inputs found in nature)	Mineral exploration: Exploration can help us find new deposits of minerals. This can increase the quantity of resources available, and hence grow productive capacity, AS, and the potential level of GDP.
	Land management: Lifting the productivity of land and the sustainability of mining and farming practices, can help grow Australia's productive capacity and our potential level of GDP. In reverse, poor management will eventually see capacity shrink.
	Climate change and severe weather events: Increased carbon emissions, global warming and severe weather events are limiting the growth in productive capacity and AS. Floods, drought, and fires have destroyed some businesses and infrastructure. To grow capacity, it is now essential that we have policies in place designed to reduce global warming, perhaps by putting a price on carbon emissions (e.g. a tax or the introduction of a carbon emissions trading scheme).

(continued)

TABLE 4.7 Some aggregate supply factors that can affect productive capacity and the potential level of economic activity *(continued)*

The level of production costs and after-tax profits for businesses (These affect business expansion and survival.)	Wage costs and labour productivity: Businesses won't exist if they can't make a profit. High wages costs, as in Australia, combined with relatively low worker productivity can be a disincentive for business expansion because they reduce after-tax profits and cause business closures, limiting the growth of productive capacity, potential GDP, and AS.
	Rates of taxation: Rates of company tax affect after-tax profits and hence alter the willingness and ability of firms to expand. Currently, higher rates of tax in Australia, compared with many countries, act as a disincentive, make local firms less internationally competitive, drive firms to relocate overseas and hence restrict the growth in Australia's productive capacity, potential GDP, and AS.
	Government outlays on infrastructure: Infrastructure includes roads, rail, shipping ports, airports, water and power supply, and telecommunications. It is used by businesses to produce other goods and services. If there is congestion and inadequate provision of infrastructure, production costs are higher, businesses are less internationally competitive and profitable, and capacity is more limited. This restricts AS and the potential level of GDP.

Some aggregate supply factors that affect producers and influence productive capacity

Ultimately, a country can't produce more than the available natural, labour and capital resources permit. Having access to more resources would potentially allow for higher levels of national output, whereas reduced access would cut productive capacity and the potential level of GDP. In addition, unless costs are low and profits are reasonable, businesses will close, limiting AS.

4.10.3 How changing aggregate supply factors can determine the level of economic activity and macroeconomic conditions

Especially over the *shortterm* we saw that a nation's level of economic activity (and therefore its material living standards), largely reflect cyclical changes in the level of *aggregate demand*. However, over the *longer term*, it is impossible to keep on expanding the level of economic activity and GDP simply by spending more. The economy would soon hit its capacity limits and AD would exceed AS, leading to inflation. At this point, further increases in national production would depend on new, *more favourable aggregate supply conditions* to grow the economy's productive capacity. However, sometimes there are *less favourable aggregate supply conditions* limiting AS and the potential level of GDP.

Realising that aggregate supply conditions can become more favourable or less favourable, let's see how they work to affect productive capacity, AS, and the potential level of GDP, along with their impact on other domestic macroeconomic conditions:

- *More favourable aggregate supply conditions* involve producers having access to extra resources, lower production costs and stronger business profits. This acts as an *incentive* to make firms *more* willing and/or able to expand their productive capacity. In this situation, the potential rate of economic activity, GDP, employment, and incomes can readily increase, without adding to inflation. This thinking is summarised in Figure 4.14.
- *Less favourable aggregate supply conditions* like reduced access to resources, supply chain issues, higher costs, or lower profits, act as a disincentive. They cause producers to become *less* willing and/or able to produce, contracting productive capacity, the potential rate of economic activity, employment, and incomes, and adding to inflationary pressures. This is shown in Figure 4.15.

FIGURE 4.14 How generally more favourable aggregate supply conditions can increase the potential rate of economic activity and improve domestic macroeconomic conditions

More favourable aggregate supply factors:	*Increased potential level of economic activity or GDP:*	*Lower unemployment and higher incomes over time:*	*Reduced inflation:*
More favourable aggregate supply conditions can include … • Increased quantity and quality of resources available • Lower production costs including wages, materials • Increased productivity or efficiency in production • Increased business profitability • Favourable climatic events • Government policies like lower tax rates, better infrastructure, and improved education and skills.	More favourable aggregate supply conditions cause businesses to be more willing and/or able to produce and grow their productive capacity/AS, expanding the potential level of economic activity and GDP.	Over the longer-term, favourable aggregate supply conditions cause businesses to become more willing and/or able to produce goods and services. They are keener to expand their output because it is more profitable, and they are hence less likely to close down or move overseas. This means, staff are less likely to lose their jobs and more likely to earn higher incomes, and have greater employment opportunities.	More favourable aggregate supply conditions are usually associated with lower production costs and better business profitability. This means that goods and services can be sold profitably by firms at lower prices, slowing the inflation rate.

FIGURE 4.15 How less favourable aggregate supply conditions can decrease Australia's potential rate of economic activity and weaken domestic macroeconomic conditions

Less favourable aggregate supply factors:	*Decreased potential level of economic activity or production:*	*Higher unemployment and lower incomes:*	*Increased inflation:*
Less favourable aggregate supply conditions include … • A decrease in the quantity and quality of resources available • Higher production costs including wages, materials • Decreased productivity or efficiency in production • Decreased business profitability • Severe climatic events • The failure of some government policies to adequately cut tax rates, and improve infrastructure, and education and training.	Less favourable aggregate supply conditions cause businesses to be less willing and/or able to produce or expand their productive capacity/AS, decreasing the potential level of economic activity and GDP.	Over the longer-term, less favourable aggregate supply conditions cause businesses to become less willing and/or able to produce goods and services. They are discouraged from expanding their output because it is less profitable. As a result, some firms will close down or move overseas. This means staff are likely to lose their jobs, earn lower incomes and have fewer employment opportunities.	Less favourable aggregate supply conditions are usually associated with higher production costs and reduced business profitability. This means that to protect their profits, businesses try to pass on their higher costs to consumers in the form of higher prices. This increases the inflation rate.

FIGURE 4.16 As a result of severe weather events including cyclones, floods, fires and droughts over the last five years to 2023, there was the loss of life, personal suffering, property damages to homes, destruction of tourism, farming and mining industries, and huge damage to infrastructure like roads and rail systems. This limited productive capacity and AS, and reduced Australia's potential rate of economic growth.

4.10 Activities

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4.10 Quick quiz on | **4.10 Exercise**

4.10 Exercise

1. **Define** the following terms:
   - **a.** aggregate supply **(1 mark)**
   - **b.** aggregate supply factors **(1 mark)**
   - **c.** productive capacity. **(1 mark)**
2. Giving examples, **distinguish** more favourable aggregate supply factors from less favourable aggregate supply factors. **(3 marks)**

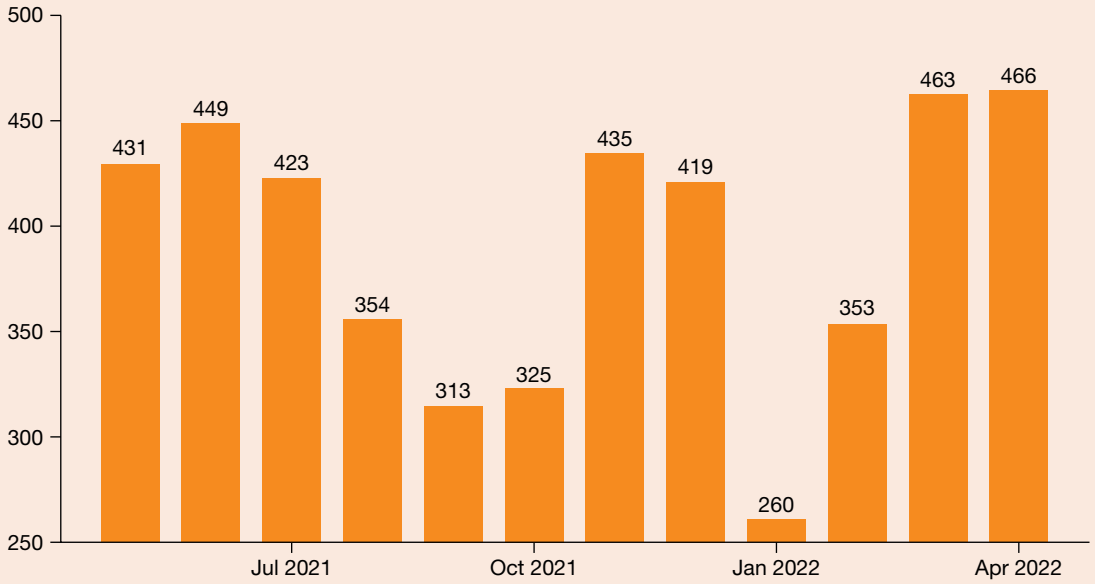
3. a. For each of the following events listed in the table below, **explain** how the *aggregate supply factor* or event could affect Australia's productive capacity, AS, and our potential long-term level of economic activity and GDP. **(12 marks)**

Event	Explain the way in which the event affects productive capacity, AS and potential GDP.
i. Efficiency among Australian workers and the productivity of other resources fall to even lower levels	
ii. New oil and gas discoveries are made in SA to rival those of the North-West Shelf	
iii. Genetically modified (GM) sheep double wool production per sheep per hectare	
iv. Severe floods occurred in eastern states during 2019 and 2022	
v. Business and government expenditure on new capital equipment and buildings reaches an all-time high	
vi. Lockdowns and supply chain issues caused by the COVID-19 pandemic between 2020 and 2022	
vii. Bass Strait oil and gas reserves run out	
viii. Soils in the Murray River region become salinated and useless	
ix. Mining in Kakadu causes environmental damage and discourages tourism in the region	
x. New technology leads to higher efficiency and lower electricity costs	
xi. Australia's population rises to 28 million people	
xii. A compulsory carbon emissions trading scheme (ETS) is introduced to make polluters pay for carbon emissions	

b. **Identify** and **outline** how any *two* of the following could help to *increase* productive capacity and AS. **(2 marks)**

I. Lower rates of company tax
II. Increased education spending
III. Promoting stronger competition in markets
IV. Building new infrastructure.

4. Examine the graph below showing monthly changes in the number of business bankruptcies in Australia.



Source: Trading Economics, https://tradingeconomics.com/australia/bankruptcies.

a. Referring to the graph, **describe** the monthly change in the number of business bankruptcies in Australia over the period shown. **(2 marks)**

b. **Identify** and **describe** three *aggregate supply factors* that could contribute to these changes in the level of business bankruptcies. **(3 marks)**

c. **Explain** how the change in business bankruptcies would affect the levels of AS, Australia's potential level of economic activity and GDP, unemployment and potential incomes. **(4 marks)**

Solutions and sample responses are available online.

4.11 The measurement of economic growth using changes in Gross Domestic Product (GDP)

KEY KNOWLEDGE

- The measurement of economic growth using changes in real Gross Domestic Product (GDP)

Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

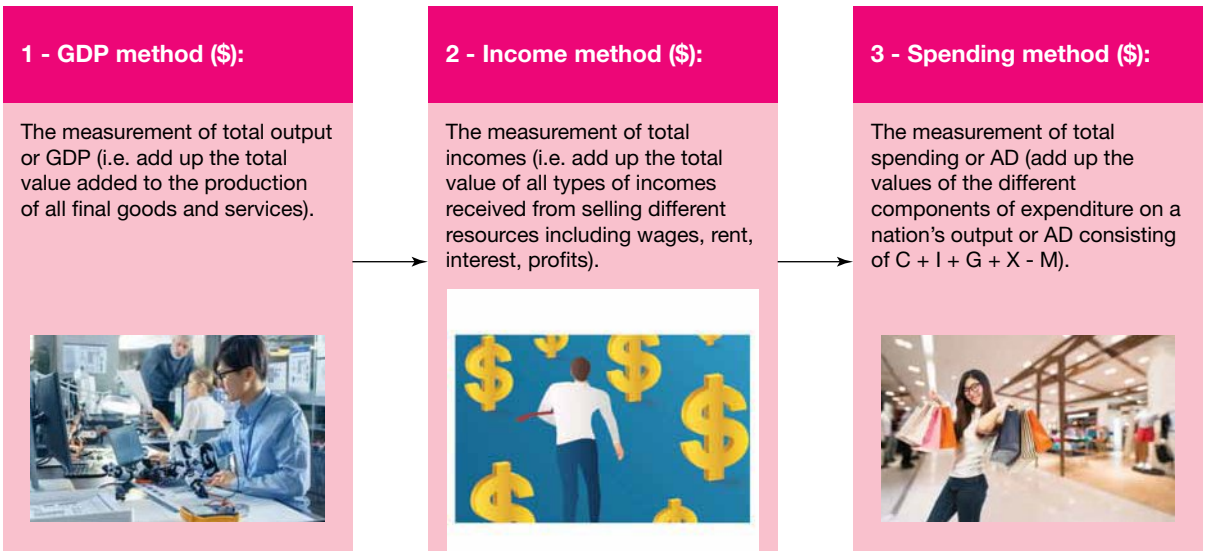
Economic growth exists when a country's economy gets bigger as a result of increasing economic activity. It occurs when there is a rise in the total *volume* of goods and services produced by a nation between one year and the next. This means that there are more goods and services being produced and made available for consumers, helping to increase some aspects of living standards.

4.11.1 Measuring a country's rate of economic growth using real GDP

The most common measure of economic growth is the percentage change in the quarterly (i.e. every 3 months) or annual value of **gross domestic product** (abbreviated as GDP) or, more precisely, real or *chain gross domestic product*. In the case of the latter, GDP statistics attempt to estimate the total annual value of goods and services produced or sold by a nation. However, to make one year's GDP results comparable with another's, the exaggeration of the value of production caused by the effects of inflation (i.e. generally rising prices paid for goods and services) or deflation (i.e. generally falling prices for goods and services) is *removed statistically* so we can compare like with like. The resulting measure produced by the Australian Bureau of Statistics (ABS) shows changes in the real or actual *volume* of goods and services produced and is hence called *chain volume GDP*. When looking at how the size of the economy has changed, it's really *volume changes* rather than *price changes* that we seek to measure.

Thinking back to the five-sector circular flow model of the economy (see subtopic 4.4), you may recall that mention was made of the *equality* in the dollar values of total spending (called aggregate demand or flow 3), national production of goods and services (called GDP or flow 4), and total incomes from the sale of resources (flow 2). This means that Australia's GDP can be calculated by the ABS using the *three* methods shown in Figure 4.17.

FIGURE 4.17 Three ways of calculating GDP to determine if there has been economic growth

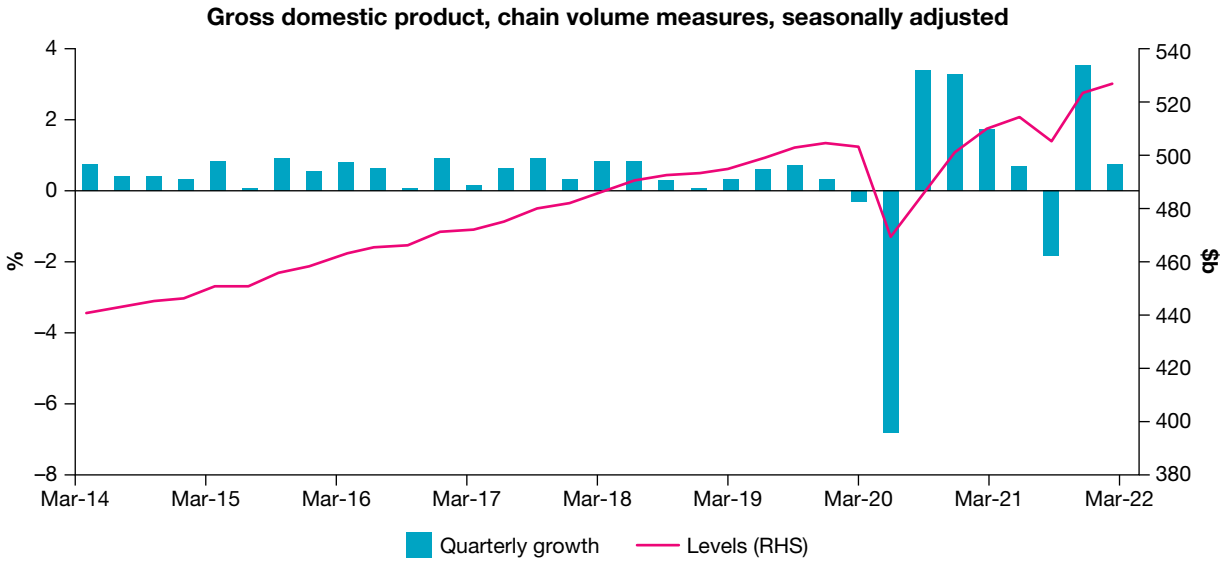


Hence, if Australia's total annual value of spending in a year was $2000 billion, then both GDP and total incomes would also equal $2000 billion. All three methods of calculation provide almost identical results, although there are small differences due to inaccuracies and other limitations of data.

Figure 4.18 shows changes in Australia's GDP presented in *two* ways (notice that the left- and right-hand scales on the vertical axis are not measured in the same units).

- *Quarterly rate or percentage change in GDP (LHS):* The graph columns show the quarterly percentage change in the value of GDP using the left-hand scale. This tells us the speed of change in production against the previous period.
- *Quarterly level or value of GDP (RHS):* The blue columns show the quarterly value of chain volume GDP (measured in billions of dollars) using the right-hand scale. This tells us the total dollar value of output in each quarter since March 2014.

FIGURE 4.18 Changes in Australia's quarterly chain volume GDP shown in both percentage and dollar terms



Source: ABS, National income, expenditure and product, see https://www.abs.gov.au/statistics/economy/national-accounts/australian-national-accounts-national-income-expenditure-and-product/latest-release.

As can be seen, the growth in Australia's GDP has been quite unstable between one quarter and the next, especially over the last two to three years. This volatility reflects changing aggregate demand and aggregate supply factors, and the effects of COVID-19 lockdowns and recent disruptions to domestic and international supply chains.

4.11.2 Limitations of using GDP as a measure of economic growth

Chain volume GDP is only an *estimation* of the total real value of national output or economic activity. Its measurement is complex and involves huge quantities of data from lots of sources. It is therefore not surprising that after the initial release of figures, the statistics are often revised with corrections. Even then, you should be aware of at least *two* main limitations:

- **Some production is not counted in GDP:** Some non-marketed goods and services (items produced but not sold normally through the market) are excluded from the GDP figures, often because they are too hard to measure. For example:
  - Do-it-yourself *home production* such as painting, housework, parenting and gardening are not included.
  - Production involved in the *cash economy*, such as work that is paid as cash in hand and not declared to the tax office, is excluded from GDP.
  - Production in the *black economy* (e.g. the production and sale of illegal drugs) is not included in GDP.
  - The value of goods and services produced by unpaid volunteers is not counted as part of GDP.

  This makes GDP an *underestimation* of the change in the real level of national output.
- **The value of some production must be imputed or 'guesstimated'.** Because of the lack of an alternative, the ABS is forced to 'guesstimate' or *impute* the value of some types of goods and services that are produced but not sold or marketed in the normal way. The inclusion of these items in GDP data may lead to inaccuracies. For example:
  - The value of *farm production that is consumed on the farm* and not sold is estimated and then included as part of GDP.
  - The annual value of *accommodation* provided by houses occupied by their owners is also estimated and added to GDP.

4.11 Activities

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4.11 Quick quiz on

4.11 Exercise

4.11 Exercise

1. a. **Outline** the three ways the annual value of Australia's GDP can be measured by the ABS. **(3 marks)**
   b. **Outline** two weaknesses that limit the accuracy of using real GDP as a measure of economic growth. **(2 marks)**
2. **Examine** the table below showing the hypothetical data for an economy. Selecting only the relevant items from the table, **calculate** the value of GDP ($ billions) using the AD or *total spending method*. Show how you calculated the answer. **(2 marks)**

Item from the circular flow model	Value ($ billions)
Household consumption	$1600
Saving	$100
Business investment	$200
Government taxes	$50
Government spending	$40
Export spending	$10
Import spending	$5

Solutions and sample responses are available online.

4.12 The potential benefits of economic growth

KEY KNOWLEDGE

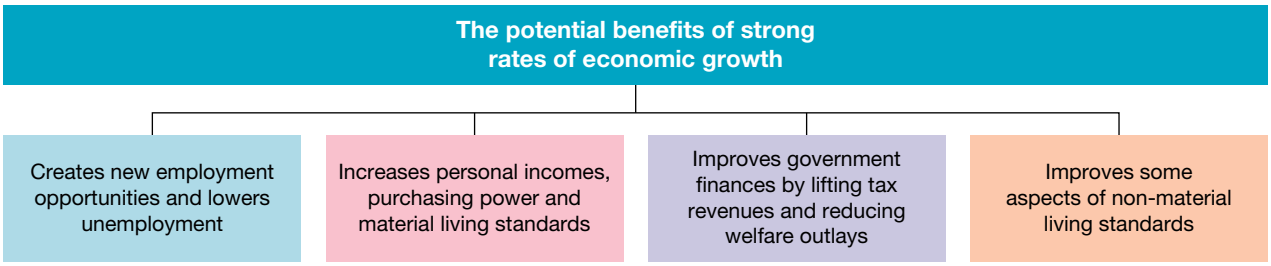
- The potential benefits of economic growth, such as growth in material living standards, improved non-material living standards, employment opportunities and economic development

Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

It is difficult to deny that economic growth (higher levels of national production) has helped most Australians to enjoy better *material* living standards and has probably even improved some aspects of our *non-material* wellbeing. These benefits are summarised in Figure 4.19.

Given these potential *benefits*, its no wonder that the Australian government promotes the **goal of full employment** or the fastest rise in GDP that is possible (perhaps an average increase of around 3 per cent a year) without causing serious inflation or jeaopardising the achievement of other important government economic and environmental goals.

FIGURE 4.19 Summary of the main benefits of strong economic growth



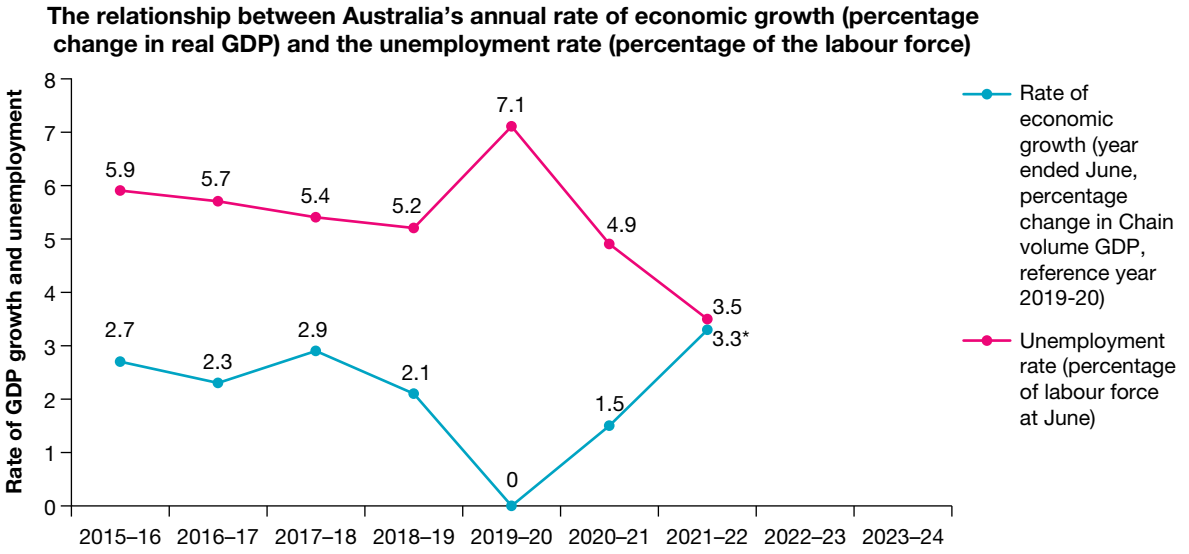
4.12.1 Strong economic growth creates new employment opportunities and lowers unemployment

Strong economic growth and rises in real GDP create extra *jobs*, helping to keep *unemployment* rates at lower levels. Indeed, one of the Australian government's important aims is to achieve the goal of full employment. This is defined as the lowest rate of unemployment, perhaps at around 4.0 to 4.5 per cent of the labour force, that does not cause inflation to accelerate.

As illustrated in Figure 4.20, one benefit of strong economic or GDP growth of at least 2 to 3 per cent a year is that it usually helps to lower Australia's *unemployment rate* (e.g. during 2017–19 and 2021–22). This is because when there is economic growth, firms usually need to hire or employ more staff to lift their production levels.

By contrast, weaker rates of economic growth, below 2 per cent, mean that **cyclical unemployment** soon rises. For example, during the COVID-19-induced recession in 2020, annual GDP growth was 0 per cent. This caused monthly unemployment to peak at 7.4 per cent (the actual figure was over 11 per cent but was artificially kept down by the government's JobKeeper wage subsidy scheme so people remained employed).

FIGURE 4.20 The close relationship between Australia's rate of economic growth and the rate of unemployment



*12 months to March 2022

Source: Data derived from ABS, Labour force, https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/latest-release; National income, see https://www.abs.gov.au/statistics/economy/national-accounts/australian-system-national-accounts/latest-release.

4.12.2 Strong economic growth increases personal incomes and material living standards

In general, income is earned by those who sell resources to the business sector and take part in the production of goods and services. The more people produce and sell thereby growing GDP, the more income is earnt. One measure of *material living standards* is real GDP per capita. Its level is very closely related to average incomes per head and can be calculated as follows:

Average real GDP (income) per head ($) = real value of GDP ($) -:- population size

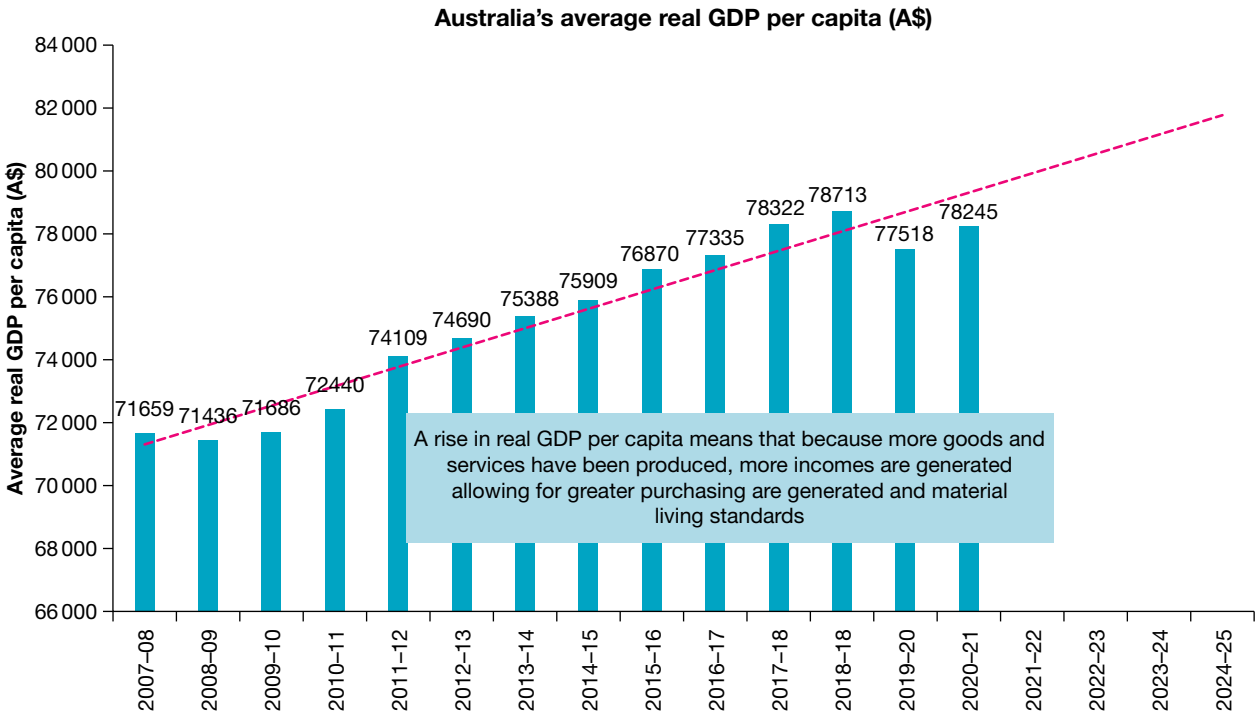
For example: If GDP equaled $1000 and the population size was 100, then average GDP (income) per capita would equal $10 (i.e. $1000 -:- by 100).

When economic growth is *strong*, and GDP is rising at a faster rate than the rate of increase in our population size, average per capita incomes and consumption levels increase. This is because to lift production, firms employ more resources including labour. As a result, wages and total incomes rise.

However, when GDP growth is *negative* or increases very slowly, average per capita incomes fall. This is the result of firms cutting production due to a lack of spending. They employ fewer resources, unemployment rates climb, and more people end up on meagre welfare benefits of perhaps $300–400 per week, rather than perhaps receive average weekly wages of around $1740 per week when employed. Clearly, their consumption levels and living standards will fall dramatically.

Figure 4.21 shows the change in average real GDP (income) per capita. Notice that:

FIGURE 4.21 Strong economic growth at rates higher than rises in Australia's population increase average per capita production and incomes, while slower growth rates tend to reduce average per capital production and incomes and therefore material living standards.

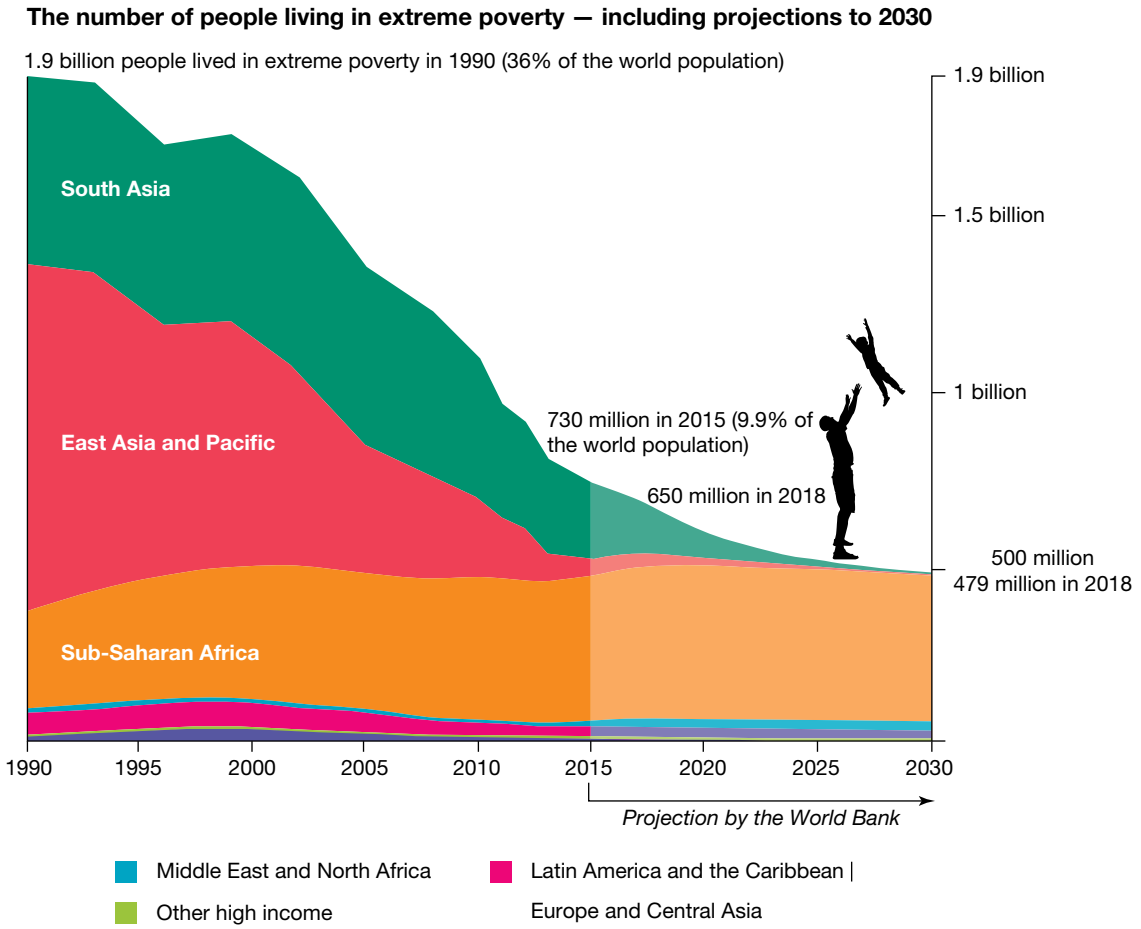


Source: Data derived from ABS, National income, expenditure and product, Table 1, Key national aggregates, see https://www.abs.gov.au/statistics/economy/national-accounts/australian-system-national-accounts/latest-release.

- overall, average real GDP per capita has increased substantially over the period leading to higher incomes, consumption and material living standards
- the rise in average GDP per capita was faster in some years (e.g. 2011–12) than in others
- that there were only two years where average real GDP failed to record an increase on the previous year's level — 2008–09 (the global financial crisis) and 2019–20 (the COVID-19 recession), lowering consumption and living standards.

Overseas experience has also impressively demonstrated why strong economic growth is so important. As shown in Figure 4.22, the spectacular rise in the average rate of *global* economic growth, from 4.3 per cent in 1960–2000 to 6 per cent in 2000–10, saw a dramatic reduction in extreme *poverty* (people surviving on less than US$1.90 per day) by over one billion people in the 25 years between 1990 and 2015. An article in the *Economist* claimed that two-thirds of this reduction can be credited to strong global economic growth, with government policies to reduce income inequality accounting for the remaining one-third. For many people, economic growth has meant increased life expectancy, better healthcare, and improved education and literacy — elements essential for better living standards.

FIGURE 4.22 Strong global economic growth has helped to reduce levels of extreme poverty.



4.12.3 Strong economic growth improves the government's finances and its capacity to provide services and welfare

Another benefit of a strongly growing economy is that there should be an increase in average incomes, with fewer people unemployed. This also means that there will normally be a rise in the amount of revenue collected by the federal government from personal income and other types of tax (such as that collected from company profits, and from the goods and services tax), along with reduced numbers receiving unemployment benefits. This strengthens the government's finances and budget position and is ultimately beneficial for our material living standards. For example:

- The extra government revenue generated from strong economic growth can be used by the government to better help the neediest individuals in our society through the payment of more generous cash welfare benefits (e.g. to the unemployed, families, sick, aged and veterans), allowing these people to enjoy reasonable living standards. There is more cash to go round for those needing help, and the welfare system is financially more sustainable, without adding further to government debt.
- The extra tax money collected when economic growth is strong can also be used by the government to provide better quality, cheap or free *community services* through the public sector (e.g. public health, education, transport and housing).

By contrast, if economic growth is weak, supporting the incomes of the neediest individuals or providing community services becomes even less affordable for the government, and living standards tend to fall.

4.12.4 Strong economic growth can improve non-material living standards

Economic growth can sometimes help improve our *non-material living standards* and the *quality of our daily lives*.

First, think for a moment about the massive non-material benefits Australians enjoy, largely thanks to decades of quite strong economic growth.

- By sacrificing some income not needed for satisfying pressing needs, individuals have the possibility of gaining more leisure time and reducing their hours of work.
- We have an increased ability to enrich our lives and minds through the broadening experiences gained from international travel.
- We have the resources and capacity to tackle environmental problems that currently reduce our wellbeing.
- There is the opportunity to extend life expectancy and improve our quality of life through improved health possibilities, care, and nutrition.
- Society can use technology and innovation to eliminate many physically demanding or boring jobs that reduce work satisfaction.
- There is an improved capacity to allocate resources towards the arts, education, music, and drama — experiences that can enrich our lives and expand our possibilities.

Second, strong economic growth normally tends to reduce the number of persons unemployed and those in poverty. For instance, in May 2022 when economic activity was strong, there were only 548 100 unemployed, whereas in July 2020 at the end of the recession, the number was 1 009 000, due to COVID-19 lockdowns and supply chain issues. Sadly, studies reveal some of the devastating effects of unemployment on the non-material living wellbeing of individuals and society generally. For instance:

- Both the physical and mental health outcomes of the unemployed are far worse than the outcomes of those with paid jobs.

- More unemployed individuals experience feelings of failure, social isolation, and lack of self-worth.
- Unemployment causes family financial and other stress, breakups, and unhappiness.
- Both the ABS and the NSW Bureau of Crime Statistics have reported higher youth crime rates among Australia's long-term unemployed, those who leave school early, and people on low incomes and in poverty.

These problems that undermineour non-material living standards tend to be less severe when there is stronger economic growth and jobs are easier to find.

4.12 Activities

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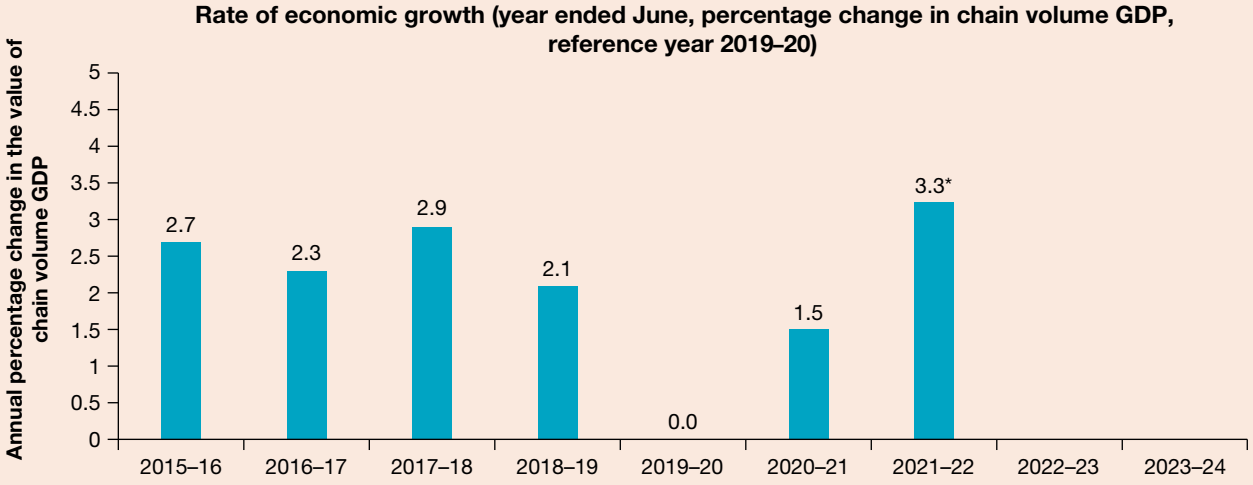
4.12 Quick quiz on | 4.12 Exercise

4.12 Exercise

1. Before answering the questions that follow, examine the figure below showing the annual percentage change in Australia's rate of economic growth using real GDP.



* 12 months to March 2022

Source: Data derived from ABS, National income, see https://www.abs.gov.au/statistics/economy/national-accounts/australian-system-national-accounts/latest-release.

   a. **Explain** the general type of *relationship* that exists between Australia's rate of economic growth, the rate of unemployment, the level of average income per person and average material living standards. **(3 marks)**

   b. Referring to the figure in question 1, **predict** the years when Australia's unemployment rate was probably relatively low and average incomes relatively high. **Justify** your selection. **(2 marks)**

c. **Explain** how a lower unemployment rate would be likely to affect society's non-material living standards. **(2 marks)**

d. Given a slower rate of economic growth in 2019–20, **explain** how you would expect this to affect the Australian government's financial situation and its ability to provide better services like transport, education and welfare systems. **(2 marks)**

2. Again, referring to the figure in question 1:
   a. Explain the general type of *relationship* that exists between Australia's rate of economic growth and the state of the Australian government's financial position or budget (i.e. the difference in value between total taxes and government outlays). **(2 marks)**
   b. Referring to the figure in question 1, **predict** the years when the financial position of the Australian government is likely to be relatively stronger. Justify your selection. **(2 marks)**
3. Sometimes, rapid economic growth can lead to an improvement in society's *non-material* living standards. **Identify** and **outline** *two* ways this might happen. **(2 marks)**

Solutions and sample responses are available online.

4.13 The potential costs of economic growth

KEY KNOWLEDGE

- The potential costs of economic growth, including boom and bust economic cycles, congestion and pollution, environmental damage, potentially widening inequality and 'affluenza'

Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

Few people, especially those in low-income countries, deny the benefits of strong economic growth for general improvements in living standards. Worldwide, and in the space of just two decades, growth has lifted perhaps 1 billion people out of severe poverty by helping to generate jobs, raise incomes, and allow for a greater satisfaction of basic needs (like food, clean water, accommodation, clothing and medical services) and even some wants. However, the question that we must now ask is — at what costs have we pursued economic growth? The main ideas are summarised in Figure 4.23.

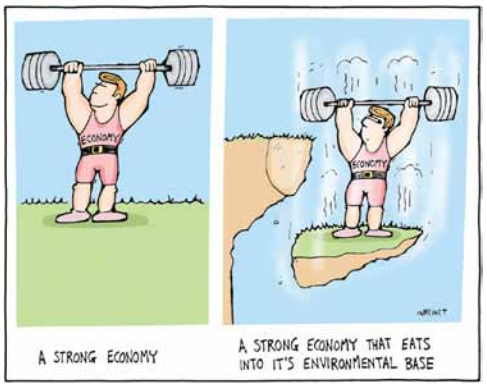
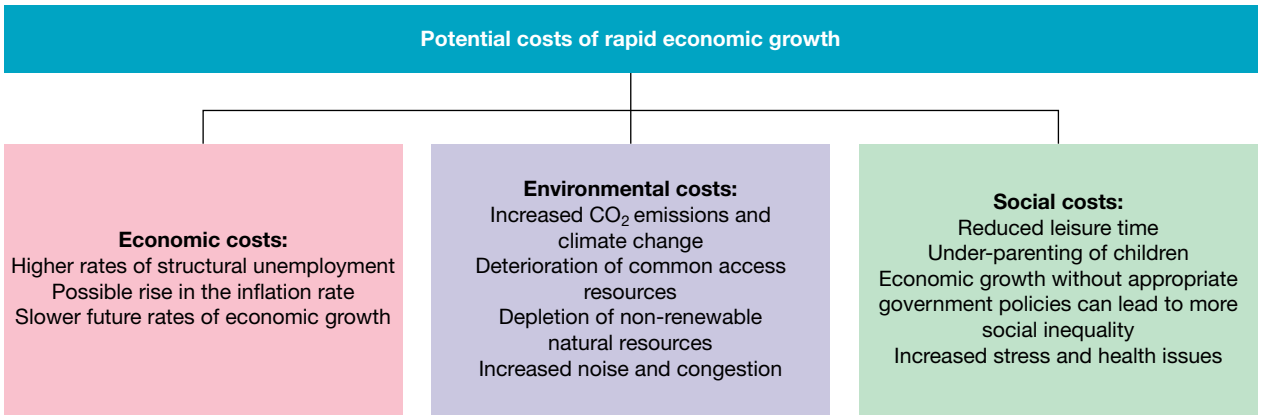


FIGURE 4.23 Some potential costs of economic growth



4.13.1 The economic costs of economic growth

While strong economic growth brings benefits, especially in the short-term, it also creates *economic* problems and comes with at least *three* important costs.

- **Rapid economic growth is unsustainable and will limit future economic growth**
  Given the world's finite resources, strong economic growth today is likely to limit the future rate of economic growth. This is because increasing GDP normally requires access to additional natural and other resources. Unfortunately, our natural resources like clean water and air are limited. In addition, as a consequence of using up *non-renewable* natural resources like minerals to fuel greater production for the current generation, this is reducing the capacity of *future* generations and an ever-growing global population to enjoy economic prosperity. This raises the question — how long will the world's natural resources last? While estimates exist for many key minerals, the answer is uncertain. It depends on assumptions including new discoveries of mineral wealth, our ability to substitute one mineral or energy resource for another by using fresh technology, the rate of population growth, and our ability to move towards a **circular economy** (i.e. instead of extracting minerals and producing goods with a short life expectancy to consume and then throw away, raw materials can be recycled and reused, slowing the demand and depletion of some resources).
- **Excessively strong economic growth can accelerate inflation**
  When economic growth is driven by strong rises in spending or AD, and the economy is close to its productive capacity or on its PPF, it is common to see a rise in the prices paid for consumer goods and services. Here, inflation is due to the onset of widespread shortages where demand or spending exceeds supply or production. In turn, higher inflation has a negative effect. It reduces the *purchasing power* of money, eroding consumption and hence material living standards.
- **Economic growth can add to structural unemployment**
  Usually, rapid economic growth causes a fall in cyclical unemployment (i.e. unemployment that exists in a recession due to a lack of spending or AD) because as businesses seek to expand production, they need to purchase extra resources including labour. However, sometimes economic growth involves structural changes to the way firms produce and sell goods and services and the type of things that are made in the economy. When firms change their production methods and use new technology to become more efficient (such as using robots on an assembly line, ATMs for banking, automated warehouses, online shopping and so on), especially in the short-term, this can cause some workers to lose their jobs, resulting in higher **structural unemployment** even though these changes can accelerate economic growth in the longer-term. Additionally, in seeking to be more internationally competitive and expand, some firms undertake cost-cutting measures. This can involve closing down less efficient and unprofitable business operations, or even relocating the whole business to low-wage countries (e.g. Bonds underwear, Brinton's carpets and aircraft servicing moved to China, and customer call centres shifted to India). While adding to global economic growth, this too can cause structural unemployment at home.

4.13.2 The environmental costs of economic growth

Economic growth can accelerate *environmental problems* including **climate change** and the deterioration in the quality of **common access goods** (i.e. those things we all share and depend on, like the air we breathe, oceans, wild fish stocks, climate, native forests, rivers, and ecosystems). In addition, economic growth, urban expansion, increased urban noise, and overcrowding also go hand in hand with increasing GDP.

Economic growth causes a deterioration of common access resources

Common access resources are needed for survival. They are seen as *free* and *non-excludable* (that is, anyone can use them without paying for them), so without proper safeguards imposed by nations (e.g. environmental pollution controls, or putting a price or cost on pollution to make it less attractive), these resources are often over-exploited for personal gain or profit. Abuse by individuals can deprive others of consumption. The atmosphere is a common access resource. So, when pollution is released into the air (or waterways) as a result of production, consumption and waste disposal, this creates **negative externalities** or *costs* for *third parties* who are usually not directly involved with the particular economic activity — costs associated with rising sea levels, the destruction of island and coastal communities, **severe weather events**, health issues, the loss of life and, over time, reduced levels of GDP growth and economic prosperity.

Economic growth accelerates climate change undermining living standards

Much research now shows a close connection between rises in global GDP levels and climate change. This connection exists because the production or goods and services, and their consumption and disposal, generate greenhouse gasses that are released into the atmosphere. These cause global warming with far reaching *negative externalities* or costs, now and into the future.

- *Severe climatic events:* Global warming is leading to more frequent and severe weather events including cyclones, storm surges, droughts, extreme temperatures, bushfires, and floods.
- *Rising sea levels:* Global warming is melting the polar caps, significantly increasing sea levels. This causes coastal erosion, damages property, and threatens coastal and island communities, adding to levels of climate-induced migration.
- *Climate change slows economic growth and GDP:* For most countries, climate change is a less favourable aggregate supply factor that will continue to slow economic growth, GDP, incomes and living standards. For example, one estimate of the global cost of climate disasters for 2020 put the loss at $272 billion! Another report concluded that climate change would shave 11–14 per cent off global GDP by 2050, compared with no climate change. Modelling used in Figure 4.24 shows the expected impact on counties' GDPs of climate change by 2100.

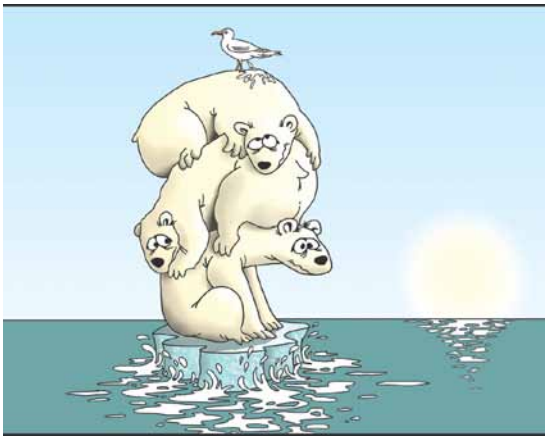
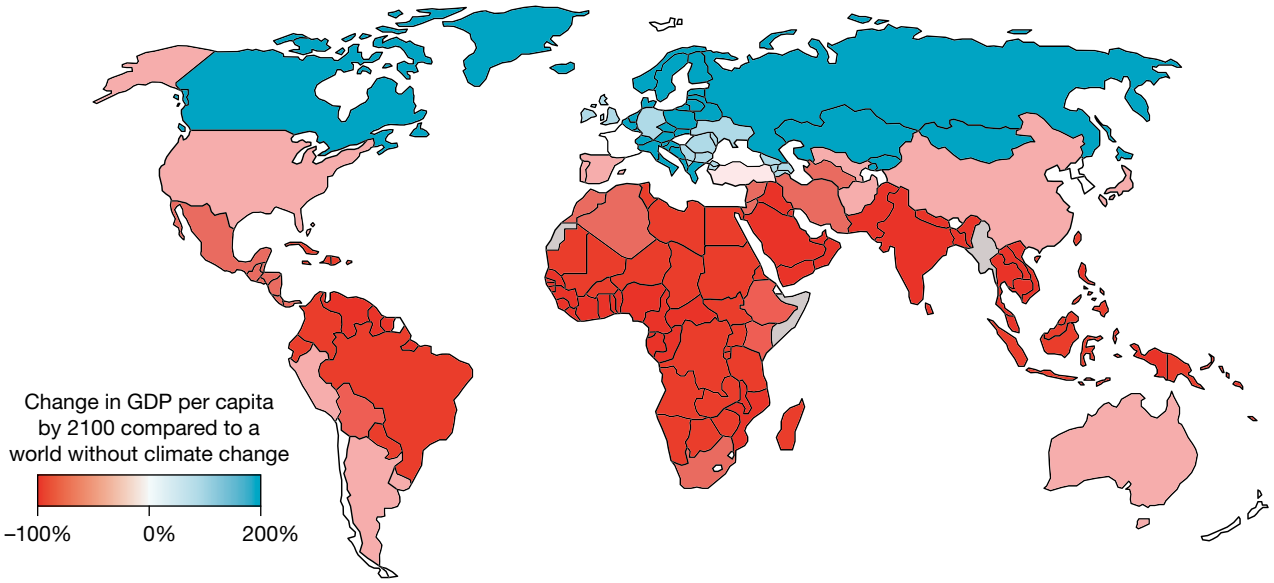


FIGURE 4.24 Projected change in GDP by 2100 from global warming against no climate change — losers and winners



Source: *Nature*, see https://www.nature.com/articles/nature15725. Reprinted in World Economic Forum, What are the consequences of climate change? See https://www.weforum.org/agenda/2015/11/what-are-the-economic-consequences-of-climate-change/.

While northern countries stand to gain, most (including Australia) are likely to suffer. Of particular note is that those likely to suffer most are often low-income nations that have contributed least to emissions and climate change. They are the third party paying a disproportionate share of the costs.

For Australia, apart from the significant loss of life and personal suffering, we think of the huge financial costs of recent fires, floods and droughts over the last five years resulting in reduced yields, repairs to infrastructure, houses and businesses, and insurance payouts. For us, these disasters are expected to rise in severity and frequency at an annual cost estimated to be around $129 billion by the year 2100.

The main takeaway here is that the impacts of accelerating climate change dramatically reduce the material and non-material gains or benefits derived from economic growth, and that it is time to take substantial action on climate change and realise that it can *not* be business as usual.

- *Food insecurity:* Economic growth that has accelerated climate change has also tended to slow crop yields, despite advances in agriculture. With the number of mouths to feed in the world still rising, moving forward, food security has become an even more significant issue. Volatile and generally higher commodity prices are likely to mean that in some years there will be less to eat, making life even more precarious. In addition, water security is a real problem in some countries. As highlighted by some commentators, it is not a huge stretch to imagine that issues related to food and water security could lead to wars and threats to world peace.

- *Degraded ecosystems:* Climate change due to economic growth has undermined the sustainability and quality of ecosystems. It has led to the loss of biodiversity needed to maintain functions like providing oxygen, clean water, pollination, and pest controls that are needed for survival.
- *Health impacts:* Climate change is negatively impacting global health. There are deaths because of heatwaves and air pollution (estimated by the WHO to be around 7 million per year). In addition, there are changed patterns of disease spread (e.g. malaria and dengue fever).

4.13.3 The social costs of economic growth

Economic growth can accelerate *social* problems.

- **Economic growth can reduce leisure time available**
  Economic growth can reduce the number of hours of leisure. This is because over the last 30 years, Australian workers have seen an overall rise in actual hours worked by those employed full-time to between 38 and 40 per week. With low wages and high costs of living, some are forced to have multiple jobs to make ends meet. As a result, there has been a reduction in the number of hours left for recreation and leisure, even though some people have taken a cut in income to reduce their time at work.
- **Economic growth can reduce health**
  Economic growth can be associated with increased levels of stress and health issues brought on by sedentary work, and pressures to lift workplace **productivity** and cut costs. There are also health issues associated with the consumption of fast food for a busy lifestyle, along with the negative impacts of air and noise pollution, and traffic congestion.
- **Economic growth can harm families**
  Economic growth has been linked with a range of problems that degrade family life. Perhaps the most common one is *under-parenting* due to mums and dads working longer hours to earn even more income. This means that they spend less time raising, loving, and guiding their children. Some young people are left unsupervised and to their own devices. Some wander the community, find themselves in unsafe situations, or are exposed to crime and drugs. These can lead to further social problems.

- **Economic growth and a failure of government policy can lead to more inequality**
  While economic growth has been good for many, the benefits of increased output and incomes are usually not shared or distributed equally. Some groups in society have benefited more than others and, in most countries, there has been an increase in *inequality* between the rich and poor. This does *not* necessarily mean that economic growth *causes* increased inequality — it is more complicated than this. In fact, weak economic growth that leads to higher unemployment and lower incomes would almost certainly make inequality even worse. The growing inequality in income and wealth that we now see is partly the result of the government's failure to adopt appropriate policies to ensure that the benefits of growing national output and income are shared more evenly.
  In Australia, for example, with rising revenue gained for economic growth, governments have cut tax rates, and allow generous tax breaks that are most beneficial for higher income earners. While tax cuts might incentivise effort, the policy has made the tax system less steeply progressive, allowing for greater inequality. In addition, tax cuts have also reduced the government's ability to pay for adequate welfare, education, health, and public housing that are needed to help slow the rise in inequality.
- **Affluenza — can money buy happiness?**
  Economic growth has created jobs, raised incomes, boosted consumption, and allowed most people to enjoy generally better living standards. But does all of this necessarily lead to greater happiness? Some (but not all) research suggests that only up to a point, where essential needs are met without uncertainty, does earning extra money add to society's happiness. Beyond this, there may be a trade-off.
  Affluenza is mostly a problem for some in high-income countries. The term describes a social condition that comes about from an individual's obsession and single-minded pursuit of wealth and material things. They fail to understand that their actions may hurt others and damage relationships, possibly leading to depression and anxiety. People with this problem focus on work and believe that their self-image is linked directly with their financial reputation and ability to display their success. This strong focus on *material values* prevents them from gaining enjoyment from the broader non-material aspects of life such as love, family, and recreational pursuits, ultimately leaving many feeling unfulfilled and unhappy. In some cases, they try to buy happiness through destructive, risk-taking actions, including substance abuse.

4.13 Activities

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4.13 Quick quiz on | 4.13 Exercise

4.13 Exercise

1. **a.** Growth in GDP can potentially bring *economic* and *social* costs. **Complete** the table below by explaining how economic growth might cause each of the impacts noted. **(6 marks)**

Potential economic and social costs of economic growth	Explain how the growth in GDP might cause the cost noted.
a. Increased inequality of incomes	
b. Affluenza	
c. Unemployment	
d. Higher rate of inflation	
e. Lower future rates of economic growth	
f. Lower future incomes and material living standards	

b. Some of our *non-renewable natural resources* are running out because of economic growth and a finite planet. Depending partly on the decisions we make as consumers, future generations will probably have reduced access to some resources. **Classify** each of the products in the table below as to whether they are produced using mainly *renewable* (R) or *non-renewable* (NR) natural resources. **(10 marks)**

Type of product	Classification of resources (R or NR)
a. A nylon shirt	
b. A coffee table made from plantation pine	
c. Petrol (crude oil)	
d. Gas made from corn or sugar cane	
e. Solar or wind power	
f. A woolen jumper	
g. Steel framing for a house	
h. A plastic ruler	
i. Cement	
j. Sardines from the Atlantic Ocean	

c. Over the past 1000 years, global production and population have both increased. Initially until the early-1800s, this was relatively slow. However, in the subsequent 200 years, the process accelerated dramatically and, when graphed, their level has risen *exponentially* at a faster and faster rate. In some circles, this has caused alarm because the world's resources are limited and in the long-term, growth in production is unsustainable.

Here is an old French riddle about exponential growth and environmental threats that you might like to solve — when will the lily plant cover just *half* the pond? **(1 mark)**

> Imagine you own a beautiful fish pond (representing the supply of the world's resources) on which a water lily is growing (representing the world's demand for resources). This lily plant doubles in size each day. If the lily is allowed to grow unchecked, it will completely cover the whole pond in exactly 30 days, choking off all other forms of life in the water. For a long time, the lily plant seems small and harmless, and so you decide not to worry about cutting it back until it covers *half* the pond. **Identify** the day on which this occurs. **The answer = day .....**

d. Economic growth comes at a cost:

i. **Define** the term, *negative externalities* associated with economic growth, and **outline** how they can affect living standards. **(2 marks)**

ii. Increased economic activity and growth can result in *negative externalities*. **Describe** the negative externality that is likely to be the result of the economic activities listed in the table below. **(10 marks)**

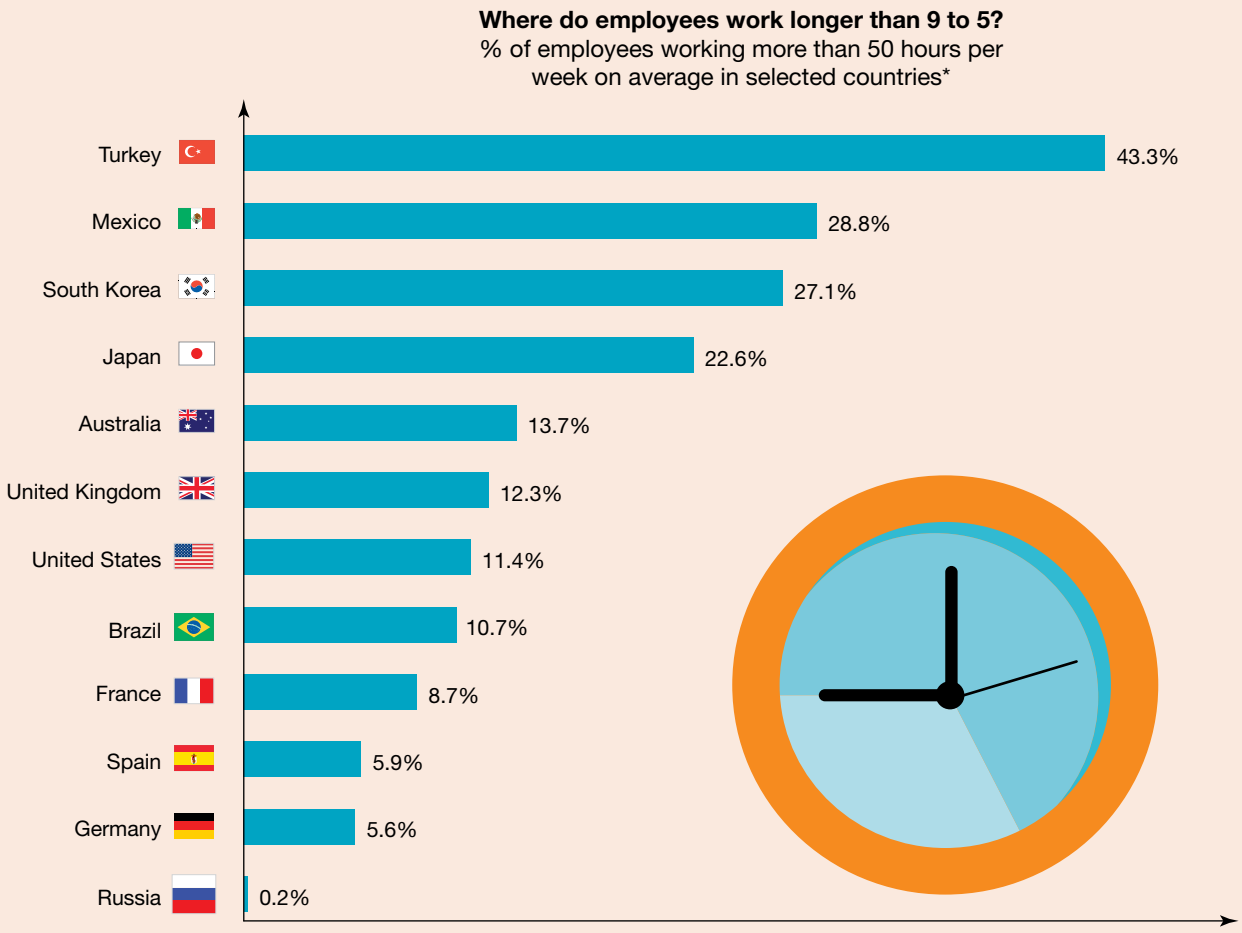
Type of activity	Describe the negative externality and who pays the cost.
a. Increased wood chipping in the Otways and north-east Victoria	
b. Setting up a new paper mill in Burnie, Tasmania	
c. The construction of a new tunnel near Westgate in Melbourne	
d. The opening of Sydney's new airport in the west	
e. A passenger smoking a cigar on a flight to Perth	
f. Leaving an electric light on all day in your bedroom	
g. Driving instead of walking to the corner shop	
h. Off-road four-wheel driving and trail motorbike riding	
i. Disposing of household rat poison down the sewer	
j. Holding a wild and noisy party at your house on Saturday night	

iii. Climate change is an example of a negative externality associated with economic growth. **Explain** how economic growth accelerates climate change and increases the incidence of severe weather events. **(2 marks)**

iv. **Explain** how climate change and severe weather events can affect the material and non-material living standards of Australians and people living in other parts of the world. **(4 marks)**

v. **Define** common access resources. Give examples of these resources. **(2 marks)**

e. Economic growth has also been associated with a reduction in some aspects of *non-material* living standards, including the amount of leisure time. Examine the figure below, which is a comparison of hours of work in selected countries as an influence on the amount of leisure time.



*Latest available year

Source: Adapted from Measuring the Standard of Living, Tutor2u; Statista Charts.

For some people, growing national production and income have meant longer hours of work.

i. **List** the two countries that work the longest hours on average, and the two that work the shortest hours. **(2 marks)**

ii. **Identify** and **outline** *three* ways long hours of work could reduce our non-material living standards. **(3 marks)**

Solutions and sample responses are available online.

4.14 The limitations associated with using real GDP and real GDP per capita to measure changes in living standards

KEY KNOWLEDGE

- The limitations associated with using real GDP and real GDP per capita to measure changes in living standards

Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

Living standards reflect the population's overall level of wellbeing and is influenced by *two* aspects:

- *Material living standards* reflect the average level of income and consumption per person per year.
- *Non-material living standards* consider other factors not directly related to income that affect the quality of life such as levels of happiness, freedom, pollution, crime, congestion, leisure time and relationships.

There is a temptation by some to use various GDP measures to indicate *overall* living standards. After all, GDP is closely related to incomes and purchasing power. However, we are about to find out exactly what these measures do and don't tell us about society's wellbeing.

4.14.1 Limitations of simply using real GDP as a measure of material living standards

Some people mistakenly assume that the level of **chain volume GDP** (i.e. real GDP that has been adjusted statistically to remove the effects of changing prices on the value of output) can be used as a *stand-alone indicator* of living standards.

However, perhaps the most obvious *weakness* is that without recalculating data and allowing for a country's *population size*, GDP on its own tells us almost nothing that is useful about living standards. For *material* living standards, what we really need to know is the annual real value of *GDP per head* or per capita (i.e. a nation's real GDP divided by its population size). Even then, it tells us nothing about the *quality of life* or *non-material* wellbeing.

FIGURE 4.25 Comparison of the GDP size in selected countries

Take a look at Figure 4.25. It compares the relative sizes of GDP ($) in selected countries. For example, it shows that China's GDP is about 12 times bigger than Australia's. However, because China's population is around 55 times that of Australia's, their average GDP *per capita* is only about one-fifth the level of ours. Hence, their material living standards are much lower. The takeaway here is that unless GDP is expressed in *per capita* terms it is meaningless, even as a measure of material living standards.

4.14.2 Limitations of using real GDP per capita as a measure of material living standards

Realising the complete uselessness of GDP on its own to tell us anything about overall living standards, we often see chain volume GDP per capita quoted. However, this too has limitations and it's what is left out of the numbers that means it is a very rough measure indeed. It certainly does not tell the whole story about living standards.

Because *real GDP per capita* takes account of population size, it is clearly an improvement on just using real GDP. However, it still has serious limitations. These are summarised in Table 4.8.

TABLE 4.8 Limitations of using real GDP per capita as a measure of overall living standards

Limitations of using real GDP per capita as a measure of material living standards	Limitations of using real GDP per capita as a measure of non-material living standards
• Not all goods and services produced are included in GDP— the measure is incomplete. • The value of some production that is included is imputed or is 'guesstimated'. • It fails to take account of how evenly goods, services and income are shared or distributed across the whole population.	• The depletion of important common access and non-renewable resources is not considered. • The impact of CO_2 emissions on climate is not considered. • Happiness and the loss of leisure time to work are not considered.

Limitations of using real GDP per capita as a measure of material living standards:

Material living standards reflect the annual level of incomes and purchasing power per person. Certainly, real GDP per head is almost a reasonable guide to average income levels and hence consumption. However, it has *three* main limitations.

Failure to consider inequality in the distribution of goods, services, and incomes

Perhaps the most important weaknesses of using *average* real GDP per capita as a measure of material living standards is that it doesn't tell us how *evenly* or *unevenly* the goods, services and incomes are shared or *distributed* between individuals. If the *income cake* is divided *evenly*, then the *average* level of GDP would be meaningful. However, if there is great *inequality*, as found in many countries, then the figure would be of limited use. In Australia, for example, there is much inequality. The top 20 per cent of income earners receive around 40 per cent of all income and the lowest 20 per cent receive just 7 per cent (i.e. the latter group is unable to consume the same quantity of goods and services). So, *average* GDP per capita doesn't tell us very much at all.

GDP statistics do not include the value of all economic activity

Chain volume GDP measures the total real market value of finished goods and services produced in a country over a period. However, this *fails* to include the value of *all* economic activity making it an *underestimation* of the goods and services produced and available for consumption. Here we might think of the following excluded items left out of GDP:

- Do-it-yourself *home production* such as painting, housework, parenting and gardening are not included.
- Production involved in the *cash economy*, such as work that is paid in cash and not declared to the tax office and hence is not included.
- Production in the *black economy* (e.g. the value of illegal activities like crime and drugs) is not known and hence can't be incorporated in the figures.
- The value of goods and services produced by unpaid volunteers is not counted.

The value of some production must be imputed or 'guesstimated':

Because of the lack of an alternative, the ABS is forced to 'guesstimate' or *impute* the value of some types of goods and services that are produced but not sold or marketed in the normal way. This may lead to inaccuracies. For example:

- An estimate of the value of *farm production that is consumed on the farm* and not sold is estimated and then included as part of GDP.
- An estimate of the annual value of *accommodation* provided by houses occupied by their owners is also estimated and added to GDP.

Limitations of using real GDP per capita as an indicator of non-material living standards

It is fair to say that a country's average real GDP per capita tells very little about society's *non-material living standards* or the general quality of life. For example, real GDP per capita fails to take account of *negative externalities* that lower *non-material living standards*. Negative externalities (i.e. the environmental and other costs imposed on third parties not connected with the economic activity that result from growing the production and/or consumption of goods and services) are not taken into account in calculating real GDP per capita. There are many examples of such external costs resulting from increasing production that undermine our personal wellbeing, yet are ignored in GDP. For example:

- the loss of leisure time for families to spend together due to the pressures of work
- youth problems caused by more adults working long hours and under-parenting of children
- increased stress levels and loss of job satisfaction due to pressure to be more efficient and work harder
- the destruction of the natural environment — for example, the exploitation and depletion of environmental or common access resources
- the costs to current and future generations of generating carbon pollution (CO_2), that accelerates global warming and climate change.

Because these external costs are not subtracted from the annual value of production, using real GDP per capita as a measure greatly *exaggerates* our actual living standards.

FIGURE 4.26 When more goods and services are produced and consumed from manufacturing, mining, agriculture and the generation of power, more carbon emissions are released into the atmosphere, contributing to global warming, climate change and severe weather events. In addition, pollution of oceans can occur, perhaps due to oil spills. These undermine both current and future living standards.

4.14 Activities

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4.14 Quick quiz on | 4.14 Exercise

4.14 Exercise

1. **Explain** what it means if Australia's GDP rises by 3 per cent. **(1 mark)**
2. The value of GDP can be calculated by summing up the total *value added* to a nation's production of finished goods and services. According to the circular flow model, **outline** *two* other ways of calculating the dollar value of a country's GDP. **(2 marks)**
3. **Examine** the table below showing the recent real value of GDP measured in US$ for three countries—Australia, Saudi Arabia, and Germany:

Country	Real value of GDP (US$ millions)
Australia	1 620 600
Saudi Arabia	842 588
Germany	4 230 200

Source: Data derived from OECD.Stat, see https://stats.oecd.org.

Outline the main reason why we cannot conclude much from this data about the actual *material* living standards that exist in Australia, Saudi Arabia and Germany. What additional data would we need to know to draw more accurate conclusions? **(2 marks)**

4. **Examine** the table below before answering the questions that follow.

Information	Australia	Russia
Real GDP (US$ millions)	1 620 600	1 650 600
Population size (millions)	26	146
Average real GDP per head	$.....	$.....

   a. *Given* the information for Australia and Russia shown in the table, **calculate** the level of average *material* living standards. **(2 marks)**
   b. **Explain** why the answers you calculated may not be an accurate guide to general living standards in these two countries. **(2 marks)**

5. Inflation (generally rising prices paid for goods and services) needs to be taken into account to accurately measure the rate of economic growth, otherwise we cannot be sure what has happened to the real *volume* of goods and services produced each year. If a country experiences rapid inflation of 10 per cent for the year, **explain** how this normally would affect the nominal or *market value* of GDP (measured in dollars) and the *apparent* rate of economic growth, if no attempt was made to remove the effects of inflation and convert this to the *real* value of GDP. **(2 marks)**
6. **Explain** why real GDP per capita tells us almost nothing useful about a country's *non-material* living standards. **(2 marks)**
7. Giving examples, **explain** the meaning of *negative externalities* and how they affect our wellbeing or overall living standards. **(4 marks)**

8. **Classify** each of the events listed in the table that follows into those that are most likely to affect *material* living standards and those that are most likely to affect *non-material* living standards, **explaining** your reasons. In some cases, you might want to explain how both aspects of wellbeing could be affected by the event. **(20 marks)**

Event	Likely effect on material living standards	Likely effect on non-material living standards
a. Your boss gets you to work more unpaid overtime.		
b. The level of GDP per hour worked increases.		
c. Population densities in capital cities rise and the city's footprint grows.		
d. Due to a new freeway, the time taken to travel to work falls.		
e. New mineral resources are discovered and mined.		
f. There was a rise in the minimum wage to around $812.60 per week as in 2022–23.		
g. Crime rates soar.		
h. Inflation rises to high levels.		
i. The minimum age for voting is increased to 25 years.		
j. Welfare benefits are abolished.		

Solutions and sample responses are available online.

4.15 Alternative measures of economic activity and living standards

KEY KNOWLEDGE

- Alternative measures of economic activity and living standards

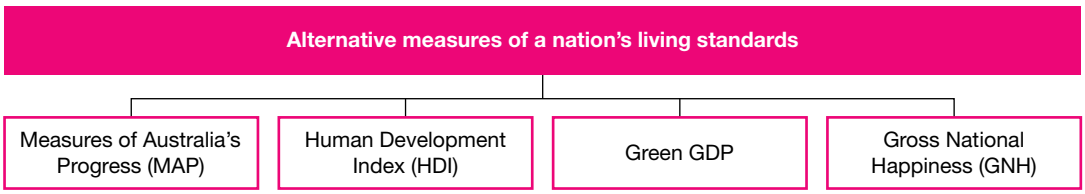
Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

Our overall living standards reflect both our *material* wellbeing (annual per capita income and the quantity of goods and services each person consumes) and *non-material* wellbeing (the quality of our daily life or existence). The most used indicator of Australian living standards or general wellbeing is the annual average level of real GDP per person. This is calculated annually by dividing the real value of GDP by the country's total population. Sometimes, too, another measure is used such as the *average disposable income per person per year*, which is derived also from the GDP figures. However, as mentioned previously, *real GDP per capita* as a measure of overall living standards is flawed. For example:

- It is a single average number that cannot possibly measure all the dimensions of our wellbeing.
- It unrealistically assumes that the goods and services produced are shared evenly among all individuals.
- It fails to include some goods and services that have been produced, and only inaccurately imputes or guesstimates the value of others.
- It says nothing about non-material living standards. For instance, it ignores the negative externalities associated with economic growth — costs like climate change, the environment, reduced leisure time, rising crime rates and reduced happiness — that clearly have a negative impact on our wellbeing.

With these shortcomings in mind, economists have investigated alternative indicators of living standards such as MAP, HDI, Green GDP, and GNH. These are summarised in Figure 4.27.

FIGURE 4.27 Other measures of a nation's living standards



4.15.1 Measures of Australia's Progress (MAP) as an indicator of living standards

Unlike GDP, **Measures of Australia's Progress (MAP)** is *not* a single statistical indicator of overall welfare. Rather, it is a suite or collection of measures published by the Australian Bureau of Statistics (ABS), illustrated in Figure 4.28. It arose partly out of public interest as to whether *'life in our country is getting better'* and whether this can be sustained indefinitely into the future. In addition, many felt that GDP alone was far too narrow as a measure of economic progress or wellbeing.

MAP involves *four* main categories of measures used by the ABS:

- society
- the economy
- governance
- the environment.

FIGURE 4.28 Measures of Australia's Progress (MAP)

Measures of Australia's Progress (MAP)

Is life in Australia getting better?

SOCIETY	ECONOMY	ENVIRONMENT	GOVERNANCE
✓ Health	✓ Opportunities	? Healthy natural environment	~ Trust
~ Close relationships	✓ Jobs	~ Appreciating the environment	? Effective governance
~ Home	✓ Prosperity	? Protecting the environment	✓ Participation
✓ Safety	✗ A resilient economy	✗ Sustaining the environment	? Informed public debate
✓ Learning and knowledge	✓ Enhancing living standards	✓ Healthy built environments	? People's rights and responsibilities
~ Community connections and diversity	~ Fair outcomes	? Working together for a healthy environment	
? A fair go	✓ International economic engagement		
? Enriched lives			

What do these symbols mean?

- ✓ The headline progress indicator for this theme has shown **progress**.
- ✗ The headline progress indicator for this theme has shown **regress**.
- ~ The headline progress indicator for this theme has **not changed greatly**.
- ? There is a **data gap** for this theme as there is currently no headline progress indicator.

It is important to realise that not every reader of this ABS publication will feel that all measures are important to their personal definition of *progress*, but the hope is that the data will be used to support opinions and perhaps shape government policy. Indeed, looking at the evidence and scorecard, particular indicators appear to show progress, while others show regression or deterioration.

Most commentators believe that MAP is a superior approach to indicating changes in Australia's living standards. This is because unlike real GDP or income per capita, which only focus on some limited influences on our wellbeing, MAP also factors in elements that say something about *non-material wellbeing* associated with changes in our environment, society, and governance

4.15.2 The Human Development Index (HDI) as an indicator of living standards

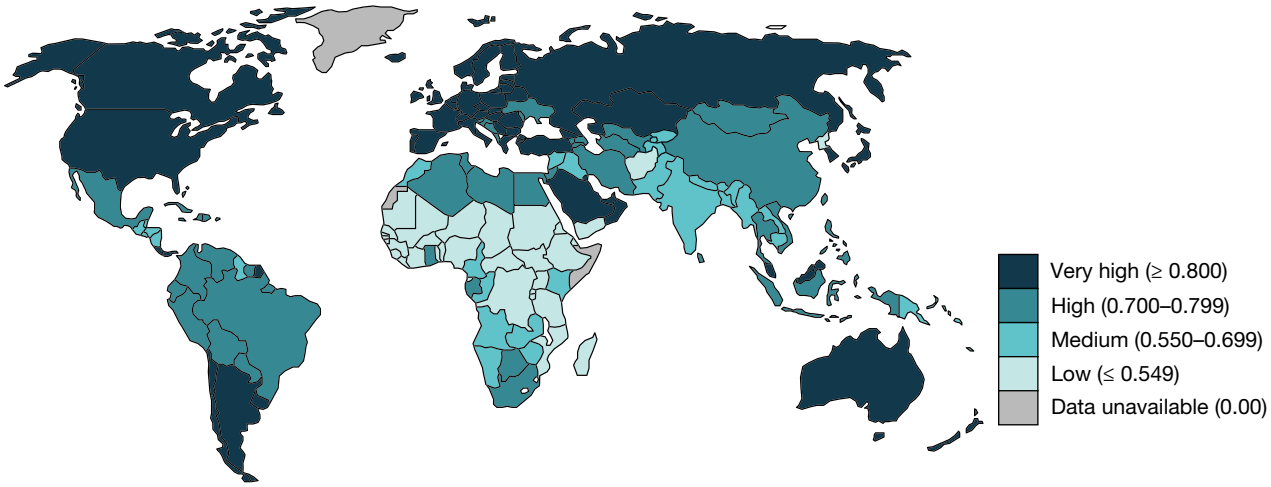
These days, the **Human Development Index (HDI)** is one of the most widely used indicators of economic development and general wellbeing. It is an index created by combining a range of economic and social indicators (although it fails to incorporate environmental considerations). Each year, the United Nations Development Program calculates an HDI for most countries, and then ranks these from highest to lowest (using a scale where 1 equals the highest score and 0 is the lowest level of development). Data is published annually in the *Human Development Report*. As outlined below, the HDI is constructed to reflect both economic and social indicators:

- **The indicator of material living standards in the HDIs.** The main *economic* indicator of wellbeing in the HDI is *real national income per capita*. This figure is adjusted to remove variations in the actual purchasing power of money in different countries (called **purchasing power parity** or PPP, expressed in US$), as well as adjusted downwards for inequality in the distribution of goods and services.
- **Indicators of social or non-material living standards in the HDI**. Two key *social* measures used in the HDI are *life expectancy* (calculated at birth and expressed in years) and education standards (shown by both the mean and *expected years of schooling*).

Figure 4.29 shows international comparisons of the HDI for selected countries. Here, Norway is on top, Australia is ranked eighth, while, unfortunately, the Central African Republic is last, sitting in one hundred and eighty-eighth place.

FIGURE 4.29 International comparisons of living standards using the Human Development Index (HDI)

Very high human development			Low human development		
Rank	**Country**	**Score (Inequality adjusted HDI)**	**Rank**	**Country**	**Score (Inequality adjusted HDI)**
1.	Norway	0.899	180.	Eritrea	0.459
2.	Ireland	0.885	181.	Mozambique	0.316
3.	Switzerland	0.889	182.	Burkina Faso	0.316
4.	Hong Kong, China (SAR)	0.824	183.	Sierra Leone	0.291
5.	Iceland	0.894	184.	Mali	0.289
6.	Germany	0.869	185.	Burundi	0.303
7.	Sweden	0.882	186.	South Sudan	0.276
8.	Australia	0.867	187.	Chad	0.248
9.	Netherlands	0.878	188.	Central African Republic	0.232
10.	Denmark	0.883	189.	Niger	0.284



Source: Based on data from *Human Development Report 2020, The Next Frontier: Human Development and the Anthropocene,* United Nations Development Programme, pp. 343–346.

4.15.3 Green GDP as an indicator of living standards

Another alternative measure of living standards is **green GDP**. This is calculated by using data for real GDP and subtracting the estimated value or cost of environmental damage (e.g. depletion of resources, the costs of climate change and the loss of biodiversity) in producing a nation's GDP.

One attempt at this measures the real value of goods and services or GDP produced (converted to common US$) per ton of carbon emissions. This also reveals information about a nation's contribution to climate change. Not surprisingly, low-income countries usually have the greenest GDPs. Overall, the hope is to reveal a broader picture of our general wellbeing, rather than simply using real GDP.

4.15.4 Gross National Happiness (GNH)

Starting in 2011, the United Nations invited member nations to measure their happiness. This was known as the World Happiness Report. Essentially, **Gross National Happiness (GNH)** is a composite index made up of several indicators including GDP per head, social support, health and life expectancy, freedom to make life's choices, generosity, and trust. It is updated annually.

Figure 4.30 uses data to rank the highest and lowest countries based on their score (near 10 represents excellent happiness, near 0 represents great unhappiness). Notice that Finland ranks highest (7.632), Australia is in tenth place (7.272) and Burundi scores lowest (2.904).

FIGURE 4.30 Gross National Happiness (GNH) scores and ranks for the happiest and most unhappy countries

Overall rank	Country/region	Score	GDP per capita	Social support	Healthy life expectancy	Freedom to make life choices	Generosity	Perceptions of corruption
1	Finland	7.632	1.305	1.592	0.874	0.681	0.192	0.393
2	Norway	7.594	1.456	1.582	0.861	0.686	0.286	0.340
3	Denmark	7.555	1.351	1.590	0.868	0.683	0.284	0.408
4	Iceland	7.495	1.343	1.644	0.914	0.677	0.353	0.138
5	Switzerland	7.487	1.420	1.549	0.927	0.660	0.256	0.357
6	Netherlands	7.441	1.361	1.488	0.878	0.638	0.333	0.295
7	Canada	7.328	1.330	1.532	0.896	0.653	0.321	0.291
8	New Zealand	7.324	1.268	1.601	0.876	0.669	0.365	0.389
9	Sweden	7.314	1.355	1.501	0.913	0.659	0.285	0.383
10	Australia	7.272	1.340	1.573	0.910	0.647	0.361	0.302
147	Malawi	3.587	0.186	0.541	0.306	0.531	0.210	0.080
148	Haiti	3.582	0.315	0.714	0.289	0.025	0.392	0.104
149	Liberia	3.495	0.076	0.858	0.267	0.419	0.206	0.030
150	Syria	3.462	0.689	0.382	0.539	0.088	0.376	0.144
151	Rwanda	3.408	0.332	0.896	0.400	0.636	0.200	0.444
152	Yemen	3.355	0.442	1.073	0.343	0.244	0.083	0.064
153	Tanzania	3.303	0.455	0.991	0.381	0.481	0.270	0.097
154	South Sudan	3.254	0.337	0.608	0.177	0.112	0.224	0.106
155	Central African Republic	3.083	0.024	0.000	0.010	0.305	0.218	0.038
156	Burundi	2.905	0.091	0.627	0.145	0.065	0.149	0.076

4.15 Activities

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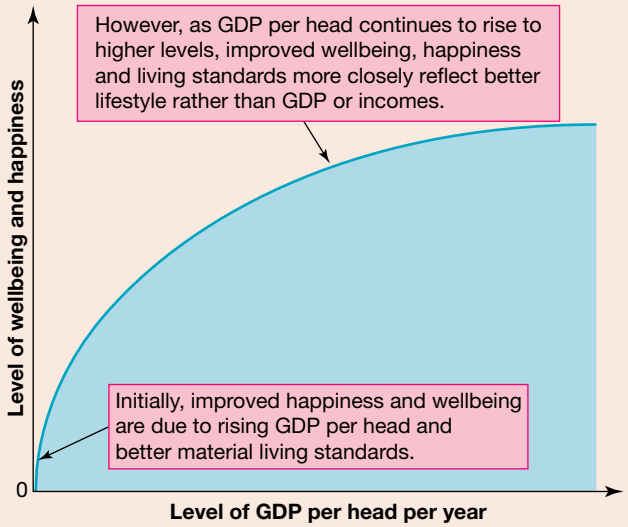
4.15 Quick quiz on | **4.15 Exercise**

4.15 Exercise

1. **Identify** and **outline** the main weaknesses of using real GDP as an indicator of overall living standards. **(2 marks)**
2. **Describe** the main features of the HDI as an alternative measure of living standards, giving reasons why some prefer it to real GDP per head. **(3 marks)**
3. The ABS developed MAP as an alternative measure of changes in Australian living standards. **Describe** the main features of the approach developed by the ABS called *Measures of Australia's Progress* (MAP, see ABS 1370.0). You may like to use the **Measuring Australia's Progress (MAP)** weblink in the Resources tab to view the video about this measure. **Identify** the key areas within the four wellbeing categories of measure in which Australia has seen either progress or regression. **(4 marks)**
4. Another alternative to real GDP per head as an indicator of wellbeing is *Gross Domestic Happiness (GDH)*. This indicator attempts to compare the happiness of people living in different countries, since perhaps the bottom line of living standards is happiness. The figure below is a diagrammatic representation of what some economic research has discovered about the growth in national production and average incomes per head on the one hand, and the perceived wellbeing including happiness of people on the other.
   a. By reference to the graph, **explain** whether a continued rise in the level of real GDP per head leads to an equal rise in wellbeing including happiness. **(2 marks)**
   b. **Suggest** and **outline** why this relationship between increased GDP per head and happiness behaves like that shown on the graph. **(2 marks)**



5. Examine the table below showing hypothetical data for a country over a two-year period:

Indicator	2023	2025
a. Annual value of real GDP ($ million)	50 000	60 000
b. Population size (millions)	10	12
c. Estimated value of environmental damage including pollution ($ million)	1000	2000
d. Percentage of school age children completing Year 11	80	85
e. Number of serious crimes per 100 000 people	500	600
f. Index (on a base of 100 points) measuring the change in inequality in the way income is shared or divided	100	100

a. **Explain** which of each of these data might be used to determine *how* overall living standards might have changed during the over the period between 2023 and 2025. **(2 marks)**

b. Showing your working, **calculate** the change in average *material* living standards over period between 2023 and 2025. **(2 marks)**

c. See if you can think of a way to **calculate** the change in average *non-material* living standards in this country over the period between 2023 and 2025. For example, could you use relevant data to construct a single index of non-material living standards? **(3 marks)**

d. **Describe** how overall living standards in this country have changed during the period from 2023 to 2025. **(2 marks)**

Solutions and sample responses are available online.

4.16 Review

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4.16.1 Summary

The nature and purpose of economic activity

- *Economic activity* is *simply a term used to describe the process of making or selling goods and services*. Scarce resources are used to produce and sell goods and services, in exchange for income.
- *Non-economic activities* are generally not sold for money but are done for emotional reasons, concern for others, or on a volunteer basis.
- The main *purpose* of economic activity is to use resources efficiently to produce and sell those goods and services that best help to maximise the general satisfaction of society's wants and wellbeing. *Consumption* is the ultimate purpose or goal of economic activity.

The meaning of material and non-material living standards

- Living standards relate to our general level of *wellbeing*. There are *two* main elements that affect our general or *overall* living standards:
  - *Material living standards* are affected by the annual average level of income and consumption per person per year.
  - *Non-material living standards* reflect various elements that affect the quality of daily life.
- Material and non-material living standards are affected by the level of economic activity.
  - When the pace of economic activity gets *stronger* this tends to *increase* material living standards, while some aspects of *non-material* living standards might *suffer* (e.g. environment, sustainability for future generations due to resource depletion).
  - *Weaker* economic activity tends to undermine *material* living standards because of lower employment, incomes, and consumption. Lower economic activity, causing higher unemployment and reduced incomes, mostly erodes the quality of life and *non-material* living standards (e.g. social isolation, reduced mental and physical health, unhappiness, possibly higher crime rate, increased stress). One possible upside of slower economic growth is reduced pollution and pressure on the environment.

The five-sector circular flow model

- The circular flow model is a diagram that simplifies the operation of the economy. It shows how the main parts of an economy interact to produce and distribute goods, services, and incomes.
- The *five-sector circular flow model* is more realistic than the three-sector model introduced earlier, because it allows for saving and international trade.
- The five *sectors* or key parts of the economic model include:
  - The consumer or household sector
  - The producer or business sector
  - The financial sector
  - The government sector
  - The overseas sector.
- The model has four main *flows* or streams that link the sectors of the economic model:
  - Flow 1 Resources
  - Flow 2 Incomes
  - Flow 3 Spending/AD (C + I + G + X – M)
  - Flow 4 Production/GDP

- It should also be closely noted that, according to this model, the values of these flows are *equal* and are *interdependent* — so if one changes, all change.
- The model can be used to help explain *why* the level of economic activity moves up and down in a cyclical or wave-like manner.
  - A *rise* in leakages relative to injections causes AD (flow 3) and economic activity/GDP (flow 4) to slow. This reduces employment of resources, lowers incomes and undermines material living standards.
  - A *fall* in leakages relative to injections causes AD (flow 3) and economic activity/GDP (flow 4) to rise, causing increased employment of resources, higher incomes and improved material living standards.

The business cycle and recent trends in Australia's economic growth

- Over a period of several years, the level of economic activity is unsteady — it speeds up and slows down in a cyclical or wave-like way. This is called the *business cycle*. We use the *business cycle model* or diagram to illustrate this.
- The business cycle consists of *four* key phases — the expansion, the peak (possibly a boom), the contraction and the trough (possibly a recession). Each phase experiences different economic conditions of output/GDP, unemployment and inflation.
- *Domestic economic stability* is the ideal situation and is somewhere midway between a boom and a recession. Here, there is strong and sustainable economic growth (where GDP rises annually by around 3 per cent without inflation), unemployment is low (at around 4.0–4.5 per cent) and inflation is slow (between 2–3 per cent a year).
- The Australian economy recently experienced the COVID-19 induced recession in the first part of 2020 and a subsequent strong recovery during 2021–22.

Types of economic indicators

- There are *three* main types of indicators of economic activity that can shed light on conditions:
  - *Lagging indicators* of economic activity only tell the reader the level of activity that occurred some time ago (e.g. GDP figures, the unemployment rate)
  - *Coincident indicators* move very closely with actual changes in the level of economic activity (e.g. monthly retail sales)
  - *Leading indicators* can help to predict where the economy may be heading in the near future (e.g. consumer confidence, business confidence).
- When examining statistical indicators related to changing economic conditions, economists look for *patterns* in the data.
  - The *long-term* trend refers to general or overall direction of change (upwards or downwards) in economic activity measured over 10 or 20 years or more.
  - The *short- to medium-term cycles* in economic activity are the wave-like changes in direction lasting perhaps 1–5 years.
  - Some data displays a *seasonal pattern* where peaks or troughs occur at the same month or time each year.
  - *Erratic behaviour* is where there is no obvious pattern because the data are reacting to one-off events.

The relationship between the business cycle and economic indicators

- As the economy travels *along* the business cycle from boom, to slowdown, recession and recovery, the level of economic activity changes. In turn, this alters economic conditions affecting the rate of economic growth/GDP, employment/ unemployment, inflation/purchasing power and living standards.
- In a *recession* caused by a drop in AD, there is a contraction of GDP over at least two consecutive quarters, unemployment rises sharply, and inflation slows/or there is deflation.
- In a *boom* caused by a strong rise in AD beyond the economy's productive capacity, there is an expansion of GDP, unemployment falls to very low levels, and inflation accelerates due to widespread shortages of goods and services (i.e. demand outstrips supply).

Factors that may affect Australia's level of economic activity or rate of economic growth

- The level of economic activity or growth rate in GDP is determined by *two* key sets of factors — aggregate *demand* and aggregate *supply* factors.
- *Aggregate demand factors or conditions.* Over the short- to medium-term, changes in aggregate demand factors affect total spending on Australian-made goods and services (AD = C + I + G + C X – M) and hence the national level of economic activity (measured by GDP). These factors may *strengthen* AD or *weaken* AD by affecting the various components making up total spending. Using the circular flow model *stronger* conditions generally boost AD, depress stocks, cause firms to expand output, employ more resources and pay increased incomes, while *weaker* conditions generally have the reverse effects. Key aggregate demand-side factors affecting these conditions include the following:
  - changes in consumer confidence about future employment and income prospects can affect C and S
  - changes in business confidence about future sales and profits can affect I
  - changes in disposable income per head affect C and S
  - changes in interest rates can affect S, C and I
  - changes in taxes (T) can affect C while government spending directly affects G
  - changes in the exchange rate for the A$ can affect X and M
  - changes in the level of economic activity overseas can affect X.
- *Aggregate supply factors or conditions.* Most important for the medium- to longer-terms, the *potential* rate of economic activity is governed by aggregate supply-side factors. These factors can affect Australia's level of AS, *productive capacity*, and size of our PPF. Over time, aggregate supply factors may become *more favourable* growing AS, or *less favourable* reducing AS. They often affect the ability and willingness of suppliers to produce goods and services. For example, if conditions become generally more favourable, firms are keener to expand, growing their productive capacity. By expanding AS, this grows the country's potential GDP and income, and creates more employment opportunities. Examples of aggregate supply factors include the following:
  - the quantity/volume and quality/efficiency of *labour resources* available (e.g. affected by immigration, birth rate, education, and skills)
  - the quantity/volume and quality/efficiency of *capital resources* available (e.g. affected by level of investment, interest rates, tax rates, and R&D)
  - the quantity/volume and quality/efficiency of *natural resources* available (e.g. affected by mineral exploration, land management, climate change and severe weather events)
  - the level of *production costs* for producers and *after-tax profits* (e.g. affected by wage rates, labour productivity, company tax rates, adequacy of government infrastructure, and education/training).

The measurement of economic growth using changes in real GDP

- The quarterly or annual rate of change in *real* gross domestic product or GDP (also called chain volume GDP), is the most common general measure of economic growth or changes in the nation's total output of goods and services.
- There are *three* ways that the ABS calculates GDP. Referring to the circular flow model, we know that GDP (the total value of finished goods and services produced) is also equal in value to AD (C + I + G + X – M) and total incomes (e.g. wages + rent + interest + profits, etc.).
- However, real GDP on its own, as a measure of the size of our economy, lacks accuracy because it excludes some production (e.g. the value of the cash and black market economies and DIY production), imputes or 'guesstimates' the value of some output that is included (e.g. the net rental value of owner-occupied dwellings).

The potential benefits of economic growth

- Economic benefits of growing the economy include more *employment opportunities* and jobs, and lower unemployment rates as firms expand production. Economic growth also helps to raise personal incomes, consumption and material living standards.
- Economic growth helps to increase *government tax revenue* and lower *welfare outlays*, strengthening the government's *financial position* and making the provision of essential services and welfare benefits for the needy more affordable and sustainable. This supports better material living standards.

- Economic growth can especially help improve some aspects of *non-material* living standards:
  - reduced unemployment can improve happiness, relationships, self-esteem, health outcomes (mental and physical), and reduce social isolation, crime, and stress
  - enable people to enrich their lives by travel and involvement in the arts
  - provide opportunities to exchange some reduction in hours of work for more leisure time.

The potential costs of economic growth

Sometimes economic growth can bring economic, environmental, and social *costs.* For instance:

- *Economic costs* might include:
  - reduced capacity of future generations to enjoy reasonable living standards due to *resource depletion* and environmental issues
  - an acceleration of the *inflation* rate where higher prices may erode the purchasing power on incomes
  - higher levels of *structural unemployment* resulting from the use of new technology like robotics in manufacturing and workers lacking the necessary skills to gain employment.
- *Environmental costs* might include:
  - the creation of *negative externalities* (i.e. where costs associated with the production and consumption of goods are transferred to third parties not directly involved with the activities) such as pollution, global warming and climate change, destruction of native habitat, loss of life in weather events, food insecurity, displacement of island communities due to rising sea levels, urban over-crowding and waste disposal problems, all of which lower our quality of life
  - degrading of the quality of *common access resources* (e.g. air, water, forests, oceans) on which we all depend.
- *Social costs* might include:
  - reduced *leisure* time as people work more and pursue material goals
  - reduced *health* due to increased stress and effects of pollution and climate change
  - harm to families and society generally due to under-parenting caused by work
  - increased *inequality* in the distribution of goods, services, and incomes given some government measures that unfortunately make the tax system less progressive, and tax cuts that have led to underfunding of welfare, education and health for those on lower incomes
  - *affluenza* and an obsession with the pursuit of material goals at the expense of other important aspects that lead to happiness and fulfillment.

Limitations of using real GDP and real GDP per head to measure living standards

- Some people mistakenly assume that the value of chain volume GDP (i.e. real GDP that has been adjusted statistically to remove the effects on the value of output of changing prices) can be used as a *stand-alone indicator* of living standards. However, perhaps the most obvious weakness is it fails to allow for a country's *population size*. What we really need to know is the annual real value of *GDP per head* (i.e. a nation's real GDP divided by its population size). Even then, it tells us nothing about the *quality of life* or non-material wellbeing.
- An improved indicator of living standards is the value of *chain volume GDP per capita,* but even this does not look at all aspects of living standards.
- Real GDP per capita is a poor measure of *material living standards* because:
  - it fails to consider how evenly or *unevenly* goods, services, and incomes are distributed — it's only an average
  - real GDP statistics do *not* include the value of all economic activity such as do-it-yourself *home production* (e.g. including parenting and gardening), the *cash economy* and the illegal *black market* economy. This means GDP is an *underestimation* of the quantity of goods and services produced and available for consumption.
- Real GDP per capita is also a poor measure of *non-material living standards* because it does not capture or take account of *negative externalities* (i.e. costs imposed on third parties that result from growing the production and/or consumption of goods and services). These costs include climate change resulting from carbon pollution (CO_2). This results in more severe and frequent weather events involving the loss of life, destruction of business, the displacement of communities, reduced leisure time for families to spend

together, youth problems caused by the under-parenting of children, increased stress levels and loss of job satisfaction due to pressures to be more efficient.

Alternative measures of economic activity and living standards

- Real GDP per head (chain volume GDP) is a very narrow and limited indicator of society's wellbeing. It does not accurately reflect our material welfare, and it tells us almost nothing about our non-material living standards.
- For this reason, *alternative measures* have been proposed that attempt to provide a more balanced picture of our wellbeing. These include:
  - Measures of Australia's Progress (MAP)
  - Human Development Index (HDI)
  - Green GDP
  - Gross National Happiness (GNH)

4.16.2 Key terms

Affluenza is a term used to describe a situation where making money and consuming goods and services is an obsession that hurts individuals and others around them.
Aggregate demand (AD) represents the total value of all spending each year on Australian-made goods and services (AD = C + I + G + X – M).
Aggregate demand factors are the conditions affecting total spending or demand for a nation's goods and services and include consumer or business confidence. Stronger aggregate demand factors boost spending, while weaker conditions slow spending.
Aggregate supply (AS) represents the total volume of goods and services that the nation's producers are collectively prepared to make available over a period.
boom is a period of excessively strong economic activity and is shown as a peak on the business cycle.It is caused by spending or demand rising faster than productive capacity or supply, leading to widespread shortages of good and services and hence inflation.
Business confidence relates to the level of optimism or pessimism by firms about their future level of sales and profits. It affects upcoming levels of new private investment spending and hence AD.
business cycle diagram is used to describe how GDP changes upwards and downwards over a period of years. Typically, the economy passes through four main phases — a boom, slowdown, recession and recovery. In addition, the ideal economic situation is called domestic economic stability. This is located on the business cycle, midway between a boom and a recession.
Chain volume GDP is the value of final output of a nation's goods and services. It is measured over a period of time and is adjusted statistically downwards to compensate for the effects of inflation, or upwards to compensate for the effects of deflation, on the value of national production.
Circular economy is a more sustainable type of economic system where minerals and some other resources are used to make more durable goods that, when they have finished their useful life, can be recycled rather than thrown away as waste.
Climate change relates to global warming caused by the release of greenhouse gasses resulting from the production, consumption and disposal of goods and/or services.
Coincident indicators are measures of the economy that move very closely with actual changes in the level of economic activity (e.g. share prices, monthly retail sales).
Common access goods are those things we all share and depend on like air, rivers and oceans.
Consumer confidence relates to the level of household optimism or pessimism about their future employment and income prospects. It affects upcoming levels of household consumption spending and hence AD.
Cyclical unemployment is when individuals lose their job due to weak AD and a slowdown or recession.
Disposable income is money available for spending after households receive welfare and pay tax. It affects AD.
Domestic economic stability is the ideal economic position for an economy to be in. Conditions do not get better than this, where simultaneously there is a strong and sustainable rate of economic growth (around 3 per cent rise in GDP per year), full employment (around 4.0–4.5 per cent unemployment rate) and low inflation (an annual rise in general prices averaging 2–3 per cent).
Economic activity occurs when resources are used by an economy to produce goods and services. In the process, this also affects inflation and unemployment rates in an economy.

Economic growth exists when a country's economy gets bigger and there is a rise in the volume of goods and services produced between one year and the next.
Erratic behaviour of economic activity show no pattern of change since their direction is caused by unpredictable, one-off events.
Exchange rate for the A$ relates to the value of an $A when it is swapped for another currency in international transactions. Its level affects the values of exports and imports and hence AD.
Expansion or the recovery phase of the business cycle is where the level of real GDP is rising and growth rates are increasing towards perhaps 3 per cent per year.
Export spending (X) represents overseas spending on Australian-made goods and services (e.g. cotton, wool, minerals, manufactured items and travel). This is an injection on the circular flow model that adds to AD.
The **five-sector circular flow model** is a diagram that shows how the various parts of an economy interact through the four main flows – resources, incomes, spending and production. The five sectors include the household, business, financial, government and overseas sectors.
The **goal of full employment** is the lowest rate of unemployment, in 2022 around 4.0–4.5 per cent of the labour force, which does not accelerate inflation.
Government spending (G) represents public sector outlays that are designed to help satisfy the needs and wants of the community for goods and services (e.g. roads, water, schools, telecommunications). This is an injection that adds to AD.
Green GDP is a measure of a nation's economic growth adjusted downwards for the environmental impacts (e.g. the depletion of resources, environmental degradation and loss of biodiversity) of producing goods and services. Some believe this more accurately reflects society's living standards than the traditional GDP measure.
Gross domestic product (GDP) is a quarterly or annual measure of the value of finished goods and services produced by a nation. On the circular flow model, is also equal in value to AD and total incomes.
Gross National Happiness (GNH) is a composite index made up of several indicators such as GDP per head, social support, health and life expectancy, freedom to make life's choices, generosity and trust. Some believe this is a better guide to living standards than the traditional GDP measure.
Human Development Index (HDI) is one of the most widely used indicators of our economic development and wellbeing. It is an index created by combining a range of economic and social indicators. However, it does not incorporate environmental considerations.
Import spending (M) is expenditure by Australians on foreign-made goods and services, which is designed to help satisfy our needs and wants (e.g. oil, electronics, travel). It is a leakage on the circular flow model, slowing AD.
Income is the payment of money, generally to those who have sold productive resources to firms.
Inflation refers to a situation where most prices paid for a basket of consumer goods and services are rising over a period, causing a drop in the purchasing power of money. It may be the result of higher production costs or general shortages of goods and services due to too much spending.
Infrastructure represents capital resources like roads, ports, power, hospitals, railways, and water supply that enable businesses to produce other goods and services. Often this is provided by governments, sometimes in partnerships with private firms. There is economic infrastructure (e.g. the construction of the NBN, the new airport in Western Sydney) and social infrastructure (e.g. schools and hospitals).
Injections are elements in the circular flow model (e.g. investment spending/I, government spending/G, and export spending/X), which act like an accelerator and add to the total value of spending on Australian-made goods and services.
Interest rates are the price or cost of borrowing credit from banks and influence the incentive to save and the levels of consumption and investment spending.
Lagging indicators are measures of the economy that only tell the level of activity that occurred some time ago (e.g. GDP figures, the unemployment rate).
Leading indicators are measures that can help to predict where the economy may be heading soon (e.g. consumer confidence, business confidence).
Leakages are elements in the circular flow model (e.g. savings/S, taxes/T and spending on imports/M) that act like a brake and slow down the total value of spending in our economy.
Living standards refers to how well-off a nation is overall. There are two components — material living standards (relate to the level of incomes and the quantity of goods and services consumed by each person each year), and non-material living standards (relates to the quality of daily life for individuals as affected by subjective elements including levels of happiness, job satisfaction, crime, environmental health, mental and physical health, life expectancy, urban congestion, hours of work and leisure, family tensions and stress).

Long-term or run refers to changes in economic activity or other variables that occur over perhaps 10 or 20 years, or more.
Material living standards are dependent on a person's level of income and consumption of goods and services, measured over a period. Real GDP per head per year is often used as a rough indicator of average material living standards.
Measures of Australia's Progress (MAP) is not a single statistical indicator of overall welfare, but is a collection of measures within four areas — society, the economy, governance, and the environment. It allows people to determine whether their wellbeing is progressing or regressing.
Negative externalities are the costs transferred to third parties not directly involved in economic activities, which result from the production and consumption of goods and services (e.g. global warming).
Non-economic activities are those generally not sold for money, but are performed for emotional reasons, concern for others, or on a volunteer basis. Their value is not included in GDP.
Non-material living standards are not related to the quantity of goods and services that we have, but instead are elements of our wellbeing that affect the quality of our daily lives, and may perhaps involve levels of freedom, happiness, quality of family life, justice, amount of leisure time, crime, health and life expectancy, pollution, and the state of the natural environment.
Overseas economic activity relates to whether globally, demand and economic conditions abroad are strong or weak. Its level affects the sales of Australian exports or injections and, hence, AD.
Peak is a phase on the business cycle diagram that occurs when GDP reaches its maximum level, and the rate of growth is strong. If there is a boom, inflation will rise and unemployment will fall to very low levels.
Private consumption spending (C) represents household expenditure that is designed to help satisfy people's immediate needs and wants for goods and services (e.g. food, holidays and clothing). It is the biggest single component of AD.
Private investment spending (I) is outlays by businesses for the purchase of machinery, technology and buildings (e.g. a tractor, a robot or a factory) used to help make other goods and services. It is designed to help grow efficiency and expand a firm's productive capacity by growing its physical capital resources.
Productivity is an aggregate supply factor that is a measure of efficiency — that is how much output is gained from a unit of resources or inputs used in production. GDP per hour worked is a measure of labour productivity that can grow a nation's productive capacity and potential GDP.
Purchasing power parity is used to make adjustments to the purchasing power of money in different countries so as to allow international comparisons of incomes. The adjusted number is usually expressed in international dollars.
Recession is a period on the business cycle where there is very weak economic activity and GDP falls over at least two consecutive quarters (a 6-month period). It is caused by a lack of spending, leading to much unused productive capacity. This results in high levels of unemployment, lower average incomes and depressed material living standards.
Recovery is a period on the business cycle where the levels of national production and employment are rising.
Seasonal pattern in data or graphs are those that occur in the same month or time each year.
Severe weather events include floods, cyclones, drought, and bushfires. They are unfavourable aggregate supply conditions that are linked with economic activities, increased CO_2 emissions, and global warming.
Short-term refers to changes in the direction of an economic variable lasting perhaps 1–5 years.
Slowdown is the downswing phase on the business cycle where the rate of growth in GDP is decelerating. Typically, this is caused by a softer levels of national spending. Here, unemployment rises and inflation slows.
Structural unemployment can occur when firms change their production methods and use new technology to become more efficient (such as robots on an assembly line, ATMs for banking, automated warehouses, online shopping and so on). It can also occur when firms relocate perhaps overseas, or there is a mismatch between the skills possessed by unemployed workers and the requirements of the jobs that are currently available.
Total income is one of the four flows making up the circular flow model. It represents the total value of payments to individuals selling resources used by firms to produce goods and services. It is equal in value to AD and GDP.
Trough is the phase on the business cycle diagram that occurs when production reaches its lowest level. It may also represent a recession or depression, where GDP falls. Usually, unemployment is higher, and inflation is slower.

Resources

Digital documents Topic summary (doc-37941)
Key terms glossary (doc-37948)
Crossword (doc-39029)
Wordsearch (doc-39030)
Match-up definition (doc-39031)

4.16.3 Practice school-assessed coursework

OUTCOME 1

Explain the purpose of economic activity, the distinction between material and non-material living standards and the factors that may affect level of economic activity and growth, discuss the costs and benefits of economic growth and examine the impact of economic activity on living standards using alternative measures.

TASK: REPORT ON AN INVESTIGATION OR INQUIRY — Tracking Australia's changing economic and other conditions affecting our living standards

Background

In the years leading up to mid-2008, the Australian economy experienced near-boom conditions. However, during 2008–09 this was suddenly interrupted by the global financial crisis (GFC) and there was a sharp contraction. Australia narrowly avoided a recession. This period was followed by a long and slow recovery till 2020. However, the last couple of years have seen considerable instability generated by the combined effects of sometimes volatile aggregate demand and aggregate supply conditions. For instance, in the first half of 2020, there was the COVID-19-induced recession where spending was weak, followed by a strong recovery. There were also bushfires, floods, cyclones, drought, the pandemic lockdowns, disruptions to supply chains, and war in Eastern Europe.

Outline of the task

As you know, when the level of economic activity and growth change, this has knock-on effects for jobs, unemployment, incomes and both material and non-material living standards. Your task here is to conduct research and then prepare and present a report about Australia's changing macroeconomic conditions over recent years. The report has *three* parts:

1. **Describe Australia's changing macroeconomic and other conditions affecting living standards**
   - Recent trends in *material* living standards: Consider three areas.
     - *Recent trends in economic growth:* Using graphs, briefly describe the most recent trends in real or *chain volume GDP* (using annual or quarterly changes in real GDP as the measure) as an indicator of the level of economic activity and as a guide to changes in national incomes.
     - *Recent trends in unemployment:* Using graphs, briefly describe the most recent trends in the unemployment rate (percentage of the labour force).
     - *Recent trends in inflation:* Using a graph(s), briefly describe the most recent trends in the rate of inflation (use the annual or quarterly percentage change in the consumer price index or CPI as the measure).
   - Recent trends in *non-material* living standards: Using graphs, describe the most recent trends in *two* indicators of non-material living standards
2. **Factors that have caused changes in economic activity and hence living standards**
   - *Aggregate demand factors:* Select *two* important aggregate demand factors and explain how each has helped to shape recent economic conditions. Using two graphs, describe the most recent trends in these *aggregate demand-side conditions*.
   - *Aggregate supply factors:* Select *two* important aggregate supply factors and explain how each has helped to shape recent economic conditions.
3. **Your forecast!**
   - Given trends in economic growth over the last quarter (3 months), have a go at predicting the near-term *future* direction of the economy. A clue — recent trends in leading indicators might be useful here!

Research resources

There is much economic information available on the internet although not all sources are reliable. Often, quarterly or monthly data are useful for spotting changes in the economy's direction since it is more up-to-date. As a start, you might like to check out some of the weblinks in the online resources.

Presentation

Your report must include graphs and commentary. It could be presented in *one* of the following formats:

- a *PowerPoint* presentation involving a series of illustrated slides, cartoons, pictures and of course graphs
- a feature *newspaper report* or article
- a *wall poster* for classroom display involving headings and a series of graphs with commentary beneath each.

on Resources

Digital document Practice school-assessed coursework (doc-38077)

Weblinks
Reserve Bank of Australia, RBA Chart Pack
Australian Bureau of Statistics (ABS) – GDP
Australian Bureau of Statistics (ABS) – Unemployment
Australian Bureau of Statistics (ABS) – Inflation
Trading Economics (data for Australia)
Macrotrends

4.16 Exam questions

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Section A: Multiple choice questions

Question 1

Which of the following statements about economic activity is *least* correct?

A. It refers to the actions of individuals involving the making and selling goods and services.
B. To be included in GDP, goods and services usually need to be sold for money or income.
C. The value of GDP is commonly used as a measure of economic activity.
D. The value of work performed by volunteers is normally included in GDP.

Question 2

In an economy, real economic growth *always* occurs when:

A. there is more spending on goods and services between one year and the next.
B. there is more production of goods and services between one year and the next.
C. there are more resources available between one year and the next.
D. business activity is steady between one year and the next.

Question 3

Concerning chain volume GDP as a measure of total economic activity or the size of the economy, which statement is generally *false*?

A. It measures the annual value of most goods and services produced.
B. In the circular flow model, it can also be estimated by measuring AD or the total incomes paid to producers.
C. It has had to be adjusted to help remove the effects that inflation or deflation have on the value of production.
D. Its value includes all goods and services produced in the country (including washing the dog, home-grown vegetables, trade in illegal guns) and it makes a downward adjustment to allow for negative externalities.

Question 4

Which *one* of the following would have an effect on the rate of economic activity and economic growth that is *different* from that of the other three?

A. The government announces a cut in income tax.
B. Households feel pessimistic about their future employment prospects and fear that they may soon become unemployed.
C. The rate of economic growth in the United States and Japan strengthens, combined with a lower exchange rate for the A$.
D. Interest rates fall following an announcement by the RBA.

Question 5

Given the hypothetical data in the table below, predict what might be happening to the country's rate of economic activity or growth. Assume that the country has been enjoying a 4 per cent annual rate of economic growth with fairly low unemployment.

Component of AD	Annual percentage growth last year	Annual percentage growth this year
C	5	1
I	4	2
G	2	1
X	7	4
M	9	9

A. The rate of economic growth will probably tend to accelerate.
B. It is impossible to predict anything about the rate of economic growth.
C. The rate of economic growth will probably tend to slow.
D. There will tend to be a boom.

Question 6

Referring again to the table from question 5 and the two-year trend in the components of AD (C + I + G + X – M), which one of the following causes is most likely to be a *correct* explanation?

A. Businesses became more optimistic about sales and profits.
B. Economic activity overseas must be rising.
C. There has probably been a fall in household disposable income.
D. The government has recklessly increased budget spending on public works and community services such as health and education.

Question 7

In the long-term, an economy needs more than just increased spending to sustain an increase in production or GDP. Which of the following is the *least* correct explanation of this statement?

A. Strong spending or AD on its own cannot make an economy grow any faster once it has reached its productive capacity or potential GDP.
B. The lack of access to extra resources restricts production levels and economic growth in some economies.
C. Some economies cannot lift the growth rate in output because of low efficiency in production.
D. In the long term, spending is always too low for the economy to fully use its capacity.

Question 8

Which *one* of the following aggregate supply developments *would* tend to affect Australia's long-term rate of growth in output or GDP in a *different* way from that of the other three?

A. The use of genetically modified crops by farmers
B. Successful measures to help drought-proof Australian farmers
C. Legislation that lowers the minimum retirement age for workers to 60 years
D. Legislation that raises the minimum school leaving age to 17 years

Question 9

Which of the following would *not* tend to lift Australia's long-term level of national output?

A. A fall in the percentage of adult females choosing to be in the labour force
B. Government policies designed to help lift efficiency by providing free re-training courses for the unemployed
C. An increase in the normal retirement age from 65 to 67 years
D. Encouragement of mineral exploration and R&D.

Question 10

Concerning the effects of an *increase* in the level of economic activity, which of the following is *false*?

A. Attempts to increase the level of economic activity through greater efficiency and cost cutting by firms can sometimes lead to higher structural unemployment in the short-term.
B. Higher economic activity usually causes unemployment to fall.
C. Without special government policies, such as progressive income taxes or welfare benefits for the needy, there is the danger that rises in economic activity may increase inequality in incomes.
D. An increase in economic activity usually slows the rate of inflation.

Question 11

Increased economic activity:

A. can lead to global warming and severe weather events that undermine material and non-material living standards.
B. can sometimes contribute to lower living standards for future generations.
C. can cause negative externalities such as reduced leisure time, traffic congestion, urban overcrowding, and waste disposal problems for cities.
D. can cause all the above.

Question 12

The level of private consumption spending (C) and the level of economic activity or GDP are likely to *fall* if there was a:

A. rise in consumer confidence.
B. fall in household savings.
C. rise in household income.
D. rise in government tax rates.

Question 13

The level of private investment spending (I) and rate of economic activity or GDP would tend to *increase* if there was a:

A. rise in business confidence about future sales and profits.
B. rise in interest rates on bank loans to businesses.
C. fall in business profits.
D. rise in the rate of company tax on firms.

Question 14

The value of spending on Australian exports (X) is likely to *rise* if:

A. there was a recession overseas.
B. exports become dearer or less competitive for overseas buyers.
C. the exchange rate for the A$ fell making exports cheaper for overseas consumers.
D. there was a drought or floods in Australia that destroyed our crops.

Question 15

Which statement about Australia's AD is *most* correct?

A. C represents private household consumption including spending on takeaway food, holidays, and clothes.
B. Aggregate demand is the total of all types of spending on our goods and services over a period of time, represented by C + I + G + X + M.
C. I represents business spending, which would rise if business confidence fell.
D. If AD rose, GDP would fall.

Question 16

Using the table that follows, which of the following statements about AD in a hypothetical economy in 2023 and 2024 is *incorrect*?

Component	2023 ($ millions)	2024 ($ millions)
Private consumption (C)	9.6	10.0
Savings (S)	1.3	1.4
Private investment (I)	3.6	3.5
Tax revenue (T)	3.6	3.6
Government outlays (G)	4.0	4.3
Imports (M)	3.5	3.8
Exports (X)	3.6	3.9

A. AD was higher in 2024 than in 2023.
B. AD was $17.3 million in 2023 and $17.9 million in 2024.
C. Theoretically, the change in private or household C in 2024 may have reflected weaker consumer confidence than existed in 2023.
D. The value of net exports over the period 2023 to 2024 did not change and was equal to $0.1 million in both years, thereby tending neither to boost nor slow AD and the rate of economic growth.

Question 17

Again, using the data contained in the table from question 16, which statement about leakages and injections is *most* correct?

A. The total value of leakages rose between 2023 and 2024.
B. The total value of leakages increased from $8.4 million in 2023 to $8.8 million in 2024.
C. The total value of injections was lower in 2023 relative to the total value of injections in 2024.
D. All of the above statements are correct.

Question 18

Which of the following would be *least* likely to *increase* a country's rate of economic growth and activity over the short-term?

A. Increased investment levels and the expansion of capital resources
B. Farming methods resulting in better soil management and fertility
C. Increased concern over environmental matters and Indigenous land claims (which have reduced access to natural resources)
D. The accelerated application of new technology in industry

Question 19

A negative externality is *best* illustrated by which of the following examples?

A. You clean up and beautify your front garden, which is visible from the street.
B. The club near your house runs its noisy and unruly venue each Friday and Saturday night until 3 am.
C. A coal mining company restores a damaged mine site and replants the native vegetation.
D. You pay for the cost of renovating the inside of your house.

Question 20

Concerning types of economic indicators, which of the following is *most* correct?

A. Consumer confidence is a coincident indicator of economic activity.
B. GDP is a leading indicator of economic activity.
C. New building approvals by councils are an example of a leading indicator of economic activity.
D. Over a year, unemployment can change in a seasonal way.

on Resources

Digital documents Multiple choice answer grid (doc-37958)
Multiple choice answers (doc-37959)

Section B: Extended response questions

Question 1 (9 marks)

a. Clearly **distinguish** *material* living standards from *non-material* living standards. **(2 marks)**

b. If a nation's real value of GDP in 2023 was equal to $1500 billion, and its population was 25 million, **calculate** the average value of real GDP per capita. **Show** your working. **(1 mark)**

c. **Explain** the extent to which GDP per capita is an accurate measure of a nation's *overall* living standards. **(3 marks)**

d. **Identify** and **explain** an *alternative measure* of a society's overall living standards to real GDP per capita. **Explain** why your chosen measure may be superior to using real GDP per capita. **(3 marks)**

Question 2 (9 marks)

a. **Explain** what is meant by the business cycle. **(2 marks)**

b. Neatly **draw** and fully **label** a typical business cycle diagram for an economy. **(3 marks)**

c. **Distinguish** a period of *boom* from a period of *recession*. **(2 marks)**

d. **Explain** what is meant by *domestic economic stability.* **(2 marks)**

Question 3 (16 marks)

Economists use the *five-sector circular flow model* to help understand how the economy operates and the impact of various events on domestic macroeconomic conditions.

a. Neatly **draw** and fully **label** a five-sector circular flow model representing the Australian economy. **(5 marks)**

b. **Define** the following terms:
- Aggregate demand (AD)
- Gross domestic product (GDP)
- Total incomes

c. **Distinguish** *injections* from *leakages*. **(2 marks)**

d. Recently, the level of consumer confidence *fell* below 100 points. Use the circular flow model to **explain**, step by step, the likely *consequence*s of this event on Australia's economy, ensuring that your explanation follows a logical sequence. **(3 marks)**

e. Using the five-sector circular flow model to help sequence or order your ideas in a logical manner, **explain** the likely domestic macroeconomic effects of a *rise* in the total value of leakages relative to the total value of injections. **(4 marks)**

f. **Identify** an aggregate demand factor that is likely to have *accelerated* Australia's level of aggregate demand during the last couple of years and then **explain** its likely impacts on the level of economic activity. **(2 marks)**

Question 4 (8 marks)

a. **Define** the term, *aggregate supply factors*. **Draw** a fully labelled production possibility diagram to show, hypothetically, how *more favourable* aggregate supply factors might theoretically affect the size of Australia's production possibility frontier, potential level of GDP and AS. **(3 marks)**

b. **Identify** a suitable example of an *aggregate supply factor* and then **explain** how this factor might have tended to *slow* Australia's rate of *economic growth* in recent years. **(3 marks)**

c. **Explain** how improvements in *education standards* and *skills* might affect Australia's AS and potential rate of growth in GDP. **(2 marks)**

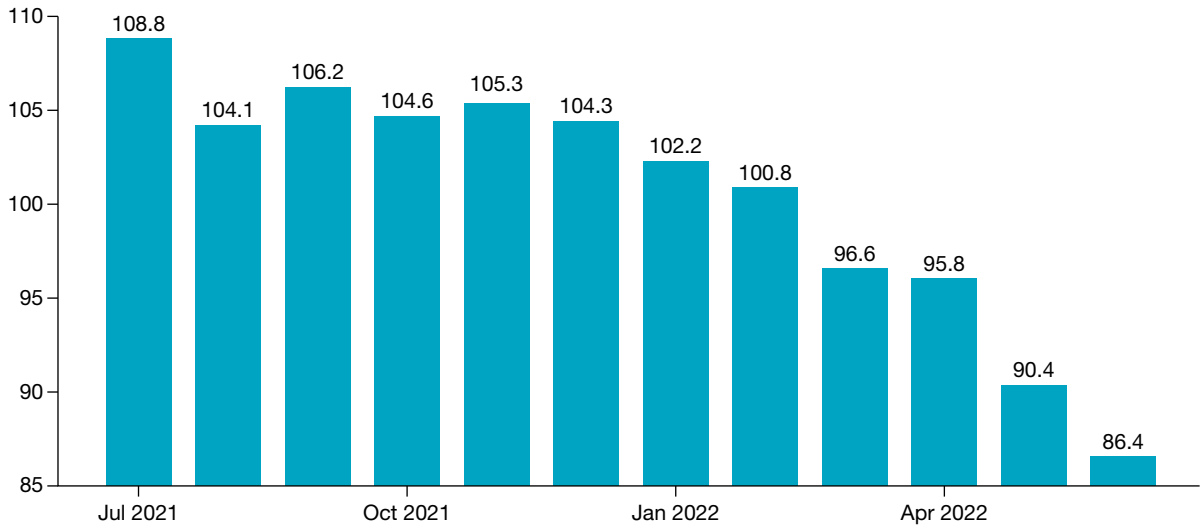
Question 5 (10 marks)

Aggregate demand and aggregate supply factors can affect the level of economic activity. Giving brief reasons, **classify** each of the items in the table below as an aggregate demand factor, or an aggregate supply factor, or in some cases, possibly both an aggregate demand factor and an aggregate supply factor:

Factor	An aggregate demand factor (explain why)	An aggregate supply factor (explain why)	Both an aggregate demand and aggregate supply factor (explain why)
a. Disposable income			
b. Spending on education and skills			
c. Level of economic activity in China			
d. Interest rates			
e. Business confidence			
f. Outlays on infrastructure			
g. The value of the A$			
h. Lower rate of company tax			
i. Labour productivity			
j. Climate change with global warming			

Question 6 (6 marks)

Examine the graph before answering the questions relating to it:



Source: Trading Economics, Monthly changes in Australia's consumer confidence, see https://tradingeconomics.com/australia/consumer-confidence.

a. **Define** the term, consumer confidence. **(1 mark)**

b. Referring to graph statistics, **describe** the overall change in consumer confidence between November 2021 and June 2022. **(1 mark)**

c. **Explain** whether consumer confidence is an aggregate demand or aggregate supply factor. **(1 mark)**

d. Other things remaining constant, **explain** how you would expect the recent change in consumer confidence to affect each of the following:

- level of economic activity and GDP
- the unemployment rate and level of disposable income
- the inflation rate. **(3 marks)**

Question 7 (4 marks)

Explain the ways in which the ABS's *Measures of Australia's Progress* provides a more complete picture of changes in living standards over time, than simply using changes in real GDP per head.

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UNIT 2 AOS

2 Applied economic analysis of local, national and international economic issues

AREA OF STUDY 2

Applied economic analysis of local, national and international economic issues

OUTCOME 2

Explain the factors that affect two economic issues at a local, national and international level and evaluate actions to address the issues.

Applied economics involves students applying insights of economic theory and key economic skills to analyse economic issues. In this area of study, students undertake an applied economic analysis by investigating two contemporary economic issues from a local, national and international perspective through an economic lens.

Students investigate **two** of the four following current economic issues:

5 The changing labour market 287

6 The economics of international trade 341

7 The distribution of income and wealth 395

8 Economics and the environment 455

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TOPIC

5 The changing labour market

UNIT 2 AREA OF STUDY 2

Applied economic analysis of local, national and international economic issues

OPTION 1: The changing labour market

OUTCOME 2

On completion of this unit the student should be able to explain the factors that affect two economic issues at a local, national and international level and evaluate actions to address the issues.

LEARNING SEQUENCE

5.1 Overview 288
5.2 Definition and nature of the labour market 290
5.3 Measures of Australia's changing labour market 294
5.4 The reasons why changes in Australia's labour market are important 305
5.5 The economic factors influencing changes in Australia's labour market 308
5.6 Different perspectives about the changing labour market 316
5.7 The Australian government's economic responses to address changes in the labour market 317
5.8 Review 326

5.1 Overview

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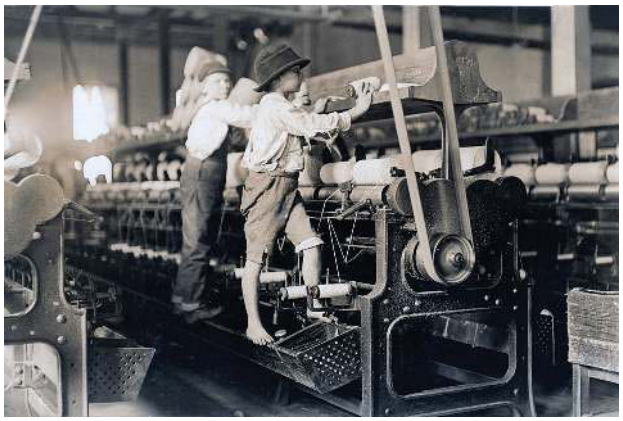
5.1.1 Introduction

Labour is a key resource for any economy. Without it, nothing can be produced. Labour involves the mental talents and physical power of people who make up Australia's *work force*. Like almost any other commodity, labour resources can be bought by firms and sold by its owners at a *market price* or *wage* in the **labour market**. Here, the wage will largely reflect labour's *relative scarcity*. On the one hand, employers want to hire the best staff at the lowest wage, while workers want the best paid job that most suits their situation. In the end, both sides of the labour market are forced to compromise.

Over the last few centuries, the *conditions* under which labour is bought and sold have changed dramatically. At various stages dating back to 6000 BC or more recently in America between the 1600s and1800s, *slavery* existed. Even today, some estimates suggest that in some countries between 20 and 40 million people work under some form of slavery, perhaps exploited in backyard sweatshops. Under these conditions, labour was not free to negotiate its supply, wages and conditions of work.

At other times, *employers* have had the balance of power in the *labour market*, without being held to account. Typically, wages were awfully low, especially when there were depressions. Employment was insecure and often had to be negotiated on a daily basis, and working conditions were often unsafe. Especially during the 1700s and early 1800s, child labour was commonplace since education was only for those who could afford it. It still exists in parts of the world today.



Then there was the rise of the *trade union movement*, mainly starting in the late-1800s. This shifted the balance of power in the labour market. Through unity in action and the ability to withdraw their labour supply and go on strike, trade unions allowed workers to improve their pay and conditions, reduce hours of work, and lift living standards.

Another important development that further changed labour markets, and occurred in the early 1900s, was that some *governments* stepped in to set *minimum wages and conditions*. Australia was one of the first countries to have a minimum wage. This started in a limited way and expanded from a famous court decision back in 1907,

well before the USA in 1939 and, more recently, the UK. Today, Australia's Fair Work Commission (FWC) oversees our wage systems.

In response, some countries have reacted against excessive government regulation of the labour market. Critics of government intervention claimed that regulation increases costs, depresses business profits, and reduces the international competitiveness of firms and countries. As a result of these concerns, there has been considerable *deregulation of some labour markets*, including Australia's, starting in the 1990s when there was a move towards firm-by-firm *enterprise bargaining* — a system of setting wages by negotiation between workers and employers on a decentralised firm-by-firm basis. Under this system, wage rises are linked to increases in worker productivity. Here, unions play only a minor role.

However, there have also been many other changes in Australia's labour market. There have been changes in the size of the labour force, the unemployment rate, participation in work, in the type of industries where people are employed, in labour unionisation, and in the hours of work. In this topic, we will touch on many of these developments.

5.1.2 What you will learn

Key knowledge

Use each of the points from the VCE Economics Study Design below as a heading in your summary notes.

Key knowledge	Subtopic
◯ The definition of the selected economic issue, including relevant measures and statistical indicators	**5.2, 5.3**
◯ The reasons the issue is of importance to the economy at a local, national and international level	**5.4**
◯ The economic factors influencing the extent of the selected economic issue	**5.5**
◯ The different perspectives of households (consumers and workers), business, government and other relevant economic agents regarding the selected economic issue	**5.6**
◯ The economic responses undertaken by relevant economic agents at a local, national and international level, to address the economic issue, including government policies	**5.7**

Key skills

These are the skills you need to demonstrate.

Key skills
◯ Define key economic concepts and terms and use them appropriately
◯ Gather, synthesise and use economic information from a range of sources to analyse economic issues
◯ Identify trends, patterns, similarities and differences in economic data and other information to draw conclusions
◯ Evaluate the economic responses undertaken to address economic issues

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Digital document Key terms glossary (doc-37949)

5.2 Definition and nature of the labour market

KEY KNOWLEDGE

- The definition of the labour market

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5.2.1 Definition of the labour market

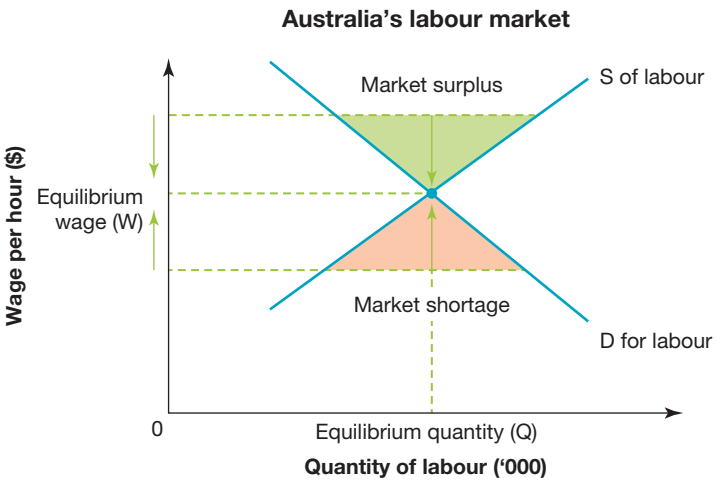
Labour is perhaps the most important resource for any economy and, in combination with other inputs, is essential (directly or indirectly) for producing goods and services. It involves the *mental talents* and *physical power* of different types of workers (e.g. engineers, doctors, electricians, teachers, mechanics, artists, builders, assembly line operators and administrators). Like other commodities, it is bought and sold in *markets*.

The labour market *is an institution where those from the household sector who are able and willing to work, supply labour (S) to the business sector wanting to buy or demand labour (D) so they can produce goods and services.* Together, sellers and buyers negotiate *wages* (W) or the *equilibrium price*. In reality, there is *not* just one labour market because, in fact, there are many types of workers, each with different skills and abilities who are employed in different industries and businesses around the country. There is a labour market for each of these. So, for example, there is the market for accountants, and ones for different health professionals, drivers, café staff including barristers, and company CEOs. In addition to the key roles played by households and businesses in the labour market, the Australian government also has some influence over wages through the **Fair Work Commission (FWC)**.

5.2.2 The nature and operation of the labour market

When thinking of the *labour market*, it is useful to recall some *microeconomics* involving *demand–supply (D–S) diagrams* like that in Figure 5.1, representing the *labour market*. For simplicity, we will *start* by assuming there is only one generic type of labour with no differentiation of skill, and that there is *no* government regulation or interference in the *free* operation of this market.

FIGURE 5.1 The labour market where buyers and sellers of labour negotiate the equilibrium wage or price of labour



Referring to Figure 5.1, take a look at the following features:

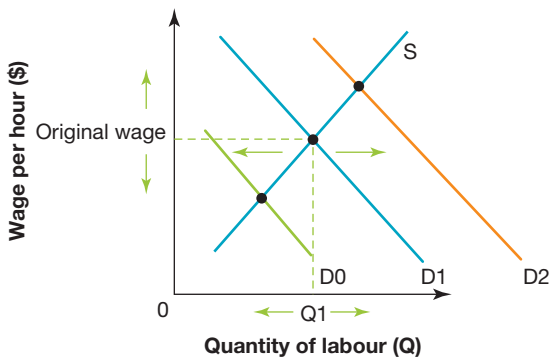
- **The demand for labour —** You may recall from our earlier work that the *law of demand* states that the quantity of a commodity purchased depends on its price, or in the case of labour, the *wage*. This is why the demand line in Figure 5.1 has a downward or negative slope. In other words, the D for labour expands as the price or wage falls or, in reverse, contracts as the wage rises.
- **The supply of labour —** Again, you may recall from earlier studies that the *law of supply* states that the quantity of a commodity made available depends on its price or, in this case, the *wage*. This is why the supply line in Figure 5.1 has an upward or positive slope. In other words, the S of labour expands as the price or wage rises or, in reverse, S contracts as the wage falls.
- **The equilibrium wage in the labour market —** Referring to Figure 5.1, the actual *equilibrium wage* (W) paid for labour is established at the point where the quantity of labour demanded and quantity of labour supplied are *exactly* equal. In this situation, there is neither a market surplus nor a market shortage (i.e. D = S).

In using Figure 5.1, we *initially* assumed that apart from wages (the price of labour) all other influences on the quantity of labour demanded or supplied in the market were *fixed*. However, we know that *non-price factors* (or in this case, *non-wage* factors) can vary from day to day. These can shift the *position* of the whole demand line and/or supply line, altering the equilibrium wage and conditions in the *labour market*.

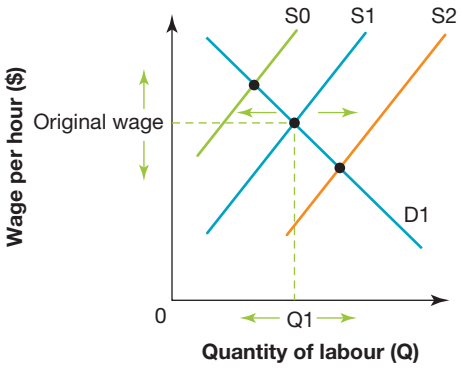
Referring now to Figure 5.2, notice what happens when non-price factors affecting the quantity of labour demanded and/or supplied at a given wage changes in the labour market:

FIGURE 5.2 How changes in the non-price factors of demand and supply of labour can bring about higher or lower wages in the labour market

Part A — Changing non-price *demand factors* for labour can change the equilibrium wage



Part B — Changing non-price *supply factors* for labour can change the equilibrium wage



- **Changes in non-price factors affecting the demand for labour —** Changes in *non-price factors* determined whether the quantity of labour *demanded* by employers *at any given wage* will increase or decrease, shifting the position of the whole demand line. Figure 5.2 (part A) shows the effect on the equilibrium wage of changes in *non-price factors*. These can move the whole demand line for labour horizontally to the right (called an *increase* in demand leading to a higher wage), or horizontally to the left (called a *decrease* in demand leading to a lower wage) of the original demand line. Non-price demand factors could include the following:
  - *Changes in the level of consumer demand for goods and services* (e.g. a rise in the demand for goods and services means that firms will need to buy more labour so there is an increase in the derived demand for labour, pushing up the equilibrium wage)
  - *The number of businesses wanting to buy labour* (e.g. if there are more businesses starting up, more labour will be needed, so demand and hence the equilibrium wage will tend to increase)
  - *The efficiency of labour* (e.g. if workers are more efficient and produce more output per hour, fewer staff will be needed to make a given level of output, decreasing the demand for labour and the equilibrium wage)

- *The level of business profitability* (e.g. if business profits are up, firms will expand and need more staff, increasing the demand for labour and pushing the wage upwards)
- *Whether there are substitutes for labour available* (e.g. in making goods, often machines can be used as a substitute for labour, reducing demand and depressing the equilibrium wage)
- *Government policy* (e.g. if the government uses cash subsidies paid to businesses that make certain types of goods or services, this can increase profits and cause firms to expand, strengthening the demand for labour and pushing up the equilibrium wage).

- **Changes in non-price factors affecting the supply for labour —** Changes in *non-price factors* determined whether the quantity of labour *supplied* by households at any given wage will increase or decrease, shifting the position of the whole supply line for labour. Figure 5.2 (part B) shows the effects on the equilibrium wage of changes in non-price supply conditions. These can move the whole supply line horizontally to the right (called an *increase* in supply that depresses wages) or to the left (called a *decrease* in supply that increases wages) of the original supply line. Non-price supply factors might include the following:
  - *Demographics, population structure, and the participation rate of the population in the labour force* (e.g. a country with an **ageing population** where there are more people nearing retirement will tend to have a decrease in the supply of labour, pushing up the equilibrium wage)
  - *Net immigration rates* (e.g. an increase in **immigration** will tend to increase the supply of labour and keep the equilibrium wage lower)
  - *The rate of natural increase in population* (e.g. a slowdown in a country's birth rate will reduce the supply of labour some years later, driving up the equilibrium wage)
  - *People's work–life balance* (e.g. not everyone wants to work full-time and so an increase in those preferring to work part-time to improve their work–life balance, and have more time for recreation, would tend to reduce the actual supply of labour and cause the equilibrium wage to be higher than otherwise)
  - *Government policy* (by tightening welfare access and increasing the pension access age, the government could increase the supply of labour and keep the equilibrium wage lower)
  - *Restrictions on entry into occupations* (e.g. some occupations have special entry requirements and special standards of experience or training limiting the supply of labour, pushing up the equilibrium wage)
  - *Trade unions* (e.g. the formation of trade unions and the use of industrial strikes, and refusal to work as a way of strengthening their bargaining position in wage negotiations with employers, would clearly limit the supply of labour and tend to push up the equilibrium wage).
- **Types of labour market conditions —** When non-wage factors shift the position of the whole demand and/or supply line, the equilibrium wage will either rise or fall, altering **labour market conditions**.
  - *Stronger labour market conditions:* **Stronger labour market conditions** develop when the demand for labour rises relative to the supply. These conditions might be caused by rising economic activity or the onset of a boom. Here, wages tend to increase faster, people work longer hours and *labour shortages* appear.
  - *Weaker labour market conditions:* **Weaker labour market conditions** develop when the demand for labour falls relative to the supply. This may be caused by a slowdown or **recession**. Under these conditions, wages rise more slowly or perhaps even fall, and people work fewer hours or become unemployed.
  - *Ideal labour market conditions: Ideally*, labour market conditions should neither be too strong causing labour shortages and perhaps wage-price inflation, nor should they be too weak where unemployment and lower incomes depress living standards. With this in mind, the Australian government seeks to achieve its **goal of full employment**. This is defined as the lowest rate of unemployment (perhaps somewhere around 4.0–4.5 per cent of the labour force) that does not cause the inflation rate to increase. This means that labour market conditions are *too strong* when the unemployment rate is below 4.0 per cent. In contrast, conditions are *too weak* when the unemployment rate is above 4.5 per cent, since there is wasted or spare productive capacity available in the economy.

5.2 Activities

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5.2 Quick quiz on | **5.2 Exercise**

5.2 Exercise

1. **Define** the term, *labour market*. **(1 mark)**
2. **Explain** how the labour market operates to determine wages and working conditions. **(4 marks)**
3. Using the table below, **identify** whether the item or event is a factor that affects the demand or the supply of labour. In addition, indicate in which direction the event would be likely to change wages in the labour market (assuming other things remain unchanged). **(8 marks)**

Item or event	Will it primarily affect the demand or the supply of labour? Explain.	In which direction would the item or event be likely to change wages?
a. Workers at the steel mill go on strike		
b. The government raises the pension access age from 67 to 70 years		
c. The closing of Australia's borders to immigration, due to the COVID-19 pandemic		
d. The average age of Australia's population continues to rise		
e. The is a global recession		
f. Labour productivity increases quickly by an average of over 2 per cent a year		
g. There is a fall in the level of business bankruptcies		
h. There is a rise in Australia's birth rate		

4. **Explain** what is meant by each of the following terms:
   a. Weak labour market conditions
   b. Strong labour market conditions
   c. Ideal labour market conditions. **(3 marks)**
5. If a country's annual rate of GDP growth was –0.5 per cent and inflation was 1.2 per cent, **identify** and **outline** the likely labour market *conditions* that you would expect to exist. **(2 marks)**

Solutions and sample responses are available online.

5.3 Measures of Australia's changing labour market

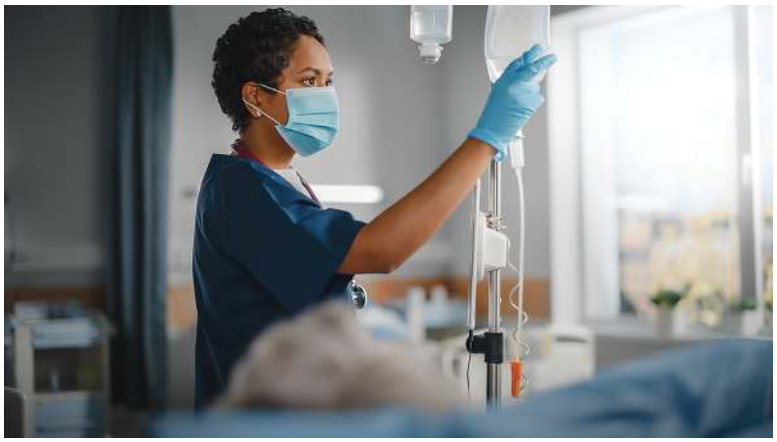
KEY KNOWLEDGE

- The relevant measures and statistical indicators of the labour market

Source: Adapted from the VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

From our earlier studies, you may recall that Australia's domestic macroeconomic conditions involving economic activity are always changing. To monitor these developments and to help guide government policy, the Australian Bureau of Statistics (ABS) uses its monthly **labour force** survey to track *labour market conditions*. For example, when the pace of economic activity quickens and firms hire more staff and increase hours of employment, labour market conditions get *stronger* (i.e. the demand for labour rises relative to its supply). In reverse, when the economy slides into a recession and firms cut staff, labour market conditions become *weaker* (i.e. the demand for labour falls relative to its supply). In fact, labour market indicators tell us a lot about how the economy is travelling.

5.3.1 The ABS labour force survey of labour market conditions



Each month, the ABS undertakes its *labour force survey* where it collects data, to shed light on changing labour market conditions. Indicators might include the following:

- the size and growth of the labour force (made up of both those employed and those unemployed)
- the number of persons employed
- the number of persons unemployed and the unemployment rate
- the number of persons underemployed and the underemployment rate
- the labour force participation rate
- the number of long-term unemployed persons
- the annual change in aggregate hours worked
- the number of job vacancies.

These indicators tell us about trends in the *demand* for labour relative to its *supply*. But what exactly do all these terms mean?

The size of the labour force

Agreed definitions are an essential starting point for all surveys. According to the ABS, Australia's labour force is defined as all individuals aged 15 or over, who are able and willing to work. It includes all those who have jobs and are *employed* (see definition of employed below), *plus* all those who are *unemployed* (see definitions below).

The labour force size = the number of people employed + the number of people unemployed

For example, if the number employed was 10 million and the number unemployed was 1 million, the labour force size would be equal to 11 million people.

Employed persons

In compiling these statistics, the ABS defines **employed persons** as meeting the following criteria:

- aged over 15 years
- working either full-time (35 or more hours per week) or part-time for more than 1 hour per week for pay (or as a special case, more than 15 hours a week in a family business when not being paid).

It includes those who have a job but may be prevented from working because of illness, strikes, holidays or other similar interruptions.

Unemployed persons

Unemployed persons are defined as those:

- aged over 15 years
- actively looking for full- or part-time work but unable to find it
- able and willing to take up a job in the week prior to the survey period.

It includes those waiting to resume work after being laid off or stood down without pay.

Calculating employment and unemployment rates

Australia's employment and unemployment *numbers* can be expressed in *two* ways:

1. Figures can be presented as an actual *number*. For example, in March 2022, 13 389 900 persons were employed, and 551 300 persons were unemployed out of a total labour force of 13 941 200 persons.
2. Figures can be expressed as a *rate* or *percentage* of the total labour force — for example, in March 2022, around 96.0 per cent of the labour force was *employed*, while 4.0 per cent was *unemployed*. The following formulae can be used for these calculations:

$$\textbf{The unemployment rate } (\%) = \frac{\text{Number of people unemployed} \times 100}{\text{Total number of people in the labour force}}$$

For example, if there were 1.0 million people unemployed out of a total labour force of 10 million, then the unemployment rate would be 10.0 per cent.

$$\textbf{The employment rate } (\%) = \frac{\text{Number of people employed} \times 100}{\text{Total number of people in the labour force}}$$

For example, if there were 9.0 million people employed out of a total labour force of 10 million, then the employment rate would be 90.0 per cent.

Participation rate

The participation rate is the proportion of all people aged 15 years and over who are in the labour force (i.e. including all those employed plus those unemployed according to the previous definitions). The participation rate affects the *supply of labour* resources available. If other things remain equal, a *rise* in the participation rate tends to increase the unemployment rate (i.e. more people competing for a limited number of jobs), while a *fall* in the participation rate puts downward pressure on the unemployment rate.

The relationship between the rates of participation and unemployment also work the other way round where the unemployment rate affects the participation rate. For instance, a rise in the unemployment rate tends to cause a fall in the participation rate because some job seekers become discouraged by their lack of success and give up actively looking for work; they become part of the *hidden unemployment* problem not captured in the unemployment statistics.

For example, Australia's participation rate for March 2022 was a near high of 66.4 per cent. This rate can be calculated as follows:

$$\textbf{The participation rate } (\%) = \frac{\text{Total number of people in the labour force} \times 100}{\text{Total number of people 15 or over in the population}}$$

For example, if the labour force size was 8.0 million and the number of people aged 15 and over was 10 million, then the participation rate in the labour force would be 80.0 per cent.

Job vacancies

Job vacancies refer to the number of positions advertised by employers that are unfilled. Vacancies represent the demand for labour. When the economy is growing quickly and firms are expanding output, job vacancies rise. Businesses are hiring workers. However, in a slowdown, job vacancies fall as firms need fewer staff.

Underemployment or disguised unemployment

Underemployment (also called *disguised* unemployment) is where individuals are classified as employed because they have jobs (i.e. they work more than just 1 hour per week) but, nevertheless, are partly unemployed because they are not working to capacity (i.e. normally 35 hours per week) and would like more hours. This applies to those in part-time jobs with limited hours.

In a sense, the existence of underemployment disguises or under-reports the problem of unemployment, particularly given the trend nowadays towards a rise in the proportion of those in *part-time work*. Higher underemployment numbers indicate weaker labour market conditions where the demand for labour is limited relative to the supply. It is typical of a period of recession.

Underutilisation rate

The **underutilisation rate** is the extent to which the available supply of labour is *not* working at its capacity. This is equal to the unemployment rate *plus* the underemployment rate. The underutilisation rate is an important indicator of labour market conditions. For instance, when there is a downturn or recession, the underutilisation rate rises because more people are unemployed and working fewer hours, whereas in a recovery the underutilisation rate typically falls.

The underutilisation rate (%) = Unemployment rate (%) + Underemployment rate (%)

For example, if the unemployment rate was 4.0 per cent and the underemployment rate was 5.0 per cent then the underutilisation rate would be 9.0 per cent. The economy would appear to have considerable unused capacity.

Hidden unemployment

Hidden unemployment includes people who would like work but who are discouraged from seeking jobs for various reasons, such as a repeated failure to find work. They have left the labour force and are therefore no longer '*actively looking for work*'. For this reason, they are no longer counted in the labour force and, hence, differ from those who make up the *disguised* or *underemployed* who are still part of the workforce.

Long-term unemployment

Long-term unemployment is where individuals have been unable to get a job for 52 weeks or more. This measure also tells us about the state of the labour market. For instance, when conditions weaken during a recession there is a rise in long-term unemployment, whereas in a recovery numbers slowly fall.

Aggregate hours worked

The change in aggregate hours worked also provides a useful guide to labour market conditions. If there is a rise in hours worked, this shows an increase in the demand for labour that occurs during a period of expansion, whereas a fall in hours is a sign that output is slowing and firms need less labour.

5.3.2 Australia's changing labour market

The ABS provides a huge array of statistical information about Australia's changing labour market over both the short- and long-terms. In this section, we will check out changes in a selection of these important indicators including the following:

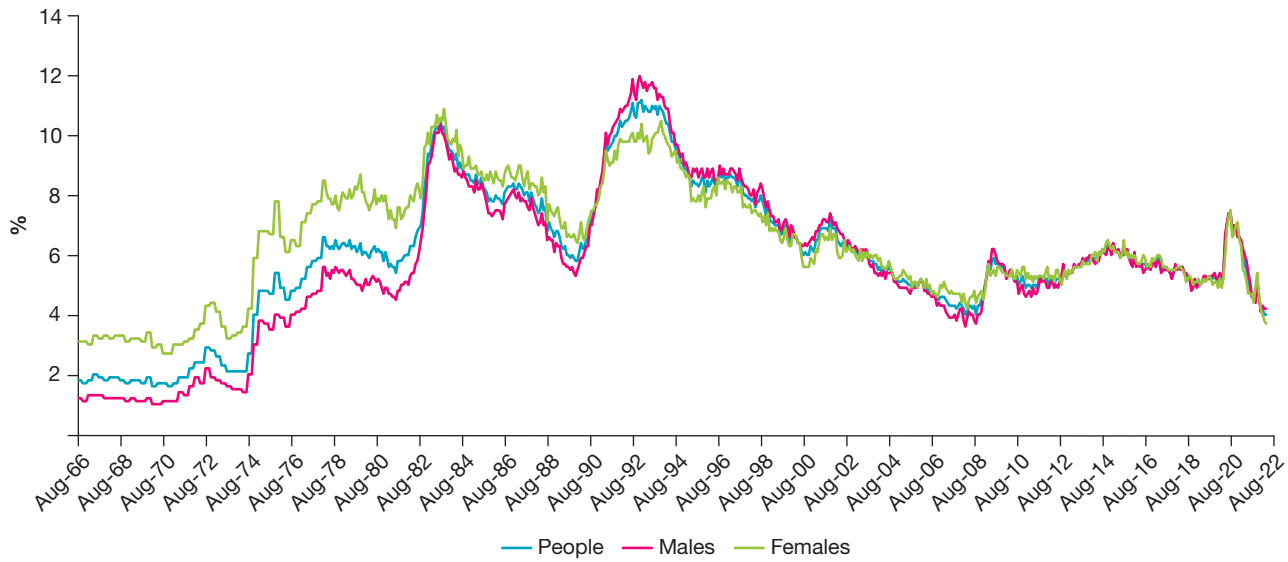
- The unemployment rate
- Employment growth
- The participation rate
- The underemployment rate
- Hours worked
- Changes in employment by industry
- Changes in labour productivity
- Changes in wages
- Changes in the proportion of the labour force that is unionised
- Changes in the educational attainment of Australia's labour force by age group with a university degree.

The unemployment rate

Despite the great range of *labour market indicators*, the most quoted one is the *unemployment rate*. The *unemployment rate* represents the proportion of all those aged 15 and over who are actively looking for paid work (i.e. who are in the labour force) but are unable to get a job. Figure 5.3 shows that unemployment rates for the period 1966 and 2022 have varied considerably between about 1.8 per cent and 11.0 per cent, with slightly higher rates for females.

There is a close relationship between the unemployment rate and the level of economic activity. For example, when activity slows (1981, 1991 and 2020) and the *demand for labour* falls, unemployment rises. In reverse, when activity is stronger (e.g. 1968 and 2022) and the demand for labour improves, unemployment falls. Even so, we will see later that aggregate supply factors have also affected the unemployment rate.

FIGURE 5.3 Changes in Australia's unemployment rate by gender, and overall



February 1978 to March 2022 estimated monthly, before February 1978 estimated quarterly.

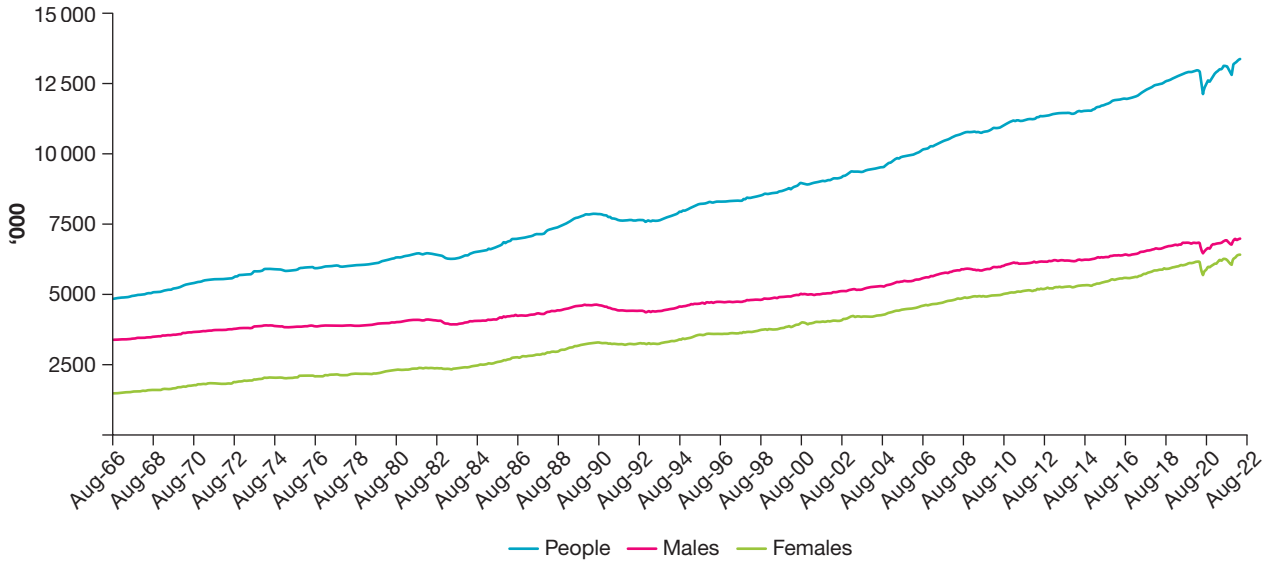
Source: ABS, Historical charts, Chart 1, see https://www.abs.gov.au/articles/historical-charts-1966.

Employment growth

Employment represents the number of people aged 15 and over who are in the labour force and have paid jobs of at least 1 hour or more per week.

Changes in employment reflect the *demand for labour* and so, amongst other factors, will be affected by changes in the level of economic activity. Figure 5.4 shows an impressive overall rise in employment between 1966 and 2022, although male employment numbers have risen faster than those for females. Even so, you might notice the tiny dips in the lines that correspond with periods of recession where the level of unemployment rose.

FIGURE 5.4 Australia's employment growth by gender, and overall



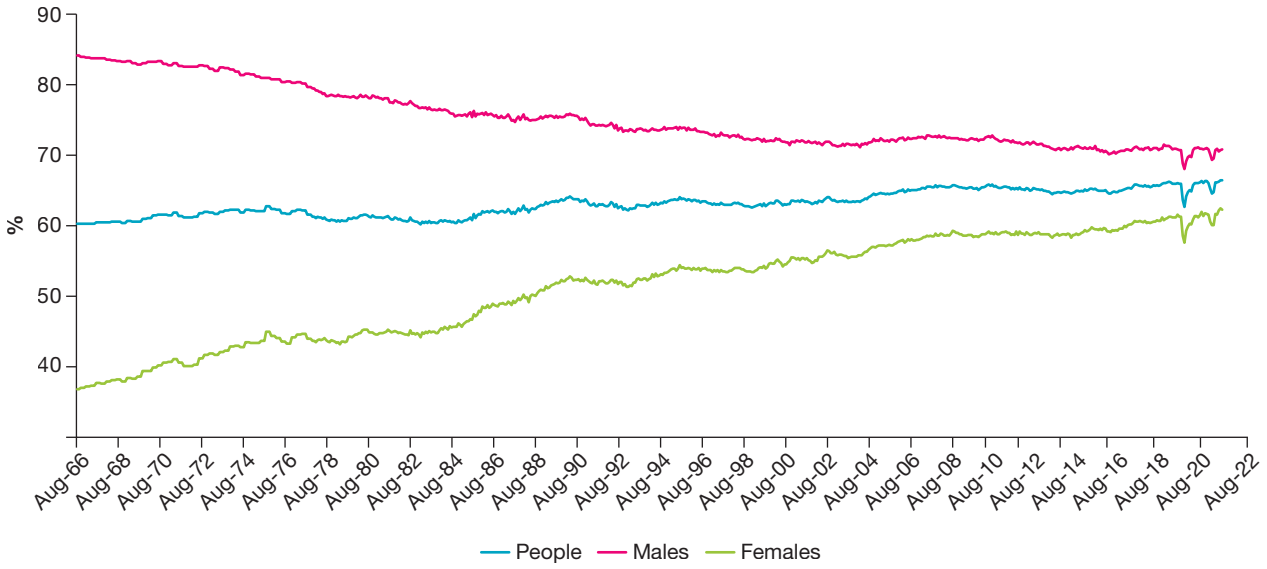
February 1978 to March 2022 estimated monthly, before February 1978 estimated quarterly.

Source: ABS, Historical charts, Chart 2, see https://www.abs.gov.au/articles/historical-charts-1966.

The participation rate

The *participation rate* represents the proportion of the population aged 15 and over who are in the labour force (i.e. either employed or unemployed). Participation affects the supply of labour. As shown in Figure 5.5, there are a couple of developments to note here with the male participation rate coming down from 84 per cent in 1966 to around 71 per cent in 2022. Contrasting this decline, female participation in the labour force increased from 36 to 62 per cent — more than enough to offset the fall for males. Overall, the participation rate was up from 60 to an all-time recent high of 66 per cent.

FIGURE 5.5 Changes in Australia's participation rate by gender, and overall



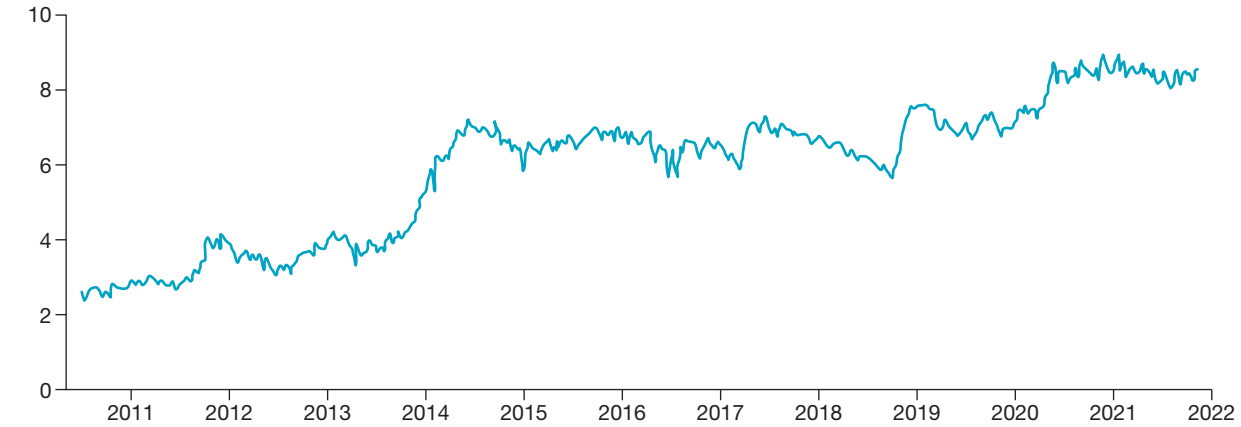
February 1978 to March 2022 estimated monthly, before February 1978 estimated quarterly.

Source: ABS, Historical charts, Chart 4, see https://www.abs.gov.au/articles/historical-charts-1966.

The underemployment rate

The *underemployment rate* represents the number of workers who have a job but who would like more hours of work, expressed as a percentage of the labour force. It involves some of those working part-time and is one indicator of unused productive capacity. The underemployment rate rises in recessions when the *demand for labour* is weak, and falls in a boom when demand is stronger. Changes in Australia's underemployment rate between 2011 and 2022 are shown in Figure 5.6. Notice the fall to record low rates between 2020 and 2022.

FIGURE 5.6 Changes in Australia's underemployment rate

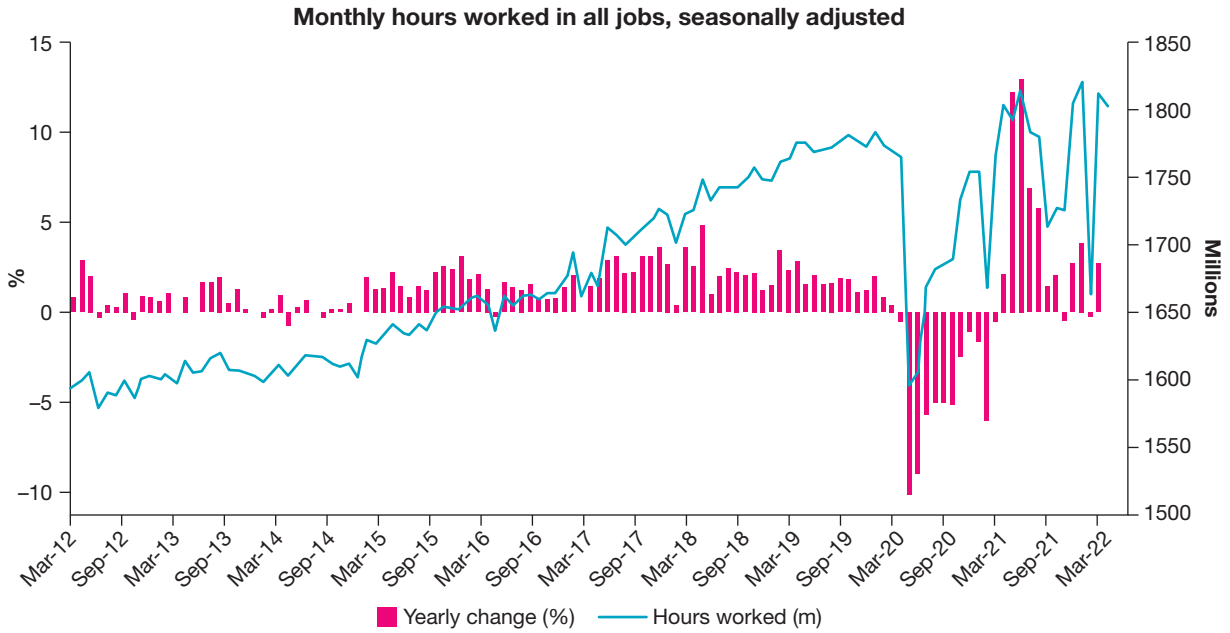


Percentage of labour force that is underemployed. Underemployed workers are employed people (both full-time and part-time) who would prefer, and are available for, more hours of work than they currently have.

Hours worked

The number of *hours worked* is an indicator of the demand for labour by firms. Figure 5.7 reveals that there has been considerable change from year to year, but especially highlights the impact of the COVID-19 recession in 2020 and the subsequent recovery in hours worked during 2021–22.

FIGURE 5.7 Changes in monthly hours worked — Australia (in percentage terms and in the number of hours)

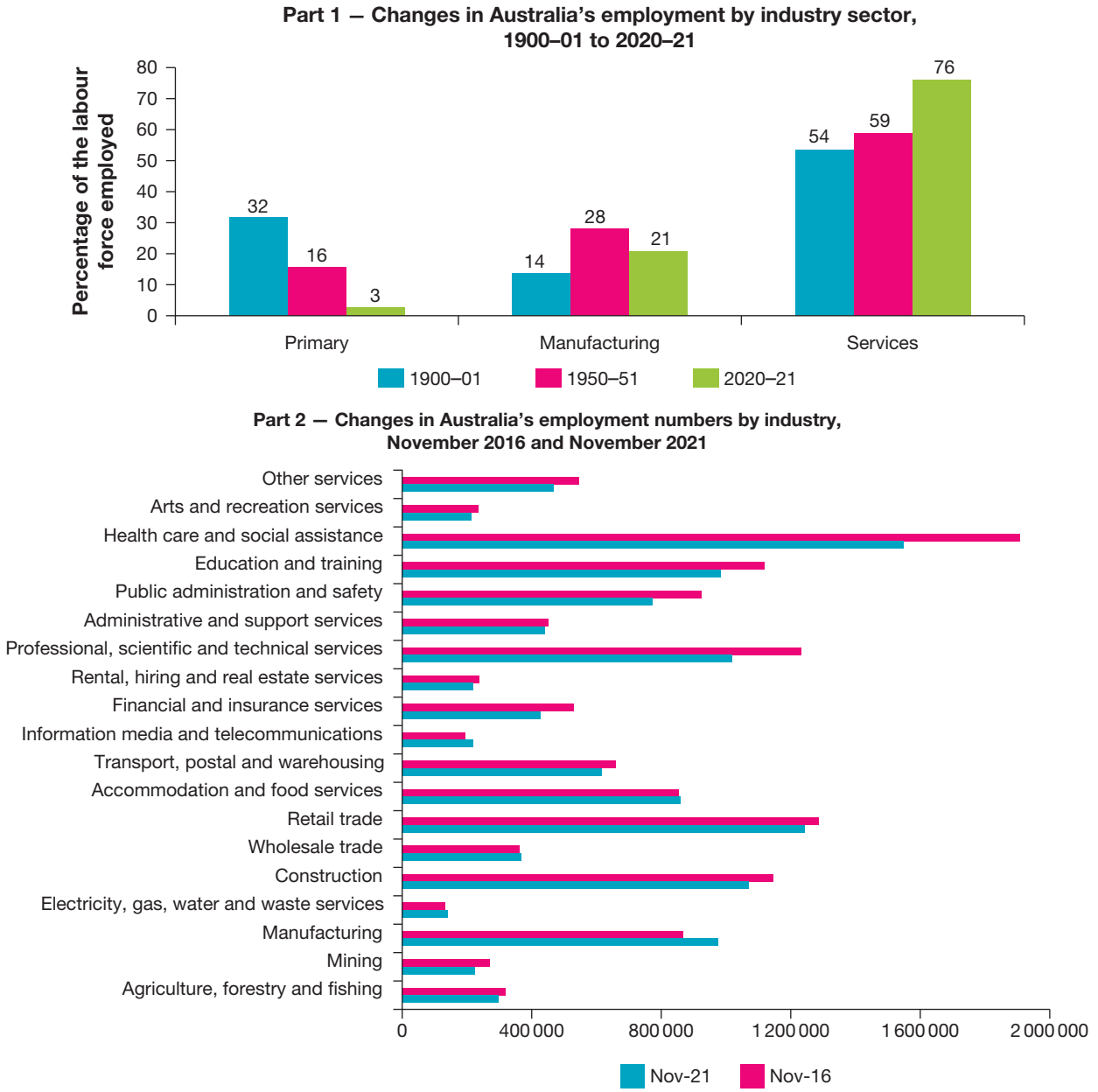


Source: ABS, Labour Force Australia, see https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/latest-release.

Changes in employment by industry

Not all industries expand at the same rate. As a result, there has been a change in the patterns of Australia's *employment*. Over the last 120 years, Figure 5.8 (part 1) shows the relative decline in primary industry (agriculture and mining), the growth and then decline of manufacturing, and the expansion of service industries. In more detail, Figure 5.8 (part 2) indicates that employment in some industries like healthcare, public administration, and scientific and technical areas, have grown faster than others over the period. However, manufacturing has shrunk. Again, this reflects the rate of growth in consumer demand for Australian-made goods and services and the derived *demand* for labour that is used to produce these.

FIGURE 5.8 Changes in Australia's employment by industry

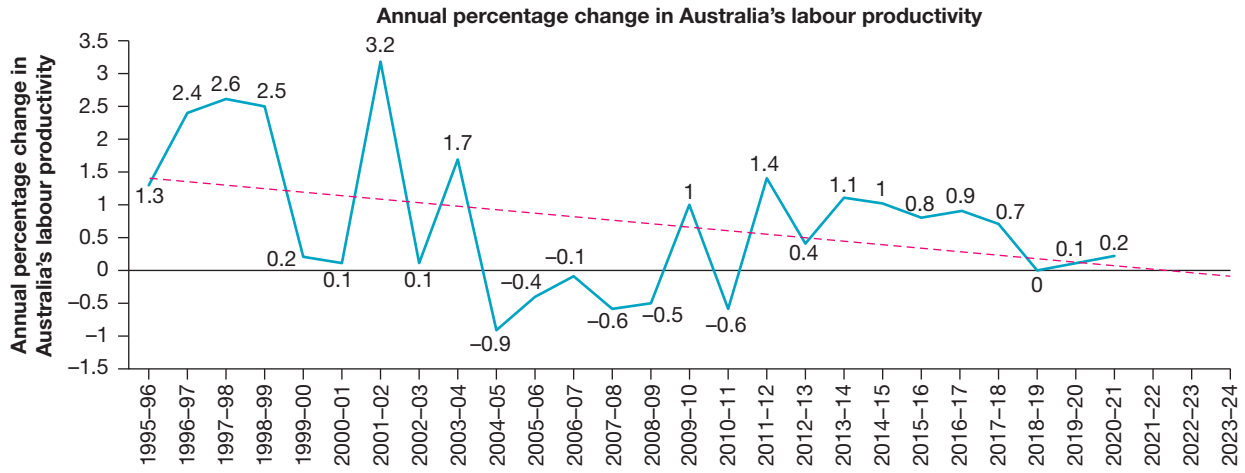


Source: Part 1 – data derived from ABS, https://www.abs.gov.au/ausstats/abs@.nsf/previousproducts/1301.0feature%20article142001; https://www.bitre.gov.au/sites/default/files/report_136_CHAPTER_6_WEB_FA.pdf; and other. Part 2 — data derived from ABS, see https://lmip.gov.au/default.aspx?LMIP/LFR_SAFOUR/LFR_Employment_Industry_TimeSeries.

Changes in labour productivity

Labour productivity or efficiency is judged by looking at the value of output or GDP that is gained from an hour of work (i.e. labour productivity = real GDP -:- number of hours worked). When labour productivity is growing strongly, production costs for businesses and consumer inflation are lower than otherwise. It also means that the economy's potential output, employment, income and hence living standards are higher. Figure 5.9 traces changes in Australia's productivity over the last few decades. Looking at this graph, it is difficult to ignore the dramatic slowdown in annual productivity growth (see the decline in the broken trendline).

FIGURE 5.9 Snapshot of Australia's annual change in labour productivity

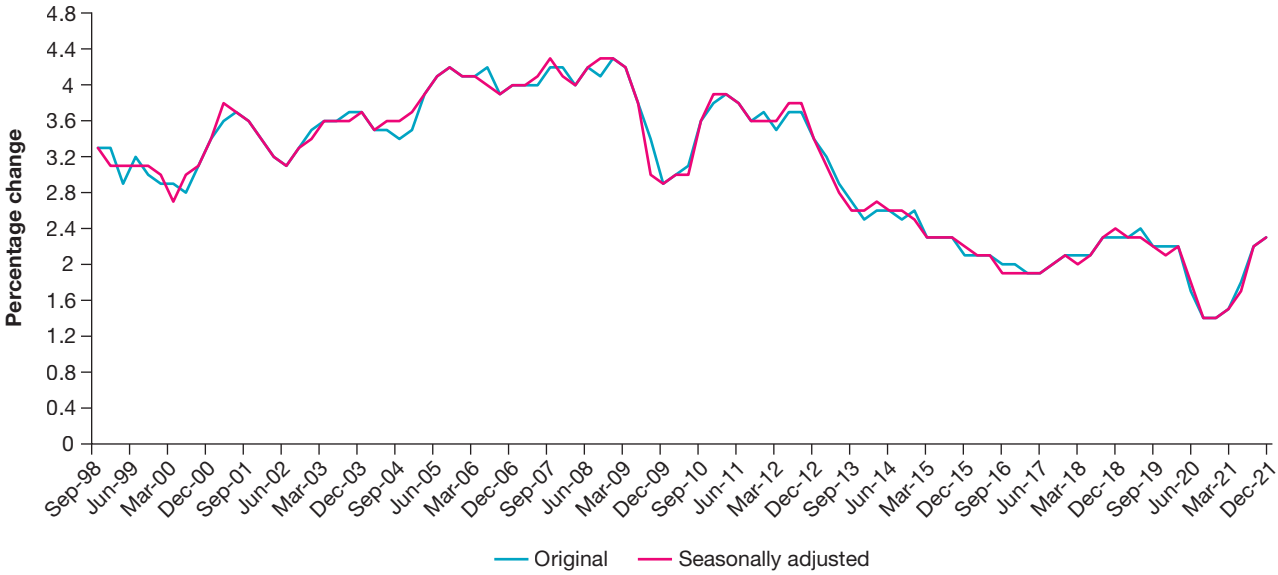


Source: Data derived from ABS, see https://www.abs.gov.au/statistics/industry/industry-overview/estimates-industry-multifactor-productivity/latest-release.

Changes in wages

To a large extent, Australian *wages* reflect conditions of demand and supply for different types of workers in various labour markets. They are largely set through negotiations between workers and employers, and increase at a faster rate when demand rises relative to supply. In contrast, they slow or fall when demand decreases relative to supply. Figure 5.10 illustrates the annual percentage change in Australia's wage–price index measured at quarterly intervals.

FIGURE 5.10 Australia's annual percentage change in wages measured at quarterly intervals



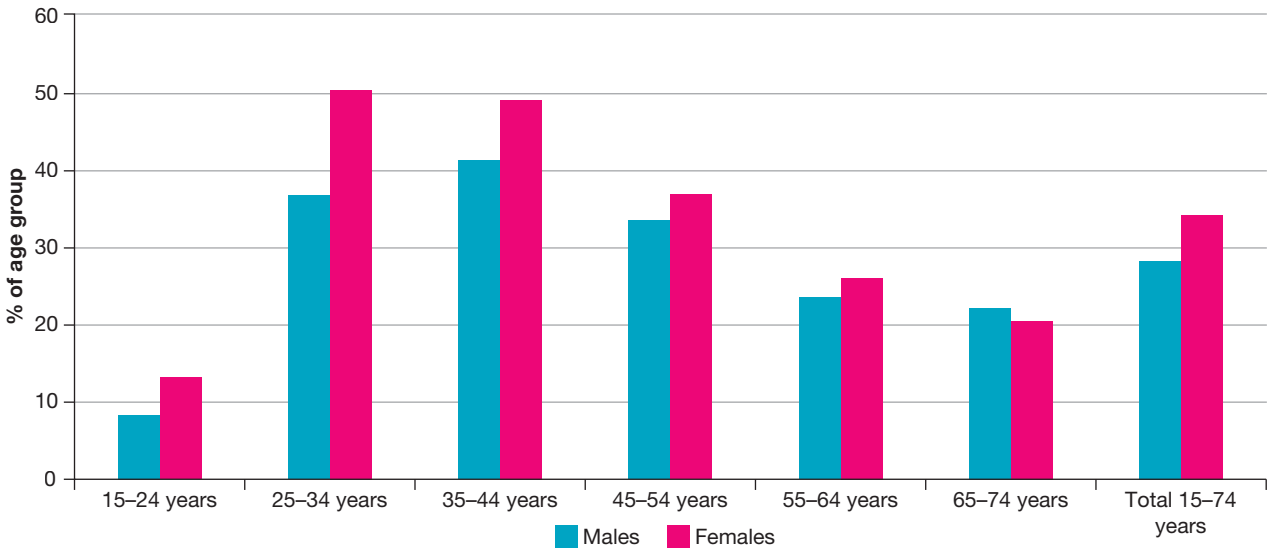
Source: ABS, see https://www.abs.gov.au/media-centre/media-releases/annual-wage-growth-increases-23.

Because the demand for labour, in particular, is *derived* from the demand for goods and services, it increases and decreases with changes in the level of economic activity. So, in the boom in 2005–08, for example, strong labour demand caused wages to grow by over 4 per cent a year, whereas in the recession in 2020 wages increased very slowly at just 1.4 per cent. Through the *Fair Work Commission*, the government also influences wage growth through setting the annual *minimum award wage*.

Changes in the educational attainment of Australia's labour force by age group and gender

The *educational attainment* of the labour force is important since it determines the quality and productivity of Australia's labour resources. In turn, this influences the country's productive capacity, potential GDP, and income. Figure 5.11 shows that those in relatively younger age groups including 25–34 and 35–39, for instance, have a higher average level of tertiary education than older workers, and that, interestingly, there is a higher proportion of females in most age groups with a university degree.

FIGURE 5.11 Differences in the rate of attainment in higher education by age group — Australia



All persons aged 15–74 years.

Source: ABS, Education and work, see https://www.abs.gov.au/statistics/people/education/education-and-work-australia/may-2021.

Changes in the proportion of the labour force that is unionised

Figure 5.12 shows that there has been a dramatic fall in *trade union membership* amongst Australia's labour force — diving from 51.0 per cent in 1976 to just 14.3 per cent by 2020 (latest available). Not shown here but there are vast differences in unionised rates between occupations, ranging from 31 per cent in education to just 1.8 per cent in agriculture, forestry, and fishing. Some evidence suggests that union membership may affect wages, international competitiveness and productive capacity.

FIGURE 5.12 Changes in Australia's trade union membership (percentage of labour force)

Notes: 1. pre-2004 series: includes Owner Managers of Incorporated Enterprises (OMIEs), 2. 2004+ series: excludes OMIEs, 3. The ABS plans to produce historically comparable estimates for the pre-2004 period, excluding OMIEs, in the future.

Source: ABS, Trade union membership, see https://www.abs.gov.au/statistics/labour/earnings-and-working-conditions/trade-union-membership/latest-release.

5.3 Activities

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5.3 Quick quiz on | 5.3 Exercise

5.3 Exercise

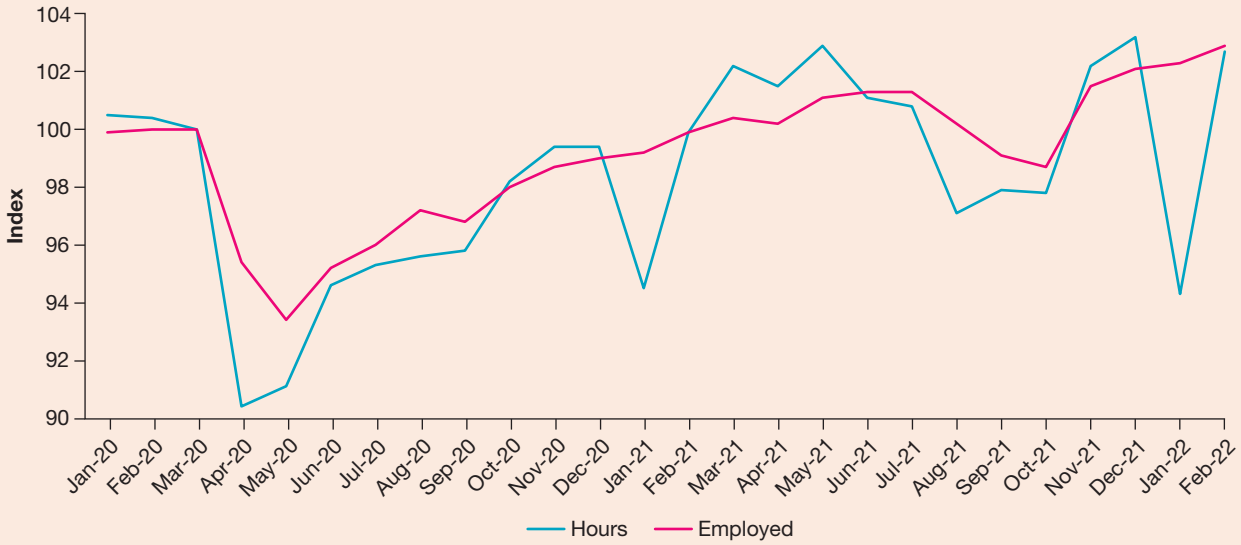
1. Examine the table below showing hypothetical population data for a nation: **(5 marks)**

Indicator	Data
Total population	20 000 000
Total number of persons aged over 15 years	15 000 000
Number of people employed	10 000 000
Number of people unemployed	500 000
The underemployment rate (%)	5

For each of the following labour market indicators, **define** the measure and then use the data to **calculate** each of the following (showing the formula used and your basic working):

a. size of the labour force
b. unemployment rate
c. employment rate
d. participation rate in the labour force
e. the underutilisation rate.

2. Before answering the questions that follow, **examine** the graph below about changes in hours worked.



Source: ABS, see https://www.abs.gov.au/articles/insights-hours-worked-february-2022.

   a. Referring to statistics drawn from the graph, describe the overall trend in hours worked since April 2020. **(2 marks)**
   b. **Explain** whether this trend indicates a stronger or weaker labour market and whether this overall trend in hours worked represents a change in the *demand* for labour, or a change in the availability or *supply* of labour. **(2 marks)**
   c. **Outline** a likely reason for the big drop in the index of hours worked in April 2020. **(1 mark)**

3. In the year to June 2008, wages grew by 4.3 per cent whereas in March 2021 they grew by just 1.4 per cent. **Contrast** the likely labour market conditions for these two periods. **(2 marks)**
4. **Explain** why it is beneficial for a country to have a labour force with higher levels of educational attainment. **(2 marks)**
5. **Explain** how the fall in Australia's labour force *productivity* would be likely to affect our *material* living standards. **(2 marks)**

Solutions and sample responses are available online.

5.4 The reasons why changes in Australia's labour market are important

KEY KNOWLEDGE

- The reasons the issue of changes in the labour market are important

Source: Adapted from the VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

There are lots of reasons why it is important to understand the dramatic *changes* that have taken place in Australia's labour market. However, the main idea is that developments in the labour market have significant effects on the *performance* of the economy and, hence, on both material and non-material *living standards*. While some of the short- and long-term changes have been positive and should enhance society's wellbeing, unfortunately this is not always the case.

5.4.1 Changes in the labour market affect material living standards

Material living standards relate to levels of *real disposable income* and *per capita consumption*. The labour market affects *material* living standards in at least *three* ways.

The connection between levels of employment, unemployment, hours, participation, and income: We have seen that there have been many changes in Australia's labour market. When it is *strong* as in 2021–22, and the ABS indicators show rapid rises in employment, falling unemployment, increased labour force participation and rising hours worked, it is usually safe to say that average incomes, consumption, and material living standards should be increasing. In contrast, when the labour market is weak as during COVID-19 in 2020, and there are rises in unemployment and reduced hours worked, consumption falls. People are worse off. In other words, it is far better to be employed, working extra hours and perhaps on average weekly full-time adult earnings of $1813 or even on the minimum wage of $812.60 per week (2022–23), than being unemployed on meagre welfare benefits of around $300–350 per week. Reliance on government welfare certainly leads to reduced levels of per capita consumption and material living standards.

The connection between unemployment and inequality in income distribution: The number of hours worked per week, along with unemployment and participation rates, greatly affect the level of a person's income. In addition, these drivers influence how evenly or unevenly Australia's total income is shared between people and the extent of social and economic inequality. As just mentioned, when a person becomes unemployed and is forced onto government welfare benefits, their level and share of the nation's income, goods, and services shrinks dramatically. Research suggests that many of those making up Australia's lowest 20 per cent of income earners are unemployed, have limited hours, or are unable to participate in work because they are too old or too young. These people are likely to make up the 13.6 per cent of the population living below the *poverty line*.

The connection between employment, education, productivity, and potential incomes: The quantity and quality of labour resources available limits the country's productive capacity and its potential GDP and income. So, when the *size* of the workforce and labour market is growing, perhaps because of the immigration of working aged individuals, or an increase in the participation rate as seen recently, this helps to expand Australia's productive capacity. Thinking of the production possibility diagram, having a larger PPF means that it is possible to produce more goods and services and hence enjoy higher average incomes. Furthermore, if the labour force is also becoming more efficient and has strong productivity growth due to improved educational attainment and skills (perhaps as a result of encouraging skilled immigration or improved levels of educational attainment), this also helps to grow the nation's PPF and potential incomes.

5.4.2 Changes in the labour market affect non-material living standards

Non-material living standards refer to the quality of daily life (rather than the quantity of goods and services purchased and consumed). It may reflect general happiness, low stress levels, having adequate leisure time, job satisfaction, quality personal relationships, good mental and physical health outcomes, long life expectancy, the absence of social isolation, opportunities for cultural enrichment, low crime rates, good social cohesion and sense of inclusiveness. For example, when there are positive changes in Australia's labour market that reduce unemployment, grow job opportunities, increase incomes, and reduce the number of people on welfare, non-material living standards are likely to improve. However, as seen during the COVID-19-induced recession in 2020, when there were weak labour market conditions and an increase in the number of people on inadequate

government welfare benefits, non-material livings standards were seriously undermined (e.g. reduced mental health, increased social isolation, unhappiness, feelings of failure, and high stress levels reflecting being unable to pay bills including mortgages).

5.4 Activities

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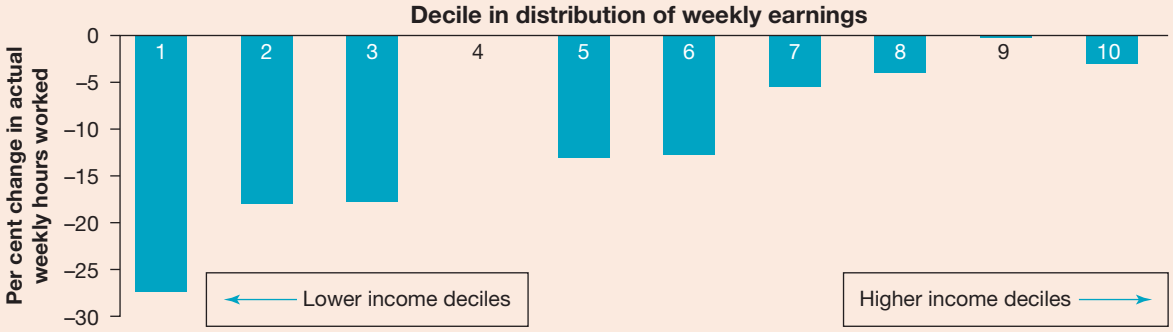
5.4 Exercise

5.4 Exercise

1. **Identify** and **outline** the main ways in which particular changes in the labour market can affect *overall* living standards. **(4 marks)**
2. **Explain** how an increase in *average hours worked* would be likely to affect each of the following:
   a. Material living standards
   b. Non-material living standards. **(2 marks)**
3. **Explain** how a lower *female participation rate* in the labour force, relative to that for males, would be likely to affect each of the following:
   a. Material living standards
   b. Non-material living standards. **(2 marks)**
4. **Explain** how Australia's high *underemployment rate* in 2020 would be likely to affect each of the following:
   a. Material living standards
   b. Non-material living standards. **(2 marks)**
5. **Examine** the graph below that shows the percentage change in the average number of hours worked across the 10 equal-sized deciles (i.e. each representing 10 per cent of the total population) during Australia's COVID-19 recession in 2020. Here, decile 1 consists of the 10 per cent of the population with the lowest income, decile 2 is the next lowest and so on, with decile 10 made up of the population with the highest income.



Source: Copied directly from Wiley, Online Library (but slightly modified labelling), see https://onlinelibrary.wiley.com/doi/full/10.1111/1467-8462.12386. The Australian Labour Market and the Early Impact of COVID-19: An Assessment — Borland — 2020 — Australian Economic Review — Wiley Online Library.

   a. Referring to graph data, identify and outline the groups making up part of the total population that suffered the greatest reduction in the number of hours worked during the 2020 recession. **(1 mark)**
   b. Giving reasons, **explain** how this would be likely to affect the living standards of those making up the groups you identified in part **a** above, relative to income earners in other deciles. **(2 marks)**

Solutions and sample responses are available online.

5.5 The economic factors influencing changes in Australia's labour market

KEY KNOWLEDGE

- The economic factors influencing changes in the labour market

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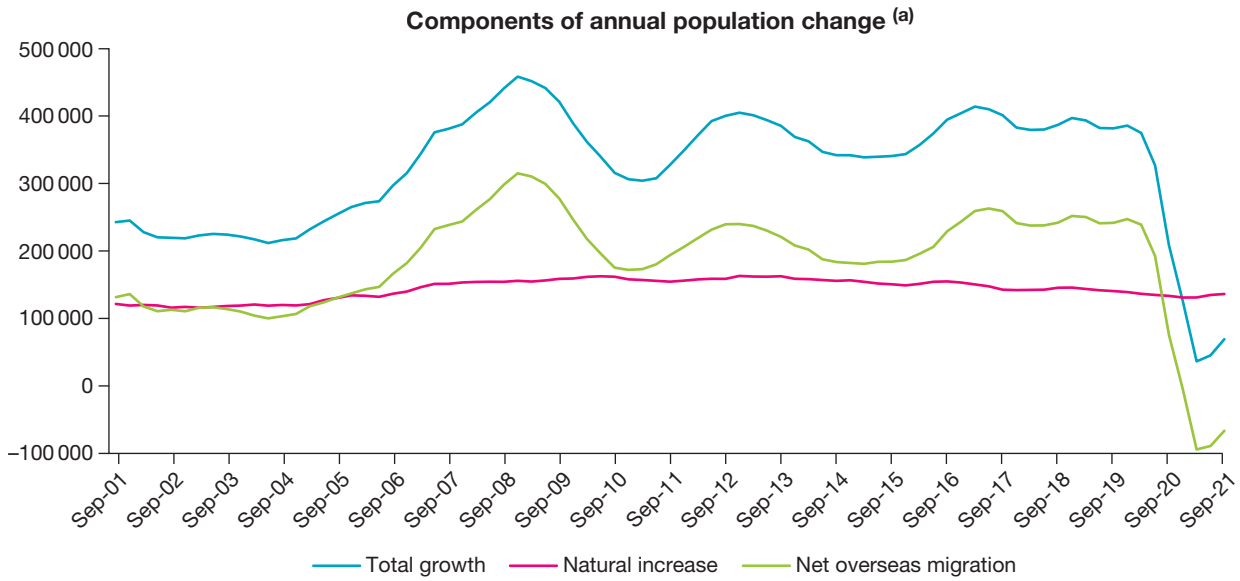
There are many economic factors that help to bring about some of the changes that we have noted in Australia's labour market. In this section, we will examine just a few of the more important causes or *drivers* of change.

5.5.1 Factors that have influenced the growth in the size of the labour market

The size of Australia's labour market has grown rapidly from a mere 2.3 million people in 1932, to 5.7 million in 1972, and 13.5 million in 2022. The size of the labour force affects the nation's productive capacity, and the potential level of GDP and income. Over time, there are *two* sources of population growth that feed through to expand the labour force — **natural increase** in population growth and **net migration**. This is illustrated in Figure 5.13.

FIGURE 5.13 Sources of Australia's population growth and hence change in Australia's labour force

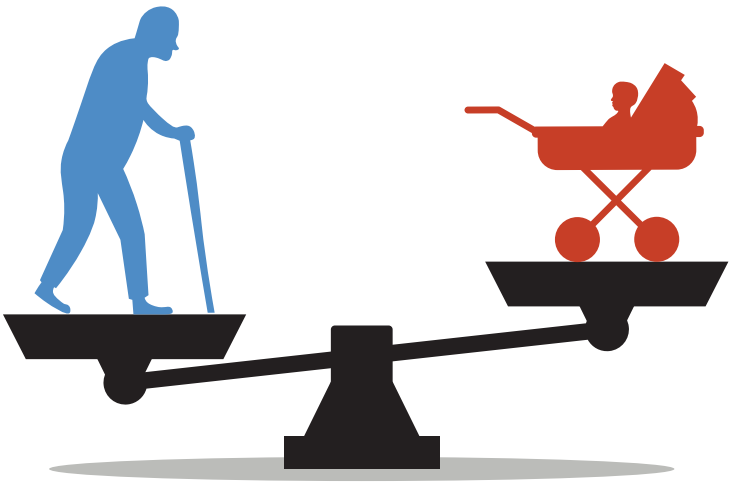


a. Annual components calculated at the end of each quarter.

Source: ABS, see https://www.abs.gov.au/statistics/people/population/national-state-and-territory-population/latest-release.

The rate of natural increase in population

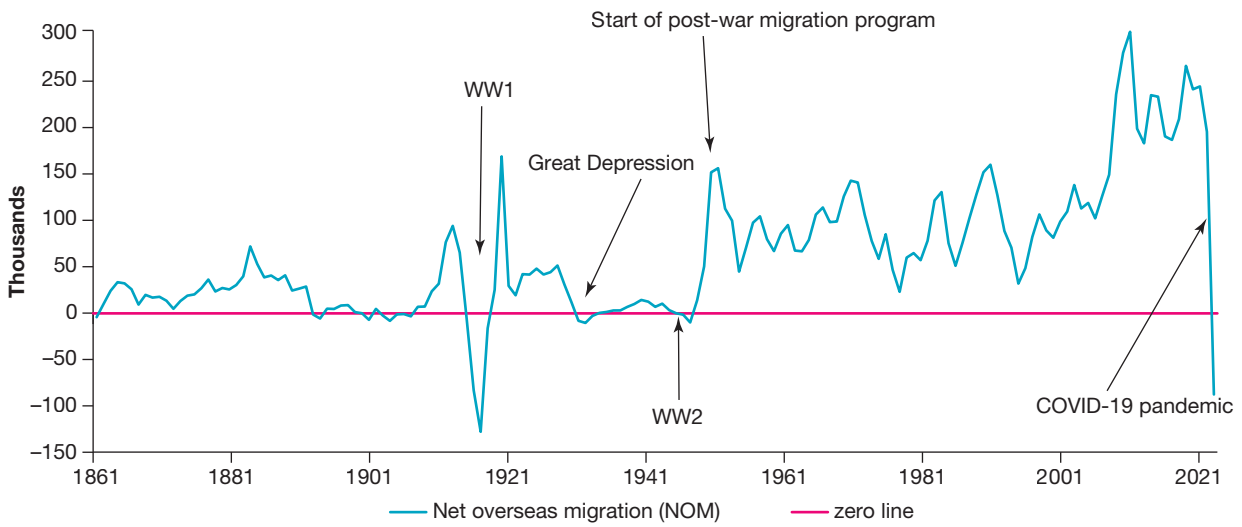
The *rate of natural increase* in Australia's population reflects the excess of births over deaths. Overall, births have exceeded deaths by around 140 000 per year. This has helped to grow our population and, after children reach working age, has expanded the labour force. Despite the reduction in the average size of families over time (a drop from over five children in 1875 to under 2 in 2022), the growth in the size of the labour force has been assisted by an increase in life expectancy, a rise in the retirement and pension access age, and by an increase in the female labour force participation rate.



The rate of net migration

The dominant source of population growth has been *net migration;* that is, the excess of immigrants coming in versus those leaving. As shown in Figure 5.14, with the exception of World War I, the Great Depression, World War II and the 2020 COVID-19 pandemic (when our international borders were closed), there has been a greater number of migrants entering Australia than leaving, typically by between 100 000 and 300 000 a year. In fact, since the late 1940s the Australian government has encouraged immigration and given priority to those with useful skills (who have made up around 65 per cent of all entrants). In addition, migrants are usually younger and hence most participate in the labour force, significantly growing the nation's productive capacity.

FIGURE 5.14 Changes in Australia's level of net migration since 1861



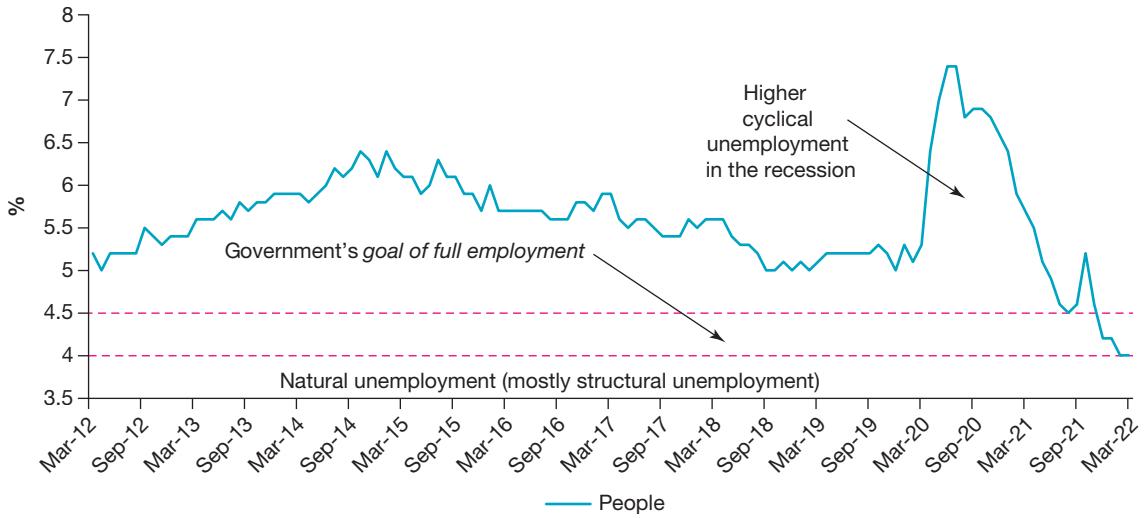
Estimates from 1972 are year ending June, prior to this they are year ending December. Estimates for 2020–21 are preliminary. See revision status on the methodology page.

Source: ABS, see https://www.abs.gov.au/statistics/people/population/overseas-migration/2020-21.

5.5.2 Factors that have influenced changes to the unemployment and employment rates

Figure 5.15 shows that Australia's unemployment rate has moved up and down. However, generally the unemployment rate has been *higher* than the government's current *ideal* rate of between 4.0 and 4.5 per cent of the labour force. This acceptable unemployment zone corresponds with the government's goal of full employment (i.e. the lowest rate of unemployment that doesn't cause inflation to accelerate significantly).

FIGURE 5.15 Recent changes in Australia's unemployment rate



Source: ABS, see https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/mar-2022.

Australia's *unemployment rate* and *labour market conditions* are influenced by *two* sets of factors:

- *Cyclical unemployment* is caused by generally weaker *aggregate demand factors* that slow spending on Australian-made goods and services.
- *Natural unemployment* (especially structural unemployment) is caused by changing *aggregate supply conditions* that alter the way goods and services are produced and/or whether firms expand or close down.

The causes of cyclical unemployment

The general rule is that Australia's level of **cyclical unemployment** rises and falls with the overall strength of *aggregate demand conditions* that affect the pace of economic activity. These changeable aggregate demand factors might include consumer confidence, business confidence, disposable income, government spending, **interest rates** and overseas economic activity.

- When *aggregate demand factors* are *weaker* and slow the level of spending (AD = C + I + G + net X) as in 2020, cyclical unemployment will rise. This is because with less spending, firms cut production. This weakens the demand for resources including labour.
- In reverse, when *aggregate demand factors* are *stronger* and spending accelerates (e.g. 2021–22), businesses will lift their output by employing more resources, including labour, which lowers cyclical unemployment.

The causes of natural unemployment

Despite periods of cyclical unemployment, the main type of unemployment in Australia is **natural unemployment**. Natural unemployment consists of *four* types:

- structural unemployment (the most important cause)
- frictional unemployment
- seasonal unemployment
- hardcore unemployment.

Currently, these four types of natural unemployment make up around 4.0–4.5 per cent of the labour force (representing the government's goal or target in this area). This target represents the *lowest unemployment rate that will not* increase inflation. Natural unemployment is caused by *changing aggregate supply conditions*. Unlike cyclical unemployment that can occur only in a recession, some natural unemployment exists all the time, even in healthy economies. Let us look more closely at the *four* main types or causes of *natural unemployment*.

1. Structural unemployment

Structural unemployment is easily the biggest single cause of natural unemployment and accounts for most of Australia's current unemployment rate. It occurs because of *structural change* where businesses alter the way they go about producing goods and services and try to cut costs or lift efficiency. Structural change can arise from the following causes:

- ***Use of new technology*** — The replacement of labour with new technology and automated machines can lead to higher *structural unemployment* in an industry. For instance, the past 20 years especially have seen the widespread adoption of robotics in the manufacture of cars and household appliances, the increased use of electronic data processing and communications (in banking ATMs, stock management, transportation, and warehousing), and the rise in online buying (adversely affecting traditional retail stores). This has displaced many unskilled jobs. A recent report warned that by 2030, up to 46 per cent of existing work in Australia (i.e. perhaps up to 6.5 million full-time jobs) could be automated, possibly creating higher levels of structural unemployment.
- ***A mismatch of skills among the unemployed*** — When firms use new technology, they often no longer need to hire those with traditional skills. This creates a mismatch between the skills held by the unemployed and the skills needed to fill the advertised job vacancies. Skills most recently sought by employers include those of computer programmers, and experts in electronics and robotics.
- ***Business closures and relocation due to high costs, poor profits and a lack of international competitiveness*** — if production costs are too high and profits too low, local businesses are uncompetitive. They are forced to close or move to overseas countries with cheap wages, such as India, China and the Philippines. This causes a rise in structural unemployment locally. Recent examples of business closures or relocation include Darrell Lea Sweets, some Heinz food plants, a section of Qantas servicing, the Shell Refinery at Clyde, Pacific Brands (Bonds underwear), car makers GMH, Ford and Toyota during 2017–18, auto parts maker CMI, Toys R Us and Foot Locker. There are many aggregate supply developments that may push up business costs, erode profits, reduce our international competitiveness, and possibly lead to business closures and hence *structural* unemployment. These include the following:
  - higher wages
  - poor labour productivity
  - high costs of power and transport
  - high rates of company tax against rates oversees that reduce after-tax profits.
- ***Some government aggregate supply policies*** — Aggregate supply policies are cost-cutting, efficiency promoting measures that seek to improve business conditions, reduce costs, grow profits, encourage

expansion, and boost Australia's productive capacity. Especially in the shorter term, some of these policies can lead to higher structural unemployment. Consider the following policy measures:

- changes to wage fixing involving some deregulation of the labour market
- government trade liberalisation that involves gradually reducing the level of tariff protection of local firms from imports.

2. Frictional unemployment

Frictional unemployment is a second type of natural unemployment. It exists when people are unemployed between finishing one job and starting another. This is common in the building trades and in some areas of rural industry.

3. Seasonal unemployment

Seasonal unemployment is a third type of natural unemployment. It results from the termination of jobs at the same time each year due to the regular change in the seasons. For instance, fruit pickers, tourist and holiday operators, ski instructors, school leavers and shearers frequently experience this type of unemployment.

4. Hardcore unemployment

Hardcore unemployment is another type of natural unemployment. It is often the product of personal attitudes that are seen by some as hostile to effective employment. Sometimes, people lose the work ethic and find it hard to hold down a nine-to-five job. Especially in the past, it was claimed that our over-generous welfare system increased unemployment levels because it made unemployment too comfortable, creating a *welfare trap*. Sometimes, too, personal appearance, criminal record or a physical disability can prevent individuals from being given an opportunity to work.

5.5.3 Factors that have increased the overall labour force participation rate

Participation rates relate to the proportion of those aged 15 and over who are in the labour force. Earlier we saw that in recent times there has been an overall *rise* in the participation rate from around 60 per cent in the 1960s to a high of 66 per cent. Although the male participation rate has fallen, that for females has risen more than enough to offset this. There has also been a rise in older Australians continuing to work beyond the normal retirement age. These developments mean that there is a greater quantity of labour resources available as a percentage of the population than previously, helping to expand productive capacity, potential GDP, and income.

The rise in the *female participation rate* has its origins in the change in *social attitudes* about the roles of women. Once, some thought the woman's role was to stay at home, do domestic chores and look after the children. This changed in the 1960s and 70s as a part of the women's liberation movement. Women too should be given a chance to have careers. In addition, there was a change in attitudes towards family size, enabled by the development of a reliable contraceptive pill. This, too, released more women into the labour force.

The increase in the proportion of *older people* working has been partly caused by a rise in *life expectancy*. This has mostly been the result of medical progress. In addition, the government has increased the minimum age at which some would be able to access the pension (now 67 years). In the meanwhile, without welfare, many have been forced to keep working longer to pay their bills.

Additionally, growing our population through the arrival of many *immigrants* has helped to temporarily slow the *ageing* of Australia's population that would otherwise have reduced the participation rate and shrunk the labour force.

5.5.4 Factors that have slowed wage growth

Overall, wage growth in Australia's labour market has slowed by 50 per cent the last decade or so. Several factors are at play here.

Weaker labour productivity

The main reason for slower wage growth is *weaker labour productivity* (GDP per hour worked). This is partly due to the fact that aspects of worker efficiency that are easily improved, have already been exploited; that is, the low fruit has already been picked.

Nowadays, too, rises in efficiency appear to come more from the use of *capital* rather than labour resources, and from new technology. Owners will therefore receive increased incomes, relative to those for unskilled workers.

High levels of immigration

Another factor slowing wage growth has been generally high levels of *immigration* with an annual target set by the government at around 160 000 per year. This has grown the supply of labour, and has tended to slow wage growth.

Unemployment

Relatively higher levels of *unemployment* until 2021 helped to slow wage rises. In other words, unemployment means that the supply of labour exceeds its demand, depressing wage growth.

Declining union membership

Since the 1970s, union membership by workers has dropped from 51 per cent to around 14 per cent. This has weakened the bargaining strength of workers in various occupations when negotiating their wages and conditions. It also reflects changes in how wages are set. There has been a shift from a centralised, regulated, uniform wage system controlled by the government's Fair Work Commission, to a more decentralised, deregulated, collective enterprise bargaining system. Nowadays, most individuals negotiate their wages on a firm-by-firm basis, often reflecting rises in productivity with a lesser role for trade unions.

5.5.5 Factors that have led to labour shortages

Labour shortages can occur in any economy when the demand for labour exceeds the supply, and unemployment rate is low. While generally higher unemployment rates over recent years have slowed wage growth overall, there are some people, typically those with special skills whose wages have increased (e.g. engineers, medical specialists, trades, digital technology, business analysts), reflecting labour shortages in key areas.

The problem of labour shortages has been worsened by Australia's *ageing population* where skills are lost as people retire. However, the rise in the pension access age has helped to ease shortages but, on its own, is not enough. There has also been a rise in the proportion of the labour force seeking a better *work–life balance*. They don't want to work too may hours. Additionally, there has also been a decline in the proportion of students taking some high-level maths and science subjects, slowing *graduate numbers* in some areas with wanted skills, adding to labour shortages.

Most recently, due to the *COVID-19 pandemic* and *border closures* in 2020–21–22 to immigrants and those on *temporary work visas*, there have been skills shortages across a range of occupations. This, too, has limited the growth in Australia's productive capacity.

5.5 Activities

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5.5 Exercise

5.5 Exercise

1. a. **Define** the following terms related to the labour market:
   - employed persons
   - unemployed persons
   - not in the labour force.

   (3 marks)

   b. According to ABS definitions, **classify** each of the following individuals listed in the table below as being: **(6 marks)**

   i. employed persons
   ii. unemployed persons
   iii. persons not in the labour force.

Description of the individual	ABS classification of the individual's situation
a. John is 17 and a full-time VCE student.	
b. Jennifer, aged 25, does not have a full-time job but works for pay at the corner milk bar for 5 hours each week.	
c. Dana is not working because of a strike at the shoe factory.	
d. Damien, aged 12, works for 20 hours each week on the family farm for pocket money.	
e. Jonathan has completed his VCE and is having a holiday at Torquay.	
f. Discouraged by being unable to find a job, Amy performs voluntary unpaid community work with the Salvation Army and has not applied for other jobs.	

2. **a.** **Define** the term, *labour market*. **(1 mark)**

   b. Briefly explaining your reasoning, **classify** each of the events listed in the table below into factors that mainly affect: **(5 marks)**

   - the *demand* for labour,
   - the *supply* of labour,
   - or both the *demand* and *supply* of labour.

Event affecting Australia's labour market conditions	Explanation of whether the event mainly affects the demand, supply or both the demand for and supply of labour
a. A rise in the minimum school leaving age from 15 to 17	
b. A rise in the pension access age from 67 to 70	
c. Consumer and business confidence booms to record highs	
d. There is a severe recession in our major export markets — Japan, China and the United States	
e. A baby boom causing the rate of natural population increase to rise from 0.7 to 1.7 per cent per year	
f. Increased participation rates among the physically handicapped	
g. There is a fall in the rate of immigration to Australia	
h. The RBA and the government raise interest rates and taxes paid by individuals	
i. Government assistance to the unemployed becomes harder to obtain	
j. There is increased use of technology making more workers' skills and training inadequate	

3. **Examine** the table below showing some of the changes that have occurred in Australia's labour market.

Change in the labour market	Identify and explain the factors causing the change
a. Increased size of the labour market	
b. Overall rise in the participation rate	
c. Shortages of some skilled labour	
d. Overall slow rise in wage growth	

Identify and **explain** the main likely causes of each of the changes in the labour market listed in this table. **(8 marks)**

4. Changes in aggregate demand factors and aggregate supply factors have contributed to variations in the rates of employment and unemployment.
   a. Giving examples, **explain** the causes of cyclical unemployment and structural unemployment. **(4 marks)**
   b. **Examine** the table below showing some factors that can influence Australia's unemployment rate. **Identify** and **explain** how each factor would be likely to affect the unemployment rate. **(5 marks)**

Factor	Explain the likely effect of the factor on the unemployment rate, identifying the type of unemployment affected
a. Increased consumer confidence	
b. A global economic boom gains speed	
c. Businesses accelerate their use of new technology in production	
d. The government lowers the rate of tax on company profits	
e. There is a rise in the minimum wage set by the FWC	

Solutions and sample responses are available online.

5.6 Different perspectives about the changing labour market

KEY KNOWLEDGE

- The different perspectives about changes in the labour market

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Our views or *perspectives* about the changing labour market are shaped by our roles as economic agents. Change affects each of us in different ways, not always positively. For example:

- Some *workers* will note that they have less certainty and predictability in employment than their parents who were more likely to stay in the one job for their whole life. Some see the development of artificial intelligence and the widespread use of technology in production as a threat to their jobs and future employment.
- As a *student*, you may well ask the question about what types of jobs will be in demand in 5–10 years, and what educational path you should take.
- As a *consumer* or *householder*, you certainly need a job and good pay to allow you to enjoy reasonable living standards. However, you also want cheap goods and services. There is a real challenge here to have high pay, lots of jobs and cheap prices.
- Some *business owners* are keen to see wage growth remain slow, and hence push for the government to accelerate immigration, increase the retirement age, invest more in education and skills training, and provide tax and other financial incentives to invest in new labour-saving technology.
- Some *union leaders* see the answer to depressed wages growth and growing wage inequality over recent years is to again increase the **unionisation of the labour force**. The idea is that a union increases the wage bargaining strength of workers relative to employers. They may also like to see more government regulation of the labour market to ensure better wages and working conditions.
- As a member of the *government*, you probably want to use various economic policies that help to grow job opportunities and achieve the *goal of full employment* (i.e. a low unemployment rate somewhere between

4.0 and 4.5 per cent of the labour force). In addition, you probably want to keep sweet with voters by using measures that make them better off. This is a tricky business for governments since a gain for one group can be a loss for another. For instance, some voters would like faster rises in wages. However, if pay rates increase too quickly, inflation is likely to accelerate and depress the purchasing power of incomes and living standards. In addition, faster wage rises reduce Australia's international competitiveness. This is bad for business owners. It can also ultimately destroy jobs and cause a drop in average incomes. In addition, these days, the Australian government's ability to influence wages is limited. This is because the labour market has been substantially *deregulated* where *few* workers remain on the minimum wage that is set by the Fair Work Commission. Instead, pay rates are largely set using a system of *enterprise bargaining* or negotiation between workers and their employer on a firm-by-firm basis.

5.6 Activities

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5.6 Exercise

1. **Explain** how the viewpoints of workers and business owners about wages and conditions may differ. **(2 marks)**
2. **Explain** why some in the community see higher levels of immigration as vital for the labour market and our wellbeing. **(2 marks)**

Solutions and sample responses are available online.

5.7 The Australian government's economic responses to address changes in the labour market

KEY KNOWLEDGE

- The economic responses, including government policies, to changes in the labour market

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Changes in Australia's labour market have resulted in a range of responses by economic agents, especially by governments. In this section, we will mostly focus on *economic policies* that are designed to help achieve the goal of full employment. This objective means that the unemployment rate should be held somewhere between 4.0 and 4.5 per cent of the labour force, or the lowest rate that doesn't cause inflation to accelerate. In other words, a *healthy labour market* is one where the unemployment rate is *not too high* causing a drop in incomes and living standards, *nor too low* where there would be *labour shortages* leading to spiraling wage-cost inflation and the erosion of purchasing power. Apart from managing the unemployment rate, policy is also directed towards growing the *size* and *efficiency* of the labour market, allowing Australia to expand its productive capacity and improve living standards.

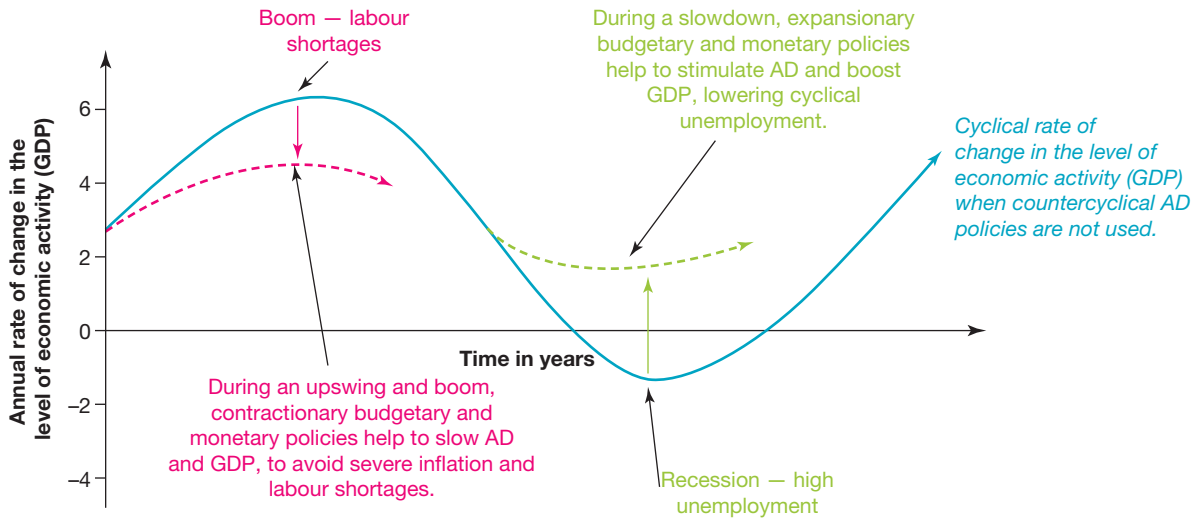
Specifically, we will examine *two* key *types* of government policy:

- **Aggregate demand policies** to limit cyclical unemployment and avoid labour shortages by regulating the strength of AD and economic activity
- *Aggregate supply policies to lower structural* unemployment and grow the size of the labour force, making AS conditions more favourable for business expansion.

5.7.1 Government aggregate demand policies to reduce cyclical unemployment during slowdowns

Earlier in our studies, we saw that market-based economies are *unstable*. As they move along the **business cycle**, they experience *recessions* where there are high levels of *cyclical unemployment*, and *booms* where there are *labour shortages*. This instability is illustrated in Figure 5.16. Both these problems in the labour market adversely affect living standards. To help reduce the severity of recessions (where there is high cyclical unemployment) and booms (where there are labour shortages), the Treasurer and the Reserve Bank of Australia (RBA) collaborate. They use countercyclical aggregate demand policies to help flatten out the business cycle. This is also shown in Figure 5.16.

FIGURE 5.16 How countercyclical government and RBA policies can help stabilise AD and GDP, to help minimise cyclical unemployment and labour shortages



So, in *slowdowns* and recessions, they will apply **expansionary aggregate demand policies** to stimulate AD and GDP and avoid high levels of *cyclical unemployment*. In reverse, during strong recoveries and booms, **contractionary aggregate demand policies** will be used to slow AD and GDP and help avoid severe *labour shortages* that would otherwise cause inflation. Through these countercyclical measures to stabilise the economy, the government hopes to achieve its *goal of full employment*. Ideally, the government doesn't want unemployment to be too low (causing inflation) nor too high. It needs to be just right.

Thinking of the five-sector circular flow model (see Topic 4) to help guide our thinking, let's step through how these *countercyclical aggregate demand policies* might work to help stabilise AD and improve labour market conditions.

Expansionary aggregate demand policies to help avoid cyclical unemployment

In slowdowns and recession where the unemployment rate rises above 4.5 per cent, typically, *expansionary* aggregate demand *budgetary* and *monetary* policies are used.

Expansionary budgetary policy to lower cyclical unemployment

Budgetary policy involves changes in the level of government tax receipts (i.e. T or leakages in the circular flow) and government spending (i.e. G or injections in the circular flow). To stimulate AD (C + I + G + X – M) and lower cyclical unemployment during slowdowns, the treasurer could announce *reductions* in *taxes* on personal incomes and companies and *increases* in *government outlays* and spending on national **infrastructure** and welfare, for example. More spending (flow 3) causes the level of unsold stocks of goods to fall. Firms then lift output (increasing GDP, flow 4) and employ more resources (flows 1 and 2) including labour. This helps to keep the level of cyclical unemployment lower than otherwise.

For instance, during and following the recession through 2020 and 2021 when cyclical unemployment was rising, highly expansionary budget measures were used where the value of budget outlays was increased relative to budget tax receipts (i.e. there was a huge budget deficit). Measures included reductions in taxes and rises in government outlays including the $90 billion for the JobKeeper wage subsidy scheme. This allowed struggling businesses affected by COVID-19 lockdowns to keep on paying wages to their staff rather than dismissing them. It meant that over a million people could keep on spending, stimulating GDP and employment. Welfare generosity for the unemployed was also temporarily doubled, again boosting spending. As a result of these budget measures, unemployment was kept to a monthly peak of just over 7 per cent. In fact without this stimulus measure, the unemployment rate would have been above 11 per cent. It also meant that, moving forward, the economy was able to recover far more quickly than otherwise.

Expansionary monetary policy to lower cyclical unemployment

Monetary policy affects the financial sector of the circular flow model and involves the RBA changing interest rates to influence the borrowing costs and credit-based spending by businesses and households (i.e. I or injections and C). Changes in interest rates can also affect the incentive for households to save income (i.e. S in the circular flow model). Hence, in *slowdowns*, the RBA will normally *cut interest rates* to make it cheaper to borrow credit and undertake investment and consumption spending. At the same time, lower interest rates also discourage saving, again stimulating AD. In turn, stronger spending helps to boost GDP and lower the level of cyclical unemployment.

Over recent years until May 2022, the RBA cut interest rates to just 0.10 per cent — their lowest level ever. This provided much needed stimulus to AD, GDP, and employment.

Contractionary aggregate demand policies to slow spending and avoid labour shortages in booms

When the economy expands too quickly and experiences a boom, *labour shortages* can appear as the unemployment rate falls below 4.0 per cent (e.g. May 2022). The demand for labour exceeds the supply, putting upward pressure on wages and prices. The purchasing power of money is reduced and living standards suffer. To help avoid this problem, more *contractionary* aggregate demand budgetary and monetary policies are used to slow spending.

Contractionary budgetary policy to avoid labour shortages

The treasurer could choose to increase taxes collected (i.e. leakages) and slow government outlays and spending (injections). With more leakages and less injections, AD and GDP will start to slow, firms will buy fewer resources, and labour shortages should start to disappear.

Contractionary monetary policy to avoid labour shortages

Typically, in booms, the RBA will also adopt a more *contractionary monetary policy* to slow spending by raising interest rates. Referring to the circular flow model, this would make borrowing credit more expensive, slowing investment (injections), and encouraging savings (leakages). As a result, higher interest rates will tend to slow AD and GDP, helping to reduce labour shortages.

5.7.2 Government aggregate supply policies to reduce structural unemployment and grow the size of the labour force

Structural unemployment (the main type of natural unemployment) is often caused by changes in the way goods and services are produced. For example, it could be the result of the following:

- Firms decide to use more technology including robotics that replace some workers
- Businesses try to cut their costs and rationalise their operations by closing unprofitable branches
- Sometimes there is a mismatch of skills where those who are unemployed lack the wanted training or experience to fill the job vacancies available
- Some firms are forced to close because their costs are too high and profits too low to keep going, causing staff to lose their jobs and become unemployed.

Even healthy economies experience *structural unemployment* and perhaps also other types of *natural unemployment*. Even so, governments still try to minimise natural unemployment using a range of **aggregate supply policies**. These cost-cutting, efficiency-promoting, profit-enhancing, and capacity-building policies are designed to make conditions more favourable for businesses or suppliers over time so they expand their

operations rather than close down. For Australia, aggregate supply policies have included the following measures:

- Cutting the rates of company tax
- Improving education and training
- Providing better infrastructure for business
- Deregulating some aspects of the labour market
- Using policies to grow the labour force through skilled immigration and tightening welfare access.

Improving education and training

Structural unemployment can be caused by workers having the wrong skills or experience to fill the job positions that are advertised. For example, in March 2022, 551 000 people were unemployed and, presumably, they were unable to take up the 423 000 job vacancies on offer at the time.

In this situation, government outlays on *education and re-training* can make workers more employable and provide them with the right skills needed to get a job. For instance, in its 2022–23 budget, the Australian government announced that there would be around $46 billion in government funding of schools, early learning, apprenticeships, TAFE colleges and universities. In addition, there has been the successful $1.5 billion *JobTrainer scheme*. This has provided free or subsidised courses for young unemployed individuals.

Government spending on education and training can also help strengthen the creativity, ingenuity, and the capacities of Australia's labour resources. It can lift labour productivity and increase GDP per hour worked. From a business perspective, this lowers the unit costs of labour in producing goods and services, making local businesses more internationally competitive and profitable. With lower costs, firms can profitably sell at cheaper prices. Instead of closing, businesses are encouraged to expand, creating more jobs, and reducing structural unemployment.

Cutting the company tax rates

The rate of company tax affects the level of business after-tax profits. It determines whether firms expand, survive, close down or relocate overseas to low-tax countries. Since 1985, the Australian government has reduced rates of company tax because they were higher than those in many overseas countries with whom our firms compete. This downward trend in **company tax rates** is shown in Figure 5.17. Today, Australia's large companies pay at the rate of 30 cents per dollar of profit (down from a peak rate of 49 per cent in 1986), while small- to medium-sized firms now pay 25 per cent. This has helped to make local businesses more internationally competitive and protect jobs, because companies can profitably sell at lower prices.

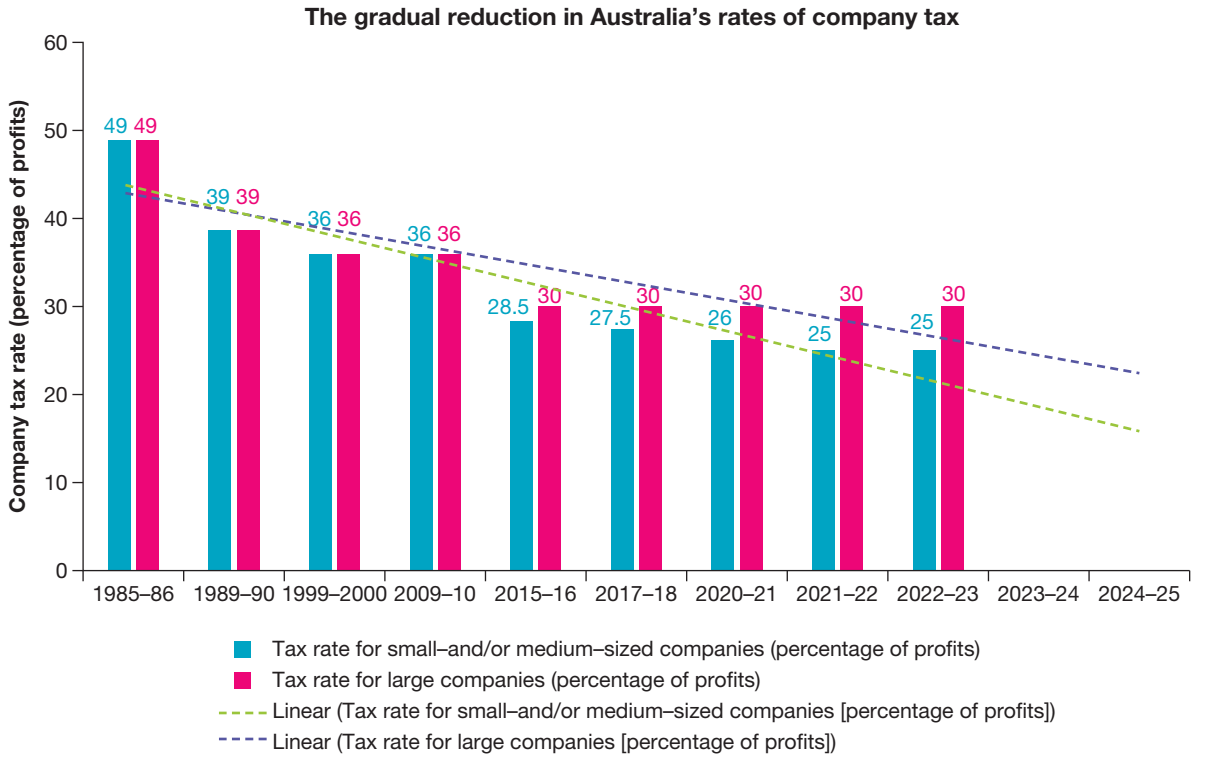
However, despite these reductions, Australian businesses are still at a competitive disadvantage because our tax rates have not come down as far as those in some countries (e.g. the average rate in OECD nations is just 21 per cent). This weakens employment opportunities and adds to structural unemployment.

Providing better infrastructure for business

Infrastructure includes investment spending for the building of highways, rail links, sea and airport facilities, telecommunications (including the National Broadband Network or NBN), water supply and power generation. It is used by businesses to produce other types of goods and services and, as a capital resource, its quality and

quantity affects the production costs and profits of firms. If these costs are low and profits are strong, firms will expand, creating job opportunities, rather than closing down where workers become structurally unemployed.

FIGURE 5.17 The reduction in Australia's rates of company tax



Sources: Data derived from several sources including the ATO and Trading Economics, see http://www.tradingeconomics.com/australia/corporate-tax-rate.

Especially during the 10 years to 2022, there has been increased federal government investment spending on national infrastructure projects. For instance, in the 2022–23 budget, the federal treasurer announced there would be around $120 billion of national infrastructure spending rolling over the 10-year period to 2031–32. Projects have recently included the M80, the inland rail project from Melbourne to Brisbane, a second airport for Sydney's west, and regional rail projects. Improved infrastructure makes the conditions of supply for businesses more favourable. By improving infrastructure and increasing the quantity and efficiency of Australia's capital resources, it helps to keep business costs down, strengthen efficiency and profitability, and therefore encourage business expansion. In turn, this grows Australia's productive capacity and PPF, thereby boosting our potential rate of economic and employment growth.

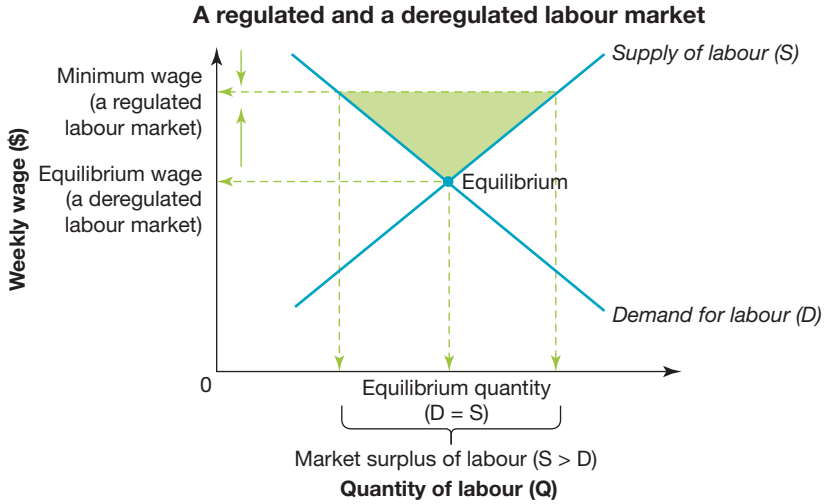
Whilst a move in the right direction, unfortunately, the rise in investment in infrastructure has *not* kept pace with the growth in Australia's population and economy. As a result, there are bottlenecks and shortages. These add to business costs, make firms less internationally competitive, undermine profits, slow business expansion, limit employment opportunities and cause higher levels of structural unemployment.

Deregulating the labour market

Wage rates have a huge bearing on business and the labour market. In the 1800s, wages were largely set by the *free operation* of the forces of demand and supply. However, wages were often very low and working conditions poor. In response to this situation, one group of workers employed by the Sunshine Harvester Company (that made agricultural machinery), took their employer to the newly created *Commonwealth Conciliation and Arbitration Court*. Workers claimed that despite long hours, they were not paid *fair and reasonable wages* that would allow them to enjoy even basic living standards. In 1907, the court handed down its decision. It ordered that all workers in the company be paid a *basic wage* that would be reviewed regularly.

Other cases followed and, gradually, there was a move towards greater *government regulation* of the labour market. Here, minimum wages were set *above* the free *market equilibrium*. This is shown in Figure 5.18.

FIGURE 5.18 A regulated labour market where the minimum wage is set above the deregulated market equilibrium wage in the labour market



The big flaw in this regulated or **centralised wage fixing system** was that pay rises were *not* linked to increases in worker efficiency. Rather, the system was designed to promote *social goals* rather than business profits.

With growing union strength, Australia's minimum wage became one of the highest in the world. However, starting in the 1970s when the government reduced tariffs (i.e. taxes on imports), it was increasingly clear that high wages in Australia pushed up prices for consumer goods and services and made local firms uncompetitive. Some businesses were forced to close, and workers lost their jobs. This added to structural unemployment.

After experimentation with other forms of wage fixing, governments moved to gradually **deregulate the labour market**. Increasingly, wages were set through *enterprise agreements*. Here, workers employed by each firm negotiate their pay and conditions with the boss, reflecting the conditions of demand and supply. The system became more decentralised and wages less uniform across Australia. Pay is closely linked to *productivity*. This creates an incentive to work hard, and the value of all but relatively unskilled labour is largely dictated by the operation of market forces.

What this more *deregulated wage system* has done is to dramatically *slow* wage growth. In turn, smaller pay rises have helped to:

- reduce the costs of production per unit of output
- enable local firms to become more internationally competitive and profitable
- encourage the expansion of local business rather than closure
- increase job opportunities and reduce structural unemployment.

Using policies to grow the size of the labour force and the economy's productive capacity

Labour shortages occur when the demand for labour exceeds the supply. This situation drives up wages, causes inflation and acts as a barrier to rises in national output and real incomes. People are worse off. To help deal with these problems, the Australian government has used *two* main policies:

Tightening welfare access to increase labour force participation rates

The *participation rate* is the proportion of people aged 15 and over who are in the labour force (i.e. either employed or unemployed). Low participation rates limit the supply of labour and contribute to labour shortages. While essential, some believe that the payment of *generous government welfare benefits* reduces the supply of labour. They feel that there is a case to tighten welfare and make it more difficult to access, especially by the unemployed and the aged.

One recent aspect of welfare tightening has been to gradually increase the *pension access age* from 65 to 67 years. This encourages people to work and participate in the labour force for longer, to maintain their income and pay the bills. Another approach is to keep the fortnightly unemployment benefit at a very low and unattractive level, pushing more to try even harder to gain employment. Additionally, there are more hurdles for the unemployed to clear if they want to claim the welfare benefit — a measure that may perhaps help to fill labour shortages and keep wage growth down.

Encouraging high levels of immigration to ease skills shortages and grow the labour force

In recent times, the Australian government has actively promoted quite *high levels of immigration* with an annual target of around 160 000 migrants. Of these, over 60 per cent have wanted skills that are in short supply. This policy not only helps to grow the *size* of Australia's labour force, easing shortages, but having skills means that it boosts the productivity of our workforce. In addition, most migrants are younger than 30 years of age and so, potentially, they have many years ahead of them as productive members of the labour force. This helps to offset the negative impact on the size of the labour force of Australia's ageing population where there is a rising proportion of workers nearing retirement.

5.7 Activities

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5.7 Quick quiz on

5.7 Exercise

5.7 Exercise

1. Over the years, changes in the labour market have resulted in cyclical unemployment, structural unemployment, and skills shortages. **Explain** each of these problems. **(3 marks)**
2. From time to time, cyclical unemployment arises.
   a. **Outline** the causes of cyclical unemployment. **(2 marks)**
   b. **Explain** how the Australian government and the RBA might take policy action to lower the level of cyclical unemployment and to help avoid labour shortages. **(4 marks)**
3. All economies have some structural unemployment.
   a. **Outline** four causes of structural unemployment. **(4 marks)**
   b. **Identify** and **explain** two important government aggregate supply policies that can help reduce the level of structural unemployment. **(4 marks)**
4. **Explain** two important aggregate supply policy strategies that, over time, the Australian government might use to reduce labour shortages. **(4 marks)**
5. a. **Outline** two economic weaknesses of having government regulation of all wages and setting a high minimum wage. **(2 marks)**
   b. **Explain** how Australia's labour market deregulation has helped to keep structural unemployment lower than otherwise. **(2 marks)**

Solutions and sample responses are available online.

5.8 Review

Hey students! Now that it's time to revise this topic, go online to:

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5.8.1 Summary

Definition and nature of the labour market

- The *labour market* is an institution where buyers of labour (the D by the businesses sector) and sellers of labour (the S by the household sector) determine wages or the price of labour at market equilibrium.
- The *demand for labour* by firms is *derived* from the demand for goods and services. When spending or demand for goods and services rises, so too does the demand for labour. Labour demand therefore rises and falls with the level of AD and economic activity. It also varies inversely with the price or wage. This means that it will expand as wages fall, and contract as wages rise.
- The *supply of labour* by households reflects population growth, participation rates and age distribution. It varies directly with wage rates. So, as the wage increases the supply of labour expands, and as the wage falls, supply contracts.
- The *equilibrium wage* in the labour market is set at a point where the quantity of labour demanded and the quantity supplied are exactly equal and there is neither a labour surplus nor a labour shortage.
- *Equilibrium wages* (the market price of labour) will change if non-price conditions affecting the demand and supply of labour at a given wage change.
- As a result of new non-price factors, an *increase* in the quantity of labour *demanded* at a given wage relative to the supply of labour causes the equilibrium wage to *rise* in the labour market.
- As a result of new non-price factors, a *decrease* in the quantity of labour *demanded* at a given wage relative to the supply of labour causes the equilibrium wage to *fall* in the labour market.
- *Non-price factors* that can affect the *demand for labour* at a given wage might include changes in consumer or business confidence, disposable income, the number of firms, and overseas economic activity, for example.
- *Non-price factors* that can affect the *supply of labour* at a given wage might include demographic factors like the age distribution, immigration, and the participation rate, for example.
- There are *three* main types of *labour market conditions*:
  - *Stronger labour market conditions* when the demand for labour rises relative to supply
  - *Weaker labour market conditions* when the demand for labour falls relative to supply
  - *Ideal labour market conditions* where the demand relative to the supply of labour is neither too strong nor too weak.

Measures of Australia's changing labour market

- The main *measure* of labour market conditions is the *labour force survey* conducted by the Australian Bureau of Statistics (ABS).
- Key ABS measures include:
  - The *labour force size* consists of all those aged 15 years and over who are either employed or unemployed. This represents the supply of labour.

The labour force size = Number of people employed + The number of people unemployed.

- *Employed persons* are those 15 years and over who have paid employment of at least 1 hour per week. This will be affected by changes in the demand for labour. Employment can be expressed as a total number or calculated as a rate or percentage of the labour force.

$$\text{The employment rate (\%)} = \frac{\text{Number of people employed} \times 100}{\text{Total number of people in the labour force}}$$

- *Unemployed persons* are generally those aged 15 and over who are *actively looking* for work but cannot secure a job where they are employed for money for at least 1 hour per week. This will be affected by changes in the demand for labour relative to the supply. Unemployment can be expressed as a total number or calculated as a rate or percentage of the labour force.

$$\text{The unemployment rate (\%)} = \frac{\text{Number of people unemployed} \times 100}{\text{Total number of people in the labour force}}$$

- The *participation rate* represents the proportion of those aged 15 and over who are in the labour force (i.e. they are either employed or unemployed).

$$\text{The participation rate (\%)} = \frac{\text{Total number of people in the labour force} \times 100}{\text{Total number of people aged 15 or over in the population}}$$

- *Job vacancies* are unfilled job offers by employers. The level reflects the demand for labour.
- *Underemployment* means that people have jobs but would like more hours of work per week.
- *Underutilisation rate* represents the proportion of the labour force that is underemployed plus the proportion that is unemployed. It is often seen as an indicator of an economy's level of unused productive capacity.

$$\text{The underutilisation rate (\%)} = \text{Unemployment rate (\%)} + \text{Underemployment rate (\%)}$$

- *Hidden unemployment* involves discouraged job seekers who have given up looking for work because of knockbacks and a lack of success in gaining a job.
- *Long-term unemployment* involves those who have been without a job and unemployed for at least 52 weeks.
- *Aggregate hours worked* is the total number of hours the labour force has worked over a period. This can be an indicator of the demand for labour.

- Over both the short- and long-terms, there have been many *changes* in Australia's labour market. These have included:
  - A huge rise in the *size* of the labour market due to natural population increase and immigration.
  - Changes in the employment and unemployment rate associated with cyclical booms (e.g. 2007–08) and recessions (e.g. 2020)
  - An overall increase in the labour force participation rate, mostly due to the rise in female participation
  - Changes in the rate of wage growth reflects the ups and downs in the business cycle — with faster wage rises in booms and slower rises or falls in recessions
  - A general increase in the level of higher educational attainment of the labour force
  - A change in the industry where the labour force is employed, with a decline in manufacturing and agriculture and a rise in service employment
  - A change in average hours worked that reflect the ups and downs in the business cycle

- A reduction in the unionisation of the labour force
- A decline in the rate of growth in labour productivity.

The reasons why changes in Australia's labour market are important

- Changes in the labour market are important because they affect both our *material* and *non-material* living standards.
- *Material living standards* relate to levels of *real disposable income* and *per capita consumption*. Changes in the labour market affect material living standards in at least *three* ways:
  - There is a close connection between employment, unemployment, hours of work and participation in the labour force, with the level of income.
  - There is a close connection between unemployment, hours and employment, with the degree of inequality in income distribution and the poverty rate.
  - There is a close connection between employment, education and productivity levels, with the potential level of GDP, incomes and purchasing power.
- *Non-material living standards* refer to the quality of daily life (rather than the quantity of goods and services purchased and consumed), perhaps reflecting general happiness, low stress levels, having adequate leisure time, job satisfaction, quality personal relationships, good mental and physical health outcomes, long life expectancy, opportunities for cultural enrichment, low crime rates, and good social cohesion and sense of inclusiveness. When there is high unemployment and labour market condition are weak, most aspects of non-material living standards suffer greatly from social isolation, mental and physical health, feelings of worthlessness, stress, strained relationships and perhaps crime.

The economic factors influencing changes in Australia's labour market

- One change in Australia's labour market is the growth in its size of the labour force. This is especially affected by *two* factors:
  - The rate of *natural increase* in Australia's population reflects the birth rate *minus* the death rate. Over the long-term, this affects the number of people of working age and the size of the labour force.
  - The rate of *net migration* is the excess of immigrants arriving versus those leaving the country. Because most migrants are skilled and of working age, this helps to grow the labour force.
- Two main factors have influenced Australia's unemployment and employment rates:
  - *Cyclical unemployment* is caused by generally weaker *aggregate demand factors* (e.g. lower consumer and business confidence, higher interest rates, a fall in disposable income and weaker overseas economic activity) that can slow spending on Australian-made goods and services. Weaker spending leads to cuts in GDP and employment, increasing the rate of cyclical unemployment. At the other extreme, excessive spending can cause labour shortages, driving up wage rates and inflation.
  - *Natural unemployment* (especially structural unemployment) is mainly caused by changes in the way goods and services are produced. It reflects the influence of changes in *aggregate supply* conditions (e.g. higher production costs and lower profits, adverse climatic conditions, reduced availability of resources including labour, lower productivity, higher tax rates on company profits). Depending on whether these conditions are positive or negative can influence whether firms expand, close down or move overseas. In turn, this impacts rates of employment and structural unemployment.
- There has been an overall *increase* in Australia's *participation rate* that makes more labour resources available for production. This increase reflects the following:
  - The increase in *female* participation has especially been important and has been associated with changes in social attitudes about the role of women and family size
  - The increase in the proportion of *older people* working has been partly caused by a rise in life expectancy (due to medical progress), along with increases in the minimum *pension access age*
  - The arrival of many *migrants* has helped to temporarily slow Australia's *ageing* population that would otherwise have reduced the participation rate and shrunk the labour force.

- Various factors have *slowed wage growth* for many workers:
  - Slower productivity growth (i.e. a slower rise in GDP per hour worked)
  - The widespread application of technology by business owners whose share of income has increased, relative to that of less-skilled workers
  - Slower rates of economic growth have softened the demand for labour and hence wage rates.
- There are *shortages of skilled labour* in parts of the labour market. They reflect:
  - changes in the types of goods and services produced and the widespread use of new technology
  - an ageing population where more are nearing retirement age
  - for some, a shift towards a better work–life balance through reduced hours
  - the disruption to supply chains caused by the COVID-19 pandemic and business lockdowns.

Different perspectives about the changing labour market

- Our perspectives about changes in the labour market partly reflect our roles as economic agents.
- There are different views about the changes that have taken place in Australia's labour market:
  - Some *workers*, for example, will note that they have less certainty and predictability in employment.
  - As a *student*, you may well ask the question about what types of jobs will be in demand in 5–10 years' time.
  - As a *consumer or householder*, you certainly need a job with good pay to allow you to enjoy reasonable living standards, but you probably also want cheap goods that are not possible if wages are too high.
  - Some *business owners* are keen to see wage growth remain slow, and hence push the government to increase immigration.
  - In response to depressed wages growth and rising wage inequality, some *union leaders* would like to see an increase in unionisation of the labour force to exercise more power in deciding wage outcomes.
  - As a member of the *government*, you probably want to try and use policies that help to keep unemployment and inflation low, and grow employment opportunities.

The government's policy responses to changes in the labour market

- In response to changes in the labour market, the Australian government has used various policy measures.
- The government has been keen to achieve the *goal of full employment*. This means achieving the lowest unemployment rate, perhaps somewhere between 4.0 and 4.5 per cent of the labour force that doesn't accelerate inflation. Here, unemployment must not be too high leading to reduced employment opportunities, hours, incomes and living standards, nor should unemployment be so low that there are labour shortages leading to a wage-price spiral that reduces the purchasing power of incomes.
- The Australian government (and the RBA) has used *countercyclical aggregate demand policies* to control labour market conditions and outcomes.
  - Avoiding high levels of *cyclical unemployment* means that during *slowdowns* and *recessions*, the Australian government and the RBA apply *expansionary* budgetary and monetary policies to help strengthen spending, AD and GDP. In turn, as firms lift output, they employ more labour, reducing cyclical unemployment. *Expansionary budgetary policy* involves cutting tax rates (leakages) and boosting government spending (injections) that increases AD, lifts GDP and lowers cyclical unemployment. *Expansionary monetary policy* involves the RBA cutting interest rates for borrowers making credit and spending cheaper, boosting spending and AD, lifting GDP, and cutting cyclical unemployment.
  - Avoiding *labour shortages* during a strong recovery and boom involves the use of *contractionary* budgetary and monetary policy to slow AD, GDP and labour demand. *Contractionary budgetary policy* could involve the treasurer lifting tax revenue (leakages) and slowing government spending (injections). *Contractionary monetary policy* might involve the RBA lifting interest rates for borrowers making credit and spending dearer, easing labour shortages.
- The Australian government has also used *aggregate supply policies* (i.e. cost-cutting, efficiency-promoting, capacity-expanding measures to make conditions more favourable for producers) to help reduce structural unemployment and grow the size of the labour force. In particular, *structural unemployment* (the main type of natural unemployment) is largely caused by changes in the way goods and services are produced. For example, it could result from firms using technology including robotics to replace workers, businesses

trying to cut costs and rationalise their operations by closing unprofitable branches, a mismatch of skills where those who are unemployed lack the wanted training to fill the job vacancies available, or high production costs and low profits can cause some firms to close down and their staff to become unemployed. Even healthy economies experience some structural unemployment. However, the government is keen to minimise structural unemployment and also grow the size of the labour force and our productive capacity using various aggregate supply policies. These can include:

- Cutting the rates of company tax so firms are more profitable, expand employment and do not close down
- Encouraging appropriate education and training so workers are more employable and can fill the job vacancies available
- Providing better infrastructure for businesses helps to cut production costs, strengthen profits, improve our international competitiveness, expand businesses' employment opportunities and reduce structural unemployment.
- Deregulating the labour market helps to improve worker efficiency and keep wage costs lower so that firms are more profitable and expand, rather than close because they are internationally uncompetitive.
- Tightening welfare access (e.g. lift the pension access age) to increase labour force participation rates can help increase the supply of labour.
- Encouraging high levels of young, skilled immigration helps to grow the size and productivity of Australia's labour force.

5.8.2 Key terms

An **ageing population** occurs when there is a rise in the proportion of people nearing retirement age. This reduces a nation's supply of labour and can contribute to labour shortages.

Aggregate demand policies include budgetary (i.e. taxes and government outlays) and monetary (RBA changes in interest rates) measures designed to regulate spending or AD, GDP, employment, unemployment and labour shortages. They are employed in a counter-cyclical way — expansionary to reduce unemployment and contractionary to reduce labour shortages.

Aggregate supply policies involve government measures designed to make conditions more favourable for producers by cutting production costs, improving efficiency, growing productive capacity, and strengthening profits so firms expand rather than close down or move overseas. They might include cutting company tax rates, improving infrastructure, providing funding for education and training, encouraging immigration, and tightening welfare access to increase labour force participation.

The **business cycle** is used to describe how GDP changes upwards and downwards over a period of years. Typically, the economy passes through four main phases — a boom, slowdown, recession, and recovery. In addition, the ideal economic situation is domestic economic stability that is located midway between a boom and a recession on the business cycle. As the economy travels along the business cycle of economic activity, labour market conditions change.

Centralised wage fixing system is one where the government controls the level of and increases in wages, rather than allowing the free operation of the labour market and demand and supply to do this. Setting the minimum award wage is an example of government regulation of wages.

The **company tax rate** is the proportion of business profits that must be paid to the tax office. For large companies in Australia, this is currently set at 30 per cent and for small to medium firms, it is now 25 per cent. This tax rate has an effect on business survival, expansion and closures and, in so doing, it affects rates of employment and structural unemployment in the labour market.

Contractionary aggregate demand policies involve budgetary measures by the government's treasurer (e.g. higher taxes and decreased government spending) and monetary measures by the Reserve Bank of Australia (e.g. higher interest rates) designed to slow spending or AD, in turn curbing economic activity and GDP, reducing the demand for labour and labour shortages.

Cyclical unemployment is when individuals lose their job due to weak spending and a slowdown or recession. Here, firms cut output and reduce their demand for labour.

Deregulate the labour market means that the government gradually reduces its control over setting wages and conditions of work. The use of enterprise or workplace agreements is one indication of labour market deregulation and reduced government interference.

Employed persons are people aged 15 and over who have a paid job and work for more than 1 hour per week.
Expansionary aggregate demand policies involve budgetary measures by the government's treasurer (e.g. lower taxes and increased government spending) and monetary measures by the Reserve Bank of Australia (e.g. lower interest rates) designed to boost spending or AD, in turn lifting economic activity and GDP, and reducing cyclical unemployment.
The **Fair Work Commission (FWC)** is an independent government institution that manages industrial relations in Australia, monitors enterprise agreements and is respons ble for setting the annual minimum legal award wage and conditions.
Goal of full employment means the lowest rate of unemployment, perhaps between 4.0 and 4.5 per cent, that will not cause inflation to accelerate. Here, there would be no cyclical unemployment due to weak AD or recession. However, around 4.0–4.5 per cent of the labour force would be naturally unemployed due mostly to structural causes and other changes in aggregate supply conditions.
Immigration involves the entry into a country of people from overseas. In Australia, the government gives priority to immigrants who have wanted skills, to help ease labour shortages.
infrastructure represents capital resources like roads, sea and airports, power, hospitals, telecommunications, railways, and water supply, that enable businesses to produce other goods and services. Often this is provided by governments, sometimes in partnerships with private firms. This affects business costs, profits and the employment of labour.
interest rates are the price or cost of borrowing credit from banks. They affect the levels of spending (C + I), saving, AD, GDP, and employment.
Job vacancies are job offers advertised by firms looking for staff to fill them. They reflect the demand for labour and change in response to the business cycle.
The **labour force** includes people over 15 years old who are able and willing to work, and are either employed or unemployed.
The **labour market** is an institution where the conditions of demand for labour by firms and the supply of labour by households, interact to determine wages (i.e. the price of labour) and conditions of employment.
Labour market conditions are determined by changes in the demand for labour relative to its supply. Conditions can become stronger if demand rises relative to supply (as in a boom), weaker if demand for labour falls relative to its supply (as during a slowdown), or ideal when the government's goal of full employment is achieved (i.e. the lowest rate of unemployment, perhaps between 4.0 and 4.5 per cent, that doesn't accelerate inflation). Conditions are especially affected by changes in the business cycle and level of economic activity.
Labour productivity or efficiency reflects the value of GDP produced per hour worked. Rises in productivity are seen as a favourable aggregate supply condition that slows production costs for firms, improves profitability, grows the nation's productive capacity and keeps inflation and prices lower.
Labour shortages (especially those with special skills) exist when the demand for labour exceeds the supply of labour. Typically, this happens during a boom.
Material living standards are dependent on per capita levels of income and the consumption of goods and services measured over a period of time.
Monetary policy involves the Reserve Bank of Australia (RBA) using changes in interest rates to help stabilise the level of total spending, GDP and the strength of the labour market.
The **natural increase** in a country's population occurs when the number of births exceeds the number of deaths. After 15–20 years, a positive natural increase can help to expand the size of the labour force.
Natural unemployment is the lowest rate of unemployment, perhaps currently around 4.0–4.5 per cent of the labour force, that does not cause inflation to accelerate. Some natural unemployment is unavoidable, even in a healthy economy. It occurs due to the existence of structural, frictional, hardcore, and seasonal factors causing unemployment and is associated with changing aggregate supply conditions.
Net migration refers to the excess of overseas arrivals over those departing the country. This can affect the size and skills of the labour force, and the level of wages.
Non-material living standards are not related to the quantity of goods and services that we have, but are elements of our wellbeing that affect the quality of our daily lives. They may perhaps involve levels of freedom, happiness, quality of family life, justice, amount of leisure time, crime, and the state of the natural environment.
Participation rates represents the proportion of those people aged 15 and over who are members of the labour force; that is, they are employed or unemployed.
A **recession** is a period of two or more negative quarters (i.e. 6 or more months) of GDP growth. It is caused by weaker AD and is associated with high levels of cyclical unemployment and low inflation.

Stronger labour market conditions develop when the demand for labour rises relative to the supply, perhaps because of rising economic activity or the onset of a boom. In this situation, wages increase faster, people work longer hours and labour shortages can appear.
Structural unemployment can occur when firms change their production methods and use new technology to become more efficient (such as robots on an assembly line, ATMs for banking, automated warehouses, online shopping and so on). It can also occur when firms relocate or there is a mismatch between the skills and experience possessed by workers, and the requirements of the jobs that are available.
Underemployment exists when those aged 15 and over have a job and want to work more hours, but are unable to do so. They are not working to capacity.
The **underutilisation rate** is the extent to which the available labour is not working at its capacity. This is equal to the unemployment rate plus the underemployment rate.
Unemployed persons are those aged 15 and over who are actively looking for work but cannot find a job.
Unionisation of the labour force is the extent to which workers in a particular profession belong to a trade union or industrial organisation.
Weaker labour market conditions develop when the demand for labour falls relative to the supply. It is often caused by a slowdown in economic activity or recession. In this situation, wages rise more slowly or fall, and people work fewer hours or become unemployed.

on Resources

Digital documents Topic summary (doc-37942)
Key terms glossary (doc-37949)
Crossword (doc-38874)
Wordsearch (doc-38875)
Match-up definitions (doc-39032)

5.8.3 Practice school-assessed coursework

OUTCOME 2

Explain the factors that affect two economic issues at a local, national and international level and evaluate actions to address the issues.

TASK: ANALYSIS OF EVIDENCE — Statistical data for Eureka

Before answering the following questions, examine the statistical data in the table for a hypothetical country called Eureka.

INDICATOR	2020–21	2021–22	2022–23	2023–24	2024–25
1. Unemployment rate (%)	5	7	11	14	9
2. Job vacancies ('000s)	90	70	45	30	55
3. Average duration of unemployment (weeks)	22	34	40	60	50
4. Labour force participation rate (%)	60	59	57	56	57
5. Consumer confidence index (points)	120	115	104	96	99
6. Business confidence (net balance)	20	5	10	8	4
7. Growth in household disposable income (%)	5	2	1	1	2
8. Economic growth in GDP for the USA (%)	4	2	1	2	3

a. Using the key indicators from the table and explaining your reasoning, **describe** the trends in Eureka's labour market conditions between 2020–21 and 2024–25. **(3 marks)**
b. Referring to statistical evidence from the table, **identify** and **explain** three important causes of these trends in Eureka's rate of unemployment. **(3 marks)**

c. Explain how these changes in Eureka's unemployment rate and labour market situation between 2020–21 and 2024–25, would be likely to affect each of the following:
- Material living standards
- Non-material living standards
- The strength of the government's finances and budget situation. **(3 marks)**

d. Imagine you are Eureka's Treasurer or Governor of the Reserve Bank during 2022–23 and 2023–24 and want to achieve the *goal of full employment*. Prepare a brief speech outlining the main policies you would introduce. **(3 marks)**

Resources

Digital document Practice school-assessed coursework (doc-38078)

5.8 Exam questions

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Before answering questions 2, 3 and 4 that follow, examine the table below containing population data for an economy.

Data relating to a hypothetical country's population and labour force	
Employed persons	9 million
Unemployed persons	1 million
Persons aged 15 years of age and over	15 million
The underemployment rate	7.0 per cent

5.8 Section A: Multiple choice questions

Question 1

Which of the following *best* describes Australia's labour market? It involves:

A. business firms.
B. households.
C. negotiation of wages.
D. all of the above.

Question 2

Using data from the table, the size of the labour force:

A. is 9 million.
B. is 10 million.
C. is 15 million.
D. cannot be calculated from the data.

Question 3

Using this data from the table, the labour force participation rate is closest to:

A. 50%.
B. 56%.
C. 60%.
D. 66%.

Question 4

Using this data from the table, the labour force underutilisation rate is closest to:

A. 7.0 per cent.
B. 10.0 per cent.
C. 17.0 per cent.
D. 20 per cent.

Question 5

Which of the following is *incorrect*? According to the ABS, the labour force generally *excludes*:

A. all people aged 15 and over who are able and willing to work.
B. all those classified as unemployed.
C. all those classified as employed.
D. those who have an unpaid job.

Question 6

Which of the following statements about changes in Australia's labour market over recent decades is *least correct*?

A. The unemployment rate has not generally remained within the government's target range for achieving the goal of full employment.
B. There has been a general increase in Australia's overall participation rate in the labour force.
C. In Australia, most workers are employed in manufacturing and primary industry.
D. Immigration has been more important in growing the size of Australia's labour market than the natural increase in population.

Question 7

Examine the table below:

Data relating to a country's economy	
Real annual value of GDP for 2023–24	$200 000 000
Total number of hours worked in 2023–24	100 000 000

From this data, it can be concluded that annual labour productivity is equal to:

A. $1.
B. $2.
C. $3.
D. $4.

Question 8

If Chinese economic activity rose strongly, which of the following impacts on Australia's labour market is *unlikely*?

A. Australia's rate of cyclical unemployment is likely to fall.
B. Australia's GDP is likely to rise.
C. Australian firms are likely to buy more resources.
D. The Australian government is likely to outlay more on welfare benefits.

Question 9

A decrease in Australian business confidence is *likely* to:

A. strengthen labour market conditions.
B. cause a rise in structural unemployment.
C. decrease job vacancies.
D. increase average hours worked.

Question 10

Examine the table below showing annual data for a hypothetical country:

Data relating to a country's population	
Number of births	200
Number of deaths	150
Number of immigrants entering	50
Number of emigrants leaving	10

Data relating to a country's population

Based on this data, which statement is *least* correct?

A. The country's population is increasing.
B. The country's population is decreasing.
C. The labour force is likely to have increased.
D. The natural change in the country's population size is unlikely to have a significant impact on the labour force size over the short-term.

Question 11

Australian government lockdowns due to the COVID-19 pandemic caused:

A. unemployment to rise.
B. caused underemployment to increase.
C. caused structural unemployment.
D. all of the above.

Question 12

Labour shortages in Australia have *not* been caused by:

A. the global COVID-19 pandemic.
B. a decrease in the average age of the population.
C. tightening government welfare access.
D. an overall lower participation rate.

Question 13

Concerning Australia's structural unemployment rate, which statement is *least* correct?

A. Structural unemployment moves up and down and is closely aligned with changes in the business cycle.
B. A cut in company tax can help reduce structural unemployment.
C. Structural unemployment is not normally caused by weak aggregate demand conditions.
D. Structural unemployment may occur because workers have the wrong skills, or the jobs are located in a different state or region.

Question 14

The type of unemployment caused by the use of artificial intelligence and robotics is most likely to be:

A. frictional unemployment.
B. cyclical unemployment.
C. hardcore unemployment.
D. structural unemployment.

Question 15

Weak aggregate demand conditions during COVID-19, including falling real per capita disposable income and lower consumer confidence, are *most likely* to cause:

A. cyclical unemployment.
B. natural unemployment.
C. structural unemployment.
D. frictional unemployment.

Question 16

A *rise in the minimum award wage* set by the Fair Work Commission will tend to:

A. lift the level of consumption spending, AD, and economic activity, lowering cyclical unemployment.
B. reduce business profits and cause some firms to close, adding to structural unemployment.
C. create more favourable supply conditions for firms.
D. both (A) and (B) are likely outcomes but it is difficult to say which of the two effects is strongest without further information.

Question 17

Full employment is one of the Australian government's key economic goals. This is *normally* taken to mean:

A. a zero rate of unemployment overall.
B. a zero rate of natural unemployment.
C. an overall unemployment rate of between 4.0 and 4.5 per cent of the labour force.
D. a zero rate of structural unemployment.

Question 18

New aggregate supply conditions involving higher wages and lower labour productivity are *most likely* to be associated with:

A. cyclical unemployment.
B. structural unemployment.
C. frictional unemployment.
D. hardcore unemployment.

Question 19

Normally, which of the following is *not* a sign of *weaker* labour market conditions?

A. Reduced job vacancies
B. Increased hours worked as overtime
C. An increased underutilisation rate
D. An increase in the duration of unemployment

Question 20

Labour market deregulation in Australia has involved:

A. more government regulation of working hours and wages.
B. an increase in the role of the Fair Work Commission.
C. in general, allowing wages to be largely set by negotiations between workers and their bosses on a firm-by-firm basis.
D. Answers A and B are both correct.

on Resources

Digital documents Multiple choice answer grid (doc-37960)
Multiple choice answers (doc-37961)

5.8 Section B: Extended response questions

Question 1 (3 marks)

a. **Define** the term, *labour market*. **(1 mark)**

b. **Explain** why wages in the labour market sometimes rise more slowly than at other times. **(2 marks)**

Question 2 (4 marks)

E**xamine** the table below containing data for an economy.

Employed persons	20 million
Unemployed persons	1 million
Persons aged 15 years of age and over	25 million
The underemployment rate	5.0 per cent

a. Showing your formula and basic working, **calculate** the size of the labour force. **(1 mark)**

b. Showing your formula and basic working, **calculate** the unemployment rate. **(1 mark)**

c. Showing your formula and basic working, **calculate** the underutilisation rate. **(1 mark)**

d. Showing your formula and basic working, **calculate** the participation rate. **(1 mark)**

Question 3 (12 marks)

a. **Contrast** strong labour market conditions with weak labour market conditions. **(2 marks)**

Examine the table below showing data for changes in Australia's labour market conditions:

Australia's labour market indicators for May 2020 and May 2022

Labour market indicator	May-20	May-22
Employed people	12 154 100	13 510 900
Unemployed people	927 600	548 100
Unemployment rate	7.10%	3.90%
Underemployment rate	13.10%	5.70%
Participation rate	62.90%	66.70%
Monthly hours worked in all jobs	1605 million	1856 million

Source: Data derived from ABS, Labour force, Australia, see https://www.abs.gov.au/statistics/labour/employmentand-unemployment/labour-force-australia/may-2020 and https://www.abs.gov.au/statistics/labour/employment-andunemployment/labour-force-australia/may-2022.

b. Referring to the data in the table above, **describe** the general change in labour market conditions over the period May 2020 and May 2022. **(2 marks)**

c. **Identify** and **outline** two important factors that *could* explain the change in Australia's unemployment rate over the period covered in the table. **(2 marks)**

d. If the unemployment rate was to fall to 3 per cent, **identify** and **explain** one important problem that may arise. **(2 marks)**

e. If Australia's unemployment rate fell to 3 per cent and the underemployment rate also fell to 3 per cent, **describe** what policy actions would be required to prevent a deterioration in domestic economic conditions. **(4 marks)**

Question 4 (7 marks)

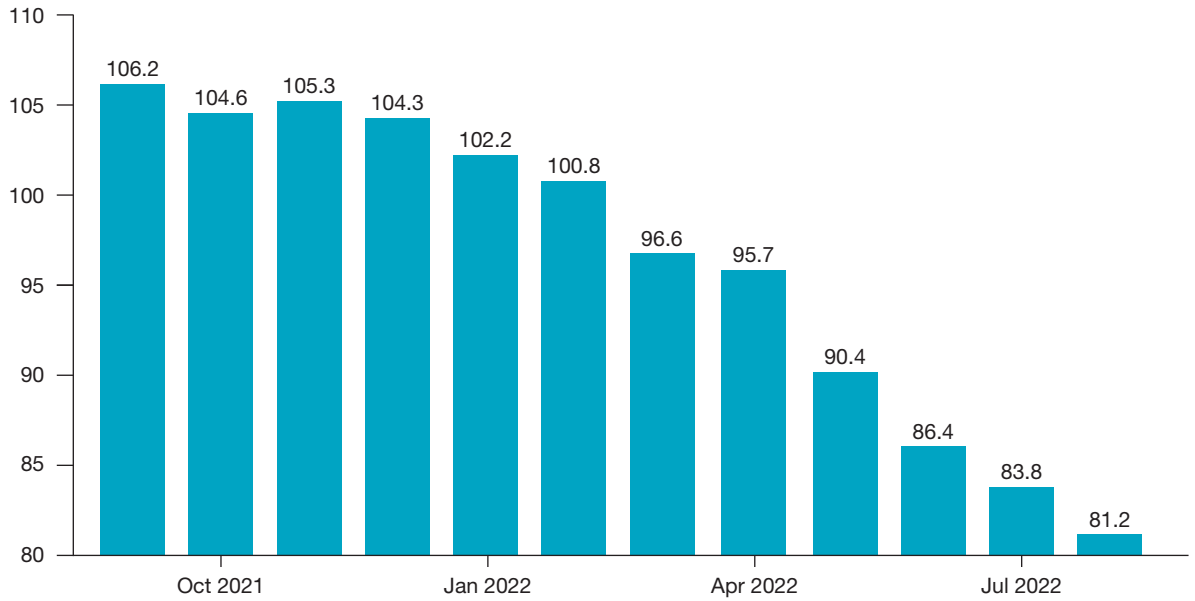
a. **Define** the term, *unemployment*. **(1 mark)**

b. **Distinguish** between cyclical unemployment and structural unemployment. **(2 marks)**

c. **Explain** how the widespread application of new technology in an economy can result in both costs and benefits for members of the labour force. **(4 marks)**

Question 5 (6 marks)

E**xamine** the graph below showing changes in Australia's level of consumer or household confidence.



Source: Trading Economics, see https://tradingeconomics.com/australia/consumer-confidence.

a. Referring to the graph, **describe** the change in consumer confidence over the period shown. **(1 mark)**

b. Assuming all other factors remained constant, **explain** how this recent overall change in consumer confidence would be likely to affect each of the following:
- The unemployment rate
- Average hours worked and job vacancies
- The underemployment rate. **(3 marks)**

c. Given the change in consumer confidence over the period shown, **explain** the actions that the RBA might take to improve labour market conditions. **(2 marks)**

Question 6 (11 marks)

a. From time to time, Australia has experienced labour shortages. **Explain** what is meant by *labour shortages*, outlining one important cause of these. **(2 marks)**

b. **Outline** the actions that the Australian government might take to help alleviate a *skills shortage*. **(2 marks)**

c. **Define** the term, *labour productivity*. **(1 mark)**

d. Giving reasons, **explain** how you would expect the general *decline* in Australia's labour productivity to affect each of the following:
- The unemployment rate
- The level of wages. **(4 marks)**

e. **Explain** why it is important to encourage a further increase in Australia's female participation rate in the labour force. **(2 marks)**

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TOPIC

6 The economics of international trade

UNIT 2 AREA OF STUDY 2

Applied economic analysis of local, national and international economic issues

OPTION 2: The economics of international trade

OUTCOME 2

On completion of this unit the student should be able to explain the factors that affect two economic issues at a local, national and international level and evaluate actions to address the issues.

LEARNING SEQUENCE

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6.2 Definition, nature and direction of international trade 344
6.3 Measurement of Australia's international transactions 347
6.4 The benefits of international trade for Australia and the global economy 350
6.5 The economic factors influencing international trade 355
6.6 Different perspectives about the issue of international trade 361
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6.1 Overview

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6.1.1 Introduction

Every day, Australians are heavily involved in two-way **international trade** across national borders. We export or sell goods and services *to* consumers overseas and also buy or import goods and services *from* abroad.

International trade allows you to have a watch made in Switzerland, eat lamb grown in Australia, be entertained with movies from the United States, drink coffee from Brazil, holiday in Bali (Indonesia), wear shoes made in the Philippines and T-shirts sourced from Bangladesh, drive cars made in South Korea or Germany, use a mobile phone manufactured in China and have a home loan where the money is often sourced by your favourite bank, perhaps from overseas. Indeed, international trade has made countries interdependent. It has allowed them to *specialise* in the production of those things they are best at making, sell these abroad, and then use the money gained to buy whatever else they need from overseas.

Because international trade generally has beneficial effects for most countries and individuals, this helps to explain its spectacular growth from around 2 per cent of the world's GDP in AD 1500, to around 60 per cent over the last few years. Apart from international trade between countries, there are also other types of transactions involving the movement of *money capital* or *investments*.

In this optional topic, we are going to get a taste of some *international economics* that looks at how conditions in countries are interdependent. Amongst other things, we will investigate why countries trade, the patterns of trade, how we measure international trade, the factors that can influence trade levels, and how government policies help to promote global trade.

FIGURE 6.1 With conditions that favour the production of high-quality tea, Sri Lanka grows 20 per cent of the teas exported around the world. Many countries are keen to import tea because they don't have the right combination of resources needed to produce quality tea.

6.1.2 What you will learn

Key knowledge

Use each of the points from the VCE Economics Study Design below as a heading in your summary notes.

Key knowledge	Subtopic
◯ The definition of the selected economic issue, including relevant measures and statistical indicators	**6.2, 6.3**
◯ The reasons the issue is of importance to the economy at a local, national and international level	**6.4**
◯ The economic factors influencing the extent of the selected economic issue	**6.5**
◯ The different perspectives of households (consumers and workers), business, government and other relevant economic agents regarding the selected economic issue	**6.6**
◯ The economic responses undertaken by relevant economic agents at a local, national and international level, to address the economic issue, including government policies	**6.7**

Key skills

These are the skills you need to demonstrate.

Key skills
◯ Define key economic concepts and terms and use them appropriately
◯ Gather, synthesise and use economic information from a range of sources to analyse economic issues
◯ Identify trends, patterns, similarities and differences in economic data and other information to draw conclusions
◯ Evaluate the economic responses undertaken to address economic issues

Source: VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

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Digital document Key terms glossary (doc-37950)

6.2 Definition, nature and direction of international trade

KEY KNOWLEDGE

- The definition of the economics of international trade

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International economics looks at the global forces at work that help to shape domestic economic conditions. We will start our investigations with a definition of international trade before looking at a snapshot of Australia's main exports and imports, and our major trading partners.

6.2.1 Definition of international trade

International trade refers the the two-way exchange of goods (products) and services across national borders. It involves Australia exporting or selling goods and services to other countries, as well as us buying imports of goods and services from abroad.

Goods and services are traded around the world, mostly because of differences in the types of productive resources available in various countries. They are also traded because sometimes it is cheaper to buy things from elsewhere if overseas producers are more efficient or have access to cheaper resources. Sometimes, too, the quality of foreign made goods is better, or they are more readily available. These factors affect the **international competitiveness** of sellers in different countries.

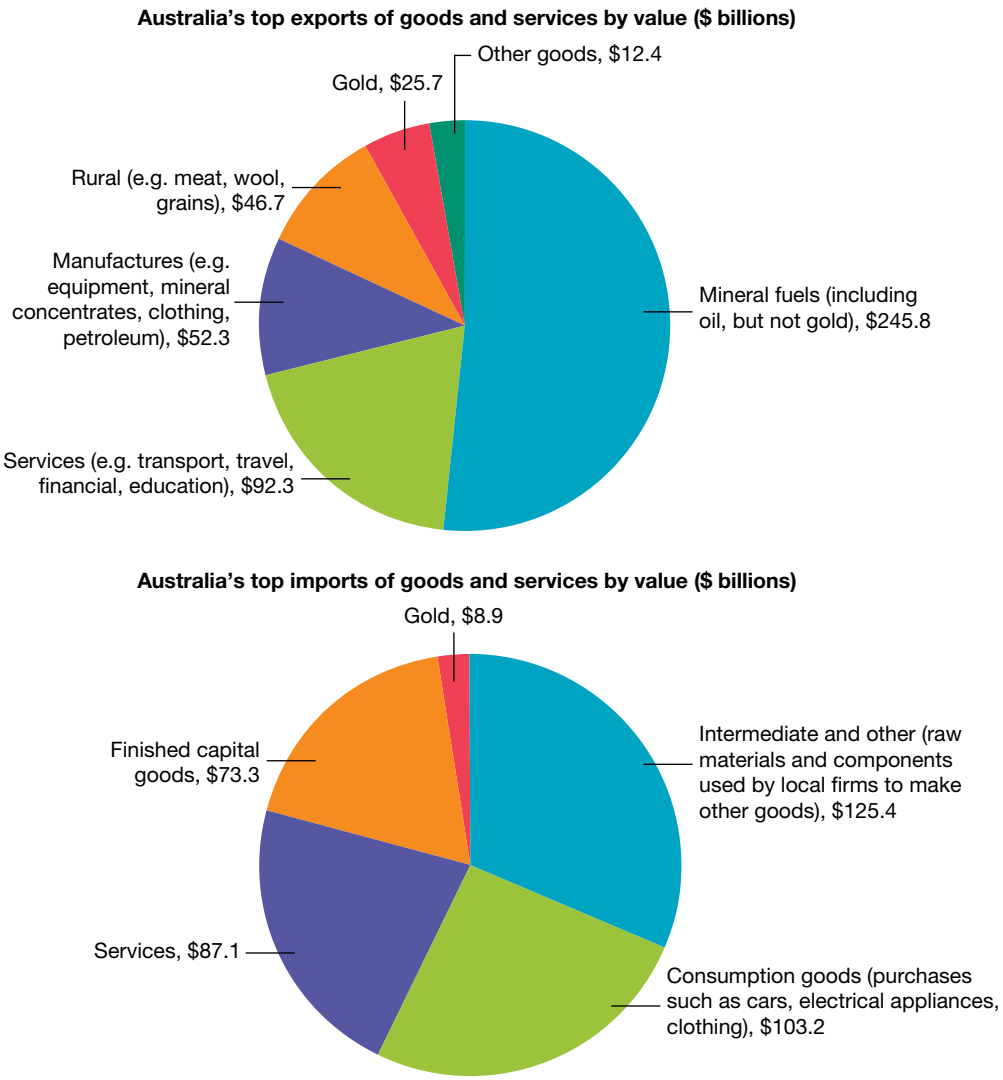
6.2.2 The composition of Australia's exports and imports

The **composition of trade** has to do with the *types* of goods and services exported and imported. As mentioned, this largely depends on the resources available for production, and on the international competitiveness of its businesses. As a result, Australia exports goods including minerals such as coal and iron ore, rural commodities like wool, wheat and meat, and services including education, health and transport. Figure 6.2 shows our most important exports and imports of goods and services.

6.2.3 Australia's main trading partners — the direction of trade

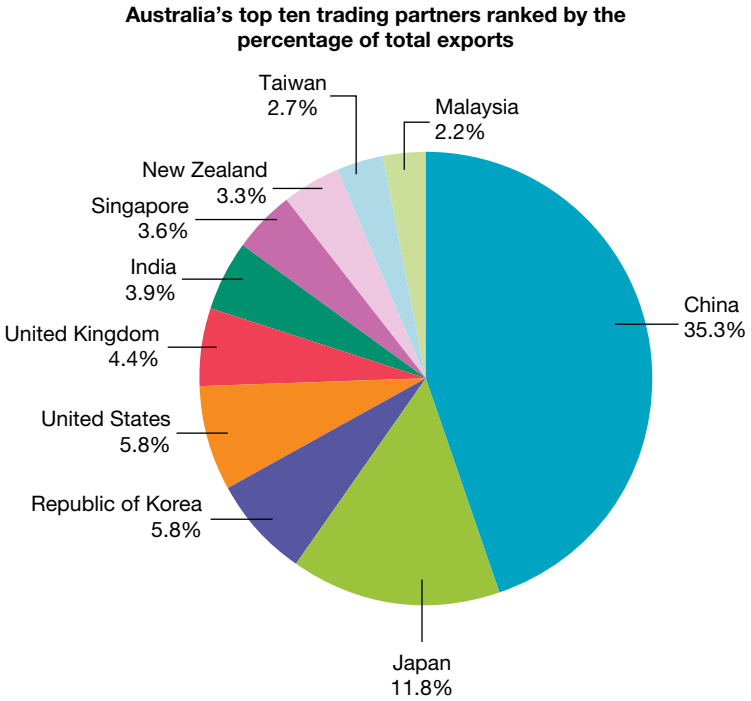
The **direction of trade** identifies the the countries with whom we trade. Australia trades its goods and services with over 180 countries around the world. Our top trading partners are shown in Figure 6.3. Notice the importance of China, Japan, South Korea, India and the United States as major customers for our exports.

FIGURE 6.2 Australia's top ten exports and imports ranked by value (A$ billions)



Source: Data derived from Australian Government, Department of Foreign Affairs & Trade, Trade & Investment at a Glance, 2019–20, pages 19 and 41.

FIGURE 6.3 How Australia's exports are divided among our top ten trading partners — nearly 80 per cent of our total exports are sold to only these ten countries.



Source: Data derived from Australian Government, Department of Foreign Affairs & Trade, Trade & Investment at a Glance, 2019–20, page 18.

6.2 Activities

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6.2 Quick quiz on | **6.2 Exercise**

6.2 Exercise

1. **Define** what is meant by *international trade*. **(1 mark)**
2. **Outline** two reasons why most countries trade internationally. **(2 marks)**
3. **Distinguish** exports from imports. **(1 mark)**
4. **List** the main types of goods and services that Australia (a) exports and (b) imports. **(2 marks)**

Solutions and sample responses are available online.

6.3 Measurement of Australia's international transactions

KEY KNOWLEDGE

- The relevant measures and statistical indicators of the issue of the economics of international trade

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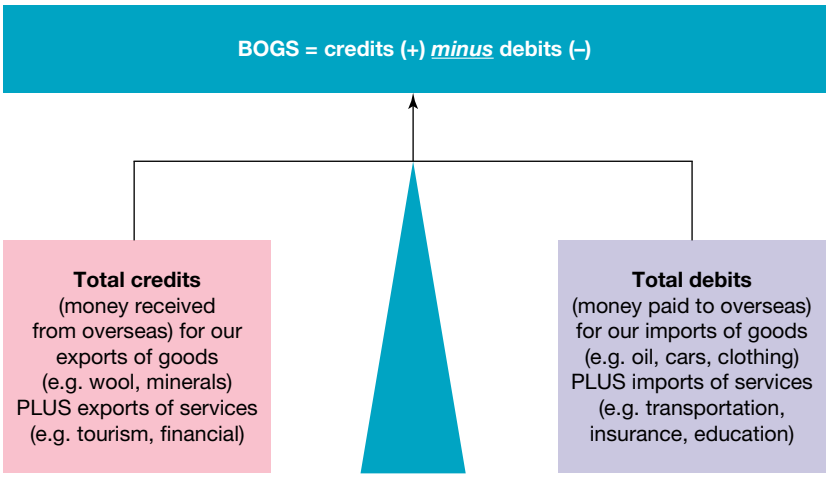
Australia records the value of its international trade transactions with the rest of the world on a *financial account* called the **balance on goods and services (BOGS)**. Sometimes this is also called the **balance of trade**.

The BOGS represents the total value of exports of goods and services minus the total value of imports of goods and services, measured over either 3 months or a one-year period. As illustrated in Figure 6.4, it classifies transactions according to which way the *money is moving*:

- When we *export* goods (e.g. minerals, wool) and services (e.g. education and tourism), the money we are paid is *coming into Australia* and hence is recorded as a *credit* transaction by Australia (and of course a debit by some overseas country).
- When we *import* goods (e.g. oil, cars and electrical appliances) and services (e.g. transportation, business services and tourism), the money for payment is going out and *leaving* Australia and is thus recorded as a *debit* transaction by Australia (and a credit by some overseas country).

FIGURE 6.4 The balance on goods and services (BOGS)

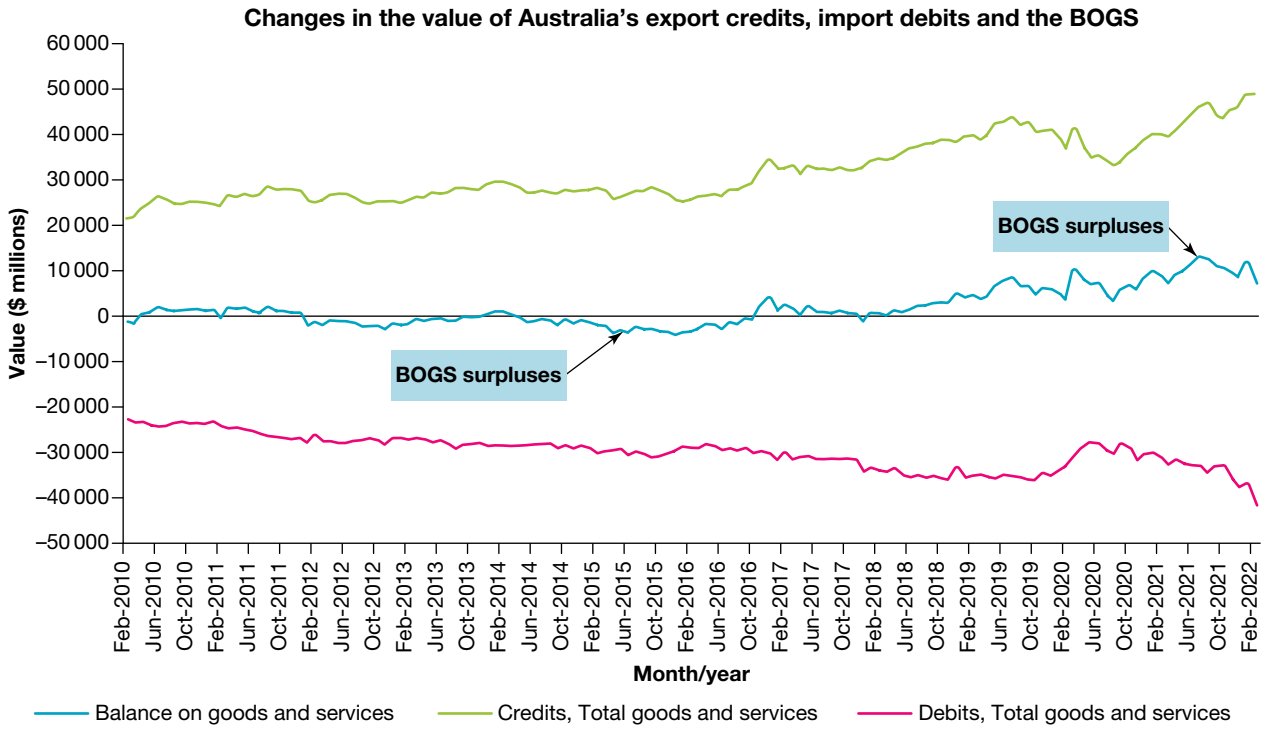


When we compare the total value of *credits for exports* of goods and services *against* the total value of all *debits for imports* for goods and services over a year, the *balance on goods and services (BOGS)* can be one of *three* possible outcomes:

- A *trade surplus* on goods and services (e.g. if the value of credits was $10 million and the value of debits was $6 million, then the trade surplus would be $4 million)
- A *trade deficit* on goods and services (e.g. if the value of credits was $8 million and the value of debits was $14 million, then the trade deficit would be $6 million)
- A *trade balance* on goods and services (e.g. if the value of credits was $10 million and the value of debits was $10 million, then there would be an exact trade balance of $0 million).

As shown in Figure 6.5, recently, Australia has run large trade surpluses where the total value of exports of goods and services is *greater* than the total value of imports of goods and services.

FIGURE 6.5 Trends in Australia's balance on goods and services (BOGS)



Source: https://www.abs.gov.au/statistics/economy/international-trade/international-trade-goods-and-services-australia/latest-release.

6.3 Activities

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6.3 Quick quiz on

6.3 Exercise

6.3 Exercise

1. **Describe** what the balance on goods and services (BOGS or balance of trade) measures. **(2 marks)**
2. **Examine** the table below and then answer the questions that follow.

International transaction for a country	Value of transaction ($ millions)
Exports of goods	20
Imports of goods	30
Exports of services	5
Imports of services	10

Use the table to **calculate** each of the following: **(3 marks)**

a. the balance of goods
b. the balance of services
c. the trade balance for goods and services.

3. a. Using the table below, **indicate** whether the item is most likely to be recorded as a credit or debit on Australia's balance of trade. **(3 marks)**
   b. **Outline** why Australia imports some of the goods listed in the table below, rather than producing all of them ourselves. **(2 marks)**

Item	Most likely recorded as a credit for Australia	Most likely recorded as a debit for Australia
a. Crude oil		
b. Laptops		
c. Shoes		
d. Iron ore		
e. Defence equipment		
f. Machinery		

Solutions and sample responses are available online.

6.4 The benefits of international trade for Australia and the global economy

KEY KNOWLEDGE

- The reasons the issue of the economics of international trade is of importance to the economy at a local, national, and international level

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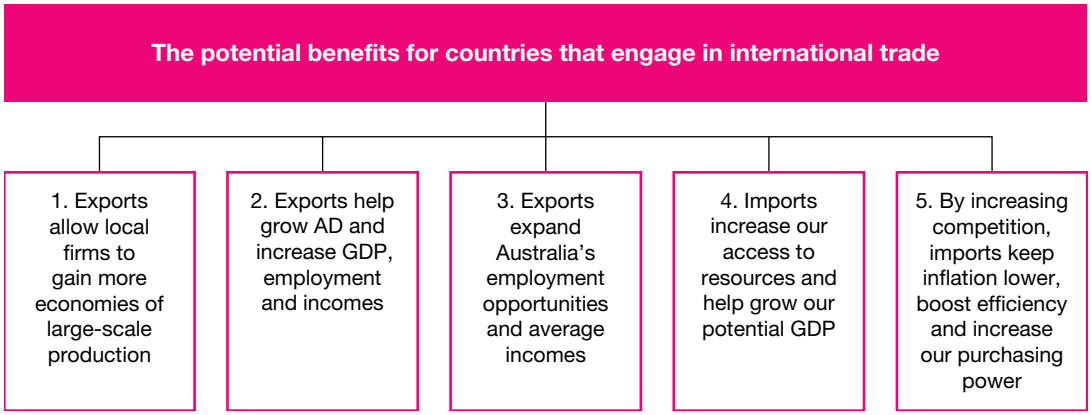
Most economists believe that, overall, international trade is *beneficial* for the countries involved, especially over the longer term. This helps to explain why the total value of world trade has grown by an average of over 5 per cent a year over the last 20 years, even with the global COVID-19 pandemic and disrupted supply chains slowing things down. Indeed, we can't survive well without it. Some of these advantages are summarised in Figure 6.6.

FIGURE 6.6 The encouragement and expansion of international trade can bring important benefits for nations.



At the macroeconomic level, there are many important reasons why international trade in goods and services is vital for the Australian economy and improvements in our living standards.

Exports allow local firms to gain more economies of large-scale production

For most businesses, it is more efficient and profitable for firms to manufacture and produce goods and services on a large scale with bigger production runs, rather than having smaller-scale operations. This is because some production costs are relatively fixed and don't increase in direct proportion, as a firm lifts its output. Here we might think of costs such as:

- buying machinery, equipment, and technology
- undertaking research, product design and development
- advertising and marketing
- the purchase of raw materials and other resources including borrowing bank credit that is cheaper for larger firms
- management and the training of staff.

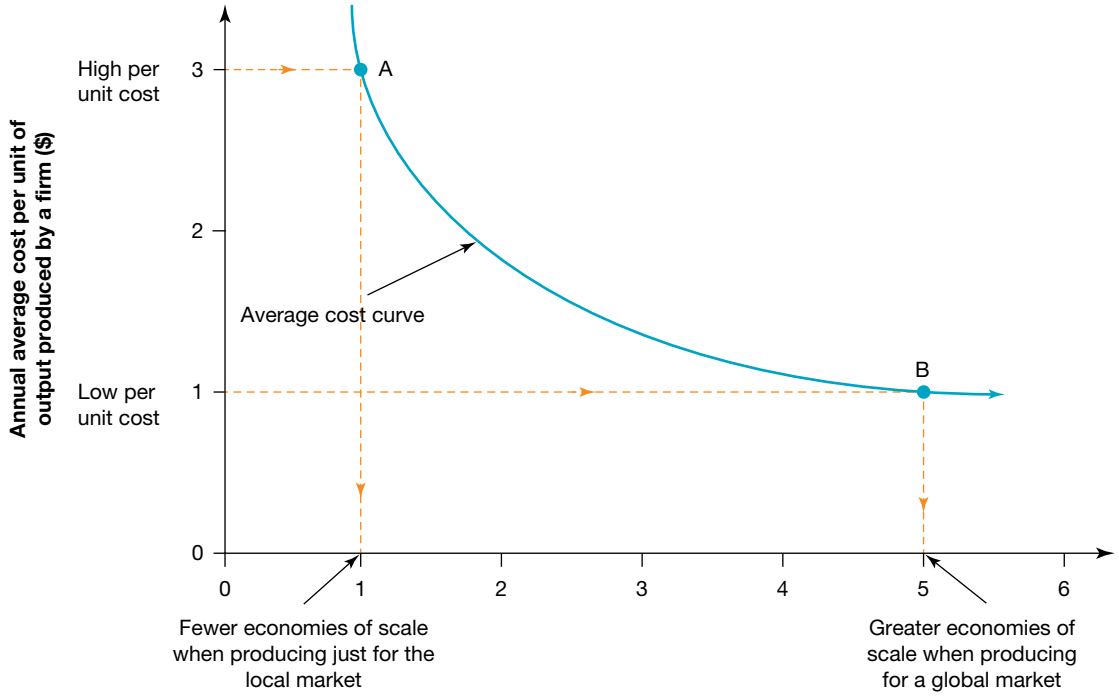
When producing in bulk for a bigger market, these relatively *fixed costs* can be spread more *thinly* over higher levels of output, so the *average unit cost* is far lower. Firms can gain more **economies of large-scale production**. For example, assume that the total cost of a new product's design, equipment and so on was say $1 million and only one unit was sold. To cover the fixed cost, the single item would have to sell for at least $1 million just to break even. However, if sales increased to one million units, to break even, each product could be sold for as little as $1!

The problem for many Australian businesses is that their operations are relatively small with high average costs per unit of output. This is because they often sell their goods and services in a relatively tiny local, state or national market.

However, if local firms succeed in *exporting to the world* where the potential market size is 7.9 billion people, rather than just sell in the local Australian market with a population of just 26 million, they are able to gain far *greater economies of large-scale production*. This also means that local businesses can profitably sell their goods and services at a *lower*, more attractive, and internationally competitive price. Figure 6.8 shows how average unit production costs come down as business sales and production levels rise. Costs can be spread far more thinly over increased volumes.

FIGURE 6.7 Due to inefficiencies and relatively small volumes, the local car manufacturing industry in Australia has closed down as it cannot compete against cheaper imports.

FIGURE 6.8 International trade can increase economies of large-scale production for a business by reducing its average costs of production per unit of output through international trade and exports.



Exports help to grow Australia's AD and GDP

From our earlier studies of the five-sector circular flow model of the economy, we know that the level of aggregate demand or spending on a nation's goods and services (i.e. AD = C + I + G + X – M), helps to determine the actual level of Australia's GDP. In fact, foreign spending on our exports of goods and services (i.e. X) amounts to over $480 billion a year. This accounts for between 20 and 25 per cent of AD and hence also GDP. Without trade, Australia's economy would be far smaller. In addition, as noted, exports allow local firms to gain greater economies of large-scale production where they can profitably sell at lower prices. This makes them more internationally competitive, growing export sales and the overall size of the economy.

Exports expand Australia's employment opportunities and incomes

National output and employment levels are directly related. Given the importance of exports as a significant determinant of AD and Australia's GDP, it is not at all surprising that our export sector creates more than 20 per cent of all local jobs. If we can grow exports, this helps to create more employment opportunities, lower the unemployment rate, and reduce the cost for taxpayers and the government of paying welfare benefits or providing important services.

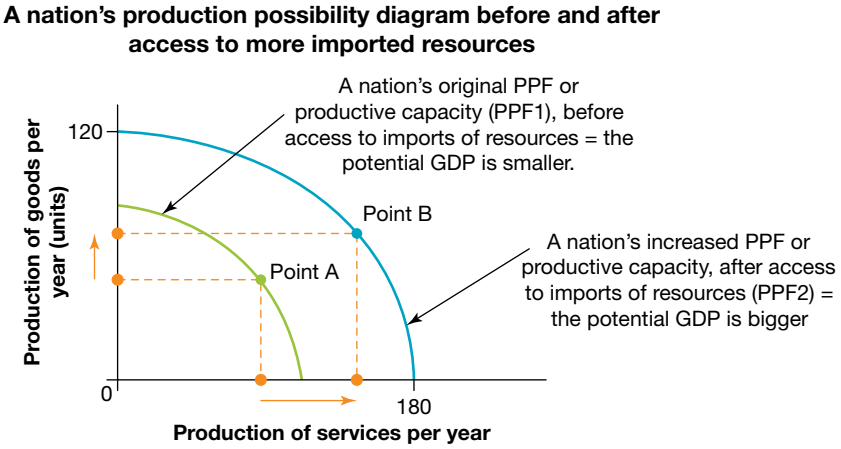
The levels of national output and incomes are also directly related (think of the five-sector circular flow model). By growing Australia's GDP and hence employment, international trade also enlarges our national income. In turn, this allows us to enjoy higher levels of consumption and better material living standards than otherwise.

Increased access to imported resources helps grows Australia's GDP

As we know, the level of national output is ultimately determined by the quantity and quality of natural, labour and capital resources available. While Australia has some types of resources, others are limited or perhaps non-existent. By involvement in international trade, we can export our unwanted *surplus* resources (e.g. minerals, rural commodities) and use the money gained to pay for *imports* of things we lack (e.g. raw materials, technology, oil, machinery, appliances) at the lowest possible price.

By growing our access to resources, imports of goods and services mean that it is possible to expand the economy, lift Australia's productive capacity, and increase employment and incomes. This is illustrated hypothetically in Figure 6.9 using the *production possibility diagram*. Notice the growth in the size of the *production possibility frontier* from PPF_1 to PPF_2. Notice, too, that the combined potential level of output of both goods and services or GDP has risen, following the shift from point A on PPF_1 to point B on PPF_2.

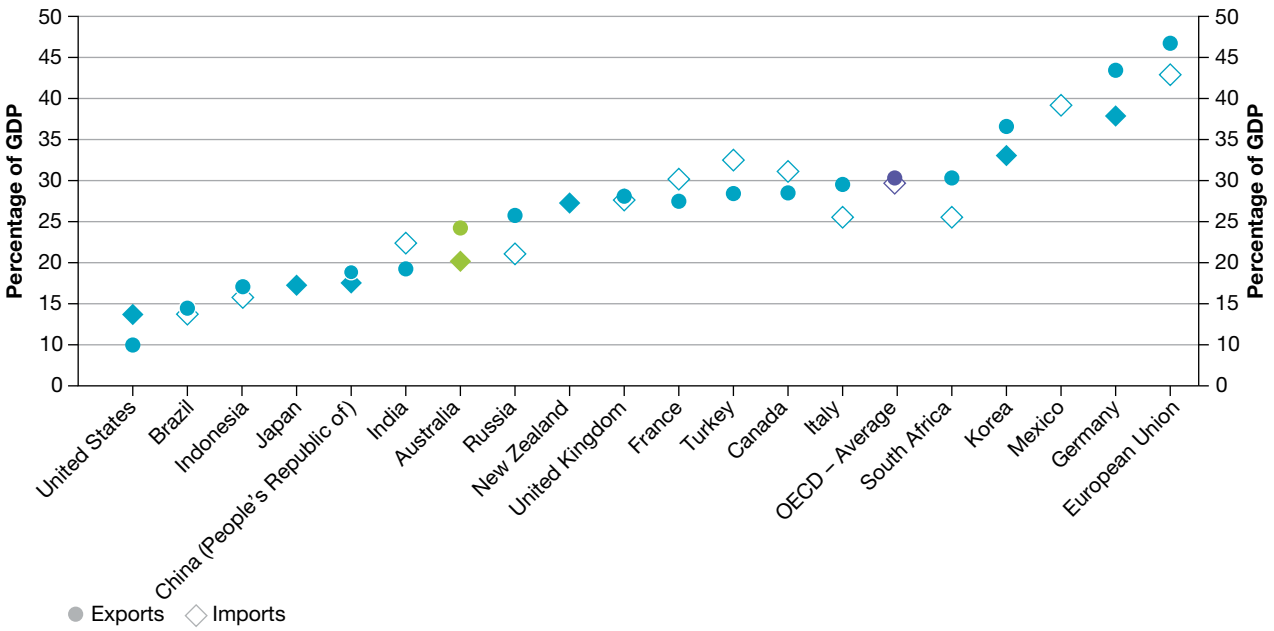
FIGURE 6.9 The hypothetical effects of international trade on the size of a nation's production possibility frontier and productive capacity, when it has increased access to imported resources



6.4.1 The potential benefits for the global economy

International trade is not only important for Australia. As shown in Figure 6.10, it is also highly beneficial for countries like South Korea, Germany, Canada, South Africa and the European Union, where export trade accounts for over 30 per cent of GDP (and incomes).

FIGURE 6.10 Comparing the importance of international trade for selected countries (expressed as a proportion of their GDP)



Source: OECD Data, see https://data.oecd.org/trade/trade-in-goods-and-services.htm.

Imports boost our efficiency and keep our inflation rate lower

Competition from imports acts as an incentive for local firms to cut their production costs, be more efficient and make their prices more *internationally competitive*. In turn, consumers benefit from a better range and quality of goods and services that are now sold at *lower prices*. This increases the *purchasing power* of incomes and living standards. Competition from imports also means that local firms are forced to *specialise* in producing particular

types of goods and services where they have a relative *cost advantage*. This causes them to use resources more efficiently and gain a bigger output from the same inputs, boosting incomes and living standards.

By helping to grow the GDP of most countries, international trade brings benefits globally including increased employment opportunities and incomes, lower prices, greater efficiency in the use of limited resources, and better living standards. In some countries like China, it has helped to lift millions out of poverty.

6.4 Activities

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6.4 Quick quiz on

6.4 Exercise

6.4 Exercise

1. Using the table below, **select** any *three* of the following and **explain** how *international trade* can be beneficial. **(6 marks)**

Potential benefits of international trade	Explanation of how international trade can be beneficial
a. Trade can grow GDP	
b. Trade can increase economies of large-scale production	
c. Trade can grow access to resources and productive capacity	
d. Trade can create jobs	
e. Trade can grow national income	
f. Trade can boost efficiency	

2. As shown in Figure 6.10, compared with the European Union, Australia's trade as a proportion of GDP is much smaller. **Explain** how you would expect our lower trade ratio to potentially impact our material living standards. **(4 marks)**

Solutions and sample responses are available online.

6.5 The economic factors influencing international trade

KEY KNOWLEDGE

- The economic factors influencing international trade

Source: Adapted from the VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

The value of two-way trade (i.e. exports plus imports) reflects the influence of many factors, both domestic and international. In this section, we will investigate just a few of the more important ones.

6.5.1 The exchange rate affects the value of exports and imports

The **exchange rate** at which the currency of one nation (e.g. the Australian dollar) is swapped for that of another (e.g. the Japanese yen, British pound, European euro, US dollar, Chinese renminbi, South Korean won, Russian ruble, and Singapore dollar). It has a huge effect on the value of a country's exports and imports.

When studying *international* trade, we need to understand that all transactions involve making payments between countries that mostly have *different currencies*. So, for instance, Australian exporters of wool want to be paid in Australian dollars, and Japanese exporters of cars want to be paid in Japanese yen. Clearly one currency needs to be *swapped* for another. This swapping of currencies happens through the **foreign exchange market**, where buyers and sellers of each currency decide the market price or the *exchange rate* — the number of units of our currency received when it is swapped for that of another.

- When the Japanese need to *pay for Australian exports*, they have to swap or exchange Japanese yen for Australian dollars. The Japanese sell or *supply* their yen (increased S) and buy or *demand* Australian dollars (increased D). Normally, the *increased demand* for the A$ relative to its supply, tends to *raise* Australia's exchange rate (causes a rise in or *appreciation* of the A$ from ER_1 to ER_2) while, at the same time, the increased supply of yen relative to its demand, drags down the Japanese exchange rate (i.e. causes a fall in or depreciation of the yen).
- When Australians need to *pay for Japanese imports*, we need to sell or *supply* Australian dollars (increased S) and buy or demand their yen (increased D). The increased supply of our dollars pushes down our exchange rate (i.e. a fall or *depreciation* of the A$ from ER_1 to ER_2) while, at the same time, the increased demand for the yen relative to its supply, lifts its exchange rate (i.e. causes a rise or appreciation of the yen).

Figure 6.11 shows a demand–supply diagram representing the *foreign exchange market* for the A$. It illustrates that, together, demand and supply interact to determine the exchange rate or price of our currency when it is swapped for other currencies.

The four demand–supply diagrams making up Figure 6.12 show the effects of *changes in the conditions affecting the demand*, and changes in the *conditions affecting the supply* of currencies, on the price or exchange rate for the Australian dollar.

- When there are *lots of sellers*, as shown in graph 1 (i.e. the increase from S_1 to S_2), and/or *few buyers*, as shown in graph 4 (the decrease from D_1 to D_2), the exchange rate falls or *depreciates* against another currency.
- In contrast, having *lots of buyers* of a currency, as shown in graph 3 (the increase from D_1 to D_2), and/or *fewer sellers,* as shown in graph 2 (the decrease from S_1 to S_2), cause the exchange rate for the A$ to rise or *appreciate*.

FIGURE 6.11 Using a demand–supply diagram representing the foreign exchange market, to show how the exchange rate for the A$ is determined at equilibrium

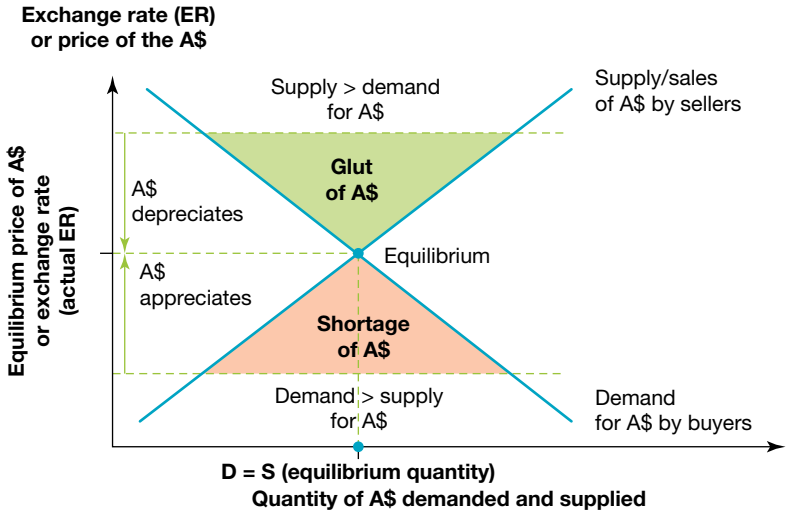
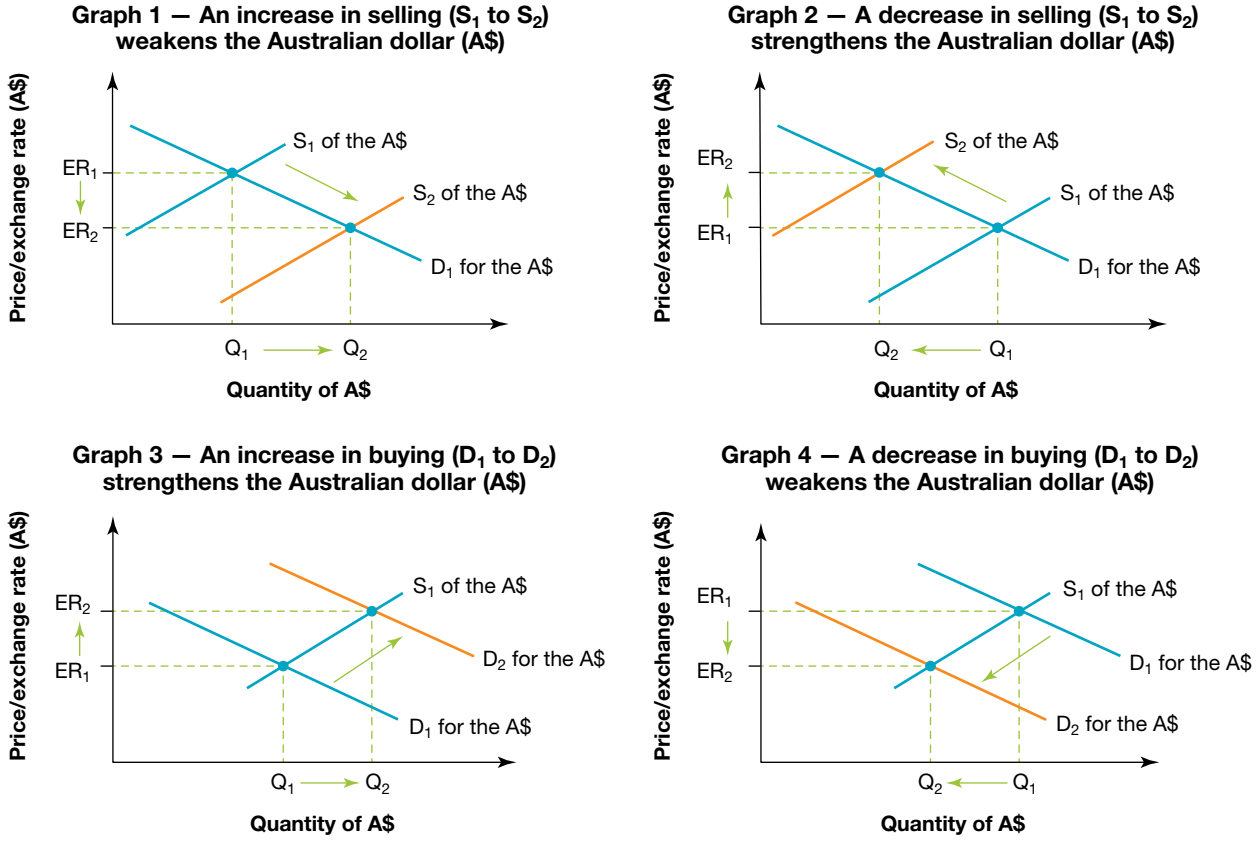


FIGURE 6.12 Demand–supply diagrams illustrating the effects of changing demand–supply conditions in the foreign exchange market on the value of the A$



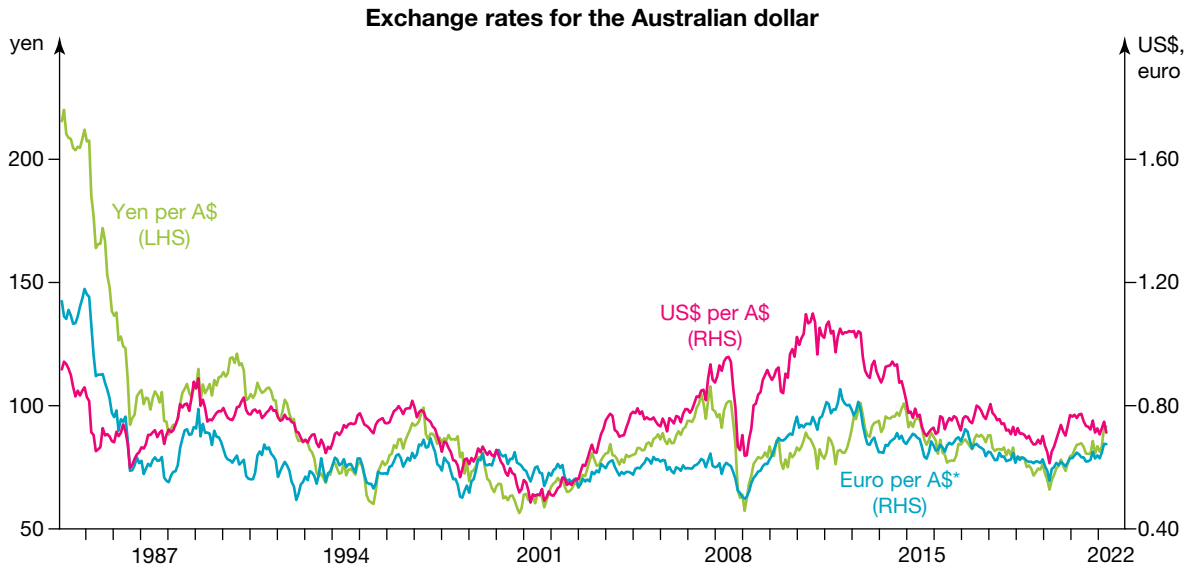
As shown in Table 6.1, there are many non-price factors that can alter the *conditions of demand (D)* and the *conditions of supply (S)* for the A$ in the *foreign exchange market*. In turn, they can cause the price of the A$ to either appreciate or depreciate.

TABLE 6.1 Some non-price factors that can change the conditions of demand and supply and hence the price of the A$ in the foreign exchange market

Three factors that can affect the level of credits or receipts for exports, changing the demand (D) for the A$ and hence the exchange rate	Three factors that can affect the level of debits or payments for imports, changing the supply (S) of the A$ and hence the exchange rate
1. Changes in overseas rates of economic growth (e.g. amongst our trading partners China, USA) affect sales of Australian exports, and hence the D for the A$ and the exchange rate.	1. Changes in Australia's rate of economic growth affects the value of our spending abroad on imports. This alters the S of the A$ and hence the exchange rate.
2. Changes in consumer and business confidence overseas affect sales of Australian exports, and hence the D for the A$ and the exchange rate.	2. Changes in Australia's consumer and/or business confidence affect spending on imports. This alters the S of the A$ and hence the exchange rate.
3. Changes in the selling price of Australian-made goods and services, perhaps due to higher or lower production costs or efficiency, alters the international competitiveness or attractiveness to overseas consumers of Australian exports. This affects the D for the A$ and the exchange rate.	3. Changes in the Australian government's spending on imported defence equipment and in levels of foreign aid, alter the S of the A$ and hence the exchange rate.

Depending on whether the exchange rate for the $A rises or falls, has a huge impact on the value of Australia's exports and imports of goods and services (and the trade balance). Figure 6.13 shows recent changes in the value or price of one A$ against the US$, the yen and the euro.

FIGURE 6.13 Recent changes in the value of one A$ when swapped for the US$, the yen and the euro in the foreign exchange market



* ECU per A$ until 31 December 1998.

Sources: Bloomberg; RBA Chart Pack, see https://www.rba.gov.au/chart-pack/exchange-rates.html.

Referring to Figure 6.13, notice that following a mostly higher $A in 1984, its value fell or depreciated towards 2001. Then there was an appreciation and another peak in 2013, followed by generally lower levels since.

You might now wonder whether it is better for a country to have a high or low exchange rate for international trade. The answer depends on *who* you are.

- For an *exporter*:
  - A *lower* exchange rate makes Australian goods and services relatively *cheaper* abroad and hence more internationally competitive and attractive for overseas buyers. This boosts export sales or injections, AD, GDP, employment and incomes.
  - A *higher* dollar makes it tougher for *exporters* to sell their goods and services because they are dearer to overseas consumers. This slows export sales, injections, AD, GDP, employment, and incomes.
- For an *importer:*
  - A *lower* exchange rate makes imports dearer for us to purchase and our currency will not go as far. This cuts our spending on foreign goods and services, reduces leakages, and tends to boost AD, GDP, employment, and incomes.
  - A *higher* dollar makes imports cheaper and more attractive to Australian consumers. Being a leakage, higher imports tend to slow AD, GDP, employment, and incomes.

As a general rule, *exporters* (at least those who don't need to purchase imports of goods or services from overseas to enable production) often prefer a *lower* exchange rate, while *importers* of goods and services from overseas tend to fancy a *higher* exchange rate. Put another way, a *weaker A$* tends to *strengthen the balance of trade*, whereas a *higher A$* tends to *weaken the balance of trade*.

6.5.2 The level of economic activity and inflation both locally and overseas affect the value of exports and imports

The level of economic activity (i.e. the change in production and sale of goods and services) and inflation, both in Australia and overseas, can affect the value of our exports and imports.

- The level of economic activity in *Australia* mostly affects the value of our spending on *imports*.
  - When Australia's economic activity is *rising* due to generally stronger aggregate demand factors such as consumer and business confidence and increases in disposable income, there is more spending on imports of goods and services (e.g. luxury cars, equipment, overseas holidays, appliances). In addition, because consumer prices also start to rise more quickly, locally made goods and services become relatively less attractive than those from overseas. This also increases imports. For these reasons, higher levels of economic activity tend to *weaken our trade balance*.
  - In contrast, when domestic economic activity *slows* due to weaker local aggregate demand factors, spending on imports slows. This tends to *strengthen the trade balance*.
- The level of economic activity *overseas*, especially amongst our trading partners (China, USA, Japan), affects their spending on our *exports*:
  - When economic activity is *stronger* abroad and their output and inflation rate is rising, overseas consumers tend to buy more Australian exports of commodities and services. This causes our trade balance to *strengthen*.
  - However, when economic activity internationally *slows* and output is cut, our export sales decline. This *weakens* our trade balance.

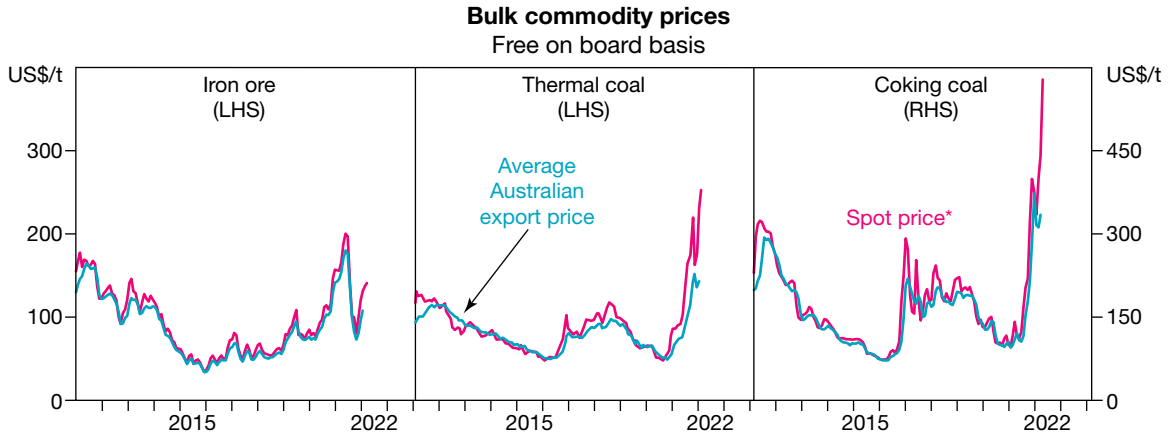
6.5.3 The level of international commodity prices received for our exports

Australia is a large exporter of *commodities* including minerals and rural products. The prices that are received and paid for these reflect *global* conditions of *demand* and *supply* in various markets. When there is a global *market shortage*, commodity prices rise, while *market gluts* depress prices.

- *Higher* commodity prices for the goods Australia sells overseas (e.g. gold, iron ore, gas, wool and wheat), due to strong global demand relative to supply, mean that the value of our exports rise, bolstering the trade balance.
- In contrast, *lower* commodity prices received, due to weaker global demand relative to supply, cause the value of our exports to fall. The trade balance becomes less favourable.

Figure 6.14 shows the changing level of commodity prices received for commodity exports of Australian iron ore and coal.

FIGURE 6.14 Recent changes in global commodity prices received for Australian exports



* Iron ore 62% Fe fines index; Newcastle thermal coal and premium hard coking coal.

Source: RBA Chart Pack, see https://www.rba.gov.au/chart-pack/commodity-prices.html.

Notice the general spike in commodity prices during 2021–22. This helps to explain Australia's large *trade surplus* in recent times.

6.5.4 Severe weather events and pandemics here and overseas affect the value of exports and imports

Over recent years, Australia has not been alone in experiencing more frequent and *severe weather events* linked with climate change. In addition, there has been the COVID-19 pandemic causing supply chain issues. These have impacted Australia's exports, imports and trade balance.

- For example, as *less favourable* aggregate supply conditions, recent cyclones, floods, drought, fires, and the pandemic all reduced Australia's productive capacity and potential level of exports. Farms and businesses were destroyed by severe weather events. The pandemic health emergency and the associated lockdowns and supply chain issues, caused labour shortages, limiting output. In addition, borders were closed to international tourists and overseas students, reducing exports of services.
- However, when conditions are *more favourable* due to more favourable weather, exports tend to rise more quickly (although when our borders are open, more Australians holiday and travel overseas, increasing the value of imports).

6.5 Activities

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6.5 Quick quiz on | **6.5 Exercise**

6.5 Exercise

1. a. **Explain** the term, *exchange rate.* **Outline** how Australia's exchange rate is determined. **(3 marks)**
   b. **Outline** the effect on Australia's exchange rate of an *increase* in the value of exports or credits. **(2 marks)**
   c. **Outline** the effect on Australia's exchange rate of an *increase* in the value of imports or debits. **(2 marks)**
   d. **Explain** how each of the following international transactions would be likely to affect the exchange rate for the Australian dollar in the foreign exchange market, assuming all other things remained unchanged or constant:
   - Australia imports oil from Saudi Arabia (use diagram 1 below)
   - Australia sells natural gas to Japan (use diagram 2 below).

   To assist your two explanations, start by illustrating hypothetically, the effects of each transaction using the two D-S diagrams making up the figure below (one for each transaction). This will involve shifting the position of the D line for the A$ (D_1 to D_2) or the S line for the A$ (S_1 to S_2), thereby bringing about a change in the equilibrium price or exchange rate for the A$ (ER_1 to ER_2) and the equilibrium quantity of dollars traded (Q_1 to Q_2). Label all new lines and points on each diagram. Referring to parts of the diagrams, you should now be able to **explain** why the exchange rate changed in the way you have shown on the diagram. **(4 marks)**

Diagram 1 — The effects of oil imports on the $A

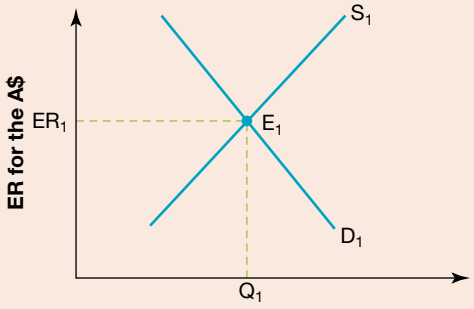
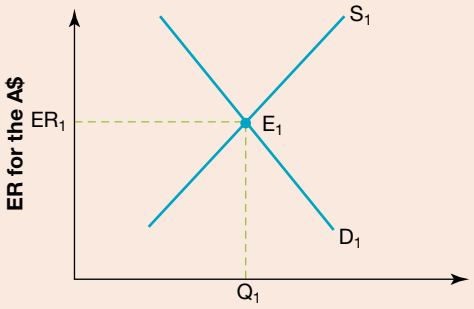
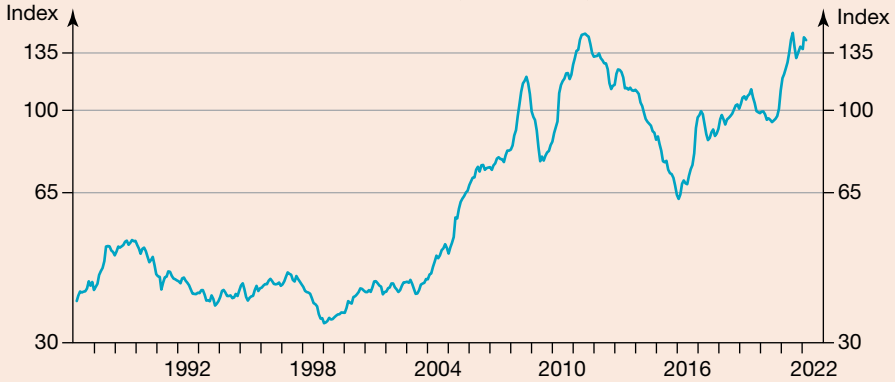


Diagram 2 — The effects of gas exports on the A$



2. **a.** Giving appropriate examples for Australia, **define** the term, *commodity exports*. **(1 mark)**
Examine the figure below showing an index that measures the average price of Australia's commodity exports, before answering the questions that follow.

RBA Index of commodity prices
SDR, 2019/20 average = 100, log scale



Source: RBA Chart Pack, see https://www.rba.gov.au/chart-pack/commodity-prices.html.

b. **Explain** how the peak in our export commodity prices in 2011–12 and the trough in 2015–16 would be likely to affect Australia's balance of trade (other things remaining constant). **(3 marks)**

3. **Explain** how severe weather events and the COVID-19 pandemic might affect Australia's balance of trade. **(2 marks)**

Solutions and sample responses are available online.

6.6 Different perspectives about the issue of international trade

KEY KNOWLEDGE

- The different perspectives of households (consumers and workers), business, government and other relevant economic agents regarding the issue of international trade

Source: Adapted from the VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

Having some understanding of what international trade for countries like Australia involves, it is now time to look at the different views or perspectives about the issue. For example:

- As a consumer, you probably enjoy having access to cheaper goods and services from overseas and a far broader product choice.
- As a business owner, while you might benefit from being able to expand by selling goods and services overseas, you might not appreciate strong product and price competition from imported substitute products that squeeze your profits and may cause you to close down.
- As a worker in an industry that faces strong competition from imports, you worry about your employer being forced to close because local production costs, including wages, are just too high relative to overseas.
- As a government, you might be popular with consumers who want cheaper prices thanks to imports, but might also be unpopular with some voters who have lost their job when local firms close due to foreign competition.

The point here is that people have different views about whether international trade is a good or bad thing, and whether it should be encouraged.

Over the years, economic debate has especially raged between *two* opposing viewpoints:

- On the one hand, there are those who believe that international trade is beneficial and should therefore be encouraged by governments gradually reducing the level of protection given to local industry from import competition. They support the ideas of **trade liberalisation** and **free trade** and see this policy as a way of increasing efficiency in our use of resources and, thereby, increasing national production, employment, incomes and living standards.
- On the other hand, there are those who believe in what is called, **protectionism**. Here, the government uses policies that deliberately restrict the level of foreign competition from imports in local markets, so that firms and their employees can survive and be profitable.

Table 6.2 sums up some of the main ideas behind these two *opposing perspectives*.

TABLE 6.2 Government policies towards international trade involving free trade or protectionism

Free trade — no government protection of local industry from imports	Protectionism — government protection of local industry from imports
• There are no tariffs or taxes placed on imports coming into the country from overseas to make imports dearer to local consumers thereby increasing competition.	• High tariffs are placed on imports to make them dearer and less attractive than local goods.
• There are no government subsidies paid to local producers to help cover their production costs so firms must become more efficient to survive.	• Subsidies paid to local firms help to cover some of their production costs so they can sell profitably at lower more competitive prices than imports.
• There are no import quotas limiting the volume of foreign goods permitted to enter the country, thereby increasing competition and consumer choice.	• Import quotas limit foreign competition and the volume of particular goods that can be imported so local consumers are forced to purchase more of the local product.
• *Many multilateral* (involving many countries) and *bilateral* (usually between two countries) free trade agreements (FTAs) are signed to reduce or abolish tariffs on the movement of imports and exports between countries, so that the volume of two-way trade increases.	• No free trade agreements (FTAs) are signed slowing the growth in international trade.

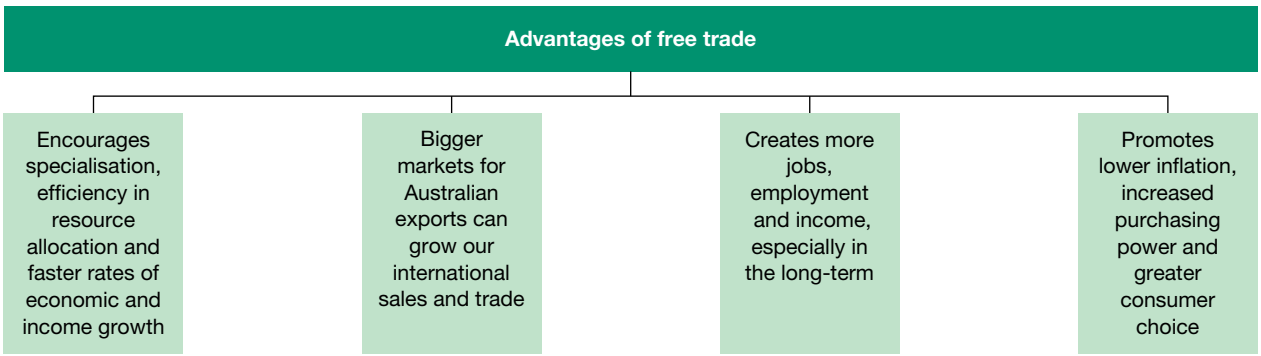
Interestingly, most governments around the world have now adopted economic policies that involve the *liberalisation of trade* and a gradual move towards *free trade*. Protection levels are now very low in most countries including Australia, where our average tariff rate (tax) on imports is less than 1 per cent. However, nations like the Solomon Islands, Palau and Bermuda have average tariff rates above 30 per cent.

FIGURE 6.15 Free trade involves no tariff barriers or other forms of protection for local industry. While free trade brings benefits such as cheaper goods, some groups, including farmers and local industries, see it as a threat to their survival.

6.6.1 One perspective: The advantages of free trade

Supporters of *trade liberalisation* and the shift towards *free trade*, believe that businesses must be efficient and survive without special taxpayer-funded government support. For them, it's more a matter of encouraging survival of the fittest, rather than having industries propped up on life support! Figure 6.16, sums up their *four* main arguments:

FIGURE 6.16 Some advantages of free trade



Specialisation, greater efficiency, economic growth and incomes

Without protection, free trade means that resources will be allocated by market forces into areas of production where a business or a country is relatively most efficient and where production costs are relatively lowest. This means that different countries are encouraged to *specialise* in producing particular types of goods and services where they have a cost advantage, or at least where their costs disadvantage is least. Resources will thus be put to work in their most productive use. As a result of free trade, more output (GDP) will be produced from the same inputs, and hence incomes and material living standards should be higher.

There are *two* types of *cost advantage* that are especially relevant to international trade, based on **specialisation in production**:

1. **Absolute cost advantage**. A country might have an absolute cost advantage *where it is the cheapest or most efficient producer of a particular good or service in the world*. For example, if South Korea is the cheapest or most efficient producer of cars in the world, it is said to have an *absolute cost advantage* over other countries. It is likely that its car exports will sell very well indeed. Similarly, if Australia is the

cheapest producer of iron ore and has an absolute cost advantage, Korean and other manufacturers would be keen to buy this from us. Both countries would benefit from specialisation in international trade since each has an absolute cost advantage in different areas of production.

2. **Comparative cost advantage**. Some countries have no product where they have an absolute cost advantage. However, this is not a problem since all countries have areas of production where they have a *comparative* cost advantage. This means that they should mostly specialise in selected areas of production where their cost disadvantages are least. By focusing on the things they produce best (and stopping production of the goods they are poor at producing), countries will minimise their *opportunity cost* (production that is foregone) and thus maximise their production, incomes and material living standards.

Let us use a simple example to help illustrate the differences between these two concepts. Table 6.3 shows hypothetical data for Country A and Country B, both of which can produce two goods, beef and computers. It indicates the total number of *hours* that it takes a worker in each country to produce *each unit* of these goods. This gives an indication of relative efficiency in each country in the production of these two goods.

TABLE 6.3 The average number of hours of work for two countries to produce each unit of beef and computers

Country	Beef (number of hours per unit produced)	Computers (number of hours per unit produced)
A	100	100
B	120	200

From the data, Country A clearly has an *absolute cost advantage* in producing both beef and computers because it is more efficient. That is, it can produce both goods more cheaply with fewer hours of work. By contrast, Country B has no absolute cost advantage in either good, so at first sight it might *seem* that Country B could never sell its goods to Country A, or be involved in international trade. However, this need *not* be the case. Beneficial international trade can occur if both countries *specialise* in areas of *comparative cost advantage*. That is, they concentrate on producing the good where they have the *greatest relative* cost advantage, or the least disadvantage. So country A should specialise in the production of computers (where its advantage is greatest) and country B should specialise in the production of beef (where its disadvantage is least). Through international trade, both countries would be better off materially by minimising their opportunity costs and maximising their output from their available resources.

One important reason for *international specialisation in production* is that often countries have different types of resources (i.e. different natural, labour and capital resources) that are wanted by other nations. For instance, countries with warm tropical climates often produce crops such as rubber, tea, coffee, sugar or cocoa. Some of these nations also specialise in tourism. The surplus output of these items can then be exported to countries with cooler climates that cannot produce these things. Trade is mutually beneficial.

Additionally, free trade allows nations to export more goods and services by opening up new markets abroad. In turn, this means that local businesses can produce on a bigger scale. Firms can gain economies of large-scale production where, in the short-term, their fixed production costs per unit — such as product design, equipment, advertising and perhaps management — can be spread more thinly over greater output volumes, allowing the good or service to be sold more cheaply. As a result of this, some consumers at home and overseas should now prefer to purchase the local item. This leads to increased production, higher incomes and better living standards.

Increased international trade

Freer trade (involving more FTAs, lower tariffs both here and overseas, and less protection) should help to grow the markets for a country's exports and thus boost its sales. In contrast, higher tariffs and more protection imposed by one country, can lead to retaliation by another, shutting out its exports and limiting trade. Indeed, Australian and international experience has shown that trade liberalisation has meant that our exports have increased between two and four times faster than our GDP. This has increased our export incomes and average material living standards.

More jobs, employment and income

If, as argued, freer trade leads to greater efficiency, more exports, business expansion and stronger economic growth, in the long run, it should also lead to the creation of more jobs and income. Indeed, it has been estimated that one in four Australian jobs depends directly or indirectly on our sales of exports. However, on its own, trade liberalisation is not enough to guarantee that all will benefit. To ensure that the advantages of higher output and income are shared by all, it is essential that the government also uses a range of policies including the re-training and re-skilling of those whose jobs and incomes are lost due to increased competition from imports.

Lower inflation, increased purchasing power and more choice

Inflation refers to generally rising consumer prices that must be paid for goods and services. Without protection and tariffs, domestic inflation rates should be much lower due to stiffer competition from imports. Research has shown that following widespread trade liberalisation by governments, the world's average inflation rate has fallen from 24 per cent a year in 1990 to less than 4 per cent in more recent decades. This impressive slowdown in prices leading to rises in purchasing power, largely reflects the powerful effects of stronger international competition. Free trade also means there is more consumer choice. This too can lead to greater satisfaction, and more affordable and better quality goods and services.

As a result of freer trade, the purchasing power of our incomes is greater and so material living standards should be higher.

on Resources

Weblinks The big ideas of trade
Foreign trade — an introduction
How beneficial is world trade?
Comparative advantage and terms of trade
Division of labour specialisation, trade comparative advantage
Arguments against international trade
Why do countries restrict trade?

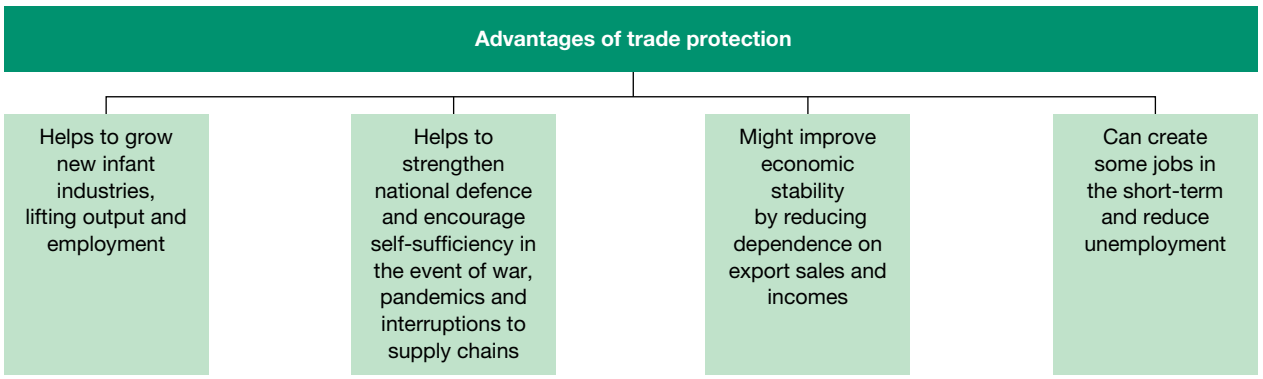
6.6.2 A second perspective: The advantages of protectionism

Supporters of *trade protection* usually focus on four *main advantages* or reasons for using **tariffs**, **subsidies** and **import quotas**. These are summarised in Figure 6.17.

Protection helps grow infant industries

The *infant industry argument*, used by some to justify protection, is based on the assumption that new industries just getting started, will have higher production costs than those that are well established. In the case of these industries, tariffs supposedly provide a helping hand for a few years, until firms get established and become more efficient. While there are some success stories justifying this use of tariff protection (indeed all industries in Australia were once infants), there are also failures (e.g. in the past, Australia's car industry) where the so-called infant remains uncompetitive, even in old age! In fact, there have been some instances of where tariffs and subsidies have reduced efficiency in resource allocation.

FIGURE 6.17 Some advantages of trade protection



Protection strengthens our independence, self sufficiency, and national security

During wartime and pandemics (e.g. COVID-19), countries are often isolated without access to imports. The use of tariffs during peacetime can help maintain inefficient or uncompetitive industries so that there is an assured supply chain of essential goods and services in an emergency. This argument has been used in Australia by a number of industries including pharmaceutical drugs and medical equipment, oil, car and shipbuilding. However, a likely cost of this policy is lower material living standards (except perhaps during wartime or pandemics).

Protection improves economic stability

Some critics of free trade argue that open, exporting economies are more likely to experience booms and recessions in the level of economic activity caused by the business cycle in overseas countries. While this is partly true, the same sort of reasoning could also be used to stop or limit interstate or intrastate trade, since potentially there could be instability here as well — a suggestion that could not be taken seriously.

Protection creates jobs and reduces unemployment

One of the most frequently heard reasons for keeping tariffs is that they help protect local jobs and employment from destruction by imports coming from low-wage countries such as Indonesia or China. Here, the argument goes that tariff protection, especially of infant industries over the short-term, is necessary so they can start up and overcome their natural cost disadvantage until they get established. While there may be some basis for this argument especially, several counterpoints can be made.

Firstly, we cannot expect other nations to allow our exports into their country if we use tariffs to repel their competition. It is likely that a move by Australia to raise tariffs would cause retaliation overseas, lower our exports, and would perhaps result in a loss of jobs and income. This would reduce our living standards. *Secondly*, although tariffs may help protect one industry, in doing so, they can cause the production costs of others that use imported materials and equipment to be higher than otherwise. This makes them less competitive and less profitable. Tariff protection of one industry can lead to other businesses closing down and the destruction of jobs. *Finally*, over the long-term, it is hard to see how more jobs can be created by using tariffs that are designed to encourage industries that are both inefficient and unprofitable. Logically, we should create more jobs and have higher living standards if Australia specialises in the things we make best — that is, we should concentrate on selecting areas of production where we have a *comparative cost advantage* (or the least disadvantage).

6.6 Activities

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6.6 Quick quiz on | 6.6 Exercise

6.6 Exercise

1. **Distinguish** *protectionism* as a government policy from that of *free trade*. **(4 marks)**
2. **Discuss** the claimed advantages and disadvantages of free trade and protectionism. **(6 marks)**
3. a. The price at which goods and services are bought and sold is important in international trade. Nations tend to export goods or services where they have an advantage, and import goods and services where they have a disadvantage. Giving examples, **distinguish** between an *absolute cost advantage* and a *comparative cost advantage* in international trade. **(2 marks)**
   b. Using the internet for research, **write** a paragraph about David Ricardo's economic theory of *international specialisation* and trade based on the concept of *comparative cost advantage*. **(4 marks)**
   c. Examine the table below before answering the questions that follow. This table shows hypothetical data for Portugal and England. It indicates the number of hours that a worker in each country must work in order to produce *each unit* of wine or cloth, giving an indicator of relative *efficiency* in each country in the production of these two goods.

Country	Cloth (number of hours per unit produced)	Wine (number of hours per unit produced)
Portugal	90	80
England	100	120

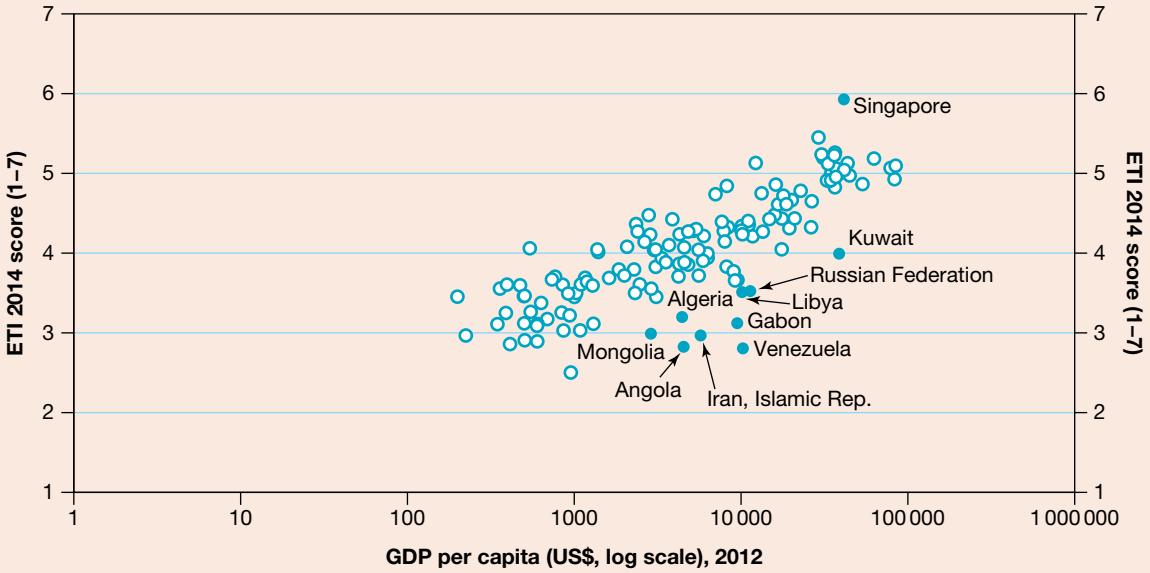
   i. Giving reasons, **explain** which country has an *absolute* cost advantage in producing: **(2 marks)**
      - cloth
      - wine.

   ii. Giving reasons, **explain** which country has a *comparative* cost advantage in producing: **(2 marks)**
      - cloth
      - wine.

   iii. Would it be possible and beneficial for these two countries to trade with each other? **Explain**. **(2 marks)**
4. a. **Identify** and **outline** the main types of trade protection sometimes used to support local industry. **(2 marks)**
   b. Supporters of protectionism usually raise *four* main *justifications* for its use. **Explain**. **(4 marks)**
5. a. **Select** any *two* of the following industries where you believe that Australia's *comparative* cost advantage is greatest (or disadvantage is least) in our region. **Explain** your reasoning. **(2 marks)**
   i. Making cars
   ii. Biomedical research
   iii. Producing wool
   iv. Producing minerals such as bauxite and gold
   v. Selling environmental tourism
   vi. Producing oil
   vii. Making video equipment
   viii. Making movies
   ix. Making twin-hulled ferries
   x. Making textiles and clothing

   b. **Explain** how *freer* international trade (i.e. without protecting local industry) can bring the following *benefits* for a country: **(10 marks)**
   i. increase efficiency in production and resource allocation
   ii. increase the rate of economic growth and raise incomes
   iii. reduce inflation
   iv. boost exports
   v. increase the number of jobs, lowering unemployment.

c. There is an index that measures the extent to which different countries have *open economies* and encourage *freer trade*. One index is called the *Enabling Trade Index* (ETI) where the scores range from a low of 0 up to a high of 7 (here the country is very open to and encourages free trade). Based on research, the figure below shows the relationship between countries that enable trade and the yearly level of their GDP per capita.



Source: World Economic Forum, 'The Global Enabling Trade Report 2014', figure 2, p. 8, see http://www3.weforum.org/docs/WEF_GlobalEnablingTrade_Report_2014.pdf. *Note:* The horizontal scale uses a logarithmic scale that compresses GDP per capita as it increases, making it look less impressive.

i. **Describe** the apparent general *relationship* between the Enabling Trade Index (ETI) and a country's annual GDP per head. **Illustrate** your response by selecting two countries named on this graph. **(2 marks)**

ii. **Explain** why many economists believe that free trade and specialisation in areas of comparative cost advantage should allow the countries involved to enjoy higher levels of production (GDP), incomes and material living standards. **(4 marks)**

Solutions and sample responses are available online.

6.7 Economic responses and government policies involving international trade

KEY KNOWLEDGE

- The economic responses of governments and others to address the issue of international trade

Source: Adapted from the VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

Overwhelmingly, governments both here and abroad have adopted the policy of trade liberalisation. This involves a gradual reduction in levels of protection and a move towards freer international trade.

6.7.1 The Australian government's policy on international trade

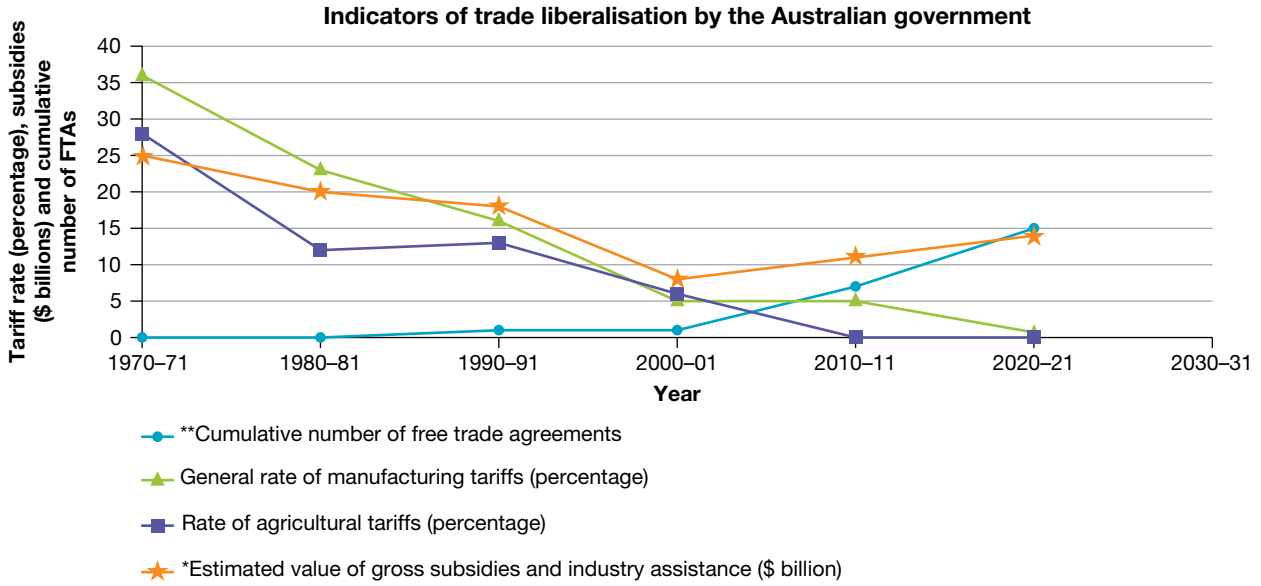
Starting in the early 1970s and accelerating from the early 1990s, the Australian government gradually shifted towards a policy of *freer trade* or, as it is also called, *trade liberalisation*. This entailed reducing the levels of industry protection through changes in *five* key policies:

1. cutting the general rate of tariffs to the current level of less than 1 per cent
2. abolishing all import quotas
3. slashing producer subsidies
4. greatly easing local content laws and restrictions on foreign capital
5. increasing the number of bilateral free trade agreements with particular countries.

Some of these policy changes by the Australian government are illustrated in the table and graph making up Figure 6.18.

From this it can be clearly seen that the Australian government accepts the principles of *freer trade* and largely rejects protectionism of local industry. Now for a closer look at each of these policy areas.

FIGURE 6.18 Indicators of the Australian government's adoption of trade liberalisation, 1970–71 to 2020–21



Year	1970–71	1980–81	1990–91	2000–01	2010–11	2020–21	2030–31
**Cumulative number of free trade agreements	0	0	1	1	7	15	
General rate of manufacturing tariffs (percentage)	36	23	16	5	5	0.7	
Rate of agricultural tariffs (percentage)	28	12	13	6	0	0	
*Estimated value of gross subsidies and industry assistance ($ billion)	25	20	18	8	11	14	

*__Note:__ Excluding the massive temporary increase in emergency subsidies provided during COVID-19, 2020–21–22.
**__Note:__ There were 15 FTAs in 2020–21, but by mid-2022, this had increased to 17. In addition, in 2022, there were three other agreements that had been signed (with India, the UK and the Trans-Pacific Partnership), with another four under negotiation with the EU, Gulf States, India and UAE.

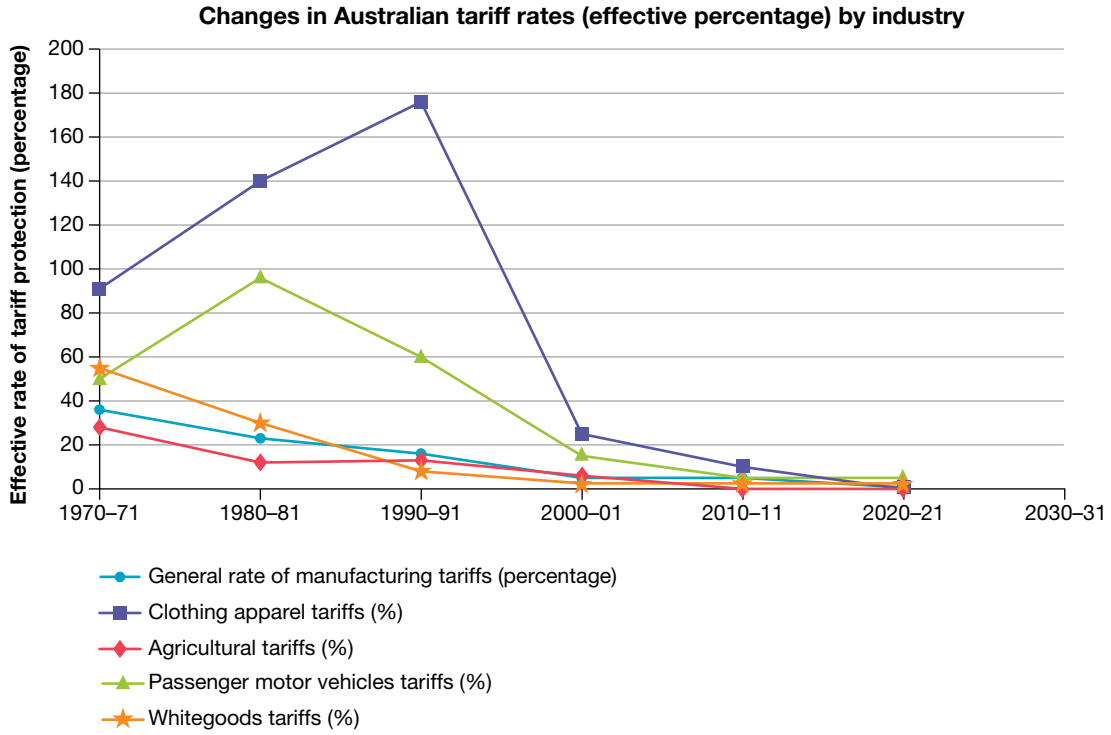
__Sources:__ Data rounded and estimated using information derived from AGPS; Industry Commission; Report by the government, 2002 Trade Policy Review; Productivity Commission, Trade and Assistance Review, 2015 (see also www.pc.gov.au/research/ongoing/trade-assistance/2013-14/trade-assistance-review-2013-14.pdf); DFAT; budget review 2006–07, budget papers 2008–09 to 2022–23; CIE report 2017, Australian Trade Liberalisation, prepared for the Department of Foreign Affairs & Trade, www.dfat.gov.au/sites/default/files/cie-report-trade-liberalisation.pdf; Trading Economics, https://tradingeconomics.com/australia/tariff-rate-applied-simple-mean-all-products-percent-wb-data.html.

Lower tariff protection

Tariffs are a tax added onto the price of imports to make them less attractive to local consumers. Figure 6.19 shows that the move towards lower tariffs started at different times for different industries.

- In the case of 'general' tariffs on manufactured items, protection was gradually reduced from the early 1970s, from an average rate of 36 per cent, to less than 1 per cent in recent years.
- Special higher rates of tariff protection were given to the textile, clothing, footwear and automotive industries until a decade ago.
- In 2005, car tariffs were cut to only 10 per cent (down from 125 per cent in 1985–86) and then to just 5 per cent from 2010 onwards.

FIGURE 6.19 How the Australian government has recently cut tariffs



Industry area	1970–71	1980–81	1990–91	2000–01	2010–11	2020–21	2030–31
General rate of manufacturing tariffs (percentage)	36	23	16	5	5	0.7	
Passenger motor vehicles tariffs (%)	50	96	60	15	5	5	
Clothing apparel tariffs (%)	91	140	176	25	10	0	
Whitegoods tariffs (%)	55	30	8	2.5	2.5	2.5	
Agricultural tariffs (%)	28	12	13	6	0	0	

Sources: Data rounded and estimated using information derived from various sources including AGPS; Industry Commission; Report by the government, 2002 Trade Policy Review; Productivity Commission, Trade and Assistance Review, 2015 (see also www.pc.gov.au/research/ongoing/trade-assistance/2013-14/trade-assistance-review-2013-14.pdf); DFAT; budget review 2006–07, budget papers 2008–09 to 2022–23; CIE report 2017, Australian Trade Liberalisation, prepared for the Department of Foreign Affairs & Trade, www.dfat.gov.au/sites/default/files/cie-report-trade-liberalisation.pdf; Trading Economics, https://tradingeconomics.com/australia/tariff-rate-applied-simple-mean-all-products-percent-wb-data.html.

By cutting tariff protection and exposing local businesses to stronger international competition, the Australian government hopes to gain benefits like greater efficiency in the use of resources, lower inflation, increased exports, higher incomes, faster economic growth, more jobs in the long-term and higher material living standards.

Reduced subsidies to local businesses

Subsidies are government cash payments made to local producers to help them cover some of their production costs. They can enable Australian firms to export at lower, more competitive prices. Figure 6.19 (earlier in this section) shows us that there was a general reduction in gross subsidies from around $25 billion in the early 1970s, down to an estimated $14 billion by 2020–21 (but this excludes the temporary emergency subsidy packages provided during the COVID-19 recession, 2020–21–22 worth over $150 billion). Overall, the government's policy has again been fairly consistent with the belief that trade liberalisation strengthens competition, efficiency, incomes and living standards.

Abolition of import quotas and licences

Import quotas are designed to restrict the supply or quantity of specific types of imports allowed into the country. In order to achieve a stated volume target, prospective importers must obtain a licence that gives them permission to bring in a certain maximum number of articles of a particular description.

Quotas were commonplace in the 1970s and early 1980s, especially on cars, textiles, footwear and clothing. However, these have been progressively abolished. The last quotas, which applied to cheese, were terminated in 2000–01. Clearly, the Australian government believes that, in the long-term, removal of import quotas, results in greater efficiency in the allocation of resources, lower prices, improved international competitiveness, stronger economic growth, and ultimately, better living standards.

Increased number of free trade agreements (FTAs)

As part of trade liberalisation, Australia has negotiated **bilateral free trade agreements (FTAs)** with two or more countries. Essentially, FTAs involve the removal of local industry protection by the countries involved. This includes abolishing most tariffs. In addition to exposing local firms to more intense foreign competition, and forcing them to become more cost efficient and improve their competitiveness, FTAs help Australian producers gain access to much bigger export markets abroad. This allows our businesses to gain more economies of large-scale production, and grow their export income. Table 6.4 shows that by mid-2022, Australia had 17 FTAs in operation, with another three signed and ready to come into force, and a further four under negotiation:

TABLE 6.4 Australia's free trade agreements

Year of operation	Name of Australia's FTA
1983	1. Australia–New Zealand (ANZCERTA or CER)
2003	2. Singapore–Australia (SAFTA)
2005	3. Australia–United States (AUSFTA) 4. Thailand–Australia (TAFTA)
2009	5. Australia–Chile (ACI-FTA)
2010	6. ASEAN–Australia-New Zealand (AANZFTA)
2013	7. Malaysia–Australia (MAFTA)
2014	8. Korea–Australia (KAFTA)
2015	9. Japan–Australia (JAEPA) 10. China–Australia (ChAFTA)

(continued)

TABLE 6.4 Australia's free trade agreements *(continued)*

Year of operation	Name of Australia's FTA
2018	11. Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)
2020	12. Australia–Hong Kong (A-HKFTA) and associated Investment Agreement (IA)
2020	13. Peru–Australia (PAFTA) 14. Indonesia–Australia Comprehensive Economic Partnership Agreement (IA-CEPA) 15. Pacific Agreement on Closer Economic Relations (PACER) Plus
2022	16. Regional Comprehensive Economic Partnership Agreement (RCEP) 17. Republic of Korea
Agreements but not yet in operation by mid-2022	
	◦ Australia–India Economic Cooperation and Trade Agreement (AI-ECTA)
	◦ Australia–United Kingdom Free Trade Agreement (A-UKFTA)
	◦ Trans-Pacific Partnership (TPP)
Agreements under negotiation in mid-2022	
	◦ Australia–European Union Free Trade Agreement
	◦ Australia–Gulf Cooperation Council (GCC) Free Trade Agreement
	◦ Australia–India Comprehensive Economic Cooperation Agreement
	◦ Australia–UAE Comprehensive Economic Partnership Agreement

Source: Data derived from Australian Government, Department of Foreign Affairs and Trade, see https://www.dfat.gov.au/trade/agreements/trade-agreements.

Apart from these FTAs, Australia also participates in multilateral trade agreements where there are many other countries involved. Two examples are discussed below.

We are part of the **Asia–Pacific Economic Cooperation (APEC)**. This is a regional forum aimed at promoting freer trade among 21 member countries (see Figure 6.20) around the Pacific rim, accounting for almost 60 per cent of global GDP. It includes Australia, Brunei Darussalam, Canada, Chile, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, the People's Republic of China, the Philippines, Republic of Korea, Singapore, Thailand and the United States. Together, there are around 2.8 billion people in this market or over 38 per cent of the world's population! Currently, these countries buy about 70 per cent of Australia's exports. Clearly, what happens to our exports in this region is of national economic and political importance to Australia. In 1994, members of APEC signed an agreement that abolished intercountry tariffs by late 2020.

The **Association of South-East Asian Nations (ASEAN)** brings together ten countries from the South-East Asia region — Indonesia, Cambodia, Vietnam, Laos, Burma (Myanmar), Brunei Darussalam, Malaysia, the Philippines, Singapore and Thailand (see Figure 6.21). These countries accept the principle that freer international trade will help their economic **development**, so their governments have been gradually cutting tariffs. Although Australia is *not* a member of ASEAN, it is a dialogue partner, and the region has great importance to us (e.g. the ASEAN–Australia–New Zealand FTA was signed in 2009). For instance, the region now offers a large and growing market for Australian firms because of its population of around 662 million (about 8 per cent of the world's population), rising GDP (now about US$4 trillion per year) and the closeness or accessibility of the member countries. We export about $53 billion (2020), around 11 per cent of our total exports, to these countries. Collectively, the ASEAN member countries are our third biggest customer after China and Japan (which together take over 46 per cent of our total exports). In fact, our exports to ASEAN members have risen more than 40-fold since 1970, and Australian investment in the ASEAN group has also risen quickly.

FIGURE 6.20 Map showing APEC nations

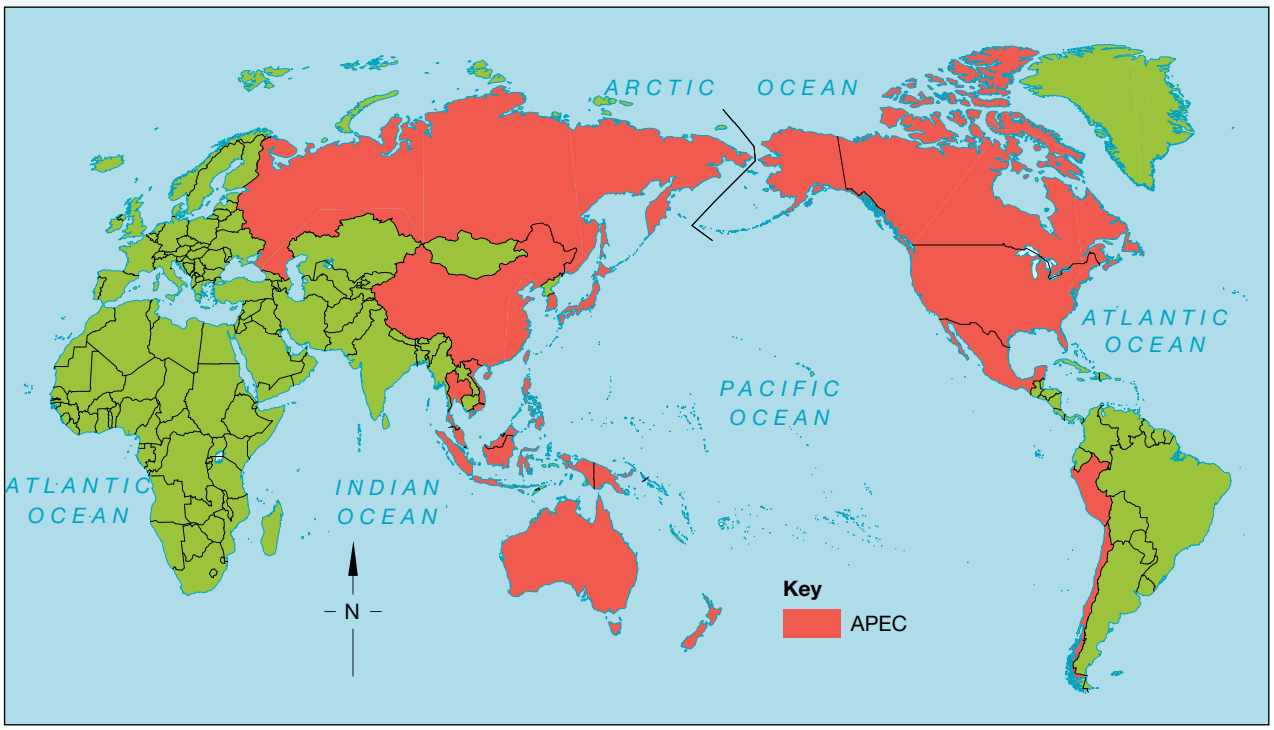
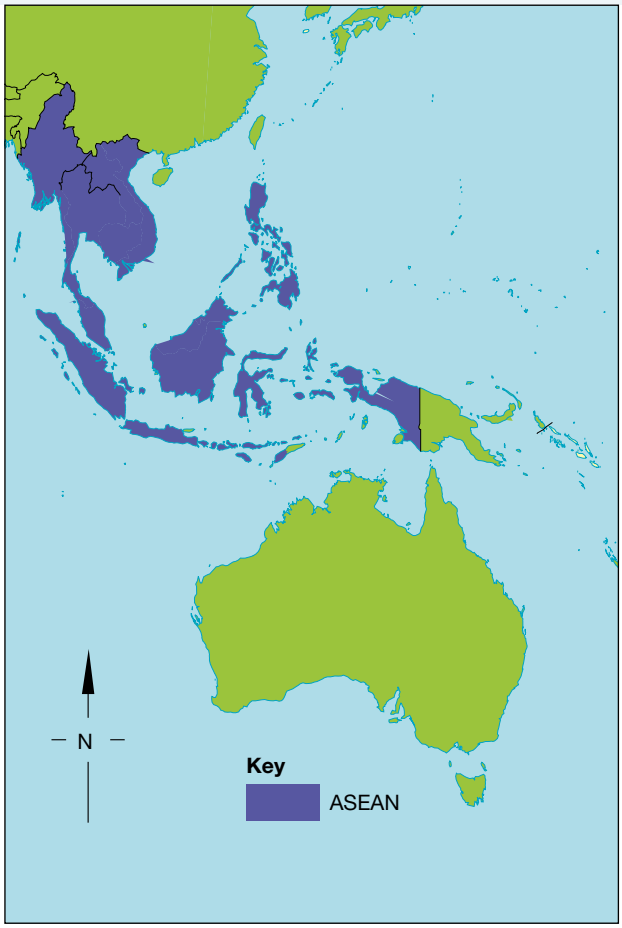


FIGURE 6.21 Map showing ASEAN nations



6.7.2 Overseas government policy on international trade

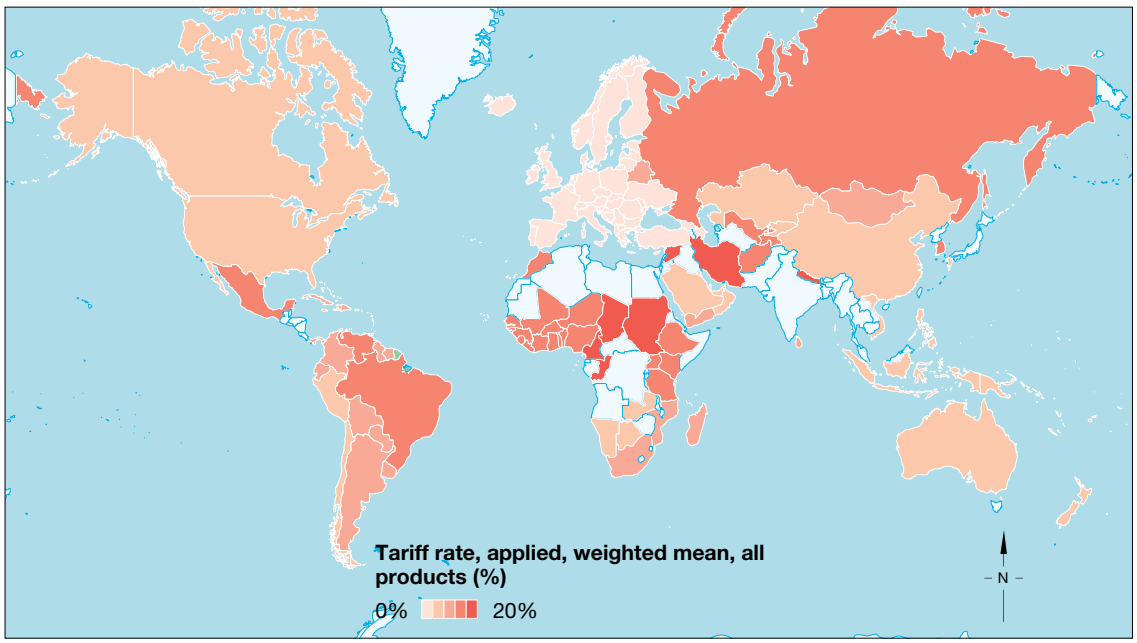
Around the world, most governments have adopted the policy of *trade liberalisation* and have been reducing protectionism. For instance, in 1990 the average global tariff rate was 34 per cent, but by 2021 this had fallen to around 3 per cent. Clearly, most governments believe that freer trade is beneficial.

Figure 6.22 shows the *extent* to which governments around the world have adopted the principles of *trade liberalisation* and *free trade*.

- Map 1 shows that governments in high-income countries, including Australia, NZ, USA, Canada, European nations, must believe in the benefits of freer trade (e.g. greater efficiency in the use of resources, higher incomes, lower consumer prices) and therefore have very low tariff rates. However, there are still many **low-income countries** in parts of South America, Africa, Russia, and the Middle East, where tariff rates are still relatively high.
- Map 2 groups countries or regions according to the number of FTAs that are operational. Again, this indicates the extent to which their governments see free trade as valuable. Apart from some African countries, the Middle East and parts of South America, most countries have more than 11 FTAs, especially amongst the EU nations.

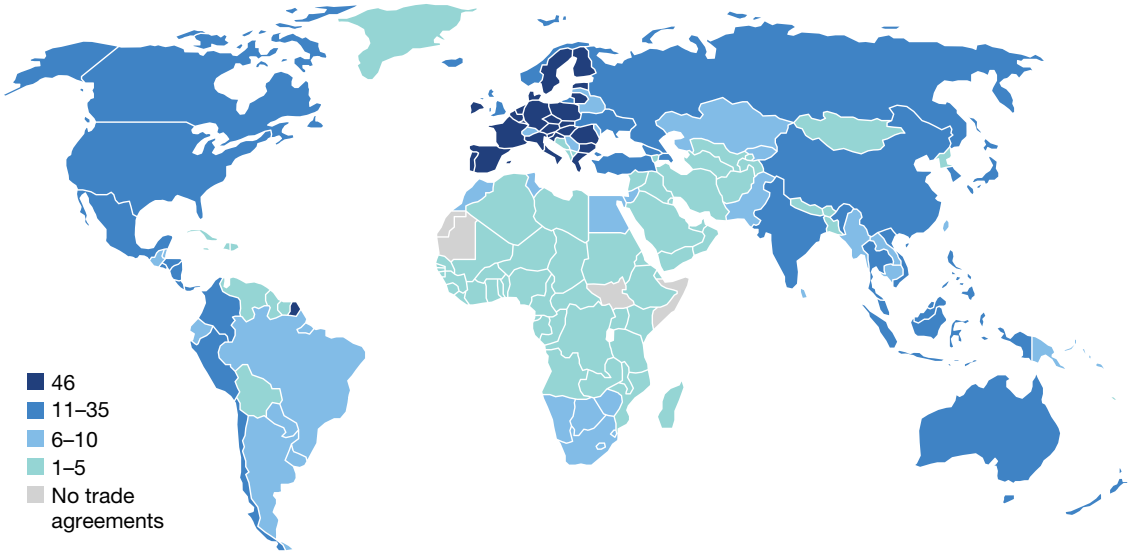
FIGURE 6.22 A snapshot of the extent to which governments globally have adopted the principles of trade liberalisation and free trade.

Map 1 — Average rate of tariff protection by country



Source: Tariff rate, applied, weighted mean, all products (%), The World Bank Group. Licensed under CC BY 4.0.

Map 2 — Number of active free trade agreements by country



Source: Katharina Buchholz, (2021). Which Countries Have the Most Trade Agreements? Statista.

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Weblinks
AUSTRADE: Benefits of trade and FTAs
Potential FTA with India
Video case study: Aaco Beef
Video case study: Ausab
Video case study: ACPET
Video case study: Burch Family Wines
Video case study: Burra Foods
Export Council of Australia (ECA)

6.7.3 Actions taken by governments and businesses following the adoption of trade liberalisation policies

Once a government has made the decision to liberalise its international trade and reduce industry protection, there are knock-on effects — other policies must also be changed so that firms become more *internationally competitive* and don't collapse. International competitiveness means that local businesses are able to profitably sell quality goods and services at relatively low prices here and overseas, without government assistance (e.g. subsidies).

Policies by government and business to improve our international competitiveness

With stronger competition from imports, the Australian government has used various *efficiency-promoting aggregate supply-side policies* to help local businesses and workers meet the challenges of import competition. Businesses have had to make *structural changes* in the way they operate. We will take a quick look at a couple of these measures that are designed to improve Australia's *international competitiveness.*

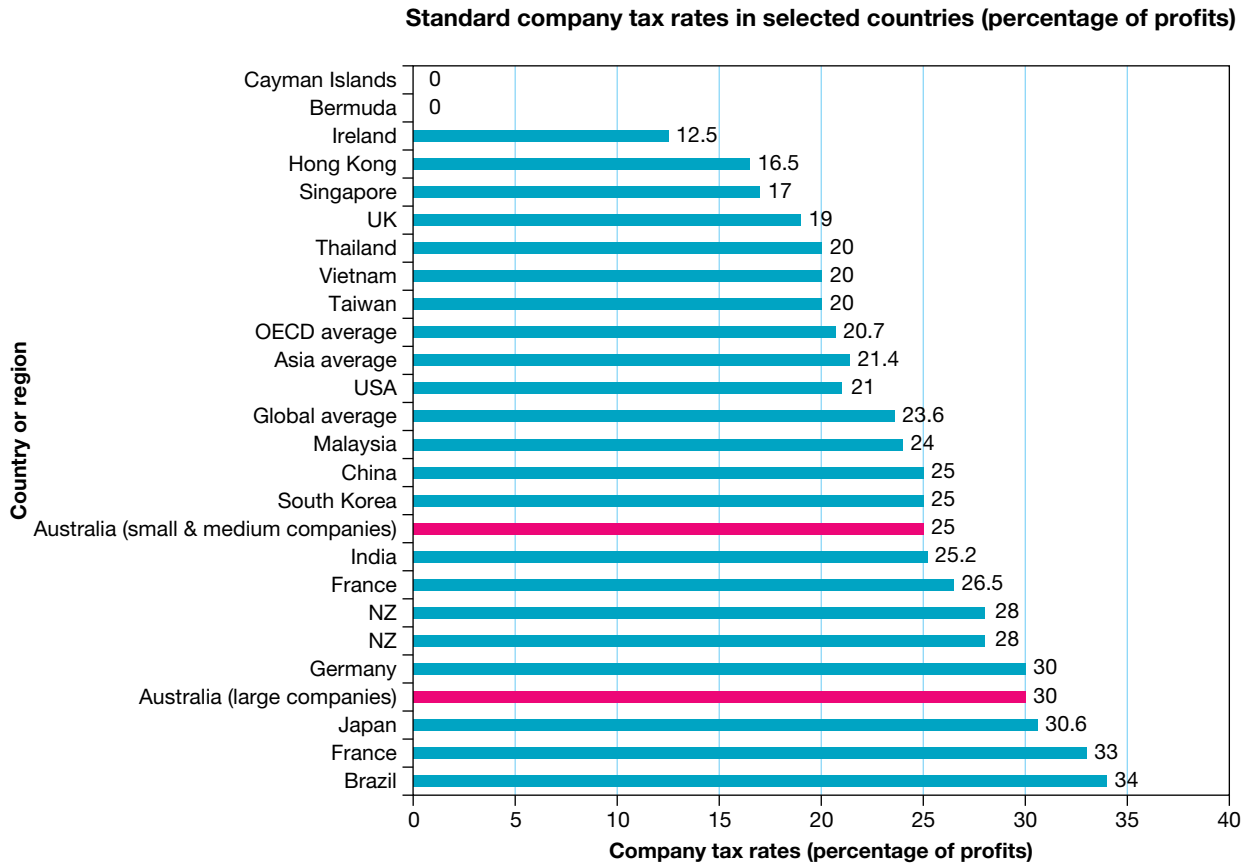
Reductions in the company tax rate

The rate of company tax affects the level of after-tax profits of firms. It also affects the price that businesses must charge consumers to make a profit. Unfortunately, compared with rates of corporate tax in many overseas countries, Australian firms are at a disadvantage. Rates are higher than in most comparable nations so profits are lower and selling prices must be higher. By making local firms less internationally competitive, high company

tax rates have forced some firms to close or relocate overseas, discouraged new industry start-ups, limited our exports and GDP, caused workers to lose jobs, and meant lower incomes and living standards.

With this problem in mind, the Australian government cut rates of company tax from 49 per cent in 1988 to 30 per cent in 2002, and from July 2021, small-medium sized firms (SMEs) had rates cut to 25 per cent if they had an annual turnover of less than $50 million. However, the size and speed of these reductions have been less than those in many other countries. For instance, as shown in Figure 6.23, the average rate of company tax in the OECD group of nations was just 20.7 per cent against the standard rate in Australia of 30 per cent, or 25 per cent for small and medium companies.

FIGURE 6.23 Comparisons of Australia's rate of company tax against that in other countries and regions



Sources: Data derived from KPMG, https://home.kpmg/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html; Trading Economics, see https://tradingeconomics.com/country-list/corporate-tax-rate.

Investment in national infrastructure projects

Infrastructure provides the services used by businesses like roads, railways, water, power, airports, and seaports. With increased competition from cheap imports, it becomes more important than ever to have an efficient and competitive system of national infrastructure. This helps to lower production costs for businesses and grows our country's productive capacity. It enables Australian-made products and services to be sold competitively at home and abroad. Unfortunately, Australia's infrastructure has been allowed to deteriorate and age. It has not kept pace with population growth, causing bottlenecks or barriers to supply and resulting in a local cost disadvantage.

Hence, in recent times, we have seen the Australian government making more money available to invest in national road (e.g. work on the M1 motorway), rail (e.g. the inland rail projects including the airport rail link to Melbourne airport, the fast rail link from Melbourne to Brisbane, and the Port Botany rail line), electricity (e.g. pumped hydro power in the Snowy Mountains Scheme), airports (e.g. a new airport for Western Sydney), telecommunications (e.g. the NBN), and water supply infrastructure projects. For instance, the 2022–23 budget committed $120 billion in funding towards the ten-year rolling infrastructure plan for the period to 2031–32. The Victorian government has also invested heavily in infrastructure like the West Gate tunnel project, roads and rail, to help alleviate some of the congestion bottlenecks, reduce production costs for local firms, and allow them to become more internationally competitive.

Investment in R&D, education and training

Following trade liberalisation, exposure to international competition necessitates improving the education and skills of our labour force. More than ever, Australian workers need to be creative, innovative and efficient. In turn, this can help lower production costs, create new industries, build our international competitiveness, lift exports, and raise incomes and living standards. Understanding this, the Australian government has increased the overall level of its spending on education to $45 billion in the 2022–23 budget, along with over $1.8 billion in funding of the JobTrainer program for the period 2020–21 to 2022–23. In addition, there has been ongoing funding of $12 billion for research and development (R&D) including money for space and scientific research, energy, medical research and the work of the CSIRO and universities to develop a COVID-19 vaccine.

Deregulation and reform of the labour market

Wage and labour costs in many businesses make up 60–70 per cent of the total cost of production. So, if these costs are too high, they make Australian firms and workers less internationally competitive and unable to survive against cheaper imports from low-wage countries. Hence, to be internationally competitive, our wage costs need to be kept down and **worker efficiency** (GDP per hour worked) must be raised. On this count, during the 1960s, 70s and 80s, some economists became highly critical of Australia's **centralised minimum wage fixing system** where the pay and conditions of many workers were determined by the **Australian Fair Work Commission** (or its many predecessors). Here, there was little connection between worker productivity and wage rates, union pressure was considerable, and Australian labour costs rose to become some of the highest in the world.

One solution used by the government to slow wage costs was partial **deregulation of the labour market** by encouraging **enterprise bargaining** as an alternative to centralised wage fixing. Under this newer system, which now covers over 85 per cent of all workers, wages and conditions are largely set by the forces of demand and supply in the labour market on a firm-by-firm basis. Here, wage rises are usually closely linked to increases in worker efficiency (i.e. output or GDP per hour worked) and the relative value or *scarcity* of each type of occupation. Despite this partial deregulation of the labour market and wages, some protection is still offered to workers on enterprise agreements since these still need to meet minimum standards. This approach to wage fixing has certainly helped to slow rises in Australia's wage costs. It has helped to make local firms more internationally competitive, boost our export sales and incomes, and improve our material living standards.

Some responses by Australian businesses to trade liberalisation

Following reductions in industry protection associated with trade liberalisation, Australian businesses have been forced to make *structural changes* to the way they go about producing goods and services. To be internationally competitive, firms need to be able to sell better products at lower prices. They must innovate with new ideas, and continually restructure the way they produce and sell their goods and services. This process of **structural change** is painful and often involves:

- finding ways of *cutting wage and other production costs* by using strategies that lift worker efficiency, innovation and motivation
- *closing down* or selling off inefficient operations and non-performing branches of businesses
- encouraging product innovation through *research and development* (R&D)
- expanding the use of the latest *technology* in production to lift efficiency, cut costs and improve product quality
- workers and managers using the *best* and most innovative *production practices* available from around the world
- marketing abroad to help grow the export volumes and gain cost savings through increased *economies of large-scale production.*

6.7.4 Are people and countries recently reassessing trade liberalisation?

The dramatic growth of world trade has depended on peace, international specialisation, trade liberalisation, acceptance of global interdependence, and adherence to orderly trading rules that were set up at the end of World War 2. *Four* key events have caused some countries to modify their approach to the *liberalisation of international trade*.

The UK's Brexit

The European Union or EU is an international organisation made up of 27 countries. It seeks to promote the wellbeing of its people by having some common economic, social and security policies. One important feature of this organisation is that it creates a *single market* within which all member countries have zero industry protection. There is *free trade* so there are no barriers to the movement of goods, services and investments across national borders. However, by 2016, there was growing resentment of this arrangement amongst some in Britain. Free trade and *import competition* were blamed for the destruction of industries, the loss of jobs and unemployment, depressed wages, growing inequality, a loss of Britishness, and reduced living standards. As a result, a referendum was held in 2016 and the question about whether to remain in the EU was put to a popular vote. The result was a small majority in favour of *leaving* the EU (52 votes to 48). Britain finally exited in February 2020 (called Brexit), after membership for 47 years. It meant that the country had greater independence in its economic and social policies, but it lost some of the advantages of belonging to this huge trading bloc with its single market.

Trade tensions with China

Today, China is an economic powerhouse. It produces around 10 per cent of global GDP and its exports are worth around $3 trillion a year. It joined the **World Trade Organisation (WTO)** in 2001 and since then has reduced many of its trade barriers and currently has 17 FTAs, including one with Australia. Even so, it still has average tariffs of around 7 per cent, and import quotas exist on over 150 items. In addition, the Chinese government has recently decided to adopt a far more assertive or, as some would say, a more aggressive and hard-line approach in its trade dealings with the rest of the world.

The US–China trade war 2018–20

One trade tension that came to head in 2018 was the US–China **trade war** declared by then President, Donald Trump. This dispute involved several issues. Deteriorating economic conditions with high unemployment, depressed wages, and growing inequality in the US were blamed on fierce *foreign competition* from cheap Chinese imports, a problem worsened by the Chinese currency being undervalued. This allowed China to run huge *trade surpluses* at the US's expense, making it a poor trading partner. There was also the serious claim that China disregarded long-held international *trading rules* and improperly accessed intellectual property belonging to the US and other western nations worth an estimated $225–600 billion a year. In response to these issues and supposedly, '*to make America great again*', Donald Trump fired the first shot in the *trade war*. Whilst contrary to the principles of trade liberalisation and international specialisation in production, he imposed a 10 per cent tariff on $200 billion of Chinese goods imported to America. This prompted similar retaliation by China and so the President further raised tariffs to 25 per cent in May 2019 on $200 billion of goods.

Chinese restrictions on exports from Australia and some other countries

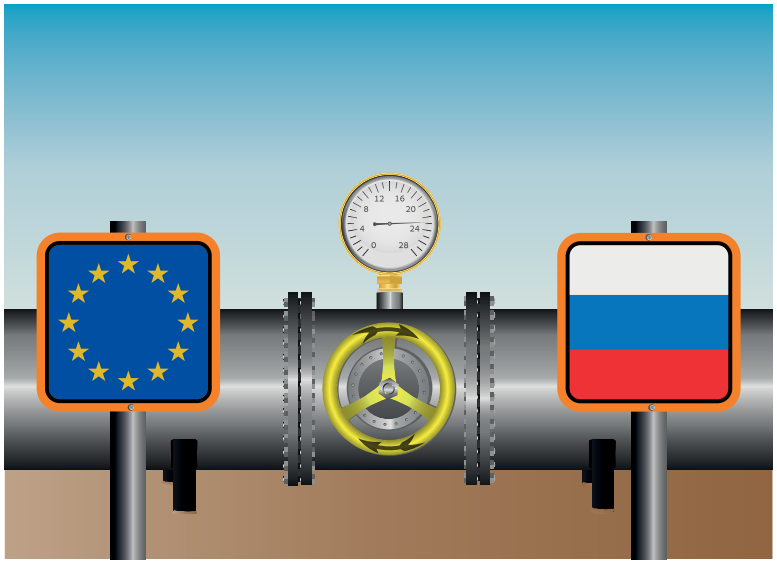
In response to what China saw as valid trade concerns with Australia, in 2020 and 2021, Beijing imposed restrictions on some Australian exports of goods including barley, cotton, beef, lamb, lobster, wine, timber and coal — worth around $25 billion or about 10 per cent of our exports to China. Some commentators believed that, in part, these trade barriers erected by China were in response to Australia calling for an international inquiry into the origins of the global COVID-19 pandemic that appeared to originate in China. In addition, there have also been Chinese government attempts to discourage its citizens from visiting Australia as tourists, or students for education. These strong-arm trade actions by the Chinese have hurt some local businesses and are contrary to trade liberalisation and our FTA. However, many Australian exporters have

been forced to broaden their markets, rather than depend overly on a single country like China. Whilst Australia has been hit hardest by Chinese coercive trade tactics, we are not alone. Other countries have also been punished including Japan, Canada, Norway, South Korea, the Philippines, and Taiwan.

The global COVID-19 pandemic

During the global COVID-19 pandemic and lockdowns, supply chains for goods and services were severely disrupted because of the health crisis, staff shortages and a lack of resources. Goods and services previously imported were not readily available, and some nations decided to impose restrictions on exports because they wanted to keep their supplies for domestic use. As a result, questions were raised about whether there had been *over-specialisation* in production and a lack of national *self-sufficiency*, driven by the ideas of freer trade. Many countries felt very isolated, vulnerable, and unable to provide the necessities of life including face masks, hospital ventilators for patients with respiratory issues, fuel, vaccines and other medications, and spare parts for cars and machinery. This experience exposed a weakness of free trade. In response, some governments have made commitments to *diversify* and reinvigorate their manufacturing sectors to make their economies more resilient to potential threats posed by pandemics and war.

The Russian invasion of Ukraine



In early 2022, the Russian government decided to invade the independent country of Ukraine, apparently to expand its territory. The destructive war sent shock waves through the rest of Europe, especially the members of NATO (i.e. North Atlantic Treaty Organisation). Russia was seen as a threat to world peace and the international order. The war also made western Europe realise how *over-dependent* it was on Russia for essential energy needed to keep its economies operating. It caused many to question whether Russia was a reliable trading partner, if in times of tension it might use its energy exports as a weapon against the West. As a result, global trading patterns are undergoing change and there is a push to *diversify* energy supply and reduce demand.

on Resources

Weblink Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP, 2018)

6.7 Activities

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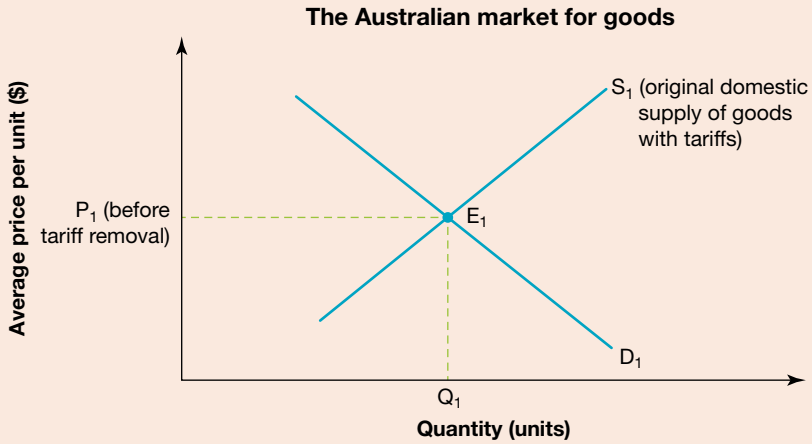
6.7 Quick quiz on | **6.7 Exercise**

6.7 Exercise

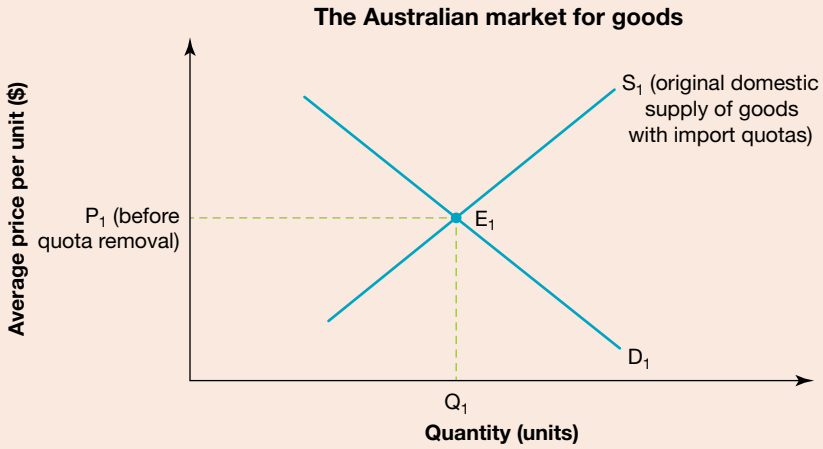
1. **Outline** the key aspects of the Australian government's policy of *trade liberalisation*. **(2 marks)**
2. **Describe** the extent of trade liberalisation in the global economy. **(2 marks)**
3. The Australian government has *liberalised* our international trade and reduced protection levels for local industries by cutting tariffs, reducing subsidies, abolishing quotas on imports and signing up to many free trade agreements.
   This question asks you to try and **illustrate** the effects of *trade liberalisation* policies on the local market for goods. You will need to think back to microeconomics and the D–S diagrams used in topic 2. In each case, the *starting* diagram shows the situation *before* the government's *reduction* in protection levels. You will then need to make *additions* to each diagram to show the *effects* of the government's reduction in protection. As always, ensure that you label all lines, changes and points.
   a. Assume that originally there were high tariffs on imported goods. **Use** the diagram here to **illustrate** the main effects of the government's decision to remove all *tariffs* on imported goods. **(2 marks)**



   i. **Explain** the changes or additions you have made to this diagram. For instance:
   - **Outline** what has happened to the average *equilibrium price* level of the goods that were previously protected by tariffs. **(1 mark)**
   - **Outline** what has happened to the *equilibrium quantity* of goods traded in the market. **(1 mark)**

   ii. **Discuss** the main *advantages* and *disadvantages* of the Australian government's reduction in tariff rates. **(6 marks)**

b. Assume that originally there were very tight import quotas limiting all imported goods into the country. Use the diagram to **illustrate** the effects of the government's decision to abolish all *import quotas* on goods entering Australia. **(2 marks)**



i. **Explain** the changes or additions you have just made to this diagram. For instance.
- **Outline** what has happened to the average *equilibrium price* level of the goods that were previously protected by import quotas. **(1 mark)**
- **Outline** what has happened to the *equilibrium quantity* of goods traded in the market. **(1 mark)**

ii. **Discuss** the main *advantages* and *disadvantages* of the Australian government's abolition of import quotas. **(4 marks)**

4. By mid-2022, Australia had no fewer than 17 operational *bilateral free trade agreements* (FTAs), with more in the pipeline.

a. **Describe** free trade agreements. **(1 mark)**

b. **List** *four* Australian examples of important bilateral FTAs. **(2 marks)**

c. **Explain** how FTAs can be beneficial for our material living standards. **(4 marks)**

d. Use the **Department of Foreign Affairs and Trade (DFAT)** weblink in the Resources tab and information from other websites to **select** and **report** on *one* of Australia's free trade agreements. In the report:

i. **List** the countries involved in this FTA. **(1 mark)**

ii. **Outline** the main terms of the agreement. **(2 marks)**

iii. **Identify** the actions that must be taken by member countries that have signed this FTA. **(2 marks)**

iv. **Discuss** the key advantages and disadvantages for Australia's membership of this FTA. **(4 marks)**

5. a. **Explain** what is meant by the term *international competitiveness*. **(1 mark)**

b. **Identify** *three* important Australian government policies that were essential, *following* its decision some years ago to liberalise trade and reduce the level of industry protection. **Explain** why these additional policies were seen as essential. **(3 marks)**

c. Australian businesses had to *restructure* their operations following reductions in industry protection. **Explain** what is meant by *structural change*, and what types of actions did this involve for local businesses. **(2 marks)**

6. Following trade liberalisation, the Australian government was forced to implement *other policy changes*. For each of the Australian government policies listed below, **outline** the policy changes and **explain** why they were deemed necessary.

a. Wage fixing arrangements **(2 marks)**

b. The rate of company tax **(2 marks)**

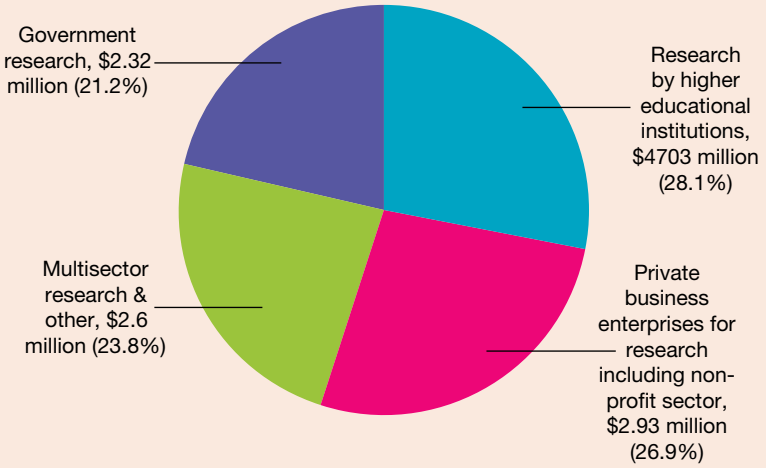
c. National infrastructure. **(2 marks)**

7. In the 2021–22 budget, the Australian government allocated $11 billion on R&D spread across various sectors. This is shown in graph 1 below and international comparisons of R&D are shown in graph 2.

a. **Explain** how government outlays on R&D help to make local businesses more internationally competitive following the reduction in industry protection and trade liberalisation. **(2 marks)**

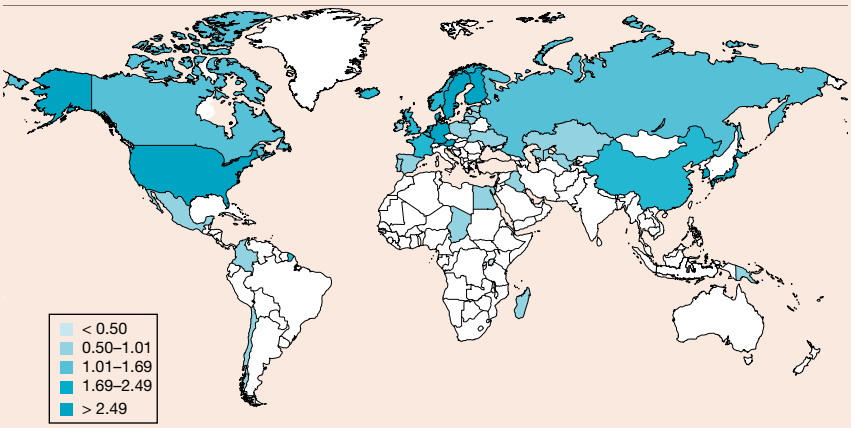
b. The Australian government outlays less than 0.7 per cent of GDP on R&D. Referring to graph 2 from in the figure below, **comment** on whether the Australian government appears to be serious in its support of R&D relative to some other countries. Giving reasons, **explain** how you would expect this situation to impact on Australia's international competitiveness. **(2 marks)**

Graph 1 — The distribution of Australian government budget outlays on R&D by research sector



Source: Data from Science, Research and Innovation (SRI) Budget Tables 2020–21. Australian Government, Department of Industry, Science & Industry, Science, Research & Innovation.

Graph 2 — International comparisons of outlays on R&D expressed as a percentage of each country's GDP



Source: Research and development expenditure (% of GDP), The World Bank Group. Licensed under CC BY 4.0.

Solutions and sample responses are available online.

6.8 Review

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6.8.1 Summary

Definition and nature of international trade

- International trade entails the buying of imports and the selling of exports of goods and services.
- Two-way international trade between countries exists mostly because it is seen as beneficial and because nations have different types of resources and so they cannot produce all the goods and services they need. Countries are therefore encouraged to specialise in areas of greatest efficiency (i.e. in areas of comparative cost advantage).
- Australia specialises in the production of exports like minerals (iron ore, coal, gold), rural commodities (wool, wheat, meat) and services (education, tourism and finance).
- Australia imports goods and services like machinery, equipment, electrical appliances, clothing, cars and oil.
- Australia's main export markets include China, USA, Japan and South Korea.

Measurement of international trade

- Australia records the value of its international trade transactions with the rest of the world on a financial account called the *balance on goods and services* (BOGS). Sometimes this is also called the *balance of trade*. The BOGS represents the difference between the total value of exports of goods and services (i.e. credits) *minus* the total value of imports of goods and services (i.e. debits), measured over either 3 months or a one-year period.
- The BOGS may be a *surplus* or positive, *deficit* or negative or an exact *balance*.
- Recently Australia has recorded several surpluses on the BOGS where the total value of credits for goods and services exceeds the total value of debits for goods and services .

The benefits of international trade for Australia and the global economy

- There are many *benefits* to be gained from international trade. These include the following:
  - Exports allow local firms to gain more *economies of large-scale production* and greater efficiency.
  - Australian exports help to *grow AD*, GDP and incomes.
  - Exports expand Australia's *employment* opportunities and incomes.
  - Trade allows increased *access to imported resources* and helps grow Australia's potential GDP and income.
  - Imports boost competition and *efficiency* and keep our inflation rate lower. This increases our purchasing power.

The economic factors influencing international trade

- The trade balance resulting from exports and imports reflects many influences:
  - The *exchange rate* affects the value of exports and imports by changing the cost or price of exports and imports. The exchange rate level reflects the demand for the A$ (when those overseas pay us for our exports) relative to the supply of the A$ (when we pay those overseas for imports) in the foreign exchange market.
  - The levels of *economic activity* and *inflation*, both locally and overseas, affect the value of exports sold and imports purchased.

- The level of international *commodity prices* received for our exports affects the value of exports sold.
- *Severe weather events* and *pandemics* here and overseas, affect the value of exports and perhaps also imports.

Different perspectives of international trade

- Attitudes towards international trade, and whether we see it as a good or bad thing, partly reflect our role as economic agents (consumers, businesses, governments, workers). This is because trade affects people in different ways.
- Over the years, *opinion has been split* between those who support the idea of *free trade* (and trade liberalisation) as opposed to *trade protectionism*.
- A *free trade* approach by government means there is no attempt to limit foreign competition in local markets using tariffs, subsidies, and import quotas. Local businesses have to survive on their own *without government support*, and be internationally competitive. Typically, too, the government signs *FTAs* to grow two-way trade. The main advantages of free trade include:
  - Countries *specialise* in the production of goods and services where they have a *comparative cost advantage* (or the least disadvantage).
  - Local firms can gain greater *economies of large-scale production* by growing export markets overseas, reducing average unit costs.
  - Trade permits increased access to *cheaper resources,* or those we lack, allow for the expansion of the economy's productive capacity, potential GDP and income.
  - Foreign competition and freer trade forces local firms to cut costs and increase efficiency in their use of resources, slowing inflation and boosting the purchasing power of incomes.
- *Protectionism* means that governments set up *trade barriers* that restrict imports using tariffs or taxes on foreign goods, cash subsidies for local firms to help cut their costs, and import quotas to limit the type and/or volume of overseas goods allowed into the country. There are *three* main advantages of protectionism:
  - It helps grow *infant industries*, expanding the economy and creating employment opportunities.
  - It may reduce economic instability caused by booms and recessions externally.
  - It enhances national security and self-sufficiency, allowing a nation to cope better during international tensions, disruptions to supply chains and global pandemics.
  - Over the longer term, it creates jobs in expanding infant industries that can reduce unemployment.

Economic responses and government policies involving international trade

- The last few decades have seen Australia (and many other nations) move towards *trade liberalisation* or *freer trade*. This involves lower government tariff protection, reduced subsidies paid to local producers and the signing of various types of FTAs. These policies ultimately help improve efficiency in resource allocation, strengthen our international competitiveness, promote economic and employment growth, and lower inflation.
- In gradually adopting *trade liberalisation* over the last 50 years, the Australian government has:
  - lowered tariffs for all industries to less than 1 per cent
  - abolished all import quotas by 2000–01
  - reduced subsidies by over 50 per cent (prior to a temporary rise due to COVID-19)
  - signed 17 bilateral FTAs to mid-2022 (with more in the pipeline)
  - been part of multilateral FTA and trading groups like APEC.
- Because of a commitment to trade liberalisation, the Australian government has been keen to improve the *international competitiveness* of local firms so they can survive and expand. This means that businesses must be able to sell quality goods and services at a low competitive price, without depending on government support. It means that local firms can survive competition from imports. It helps us to better pay our way in international financial transactions. Various *aggregate supply-side policies* have been used to help reduce production costs, lift our international competitiveness, and improve our long-term performance and living standards. For example:
  - *Partial labour market deregulation.* Labour market deregulation (e.g. encouraging the spread of efficiency-based, firm-by-firm enterprise or workplace agreements to replace the government's control of

minimum wages) helps to lower the cost of wages (labour costs) for local firms. This helps to make our exports more competitive. It also strengthens our trade balance and boosts incomes and living standards.

- *Reduced company tax rates.* Company tax rates determine the level of business after-tax profits and the prices charged. Recently, corporate tax rates have been reduced to help make local firms more cost competitive and to encourage investment in new, more efficient plant and equipment. It also helps to strengthen our trade balance, creates jobs, boosts GDP and incomes and improves our living standards.
- *Investment in national infrastructure projects.* Building up national infrastructure (e.g. highways, NBN, water, power) can help reduce business production costs, lift efficiency and competitiveness, grow export capacity, and lift GDP and incomes.
- *Education and training policies.* Government outlays and policies designed to increase the education and skills of our labour force (e.g. the *JobTrainer scheme* to provide cheap or free courses to re-skill the unemployed, and financial incentives to encourage more apprentices) help make workers more efficient and creative, improve local competitiveness, increase exports and GDP, and boost incomes and living standards.

6.8.2 Key terms

Absolute cost advantage occurs when a nation is the cheapest or most efficient producer of a particular good or service in the world.
Asia–Pacific Economic Cooperation (APEC) is a regional forum aimed at promoting freer trade among 21 member countries in the Asia–Pacific area.
Association of South-East Asian Nations (ASEAN) brings together ten countries from the South-East Asia region. These countries accept the principle that freer international trade will help their economic development, so their governments have been gradually cutting tariffs and protection levels.
Australian Fair Work Commission determines minimum legal wages and conditions for Australian workers to help avoid exploitation and ensure reasonable living standards.
The **balance of trade** or **trade balance** is a financial account that records a country's total value of exports of goods and services (i.e. credits) *minus* the total value of imports of goods and services (i.e. debits), measured over a period of time. The trade balance may be *a surplus, deficit* or an exact *balance*.
The **balance on goods and services (BOGS)** represents the total value of goods and services exported *minus* the total value of goods and services imported, measured over a period of time. See also the balance of trade.
Bilateral free trade agreements (FTAs) are negotiated between two or more countries and involve the removal of industry protection such as tariffs.
Centralised minimum wage fixing system involves the Australian Fair Work Commission determining the minimum pay and conditions.
Comparative cost advantage occurs when a nation specialises in the production of those goods and services where it is relatively most efficient or where its cost disadvantages are least, thereby raising incomes and material living standards, and minimising opportunity costs.
The **composition of trade** deals with the type of goods and services exported and imported. Australia's trade is composed of goods such as minerals and primary products.
Deregulation of the labour market means that there is less government interference in how wages are determined in the labour market, and more reliance on the conditions of demand and supply of labour and the process of enterprise bargaining. Often, higher wages are linked to increases in efficiency.
Development is nowadays seen as the economic, social, political and institutional changes needed in low-income countries to improve material and non-material elements affecting the quality of daily life.
Direction of trade refers to the countries with whom Australia exchanges goods, services and money capital.
Economies of large-scale production can occur when a firm produces on a large scale that enables it to spread its fixed production costs (i.e. costs that do not rise much as output increases including research, advertising, product development, some aspects of management and, up to a point, equipment) more thinly over a greater volume of sales. Growing export markets through freer trade allows local firms to gain more economies of large scale, reduce average unit costs and expand output, employment and incomes.
Enterprise bargaining is a more flexible alternative to centralised wage fixing and involves negotiations between workers and their boss on a firm-by-firm basis, with pay rises usually reflecting worker efficiency or productivity.
The **exchange rate** represents the price of one nation's currency when it is swapped for another in the foreign exchange market. It is determined by the number of buyers relative to the number of sellers of a currency, and

may rise (called an appreciation) or fall (called a depreciation) due to changes in the demand for the currency by buyers relative to its supply by sellers.

Foreign exchange market is where buyers (D) and sellers (S) of foreign currencies negotiate the rate at which one nation's currency is swapped for another's. The price or exchange rate for each nation's currency is continually responding to market forces, reflecting the currency's relative scarcity.

Free trade is the opposite government policy to protection. It exists when there are no tariffs, subsidies, quotas or other restrictions on the movement of goods, services and capital between countries. It encourages countries to specialise in areas of comparative cost advantage and to allocate resources more efficiently.

Import quotas represent quantity limits imposed by the government on the importation of particular types of goods (such as cars, cheese and textiles) and services from abroad.

Infrastructure provides the services (like roads, railways, water, power and ports) used by producers of goods and services and the general community. It facilitates production and grows a nation's productive capacity.

International economics looks at why countries trade, the patterns of trade, how we measure international trade, the factors that can influence trade levels, and how government policies can affect global trade.

International trade involves a nation exporting and importing goods and services. Transactions are recorded on an account called the balance of trade.

Low-income countries are those where people subsist on a mere $2.86 or less per day (around $1045 per year per person), and where typically there is great physical deprivation, poverty, hunger, inequality, insecurity, poor health, illiteracy, persecution, and the absence of hope and opportunity.

Protectionism is the opposite to the policy of free trade. It involves the government using barriers to trade such as tariffs, subsidies and import quotas to limit competition and the inflow of goods from other countries. Supporters often justify the use of protection by arguing that it creates jobs, supports infant industries, and strengthens supply chains and national defence.

Specialisation in production occurs when a nation concentrates on making those goods and/or services where it is relatively most efficient, given the resources available.

Structural change by businesses often involves finding ways of cutting production costs, lifting worker efficiency, and sometimes closing down or relocating business operations.

Subsidies are government cash payments or tax concessions made to local producers to make them more internationally competitive by covering some of their production costs.

Tariffs are an important trade protectionist policy. They represent an indirect tax added onto the price of selected imports to increase the price of imports relative to the locally made good. As a barrier, it makes foreign goods relatively less attractive to local consumers, but they can reduce efficiency in resource allocation.

Trade liberalisation occurs when governments gradually reduce their protection of local industry by cutting tariffs on imports, abolishing quotas or quantity controls on particular types of imports, and lowering the payment of subsidies to local firms.

Trade wars occur when one country increases its level of protectionism by imposing higher tariffs and other restrictions to limit the value of imports coming in from another country, leading to further rounds of retaliatory rises in tariffs. A recent example of this is the 2018–20 trade war between the US and China, where the US imposed higher tariffs on over $450 billion of Chinese goods imported into the USA. China did the same by raising its tariffs on US goods.

Worker efficiency or productivity is calculated as GDP or output per hour worked. This has an important impact on a country's international competitiveness.

The **World Trade Organization (WTO)** is an international organisation that is committed to free trade and the orderly conduct of international transactions between countries. It can also try to settle trade disputes between member nations.

on Resources

Digital document Topic summary (doc-37943)
Key terms glossary (doc-37950)
Crossword (doc-38877)
Wordsearch (doc-38878)
Match-up definitions (doc-39033)

6.8.3 Practice school-assessed coursework

OUTCOME 2

Explain the factors that affect two economic issues at a local, national and international level and evaluate actions to address the issues.

Task: A STRUCTURED REPORT

A Structured report about one of Australia's trading agreements

The task

As you know, Australia already has many *bilateral* and *multilateral trade agreements* with other countries. For instance, there are bilateral trade agreements with New Zealand, Thailand, Singapore, Malaysia, Japan, ASEAN, South Korea, Chile, USA and China, along with progress on an agreement with India and the European Union. In addition, there are multilateral trade agreements with Asia–Pacific Economic Cooperation (APEC), Organisation for Economic Co-operation and Development (OECD) and the World Trade Organization (WTO).

Your task is to investigate *one* of these agreements and then present a report to the class. You could perhaps research some of the following aspects:

1. Which countries signed the agreement and what are the aims?
2. When was the agreement signed?
3. What are the aims or purposes of the agreement?
4. What are the advantages of the agreement for Australia and the other country?
5. What are the disadvantages of the agreement for Australia (e.g. which particular industries may suffer from stronger competition)?

This work could be undertaken individually or in small groups.

References

You may like to follow the weblinks in the Resources tab to find some relevant references.

Presentation

Your research could be completed in groups, syndicates or individually, and delivered as a written report, oral presentation to the class, or a PowerPoint slide show.

on Resources

Digital document Practice school-assessed coursework (doc-38079)

Weblinks Department of Foreign Affairs and Trade (DFAT)
Centre for International Economics (CIE)

6.8 Exam questions

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6.8 Section A: Multiple choice questions

Question 1

Free trade involves:

A. lower tariffs.
B. reductions in business subsidies.
C. a reduction in import quotas.
D. the complete absence of industry protection and controls on two-way international trade.

Question 2

Government *subsidies* to local producers help businesses by:

A. taxing imports.
B. limiting the volume of particular imports.
C. allowing firms to sell their goods or services at a lower price than otherwise.
D. all of the above.

Question 3

Protectionist policies might include which of the following measures?

A. Import quotas
B. Taxes on imports
C. Cash payments to inefficient local producers
D. All of the above

Question 4

Those who favour protectionism usually do *not* claim that it:

A. lowers inflation.
B. protects jobs and lowers unemployment.
C. helps infant industries to get established and expand.
D. strengthens our self-sufficiency and national security.

Question 5

Free trade encourages businesses to allocate resources *efficiently* by:

A. not protecting inefficient firms.
B. promoting stronger competition among producers and sellers of goods and services.
C. encouraging nations to specialise in those areas of production where they have a comparative cost advantage.
D. all of the above.

Question 6

A *comparative cost advantage* most likely occurs when:

A. a nation is the cheapest producer in the world.
B. a nation is good at making a product.
C. a nation has been producing a product for many years.
D. a nation is relatively most efficient or least inefficient in producing a particular product.

Question 7

In the longer term, the policy of gradually *liberalising trade* would normally lead to:

A. higher efficiency and more jobs, despite the possibility of structural unemployment in the shorter term.
B. higher GDP per head, lower inflation or consumer prices, and better purchasing power of incomes.
C. higher exports, GDP per head and material living standards.
D. all of the above.

Question 8

Regarding Australia's international trade transactions, which statement is *incorrect*?

A. Australia is likely to have a *comparative cost advantage* when trading wool with Japan.
B. *Specialisation* in selected areas of production usually helps make Australia more internationally competitive and efficient, thus improving our material living standards.
C. Australia mainly exports to countries that produce the same types of goods and services.
D. International trade helps to increase consumer choice.

Question 9

As part of its policy of *trade liberalisation* over the last 50 years, the Australian government has generally:

A. abolished all import duties but overall increased its subsidies to businesses to around $50 billion per year.
B. greatly lowered general manufacturing tariffs to a general rate of less than 1 per cent and abolished import quotas.
C. entered into only two bilateral free trade agreements.
D. increased protection of local manufacturing businesses so as to keep jobs.

Question 10

Some countries try to justify *high* tariffs using which of the following arguments?

A. Tariffs help protect jobs and lower unemployment.
B. Tariffs help self-sufficiency in case of war and disruption to supply chains.
C. Tariffs provide help for struggling infant industries.
D. All of the above arguments are frequently used.

Question 11

Australian firms often find it difficult to be *internationally competitive* because:

A. wages are high by the standards of other countries in our region.
B. the absence of sufficient economies of large-scale production among some of our firms means that average costs per unit of output produced are too high.
C. some firms have not paid sufficient attention to restructuring their operations so as to cut costs and improve product quality, speed of delivery and customer service.
D. all of the above are common explanations.

Question 12

Concerning international trade agreements between Australia and other nations, which statement is *false*?

A. Bilateral agreements usually exist between two countries.
B. An example of a multilateral trade agreement is the Closer Economic Relations with New Zealand.
C. Most international trade agreements seek to lower tariffs and expand the volume of trade.
D. Australia is a member of the Asia–Pacific Economic Cooperation (APEC), but is not a full member of the Association of South-East Asian Nations (ASEAN).

Question 13

In the long-term, which of the following government economic policies would *not* strengthen the international competitiveness of Australian producers in local and foreign markets?

A. A gradual reduction in tariffs
B. A lower rate of company tax
C. A 10 per cent rise in the minimum award wage
D. Increased levels of worker efficiency and the extension of firm-by-firm workplace or enterprise agreements

Question 14

Concerning government policies in countries around the world towards trade liberalisation, which statement is generally *least* correct?

A. Most governments have decreased tariffs over the last 20 years or so.
B. Tariff rates tend to be lower in low-income countries rather than in high-income countries.
C. Those countries that have reduced tariffs are generally more efficient in production.
D. Cutting tariffs forces local firms to restructure their production to help reduce costs.

Question 15

Following trade liberalisation, which of the following government policies would be *least* likely to help local firms become more internationally competitive against imports?

A. Higher rates of company tax and increased subsidies to local businesses
B. More spending to upgrade national road, rail water, air and port infrastructure
C. Budget spending on R&D, and the lifting of the minimum school leaving age
D. Changes to the wage fixing system where pay rises are closely linked with better worker productivity and conditions of demand and supply of labour

Question 16

Examine the following hypothetical statistics for a country.

Item	Value (millions)
Exports of goods	$8
Imports of goods	$10
Exports of services	$5
Imports of services	$6

Based on this data, the country's balance on goods and services (BOGS) would be equal to:

A. a surplus of $3.
B. a deficit of $2.
C. a deficit of $3.
D. a surplus of $2.

Question 17

Countries trade internationally because:

A. they lack all the resources they need to be self-sufficient.
B. they can often purchase goods and services more cheaply abroad where countries are more efficient producers.
C. they do not have a comparative advantage in the production of every good they need.
D. all of the above may apply.

Question 18

Concerning Australia's international trade, which statement is *most* correct?

A. Australia is likely to have a comparative cost disadvantage in producing iron ore.
B. The USA is Australia's biggest export customer.
C. Australia imports oil because we do not have sufficient resources.
D. During 2019-20-21, Australia had a deficit on the BOGS.

Question 19

Concerning international trade, which statement is *least* correct?

A. Australia has a comparative cost advantage in wool production but not in cars.
B. Many firms that produce goods just for sale in the Australian market are unlikely to gain such large economies of scale as those exporting to a global market.
C. Today, Australia's average rate of tariff protection is less than 1 per cent.
D. International specialisation in production usually leads to lower efficiency in the use of global resources.

Question 20

Concerning the exchange rate for the A$, which statement is *least* correct?

A. A rise in the value of the A$ against the US$ would make our exports more attractive to US buyers.
B. A rise in the value of the A$ against other currencies could be caused by an increase in our sales of exports due to stronger economic activity abroad.
C. Stronger levels of consumer confidence in Australia can lead to an increase in imports and a weaker A$.
D. The value of the A$ is determined in the foreign exchange market by the number of buyers of the A$, relative to the number of sellers.

on Resources

Digital documents Multiple choice answer grid (doc-37962)
Multiple choice answers (doc-37963)

6.8 Section B: Extended response questions

Question 1 (5 marks)

a. **Explain** what is meant by a trade deficit. **(1 mark)**
b. **Identify** and **outline** two events that could cause Australia to run a trade *deficit* in the future. **(2 marks)**
c. **Explain** how China's trade barriers on some Australian exports during 2020-21-22 would be likely to affect our trade balance. **(2 marks)**

Question 2 (2 marks)

Outline how free international trade can slow inflation and improve material living standards.

Question 3 (4 marks)

Between March 2020 and March 2022, the US consumer confidence index fell from 101 points to 59 points. **Explain** how you would expect this to affect each of the following:

a. Australia's trade balance
b. The US trade balance
c. Australia's level of AD,
d. Australia's GDP, employment and income.

Question 4 (14 marks)

a. **Contrast** the policies of *trade protectionism, free trade* and *trade liberalisation*. **(4 marks)**
b. **Explain** whether the Australian government has fully adopted the policy of free trade. **(4 marks)**
c. The Australian car industry used to enjoy high levels of protectionism from imports including high tariffs, import quotas and subsidies.
  i. **Outline** the likely reasons for this protection, noting the highest level of tariff protection that was previously given to the car industry. **(1 mark)**
  ii. **Describe** the changes in the level of tariff protection previously given to Australia's car industry. **(2 marks)**
  iii. The manufacture of cars in Australia ceased in 2017. **Explain** why you think this happened, along with the main macroeconomic effects of this closure. **(3 marks)**

Question 5 (10 marks)

A few years ago, the then US President Donald Trump increased tariffs on billions of dollars of Chinese imported goods going into the US. **Explain** how this policy action by the US would be likely to affect each of the following.

a. The purchasing power of US incomes and the cost of living in the US **(2 marks)**
b. The value of US exports **(2 marks)**
c. The unemployment rate in the US in both the short- and long-terms **(2 marks)**
d. The level of GDP and average per capita incomes in the US **(2 marks)**
e. Australia's exports of mineral commodities **(2 marks)**

Question 6 (4 marks)

Explain how Australia's adoption of trade liberalisation has probably helped to:

a. slow our inflation rate **(2 marks)**
b. increase our productive capacity, employment and average incomes. **(2 marks)**

Question 7 (4 marks)

a. **Contrast** the terms, *absolute cost advantage* and *comparative cost advantage*. **(2 marks)**
b. Assume that Australia has an *absolute cost advantage* in the production of *both* wheat and wool. **Explain** whether this necessarily means that we should produce both these goods equally. **(2 marks)**

Question 8 (6 marks)

The Australian government has adopted the policy of *trade liberalisation*. Given this:

a. **Explain** why it is also necessary for the government to reduce the rate of company tax. **(2 marks)**
b. **Explain** why it is also necessary for the government and businesses to lift the productivity of workers and slow wage rises. **(2 marks)**
c. **Explain** why it is also necessary for the government to improve the quality of our national infrastructure. **(2 marks)**

Question 9 (6 marks)

Discuss the advantages and disadvantages for a government that adopts the policy of free trade.

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TOPIC

7 The distribution of income and wealth

UNIT 2 AREA OF STUDY 2

Applied economic analysis of local, national and international economic Issues

OPTION 3: The distribution of income and wealth

OUTCOME 2

On completion of this unit the student should be able to explain the factors that affect two economic issues at a local, national and international level and evaluate actions to address the issues.

LEARNING SEQUENCE

7.1 Overview 396
7.2 Definition and nature of income and wealth 398
7.3 Measures of Australia's distribution of income and wealth 402
7.4 The reasons why the distribution of income and wealth is an important issue 413
7.5 Economic factors influencing income and wealth inequality in Australia 419
7.6 Different perspectives about the distribution of income and wealth 428
7.7 The Australian government's response to address inequality in the distribution of income and wealth 433
7.8 Review 442

7.1 Overview

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7.1.1 Introduction

Have you ever wondered why some people are highly paid, feel financially secure, own luxury cars and live in uncrowded leafy streets, while others earn very low wages, worry how they will pay their next power bill, own little other than a few personal possessions, and live with noise and congestion near industrial areas? This issue relates to the problem of *inequality* in the way Australian income and wealth are shared or *distributed*. In this option, we will look at the nature, causes, measurement, effects of inequality in income and wealth, and government policies designed to help narrow the gap.

7.1.2 What you will learn

Key knowledge

Use each of the points from the VCE Economics Study Design below as a heading in your summary notes.

Key knowledge	Subtopic
The definition of the selected economic issue, including relevant measures and statistical indicators	7.2, 7.3
The reasons the issue is of importance to the economy at a local, national and international level	7.4
The economic factors influencing the extent of the selected economic issue	7.5
The different perspectives of households (consumers and workers), business, government and other relevant economic agents regarding the selected economic issue	7.6
The economic responses undertaken by relevant economic agents at a local, national and international level, to address the economic issue, including government policies	7.7

Key skills

These are the skills you need to demonstrate.

Key skills	
◯	Define key economic concepts and terms and use them appropriately
◯	Gather, synthesise and use economic information from a range of sources to analyse economic issues
◯	Identify trends, patterns, similarities and differences in economic data and other information to draw conclusions
◯	Evaluate the economic responses undertaken to address economic issues

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on Resources

Digital document Key terms glossary (doc-37951)

7.2 Definition and nature of income and wealth

KEY KNOWLEDGE

- The definition of The distribution of income and wealth

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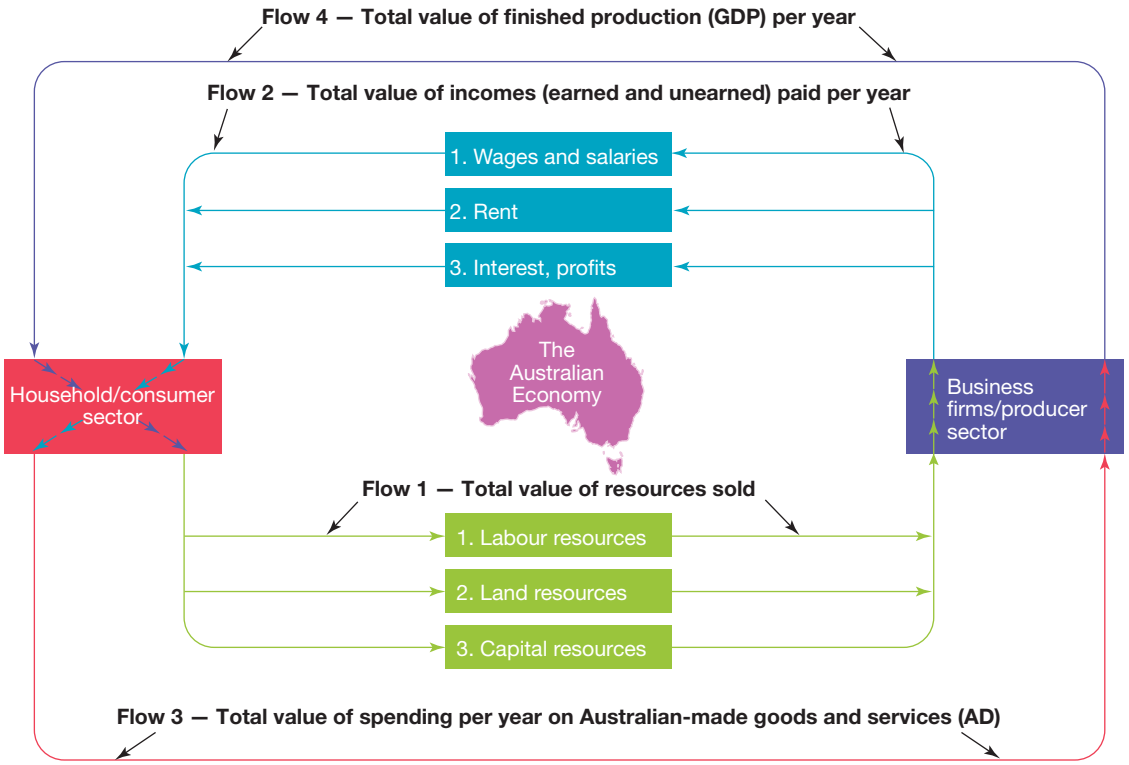
Many people get income and wealth confused. As we shall see, they are not the same thing.

7.2.1 Definition and nature of income

Income *represents the flow of money to households measured over a period of time and is a major influence on consumption levels and material living standards.* Each year in Australia, a total national income of well over $20 000 billion is generated from the production and sale of goods and services.

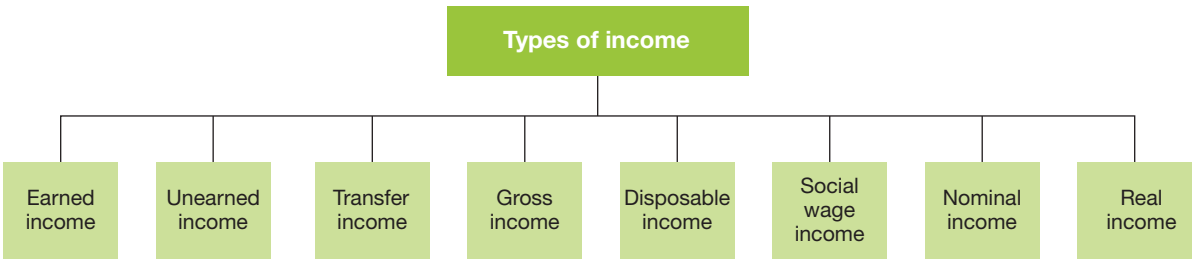
As shown in Figure 7.1, most people gain income from economic activities and selling their natural, labour and capital resources to the business sector. For instance, wages and salaries come from the sale of labour, whereas rent comes from property, and interest and profits are derived from investments.

FIGURE 7.1 The creation of incomes in the simple circular flow model of the economy

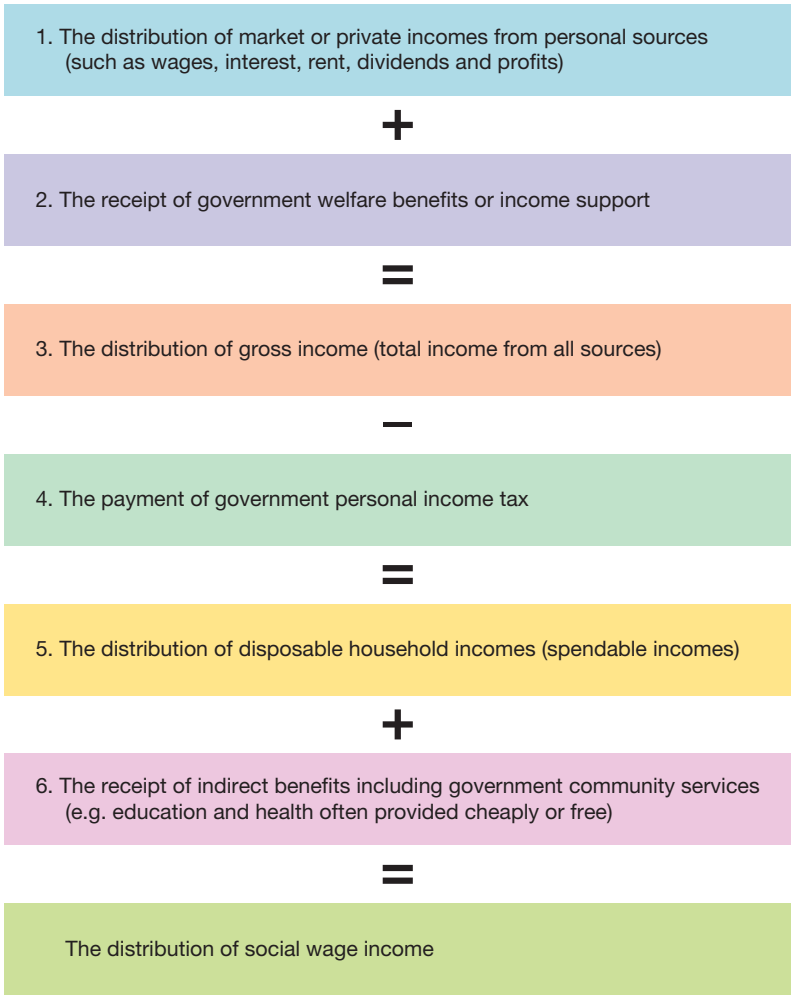


When looking at incomes, we need to be aware that there are different measures. The two parts making up Figure 7.2 shows some of the different types of income and how they are related. For instance, income can be *earned* and *unearned*. There is also *transfer income* from welfare, *gross income* before tax, *disposable income* after receiving welfare and paying tax, *nominal income* before taking its purchasing power into account, and *real income* or purchasing power that takes account of changes in prices. Each sheds light on slightly different aspects of income.

FIGURE 7.2 Different types of income and their relationships



Type of income	Description
Earned income	Comes from households selling their labour or supplying intellectual talents and physical power to businesses
Unearned income	Includes rent and interest. It is received for allowing others to use your property or savings, or sometimes it represents a reward for risk.
Transfer income and other forms of income	Derived from government welfare payments. This is income mainly collected from taxation and then transferred to the neediest individuals by means of government welfare payments. They are a one-way transaction from the government to individuals where nothing is given in return. These transfers include cash benefits given to the aged, unemployed, families, students, war veterans and the sick. They are not available to the relatively rich and higher income earners, since assets (wealth) and/or a means (income) tests are applied. Finally, there are other types of income — income from superannuation, along with fringe benefits (sometimes referred to as 'perks') such as the provision of a house or car, entertainment or school fees by companies that may be associated with some jobs.
fringe benefits	A fringe benefit is a special nonmonetary reward given by an employer to selected employees in lieu of income (e.g. a free house, company car).
Gross income	The sum of all income received by an individual from various sources such as wages, salaries, rent, interest, dividends and government welfare benefits, but before the payment of taxes
Disposable income	Equals the gross income of a person from all sources including government welfare, after the payment of personal income tax
Social wage income	The disposable income received by an individual, including private income and government welfare, after the payment of income tax and following the addition of the value of government services like health care provided free of charge or at a lower, subsidised price. Clearly, the level of a person's social wage income gives a very clear picture of an individual's actual purchasing power or access to basic goods and services, and hence their material living standards.
Nominal income	The number of dollars of income received by an individual measured over a period of time — perhaps an hour, a week, a month or a year (e.g. $750 per week). It does not take into account the actual quantity of goods and services that these dollars can purchase (purchasing power), since this depends on the prices that are paid or the general inflation rate that is often measured by the consumer price index (CPI). This is where it is handy to use another measure called *real* income.
Real income	Equal to a person's nominal level of income measured in so many dollars, after taking into account the inflation or deflation rate or change in general level of consumer prices. For example, if the average level of household's nominal incomes went up by, say, 4 per cent during 2023–24 and average consumer prices during the year went up by 3 per cent, then *real* incomes or purchasing power would have risen by 1 per cent (i.e. 4 per cent rise in nominal income minus 3 per cent rise in inflation equals a 1 per cent rise in real incomes). Normally, the rise in real income would lead to better average material living standards.



7.2.2 Definition and nature of wealth

Wealth is different from income. **Wealth** *consists of a stock of assets or things of value owned by private individuals or governments, measured at a point in time (e.g. at 30 June), while income is a flow of money measured over a period of time (e.g. one financial year from 1 July one year to 30 June the next year).*

- *Private wealth* includes the value of property, houses, shares, bonds, savings, superannuation contributions, and antiques or collectibles.
- *Government* or *public wealth* includes land, buildings, equipment and other infrastructure associated with the provision of collective or public services such as power, transport, health and education.

For most individuals, wealth takes years to accumulate. Those with high incomes can use their surplus income or savings to purchase and expand their assets or wealth and, in turn, increase their level of unearned income. However, although it takes a lifetime for most to accumulate wealth, in Australia considerable wealth is inherited or passed from one generation to the next, usually when family members die. As investments, these assets can earn extra income for the owner. As a result, inequality in the income–wealth cycle in one generation continues into the next.

FIGURE 7.3 Some wealthy Australians. For example, (a) Gina Rinehart was Australia's wealthiest person, reputedly worth over $31 billion. While some of her wealth was inherited from her father's mining company, Hancock Prospecting, many years ago, she has significantly grown these assets, partly through astute decision-making. Other wealthy Australians include (b) Andrew Forrest (mining), (c) Mike Cannon-Brookes (technology) and (d) Melanie Perkins (technology).

7.2 Activities

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7.2 Quick quiz on | **7.2 Exercise**

7.2 Exercise

1. **Define** the term *income*. **(1 mark)**
2. a. **Distinguish** between the three types of income: earned income, unearned income and transfer income. **(3 marks)**
   b. **Classify** each of the following types of income as *earned, unearned* or *transfer income*. **(5 marks)**

Income	Classification of income
i. Interest from your savings account	
ii. Casual wages from your part-time job	
iii. Dividends from some shares you own	
iv. The aged pension	
v. Sales commissions for a job	

3. a. **Define** the term, *wealth*. **(1 mark)**
   b. **Explain** the *relationship* that exists between income and wealth. **(2 marks)**
   c. **Classify** each of the following items as either *income* or *wealth*. **(7 marks)**

Item	Classification (income or wealth)
i. Your superannuation account	
ii. Your at-call savings deposit in the CBA	
iii. Rent from an apartment you own	
iv. A small business you own	
v. The value of your shares in Rio Tinto	
vi. Your AUSTUDY allowance	
vii. Your old coin and stamp collection	

4. Use the information below to **calculate**:
   a. the percentage rise in your *real* gross wages between one year and the next **(1 mark)**
   b. the annual percentage change in your real disposable wage. **(1 mark)**
      - Your annual nominal wage rises by 5.3 per cent.
      - The annual inflation rate is 1.9 per cent.
      - The annual percentage rise in the amount of your total tax is 2.0 per cent.

Solutions and sample responses are available online.

7.3 Measures of Australia's distribution of income and wealth

KEY KNOWLEDGE

- Relevant measures and statistical indicators of the distribution of income and wealth

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It is important to measure changes in Australia's income and wealth over a period of time since this helps us to track changes in society's wellbeing and living standards. In doing so, it is not just a matter of knowing the levels of income and wealth in dollar terms but, more importantly, how each is *divided* or *shared* across the total population.

7.3.1 Measures of Australia's income distribution

Income distribution *refers to the way the nation's 'income cake' (or 'income pie' as it is often called) is divided or shared between individuals and income units making up the total population.* The **pattern of income distribution** is regarded as fairly *even* if all people receive similar-sized slices of the income cake. However, in Australia, the distribution pattern is *uneven* because people receive vastly different percentage shares of total national income. Despite this inequality, there would be even more unevenness if the Australian government did not use redistribution policies to reduce inequality.

FIGURE 7.4 The Australian Bureau of Statistics (ABS) helps us monitor changes in the way the nation's 'income cake' is sliced, or divided between different groups, states and occupations. Recent data for Australia and around the world shows a general increase in income and wealth inequality.

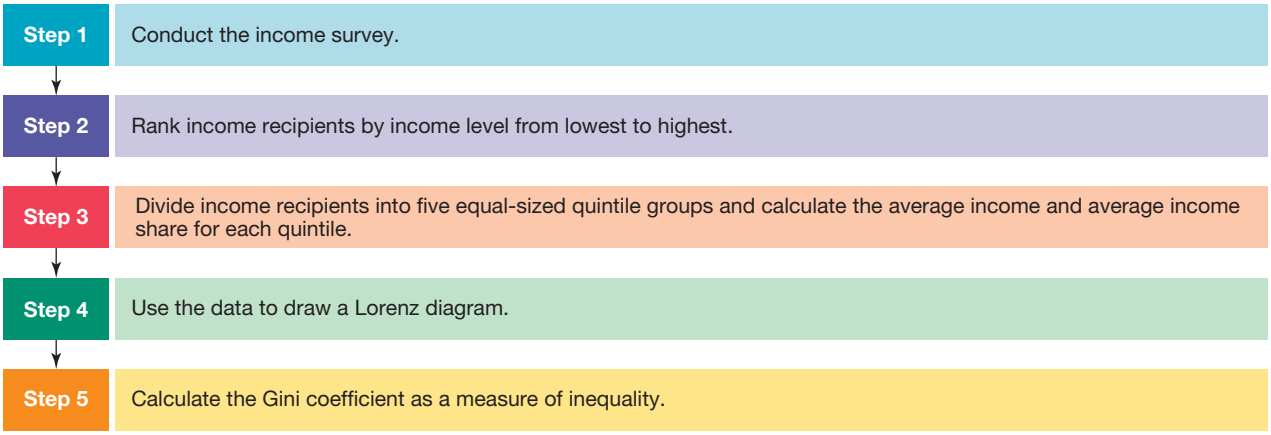
The Australian Bureau of Statistics (ABS) measures *income distribution* every few years (the last in 2019–20, released in April 2022) using a survey of income units (i.e. family or other groupings of people living in the same household) in private dwellings throughout Australia. Trained interviewers go around to a small but representative cross-section of the population (i.e. about 0.2 per cent of the population). Typically, the interviewers collect a range of statistical data that measure the distribution of different types of incomes.

Some common measures of *income distribution* include the following:

- The distribution of **market or private income** refers to how equally or unequally personal incomes of all types (wages, salaries, profits of the self-employed, rent, interest, dividends) are divided, prior to any government efforts to redistribute income more evenly using taxation or welfare.
- The distribution of **disposable weekly income** refers to how personal or private incomes (wages, salaries, profits of the self-employed, rent, interest and dividends, plus the receipt of government welfare benefits, and *after* the payment of personal income tax) are divided between individuals.
- The distribution of **equivalised disposable income** is a similar measure to disposable income (outlined above), except that special statistical adjustments have been made (i.e. *equivalence scales* have been applied) to the disposable incomes of households. This allows for clearer comparisons to be made of the economic wellbeing or living standards of households of different sizes and composition. For example, to enjoy the same living standards, a household consisting of three people would normally need more income than a household with only one person. The resulting equivalised measure is a far better indicator of actual income distribution, and it is the main one to which we will refer.
- The distribution of **final income** takes full account of the impact of government policies — including the payment of welfare, income tax, provision of free or subsidised services, and the payment of **indirect taxes** such as the GST — on the level of market or private incomes. This measure best indicates how evenly or unevenly incomes are ultimately divided and whether individuals can consume or have access to basic goods and services.

For Australia, the most common measure of how income is shared or divided up is the *distribution of equivalised disposable weekly income*. There are *five* main steps involved in the measurement of this, summarised in Figure 7.5.

FIGURE 7.5 The five main steps involved in measuring the distribution of equivalised disposable weekly income



Step 1: Conduct the income survey

The ABS conducts a household survey of income and wealth in which it collects data about the sources and level of weekly income based on a representative cross-section or sample of the population.

Step 2: Rank income recipients by income level

Once the information is collected, the ABS ranks equivalised income recipients from the lowest to the highest weekly income in ascending order. This establishes the *spread* or range of all weekly incomes.

Step 3: Divide income recipients into five quintile groups and calculate the average income and average income share for each quintile

The ranked weekly equivalised incomes are then broken into *five* equal-sized groups with the same number of income recipients in each group. These five groups are called **quintiles** (each representing 20 per cent of the total number of income recipients).

By adding up the total income of each quintile and dividing this by the number of income recipients, an *average level of income* for that quintile and the other quintiles can be calculated. These results can then be used to draw a pie graph like that in Figure 7.6 for 2019–20. This graph for Australia clearly shows that there is significant income inequality between the average income in quintile 1 relative to that in quintile 5. For instance, quintile 1 receives a mean income of only $415 per week against $2234 for quintile 5. Put another way, some people receive a much larger share or slice of the nation's income 'cake' than others.

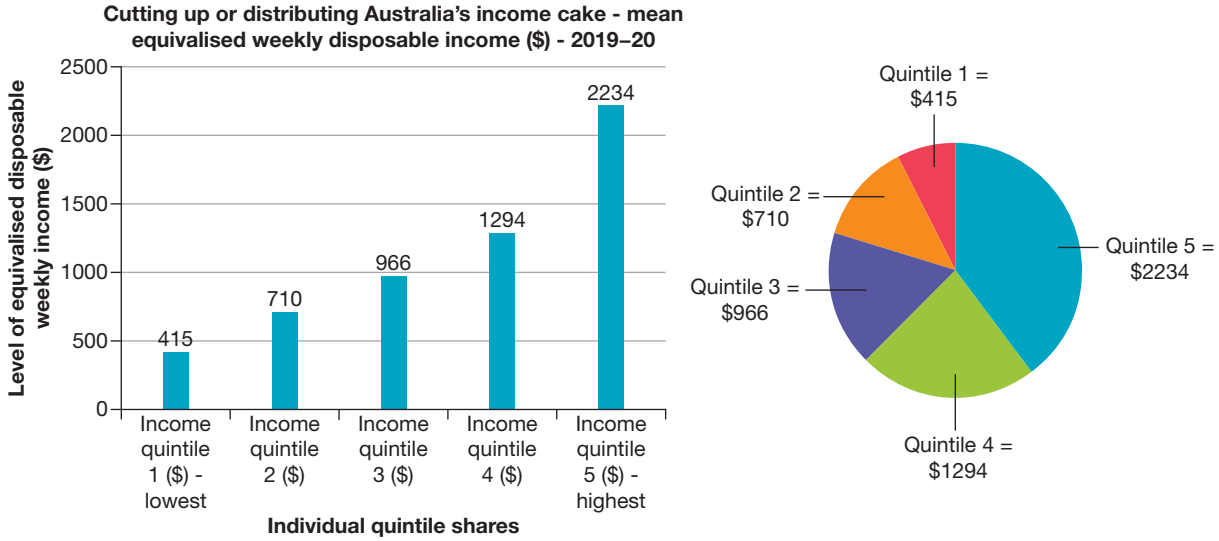
In addition, with this data it is also possible to calculate the proportion or *percentage* of Australia's total income cake that is received by each quintile (each representing 20 per cent of the whole population) — those making up quintile number 1 (the lowest 20 per cent of all income units), through quintiles 2, 3 and 4, up to quintile number 5 (the highest 20 per cent of all income units). Naturally, in totally *equal* societies all quintiles would receive exactly the same-sized slice or proportion of the income cake (i.e. 20 per cent). However, as shown in Figure 7.7, in *unequal* societies like Australia quintile number 1 would receive a much smaller *percentage* share of the income cake than quintile number 5. Notice that in 2019–20, quintile 1 receives just 7.4 per cent of the income cake, compared with a massive 39.8 per cent for quintile 5.

Step 4: Use the data to draw a Lorenz diagram

If we choose to do so, data showing the *percentage* of total income received by each quintile can be used to construct a graph called, a **Lorenz diagram** (named after the US economist, Max Otto Lorenz, 1905). From this, it is possible to calculate the level of *income inequality* in a country. Referring to Figure 7.8, notice that this Lorenz diagram plots *cumulative quintiles* numbered 1 to 5 along the lower horizontal axis, and the cumulative percentage of equivalised disposable income (i.e. this cumulative figure can be gained by adding up each

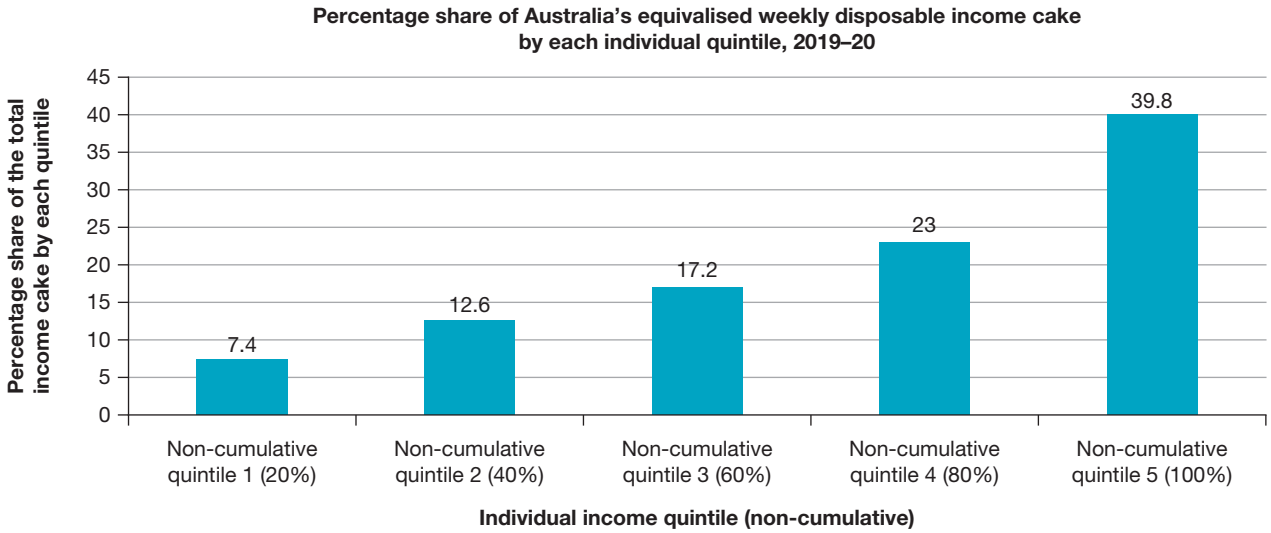
successive income share) up the vertical axis. Notice, too, that there is a diagonal line sloping upwards from left to right, representing total **equality** in income distribution where all quintiles receive exactly the same-sized income share and potentially enjoy the same levels of consumption and living standards. Figure 7.8 also contains the actual 2019–20 **Lorenz curve** for Australia's income distribution. Notice that this curve bends downwards away from the diagonal line (the line that represents total equality). The greater this bend or *deviation* in the actual Lorenz curve, the greater the degree of *inequality*, whereas a flatter curve shows more *equality* in income distribution.

FIGURE 7.6 Mean equivalised weekly disposable income by quintile, Australia, 2019-20



Source: Data derived from ABS, Household Income and Wealth, Australia, see https://www.abs.gov.au/statistics/economy/finance/household-income-and-wealth-australia/2019-20.

FIGURE 7.7 Inequality in the share of Australia's equivalised weekly income received by each quintile

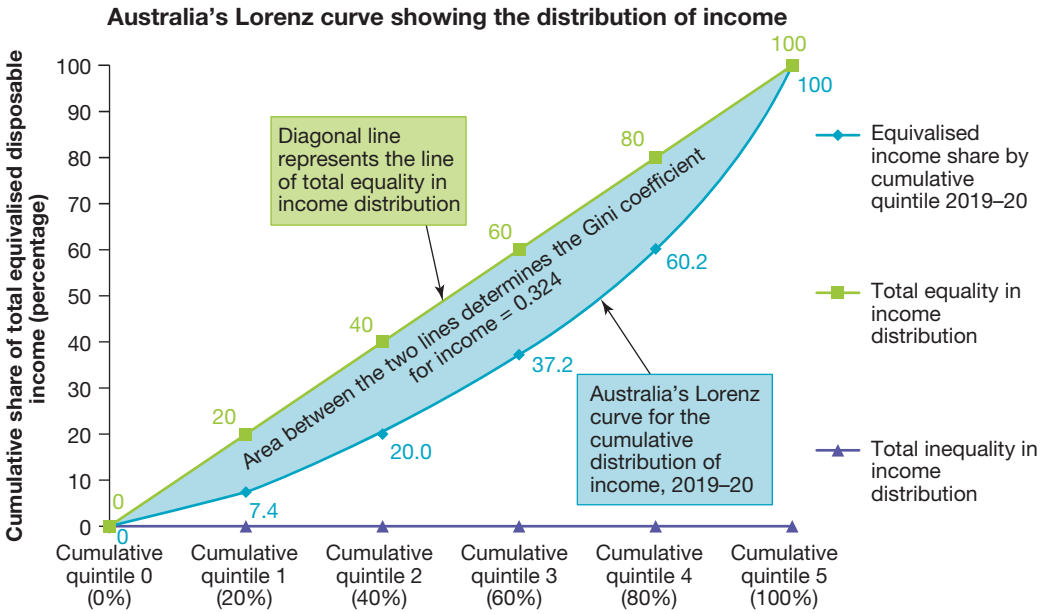


Source: Data derived from ABS, Household Income and Wealth, Australia, see https://www.abs.gov.au/statistics/economy/finance/household-income-and-wealth-australia/2019-20.

Step 5: Calculate the Gini coefficient as a measure of inequality

Using this data for income distribution, the ABS publishes a general measure of income distribution called the **Gini coefficient**. It is a number between 0 (where there is *total equality* in income shares) and 1 (where there is *total inequality* in income shares). This data is shown in the table accompanying Figure 7.8. Essentially, the Gini coefficient can be calculated using the Lorenz diagram. It involves measuring the *area* between the upward sloping diagonal line of *absolute equality*, and the actual Lorenz curve. The resulting figure is then expressed as a proportion of the *total triangular area* below the diagonal line. This is illustrated in Figure 7.9. Gini figures collected over a number of years can also be compared, to determine whether Australia's inequality in income distribution is increasing or decreasing.

FIGURE 7.8 Lorenz diagram showing inequality in Australia's distribution of equivalised weekly disposable income received by cumulative quintile, 2019–20



Quintile	Cumulative quintile 0 (0%)	Cumulative quintile 1 (20%)	Cumulative quintile 2 (40%)	Cumulative quintile 3 (60%)	Cumulative quintile 4 (80%)	Cumulative quintile 5 (100%)	Gini coefficient
Equivalised income share by cumulative quintile 2019–20	0	7.4	20	37.2	60.2	100	0.324
Total equality in income distribution (by cumulative quintile)	0	20	40	60	80	100	0.000
Total inequality in income distribution (by cumulative quintile)	0	0	0	0	0	100	1.000

Note: Cumulative shares of income are calculated by working out a running total of previous individual quintiles. Cumulative quintile 2, for instance, is the sum of the individual percentage shares for quintiles 1 and 2. Cumulative quintile 4, for instance, is the sum of the individual percentage shares for quintiles 1, 2, 3 and 4.

Source: Data derived from ABS, Household income and wealth, (Excel Table 1.1, EQUIVALISED DISPOSABLE HOUSEHOLD INCOME, Australia, 1994–95 to 2019–20), Data downloads, see https://www.abs.gov.au/statistics/economy/finance/household-income-and-wealth-australia

Figure 7.10 shows that between 1994–95 and 2019–20, there was a general *upward* trend (see the broken trend line marked in red) in Australia's Gini coefficient for equivalised disposable weekly income — that is, *inequality* has been increasing slowly. We will investigate the possible reasons for this later in the topic.

Figure 7.9 Calculating the Gini coefficient using the Lorenz diagram

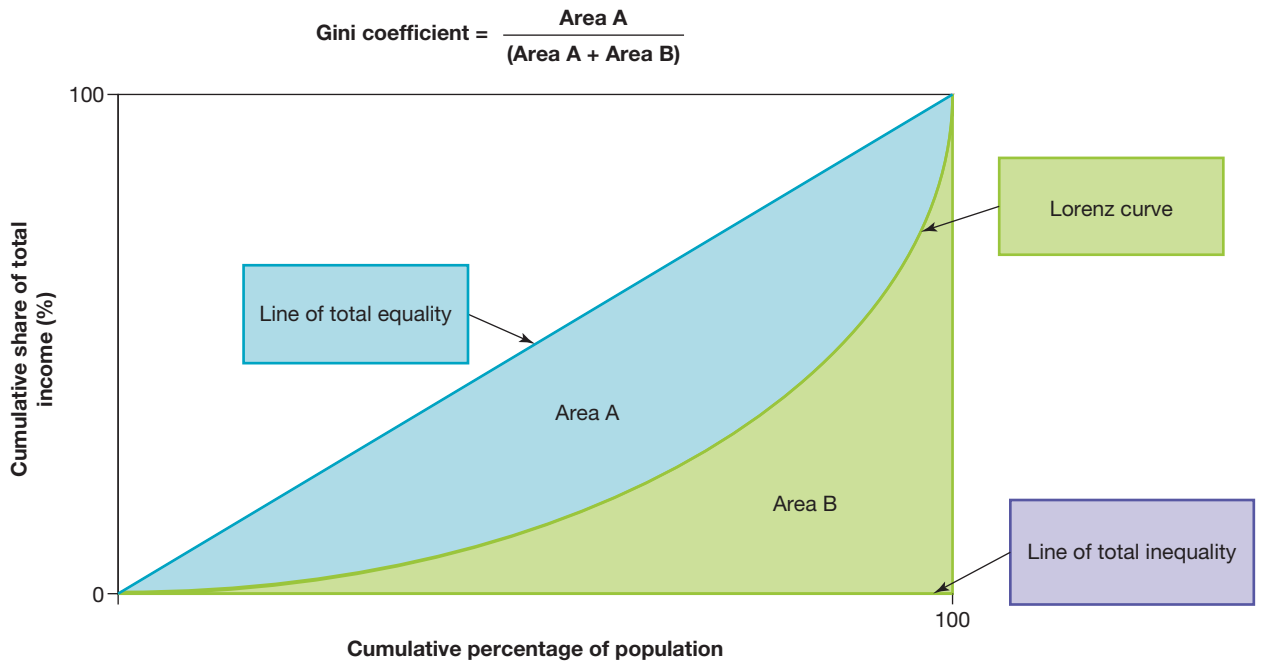
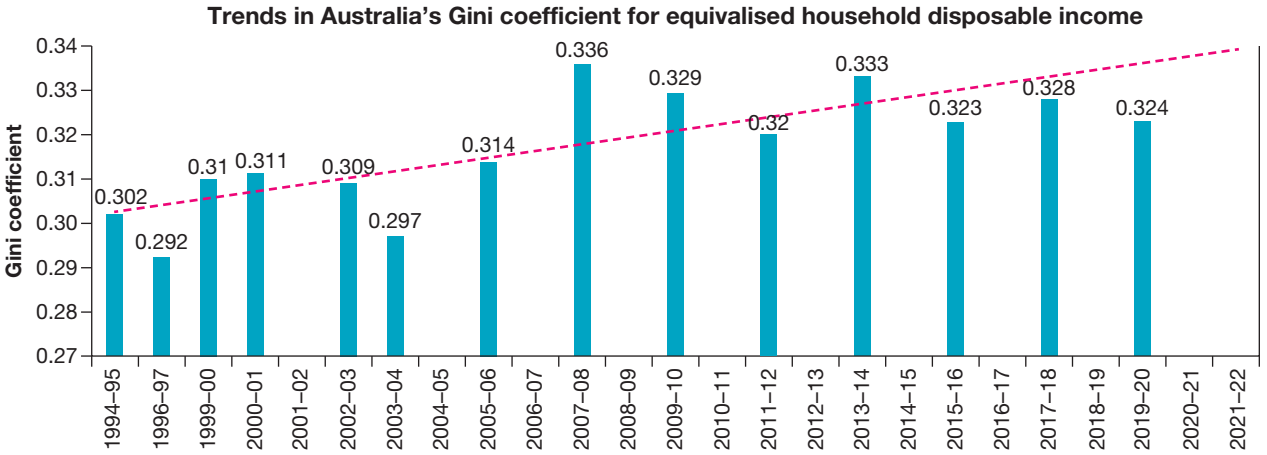


FIGURE 7.10 Trends in Australia's Gini coefficient, 1994–95 to 2019–20



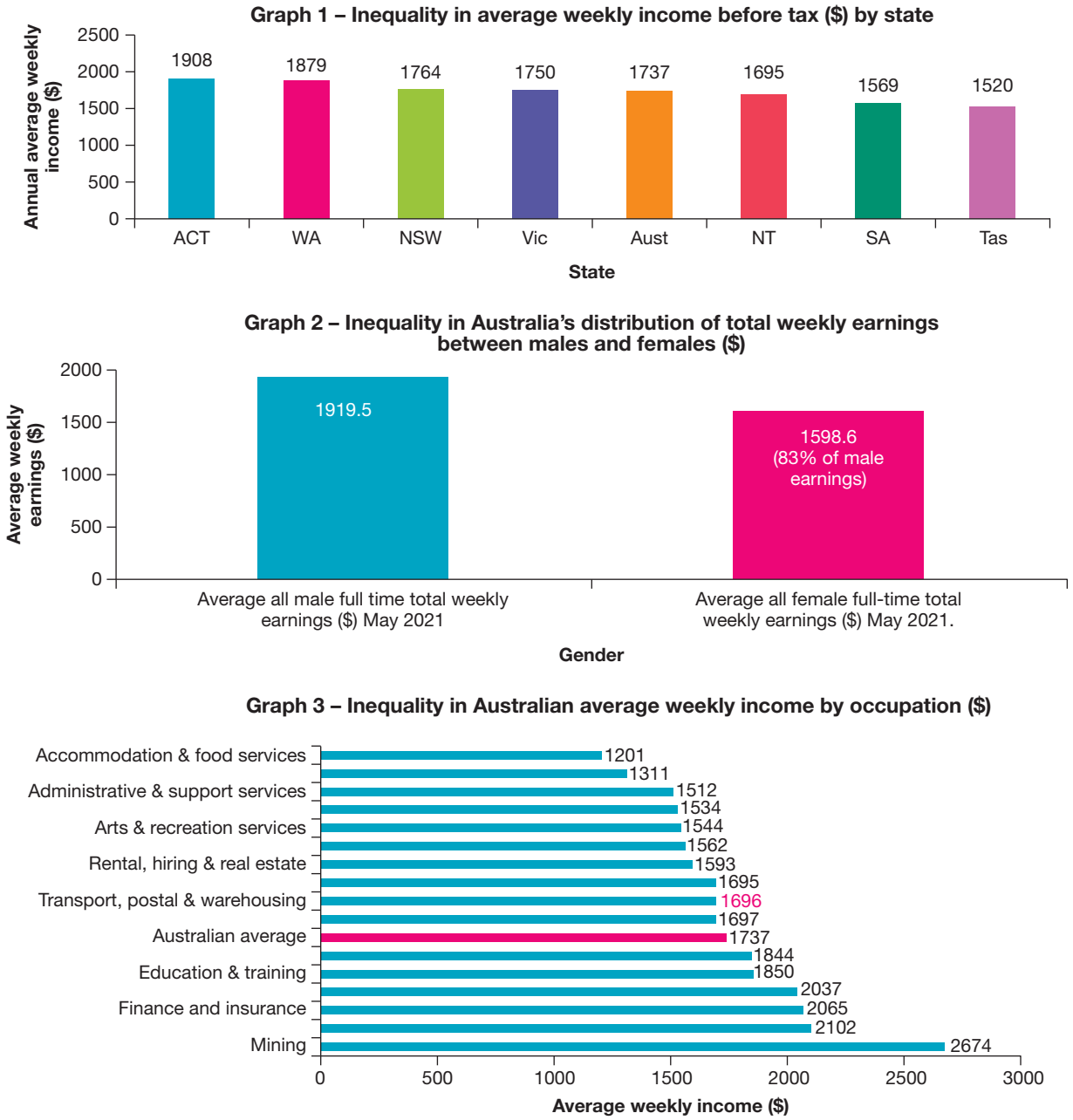
Source: Data derived from ABS, Household income and wealth, see https://www.abs.gov.au/statistics/economy/finance/household-income-and-wealth-australia.

Some other measures of Australia's income inequality

Apart from measuring income inequality by quintile, the ABS also measures other aspects of income distribution. For example, as shown in Figure 7.11, there are at least *three* additional measures, each showing that there is considerable income inequality in Australia.

1. Graph 1 shows Australia's distribution of income by *state or* territory. Surprisingly, there is considerable variation with higher average incomes in Western Australia, for example, against those in Tasmania.
2. Graph 2 illustrates Australia's distribution of income by *gender*. It indicates that average male weekly income is 17 per cent higher than that of females.
3. Graph 3 is about Australia's distribution of income by *occupation*. For instance, average weekly wages in mining are more than double those in accommodation and food services.

FIGURE 7.11 Three other measures of Australia's income inequality



Source: All data derived from ABS, Average weekly earnings, Australia, May 2021, see www.abs.gov.au/statistics/labour/earnings-and-work-hours/average-weekly-earnings-australia/latest-release.

7.3.2 Measures of Australia's wealth distribution

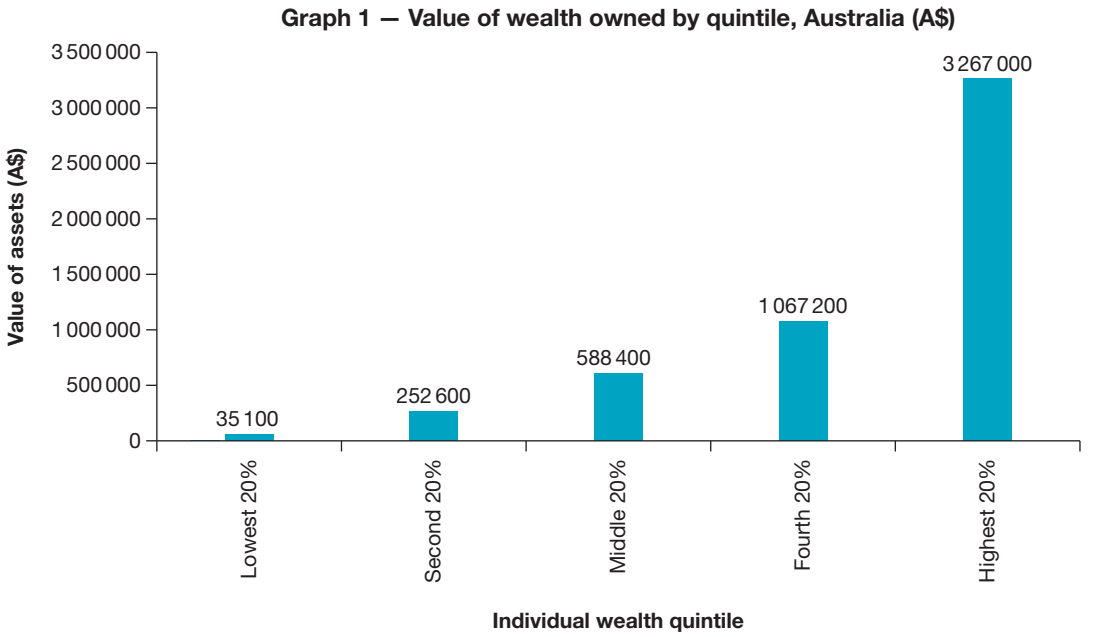
The **distribution of wealth** *refers to the way the nation's 'wealth cake' is divided or shared between individuals making up the total population.* The **pattern of wealth distribution** is regarded as relatively *even*, if all people own similar-sized slices of a nation's assets or wealth pie. However, in Australia, this pattern of distribution is highly *uneven*. Just a few people own far more assets than the rest of the population.

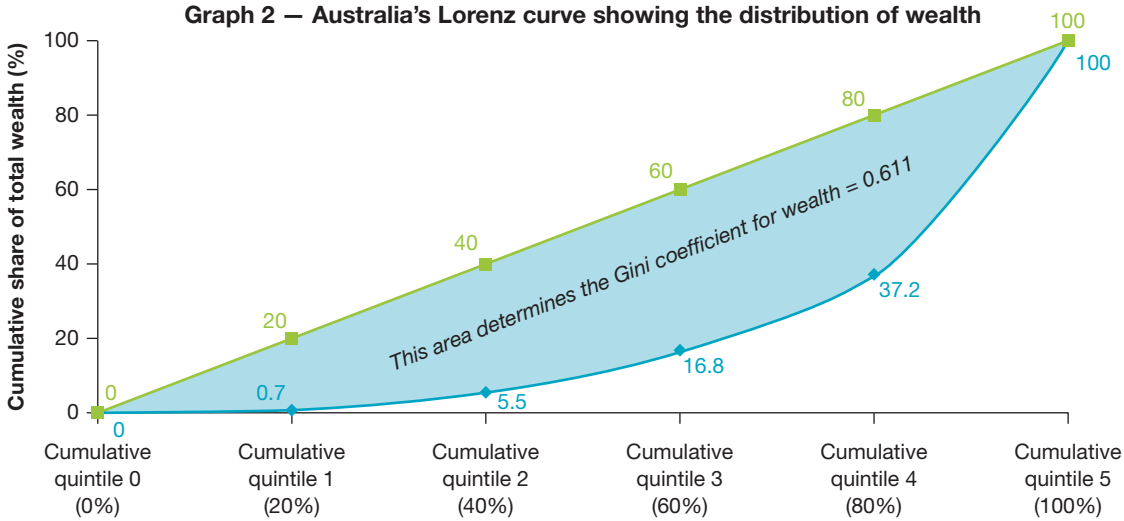
To monitor trends, every couple of years the ABS estimates the *distribution* of Australia's *wealth* by quintile, or as it is called, *net worth*. It uses the same approach as that for the distribution of income. **Net worth** *refers to the difference in value between an individual's assets owned, minus any debt or liabilities.* There is *positive* net worth when there is an excess of assets owned by households over their liabilities, but *negative* when the values of liabilities exceed assets.

Figure 7.12 includes *two* graphs about the distribution of Australia's wealth:

- Graph 1 shows the average value of wealth (A$) owned by each quintile and by other groupings. Notice that quintile 1 has average wealth of $35 100, while quintile 5 has wealth averaging around $3 267 100 in assets— 92 times that of the lowest 20 per cent of individuals.

FIGURE 7.12 How evenly does Australia distribute its wealth (net worth)





Sources: Data for graph 1 was originally derived from ABS, Household income and wealth, https://www.abs.gov.au/statistics/economy/finance/household-income-and-wealth-australia. Graph 2 is derived from ABS, Household income and wealth, https://www.abs.gov.au/statistics/economy/finance/household-income-and-wealth-australia.

- Graph 2 involves a Lorenz diagram based on net worth by quintile. You may notice here that the Lorenz curve for wealth deviates much further from the diagonal line of total equality than the curve for disposable income. Again, this demonstrates that Australia's wealth is divided even more *unevenly*. Indeed, the Gini coefficient for wealth is 0.611, whereas that for equivalised disposable income is just 0.624. In our country, the wealthiest 20 per cent own almost 63 per cent of all wealth.

However, while you might think that this seems highly unequal, globally the richest 1 per cent are estimated to own around half of the world's wealth! Surprisingly, a net worth or assets equal to around $100 000 would put an individual in the top 10 per cent of the world's wealthiest. By comparison, it is estimated that the wealthiest 1 per cent of Australian households own around 23 per cent of our total wealth, or more than the lowest 70 per cent of all Australians.

7.3.3 Measures of Australian poverty

Poverty means different things to different people.

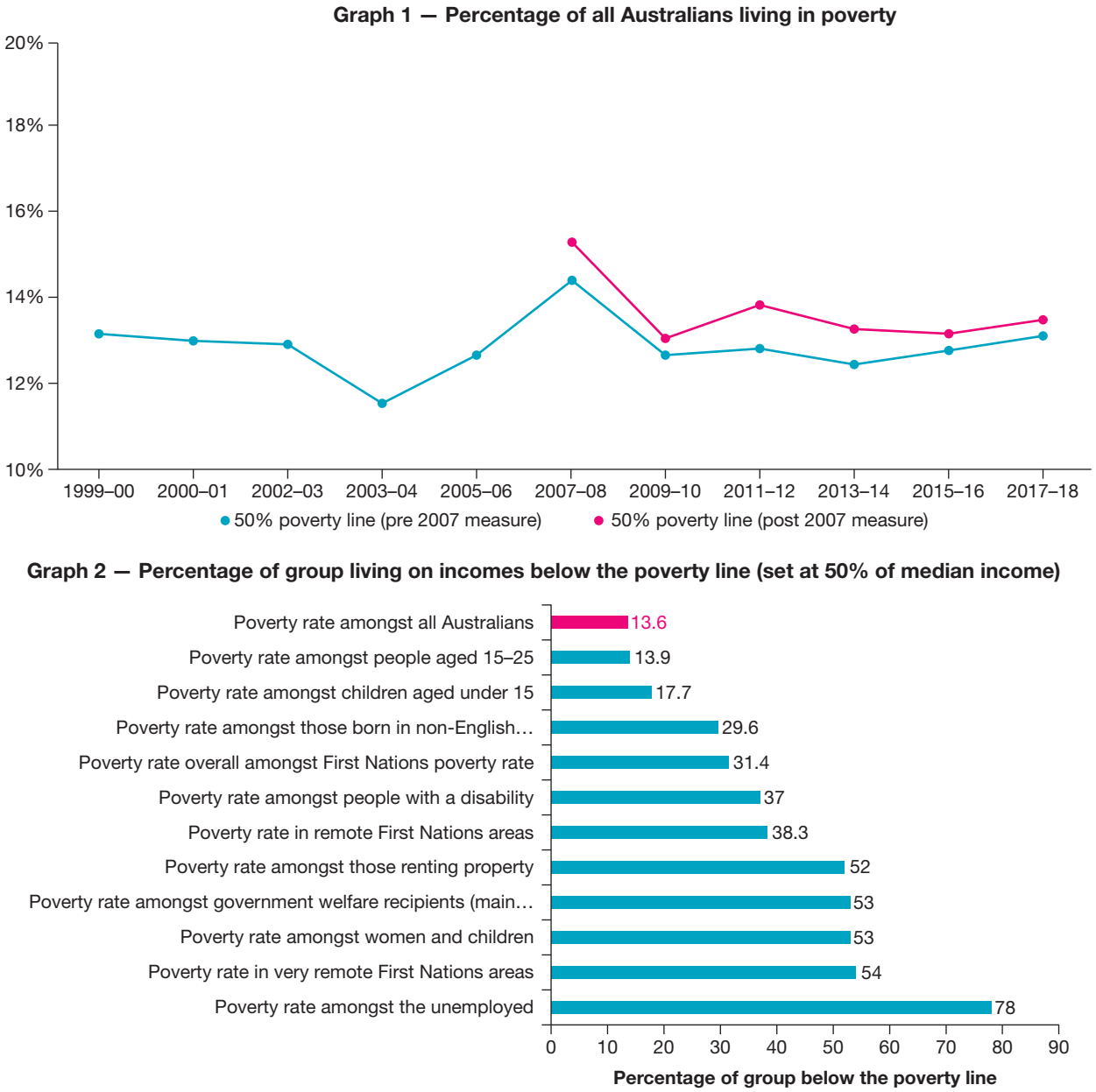
- **Absolute poverty**: When most of us think of poverty we think of *absolute* poverty where there is serious material deprivation and the absence of the real necessities to sustain life. This is commonly found in Third World nations and in some remote First Nations communities in Australia.
- **Relative poverty**: When measuring the type of poverty most commonly found in Australia, it is mostly *relative* poverty. This is where people's material living standards are low or austere *relative*, compared with the rest of the community.
- **Multi-dimensional poverty**: Poverty can be more than just a lack of income. It is possible to have a reasonable income, but despite this there is no access to clean drinking water, sanitation, power, opportunity and basic education. This is called *multi-dimensional* poverty.

In the 1960s, economist, Professor Ronald Henderson, developed a controversial measure called Australia's **poverty line**. In a sense, this measures *relative poverty*. The poverty line was set at the amount of money required by different-sized **income units** each week to sustain an *austere* or very basic living standard (i.e. to purchase essential food, shelter and clothing). This is normally set at 50 per cent of median Australian incomes. For December 2021, for example, the Melbourne Institute for Applied Economic and Social Research estimated that a standard income unit of four (consisting of two parents, one working, plus two dependent children) would need over $1143.80 per week (including housing) to stay *above* the standard poverty line.

The Australian Council of Social Service (ACOSS) and the University of NSW use poverty lines to estimate poverty rates, some of which are shown in Figure 7.13:

- Graph 1 indicates that Australia has a surprisingly high overall poverty rate of 13.6 per cent of the population (including children). This means that a large proportion of the population cannot enjoy even austere living standards. Notice that there are two different years (pre-2007 and post-2007) of income data used here for calculating comparable poverty rates.
- Graph 2 shows Australian poverty rates among selected groups of individuals. Notice that rates are highest among the unemployed, some First Nations Australian communities, women, welfare recipients and the disabled.

FIGURE 7.13 Some measures of Australian poverty



Note: The poverty line used is 50% of median income, taking account of housing costs. The lower line shows poverty rates measured using the pre-2007 income definition, while the higher line is based on the post-2007 income definition.

Sources: Graph 1 — ACOSS & UNSW, Poverty report, 2020, Figure 2, p. 9, https://povertyandinequality.acoss.org.au/wp-content/uploads/2020/02/Poverty-in-Australia-2020_Part-1_Overview.pdf; Graph 2 — ACOSS and UNSW, *Poverty in Australia, 2018*, see ACOSS_Poverty-in-Australia-Report_Web-Final.pdf.

on Resources

Weblinks
- Inequality in Australia: A nation divided
- Inequality in Australia
- Wealth inequality in America
- Global wealth inequality
- Gini coefficient calculator

7.3 Activities

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7.3 Quick quiz on

7.3 Exercise

7.3 Exercise

1. **Explain** what is meant by the *distribution of income.* **(2 marks)**
2. **Outline** the extent of income inequality in Australia. **(2 marks)**
3. **Outline** how the distribution of income is *measured* by the ABS. **(2 marks)**
4. Concerning the Lorenz diagram, **explain** the following:
   a. the distribution of income by quintile
   b. the line of total equality
   c. the Lorenz curve
   d. the Gini coefficient. **(4 marks)**
5. **Explain** what is meant by the *distribution of wealth* (net worth). **(2 marks)**
6. **Explain** the term, *relative poverty* and how it is commonly measured in Australia. **(2 marks)**
7. a. **Explain** how a nation's pattern of income *distribution* is likely to affect material living standards. **(2 marks)**
   b. **Explain** the difference between market or *private income* and *equivalised disposable income*. **(2 marks)**
   c. **Examine** the statistics shown in the table below relating to Australia's distribution of equivalised disposable income and wealth (net worth) by individual quintile and cumulative quintile.

Cumulative quintile	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Equivalised disposable income share by individual quintile, 2019–20	7.4	12.6	17.2	23	39.8
Equivalised disposable income share by cumulative quintile, 2019–20	7.4	20	37.2	60.2	100
Wealth (net worth) share by individual quintile, 2019–20	0.7	4.8	11.3	20.5	62.8
Wealth (net worth) share by cumulative quintile, 2019–20	0.7	5.5	16.8	37.2	100

Source: Data derived from ABS, Household Income and Wealth, Australia, released April 2022, see https://www.abs.gov.au/statistics/economy/finance/household-income-and-wealth-australia/2019-20.

Use the data to **draw** and fully **label** a Lorenz diagram that shows the following (on graph paper or using Excel and your computer): **(4 marks)**

- fully labelled axes and scales
- the line of absolute equality in income and wealth distribution
- the line of absolute inequality in income and wealth distribution
- the two Lorenz curves — one for the distribution of equivalised disposable income and one for net worth or wealth for Australia (*Note:* Use the cumulative quintile data for drawing these curves.)

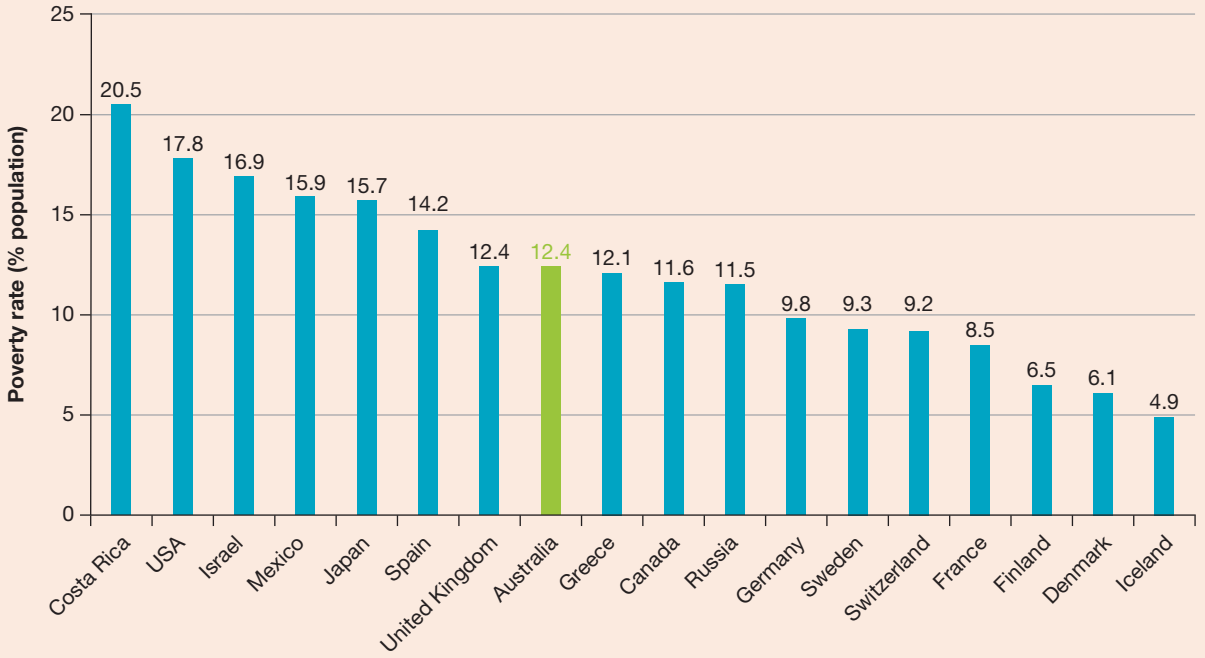
   d. Quoting statistics from the table above and your Lorenz diagram for different quintiles, **describe** the *patterns* of Australia's distribution of:
      i. equivalised disposable income **(2 marks)**
      ii. net worth or wealth. **(2 marks)**

e. Using the Lorenz graph you have just created, try to **estimate** the Gini coefficient for the distribution of Australia's equivalised disposable income and one for net worth or wealth. For each, the number will be one between 0 and 1. This can be done roughly by expressing the area between the diagonal and the Lorenz curve as a proportion of the total triangular area for the lower part of the Lorenz diagram (see the formula). **(2 marks)**

8. a. **Distinguish** between *absolute poverty* and *relative poverty*. **(2 marks)**

b. **Explain** what is meant by the *poverty line*. **Identify** which groups of Australians are most likely to live in poverty. **(3 marks)**

c. **Examine** the figure below, comparing poverty in different countries. **Identify** which OECD country has the highest rate of poverty, and which has the lowest, noting how Australia's rate compares. **(2 marks)**



Source: Data derived from OECD Data, Poverty Rates, see https://data.oecd.org/inequality/poverty-rate.htm.

Solutions and sample responses are available online.

7.4 The reasons why the distribution of income and wealth is an important issue

KEY KNOWLEDGE

- The reasons the issue of the distribution of income and wealth is of importance to the economy at a local, national and international level

Source: Adapted from the VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

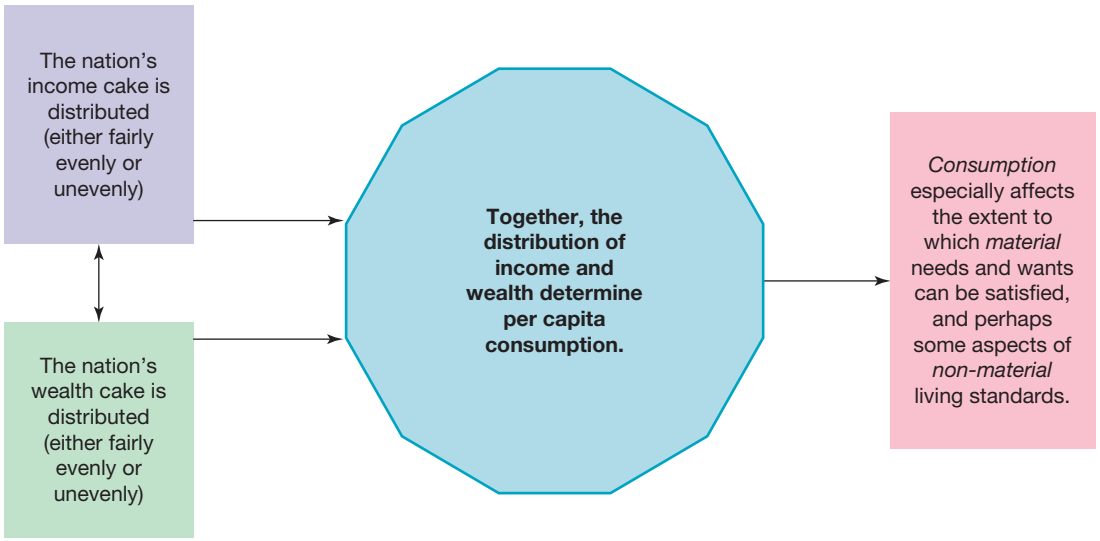
Collectively, the world's wealthiest 1 per cent own almost half the world's wealth, dramatically increasing since the COVID-19 pandemic. In Australia, the wealthiest 10 per cent of households own around 50 per cent of all wealth. As an economic issue, whether the distribution of income and wealth is relatively even or uneven matters a lot because it affects the general wellbeing of people, locally, nationally and globally. A relatively even

distribution, for example, spreads purchasing power and consumption more broadly so that average wellbeing is enhanced. A relatively uneven distribution means that only a few get to enjoy reasonable living standards.

The main connections between *distribution* and *living standards* are summarised in Figure 7.14.

- It shows that income and wealth interact and affect each other. Together, they influence the levels and distribution of consumption per person.
- In turn, *consumption per person* especially determines *material living standards* and the overall extent to which needs and wants can be satisfied. It may also impact some aspects of *non-material wellbeing* like happiness, health, relationships and social cohesion, crime rates and stress levels.

FIGURE 7.14 The important relationship between the distribution of income and wealth and living standards



As we shall see later in more detail, opinion is divided about how much inequality is desirable:

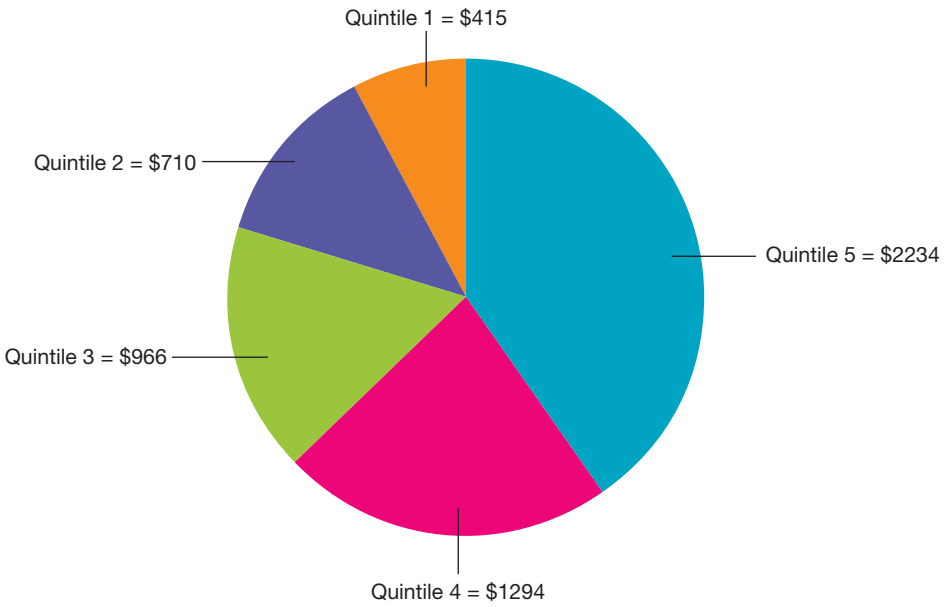
- Some argue that greater income inequality can stimulate economic growth and in the long-term make everyone better off, even the poor. The benefits for groups at the top eventually trickle down to those at the bottom.
- Others argue the reverse that too much inequality actually slows the growth in output, incomes and wellbeing.
- There is also the social cohesion argument that says that too much inequality can be destabilising leading to unrest and political instability.

7.4.1 The importance and effects of poverty and inequality on material living standards locally and internationally

Material living standards ultimately reflect an individual's annual level of consumption and the extent to which needs and wants can be satisfied. As mentioned, inequality in the distribution of income and wealth have a very direct effect on the *material wellbeing* of people in Australia and overseas. Figure 7.15 contains three graphs relating to aspects of inequality.

FIGURE 7.15 Some indicators of inequality in Australia and globally

Graph 1 Inequality in Australia's mean equivalised weekly disposable income by quintile

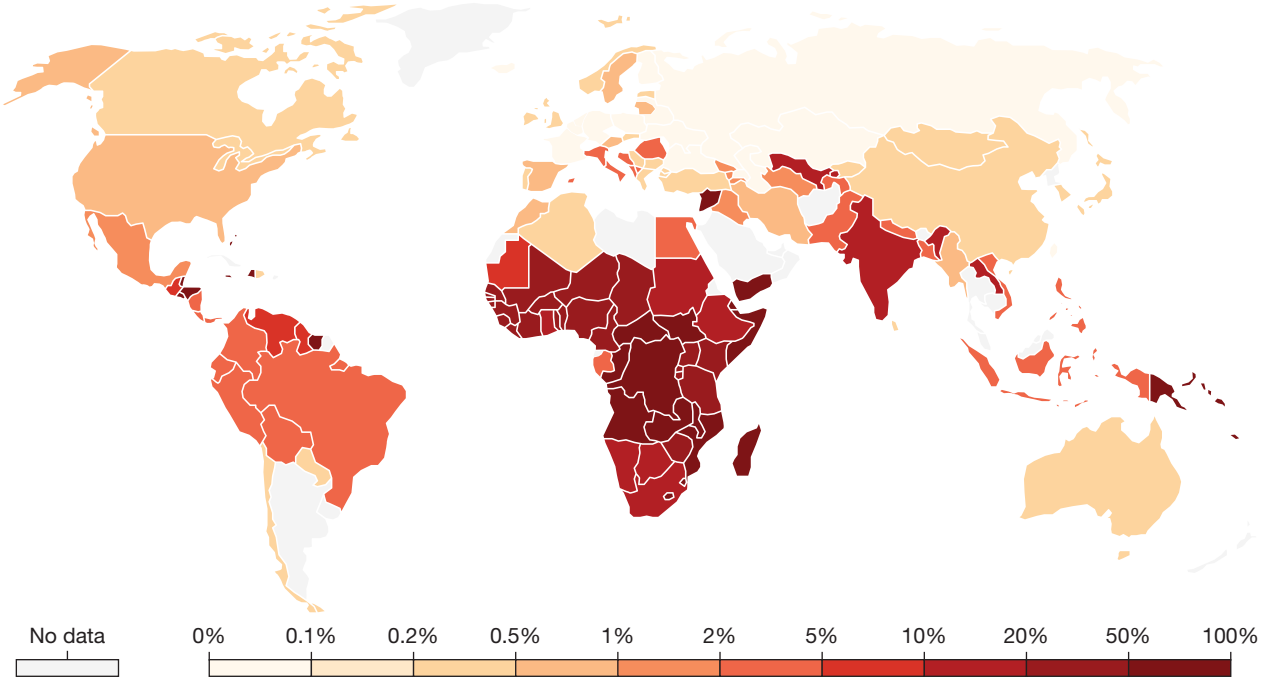


Source: Data from ABS, 6523.0 - Household Income and Wealth, Australia, 2017–18.

Graph 2 Australia's Gini coefficient compared with other countries

Source: OECD (2022), Income inequality (indicator). doi: 10.1787/459aa7f1-en (Accessed on 2022-05-01).

Graph 3 — Global comparisons of extreme poverty rates (percentage of the population)

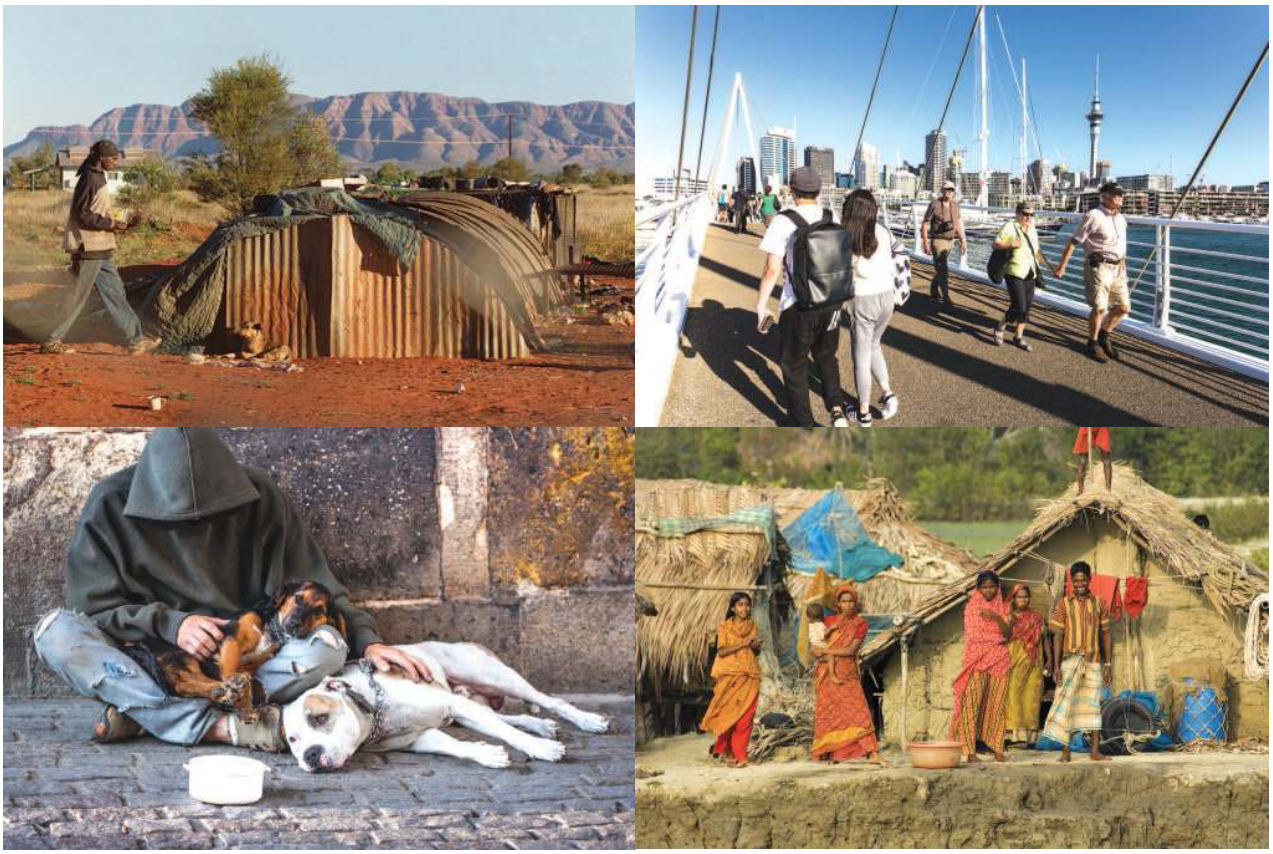


Source: Max Roser and Esteban Ortiz-Ospina, Global Extreme Poverty, 2019. Licensed under CC BY 4.0.

Referring to Figure 7.15, several points can be made about the effects of inequality:

- Graph 1 shows that for Australia the income cake is cut up or distributed very unevenly. Those in quintile 1 on median weekly incomes of $415 per week would struggle to buy basic goods and services like food, housing, electricity and medical care needed for survival. Most would have incomes below the poverty line. In contrast, those in quintile 5 on $2234 per week would do far better and have money left over to afford luxury items including nice clothes and holidays in exotic locations. Clearly material living standards would differ widely.
- Graph 2 shows that Australia's distribution of income, based on our Gini coefficient of 0.33, is not as equal as the Slovak republic with 0.22. However, it is not as lopsided as in some countries like Mexico, Chile, Costa Rica and South Africa where the Gini rises to 0.62. Clearly in these highly unequal societies where incomes are relatively low in the first place, many would be unable to enjoy reasonable living standards, while the small minority at the top is able to live very comfortably.
- Graph 3 shows the distribution of extreme poverty around the world where people try to survive on an income of less than $1.90 per day. Here, life would be most uncertain with few opportunities for improvement.
  - Adequate food and nutrition cannot be purchased, and individuals are commonly unnourished and have a short life expectancy.
  - Because of the cost and the lack of educational facilities, few children attend school. Restricted or no access to education (especially for young females) causes limited employment and income opportunities. It also depresses productivity and cuts the country's productive capacity.
  - There is a lack of affordable medical treatment available for serious illnesses. Life expectancy is low, perhaps around 50 years, and infant death rates are high.
  - Without much money, housing is basic and overcrowded, with an average of more than four people living in each room. Sanitation and access to safe drinking water are non-existent.

On a brighter note, over the last 10–15 years recent government policies to reduce inequality and promote increased production, have helped to halve the global number living in poverty.



7.4.2 The importance and effects of poverty and inequality on non-material living standards, locally and internationally

Most people don't choose to be poor and live in poverty. Why would they? Having little money not only limits consumption and leads to poverty, it also significantly undermines *non-material* living standards and contributes to sadness, violence, crime, a lack of opportunity, wasted talent and a short life-expectancy. In addition:

- Low income and poverty mean that finding affordable housing is an impossible challenge for some. Many individuals (including children) are homeless and live with insecurity on the streets or are forced to reside on the outskirts of cities where there is no public transport, little to do and few jobs available.
- When people look shabby, lack personal grooming, or have few skills, it is hard to gain employment. This can begin the cycle of poverty and welfare dependency (if it is available). In addition, at the macroeconomic level, the exclusion of potential workers slows the economy's productive capacity and limits future living standards.
- Children from poor families are often reluctant to go to school without a lunch, books, uniform or shoes. They cannot afford to play sport, go on excursions or camps like the others, and frequently experience bullying. The likelihood of completing VCE and especially a tertiary course is greatly reduced in such circumstances. At the macroeconomic level, this lowers Australia's future labour productivity and limits our productive capacity, potential GDP and living standards.
- The self-esteem of both parents and children is destroyed and there are feelings of despair and failure, sometimes resulting in mental illness, possibly substance and alcohol abuse, and violence. Poverty also results in reduced health outcomes and, according to the ABS, perhaps increased crime.

- There is isolation and reduced social contact, often because of a disreputable appearance and reluctance to mix with other people or groups. This leads to unhappiness and a lower quality of life.
- Poverty and extreme inequality alienate people. It erodes social cohesion needed for a workable society, and it poses a serious threat to democracy, freedom, and stability.

Resources

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7.4 Activities

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7.4 Quick quiz on

7.4 Exercise

7.4 Exercise

1. **Explain** how poverty and low incomes affect material and non-material living standards in Australia and low-income countries in Africa, India, Asia and South America. **(4 marks)**
2. a. Imagine you are a single unemployed parent, with two children aged 12 and 14, wanting to rent a flat. Use the **Centrelink** weblink in the Resources tab to **research** what you would receive as your welfare benefit (income support) per fortnight. Also use the internet to **research** the cost of renting a flat in your area or city and paying other bills. **(2 marks)**

   b. Prepare a *fortnightly budget* using the following format: **(4 marks)**

Your income (money coming in) per fortnight	
	$
	$
	$
Total income per fortnight	$
Your expenses (money going out) per fortnight	
	$
	$
	$
	$
	$
	$
	$
Total expenses or costs per fortnight	$

   c. Use your fortnightly budget to **describe** how your financial position effects your material and non-material living standards of your income. **(4 marks)**

   d. **Identify** not-for-profit private welfare agencies that may be able to assist you. **(2 marks)**

Solutions and sample responses are available online.

7.5 Economic factors influencing income and wealth inequality in Australia

KEY KNOWLEDGE

- The economic factors influencing the extent of the distribution of income and wealth

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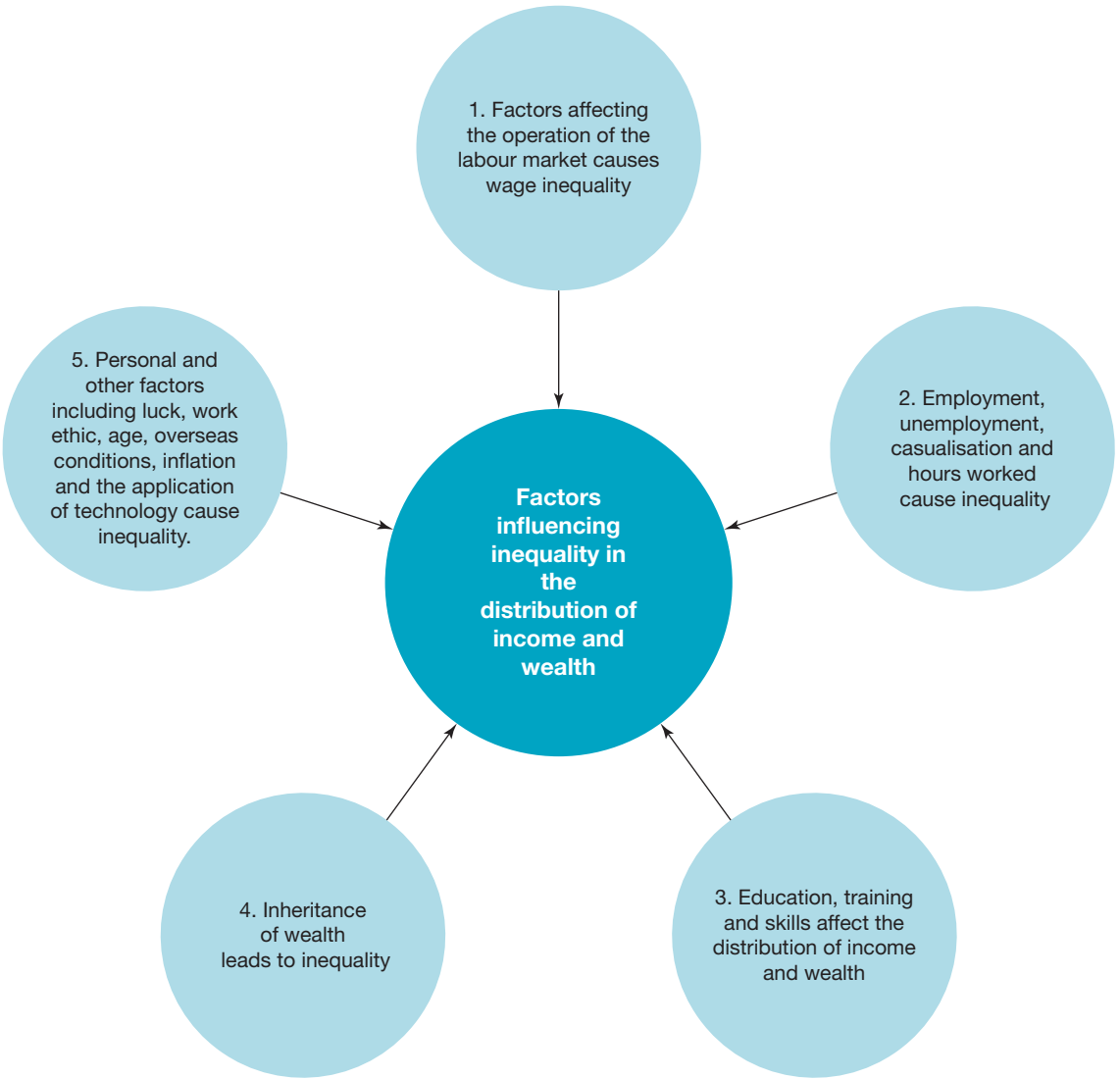
As we shall see, there are many factors (including those shown in Figure 7.16), that cause poverty and inequality in Australia's distribution of income and wealth, which in turn, negatively impacts living standards.

FIGURE 7.16 Some causes of income inequality and poverty in Australia

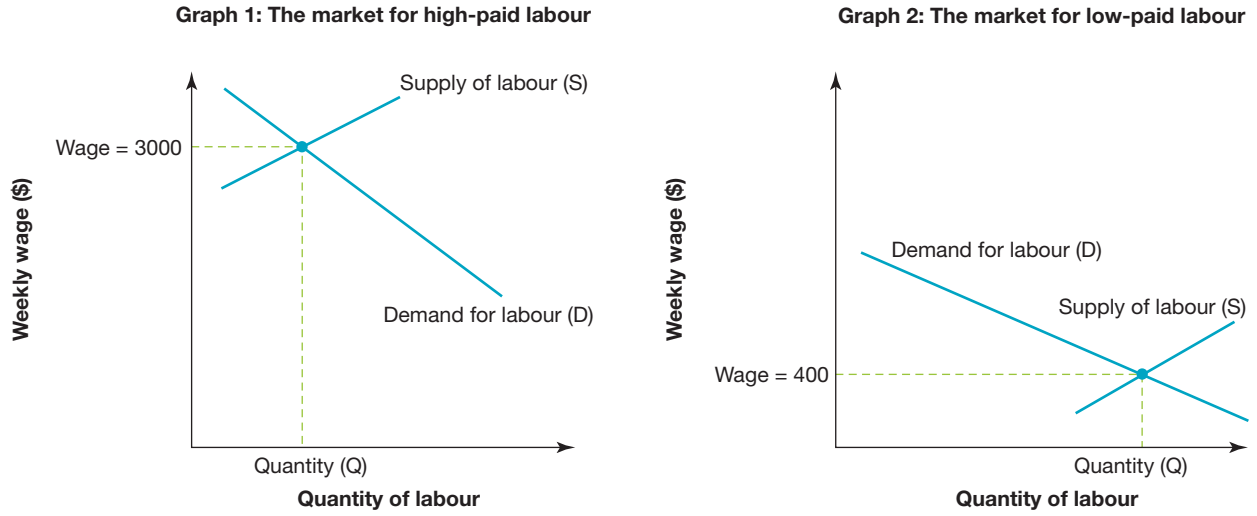


7.5.1 The operation of forces in the labour market cause wage inequality

The most important cause of *wage inequality* in Australia is the normal *operation of the labour market*. In a free or unregulated market, wages simply represent the *equilibrium price* paid for labour. This is determined at market equilibrium by the *conditions of demand* for labour (i.e. the D by businesses and indirectly by consumers who buy goods and services), relative to the *conditions of supply* of labour (S by members of the household sector). As a result, wage rates will be either higher or lower so as to reflect the *relative scarcity* of each occupation in that area or region of the country.

Figure 7.17 shows, hypothetically, how wage rates for *high-paid labour* (graph 1) and for *low-paid labour* (graph 2) are determined in an unregulated labour market, through the operation of D and S.

FIGURE 7.17 How the demand and supply of labour in an unregulated labour market cause wage inequality, that reflects the relative scarcity of different occupations



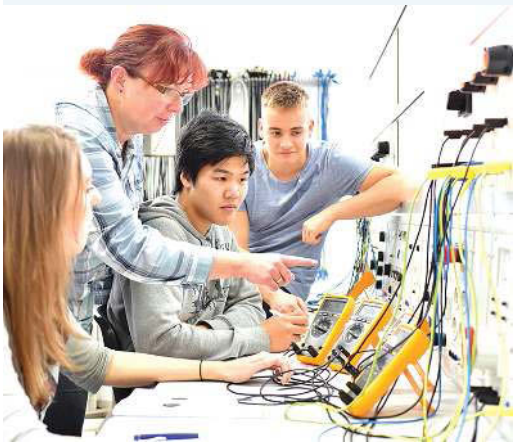
Graph 1 — High-paid labour: High-paid jobs (e.g. $3000 per week) are those where there is a *strong demand* relative to a *low supply* of labour at a given wage. Here we might think of successful AFL footballers, pop stars, CEOs, lawyers, medical specialists or ICT innovators.

- The *limited supply* of labour at a given wage could reflect:
  - the need for special talent to perform the work
  - high educational or training qualifications and skills
  - a low likelihood of success in mastering the required skills
  - substantial on-the-job experience is required
  - unattractive working conditions (e.g. long hours, dangerous or unpleasant environment)
  - very high levels of personal responsibility and care (e.g. brain surgeons, air traffic controllers).
- The relatively *strong demand* for labour at a given wage may be the result of:
  - the high level of efficiency or value of the output produced by a worker
  - a robust demand driven by current fashions and tastes (e.g. some pop stars and sporting heroes)
  - technological advances that cause increased demand for a new good or service
  - effective advertising or promotion of a good or service
  - rises in average disposable incomes
  - generally improved economic conditions where spending is strong.

Graph 2 — Low paid labour: For low-paid work (e.g. $400 per week), wages are depressed by a *big supply* of labour relative to a *smaller demand* for labour at a given wage. Low paid occupations include part-time junior workers at a takeaway food outlet, casual staff and cleaners.

- The relatively *large supply* of labour at a given wage could reflect:
  - the absence of special job requirements
  - experience is not required
  - low levels of education, skill and training
  - the work may be relatively easy.
- The relatively *weak demand* for labour at a given wage may be the result of:
  - low levels of efficiency and output
  - softer spending and economic conditions generally
  - technical change has made some jobs redundant
  - fewer consumers want to purchase a product that has become less fashionable.

FIGURE 7.18 Jobs that require high educational or training qualifications generally have a more limited supply of labour and therefore command higher wages.



Whatever the specific reason, wage differences due to the operation of the labour market cause inequality in income, consumption and material living standards.

7.5.2 Unemployment and reduced hours of work cause income inequality

One of the most obvious and important causes of inequality in both income and wealth is *high unemployment* (e.g. over 30 per cent in the Great Depression of 1929–33, and a monthly high of 11.7 per cent in June 2020 without the JobKeeper wage subsidy during the COVID-19 recession).

As we know, unemployment can follow a drop in aggregate demand which occurs in a recession. It may also be the result of structural change (e.g. firms restructure operations using new technology, closing unprofitable branches, relocating overseas, or a mismatch of worker skills with the jobs available). Whatever the case, when individuals lose their job and cannot sell their labour resources, they are forced onto government welfare benefits. Typically, their income drops sharply from full-time adult average weekly earnings of over $1750, to perhaps only $300 to $350 a week on welfare. For some, this means poverty. Part-time and casual workers also face a greater likelihood of lower incomes than full-time employees.

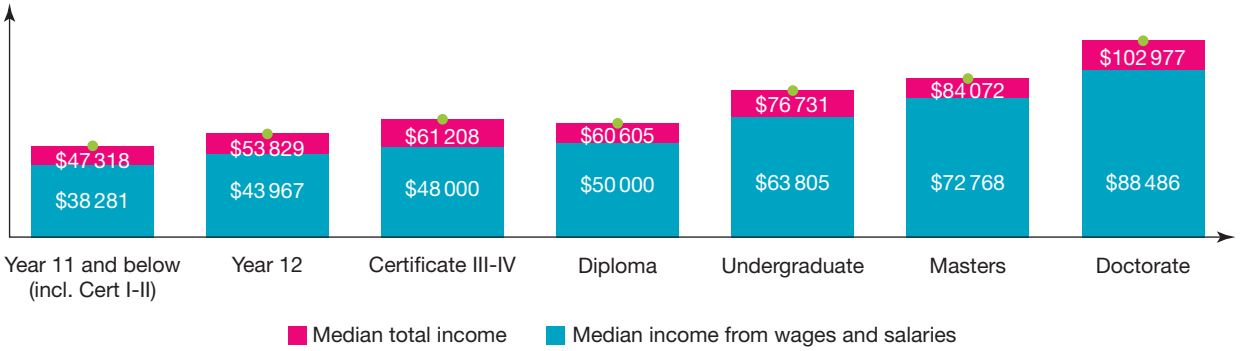
In addition, the unemployed run down their wealth. They cash in their assets, such as savings or shares, just trying to make ends meet. With less interest and dividends received from savings, this also causes their income to fall. In addition, if they are unable to meet home mortgage and other interest repayments, their assets can be repossessed, lowering their share of wealth. As a result, material living standards fall.

7.5.3 Low educational attainment causes income inequality

Educational attainment has a powerful influence on income, poverty and living standards. As shown in Figure 7.19, those with no formal education, or who leave school at or before the end of Year 11, usually have incomes about 40+ per cent lower than those with university qualifications. This is because the labour market usually values educated people more highly than those without such training — the latter are less scarce.

In addition, other data suggests that highly educated individuals with post-graduate qualifications are *unlikely* to experience poverty (just 3.3 per cent), while those who leave school in Year 8 or earlier are very likely (56.3 per cent) to end up in poverty.

FIGURE 7.19 Median annual income and median income from wages and salaries for 30- to 64-year-olds not currently studying, by highest level of educational attainment



Source: Australian government, Department of Education, skills, and employment, see https://www.dese.gov.au/integrated-data-research/benefits-educational-attainment/income.

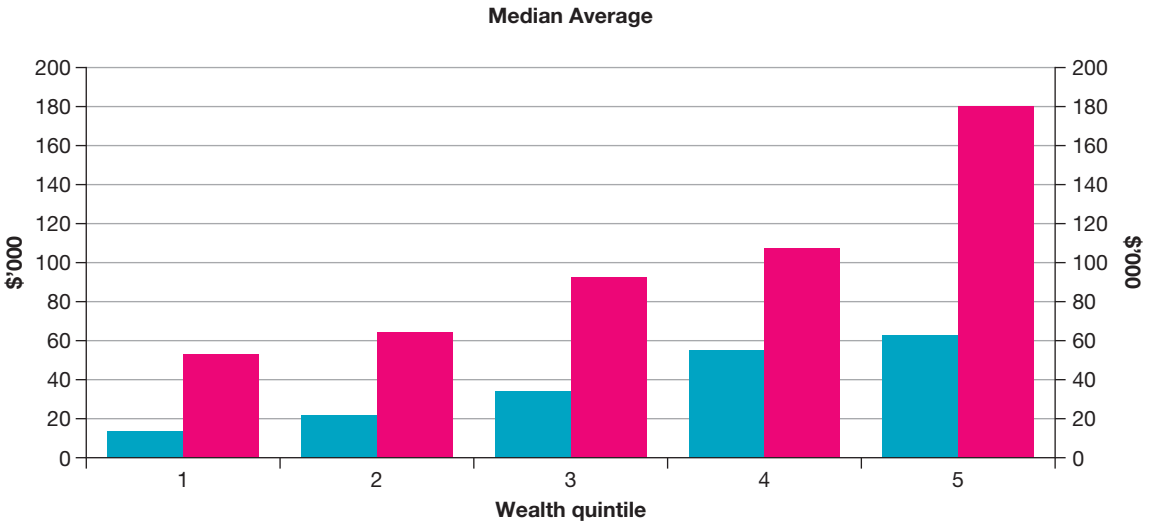
7.5.4 Ownership and inheritance of wealth cause inequality

Income is not only earned by selling one's labour. Income such as interest, rent, dividends and profits can also come from the ownership and sale of assets or wealth such as property, shares, bank deposits, superannuation and businesses. Because Australia's wealth is distributed very unevenly, it is not surprising that income from these assets also leads to inequality.

In addition, the existence of *inherited* wealth, leads to inequality in income and wealth. Here, assets are handed down from older to younger generations. Nowadays, there is little to prevent inheritance, given that death duties or taxes on the value of estates of the deceased, were abolished some decades ago. Although perhaps 80 per cent

of Australia's wealthiest 200 have accumulated self-made fortunes, inheritance certainly gives the lucky few a start financially. Figure 7.20 shows the value of wealth inherited varies greatly between quintiles 1 and 5. For instance, the average value of wealth inherited by quintile 5 was around three times higher than that for quintile 1.

FIGURE 7.20 Median and average values of inheritance by wealth level, Australia (A$)



Source: Australian government, Treasury, 2020, Retirement Income Review final report; data from Melbourne Institute HILDA surveys from 2001–2017, see https://povertyandinequality.acoss.org.au/wp-content/uploads/2020/12/Inequality-in-Australia-2020-Part-2-Who-is-affected-and-why_FINAL.pdf.

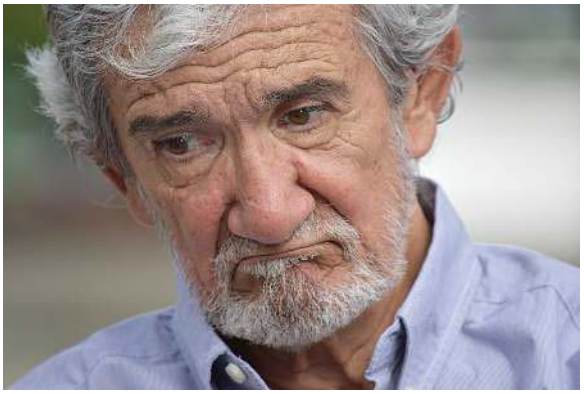
Recipients of inherited wealth can use it to invest, enabling them to further increase their income and generate even more wealth. Here we might think of individuals who inherited substantial wealth including Gina Rinehart (mining), Blair Parry-Okeden (media), James Packer (media) and Warwick Fairfax (media).

7.5.5 Personal and other influences

There are many other causes of income and wealth inequality that we see in Australia. Here are just a few:

Age can cause income inequality

For most people, the peak in their income-earning capacity occurs when they are in the 35–49-year-old age group. In contrast, there are *two* age groups that often suffer low incomes and a lack of wealth:



- The *very young* sometimes find it hard to get their first job, mostly because of a lack of work experience, training, skill or, in a few cases, possibly a poor '*work ethic*'. Consequently, youth unemployment is relatively high (around 9 per cent in mid-2022), and their share of income is low. In addition, most of these young people have not yet had time to accumulate assets or wealth.
- At the other end of the life cycle, there are the *aged* who can no longer work. They often depend on welfare benefits (e.g. the age pension), past savings and, for the lucky few, superannuation. Because they are income poor (although may be asset rich), seniors often endure lower living standards. In addition, those over 50 often find it harder to gain employment, thereby reducing their average income.

A weaker 'work ethic' and personal choices can cause income inequality

In some cases, a poor 'work ethic' or attitude results in individuals being unable and or unwilling to gain or keep their job. The problems could be rudeness or a negative manner, lateness in arriving for work, a lack of effort, or unsatisfactory dress and personal appearance. This can make some people less employable and can lead to their exclusion from the labour force. This then leads to lower incomes and material living standards.

Of course, some individuals simply do not want to spend their life working and earning money — achieving a better work–life balance is an important consideration for them.

Rapid inflation causes income inequality

Inflation (i.e. when most consumer prices paid for goods and services are rising) can also cause inequality in both income and wealth, usually in favour of the better-off sections of society. For example, *speculators* buying assets like shares and property when prices are low — and selling them when inflation causes prices to rise — often do relatively well from inflation (as in the middle to late 2005–08, and 2021–22 when property prices rose significantly). Their share of both the income and wealth cakes tends to increase, relative to others. Typically, these people are the rich, with sufficient savings or a strong credit rating to permit speculative activities.

By contrast, *ordinary* working families and retirees on relatively *fixed incomes* often find that their wages and incomes rise less quickly than prices. This reduces their purchasing power. Paying bills and buying food become more difficult. In addition, for young people, purchasing a house is less affordable because of higher property prices and interest rates on money borrowed from the bank. This adds to income and wealth inequality and erodes general living standards.

Overseas economic conditions cause income inequality

Variable economic conditions overseas can cause income inequality. When there is strong economic growth abroad among our trading partners (e.g. China and USA), Australian mineral exporters and their workers find that rising commodity prices and sales lead to higher incomes, often at rates faster than others in the community. For instance, the recent strong demand for mineral and rural commodities from abroad in 2021–22 saw incomes in these sectors rise strongly. In contrast, the deflation recorded during the global COVID-19 pandemic in 2020 saw a fall in the incomes of some.

Declining unionism has increased inequality

Over the past few decades, there has been a dramatic decline among workers in *union membership*. Figure 7.21 shows that following a peak of 51 per cent in 1976, the overall (the total of women and men) unionisation of the labour force has fallen to around 14 per cent by 2020. This means that when wage rises are being negotiated between workers and their boss, there is now *less protection* of workers from wage exploitation and unsafe working conditions. Even so, it is likely that union membership still affects the income difference between unionised and non-unionised workers. There is some evidence that pay rises are faster in occupations that are more highly unionised, since this shifts the balance of power in wage negotiations in favour of workers.

The growth of technology is increasing inequality

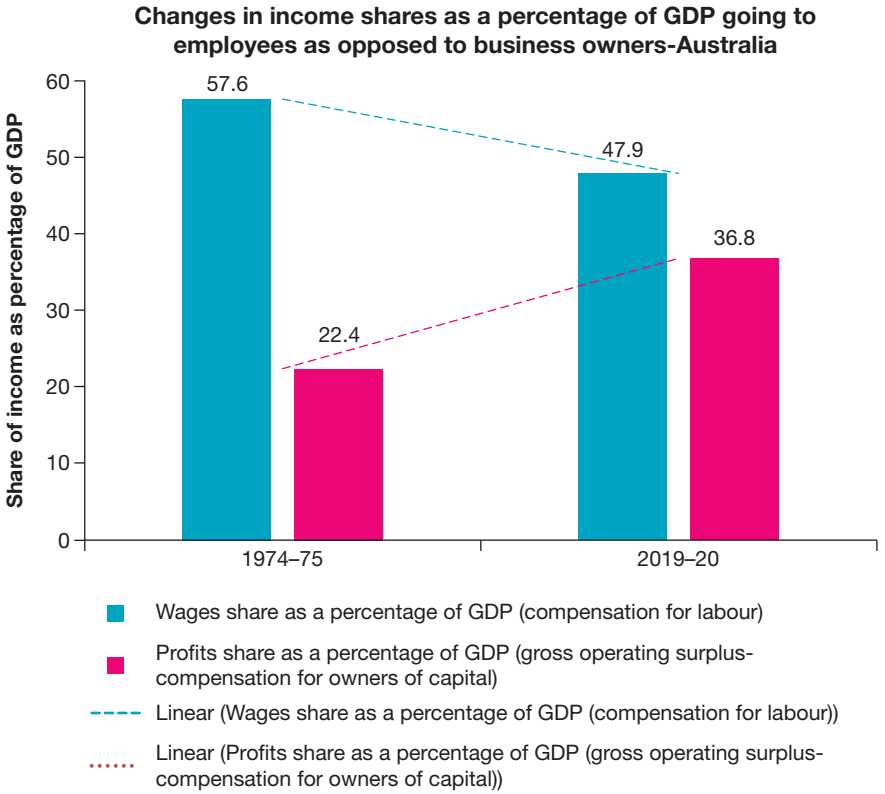
Increasingly, the application of technology, computers, robotics and automated processes are performing lots of tasks in manufacturing, banking, finance, packaging and warehousing that were once done by employees. This has reduced the number of staff required and has eliminated many boring and repetitive jobs. The growth in artificial intelligence (AI) is further accelerating this trend.

While technology destroys some jobs, it creates others, usually for workers with greater skill, but not always at the same rate or in the same industry. As a result, unemployment may rise amongst the unskilled and/or the growth in wages may slow down, as seen recently. Because the application of technology is controlled by business owners (i.e. those who operate *capital* resources), this tends to increase the *profit share* of Australia's income cake that goes to business owners. Figure 7.22 supports this idea and shows that, over time, the share of the *income cake* going to ordinary employees has *fallen* dramatically. On the other side, there has been a *rise* in the share of GDP or income in the form of profits going to business owners.

FIGURE 7.21 Trends in Australia's number of union members and membership rate as a percentage of all employees

Source: ABS, Trade Union Membership, see https://www.abs.gov.au/statistics/labour/earnings-and-working-conditions/trade-union-membership/latest-release.

FIGURE 7.22 How Australia's national income is shared between workers and business owners



Source: Data derived from RBA, see https://www.rba.gov.au/statistics/tables/?v=2022-04-12-15-55-46#output-labour.

In addition, the application of technology has meant that the *income gap* between skilled workers who use technology (where there is an increasing demand but a limited supply) and those that are unskilled, has continued to widen.

7.5 Activities

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7.5 Quick quiz on | **7.5 Exercise**

7.5 Exercise

1. a. Clearly **explain** *any three* of the following *causes* of *inequality* in Australia's distribution of income, consumption and goods and services: **(6 marks)**
   - high unemployment and/or low hours of employment
   - high inflation rates
   - stronger or weaker economic conditions overseas among our trading partners
   - inheritance
   - some government policies like tax concessions often used by higher income earners to reduce their actual tax rate.

   b. In an unregulated or free labour market, carefully **explain** why there are often large wage differences between occupations. **(4 marks)**

   c. The forces of demand and supply in the labour market play a big part in explaining inequality in Australia's weekly wages. From the following list, **select** one high- and one low-income occupation (two examples in total):
   - Basketball player, Andrew Bogut, (reportedly earned $16.2 million)
   - The manager of the National Australia Bank (reportedly paid over $5 million per year)
   - A crewmember/worker at McDonald's (paid around $18 per hour)
   - A farmer (average income $278 000 in 2021–22)
   - A childcare worker or nurse in a public hospital
   - A successful heart surgeon (average income around $380 000 per year)
   - Tennis player, Ash Barty (reported income of $13.1 million)
   - A brilliant computer engineer and designer
   - A person with a poor 'work ethic'
   - Tennis player, Roger Federer (reported gross income of over $90.6 million).

   Draw and label a D–S diagram for each of the two examples selected. Referring to a range of specific demand or supply factors in the labour market, **explain** the most likely reasons why income is either relatively high or low for that occupation or person. **(4 marks)**

2. Examine the four images that follow before answering the questions that follow:

   a. **Explain** why unemployment by the main household earner is far more likely to cause poverty than households where the main income earner is employed. **(2 marks)**

   b. **Explain** why children in sole parent households are far more likely to be living in poverty, than in couple-based families. **(2 marks)**

   c. **Explain** why households dependent on government welfare benefits are far more likely to be living in poverty, than households where the main income earner is employed. **(2 marks)**

d. **Explain** why sole parent households, where the main income earner is female, are far more likely to be in poverty than households where the main income earner is male. **(2 marks)**

Source: ACOSS, Poverty and Inequality, see https://povertyandinequality.acoss.org.au/poverty/#:~:text=Our%202020%20report%20Poverty%20in,424%2C800%20young%20people%20(13.9%25).

Solutions and sample responses are available online.

on Resources

Weblinks
- Income and wealth inequality
- Labour market
- Where did a million Chinese millionaires come from?
- The manners and morals of high capitalism
- Why we look down on low-wage earners
- Gina Rinehart: The power of one (Four Corners)
- The Fringe Dwellers
- Centrelink

7.6 Different perspectives about the distribution of income and wealth

KEY KNOWLEDGE

- The different perspectives of households (consumers and workers), business, government and other relevant economic agents regarding the issue of the distribution of income and wealth

Source: Adapted from the VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

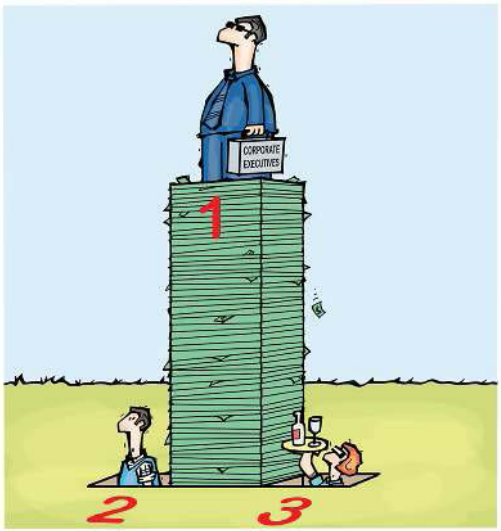
What is the *ideal* distribution of income and wealth? Now that's a tough question! Opinion is widely split about how income and wealth *should* be divided. On the one hand, some feel *greater equality* or fairness is a good thing, while others believe that *inequality* can be beneficial by creating financial incentives to propel efficiency and personal effort.

As economic agents, people and groups have different *viewpoint*s. For instance:

- As an *employee*, you might feel that wages are too low and that the profits are unfairly high, allowing business owners to enjoy a lifestyle that can only be a dream for others.
- As a *business owner*, perhaps you would like to pay staff less to cut costs, improve your international competitiveness, and boost returns.
- As a *consumer*, you probably like cheap goods, even if this requires depressing wages and profits.
- As a *government* facing periodic elections, you realise that it isn't possible to keep everyone happy all of the time. Cutting taxes to make it fairer for one group unfortunately reduces the funds available for other purposes, like paying for welfare, education, affordable housing, health or infrastructure.

Your perspective about whether more equality or inequality in distribution of income and wealth is good or bad, partly depends on your value or opinions about what you see as *fair* or *unfair*.

Interestingly, a recent survey about the issue of income distribution found that 92 per cent of Australians believed that nobody should go without access to basics like food, healthcare, and power, and that nearly 80 per cent felt that it was up to the government to ensure people have enough money for basic accommodation and food. In other words, most Australians believe that too much inequality is a bad thing and that governments need to step in with appropriate policies, to help *promote greater fairness and equity*.

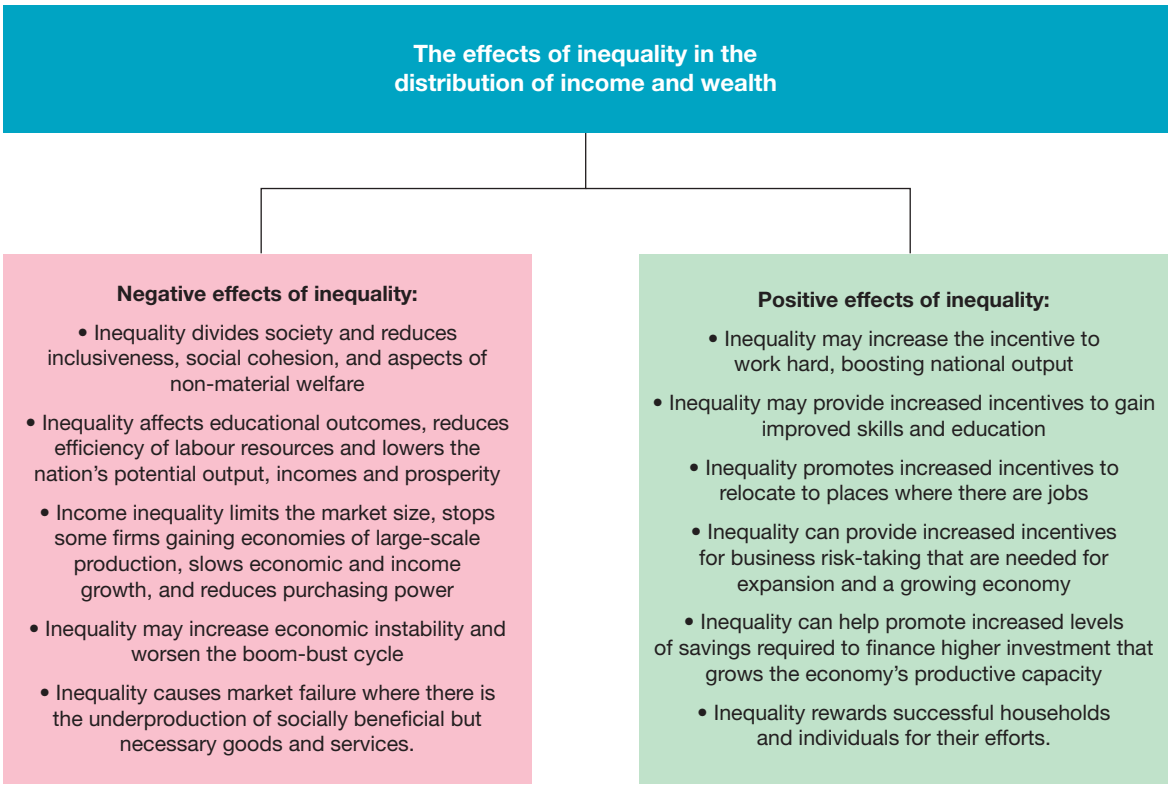


THE WAGE RISES WINNERS PODIUM

The reality is that there will always be some *inequality* in the distribution of income and wealth. Indeed, most economists believe that a bit of inequality is good and in fact essential in our *market economy*. It creates *incentives* for the price system to efficiently allocate resources between different uses. However, opinion is divided about *how much inequality* is *ideal*.

In this section, we are going to investigate a couple of these perspectives and examine why some *inequality* can have both good and bad effects on society's wellbeing. Figure 7.23 sums up the opposing viewpoints or perspectives about the negative and positive effects of inequality for individuals, society and general living standards.

FIGURE 7.23 Two perspectives — the positive and negative effects of inequality in the distribution of income



7.6.1 One perspective — excessive inequality has negative effects and reduces society's general wellbeing

There are compelling reasons why *excessive* levels of inequality in the distribution of income and wealth are bad for most people, not just the poor. Extreme inequality lowers average living standards and society's general wellbeing.

Inequality creates a social divide, reduces cohesion, and erodes society's non-material wellbeing

Inequality divides society into the 'haves' and *'have nots'*. In some parts of any city, there are families living comfortably in palatial dwellings located on tree-lined streets, well away from the filth of factories and the noise of freeways and trains. However, in other areas, there are overcrowded suburbs that include none of the luxuries of affluence. Here, unemployment, racial ghettos, crime, drugs, despair, poverty, and welfare dependence are far more commonplace. The people living in these areas may well resent those who are better off and start to see the system as unfair. This weakens social

FIGURE 7.24 Severe income inequality divides society, reduces social cohesion and may cause social unrest, violence and crime.

cohesion and can lead to great discontent, unrest, crime, violence, political protest and even revolution. For many low-income groups, there is social and economic exclusion, and *opportunities* to become rich are limited. Sometimes, those who are well-off find they cannot enjoy their wealth, and to ensure their personal safety, are forced to have protection and 24-hour security surveillance.

Inequality affects educational outcomes, reduces efficiency of labour resources and lowers potential output, incomes and prosperity

Perhaps one of the most serious problems of having significant income and wealth *inequality,* is that it results in reduced educational outcomes and employment opportunities for children from *disadvantaged households*. For instance, sometimes their home environment is not supportive for good study habits, so their academic results can be lower and dropout rates are higher. Often there is pressure to leave school early to get a job and earn money, rather than go on to tertiary study. There is also a lot of evidence suggesting that children from disadvantaged households, growing up in some neighbourhoods and hanging out with their local peers, lowers educational success. In contrast, children growing up in *advantaged households*, even if they only have mediocre academic ability, will tend to value education more highly, mix with more ambitious friends, perhaps go to better funded and resourced schools, have access to quality teachers and private tutors, stay at school longer, go onto tertiary study and be employed in better paid and perhaps more satisfying jobs.

In other words, economic and hence social inequality significantly lower the *quality* of Australia's *human capital resources*. This represents a waste of labour resources. It acts as a barrier to growing Australia's productive capacity, potential GDP and average incomes. Countries that invest more in education, skills and training, and ensure that access is inclusive, are far more prosperous and enjoy better material and non-material living standards for all.

Well-known economist, John Kenneth Galbraith, in his book, *Inequality and Instability*, noted that more equal or egalitarian societies have a lower average unemployment rate over the long-term, faster technical progress, better labour productivity and quicker rates of GDP and income growth.

Income inequality stops firms gaining economies of large-scale production and slows economic growth

When there is much inequality, purchasing power is not *spread* across the whole population. The market size is therefore reduced. It limits the demand for locally made goods and services that, in turn, means that Australian firms tend to gain fewer *economies of large-scale production* (i.e. they have higher average production costs per unit of output). This forces local firms to charge higher prices, cutting the purchasing power of incomes. They also become less internationally competitive with lower sales, reduced output and higher unemployment. This makes most people worse off.

Inequality may increase economic instability and the boom-bust cycle

Some economists argue that significant inequality in the distribution of incomes and wealth, increases the likelihood of recession and economic instability, worsening the *boom-bust cycle*.

One way this can happen is that high income individuals spend a smaller proportion of their income and save more, than those on lower incomes. This tends to *slow* the rate of growth in aggregate demand, limiting economic activity and leading to higher levels of unemployment than would otherwise occur in more equal societies. In response to weaker economic activity, governments typically try to use expansionary policies like cutting interest rates to stimulate spending. This can lead to booming asset prices (called an asset bubble) and unsustainably high house prices (e.g. 2021–22). While good for the rich, first-home buyers are forced to take out bigger home mortgages. Then, worried about rising inflation, governments reverse their policy and raise interest rates, causing unemployment to rise. Because of unemployment and being unable to meet loan repayments, some lower-income households default on their loan repayments, popping the asset bubble and bringing on a crash. Some economists believe that this type of scenario explains the cause of the Global Financial Crisis of 2008–09.

Inequality causes market failure and the underproduction of socially beneficial but necessary goods and services

Another drawback of great inequality is that the economy tends to *overproduce* luxury goods and services such as cars, yachts and high-end housing and, at the same time, *underproduce* necessities like affordable healthcare, housing, education, public transport and legal services. Those with low incomes lack sufficient spending power in these markets to indicate the types of things they want to see produced. They are effectively excluded from decision-making, and so society's overall satisfaction of wants is reduced. In other words, inequality can distort the allocation of resources and thereby significantly lower society's average material living standards.

7.6.2 Another perspective — inequality has positive effects and improves society's wellbeing

There is also some agreement amongst economists, that *modest* levels of *inequality in income and wealth* can be beneficial and improve society's general wellbeing. There are a number of arguments advanced, often based on the idea that inequality creates *incentives* to improve efficiency in resource allocation and production, promote stronger economic growth, expand employment opportunities, increase general incomes and raise material living standards.

In his book, *Equity and Efficiency — the Big Trade-Off*, economist, Arthur Okun argued there was an inescapable *trade-off* or conflict between *equity* and **economic efficiency**. He claimed that government policies including steeply progressive rates of income tax on the rich, generous welfare payments for the poor, free public services and high minimum wages designed to promote more equality, unfortunately undermine beneficial incentives gained from inequality, lowering the economy's efficiency and hence the wellbeing of all.

Inequality may increase the incentive to work hard

The promise of higher pay can motivate employees to work extra hours or overtime (and give up some of their leisure or holidays), try harder, and be more productive and efficient on the job. This helps to strengthen material living standards. However, if all wage rates were equal, it is likely that there would be no such incentive. Productive capacity and the rate of economic growth would probably be lower, and goods and services would be more expensive, depressing living standards.

Inequality provides increased incentives to gain improved skills and education

Skilled and educated workers usually receive higher pay since they are scarcer and generally more productive or efficient. An advantage of inequality is that it can provide young people with the incentive to stay at school longer and go into tertiary education. In the longer-term, this also helps to promote stronger economic growth and better living standards.

Inequality promotes increased incentives to relocate for gaining employment

Given the desire for self-improvement, income inequality can cause people to move from one job to better paid employment. Here, wage differences act as price signals to allocate labour to areas of greatest need or utility. Pay differences also make it possible for firms to fill job vacancies, even if these are in different towns or states, or perhaps involve unpleasant work. Again, inequality helps promote better living standards.

Inequality provides increased incentives for business risk-taking and expansion

Income inequality provides financial incentives to reward or compensate businesspeople to take calculated

risks with their money and undertake investment in new technology and equipment needed for expanding the firm. If there was no opportunity for entrepreneurs to earn extra profits through their decision-making, Australia's rate of economic growth would be much slower, employment opportunities reduced and material living standards diminished.

Inequality helps promote increased levels of savings to finance higher investment and expansion of the economy

Some claim that as a result of income inequality, the rich are more able to save a higher percentage of their income than if it was shared more evenly. In turn, better savings help to increase investment in new technology and equipment, finance business expansion and create improved job opportunities and income for others, even the poor. This boosts material living standards.

Inequality rewards successful households and individuals

In some ways, inequality in wealth and income shows success. It allows the fortunate to enjoy more opportunities for a great lifestyle such as living comfortably in pleasant suburbs, gaining personal fulfilment, enjoying social interaction and benefiting from international travel and leisure.

FIGURE 7.25 Inequality allows successful individuals on higher incomes to enjoy more varied choices including opportunities for international travel and the purchase of more goods and services.

In part, because a little inequality can sometimes be beneficial, governments in former socialist countries today use this as an incentive to change behaviour and improve economic outcomes. It is also interesting to note that the Australian government does *not* seek to promote total equality in the distribution of income and wealth. Rather, it tries to strike an *equitable* balance as defined by the political party.

7.6 Activities

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7.6 Quick quiz on **7.6 Exercise**

7.6 Exercise

1. **Explain** how significant *inequality* in distribution of the income and wealth is likely to *negatively* influence each of the following: **(4 marks)**
   - **a.** educational outcomes, economic growth and living standards
   - **b.** social cohesion
   - **c.** economic stability
   - **d.** the allocation of resources towards socially beneficial and necessary goods and services.
2. Sometimes, income inequality can have *positive* effects. **Identify** and **outline** *four* important reasons why some income inequality is often seen as *beneficial* for society's living standards. **(4 marks)**

Solutions and sample responses are available online.

7.7 The Australian government's response to address inequality in the distribution of income and wealth

KEY KNOWLEDGE

- The economic responses of governments and others to address the issues of the distribution of income and wealth

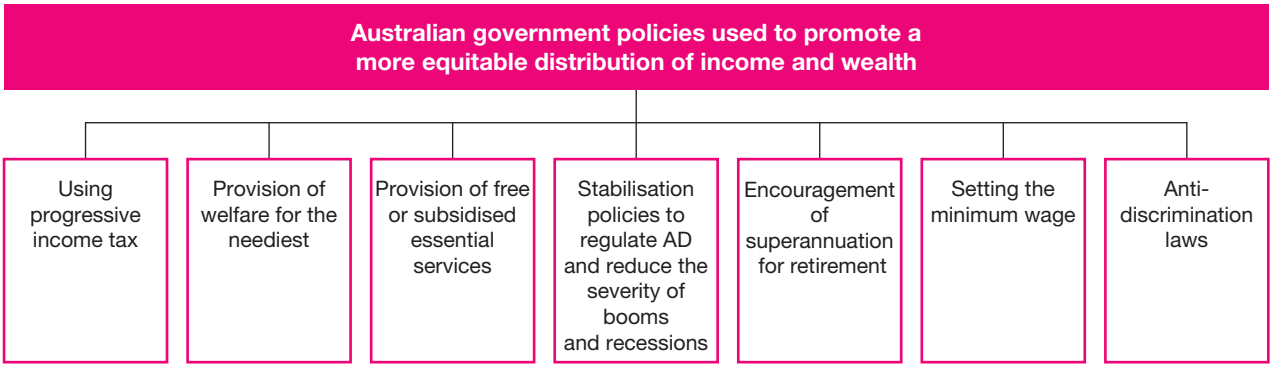
Source: Adapted from the VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

An *equitable* distribution of income and wealth means sharing income, wealth, goods and services in a *fair* and reasonable way. Of course, people have different values or perspectives about what is *fair* or *unfair*. We sometimes see different opinions displayed when an umpire in a sporting competition makes a particular decision. One side sees it as a good call, but the other believes it's unfair! When it comes to the ways that *final* income and wealth are distributed, the government steps in as the umpire using economic policies to promote a more *equitable* distribution. It seeks to reduce inequality that is partly the result of the free operation of the labour market.

The Australian government's **goal of an equitable distribution of income** *is defined as a situation where all people have sufficient income to purchase or have access to basic goods and services and enjoy reasonable living standards at a level deemed generally acceptable to most.* Here, the government's intention is *not* to create total *equality*. It only seeks to *narrow the income-wealth gap* a little and promote greater fairness. There is no precise target for the Gini coefficient, nor is it clear as to exactly what is meant by access to *basic* goods and services or an *acceptable* standard of living.

As shown in Figure 7.26, the Australian government uses a range of policies designed to reduce the level of inequality and redistribute incomes and wealth in a more equitable way.

FIGURE 7.26 Australian government policy measures to help promote a more equitable distribution of income and wealth



7.7.1 Using progressive income tax on individuals to promote equity

There are *three* main types of tax that can affect the distribution of income and wealth including progressive, regressive and proportional taxes. However, in looking at these taxes, we will discover that only *progressive taxes* work to directly promote a more equitable distribution of income.

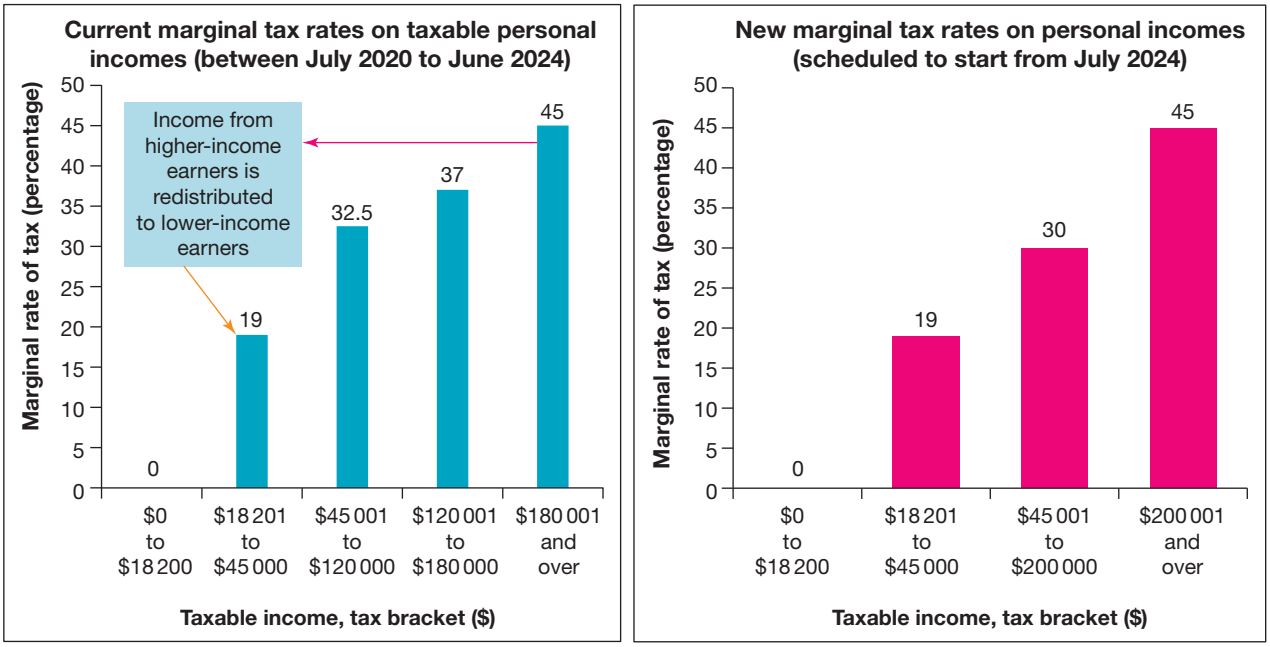
Progressive personal income tax

Progressive personal income tax can help *reduce inequality* and *increase equity.* Using the Robbin Hood principle (i.e. take from the rich to give to the poor), they work in *two* ways to help *narrow the gap* between high- and low-income earners and make the *final* distribution of income more *equitable:*

- *The direct effect on higher income earners:* First, they work *directly* to reduce inequality in the distribution of *disposable* income by taxing upper income earners at higher marginal tax *rates* (expressed as a proportion of income), than those charged on lower incomes. For instance, when an individual gains taxable income from earning wages, and receives rent, interest, or dividends from shares, income tax has to be paid at varying marginal tax rates. As shown in Figure 7.27 (see part 1), these rates start at zero per cent on all taxable income up to $18 200 per year. This is called the *tax-free threshold*. It benefits all taxpayers. However, beyond this level of income, the marginal tax rate on additional dollars rises through four steps or *tax brackets* to eventually reach the top marginal income tax rate of 45 per cent of each additional dollar of income in excess of $180 000. In addition, there is a 2 per cent Medicare Levy on most incomes that is designed to help pay for our largely free *healthcare* system.

FIGURE 7.27 Australia's recent and scheduled changes to personal income tax rates, July 2018 to July 2024

Part 1: Current and future rates of personal income tax



Part 2: Recent changes to personal income tax

Current rates of personal income tax (from July 2020 to June 2024)		Scheduled rates of personal income tax (from July 2024)	
Taxable income thresholds ($)	**Marginal tax rates (%)**	**Taxable income thresholds ($)**	**Marginal tax rates (%)**
$0 to $18 200	0	$0 to $18 200	0
$18 201 to $45 000	19	$18 201 to $45 000	19
$45 001 to $120 000	32.5	$45 001 to $200 000	30 (replaces the 32.5 per cent bracket)
$120 001 to $180 000	37	NA	NA (the 37 per cent tax bracket is abolished)
$180 001 and over	45	$200 001 and over	45

- *The indirect effect on lower income earners:* Second, the personal income tax system also works *indirectly* to increase the *final* disposable income, especially of lower income earners. The money raised (mostly from taxing high income earners) is used to pay for *welfare benefits* (i.e. cash payments to the neediest individuals including the aged and unemployed), increasing their disposable income and purchasing power. Tax revenue is also used to pay for government-provided *essential services* like public health and education (i.e. more often used by low-income individuals who tend to use the public system).

You will also see from Figure 7.27 that, currently, big *changes* to the personal income tax system are scheduled from July 2024. Notice that the current 32.5 and 37.0 per cent tax brackets will disappear and be combined into one huge 30 per cent tax bracket. In addition, the tax threshold for hitting the 45 per cent tax bracket will be pushed out to an annual taxable income in excess of $200 000. Clearly, although this will make the tax system simpler, it will also become *less steeply progressive* (especially when compared with a top rate of 75 per cent back in 1951 or 67 per cent in 1984). It will allow for greater income inequality and may also mean that the value of tax revenue raised will be relatively lower. This raises the question as to whether there is less money available for welfare and essential services, adversely affecting low-income earners?

Proportional income tax on companies

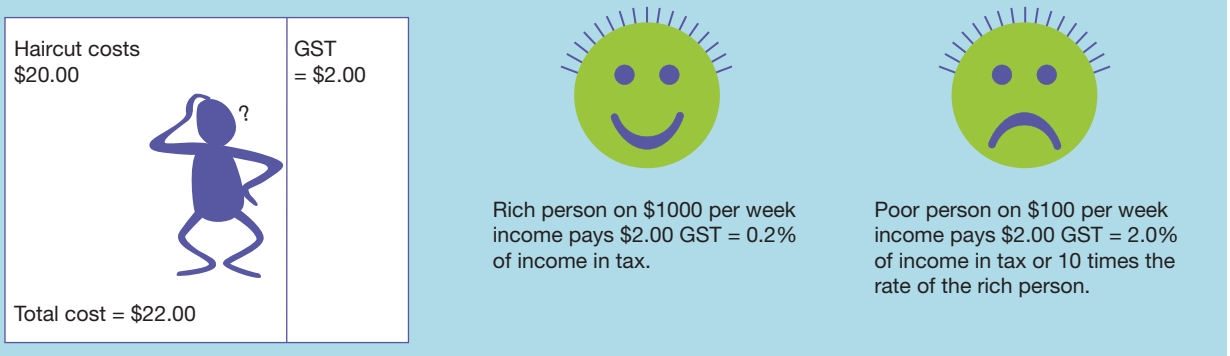
Proportional taxes have a fairly neutral effect on income distribution. Here, the tax rate remains constant as income rises. An example of a proportional tax is company tax. In 2022–23, large businesses paid at the rate of 30 per cent of each dollar of profit, while small companies were taxed at 25 per cent (here, small and medium-sized firms, abbreviated to SMEs, are defined as those with a turnover below $50 million per year). Unlike progressive or **regressive taxes**, proportional taxes tend to have a fairly neutral effect on how evenly or unevenly income is distributed.

Regressive indirect taxes

Regressive indirect taxes increase inequality and reduce equity. Some of Australia's taxes are *regressive* because the *rate* of tax paid as a proportion of income, *decreases* as income rises. Examples of indirect regressive taxes include the goods and services tax (or GST) that is levied at the general rate of 10 per cent on most (but not all) goods and services, and the excise taxes on petrol, tobacco and alcohol that are as high as 40 per cent. Here, the tax is added onto the price of goods and services at the point of sale, making items dearer for buyers.

Regressive taxes lead to increased inequality because a low-income buyer purchasing an item (such as a $20 haircut with 10 per cent or $2 GST) will be paying a larger proportion of income in tax than a high-income person making exactly the same purchase. This is illustrated in Figure 7.28.

FIGURE 7.28 The regressive effects of the GST (or most other indirect taxes)



In fact, Australian estimates suggest that low-income individuals in quintile 1 pay indirect taxes equal to around 20 per cent of their income, while high-income earners making up quintile 5, only pay about 9 per cent of their income in indirect tax. This is highly unfair and *regressive* because these taxes make things more expensive and reduce the access of low-income earners to basic goods and services.

One exception to the regressive nature of most indirect excise taxes is the *luxury car tax*. This is only applied to expensive imported vehicles that are typically purchased by those on higher incomes.

A review of different types of tax and their effects on distribution

So far we have seen that there are *three* types of taxes:

- progressive
- proportional
- regressive.

Each affects the distribution of income in different ways. Only progressive taxes narrow the income gap between high and low income earners, while regressive taxes widen inequality. Table 7.1 illustrates some of the features of these taxes.

TABLE 7.1 Features of hypothetical progressive, regressive and proportional taxes

Annual taxable income ($)	Amount of tax ($) and average tax rate (%) applicable for a 'progressive' tax	Amount of tax ($) and average tax rate (%) applicable for a 'regressive' tax	Amount of tax ($) and average tax rate (%) applicable for a 'proportional' tax
$5000	$0 tax = a rate of 0%	$1000 tax = an average rate of 20%	$1000 tax = an average rate of 20%
$10 000	$1000 tax = an average rate of 10%	$1500 tax = an average rate of 15%	$2000 tax = an average rate of 20%
$15 000	$3000 tax = an average rate of 20%	$1800 tax = an average rate of 12%	$3000 tax = an average rate of 20%
Impact of tax on income distribution	Has a levelling effect on the distribution of incomes- e.g. personal income tax is a progressive tax	Causes income distribution to become more uneven- e.g. the GST is a regressive tax	Has a fairly neutral impact on the distribution of income- e.g. company tax is a proportional tax

7.7.2 Using cash welfare payments to promote equity

Welfare benefits represent the government fortnightly payments of cash to the neediest members of the community including the unemployed, aged, carers, those with disabilities, war veterans and students. They represent over 35 per cent of all Australian government outlays in the annual budget and, as shown in Table 7.2, typically range in value between $600 and $1000 per fortnight.

In paying benefits, Centrelink uses both a **means test** (i.e. *income* test or cut-off) and an **assets test** (i.e. *wealth* test or cut off) designed to exclude higher-income and wealthier individuals from gaining access to welfare. This ensures that the money goes to where it is most needed, and the system is affordable and sustainable for other taxpayers.

Welfare benefits help to *narrow* the income gap by *lifting* the disposable income and hence the *purchasing power* of those on lower incomes. They mean that these individuals can more readily afford to purchase basic goods and services, improving their living standards. Even so, you may recall that welfare recipients are likely to be in poverty. This is because benefit rates are too low and not sufficiently generous. Opponents of making welfare more generous often note that this could act as a disincentive for people to take personal responsibility for finding employment and earning income.

TABLE 7.2 Some types of welfare assistance offered by the Australian government (April 2022)

Name of benefit	Target group	Maximum value per fortnight ($ rounded)
Age pension (single)	Aged person (single) who are retired	987.60
JobSeeker (previously called Newstart)	Single unemployed, no dependants over 21 years while looking for work	691.00
Youth allowance (living away from home aged 18–24)	Single, aged over 18, living away from home, undertaking full-time study or training	679.00
Austudy (single, no children)	Single, over 25, in full-time study to cover expenses	679.00
Family tax benefit (one child aged 0–12)	Lower income couples with one child	162.54
Carer payment	A single individual prevented from working because they are caring for a dependant	987.60
Disability support pension	Single, aged over 21, longer term medical, health and impairment conditions	987.60

Source: Data derived from Department of Human Services, Centrelink, April 2022, see https://www.servicesaustralia.gov.au/guide-to-australian-government-payments?context=1.

7.7.3 Using free or subsidised government services to promote equity

Federal and state governments use their budgets to provide a range of community services (e.g. public education, health, some prescription drugs and housing) free of direct charge or at a relatively low, subsidised price. These are regarded as **merit goods** because, if not paid for by the government, they would be underproduced and too expensive for ordinary families. Providing these services makes them more affordable for those on lower incomes, than would otherwise be the case.

From the point of view of the poor, having access to these government services is as good as having extra income. Indeed, it has been estimated that government services provide an average cost saving or benefit of around $300–$400 a week for those individuals in the lowest two income quintiles (but less than half of this amount for those in quintile 5). However, with the Australian government's weakened financial position involving large budget deficits (where budget receipts are less than budget outlays) over the last decade, there has been an attempt by the government to recover some of the costs of providing services through a shift towards the 'user-pays principle' (i.e. consumers of these services are expected to pay some of the cost to the government of producing these items). Examples here can be found especially in areas like transport, education and health. This trend is likely to increase inequality because the poor lack the income to pay, depriving some of access to these basic services.

7.7.4 Using policies to stabilise AD to the level of economic activity to promote equity

Generally, rising prices or inflation, as well as unemployment, cause inequality in the distribution of Australia's income. Both problems reduce the purchasing power of individuals.

To help avoid *inflationary booms*, or during recessions where there is *high unemployment*, the Australian government changes taxes and government spending in a *countercyclical* way to regulate spending. The Reserve Bank of Australia (RBA) also changes interest rates. Together, the policies adopted represent either a contractionary or expansionary approach:

- In an inflationary *boom*, typically a *contractionary* approach is used — taxes and interest rates are increased, while government spending is reduced. This slows AD and curbs inflation.

- In a *recession* (e.g. during 2020–21–22), typically an *expansionary* approach is used. Taxes and interest rates are cut and government spending increased, stimulating AD to boost employment.

Keeping both inflation and unemployment under control helps to promote greater equality in income distribution.

7.7.5 Encouraging superannuation to promote equity

Australia has an ageing population which is living longer, yet there is a declining proportion of the population who are of working age and paying taxes to support these older people. When people no longer work, they usually have lower incomes or none at all. This has created pressure on our welfare system. To ease this problem, starting in 1992, the Australian government introduced the **superannuation guarantee charge (SGC)**. This is a levy which requires employers to make retirement contributions on behalf of their workers. In 1992, the contribution was 3 per cent of the employee's pay, but by 2015 this had increased to 9.5 per cent, and then most recently to 10.5 per cent from July 2022. Ultimately, it will reach 12 per cent by July 2025. By helping ordinary workers to retire with more adequate superannuation, the burden on the nation's finances is eased and it is hoped that retirees should be able to enjoy better living standards and live above the poverty line.

The budget also uses very attractive tax concessions to encourage people to put money aside into personal superannuation funds voluntarily (called salary sacrifice) while they are still working. While this does build retirement savings for those who are better off and can afford to save, it does little to help those on low incomes. Additionally, providing such generous tax concessions, which are mostly of use to those on higher incomes, seems highly unfair, weakening the government's budget position and making the provision of merit goods and welfare for the neediest less affordable and sustainable.

7.7.6 Setting the minimum wage to help promote equity

Each year, the Fair Work Commission (FWC) reviews minimum weekly and hourly wage rates that employers must legally pay their staff. The main aim is to ensure that businesses don't exploit workers so their staff can have a reasonable standard of living where wages and purchasing power keep up with rising prices. This helps to protect living standards. For example, in 2022–23, the adult **minimum award wage** was increased to $812.60 per week for a 38 hour week, or $21.38 per hour.

7.7.7 Use anti-discrimination laws to promote equity

When businesses hire new staff, discrimination can cause some people to find it more difficult to get a job or earn a reasonable income. Discrimination can be based on race, age, appearance and gender.

In response to this, the Australian government has passed several **anti-discrimination laws** making it unlawful to discriminate on the basis of age, disability, race, sex, inter-sex status, gender identity and sexual orientation.

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7.7 Quick quiz on | 7.7 Exercise

7.7 Exercise

1. **Define** what is meant by the Australian government's goal of an *equitable distribution of income*. **(2 marks)**
2. **Outline** three policies the Australian government uses to promote greater equity in distribution of income. **(3 marks)**
3. a. **Define** what is meant by the *progressive tax* on personal income. **Explain** how this differs from a *regressive tax*. **(2 marks)**
   b. Use the data in the table below to **create** a graph showing how Australia's *marginal tax rate* steps upward as personal income increases. **(2 marks)**

Taxable income levels and thresholds (tax brackets) ($)	Marginal tax rates (%)	Calculation of tax on taxable income falling in each tax bracket
$0 to $18 200	0	Zero
$18 201 to $45 000	19	Zero plus 19c for each $1 over $18 200
$45 001 to $120 000	32.5	$5092 plus 32.5c for each $1 over $45 000
$120 001 to $180 000	37	$29 467 plus 37c for each $1 over $120 000
$180 001 and over	45	$51 667 plus 45c for each $1 over $180 000

Source: Data from the Australian Tax Office (ATO), see www.ato.gov.au/rates/individual-income-tax-rates. Data excludes the effects of the 2 per cent additional Medicare levy.

   c. Use the table to **calculate** the total amount (in dollars) of personal income tax payable on each of the following taxable incomes: **(3 marks)**
      i. $18 201
      ii. $36 402
      iii. $190 000.
   d. Examine the table before answering the following questions:
      i. **Explain** what is meant by the tax-free personal income threshold. **(1 mark)**
      ii. In July 2012, the federal government raised the tax-free threshold from $6000 to $18 200 (where it remains today). Additionally, over more recent years, it has lowered the marginal tax rate on low and middle incomes, and tax bracket thresholds were generally lifted. **Discuss** the likely effects of these tax changes on the level of equality in Australia's income distribution. **(4 marks)**
4. a. Concerning the goods and services tax (GST):
      i. In general, **explain** why indirect taxes levied on goods and services that are purchased by households are considered to be *regressive*. **(2 marks)**
      ii. **Outline** the features of the GST that currently help to limit its regressiveness. **(2 marks)**
   b. Assume that you were the federal treasurer revising Australia's GST. **Identify** which *six* of the following goods or services you would tax if you wanted to make the GST more *progressive*. Be prepared to justify your answers. **(2 marks)**
      - Cosmetics
      - Holidays
      - Above-ground plastic swimming pools purchased from Kmart
      - Public transport tickets
      - Takeaway foods

- Restaurants
- Fresh fruit and vegetables
- Medical prescription drugs
- Contraceptives
- Textbooks
- Petrol
- Tax accountant fees
- International departures
- Taxis
- Bread
- Imported French wines

5. Examine the table below containing data relating to three types of tax: a *progressive, regressive* and a *proportional* tax. Complete this table by:
   a. calculating the rates of tax applicable for each of these three taxes **(3 marks)**
   b. deciding whether each tax is progressive, proportional or regressive **(3 marks)**
   c. explaining the effect of each tax on the level of inequality in income distribution. **(3 marks)**

Annual income and other	Features of tax 1	Features of tax 2	Features of tax 3
$30 000	$5000 = ...%	$2000 = ...%	$4000 = ...%
$60 000	$10 000 = ...%	$6000 = ...%	$3000 = ...%
Name the type of tax	a ..... tax	a ..... tax	a ..... tax
Effect on income distribution =	....	....	....

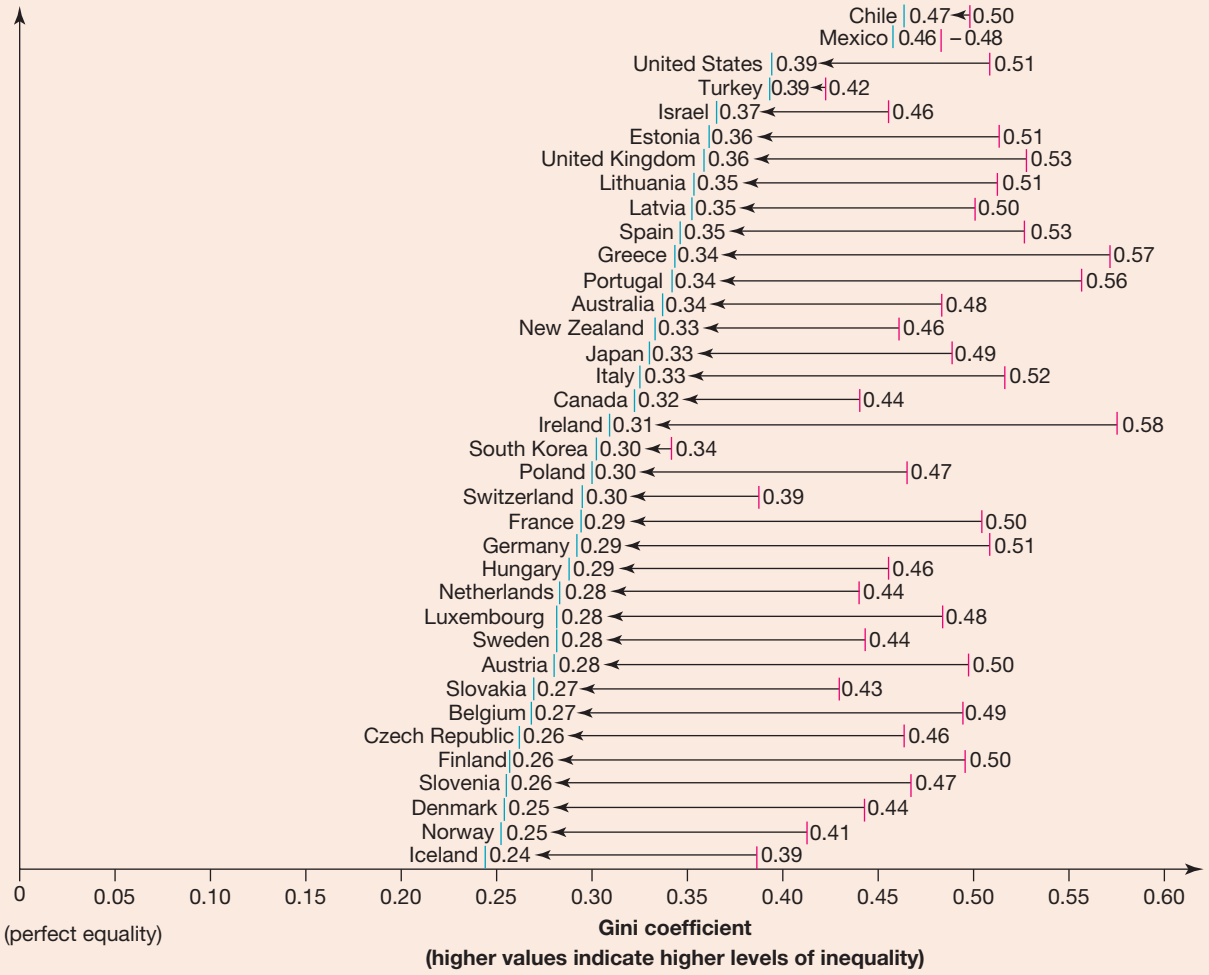
6. **Explain** how each of the following possible Australian government budgetary policy decisions, would be likely to affect the level of equality and equity in the distribution of income and wealth. **(10 marks)**
   a. A tightening of the assets or means tests applied to welfare benefits
   b. An increase in the superannuation guarantee charge *rate* paid by employers on behalf of their employees to 10.5 per cent of income from July 2022 and then rising to 12 per cent from July 2025
   c. The free or subsidised provision of socially beneficial merit public goods by the government
   d. A move towards the user-pays principle in the provision of government or public services
   e. Requiring that the unemployed wait six months before receiving unemployment benefits
   f. Lowering the top marginal tax rate from 45 to 40 per cent
   g. Increasing the GST from 10 per cent to 15 per cent on all goods and services without exception
   h. Scrapping the assets and means tests applied to the aged pension.
7. Examine the figure below showing the Gini coefficient both before and after various government policies designed to redistribute income more equitably.
   a. **Explain** what is meant by the Gini coefficient. **(2 marks)**
   b. Prior to the redistribution of income by governments (i.e. the pink markers), **list** the four countries that had the most uneven distribution of market incomes. **Quote** their Gini coefficients. **(2 marks)**
   c. In constructing the blue markers on this graph, **outline** the various types of government policies that have typically been used to affect the distribution of disposable income. **(2 marks)**
   d. After the use of redistribution policies, **list** the four countries that had the most even distribution of disposable income. **Quote** their Gini coefficients. **(2 marks)**

Inequality of incomes before and after redistribution

Inequality of incomes, as measured by the Gini Coefficient. Higher values reflect more inequality.

- The red bar shows the level of 'market income' inequality (gross wages and salaries + self-employment income + capital and property income).
- The blue bar shows the level of 'disposable income' inequality (disposable income = market income + social security cash transfers + private transfers – income tax).

Shown is the latest available data, which depending on the country is from 2012 to 2014.



Data source: OECD

The data visualization is available at OurWorldinData.org.

There you find the raw data and more visualizations on this topic.

Licensed under CC-BY-SA by the author Max Roser.

Source: Our World in Data (data source OECD), see https://ourworldindata.org/income-inequality.

Solutions and sample responses are available online.

7.8 Review

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7.8.1 Summary

The nature of income and wealth

- *Income* represents flow of money or rewards over a time period, usually to those households selling natural, labour and capital resources. Wages and salaries come from labour, rent from property and interest and profits from investments.
- When labour is sold, this is called *earned income* as opposed to *unearned income* in the form of rent and interest, or *transfer income* from government welfare payments to the neediest individuals.
- *Wealth* is different — it is the value of assets owned by individuals (e.g. savings, shares, property, superannuation, collectables) at a point in time, which often generate income for their owners (e.g. interest, dividends).

Measures of income and wealth distribution

- *Income distribution* refers to the way the income 'cake' is shared or divided between individuals, genders, groups or regions. This pattern of distribution affects living standards and may be fairly even or uneven.
- The ABS measures income distribution using a sample survey of Australian households, to construct a range of measures. Three important measures of income distribution are:
  - market or *private income* (i.e. income from personal sources such as wages, interest, dividends, profits and rent, prior to government redistribution measures)
  - *equivalised disposable income* (i.e. income from all private sources after allowing for government welfare payments, the payment of income tax and adjustments made to reflect differences in household size and composition)
  - *final income* (income from all private sources of income after allowing for the effects of government redistribution measures including welfare, income tax, provision of government services and payment of indirect taxes).
- From its survey data, the ABS calculates *quintile shares* of income (i.e. for five groups each representing 20 per cent of households). From this, a *Lorenz diagram* and curve can be drawn and a *Gini coefficient* calculated where 1.0 is total inequality and 0.0 is total equality in distribution.
- There is *moderate income inequality* in Australia relative to some countries. The Gini coefficient is 0.324. The lowest quintile receives just 7.5 per cent of the equivalised disposable income cake, while quintile 5 receives a massive 39.8 per cent of the total income cake.
- The ABS also calculates income differences by gender, state, occupation, educational attainment and age.
- Wealth surveys (net worth) are also conducted by the ABS in a similar way to the income survey and reveal an especially high degree of inequality. The Gini coefficient for the distribution of Australia's wealth is significantly higher than that for income.
- *Absolute poverty* is the absence of the necessities of life due to very low incomes, whereas *relative poverty* means that living standards are austere, usually less than 50 per cent of average weekly earnings.
- In Australia, around 13.6 per cent of the population live in relative poverty with incomes below the poverty line. Overall, this figure has gradually increased over recent years. Those most likely to experience poverty include the unemployed, welfare recipients, the disabled and individuals from non-English speaking countries.
- Not only is income divided unequally in Australia, but there is also significant *global inequality* between nations and within countries, especially low-income nations.

The reasons why the distribution of income and wealth is an important economic issue

- As an economic issue, whether the distribution of income and wealth is relatively even or uneven matters a lot because it affects the general wellbeing of people, locally, nationally and globally.
- A relatively even distribution, for example, spreads purchasing power and consumption more broadly so that average wellbeing is enhanced. A relatively uneven distribution means that only a few get to enjoy reasonable living standards.
- Having little money limits both material and non-material living standards. Low incomes restrict consumption and leads to poverty. It also undermines *non-material* living standards and contributes to sadness, violence, crime, a lack of opportunity, wasted talent, and a short life-expectancy.

The economic factors that influence the distribution of income and wealth

- A range of factors causes inequality in Australia's distribution of income and wealth:
  - Foremost, wage differences in Australia reflect the relative scarcity or economic value of each occupation. Wage differences therefore reflect the operation of the forces of demand for labour (e.g. affected by tastes, technology, economic conditions) and supply of labour (e.g. affected by education, skill, experience) in the labour market. Here, higher wages reflect greater scarcity and mean that supply is less than demand for labour, while lower pay means that supply is greater than demand.
  - Incomes are also influenced by unemployment, hours worked, inflation, overseas economic conditions, the application of new technology, union effectiveness, luck, inheritance, age, education, discrimination, work ethic and the unintended effects of some government policies (e.g. tariff cuts, the user-pays principle, deregulation of the labour market).

Different perspectives about the distribution of income and wealth

- People have different views about whether *inequality* in the distribution of income and wealth is a good or bad thing.
- *Too much inequality* can be detrimental. For example, it can:
  - reduce social cohesion and *non-material* living standards
  - distort the allocation of resources and lead to the *underproduction* of socially beneficial or merit goods and services, like health and education, unless there is government interference
  - undermine productivity, economic growth and prosperity because poverty and inequality lead to poorer educational and health outcomes, and a reduction in the quality and volume of Australia's labour resources.
- *Too little inequality* can also be bad. For instance, modest inequality can help:
  - increase the incentive to work hard
  - increase the incentive to gain improved skills, education and job position
  - increase the incentive to relocate to another geographic area
  - increase incentives for businesses to take risks and expand their operations
  - increase the levels of savings needed to finance higher levels of investment
  - reward households and individuals who are successful.

The Australian government's response to inequality in the distribution of income and wealth

- The Australian government's *goal is to promote an equitable distribution of income and wealth* so that everyone has access to basic goods and services (e.g. food and housing) and can enjoy reasonable living standards at a level deemed generally acceptable to society, avoiding absolute poverty.
- The government redistributes incomes and wealth more evenly using a range of policy measures.
- *Direct progressive taxes* like PAYG income tax, are used in the budget to narrow the income gap a little between high- and low-income earners and promote greater equity. Here, the marginal tax rate rises with taxable income (e.g. personal marginal tax rate range from 0 on incomes up to $18 000, and up to 45 per cent marginal rate on incomes above $180 000 for 2023–24). They take money from the wealthy that can then potentially be used to pay for welfare and free or subsidised public services.

- *Indirect taxes* on goods and services (e.g. the GST, excise taxes on petrol, alcohol and tobacco, the former carbon tax) are also part of the budget. These are mostly regressive and increase inequality, but they are less so if necessities are exempted or the taxes are only levied on luxury items purchased mainly by higher income earners.
- *Proportional taxes* like company tax also raise budget revenue and involve a flat tax rate on every dollar of business profit. These have a fairly neutral effect on the distribution of income.
- *Cash welfare benefits* of perhaps $600–1000 per fortnight are paid only to the neediest (e.g. the aged, unemployed, families). This is done by applying both *assets* and *means* tests. These benefits are also *indexed* to protect their purchasing power as prices and the cost of living rise. Income support allows low-income individuals to purchase basic goods and services and thus helps to promote equity. In addition, there have been *changes* to the welfare system over the years. This has involved tightening access with the hope of better targeting the most needy, encouraging increased *participation* in work and reducing reliance on government income support.
- The budget is also used to fund and *provide free* or *subsidised government services* (e.g. merit goods and services like public health, education, housing, transport) to the needy at an affordable price, improving their accessibility. A concern is the increased move towards the *user-pays principle*. This is likely to make the policy less effective in promoting an equitable distribution of income.
- The government has encouraged *superannuation* or retirement savings. Some years ago, the *superannuation guarantee charge* was introduced. This is a *compulsory* levy on employers who must currently contribute an amount equal to an additional 10.5 per cent of employees' wages into a superannuation fund on behalf of each employee (scheduled to rise to 12 per cent by July 2025). There are also generous *tax concessions* for those individuals who salary sacrifice and contribute to their superannuation balances. While some of these measures tend to favour higher income earners, they should allow people to retire with more wealth and income, reduce their reliance on the pension and enjoy improved access to goods and services.
- The government tries to *lower unemployment* (e.g. during the COVID-19 recession in 2020–21) and keep *inflation in check* (e.g. during the boom in 2007–08) using appropriate *countercyclical* budgetary policies. Typically, these involve either expansionary policies in recessions (e.g. cuts in taxes, rises in government spending and lower interest rates to stimulate AD, GDP and employment), or contractionary policies in booms (e.g. higher taxes, cuts in government spending and higher interest rates to slow AD and inflation). By keeping unemployment and inflation rates lower, the purchasing power of family incomes and general living standards are better protected. Equity is improved.
- Through the *Fair Work Commission*, the government also sets the minimum wage to ensure that low-paid workers have reasonable wages, are not exploited and can have access to basic goods and services.
- The government has also passed *anti-discrimination laws* to increase fairness when people apply for jobs, so that their age, gender and race do not prevent them from gaining employment or seeking promotion.

7.8.2 Key terms

Absolute poverty occurs when people's basic survival needs for adequate food, shelter, clothing and health are not generally met.
Anti-discrimination laws make it unlawful to discriminate in employment on the basis of age, disability, race, sex, inter-sex status, gender identity and sexual orientation. These laws help to promote greater equity in income distribution.
An **assets test** (wealth test) is used by the government to exclude the rich who own many assets from gaining access to welfare and to better target those in most need of help.
Disposable income is income available for spending after the receipt of welfare benefits and deduction of personal taxes. This is a major determinant of the level of private consumption spending (C) and hence is an aggregate demand-side factor.
Disposable weekly income is market income, plus any government welfare income, that is available for spending each week by individuals after the payment of personal income tax.

Distribution of wealth refers to the way the nation's assets or 'wealth cake' is divided or shared between individuals making up the total population.
Earned income comes from households selling their labour (i.e. supplying intellectual talents and/or physical power to businesses).
Economic efficiency means that resources are used to produce particular types of goods and services that maximise the general satisfaction of society's needs and wants, and wellbeing.
Equality in Australia's distribution of the income cake would mean that every individual would get exactly the same-sized slice of the cake and end up with the same level of income.
Equivalised disposable income refers to the level of spendable income available for individuals, after special adjustments have been made to reflect the effects of different-sized households. Disposable income includes market income plus any government welfare income minus personal income tax.
Final income refers to the level of market or private income after allowing for the effects of government income redistribution policies including welfare, free or subsidised public services, the payment of direct personal income tax and the payment of indirect taxes.
A **fringe benefit** is a special non-monetary reward given by an employer to selected employees in lieu of income (e.g. a free house, company car).
The **Gini coefficient** is a measure of the degree of inequality in the distribution of a nation's income or wealth. On the Lorenz diagram, it represents the area between the diagonal line of total equality and the actual nation's Lorenz curve. The bigger the area, the closer the Gini coefficient is to its maximum value of 1; the smaller the area, the lower the degree of inequality and the closer the Gini coefficient is to 0.
Goal of an equitable income distribution is achieved when everyone has access to basic goods and services, and can enjoy a reasonable standard of living at a level deemed generally acceptable by most in society. It is pursued using government policies to help narrow the gap between high- and low-incomes, and includes measures like progressive income tax, welfare benefits, provision of free or cheap services, encouragement of superannuation and setting the minimum wage.
Gross income represents the total of private or market income received before tax, along with income received from government welfare benefits.
Income distribution refers to how equally or unequally the nation's 'income cake' is divided or shared between individuals and income units making up the population.
Income units are of different sizes and types, and represent a group of people or an individual that is dependent on a given income to survive.
Indirect taxes are those added onto the price of goods and services at the point of sale. These are usually regressive and add to inequality because their value represents a higher percentage of a low-income earner's income than for a high-income earner, purchasing a particular item on which these taxes are placed.
A **Lorenz curve** is part of the Lorenz diagram. The line or curve shows how evenly or unevenly total income or wealth is shared between cumulative quintiles. The greater the deviation of the Lorenz curve from the diagonal line of total equality, the greater the degree of inequality.
A **Lorenz diagram** is a graph used to show how evenly or unevenly income or wealth is distributed between individuals making up the population of a country.
Market or private income is personal income from private sources including wages, salaries, profits, rent, interest and dividends, prior to any government efforts to redistribute income more evenly.
A **means test** (income test) is used by the government to exclude high-income earners from gaining access to welfare and to better target those individuals that most need financial help.
Merit goods are socially beneficial goods and services like health and education that all people require for reasonable living standards, so they are usually provided free of charge or subsidised by the government.
The **minimum award wage** is set each year by the Fair Work Commission (FWC). It is the lowest weekly or hourly wage that employers must legally pay their staff. It seeks to promote a fairer distribution of income.
Multi-dimensional poverty means not only low incomes, but there is no access to clean drinking water, sanitation, power, opportunity and basic education.
Net worth is positive when there is an excess of assets or wealth owned by households over their liabilities.
Nominal income is simply the number of dollars of income received by an individual measured over a period of time, and does not take into account its purchasing power.
The **pattern of income distribution** is regarded as fairly even if people receive similar sized slices of Australia's income cake, but uneven if the majority of the population receives only a relatively small share of the total income cake.
The **pattern of wealth distribution** is regarded as relatively *even* if all people own similar-sized slices of a nation's wealth cake or pie.

Poverty has many meanings, including material deprivation and inability to afford basic goods and services needed for survival (absolute poverty), or for a reasonable living standard (relative poverty).
The **poverty line** is regularly set at the amount of money required by different-sized income units each week to sustain an austere or basic living standard, and to purchase essential food, shelter and clothing.
Progressive personal income tax is one where the percentage of income paid in tax rises with the level of income, from zero per cent on annual taxable incomes below $18 200, stepping up to a top rate of 45 per cent. It seeks to narrow the income gap between high- and low-income earners, and the money raised from tax can be used to pay for welfare benefits for the neediest and provide free or cheap government services like public health or education.
Quintiles represent the five equal-sized groups making up all income earners in Australia. Each quintile therefore represents 20 per cent or 1/5 of all income earners. Comparing income or wealth shares of the income cake by quintiles exposes the degree of inequality.
Real income is equal to a person's nominal level of income measured in so many dollars after taking into account the inflation or deflation rate. This is a guide to its purchasing power.
Regressive taxes are those where the rate of tax as a proportion of income decreases as incomes rise (e.g. the GST). Unless they are used carefully, targeting items purchased mostly by the rich, they increase the gap between high- and low-income earners, reducing equality.
Relative poverty exists when people have low incomes compared with those needed to maintain what is regarded as a reasonable living standard.
Social wage income represents the disposable income received by an individual, including private income and government welfare, after the payment of income tax and following the addition of the value of government services, like healthcare provided free of charge or at a lower, subsidised price.
Superannuation guarantee charge (SGC) requires employers to make superannuation or retirement contributions on behalf of their workers, currently equal to an extra 10.5 per cent of pay (to be progressively increased to 12 per cent by 2025).
Transfer income is derived from government cash welfare payments or income support made to the neediest individuals with little or no income or wealth.
Unearned income includes rent and interest, and is received for allowing others to use your property and savings.
Wealth consists of assets or things of value owned by private individuals (e.g. houses, shares, bonds, savings) or governments (e.g. public infrastructure including power, transport, health and education), that could be converted into money.

on Resources

Digital documents
Topic summary (doc-37944)
Key terms glossary (doc-37951)
Crossword (doc-38880)
Wordsearch (doc-38881)
Match-up definitions (doc-39034)

7.8.3 Practice school-assessed coursework

OUTCOME 2

Explain the factors that affect two economic issues at a local, national and international level and evaluate actions to address the issues

TASK: A REPORT ON AN INVESTIGATION OR INQUIRY

Inequality in your Economics class

Aim

Your task is to research the distribution of income and the distribution of wealth in your Economics class and report your findings.

Collecting the statistical information

You could proceed using the following steps:

1. Your teacher should photocopy the survey form shown in the table below and distribute one to each member of the Economics class for voluntary completion. This could also be collected using an online survey. However, before completing the survey, there should be discussion about the need to protect student's privacy and the nature of income and wealth. *Income* (e.g. wages from a job, gifts, tips, allowance or pocket money, interest from a savings account, dividends from shares) in the survey should represent an estimate for the last complete financial year (e.g. 2022–23). *Wealth* should be an estimate of the value of your assets (e.g. personal savings, shares, property, share of trust, possessions worth more than $500 per item) on the day of this survey. Forms could then be completed anonymously for homework.

Anonymous survey form for the distribution of class income and wealth — your details

'Income' survey — Economics class	Value ($)	'Wealth' (net worth) survey — Economics class	Value ($)
Wages from a part-time job		Bank savings (total value or balance)	
Tips		Current market value of shares owned	
Pocket money or allowance		Personal possessions (items over $500 each)	
Gifts or presents from family or friends		Valuables and antiques you own	
Interest received from savings account		Value of property held in your name	
Dividends received from shares		Your value of a trust or inheritance	
Other		Other	
		Subtract any money owed by you	
Your total income for the past 12 months		**Your current total net value of assets or wealth**	

2. Collect the completed survey forms (for privacy, students must not put their name on their form).
3. Process the completed forms. First, rank student income levels from lowest to highest and divide them into five *equal-sized* income groups or quintiles. Second, tally up the total income for each quintile and for the class as a whole. Third, work out what percentage each quintile's total income is of the total class income. This will mean that you should now have percentage income shares by quintile from lowest income quintile through to the highest income quintile. Repeat the same process to gain the same information about the wealth distribution for your Economics class. Use this information to complete a table similar to the following tables (each is only suitable for recording a survey result for 10 students, with two students making up each quintile).

Results for the Economics class income survey

Rank income of class by quintile from lowest to highest income		Student income by rank order	Student total income ($) by quintile order	Quintile share (percentage) of total income by rank order	Cumulative (progressive total) quintile share (percentage) of total income
Quintile 1:	Student 1	$.....			
	Student 2	$.....	$.....	.....%	.....%
Quintile 2:	Student 3	$.....			
	Student 4	$.....	$.....	.....%	.....%
Quintile 3:	Student 5	$.....			
	Student 6	$.....	$.....	.....%	.....%

(continued)

Results for the Economics class income survey *(continued)*

Rank income of class by quintile from lowest to highest income		Student income by rank order	Student total income ($) by quintile order	Quintile share (percentage) of total income by rank order	Cumulative (progressive total) quintile share (percentage) of total income
Quintile 4:	Student 7	$.....			
	Student 8	$.....	$.....	.....%	.....%
Quintile 5:	Student 9	$.....			
	Student 10	$.....	$.....	.....%	.....%
Total incomes		$..... (= **100%**)	$..... (= **100%**)	**100%**	**N/A**

Results for the Economics class wealth (net worth) survey

Rank wealth of class by quintile from poorest to richest		Student wealth by rank order	Student total wealth ($) by quintile order	Quintile share (percentage) of total wealth by rank order	Cumulative (progressive total) quintile share (percentage) of total wealth
Quintile 1:	Student 1	$.....			
	Student 2	$.....	$.....	.....%	.....%
Quintile 2:	Student 3	$.....			
	Student 4	$.....	$.....	.....%	.....%
Quintile 3:	Student 5	$.....			
	Student 6	$.....	$.....	.....%	.....%
Quintile 4:	Student 7	$.....			
	Student 8	$.....	$.....	.....%	.....%
Quintile 5:	Student 9	$.....			
	Student 10	$.....	$.....	.....%	.....%
TOTAL incomes		$..... **(= 100%)**	$..... **(= 100%)**	**100%**	**N/A**

4. Use these two tables of survey results and, in particular, the cumulative results (i.e. the last column of each table) to neatly plot a Lorenz diagram or graph showing:
   - the labelling of the two axes and scales (i.e. 0–100 per cent for each)
   - a Lorenz curve showing the distribution of class income
   - a Lorenz curve showing the distribution of class wealth
   - the diagonal lines of total equality
   - the lines of total inequality.
5. Next, calculate the Gini coefficient using the formula: (The Gini coefficient = Area A on the Lorenz diagram divided by area A+B). If you are not especially mathematically inclined, you can roughly estimate the area between the diagonal line of total equality and the actual Lorenz curve (area A for the formula), and the whole area below the diagonal (areas A + B). This is done by roughly counting up the total number of squares for each area on the graph paper used to plot the diagram. Your answer will be a number between 0 and 1. It is also possible to go online and use the Gini coefficient calculator — see https://shlegeris.com/gini. Feed in the income data for each quintile and generate a graph and a Gini coefficient.

6. Write a brief report in which you analyse the causes of income and wealth inequality in your Economics class. Try to identify and explain several factors that cause high or low incomes or that make students relatively rich or poor.

Presentation

Your work could be presented as a wall chart, report or oral presentation in class illustrated using PowerPoint slides.

on Resources

Digital document Practice school-assessed coursework (doc-38080)

7.8 Exam questions

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Section A: Multiple choice questions

Question 1

Concerning the concepts 'wealth' and 'income', which of the following is *true*?

A. All income is regarded as 'earned' income, whereas all wealth is inherited.
B. Income is the flow of monetary rewards that is normally measured over a period of time, whereas wealth is the value of assets measured at a point in time.
C. Wealth does not generate income, but it can help to generate even more wealth.
D. Interest is the income from property, whereas dividends are income from ownership of company shares.

Question 2

Wages represent:

A. earned income.
B. unearned income.
C. transfer income.
D. the reward from the sale of property.

Question 3

Which of the following statements is *most* correct? Transfer income from the government:

A. is usually payable only to those with low incomes and wealth.
B. helps to provide a minimum income and living standard for the poor.
C. is largely paid for by relatively richer households and companies.
D. All of the above are largely correct.

Question 4

Concerning Australia's measurement of income distribution, which statement is *false*?

A. Statistical data are collected by the ABS through its income survey.
B. Income distribution relates to the way wages and other forms of income are shared between individuals.
C. The greater the deviation of the Lorenz curve from the diagonal line, the less the degree of inequality.
D. The Gini coefficient is a number between 0 and 1. It measures the level of inequality and its value is related to the area between the diagonal on a Lorenz diagram and the actual Lorenz curve.

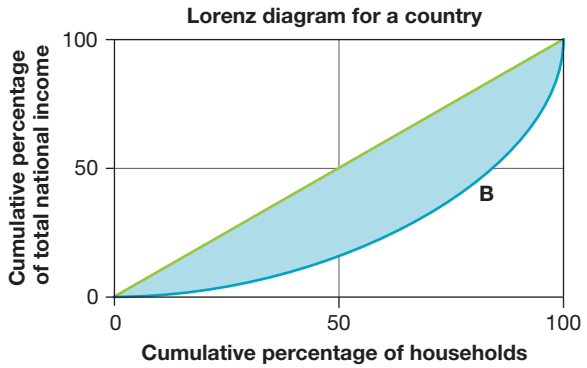
Question 5

The Australian government's goal of equity in the distribution of income and wealth does *not* mean:

A. that income should be divided totally evenly between individuals.
B. that poverty should be avoided.
C. that everyone should be able to access basic goods and services.
D. that everyone is entitled to basic living standards.

Question 6

Referring to the Lorenz diagram, which statement about curve B on the diagram is *most* correct?



A. The poorest 50 per cent of households receive around 50 per cent of the income cake.
B. The poorest 50 per cent of households receive around 70 per cent of total national income.
C. The poorest 50 per cent of households receive 0 per cent of income.
D. The poorest 50 per cent of households receive around 15 per cent of total national income.

Question 7

From the Lorenz diagram in question 6, the Gini coefficient for a country with a Lorenz curve B, would be about:

A. 0.5.
B. 1.0.
C. 0.0.
D. 10.0.

Question 8

Examine the table below.

Equivalised disposable income distribution (non-cumulative figures) by quintile for four countries

Country	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Alpha (percentage of income)	1.0	4.0	11.0	20.0	64.0
Beta (percentage of income)	4.0	9.0	15.0	24.0	48.0
Gamma (percentage of income)	10.0	15.0	20.0	25.0	30.0
Delta (percentage of income)	20.0	20.0	20.0	20.0	20.0

Which statement is *incorrect* about the distribution of equivalised disposable income in these four countries?

A. Alpha has the most uneven distribution of income.
B. The Gini coefficient for Delta would be 0.0.
C. The poorest 60 per cent of households in Gamma would receive 25 per cent of the income cake.
D. The richest 40 per cent of Beta households would receive 72 per cent of all equivalised disposable income.

Question 9

Nowadays in Australia, the poorest 20 per cent of households receive about:

A. 4 per cent of equivalised disposable income.
B. 8 per cent of equivalised disposable income.
C. 12 per cent of equivalised disposable income.
D. 16 per cent of equivalised disposable income.

Question 10

Often relatively well-paid workers in Australia:

A. possess relatively scarce skills and talents.
B. perform difficult, responsible or dangerous tasks.
C. work longer hours.
D. All of the above may be explanations that reflect the operation of the labour market.

Question 11

High wages are *least likely* to be gained by workers in industries where:

A. firms operate in markets that resemble pure competition.
B. a strong union operates in the industry.
C. workers are usually employed full-time rather than part-time in the industry.
D. firms are highly profitable and efficient.

Question 12

Which of the following is the *least* likely explanation of income inequality and lower material living standards?

A. There is high unemployment.
B. There is rapid inflation resulting in speculative gains by some groups.
C. There is a progressive wealth tax on the inheritance of assets worth more than $10 000.
D. Education to age 15 years is neither free nor compulsory, and unionism in the labour force has declined.

Question 13

Study the data in the table below relating to three different types of income tax. From the data, which statement is *correct*?

Data relating to different types of income tax

Annual taxable income	Annual value of revenue collected from the three types of tax		
	Tax 1	Tax 2	Tax 3
$10 000	$1000	$1000	$1000
$20 000	$2000	$1000	$3000

A. Tax 2 has regressive rates.
B. Tax 1 and tax 3 have progressive rates.
C. Tax 1 and tax 2 have proportional rates.
D. Answers A, B and C are all incorrect.

Question 14

An increase in the GST to 15 per cent on all goods and services would, in itself, tend to:

A. make income distribution more even.
B. make income distribution more uneven.
C. have no effect on the distribution of income.
D. have an effect on income distribution, but it is impossible to predict the overall impact.

Question 15

Concerning Australian government taxes, which statement is *true*?

A. Company tax is a progressive tax.
B. Personal income tax is a progressive tax.
C. The exemption of essential goods and services from the GST has made the tax more regressive than otherwise.
D. A progressive tax is one where the amount of tax paid rises, even if this rise is at a slower rate than income.

Question 16

Which of the following policies is *least* effective in helping the poor to enjoy a reasonable living standard?

A. Providing free childcare for those on incomes below $40 000 per year, along with skills training for those unemployed for more than six months.
B. The payment of government welfare benefits to those qualifying under the means and assets tests.
C. The government's provision of subsidised public services, such as education and health.
D. Reducing the marginal rates of personal income tax on incomes above $80 000 per year and increasing the GST rate to 15 per cent.

Question 17

Concerning poverty and inequality, which statement is *least* correct?

A. Poverty is especially caused by prolonged periods of unemployment.
B. The normal operation of the labour market leads to wage inequality where the best-paid occupations are those in which labour supply is large relative to low demand.
C. During periods of inflation, the wealth and income of property speculators often rises faster than those of others in the community.
D. Some government policies, like the increased reliance on the user-pays principle, can increase inequality.

Question 18

Which of the following measures of income is *most* correct?

A. Private income includes wages and all government welfare.
B. Gross income includes wages and welfare after the payment of income tax.
C. Earned income is that derived from the ownership of assets and investments.
D. Disposable income includes income from all sources minus the payment of income tax.

Question 19

Income inequality and poverty rates are likely to be *highest* among:

A. those on the minimum wage.
B. the very old.
C. those on welfare.
D. those in remote First Nations communities.

Question 20

Concerning *equity* and *inequality* in the distribute incomes in Australia, which statement is *false*?

A. Equity means ensuring that everyone can enjoy a reasonable living standard at a generally acceptable level.
B. In one sense, the government's goal of a fair or equitable income distribution means treating high-and low-income earners in different ways.
C. Australia's wealth (net worth) is distributed more unequally than equivalised disposable income.
D. An equitable distribution of income is likely to be one where the Gini coefficient is equal to 1.

on Resources

Digital documents Multiple choice answer grid (doc-37964)
Multiple choice answers (doc-37965)

Section B: Extended response questions

Question 1 (2 marks)

Clearly **define** what is meant by the term *the distribution of income*. **Outline** the overall *way* income is distributed in Australia.

Question 2 (3 marks)

Use the approximate data for Mexican income from the table below, showing the percentage income shares by quintile, to *neatly* and *accurately* **complete** and fully **label** a Lorenz diagram that clearly shows the following:

- the line of total equality
- the actual Lorenz curve for Mexico
- appropriate horizontal and vertical scales for the graph
- the titles for the two axes
- your estimate of the *Gini coefficient* for Mexico.

Quintile	Mexico non-cumulative share (%) of total income
1	2.0
2	6.0
3	12.0
4	20.0
5	60.0

Question 3 (5 marks)

It has been said that the biggest single cause of *inequality in wages* among Australian workers in *different occupations,* is the *normal operation of the labour market*.

a. Accurately **explain** how the operation of the labour market, and the *conditions of demand* and *conditions of supply* for each type of labour, account for why a typical factory worker receives less than $1000 per week while an experienced engineer frequently gains more than $5000 per week. **(3 marks)**

b. Neatly **complete** and fully **label** a demand–supply diagram to show, hypothetically, how the free operation of the labour market causes inequality in weekly wages between these two occupations. (*Note:* Take care to realistically locate the positions of the various *demand and supply lines* for the two occupations, and *carefully label* all points and lines). **(2 marks)**

Question 4 (3 marks)

List and briefly **outline** three important *causes* of typically low incomes received by many *First Nations* Australians.

Question 5 (2 marks)

Explain how *unemployment* and/or *part-time work* can cause income *inequality* and low living standards in Australia.

Question 6 (6 marks)

a. The Australian government pursues the *goal of an equitable distribution of income*. Accurately **define** what is meant by this goal. **(2 marks)**

b. **Describe** the *main features* of Australia's *personal income (PAYG) tax system* and explain how this tax helps to redistribute personal incomes *more evenly* than otherwise, thereby promoting greater *equity*. **(2 marks)**

c. *Other than* the personal income tax system, **identify** and **outline** *one* other important federal government policy that helps to *redistribute personal incomes more evenly*. **(2 marks)**

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TOPIC

8 Economics and the environment

UNIT 2 AREA OF STUDY 2

Applied economic analysis of local, national and international economic issues

OPTION 4: Economics and the environment

OUTCOME 2

On completion of this unit the student should be able to explain the factors that affect two economic issues at a local, national and international level and evaluate actions to address the issues.

LEARNING SEQUENCE

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8.3 Measures of the environmental sustainability of economic activity 461
8.4 The reasons why environmental sustainability is of importance to Australia and globally 474
8.5 The economic factors influencing the extent of environmental sustainability 478
8.6 Different perspectives about the issue of environmental sustainability 486
8.7 The responses by economic agents to improve environmental sustainability 491
8.8 Review 501

8.1 Overview

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8.1.1 Introduction

Like most people, you probably take our natural environment for granted and hence, give little thought to how much we depend on it. In fact, we wouldn't even be here without it, since it provides the things essential for survival such as rain, sunshine, clean air and water. However, in recent years, it has become obvious that collectively we are changing the environment for the worse. Global economic growth (mostly since the 1970s and especially in high-income countries) has created an array of severe environmental problems that are difficult to ignore. These include:

- *climate change* and *global warming* that are causing an increase in the number and severity of extreme weather events
- rising *sea levels* of more than 20 centimetres since 1900 due to the melting of polar ice caps and glaciers, leading to the displacement of island and coastal communities, forcing migration
- *extreme temperatures, reduced air quality* and shifts in the distribution of dangerous *diseases* that pose threats to life and health
- *reduced agricultural productivity* by more than 21 per cent over the last 60 years, on what it would have been without climate change. weakening food security, increasing food prices, and adding to poverty
- the *poisoning* of rivers, soils, and oceans, and the *over clearing* of land, have caused the destruction of important *biosystems* needed for the earth to repair the damage we have inflicted.

While *economic growth* has been important to help satisfy the needs and wants of the world's ever-growing population (now over 7.9 billion people), it has come at an enormous *cost to the environment*. Some economic activities now seriously threaten current and future living standards.

We will examine some of these serious environmental impacts of economic growth that economists call, **negative externalities**. These are costs associated with the production and consumption of goods and services that are not paid by those involved with these economic activities. Instead, they are unfairly passed on to other third parties who must bear the consequences. Negative externalities are an example of **market failure** — a situation where the free operation of demand and supply and the price system has not directed resources efficiently into areas that help to maximise the general long-term wellbeing of society.

In response to mounting environmental challenges and the worry of resource depletion caused by global economic growth, the question of **environmental sustainability** has become a hot topic for discussion. Given vital and scarce **environmental resources** (for example, stable climatic conditions, clean air, unpolluted oceans and rivers, vigorous natural forests, wild fish stocks, biodiversity, and the natural ecosystems needed to process waste and maintain the planet's health) the question now arises — can economic growth be sustainable into the future? Because environmental issues are getting worse, momentum for change has recently strengthened. It is in this area that **environmental economics** can make valuable contributions to help shape policy responses designed to ease the problem.

8.1.2 What you will learn

Key knowledge

Use each of the points from the VCE Economics Study Design below as a heading in your summary notes.

Key knowledge		Subtopic
◯	The definition of the selected economic issue, including relevant measures and statistical indicators	**8.2, 8.3**
◯	The reasons the issue is of importance to the economy at a local, national and international level	**8.4**
◯	The economic factors influencing the extent of the selected economic issue	**8.5**
◯	The different perspectives of households (consumers and workers), business, government and other relevant economic agents regarding the selected economic issue	**8.6**
◯	The economic responses undertaken by relevant economic agents at a local, national and international level, to address the economic issue, including government policies	**8.7**

Key skills

These are the skills you need to demonstrate.

Key skills	
◯	Define key economic concepts and terms and use them appropriately
◯	Gather, synthesise and use economic information from a range of sources to analyse economic issues
◯	Identify trends, patterns, similarities and differences in economic data and other information to draw conclusions
◯	Evaluate the economic responses undertaken to address economic issues

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on Resources

Digital document Key terms glossary (doc-37981)

8.2 Definition and general nature of environmental sustainability

KEY KNOWLEDGE

- The definition of environmental economics

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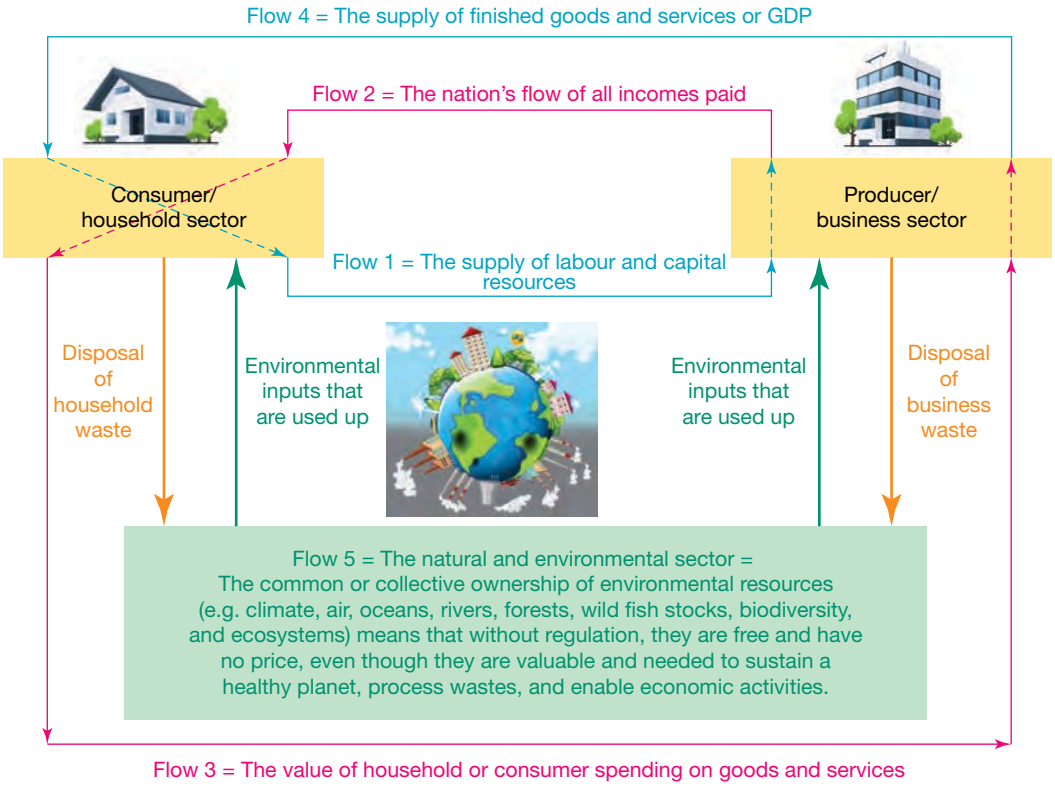
For many years now, governments, both here and around the world have been keen to *increase material living standards* by growing GDP at a faster rate than the population. While strong economic growth has lifted many out of poverty, it has come at a great *cost to the environment* on which it ultimately depends.

Figure 8.1 uses a variation on the basic two-sector circular flow model to illustrate the main relationships between economic activity and the *environment*.

FIGURE 8.1 Using a simple circular flow model to show the interaction between economic activity and the environment



Referring to this new version of the circular flow model, you might notice the following features:

- There are two main *sectors* — the consumer or household sector, and the business or producer sector.
- Essentially, there are four main *flows* that are interdependent and equal in value:
  - Flow 1 — the total value of capital and labour resources supplied by the household sector
  - Flow 2 — the total value of incomes paid to the people selling resources
  - Flow 3 — the total value of household or consumer spending on finished goods and services
  - Flow 4 — the total value of finished goods and services supplied or produced (GDP).

- However, an additional sector has been added called the **natural and environmental sector**. This part shows the two-way interactions between *economic activity* and the *natural environment*. Here, environmental **resources** needed for survival, are used by both households and businesses. For example, there are **renewable resources** found in nature that can be replenished or replaced over a fairly short period of time. Here we think of some plants and animals, and solar and wind energy. There are also **non-renewable resources** or inputs that cannot be readily replaced once they have been used up. They take millions of years and special geographic conditions for their formation, and might include minerals like oil, coal and iron ore, old growth forests and natural beauty spots. And then there are environmental resources that make the earth unique and support life and economic activities. These comprise of stable climatic conditions, clean air, unpolluted oceans and rivers, vigorous natural forests, wild fish stocks, biodiversity, and the natural ecosystems needed to process waste and maintain the planet's health.
- Importantly, too, the environment is also a dumping ground where all waste and rubbish ends up. Indeed, everything that has ever been produced (total world GDP over time) will end up here; although, of course, it may change its form. Over a lifetime, the average Australian, for example, generates over 60 tonnes of waste.
- Unlike other resources shown in flow 1, environmental resources are usually seen as *free inputs* that have no price and are there to be used by all. This makes them very attractive and leads to their overuse, abuse and eventually, depleted quality.
- For economic growth to be *sustainable* so future generations do *not* have reduced opportunities, the use and disposal of natural and environmental resources need to be managed very carefully.

Armed with a general background about the relationship between economic activity and the environment, it is now possible to *define* the central focus of this option — environmental sustainability. There are many definitions of *environmental sustainability*, but here are just *five*:

- **Sustainable economic growth** is commonly defined as 'a method of expanding the economy's production levels to meet the needs for goods and services of the present population, without undermining the ability of future generations to meet their needs'.
- Put yet another way, *environmental sustainability* is 'an economy where production is in equilibrium or balance with the environment and its ecological support systems'.
- *Environmental sustainability* would mean that 'the rates of harvesting renewable resources, creating pollution, and depleting non-renewable natural resources as a result of increasing economic prosperity, can be continued indefinitely into the future'.
- *Environmental sustainability* can be defined as the 'responsible interaction with the environment to avoid depletion or degradation of natural resources and allow for long-term environmental quality'.
- Finally, *environmental sustainability* is 'the practice of interacting with the planet responsibly, so as not to deplete natural resources that would undermine the future generation's ability to meet its daily needs'.

We now know what *environmental sustainability* involves. However, some of you are probably wondering, what level of economic activity or GDP might be seen as *sustainable*? This is a tricky question to answer since, as we shall see, it depends on many things including:

- the rate of population growth
- the types of goods and services that are produced and, at the end of their life, how they are disposed
- advances in technology and new discoveries.

In 1972, a group of economists called *The Club of Rome* pointed out that the world's natural resources are finite or limited. They hence recommended a *'zero rate of economic growth'*. Pursuing zero GDP growth would have had massive and often negative effects on our lives, given the rapid growth in global population. It would have been especially disastrous for people in low-income countries already struggling to survive. Today, this environmental debate has shifted in at least *three* main ways:

- *First*, it is less focused on stopping economic growth. Instead, there is a drive toward **renewable energy**. This is to reduce our reliance on the burning of fossil fuels that generate **CO_2 emissions** linked with global warming, and more frequent and severe weather events that, in turn, seriously threaten material and non-material living standards.

- *Second*, there is now a gradual shift towards making *greener products* that can be *recycled* at the end of their useful life, creating a **circular economy**. By recycling and reusing resources, this helps to slow the demand for scarce, non-renewable resources. It also reduces waste that often pollutes waterways and destroys ecosystems.
- *Third,* greater importance is being attached to *slowing population growth* by empowering women through education and family planning. This helps to ease the pressure on resources.

Whilst these changes are a welcome step in the right direction and can help promote *more sustainable economic growth*, underlying challenges remain. For example, there is growing *inequality* in the way the *benefits* of higher output are shared between nations. The small minority of the world's 7.9 billion people living comfortably in high-income countries consume most of the available resources. They also produce the greatest damage to the planet including climate change from CO_2 emissions. In these rich countries, there is a general obsession with *materialism* — that is, the mindless consumption of even more goods and services. At the same time, these societies often neglect the satisfaction that can be gained from non-material cultural and social aspects that enhance society's wellbeing and happiness, with far less environmental damage.

8.2 Activities

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8.2 Quick quiz on

8.2 Exercise

8.2 Exercise

1. a. **Describe** the two main ways in which economic activity depends heavily on the environment. **(2 marks)**
   b. **Explain** why most governments have been keen to promote strong economic growth and increase GDP. **(2 marks)**
   c. **Identify** and **outline** the likely environmental impacts for an economy of increasing the level of GDP. **(3 marks)**
2. Giving examples of each, **distinguish** the terms, *renewable* resources and *non-renewable* resources. **(2 marks)**
3. If there is equilibrium between the environment and the economy, economic activity can go on forever.
   a. **Explain** the meaning of environmental sustainability. **(2 marks)**
   b. **Explain** why the *Club of Rome* suggested that there should be a zero rate of global economic growth. **(2 marks)**
   c. **Outline** how the use of *renewable energy*, rather than the burning of fossil fuels, can substantially reduce the problems associated with climate change. **(2 marks)**
   d. **Outline** how a *circular economy* could work to help reduce environmental problems. **(2 marks)**

Solutions and sample responses are available online.

8.3 Measures of the environmental sustainability of economic activity

KEY KNOWLEDGE

- Measures and statistical indicators of the environmental sustainability of economic activity

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As the following extract from a book written in 1971 vividly explains, the world's environmental decline is a phenomenon that people have created.

> *To emphasise the effect of man on the earth, let's condense the 4.5-billion-year age of earth into just one year. On this scale, the earth came into being at precisely midnight on December 31st. We know almost nothing about what went on during the next eight months. It was not until December the 15th on the twelfth month of this condensed year, that plants and dinosaurs became established. Man appeared on the scene at about 8.00 pm on December 31st, animals were extensively domesticated by about 35 seconds to midnight on the 31st December, Columbus arrived in America about 3 seconds to midnight and the Industrial Revolution began around one second to midnight! Yet the environmental damage man has wrought in this last second of our year, is almost unbelievable!*
>
> ***Source:*** E. E. Inyden, *Please Stop Killing Me,* New American Library, NY, 1971, pp. 117–8.

It is especially important to track changes in environmental sustainability in order to identify problem areas and evaluate the success or otherwise of the government policies to reduce damage. So how should we assess whether economic activity is environmentally sustainable?

8.3.1 Measures of the environmental sustainability of global economic activities

Trends in *environmental sustainability* are usually measured by looking at a range of statistical indicators that reveal changes in the *extent of harm* caused by economic activity. Table 8.1 lists some of the data available and what to expect if global environmental sustainability is improving or deteriorating. However, like many measures, indicators do not always tell the whole story and the quality of data is variable.

TABLE 8.1 Some possible indicators of changes in the environmental sustainability of economic growth

Some indicators of *increasing* environmental sustainability	Some indicators of *decreasing* environmental sustainability
1. A fall in the total number of tonnes of global CO_2 emissions and a smaller carbon footprint	1. A rise in the total number of tonnes of global CO_2 emissions and a bigger carbon footprint
2. A fall in the total level of global CO_2 emissions for each dollar of GDP produced	2. A rise in the total level of global CO_2 emissions for each dollar of GDP produced
3. A stabilisation of average global surface temperature	3. A rise in the average global surface temperature
4. Reduced electricity consumption per capita	4. Increased electricity consumption per capita

(continued)

TABLE 8.1 Some possible indicators of changes in the environmental sustainability of economic growth *(continued)*

Some indicators of *increasing* environmental sustainability	Some indicators of *decreasing* environmental sustainability
5. A rise in the Environmental Performance Index	5. A drop in the Environmental Performance Index
6. An increase in rates of waste recycling	6. A decrease in rates of waste recycling
7. A decrease in the ecological footprint measured in terms of the number of earths required for resources to sustain current living standards	7. An increase in the ecological footprint measured in terms of the number of earths required for resources to sustain current living standards

Changes in total world CO_2 emissions and the link with global warming and reduced crop yields

Changes in global CO_2 emissions that result from the burning of fossil fuels like coal and oil and the production of cement, is a starting point for assessing environmental sustainability. As shown in Figure 8.2 (part 1), CO_2levels are measured in tonnes so the changes can be plotted over time. Notice that with very few exceptions (other than during the 1930s Great Depression and the COVID-19 pandemic in 2020 when economic activity slowed) CO_2 emissions have increased exponentially (especially from the golden age of economic growth starting in the 1950s). Scientists believe that the increase in CO_2 emissions into the atmosphere act like a blanket. They limit the escape of heat into space and hence explain the worrying rise in average global temperatures that are shown in Figure 8.2 (part 2). In other words, economic activity has led to climate change with its negative effects. These include problems associated with the 20 centimetre rise in sea levels since 1900. It is also linked with an increased frequency and severity of weather events like cyclones, drought, extreme temperatures, bushfires, and floods that destroy life and property.

Furthermore, climate change has been blamed for the 21 per cent fall in agricultural productivity worldwide over the last 40 years, partly offsetting the advances in farming. The decline in average crop yields for maize, wheat, soybeans and rice between 1980 and 2020 is shown in Figure 8.2 (part 3). This means that for many in low-income countries, there is an increased risk of poverty and reduced food security.

Environmental Performance Index (EPI)

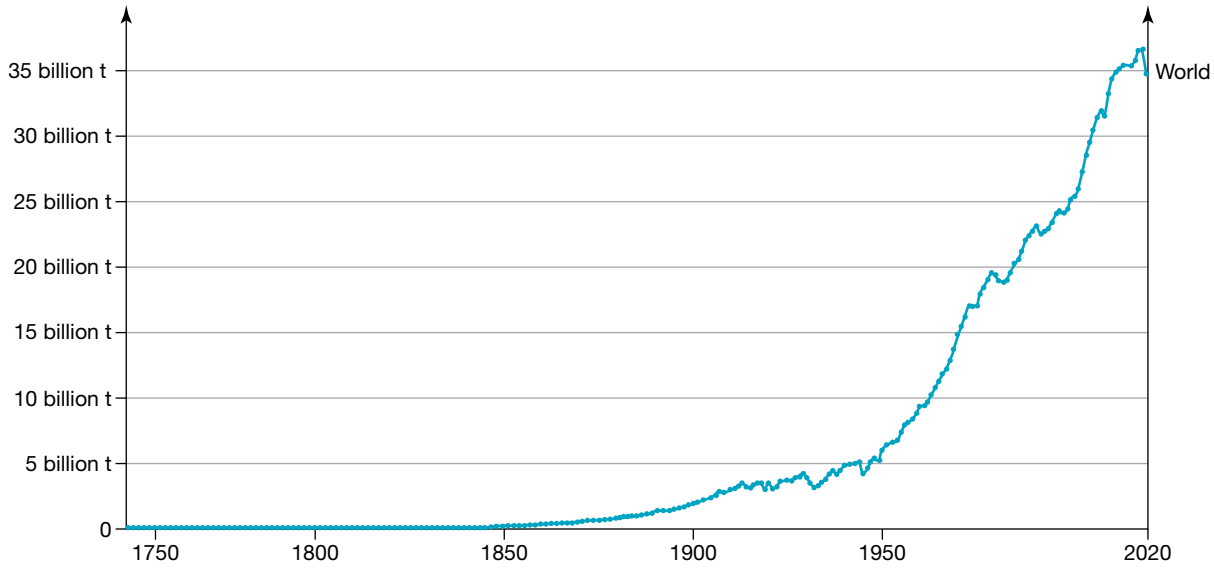
The **Environmental Performance Index (EPI)** is a general measure that uses data relating to environmental health (i.e. based on air quality, water quality, heavy metals, biodiversity, forests and fisheries), as well the vitality of ecosystem (i.e. based on CO_2 and other **greenhouse gas emissions**, treatment of water waste, and nitrogen management in agriculture). These measures from 180 countries are weighted according to their relative importance and then combined to produce a single index where a score of 100 points shows perfect environmental sustainability. The approach used for this index is similar to that first used by the UN in 2002, as part of its sustainable environmental target for its Millennium Development Goals. The map shown in Figure 8.3 displays the updated results for 2020. While Australia scores relatively well, there are clearly severe human-induced environmental problems, especially in South America, Africa, the Middle East, and Asia (the brown areas). Here, a low index suggests that economic activity is not sustainable.

FIGURE 8.2 Changes in global CO_2 emissions and average global temperature, linked with economic activity

Part 1 – Change in global CO_2 emissions resulting from the burning of fossil fuels for energy to power economic and other activities

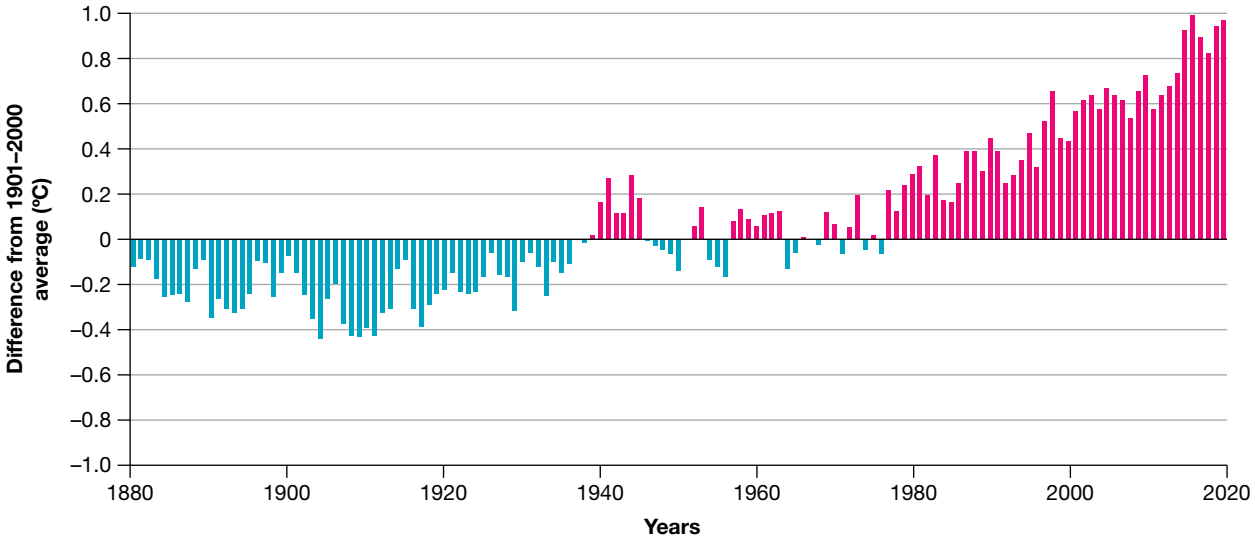
Annual CO_2 emissions

Carbon dioxide (CO_2) emissions from the burning of fossil fuels for energy and cement production. Land use change is not included.



Source: Our World in Data, see https://ourworldindata.org/co$_2$-emissions.

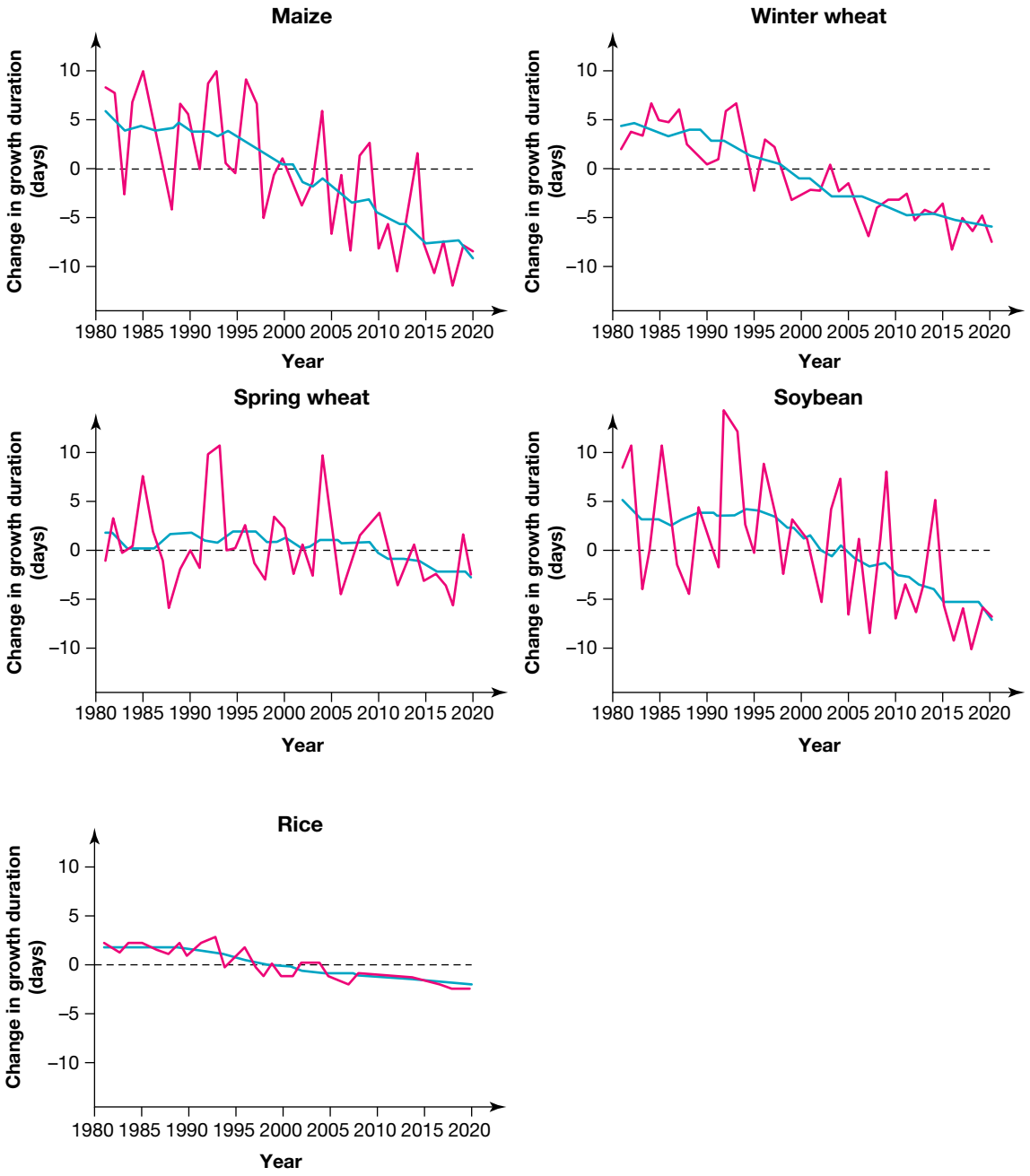
Part 2 – The rise in the average global surface temperature that has added to the frequency and severity of extreme weather events largely reflects human activities



Yearly surface temperature compared to the 20th-century average from 1880–2020. Blue bars indicate cooler-than-average years; red bars show warmer-than-average years. NOAA Climate.gov graph, based on data from the National Centers for Environmental information.

Source: *Climate Change: Global Temperature*, by Rebecca Lindsey and Luann Dahlman, Reviewed by Jessica Blunden, Published March 15, updated August 12, 2021.

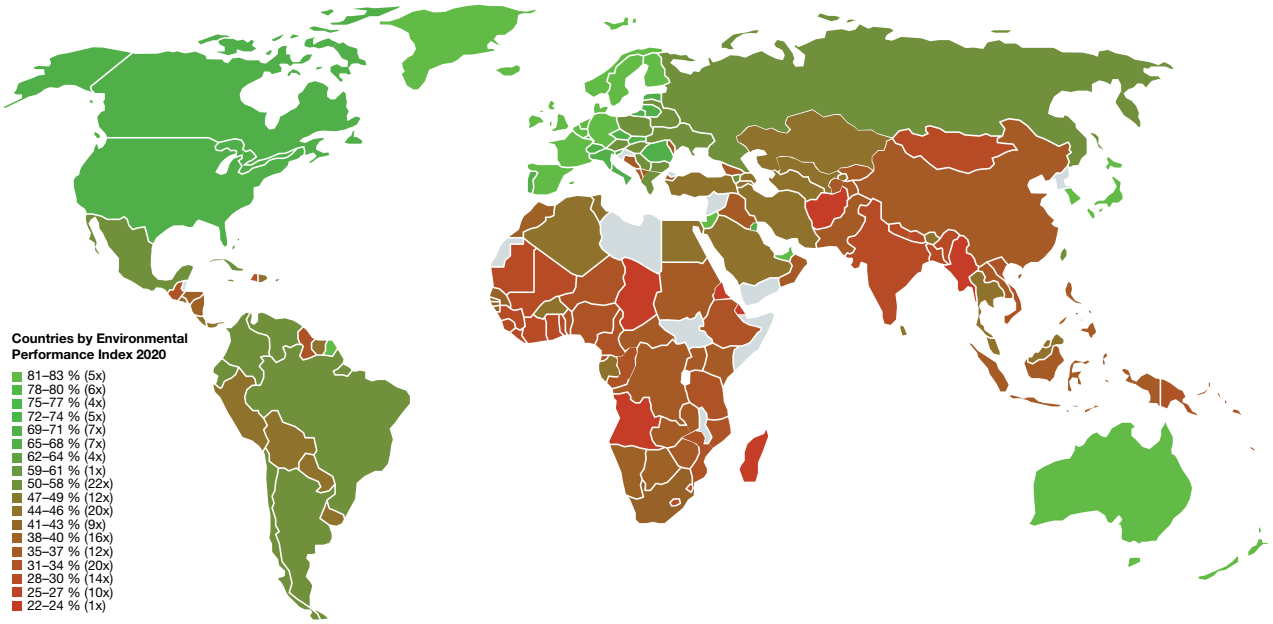
Part 3 – Declining agricultural crop yields 1980–2020



Note: Change in the number of crop growth days is relative to the 1981–2010 global baseline average and is used as a substitute for productivity. The red line on each graph represents the annual global area-weighted change in the days of crop growth. The blue line represents the running mean change in crop growth duration.

Source: Lancet, Vol 398, Oct 30, 2021, The 2019 Lancet Countdown on health and climate change, p. 1632, https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(21)01787-6.pdf.

FIGURE 8.3 Countries grouped by their Environmental Performance Index (EPI).



Source: 2020 EPI Map World by Angerdan — Own work. Licensed under CC BY-SA 4.0 via Commons — https://wiki2.org/en/File:2020_EPI_Map_World.png#/media/File:2020_EPI_Map_World.png

Recycling rates by country

Waste from households and businesses normally ends up in the environment. Degradable items will eventually be broken down by natural environmental processes. However, some waste is not easily degradable and may poison waterways, destroy ecosystems, and end up in the food chain. *Recycling* of waste helps to reduce the impact of economic activity on the environment and biosphere, where it would otherwise end up.

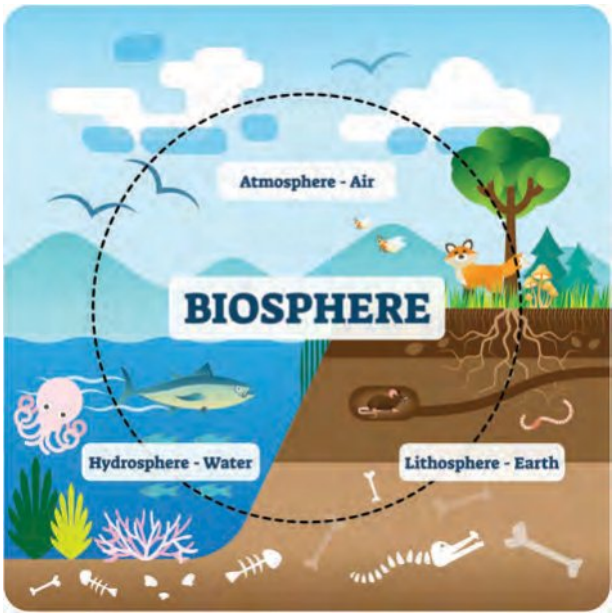
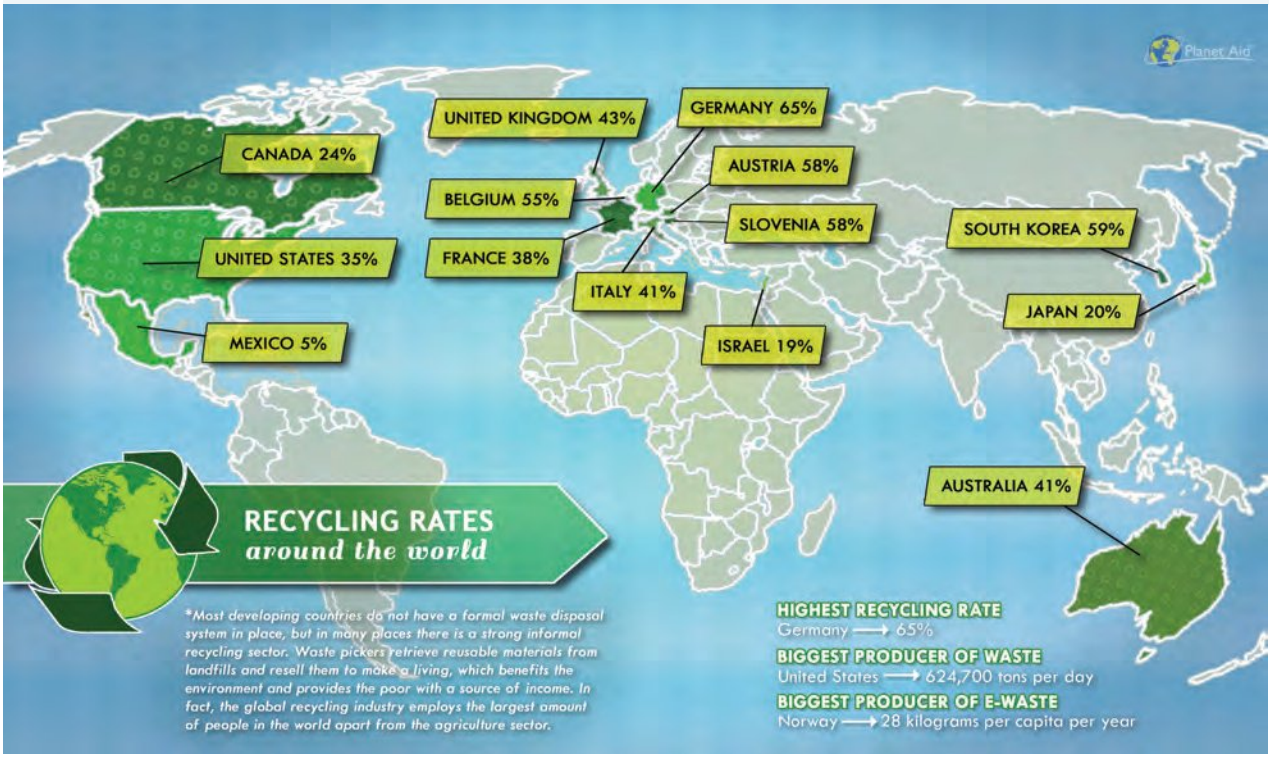


Figure 8.4 illustrates the huge differences in *waste recycle rates* between countries, with Germany leading the way. In addition, some businesses are making their products so that a higher proportion of materials can be recycled. This is helping to create a more sustainable circular economy, reducing the stress on the environment.

Energy consumption by country

Coal is the biggest source of energy to power homes and enable the growth of industry and economic activity. As such, it is the largest source of CO_2 emissions and other greenhouse gases, making it a significant driver of climate change.

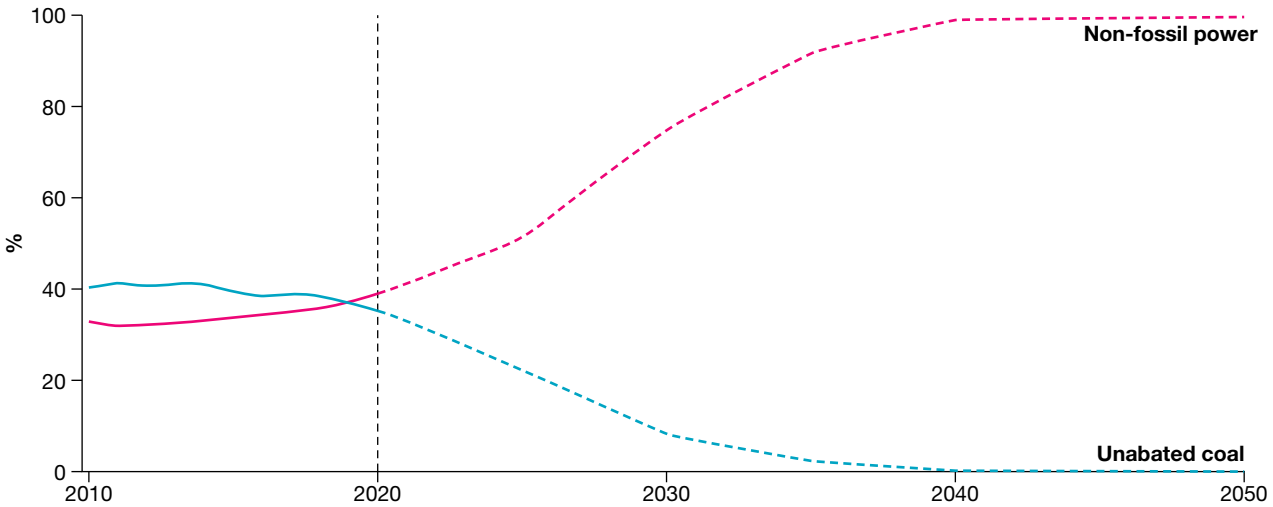
FIGURE 8.4 Comparisons of waste recycling across selected countries



Source: Planet Aid Organisation, see https://www.planetaid.org/blog/global-recycling-rates.

Figure 8.5 shows the actual change in the world's energy dependence on coal, from 2010 and 2020. Notice the fall from 41 per cent in 2014 to 35 per cent in 2020. Interestingly, the graph also shows the projected decline in reliance on coal-fired electricity for the period, 2020–2050, along with a dramatic rise in non-fossil, renewable power from 33 per cent in 2010 to an expected 99.6 per cent by 2050. Indeed, without a switch from coal to renewables, the widely adopted *net zero CO_2 emissions target* will not be reached by 2050.

FIGURE 8.5 The actual and forecast change in the global energy mix away from fossil power towards non-fossil power



Source: International Energy Agency (IEA), see https://www.iea.org/reports/coal-fired-power.

Ecological footprint — how many earths are needed to provide the resources?

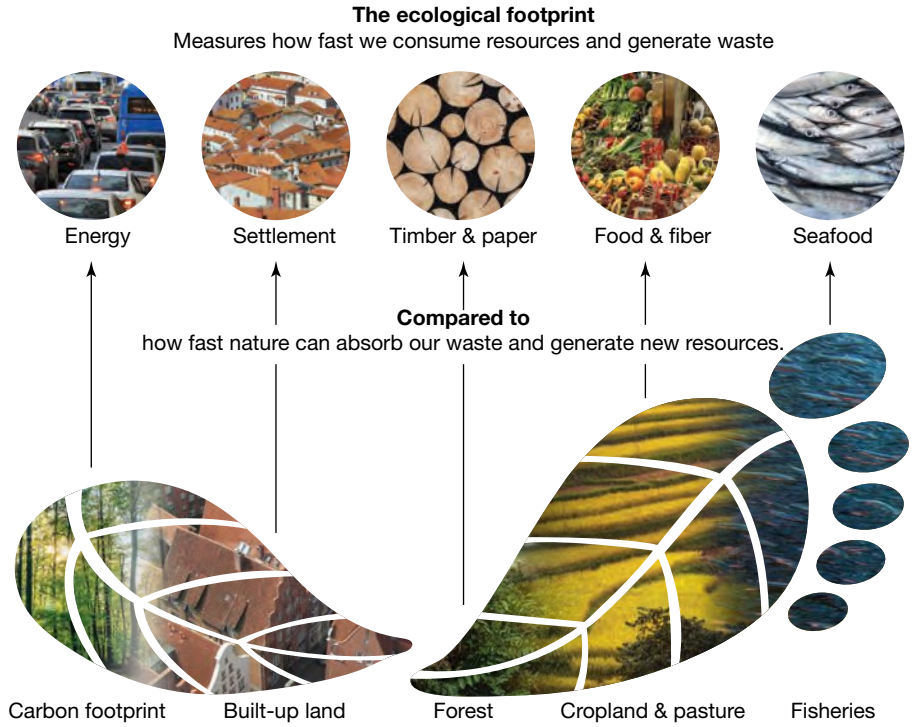
Resources are needed as inputs to enable the growth in the output of goods and services. With the explosion of global population and a desire to enjoy higher material living standards, the demand for renewable and non-renewable natural and environmental resources has increased. This has depleted the available supply of these inputs and there is competition for those that remain.

Around 30 years ago, the concept of the *world's carrying capacity* was developed although it was later renamed the **ecological footprint**. Putting it simply, the ecological footprint relates to the quantity of environmental resources needed to produce the quantity of goods and services to support a particular lifestyle or living standard. Based on United Nations data (e.g. carbon use, and land area used for cities, cropping, fishing, forests, grazing etc.) it is updated annually. Calculations simply add up the human demands for environmental resources that compete for the earth's ability to regenerate and remain sustainable into the future. The concept of the ecological footprint is illustrated in Figure 8.6 (part 1).

Despite having some shortcomings, the *ecological footprint* does help to shape government policy at the national and international level. It helps to make people far more aware of the extent to which their lifestyle and material living standards could be replicated by others. As shown in Figure 8.6 (part 2), comparisons between countries of ecological footprints highlight the huge inequalities in the consumption of the world's scarce resources. By way of example, for everyone in the world to enjoy Australian living standards, we would need the resources of 4.1 earths. Clearly, there is a shortfall or an *environmental deficit* (i.e. the demand is greater than the available supply) where the earth's ecosystems and biosystems are unable to remain in balance. In contrast, if everyone had a lifestyle of the average Indian, we would need just 0.7 earths.

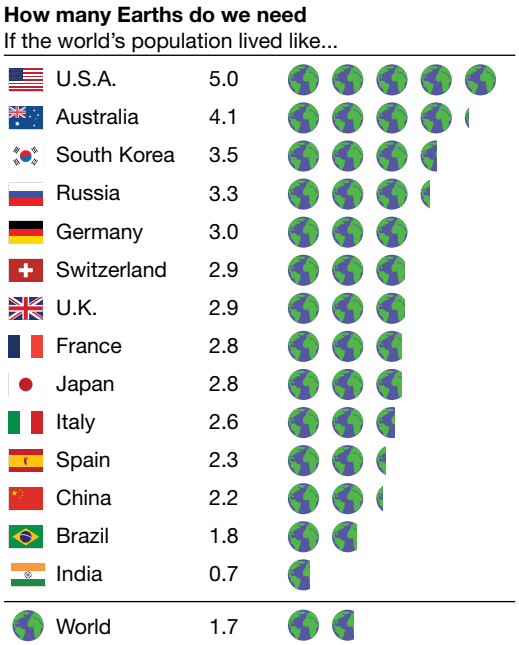
FIGURE 8.6 Environmental sustainability as measured by the ecological footprint

Part 1 – The concept of an ecological footprint relates to how much nature we have (the supply of resources that are also needed to absorb our waste, especially CO_2) and how much nature we use (the demand for resources).



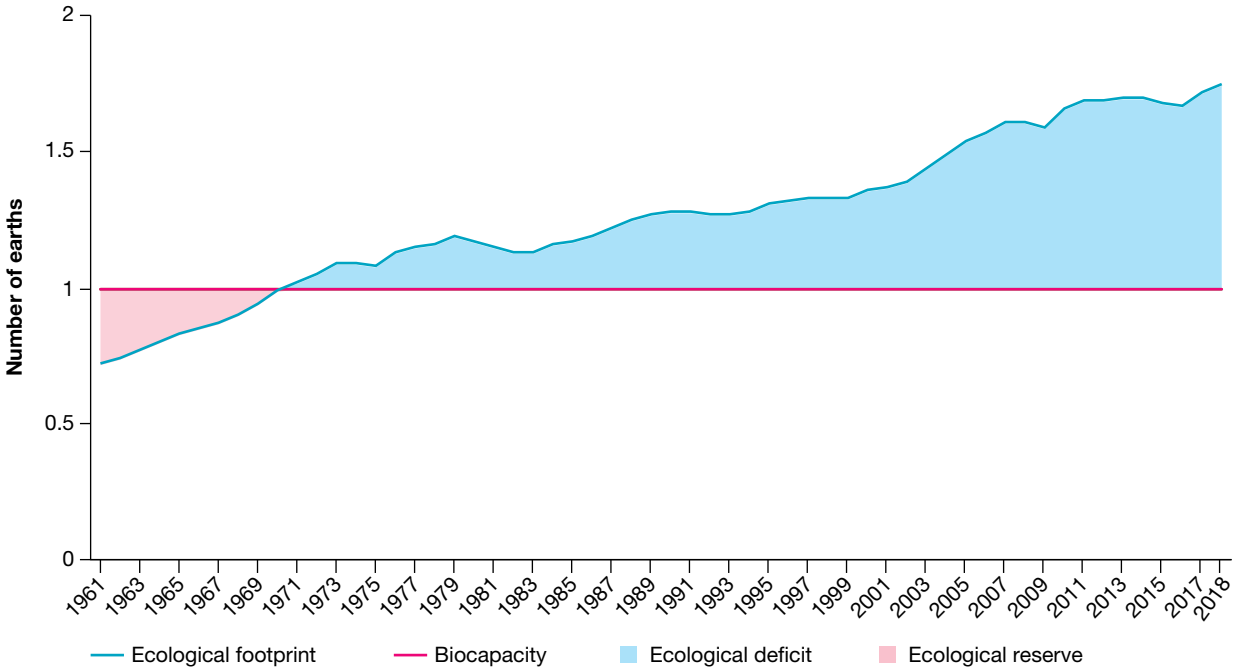
Source: Global Footprint Network, see https://www.footprintnetwork.org/our-work/ecological-footprint/.

Part 2 – The environmental footprint of selected countries (in terms of the environmental resources of the planet required)



Sources: Original data from Global Footprint Network, National Footprint Accounts, 2018.

Part 3 – Changes in the world's ecological footprint from an environmental surplus to environmental deficit



Source: Global Footprint Network, 2022, National Footprint and Biocapacity Accounts, see https://data.footprintnetwork.org/?&_ga=2.86826584.1590359106.1651877490-908330195.1651617156#/countryTrends?cn=5001&type=earth.

It is also possible to track *trends* in the world's overall environmental footprint. Figure 8.6 (part 3) shows that since 1961, the environmental footprint of humanity (see the blue line) has increased by around 2 per cent a year. It has switched from having a surplus or spare capacity in 1961 (see the pink shading), to a growing deficit since 1971 (see the blue shading) in terms of the number of earths (shown on the vertical axis) required for biosystems and ecosystems to remain in balance. We now need about 1.75 earths to sustain current average material living standards.

8.3.2 Measures of the environmental sustainability for Australia

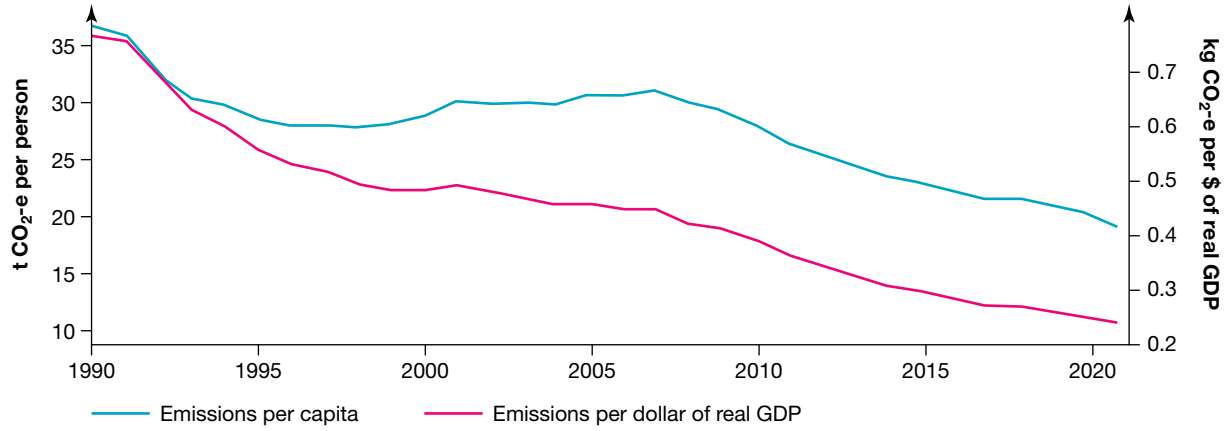
There are many measures of the extent to which Australia's economic activities are environmentally sustainable. Here are just a few:

Changes in Australia's per capita CO_2 emissions and emissions per dollar of GDP

In most countries, the growth in GDP and economic activity are linked with higher CO_2 emissions, although some countries are starting to break this relationship by burning less fossil fuels (e.g. coal, oil and gas) that cause climate change. In this regard, Figure 8.7 (part 1) shows that since 1990, Australia appears to have made substantial progress in improving its environmental sustainability. Despite the rapid increase in Australia's population over the period, CO_2 emissions per person have come down by around 45 per cent and, even more impressively, despite strong GDP growth, CO_2 emissions per dollar of GDP produced have fallen by about 65 per cent! This represents an increase in how efficiently goods and services are produced — more environmentally sustainable output has been achieved from fewer inputs.

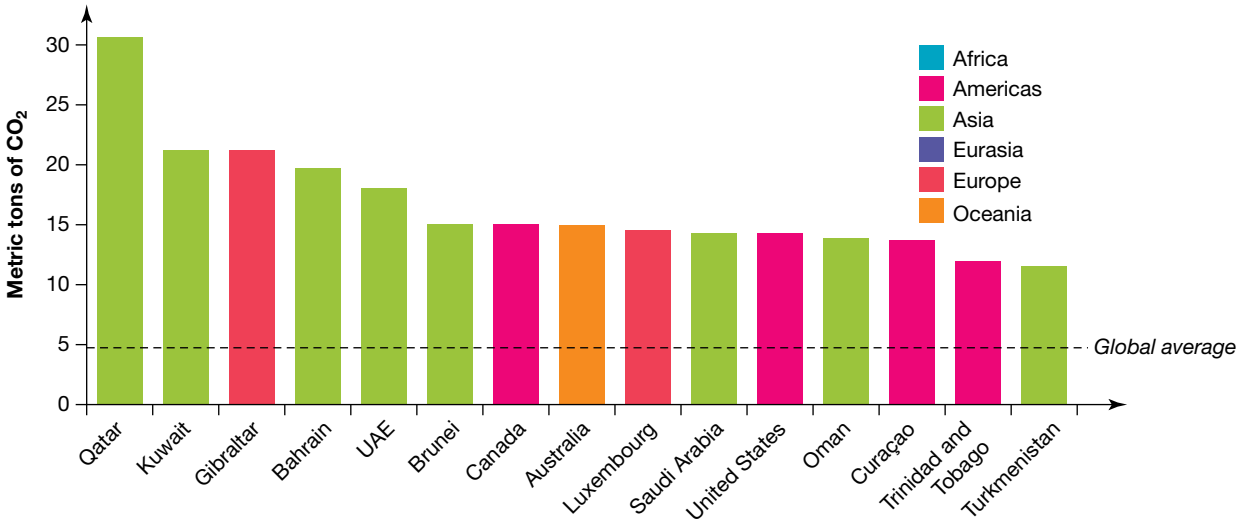
FIGURE 8.7 Changes in Australia's CO_2 emissions as an indicator of environmental sustainability

Part 1 – The general downward trend in CO_2 emissions per person (LHS) and CO_2 emissions per dollar of real GDP (RHC)



Source: Australian government, Department of Industry, Science, Energy and Resources, 2021, Australia's latest greenhouse gas emissions, quarterly update, August 2021, https://www.industry.gov.au/data-and-publications/national-greenhouse-gas-inventory-quarterly-update-march-2021.

Part 2 – Countries with the highest CO_2 per capita emissions resulting from the burning of fossil fuels



Source: Union of Concerned Scientists, 2021, see https://www.ucsusa.org/resources/each-countrys-share-co$_2$-emissions.

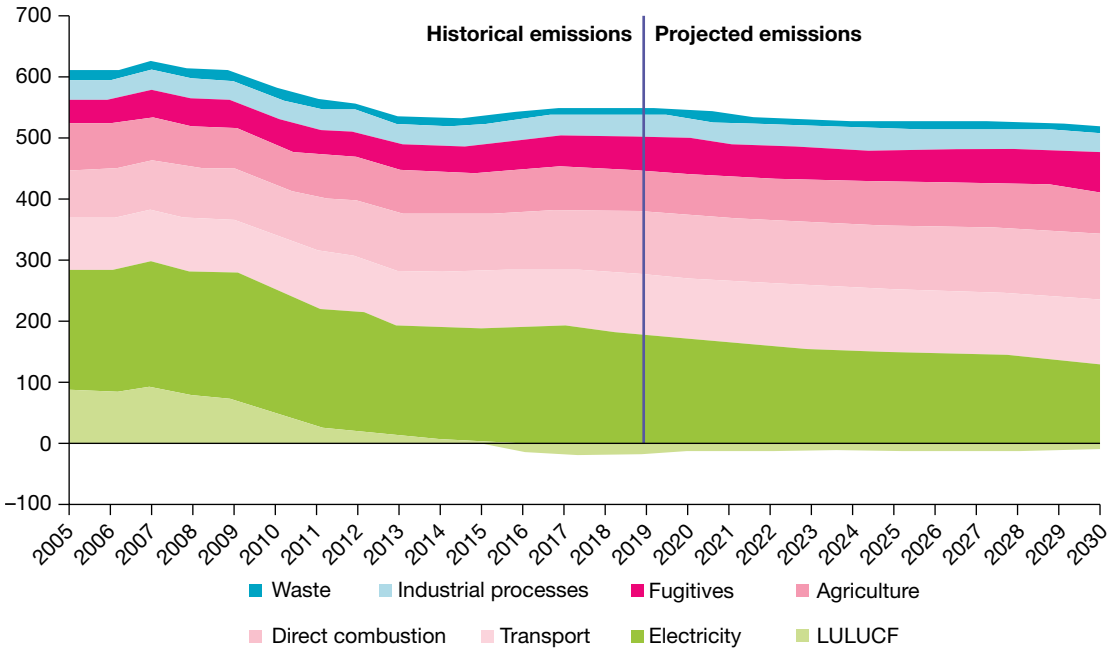
However, despite this progress, Figure 8.7 (part 2) shows that relative to other countries, Australia is still the eighth *highest* emitter of CO_2 per capita. Clearly, we are not pulling our weight and further action is needed to make economic growth more sustainable.

Other indicators of Australia's environmental issues

Emissions into the environment that cause climate change come from various sources associated with the production, use and disposal of goods or services. Trends in the levels of these emissions from each source also help to throw some light on whether economic activity is becoming more sustainable.

- ***Emissions by origin:*** Figure 8.8 shows historical and projected changes in emissions originating from different sources (i.e. waste, industrial processes, agriculture, combustion, power, and transport). Of these, electricity generation, direct combustion and agriculture have been mostly responsible. While overall levels are coming down for electricity because of the switch from coal to renewables, there is little change in most other areas.

FIGURE 8.8 Trends in Australia's actual and projected CO_2 emissions (metric tonnes) by their source

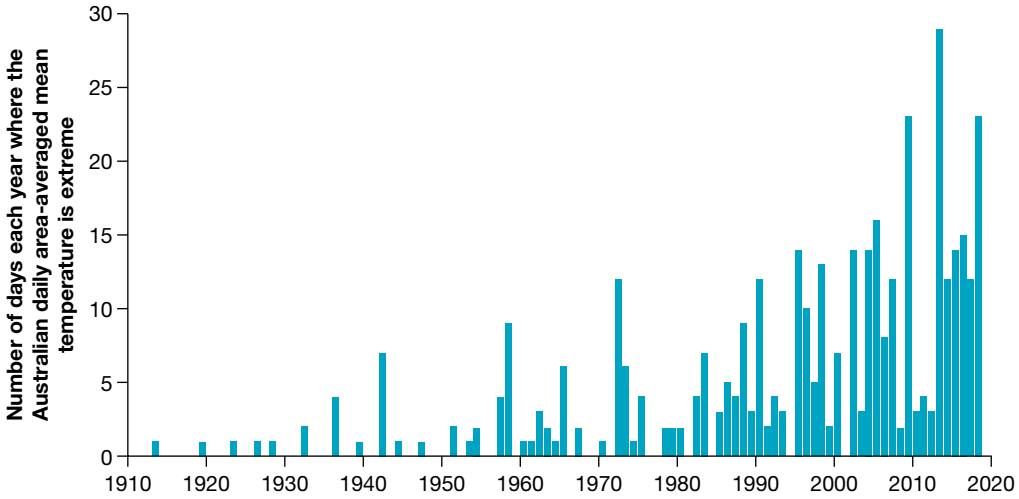


Source: Australian government, 'Prospering in a low-emissions world: An Updated Climate Policy Toolkit For Australia', March 2020, page 36, see https://www.climatechangeauthority.gov.au/sites/default/files/2020-09/Prospering%20in%20a%20low-emissions%20world.pdf.

- ***Number of hot days and bushfires:*** Climate change has made living in Australia more challenging. For example, Figure 8.9 (graph 1) shows the sharp increase in the number of days with extreme temperatures. Note the rise especially since the 1980s. Figure 8.9 (graph 2) reveals that frequency of bushfires by region. For instance, on the map, the grey shaded areas along Australia's east coast have bushfires annually or every couple of years. Many are sparked by high temperatures and extreme weather events linked to climate change.

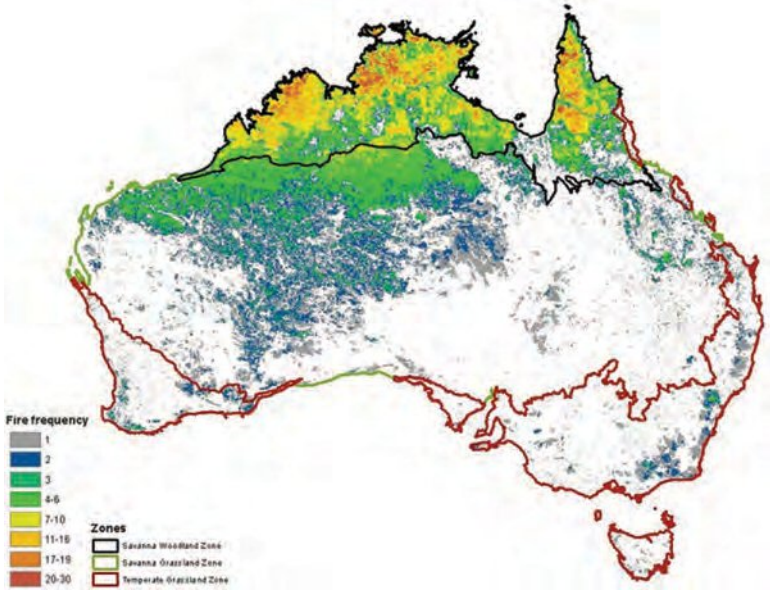
FIGURE 8.9 Changes in Australia's climate related events

Graph 1 – Frequency of extreme heat events in Australia 1910–2020



Sources: Temperature data, BOM; graph from Australian Government, Climate Change Authority Report, 2020, page 2, see https://www.climatechangeauthority.gov.au/prospering-low-emissions-world-updated-climate-policy-toolkit-australia#:~:text=The%20report%20presents%2035%20recommendations,and%20land%2C%20and%20waste%20sectors.

Graph 2 – Frequency of bushfires by region, Australia (average number of years between fires)



Source: Australian government, Department of Industry, Science, energy and Resources (figure 1), see https://www.industry.gov.au/data-and-publications/estimating-greenhouse-gas-emissions-from-bushfires-in-australias-temperate-forests-focus-on-2019-20.

8.3 Activities

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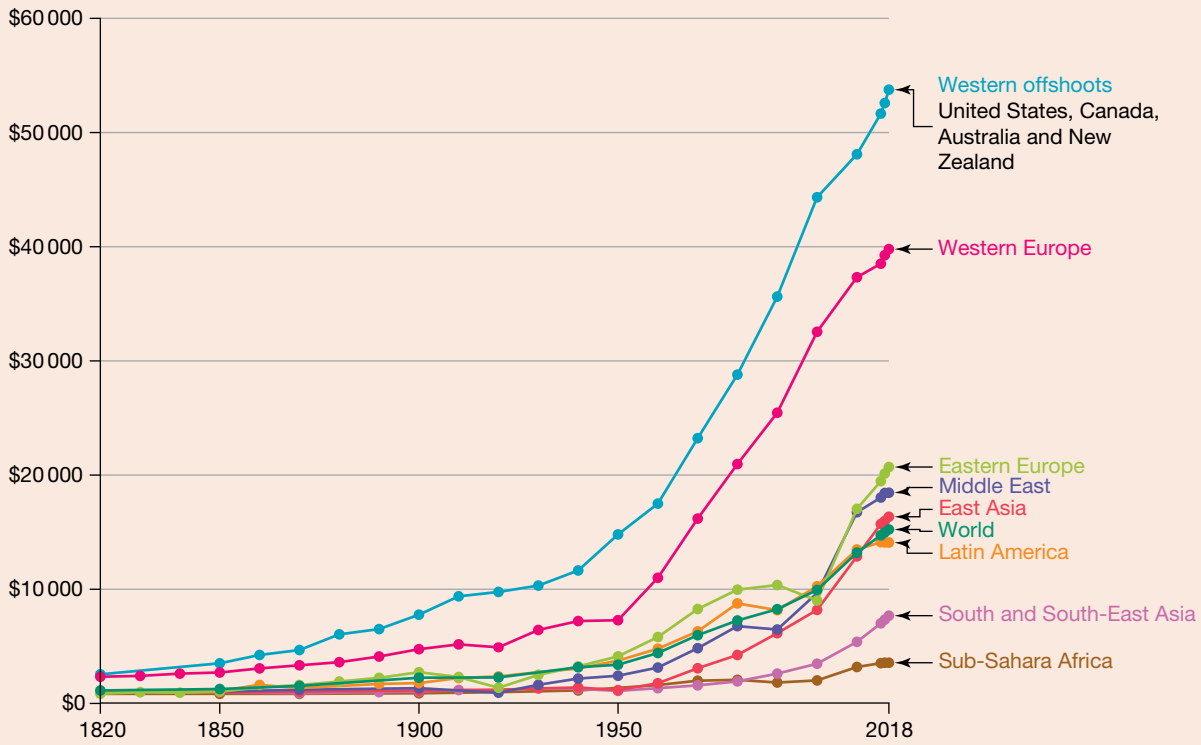
8.3 Quick quiz on | **8.3 Exercise**

8.3 Exercise

1. **Explain** how each of the following measures can tell us something about whether economic growth is environmentally sustainable:
   - a. Global surface temperatures **(1 mark)**
   - b. CO_2 emissions per capita **(1 mark)**
   - c. Ecological footprint. **(1 mark)**
2. Rapid increases in global real GDP per person have led to environmental damage.
   - a. **Explain** how GDP growth is linked with global environmental damage. **(2 marks)**
   - b. Referring to the figure below, **identify** the countries that are mostly responsible for environmental damage. **(1 mark)**

GDP per capita, 1820 to 2018

GDP per capita adjusted for price changes over time (inflation) and price differences between countries – it is measured in international-$ in 2011 prices.

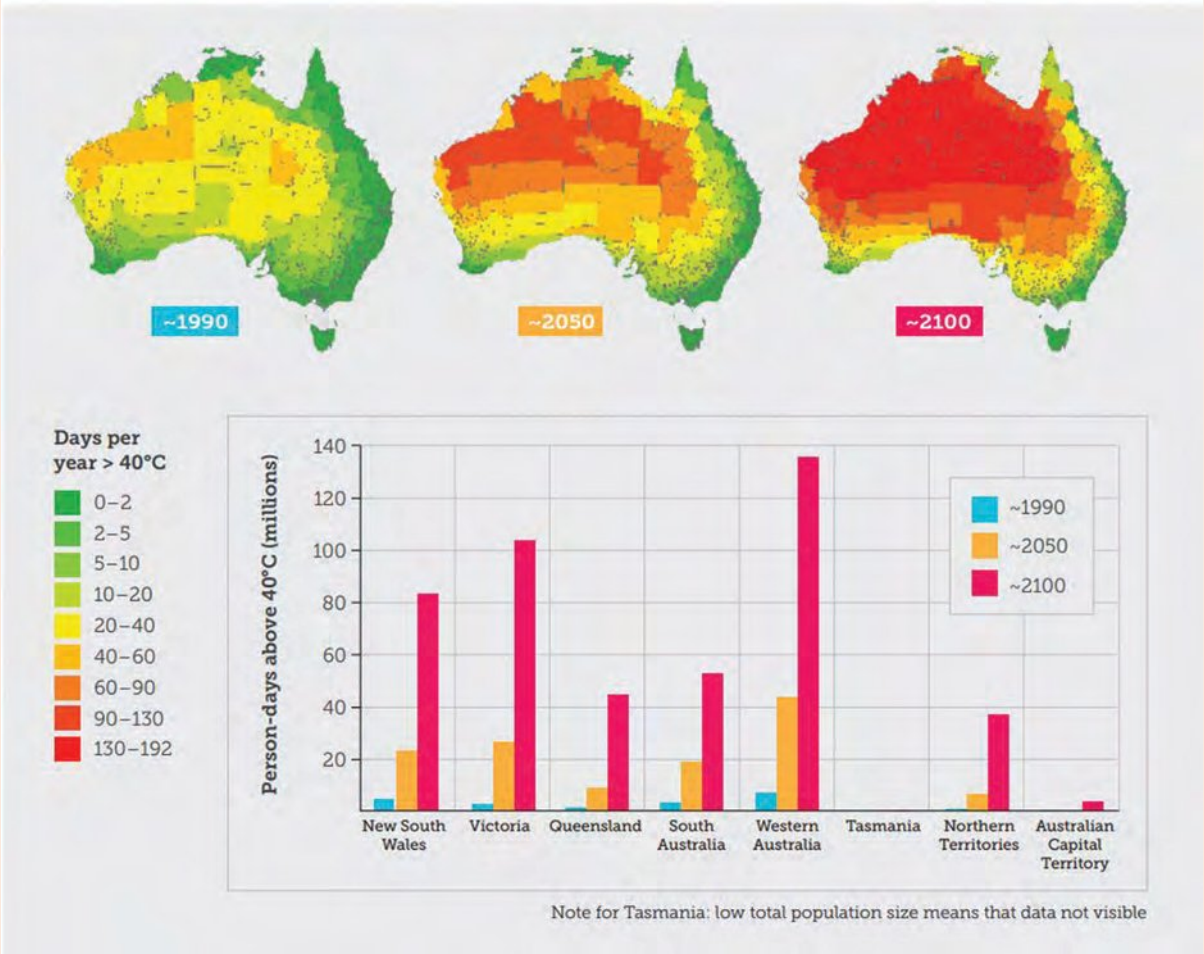


Source: Our World in Data, see https://ourworldindata.org/grapher/gdp-per-capita-maddison-2020.

c. The rise in global surface temperature can be an indicator that economic growth has not been sustainable. **Identify** and **outline** four problems that the rising global surface temperature has created. **(4 marks)**

d. If the growth rate in global GDP slowed (e.g. 2020) and at the same time, the rate of population growth also slowed by the same percentage, **explain** how this would be likely to affect:
- the level of environmental damage **(2 marks)**
- average material living standards. **(2 marks)**

3. Examine the figure below showing actual and forecast rises in the number of days each year in Australia, with temperatures over 40 degrees Celsius.



Source: Climate Council, Figure 11, page 21, see https://www.climatecouncil.org.au/uploads/7579c324216d1e76e8a50095aac45d66.pdf.

a. Looking at the three maps of Australia and the column graph, describe the forecast changes in extremely hot days, given a high emissions scenario and the failure to limit global emissions. **(2 marks)**

b. Looking at the column graph, **identify** the two states that are expected to suffer most, and the two states that are expected to suffer least from days of high temperatures, if emissions are not limited. **(2 marks)**

Solutions and sample responses are available online.

8.4 The reasons why environmental sustainability is of importance to Australia and globally

KEY KNOWLEDGE

- The reasons environmental economics is of importance to the economy at a local, national and international level

Source: Adapted from the VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

We have seen that global economic growth has often come at the expense of the environment. It has involved the depletion of natural and environmental resources, and the return of huge amounts of waste at a rate that the world's natural regenerative ecosystems are unable to process. In attempting to meet our current needs and endless wants, the living standards of future generations have been put in jeopardy. As a result, the issue of environmental sustainability, is of utmost importance.

8.4.1 The importance of environmental sustainability for maintaining material living standards

Material living standards are affected by changes in the levels of production, employment, incomes, and consumption. Clearly, environmental sustainability and climate change will impact on these things. With this in mind, it seems that society is now presented with an important choice:

- *On the one hand*, it could be 'business as usual' and continue to pursue unsustainable rates of economic growth with high CO_2 emissions. However, this would see a further increase in the incidence and severity of extreme weather events that severely damage the economy and erode material living standards. Research and modelling by Deloitte Access Economics released in 2022 suggests that over the last 50 years, these events lowered Australia's GDP and hence incomes by $120 billion. However, more alarmingly, the modelling also suggests that this loss may rise to a around $1000 billion for the period, 2020–2050.
- *On the other hand*, by taking decisive, effective, and prompt action starting now by investing to limit emissions and making the economy more resilient and able to cope with climate change, the expected loss by 2050 can be reduced by $380 billion, to $620 billion (a loss that is 38 per cent lower). In other words, there is a huge *environmental dividend* or return on *investing* to make the economy more sustainable.

Either way, it seems climate change will continue to cost Australia's economy through lost production, lower incomes and eroded material wellbeing. However, moving forward, Figure 8.10 shows that taking effective action to limit climate change, would seem a far better and obvious option.

Reflect for a moment on the massive disruption and devastation caused by Australia's increasingly severe and frequent weather events. They have made aggregate supply conditions far *less favourable* for producers. In addition to the terrible loss of life, they have destroyed business and capital resources in farming, retailing, manufacturing, tourism, and services. In addition, infrastructure worth billions of dollars have been badly damaged.

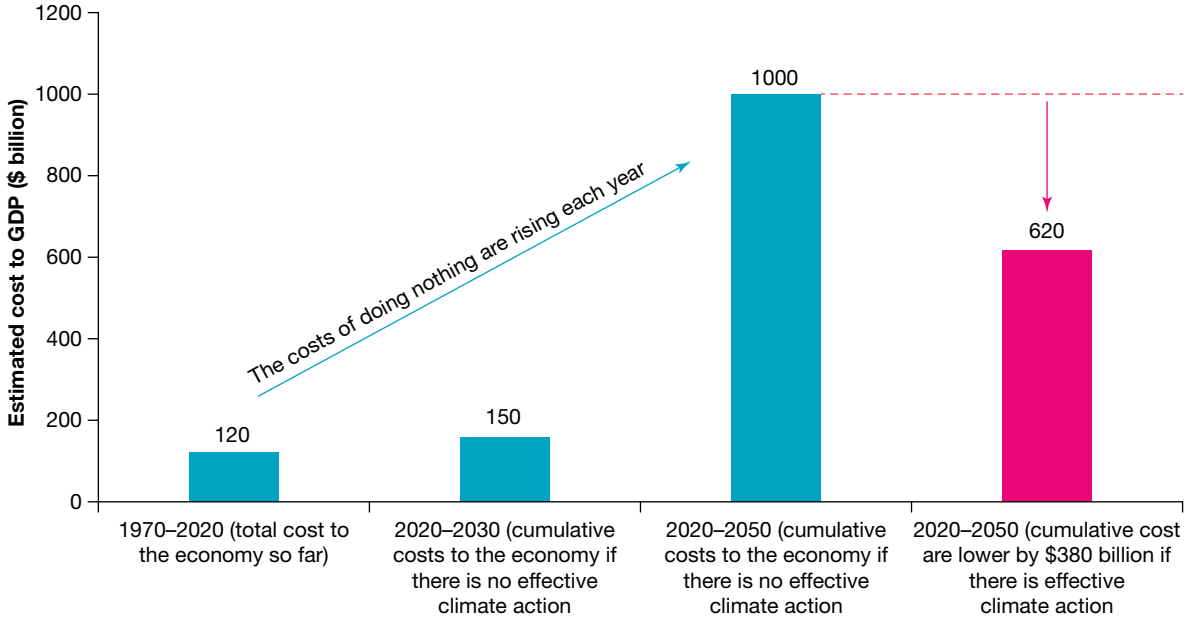
More specifically, consider the negative economic effects on Australia's GDP, employment, incomes, consumption, and material wellbeing, of these *three* examples of severe weather events:

- ***2017–19 Severe drought:*** The severe drought in Queensland and NSW during 2017–19 led to lower farm productivity and lost output. It accelerated the decline of rural communities, businesses closed, and many services disappeared as people moved to the cities. In fact, GDP was depressed by 0.7 per cent or a loss of around $63 billion (where the drought cost $53 billion and bushfires cost $10 billion). In turn, this lowered levels of employment, incomes, consumption, and material living standards.
- ***2020 Bushfires:*** After years of drought and rising average surface temperatures, the bushfires in Victoria, NSW, and Queensland in early-2020 reduced farm GDP by around $4–5 billion due to destroyed buildings,

equipment, crops and 100 000 livestock. Tourism and other services in these areas were decimated, reducing employment, incomes, and material living standards.

- ***2022 Floods:*** The floods in 2022 in eastern Queensland and NSW cost about $3.4 billion in insurance claims. In addition, there was over $6 billion in government outlays on flood payments to victims and repair of infrastructure. Farming, manufacturing, tourism, hospitality, and retail businesses were unable to operate, and workers lost their jobs and incomes. This depressed living standards already badly affected by the COVID-19 recession, lockdowns and border closures.

FIGURE 8.10 The costs of doing nothing about climate change are expected to be far bigger for Australia, than if appropriate action is taken to limit emissions.



Source: Data derived from Deloitte Access Economics, 'Economic reality check: Adapting Australia for climate-resilient growth', January 2022, see https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-dae-economic-reality-check-minderoo-foundation-17012022.pdf.

As a result of these and other events, environmental sustainability has now become a far more important issue than previously. For instance, in a poll conducted by the Lowy Institute in 2021, 60 per cent of those surveyed believed that global warming is a serious problem. In addition, 74 per cent thought that the benefits of further action would outweigh the costs, and 91 per cent supported Australia's commitment to net zero emissions by 2050.

Finally, environmental sustainability is not just a costly economic problem for Australians, but is especially the case in low-income countries. Climate change, brought on by unsustainable global economic activities (especially in high-income countries), is a matter of life and death. The increased severity and frequency of drought and other events have depressed farm productivity, output, employment, and incomes. It has been a factor that has added to poverty, the spread of disease and, for survival, climate-induced global migration. It seems that those whose material living standards have suffered most are not responsible for the current environmental crisis, yet they pay the highest cost.

8.4.2 The importance of environmental sustainability for maintaining non-material living standards

It might be easy to think that environmental sustainability is only important because it affects material living standards. However, this is *not* correct. Climate change, global warming and severe weather events, brought on by unsustainable economic activities, have also lowered society's *non-material wellbeing* or quality of daily life.

- ***Reduced health:*** Climate change reduces health outcomes for most who live through extreme climatic events. First, the event often brings on mental health issues, including psychological distress and depression, that persists for some time after. Here we might think of the impact on people of the 2022 floods or the bushfires in 2021 in NSW and Queensland. Many people were severely traumatised by the loss of loved ones, homes, personal possessions, businesses, security, jobs, and incomes. On each occasion, government mental health support for victims ran into billions of dollars. Their quality of life and happiness have been severely reduced. Second, extreme weather events result in a reduction of other outcomes, leaving people worse off. Perhaps the most obvious problem, especially in low-income countries, is that severe weather events, including drought and floods, lower agricultural productivity, depressing incomes that lead to reduced food security, and add to hunger, malnutrition, and poverty. These events also diminish the quality and quantity of drinking water, leading to illness. In addition, malaria, diarrhoea, typhoid, hepatitis, cholera, and kidney and liver damage associated with undernutrition of the body's nervous and respiratory systems, are worsened by climate change. For instance, studies suggest that by 2080 an extra 260–320 million people in Africa could be living in malaria-infested areas. These impacts shorten life expectancy and lower the quality of life.
- ***Domestic violence:*** Many studies show that severe weather events, including heatwaves and drought that increase stress and economic hardship, usually lead to higher rates of domestic violence, especially against women and children.

- ***Loss of biodiversity, altered ecosystems and reduced places of natural beauty for recreation:*** Climate change alters nature and the landscape. First, it has led to the loss of animal and plant species at an accelerating rate, and an increase in the number on the endangered list. Studies out of Africa indicate that by 2080, 25–40 per cent of mammal species like Zebra, may be either extinct or endangered. In Australia, the 2020 bushfires devastated nature and fragile ecosystems. Around 400 million native animals died in the fires, along with a 14 per cent increase in threatened plant species. Second, climate change and unsustainable types of economic activity have helped to destroy areas of natural beauty used for recreation. Rising temperatures have seen glaciers disappear, hiking areas blackened, coastlines eroded, and a shrinkage of snow coverage for skiing. Third, the environment helps to break down some household and business wastes, pollinate crops, filter water, and regulate weather patterns. However, not all products are biodegradable — many cannot be processed by nature. Additionally, some waste including plastics and chemicals have entered the food chain, poisoning plants and animals.

8.4 Activities

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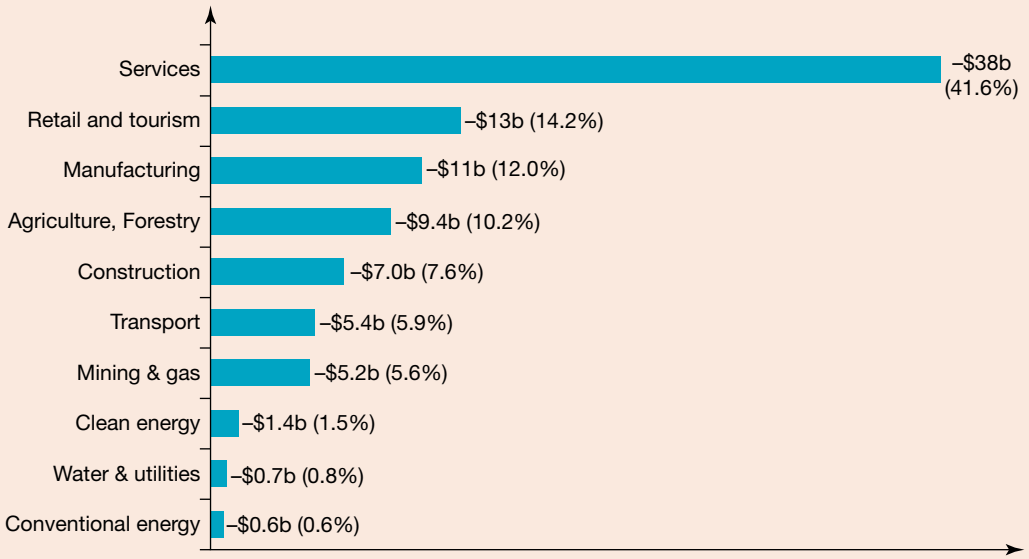
8.4 Quick quiz on | **8.4 Exercise**

8.4 Exercise

1. **Define** the term, *environmental sustainability*. **(1 mark)**
2. **Explain** why all economies, especially those of rich countries, now need to become more environmentally sustainable. **(4 marks)**
3. **a. Outline** how worsening climate change can affect each of the following:
   i. GDP
   ii. Employment
   iii. Incomes and material living standards. **(6 marks)**
   b. Examine the figure below. Quoting data from the graph, select the two worst climate-affected industries or sectors and, according to the forecasts, explain why they are likely to suffer more than others. **(4 marks)**

How the forecast losses of $92 billion for 2050 resulting from climate inaction are spread across Australian industry ($ billions)



Source: Deloitte Access Economics, 'Economic reality check: Adapting Australia for climate-resilient growth', January 2022, Chart 2.1, page 21, see https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-dae-economic-reality-check-minderoo-foundation-17012022.pdf.

Solutions and sample responses are available online.

8.5 The economic factors influencing the extent of environmental sustainability

KEY KNOWLEDGE

- The economic factors influencing the extent of environmental sustainability

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The degree to which higher GDP is environmentally sustainable, is affected not only by the *speed* of increases in global output, but also by the *types* of goods and services produced and consumed. Some production is far more sustainable than others and creates a much smaller environmental footprint. In this section, we will investigate the *factors* that have adversely affected environmental sustainability, and look at *market failure* including the concepts of *negative externalities* and the use of *common access resources*.

8.5.1 Market failure affects the extent of environmental sustainability

A typical starting point in understanding the factors causing environmental problems, is the concept of *market failure*. Market failure exists where, in the absence of government intervention, the free or unregulated operation of demand, supply, and the price system cause resources to be allocated inefficiently into uses that do not maximise the community's general wellbeing. Sometimes, the market *fails* to provide decision makers with *all*

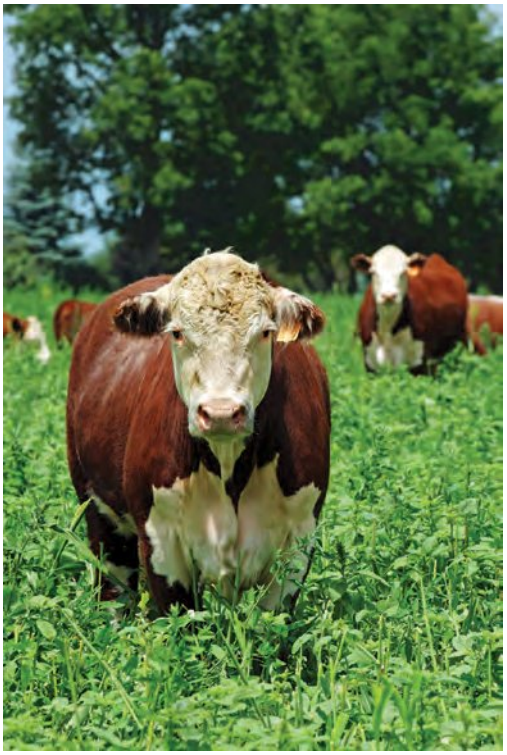
the necessary *information* needed to ensure that resources go into the production of those goods and services that are most wanted. As we shall soon see, common types of market failure include the problems of **negative externalities** and the abuse of environmental or **common access resources**.

Some economic activities create negative externalities as a market failure

Negative externalities are *costs* associated with the production and/or consumption of goods and services that are *not* paid by those involved with a particular economic activity. Instead, they are passed onto *third parties* who gain no direct benefit.

Take, for example, a *business producing aluminium for soft drink cans* and a *consumer buying the soft drink*. Production of the can required digging out of the ground and transporting the bauxite ore needed to make aluminium, and then the addition of lots of electricity to melt and extract the metal. While producers pay for the ore, transport, and power, they haven't paid for the damage done by the CO_2 emissions released into the atmosphere involved with extraction, transportation, and the burning of coal at the power station. This has contributed to global warming. Leaving some costs out means that aluminium cans are cheaper to produce, and profits are greater than they should be. As a result, firms are even keener to allocate more resources towards the production of this good. On the other side of the market, it is true that consumers of soft drink have paid for the can and its contents at the point of sale. However, the price they have paid does *not* include *all* the costs — the costs to the environment, the effects of global warming, the damage from severe weather events for third parties like farmers, those who have lost their life in storms and fires, people dislodged from low-lying island and coastal areas due to rising sea levels, the drop in farm productivity that has added to global hunger and rising food prices, mental disorders, the destruction of ecosystems and species, the disposal of non-degradable waste, and the spread of disease. Unfortunately, third parties who have not produced or consumed the soft drink, have paid all of these costs that are *external* to those producing and consuming the good. Put another way, the market system has not accounted for all of these costs and so the price paid for the soft drink is far too low. In this and other instances, the *market price* is not a proper guide to how scarce resources should be allocated in order to maximise society's general wellbeing.

Here is another example of *negative externalities* created by economic activity. As a consumer you might buy meat for $20/kg. You believe the price paid covers all the costs for the farmer, meat processor, transporter, retailer, refrigeration, and packaging, but does this price reflect all of the *external costs* of production and your consumption? The farmer, for instance, looks at meat prices and decides that it's profitable, and so allocates resources to its production. The cattle graze on pastures, breathe the free air and drink the free water collected from runoff and the environment. In the process, the cattle also release lots of methane — a greenhouse gas that leads to global warming and other environmental issues. In turn, this has lots of knock-on effects that result from climate change. These costs are *not* internalised where they are paid by the producer and consumer of meat. Instead, they have been passed on for third parties to pay, who are external to these economic activities and gain no benefit. In the absence of government regulation and despite the broader negative effects of society's general wellbeing, the free operation of market forces again fails to reallocate resources efficiently and reduce this environmentally damaging economic activity.



Some economic activities lead to the abuse of environmental resources

You may be wondering why only some costs are *internalised* where producers and consumers pay, but other costs to the climate, air, water, and environment are paid by third parties who are *external* to many economic activities. Again, the answer is that the free operation of the market *fails* to allocate environmental or common access resources (i.e. those owned and used collectively such as the air we breathe, the water we drink) to optimise people's general wellbeing. Unfortunately, common access resources have *two* special features that make them different to other types of resources that are used in production, like the cost of wages, fuel, truck driver, electricity, bank loans, and machinery.

- *First*, users of environmental resources are **non-excludable**. Those who refuse or choose not to pay can still consume them as they please. This is because it is not cheap, easy or practical to charge them a price for something that everyone owns. There is open access to these resources so this is taken to mean they are *free* and have no price attached to them. Their real value is not reflected in the market price we pay for goods and services using these resources, even though these are scarce and valuable.
- *Second*, common access environmental resources are also **rivalrous**. That is, if one person uses them, this deprives others from consuming that same resource. For example, as a profit seeking business owner, if you extract 500 000 wild fish from the ocean, there are 500 000 fewer fish for others to consume. Over time, fish stocks are depleted, as we now see. The cutting down of old growth forests is also rivalrous. They are no longer there for others to enjoy as areas of natural beauty and recreation. The removal of these trees also lowers the ecosystem's capacity to process our wastes and remove CO_2 from the atmosphere. In the case of air as an environmental resource, if businesses take clean air from the environment or pure water from a river and use it to produce goods and services that have high CO_2 emissions and discharge other wastes that go back into the environment, these economic activities have lowered the quality of environmental resources. Here, there is no financial incentive for these profit-seeking businesses to behave in any other way by perhaps installing expensive equipment to reduce air and water emissions, plant renewable forests, or operate sustainable fish farms. In fact, it is profitable for producers of goods and services with huge negative environmental footprints to keep producing their products. These further harm the general wellbeing of many.

Review

Both *negative externalities* and *problems in the use of common access resources* are interrelated. They represent two examples of *market failure* that affect the *environmental sustainability* of some types of economic activity. With rapid global economic growth, especially since the 1970s in high-income countries, and driven by an obsession with materialism and the population explosion, it is not surprising that the world now faces environmental problems including severe weather events.

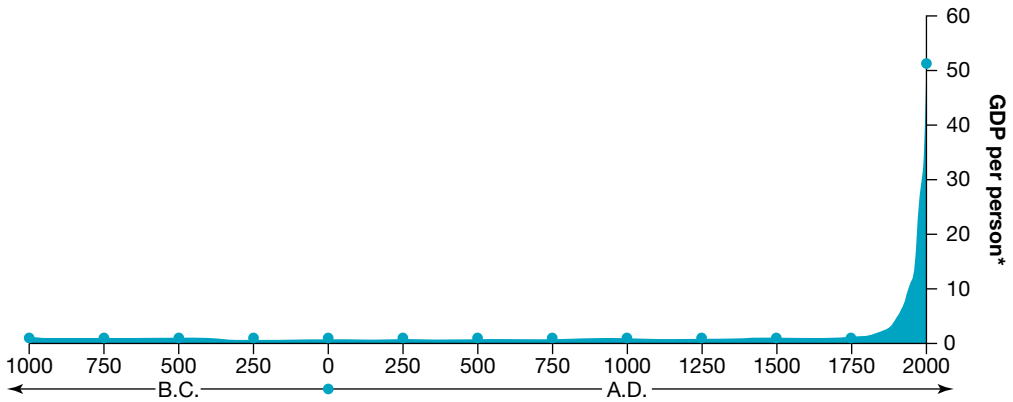
8.5.2 Other factors affecting the extent of environmental sustainability

Apart from various types of *market failure*, other factors can also affect the extent of environmental sustainability. Here are just a few:

The growth in global GDP and some types of economic activity affect environmental sustainability

Perhaps the most obvious factor affecting the extent of environmental sustainability is the rate of increase in economic growth. As a rule, rapid increases in GDP have led to an exponential rise in emissions of CO_2 and other greenhouse gases, along with lots of waste that is returned to the environment. Figure 8.11 shows the almost unbroken expansion in global GDP over the last 3000 odd years. Whilst early data prior to the 1940s is likely to be only an educated guess from lots of sources, much more recently, formal national GDP data provides us with a more reliable guide to global economic growth.

FIGURE 8.11 The growth in global GDP has led to the rise in emissions and waste returned to the environment



Source: Based on data from J. Bradford De Long, Estimates of World GDP, One Million B.C. – Present (1998).

Based on the available data, global GDP growth since 1750 has averaged an impressive rise of 1.5 per cent per year. This has caused each successive generation to be one-third better off than the one before it. Put another way, while it took the global economy 600 years prior to 1750 (the start of the industrial revolution) to double in size, since 1750 on average it has taken just 50 years! Meanwhile CO_2 emissions have followed a similar exponential pattern when graphed against global GDP.

However, there is a bit more to it than this. Not all output impacts environmental sustainability to the same extent. Take the following illustrative examples:

- Products produced locally, rather than imported and transported across the world in ships and planes, have a lower impact on CO_2 emissions and climate change.
- Products that use renewable and biodegradable natural resources can be less damaging than those using non-renewable and non-biodegradable inputs.
- Products that are single-use and then thrown away are clearly less sustainable than those that are more durable and can be repaired for further use.
- Products whose demand is based on fashions that change, and then are no longer wanted by their owners, end up as waste have a high environmental impact.
- The production of services tends to have lesser environmental impacts, than goods that use natural resources and end up as waste in the tip where they may or may not be broken down by the environment.
- The production and consumption of some foods like meat tend to have far greater negative impacts on the environment than plant-based foods. Some types of meats (e.g. beef) are also worse than others (lamb, chicken and fish).
- Some types of goods can be recycled where inputs can be reused many times. They can help to create a far more sustainable circular economy, reducing environmental impacts.

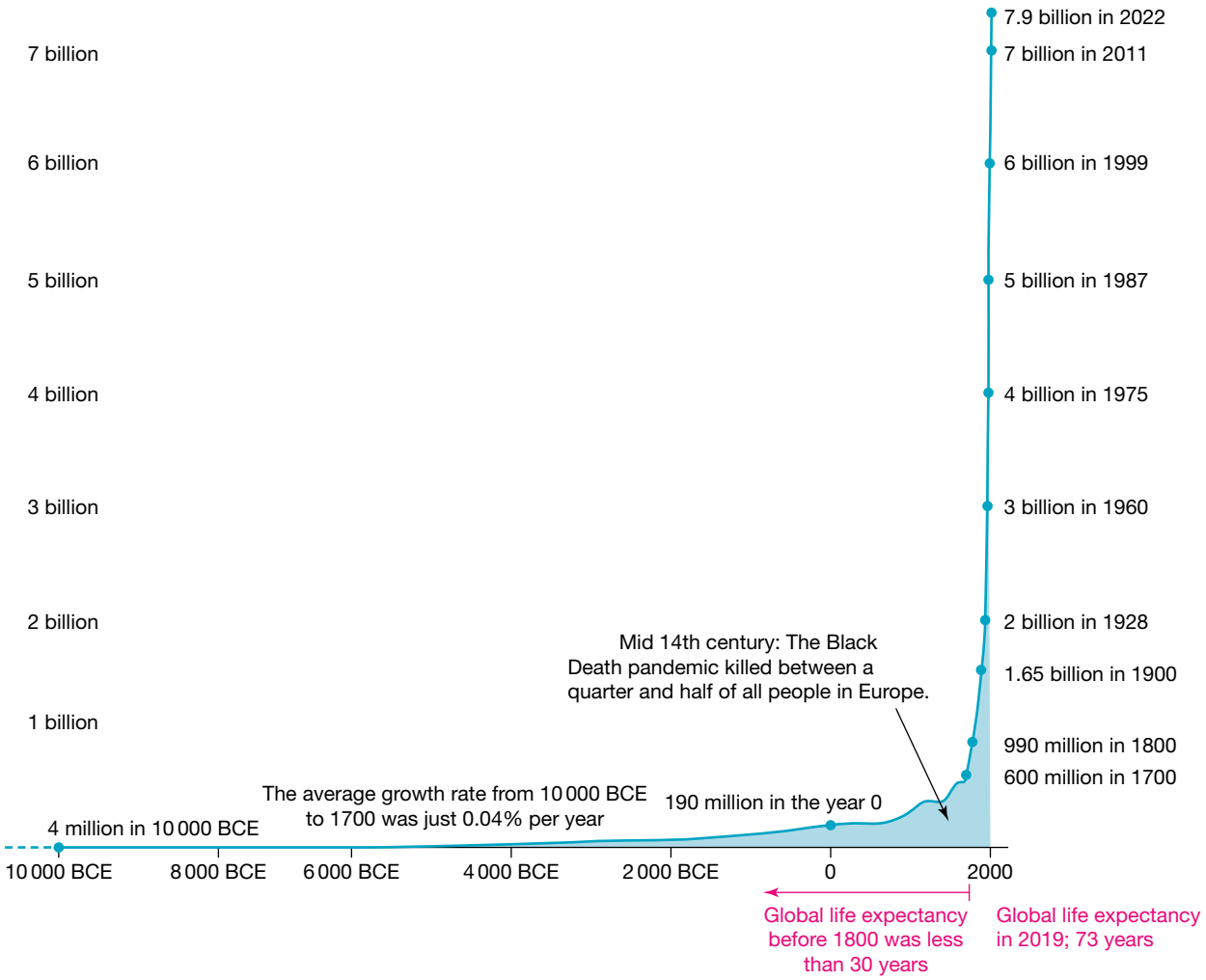
So, to an extent, the environmental sustainability of growing the size of the global economy, depends on the type of things we choose to produce.

The growth rate in global population affects environmental sustainability

There is a close relationship between the growth in the world's population and the degree of environmental sustainability. Given the resources available, our finite planet can only support a certain number of people and allow them to maintain reasonable living standards. Figure 8.12 (part 1) shows that while global population numbers grew very slowly till about 1700, they have since taken off. In fact, it took about 600 years to double in size prior to 1534, 260 years to 1803, and just 48 years to 2022. This means that there are more needs and wants to satisfy, from the increasingly scarce resources available. Figure 8.12 (part 2) shows population projections to 2100. All three scenarios or assumptions about population growth indicate that numbers are expected to keep rising till 2075 at the earliest, depending on which of the three projections (high, medium, low) is used. In other words, world population numbers will continue to put increasing pressure on environmental resources and sustainability.

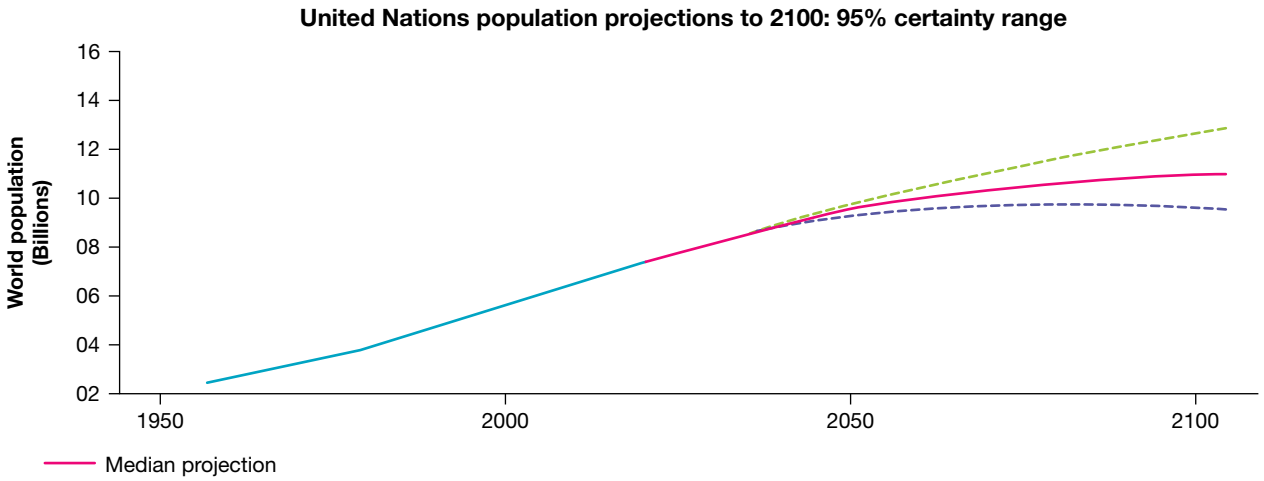
FIGURE 8.12 Global population numbers affect environmental sustainability

Part 1 – The growth in global population numbers over the last 12 000 years



Source: Our World in Data, World Population Growth, see https://ourworldindata.org/world-population-growth.

Part 2 – Projections of global population numbers till 2100



Source: Population Matters, see https://populationmatters.org/population-numbers.

Increased environmental knowledge affects environment outcomes

Increasingly, people around the world are becoming aware of and concerned about environmental problems, and the impact of their decisions on sustainability. This is partly because of extensive research and media attention, and the formation of climate action and political pressure groups. The argument goes that nowadays, when people are buying products, they are more likely to make rational, pro-environmental decisions because they have improved knowledge.

8.5 Activities

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8.5 Quick quiz on | **8.5 Exercise**

8.5 Exercise

1. **Define** the term, *market failure*, referring to two types of failure that are relevant to environmental sustainability. **(3 marks)**
2. a. **Outline** the general relationship that exists between economic growth, population growth and *environmental sustainability*. **(2 marks)**
   b. When thinking about the government's goal of promoting rapid economic growth, **explain** why it is not just the *level* of output that matters but also the *type* of goods and services produced, that determine the extent of environmental sustainability. **(2 marks)**
   c. **Examine** the table below and then **rate** each of the products or economic activities listed, according to whether you believe they are relatively sustainable (RS) or relatively unsustainable (RU). **(8 marks)**

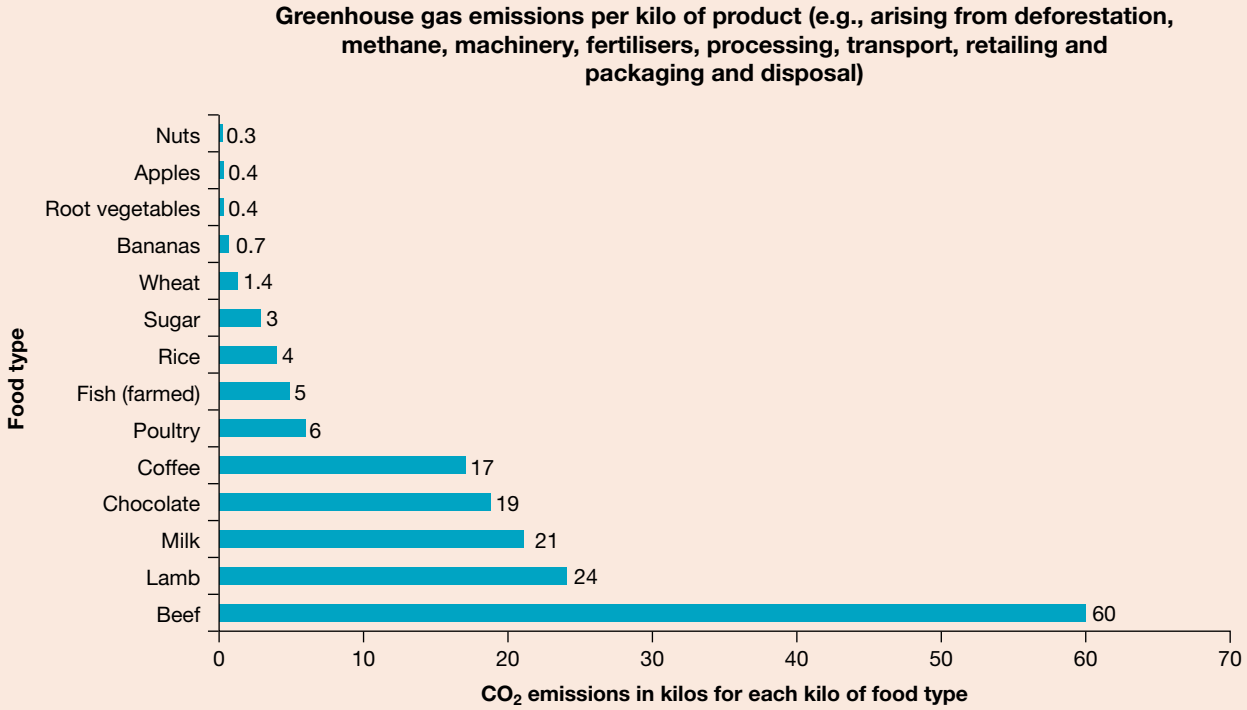
Types of production or economic activity	Relatively sustainable economic activity (RS)	Relatively unsustainable economic activity (RU)
i. Irrigated rice that uses water drawn from the Murray River		
ii. Iron ore used to make steel for a house		
iii. Solar panels on your roof used to generate electricity		
iv. A plastic ruler		
v. Wild sardines from the Atlantic Ocean		
vi. Petrol (crude oil) from wells in Saudi Arabia		
vii. A coffee table made from plantation pine		
viii. Gas made from corn and sugar cane		

3. a. **Explain** the meaning of *negative externalities* and how these represent a type of market failure that reduces the extent of environmental sustainability, ultimately eroding society's living standards. **(4 marks)**
   b. Using the table below, **describe** how each of the following economic activities is likely to generate a range of *negative externalities*, undermining society's general wellbeing. **(10 marks)**

Economic activity	Identify and outline the likely negative externality of the economic activity, noting which third parties pay the cost
i. Holding a wild and noisy birthday party at your house on Saturday night	
ii. Using disposable tissues	
iii. The construction of a new tunnel near Westgate in Melbourne	
iv. The opening of Sydney's new airport in the west	
v. A passenger smoking a cigar on a flight to Perth	
vi. Leaving the central gas heating on all day when there was nobody at home	
vii. Driving instead of walking to the corner shop	
viii. Off-road trail bike riding in state forests	
ix. Disposing of household rat poison down the sewer	
x. Consuming a huge T-bone steak	

4. a. Giving examples, **describe** common access resources. **(2 marks)**
   b. Thinking about market failure and the abuse of common access resources, **explain** what is meant by the concepts, *non-excludability*, and *rivalrous* use. **(2 marks)**
   c. Giving an example, **explain** how the free operation of the market often leads to the overuse, abuse, and a reduced quality of environmental resources. **(3 marks)**
   d. There has been overfishing leading to reduced fish stocks in oceans. **Explain** why this happens. **(2 marks)**

5. Before answering the questions that follow, **examine** the graph below.



Source: Our World in Data, see https://ourworldindata.org/food-choice-vs-eating-local.

a. **Explain** the relationship that exists between our diet preferences, and the extent of environmental sustainability. **(2 marks)**

b. Referring to the graph, **identify** the main types of food production that generate the highest amount of CO_2 emissions per kilo of food produced. **(1 mark)**

c. Referring to the graph, **identify** the main types of food production that generate the lowest amount of CO_2 emissions per kilo of food produced. **(1 mark)**

d. Diet preferences differ substantially between countries and even religions. High-income western nations tend to consume more meat, while lower-income countries consume more grains. **Outline** how this is likely to affect global environmental sustainability. **(2 marks)**

Solutions and sample responses are available online.

8.6 Different perspectives about the issue of environmental sustainability

KEY KNOWLEDGE

- The different perspectives of households (consumers and workers), business, government and other relevant economic agents regarding environmental sustainability

Source: Adapted from the VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

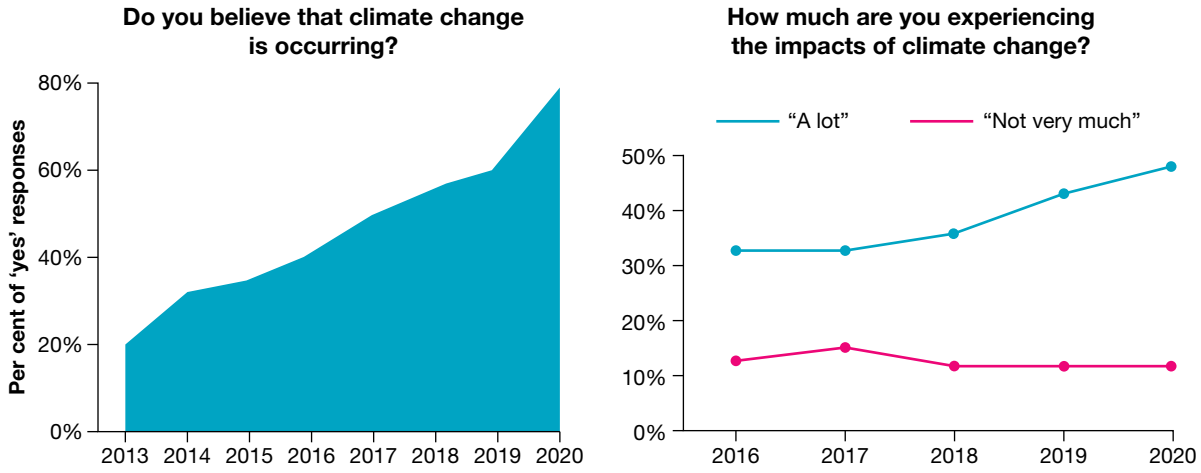
Especially over the last 5–10 years, there has been a growing awareness amongst households, businesses, and governments of environmental issues including climate change. There has also been a greater acceptance of the need for action. Even so, different perspectives remain, especially when it comes to deciding how to make economic activity more environmentally sustainable.

> *'Anyone who believes in indefinite growth of anything physical on a physically finite planet is either a madman or an economist!'*
>
> *– Kenneth Boulding, economist*

8.6.1 A consumer viewpoint on environmental sustainability

As consumers, all of us affect the environment by what we buy, how we use it and the way we dispose of it when it is no longer useful. Over recent years, there has been a massive shift in consumer support for improving environmental sustainability. This is shown in the two graphs making up Figure 8.13. For instance, between 2013 and 2020, believers in climate change have increased from 20 per cent to nearly 80 per cent of Australians surveyed, and the proportion noticing a lot of impacts of climate change has risen from around 33 per cent to about 48 per cent. It is this change in consumer attitudes that can drive climate action.

FIGURE 8.13 The change in Australian consumer attitudes towards environmental sustainability



Source: ABC, 'Climate change worrying more Australians than ever before, Australia Institute report reveals', see https://www.abc.net.au/news/2020-10-28/australia-institute-2020-climate-change-report-concern-growing/12764874.

In another survey, over 91 per cent of both households and businesses were concerned about the environment and environmental sustainability, and more than 70 per cent said they were prepared to pay extra for products that were sustainable (see HP Australia and Planet Ark, October 2021, see https://breakdownthebeast.com/report.pdf).

To some extent, the change in consumer's attitudes towards the environment has been a key in shifting opinion amongst other economic agents. Starting with protests amongst a few dedicated activists, concern and information about this issue have grown. Increasingly, better knowledge has helped reduce market failure and change consumer behaviour, by encouraging people to make better choices when buying products.

8.6.2 A business viewpoint on environmental sustainability

Until recently, many businesses tended to downplay negative externalities and environmental concerns associated with market failure. This was probably because to do otherwise would have meant higher costs and lower profits. Some attempted to reassure both governments and the community that their activities were not creating significant damage. They also tended to reject the need for direct government environmental regulations or intervention in the market, instead promoting commercial interests through organisations such as the *Australian Mining Council*, the *Forest and Forest Products Industry Council*, the *Business Council of Australia*. For instance, the forest industries group conducted a campaign to extend logging licences in state forests, whilst the miners pushed for an additional uranium mine and operations in Kakadu National Park.

But what a difference a few years can make. Recently, things have changed. Look at the following statement from the Business Council of Australia (BCA).

> The momentum for change is overwhelming. The BCA believes that the momentum for moving towards net zero by 2050 is unstoppable. The pace and scale of change is accelerating globally. Australia is at a crossroad: we can either embrace decarbonization and seize a competitive advantage in developing new technologies and export industries; or be left behind and pay the price. The case for Australia to achieve net zero emissions by 2050 is compelling:
> **The science tells us the climate is changing at an unprecedented rate.** We must limit global average warming to as close to 1.5°C by 2050 and below 2°C, in alignment with current Paris Agreement objectives. Unchecked, climate change over the next 50 years to 2070 would amount to a $3.4 trillion loss to Australia's GDP (net present value). The recent IPCC report underscored the urgency of action to limit temperature rises and increasingly frequent and extreme weather events.
>
> **The economic cost of inaction is significant.** The Technology Investment Roadmap estimates that low emissions technologies could deliver $30 billion a year of new export revenue from energy-intensive, low emissions products by 2040. To capture this economic opportunity, Australia must

act now to invest in the development and deployment of these new technologies and become a world leader.

Demand for our exports at risk. Australia's major trading partners are reorientating their economies and shifting demand away from carbon-intensive imports. Fourteen of Australia's largest 20 trading partners — including the United States, United Kingdom, Japan and South Korea — have committed to achieving net zero emissions by around mid-century. This covers over 70 per cent of our two-way trade and 83 per cent of our exports. Our trading partners are also substantially increasing their 2030 ambitions, with the United States adopting a 50 to 52 per cent reduction on 2005 levels by 2030.

Capital markets are moving. Former Bank of England governor Mark Carney recently warned that banks and asset managers controlling $120 trillion worth of balance sheets wanted disclosure of investments in fossil fuels. In meetings with shareholders, BCA members report that environmental, social and governance (ESG) and specifically decarbonisation plans are no longer a separate or side issue, but have become core to investors' portfolio allocation decisions.

Net zero from the bottom up. All states and territories have signed on to the 2050 target and are taking decisive actions such as increasing their interim targets, implementing electric vehicle policies, and creating renewable energy zones.

Business is leading. Domestic and international companies are rapidly adopting net zero and ambitious internal decarbonisation targets. Net zero commitments made by ASX200 companies more than tripled in the past year. A quarter of ASX200 companies or 50 per cent of the collective ASX200 market capitalisation is now covered by net zero commitments. A recent survey by KPMG found that 84 per cent of Australian CEOs believe the upcoming 26th UN Climate Change Conference of the Parties (COP26) in Glasgow meeting must inject necessary urgency into the climate debate.

Source: Business Council of Australia (BCA), 'Achieving a net zero economy', October 2021, https://d3n8a8pro7vhmx.cloudfront.net/bca/pages/6612/attachments/original/1633693581/BCA_Achieving_a_net_zero_economy_-_9_October_2021.pdf?1633693581.

Business action on climate and the environment is now more than just talk. Some firms have taken it upon themselves to become more environmentally sustainable by making changes to the way they operate and are investing in technological solutions to reduce emissions. For example:

- In wine production, Australian companies like Tahbilk, Tulloch, and Ross Hill produce carbon neutral wine.
- In power generation, there has been the accelerated closure of some coal-fired power stations by key local companies including Engie (Hazelwood Power station, 2017), AGL Energy Ltd (Bayswater by 2025 and Liddell by 2023) and a switch in investment towards renewables.
- In aviation, Qantas has purchased newer, more fuel-efficient aircraft and have capped its net emissions from 2020, so new flying becomes carbon neutral.
- Australia Post has invested in electric bikes.
- Aldi's local supermarkets operate with 100 per cent renewable power.
- In vehicle production, key players (e.g. Hyundai, Toyota) have invested millions of dollars into developing electric and hydrogen-powered cars.
- In agriculture, red meat production will become carbon neutral by 2030 and some firms like Five Founders, Flinders and Company, and Arcadian Organic and Natural Meat Company already claim to have net zero emissions.

8.6.3 A union viewpoint on environmental sustainability

The union movement, including the *Australian Council of Trade Unions* (ACTU), has sometimes extended its concerns to include the environment. During the past 30 years, notable instances comprise their opposition to asbestos and uranium mining where production caused serious health and environmental concerns. More recently, there have been quotes attributed to the President of the ACTU, that include the following statements relating to environmental sustainability and the union movement's viewpoint:

> The global shift towards net zero emissions presents huge opportunities to create new, secure jobs for workers across Australia, but we need to act decisively to secure these industries.
>
> We need leadership from the federal Government to develop a national clean exports strategy with clear targets and credible policies.
>
> Australian workers know that our future lies in producing the clean products and services needed in a net-zero emissions world but the nations that benefit most from this transition will be those on the front foot.
>
> It's not a choice between jobs and the environment, it's a responsibility to act on both.
>
> Australian workers on the end of a hose fighting bushfires, treating patients from heat exhaustion in hospitals and manufacturing wind turbine towers know that climate change is a workers issue.
>
> An economy-wide plan to tackle climate change is essential to maintaining and growing jobs and avoiding even higher rates of underemployment, unemployment and youth unemployment than we have already seen under this Government.
>
> Together, ACF, WWF-Australia, ACTU and BCA are today releasing Sunshot: Australia's opportunity to create 395,000 clean export jobs, charting a path for the country through the global transition to net-zero that delivers new jobs.
>
> The report finds that Australia's largest clean export opportunities are in renewable hydrogen and ammonia, green metals, critical minerals, battery manufacturing, education and training and engineering, ICT and consulting services.
>
> These industries offer the opportunity to create tens of thousands of well-paid jobs, mostly in regional areas and accessible by workers across all levels of skill and education. Reaping the benefits of this change will require bold, co-ordinated action and investment and the development of a national clean exports strategy.
>
> ***Sources:*** ACTU, including https://www.actu.org.au/actu-media/media-releases/2021/clean-exports-could-deliver-395-000-new-jobs; https://www.actu.org.au/actu-media/media-releases/2019/australia-falling-behind-the-rest-of-the-world-thanks-to-absent-morrison-climate-action-plan.

Even so, the environment still presents a tricky issue for the ACTU. For example, some union members work for coal mining companies and fear that the closure of coal-fired power stations in Victoria, NSW and Queensland, the switch to renewable sources of electricity, the commitment to net zero carbon emissions by 2050, and reductions to coal exports due to the forecast fall in global demand, will mean massive job losses.

8.6.4 Government viewpoints on environmental sustainability

As economic agents, federal, state, and local governments have a significant impact on the environment and how resources are used. This often occurs through decisions related to the location of rubbish tips, zoning of land use, the position that is adopted on international treaties (e.g. about fishing, greenhouse emissions, world heritage area listings, defence treaties), policies related to indirect taxation on goods and budget allocations towards the support of public transport.

More specifically, over the last 12 years, the views of the Australian government on environmental sustainability and climate have altered, largely driven by the change in voter attitudes, national politics, and international pressure.

- Initially, there was denial of a climate issue and a hope that the problem would go away.
- In 2007, Australia signed up to the *Kyoto protocol* target to cut its emissions to 108 per cent of 1990 levels.
- Next came the start of the *carbon tax* in 2012.
- In 2014, the carbon tax was abolished and replaced with a policy called **Direct Action**.
- Australia ratified the *Paris Climate Agreement* in 2016 to reduce its emissions by 2030, to between 26–28 per cent of 2005 levels.
- Most recently, the Australian government made a commitment at the UN *Glasgow Climate Pact* or CoP26 (2021) to work towards *net zero emissions* for the Australian economy by 2050. However, some commentators feel that, despite much talk, there has been a lack of real action with few concrete measures.

One reason why some governments have not been enthusiastic about promoting environmental sustainability is the fear of a **trade-off** between protecting the environment and rapid economic growth — a belief that action would lead to a loss of jobs and lower incomes. However, the reality is that doing nothing is no longer an option and that there are actually employment, export and income opportunities created by a switch to a cleaner, greener economy.

Shortly, we will investigate further government policies and actions by others, designed to improve the environmental sustainability of economic activity.

8.6 Activities

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8.6 Quick quiz on

8.6 Exercise

8.6 Exercise

1. **Outline** how the Australian government's viewpoint about environmental sustainability and climate issues has changed over the last decade and a half. Suggest one reason for this change in attitude. **(2 marks)**
2. The view of business towards the environment has changed dramatically in recent times. **Explain**. **(2 marks)**
3. **Explain** how consumer attitudes about the environment have changed, and how this is helping to improve sustainability. **(2 marks)**
4. **Outline** why some workers in the coal industry, worry about the phasing out of coal-fired power stations both here and around the world. **(2 marks)**

Solutions and sample responses are available online.

8.7 The responses by economic agents to improve environmental sustainability

KEY KNOWLEDGE

- The economic responses undertaken by relevant economic agents at a local, national and international level, to address environmental sustainability, including government policies

Source: Adapted from the VCE Economics Study Design (2023–2027) extracts © VCAA; reproduced by permission.

Economic agents have important roles to play in responding to the challenges posed by climate change and environmental damage.

- *Consumers*, for instance, need to have better product information and, possibly, incentives to influence their buying decisions.
- *Businesses* need to be able to see that caring for the environment can produce financial benefits and improve their profits or bottom line. Again, market-based and government financial incentives can help change business behaviour.
- *Governments* also have a key role to play. They need to lead the way and become a catalyst for change, perhaps through the use of incentives, international agreements, laws, and informative advertising so that people are made more aware of the need to change.

Here are a few of the responses to climate change and environmental issues, some of which have been used here in Australia and in other countries around the world.

8.7.1 A carbon tax puts a price on pollution

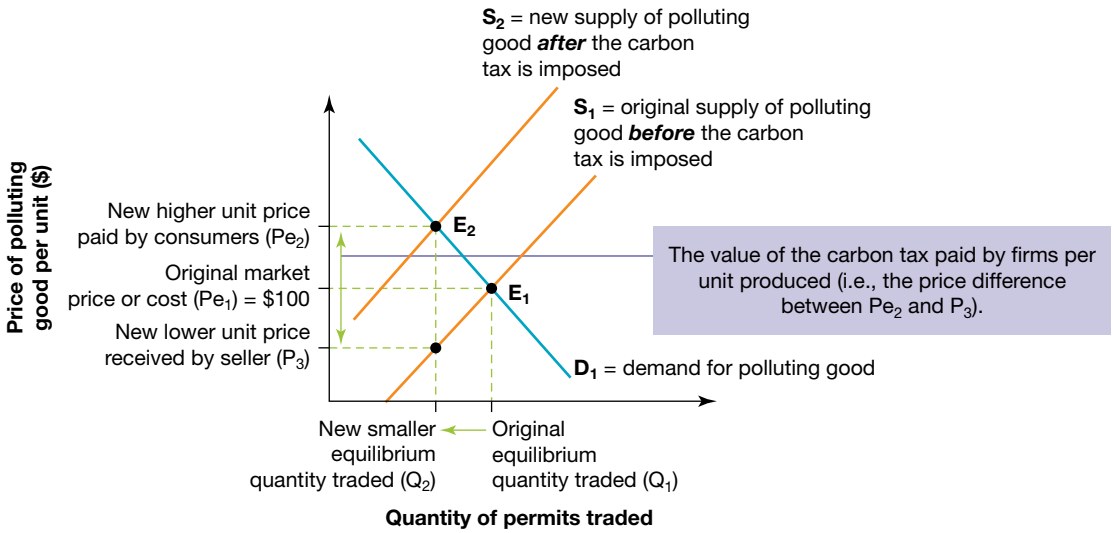
A **carbon tax** *puts a price or cost on carbon pollution. It changes an external environmental cost into an internal cost shared by producers and consumers of goods and services with high carbon emissions. In so doing, it helps to reduce negative externalities, otherwise paid by innocent third parties adversely affected by climate change.*

In other words, over time a carbon tax can help to change the behaviour of both producers and consumers:

- *Producers* will be incentivised to develop more profitable substitute goods using cleaner production methods with lower emissions.
- *Consumers* will notice that the tax has led to higher prices. The rise in price will contract demand for high emissions products, as people look for cheaper and cleaner substitutes. Again, pollution is reduced.

The effects of using a carbon tax on the market for *high-emissions goods,* can be illustrated hypothetically using the demand–supply diagram. This is shown in Figure 8.14. Here, the imposition of the tax makes *supply conditions less favourable* for producers that are selling the high-emissions good. As a result, firms will reduce the quantity of the product supplied at a given price from S_1 to S_2. This inward shift of the supply line would create a temporary market shortage, driving up the market equilibrium price paid by consumers of this product, from P_1 to P_2. Eventually, demand and supply will again return to equilibrium, but there would be a lower quantity of the dirty good being traded (i.e. the fall from Q_1 to Q_2).

FIGURE 8.14 The impact of a carbon tax on the market for a product with high emissions



- The *behaviour of producers* in this market for the high emission product has been altered. One reason for the decrease in the quantity supplied at a given price (i.e. the fall from S_1 to S_2) was that, following the imposition of the tax, supply conditions became less favourable. For each unit sold, part of the higher unit selling price (i.e. P_2), must go to paying the carbon tax. After *subtracting the unit value of tax*, the producer only gets to keep the lower, *less profitable* unit price of P_3. This lower, less profitable unit price repels resources (see the fall from Q_1 to Q_2), discourages production of this high-emissions good, and creates an incentive for firms to switch production to greener alternatives. *Negative externalities* and climate change are reduced.
- Looking at the *behaviour of consumers* in this market, as the price rises towards P_2 notice that the demand for this high-emissions product contracts. So, the tax has positively changed behaviour. With a contraction in the number of consumers, there will be lower emissions, slowing climate change.

The *effectiveness of a carbon tax* in changing the goods and services supplied, depends partly on the *amount* of tax levied per tonne of carbon emissions. If this is too low, perhaps just $10 per tonne of carbon, it may have little effect on consumers who will simply pay the higher price without much contraction of demand or reduction in total level of global pollution. On the other hand, if the tax is too high, say $80 per tonne, consumers may import products from overseas where there is no carbon tax, and the policy would do little to solve this global problem. In addition, an excessively high level of tax could be disastrous for Australia's industries. With higher prices, they would be unable to compete against imports and may close down. Here, GDP, employment, incomes and living standards would be likely to suffer.

Today, around 30 countries (e.g. including those in the European Union, Canada, China, Denmark, Japan, Korea, New Zealand, Norway, Sweden, and the UK) have a carbon tax designed to reduce emissions and climate change. In Australia, the Gillard Labor government also enacted a carbon tax in 2012 (until it was later abandoned in 2014). Here, the *carbon price* or tax started at $23 per tonne of CO_2 and was to gradually rise each year by 2.5 per cent (before a

planned transition in 2015 to an *emissions scheme* that involves the sale of pollution permits). The tax drove up electricity charges and the price of transport and food, causing business closures and the loss of some jobs, so the government decided to compensate low-income earners and some polluting businesses using the $7 billion collected annually in tax revenue. However, this compensation reduced the effectiveness of the tax in changing the behaviour of households and businesses. The incoming Coalition government in 2014 ditched the carbon tax and replaced it with a policy called *Direct Action* on climate change with its *Emissions Reduction Fund*. Here, firms could bid for financial support in a reverse auction arrangement, where the government money went to those promising the biggest reduction in emissions for the lowest cost. Whilst the carbon tax had its flaws, some commentators feel that its replacement failed to reduce emissions sufficiently, to achieve our international commitments and targets.

8.7.2 An emissions trading scheme puts a price on emissions

An **emissions trading scheme (ETS)** *is another market based, environmental policy that puts a price on carbon emissions by the sale of tradeable pollution permits or offsets. Like the carbon tax, it makes pollution less profitable and, therefore, helps to change producer and consumer behaviour, cutting emissions levels.*

As in all markets, in an ETS, there are buyers and sellers who negotiate a price, or, in this case, determine the cost of pollution permits. This cost of environmental damage would be paid internally by the firm, rather than externally by some third party.

- On one side of the market, the *buyers* or *demanders* (D) of these pollution permits or carbon offsets are businesses. To produce their goods or services, and hence pollute at a certain level, firms are required to own or purchase the required number of permits (each permit allows the release of one tonne of CO_2).
- On the other side of the market, the initial *seller* or *supplier* of permits (i.e. the supply of pollution permits or offsets — S) is usually the government. In the first instance, it could distribute these free of charge to firms, or auction them off. The government would 'cap' the number of permits it issued at a certain level, so that the agreed emissions reduction target could be achieved.

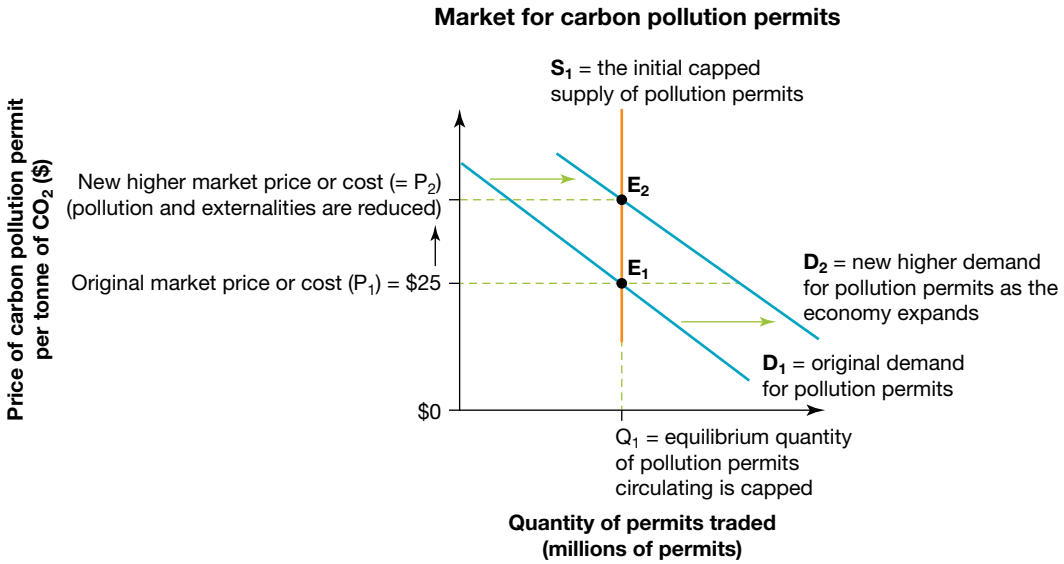
Under this so called, *'cap-and-trade system'* the market price of permits would move up and down. This would create market signals or price incentives that help to alter behaviour and the allocation of resources between competing uses. Here, changes in the cost of pollution would reflect the *conditions of demand* for pollution permits, relative to their *supply*.

For instance, the price of carbon permits could be driven up if the economy was growing rapidly, because it is likely there would be a stronger demand relative to the fixed or *capped* supply of offsets. In this situation, pollution would become more expensive. This would incentivise the supply of cleaner products and the use of production technologies with lower emissions. In addition, market failure would be reduced and costs that were previously *external* and paid by third parties and future generations, would now be *internalised*. Polluters would at last pay!

The operation of an ETS can be illustrated, hypothetically, using the demand–supply diagram shown in Figure 8.15. Under this system, polluting firms with high emissions are required to have or purchase sufficient *carbon pollution permits* or *offsets* to cover their reported level of CO_2 emissions (measured in tonnes). This creates a *demand* for permits (shown initially as D_1). On the other side of the market, the number or *supply* of permits is initially *capped* at a given level, hence the vertical supply line (shown here as S_1). Together, the operation of the market establishes the *price* or cost of carbon emissions (shown initially as P_1).

Once there is a limit or cap in supply, it is mostly new conditions of *demand* by polluting firms that cause the price of permits to move up and down. For example, if the economy is booming and *output is growing* quickly, it is likely there will a rise in the *demand* for permits (shown as a rise from D_1 to D_2). Initially, a need to increase pollution to allow for higher output temporarily causes a *market shortage* of permits at the original price, P_1. The shortage (i.e. the demand at P_1 exceeds the supply) then pushes the price up towards P_2. In the process, a new market equilibrium is finally established (at E_2, P_2 and Q_2). Here, the quantity of pollution permits demanded again exactly equals the quantity supplied, except that the cost of pollution will be more expensive (P_2 not P_1). This acts as an incentive *not* to pollute and helps to achieve the required emissions reduction target.

FIGURE 8.15 The operation of a carbon market involving an emission 'cap-and-trade' scheme where there is a rise in the demand for pollution permits by polluters wanting to increase their production



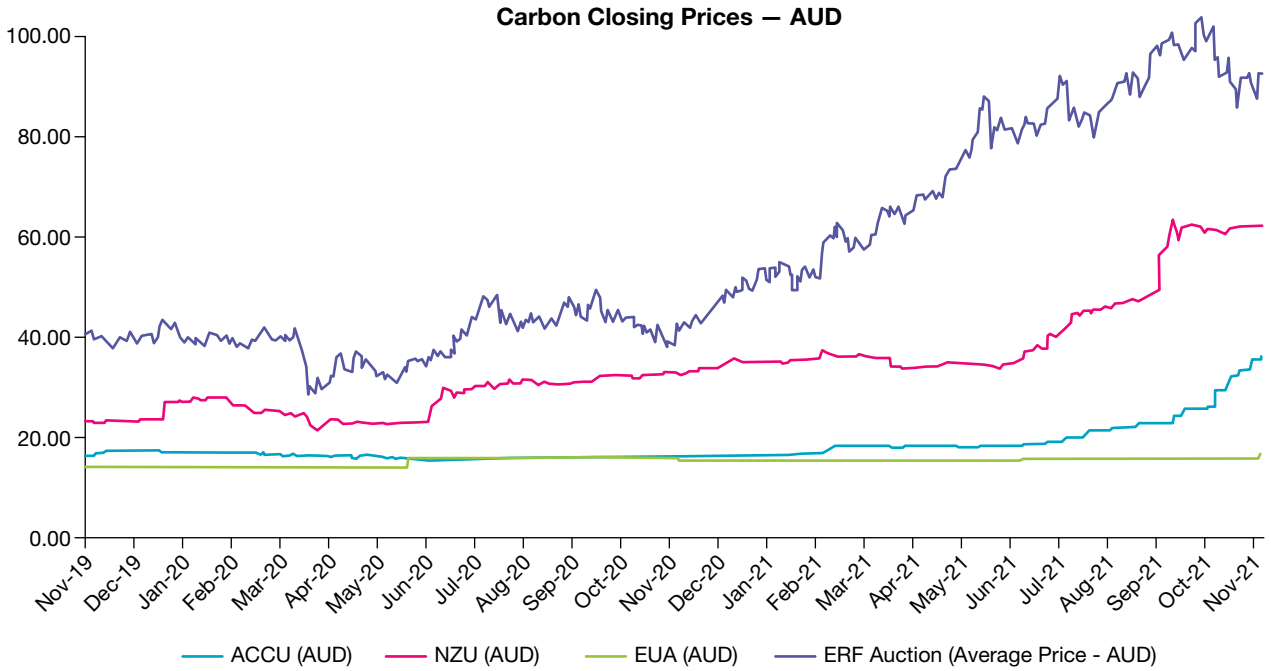
The *advantage* of an ETS like this, as opposed to a carbon tax, is that the agreed emissions target (e.g. net zero emissions by 2050) can be achieved with a fair degree of certainty, by appropriately capping the initial supply of permits and monitoring emissions. By comparison, there is greater uncertainty about the level of emissions reductions when relying on a carbon tax.

In addition, over time, the emissions target for the ETS can even be changed to meet new circumstances or targets. However, a disadvantage of the ETS for businesses is that the price of pollution is uncertain. This is because the price of pollution permits can potentially fluctuate markedly from day to day. It makes it trickier for businesses and consumers to plan ahead. In contrast, there is a greater degree of certainty about the cost of pollution if a carbon tax were to be used.

Currently, over 35 countries use an ETS. The biggest scheme is that for the European Union (EU), but even New Zealand (NZ) has one. Australia has a trading scheme that is a bit different. Ours is a largely voluntary and quite a limited arrangement that involves the production, buying and selling of *Australian Carbon Credit Units* (ACCUs). These credits are produced through various projects such as land restoration and revegetation to pull CO_2 out of the atmosphere. Some schemes are funded by the government through its *Emissions Reduction Fund* (ERF). Carbon credits from these projects are mostly sold to the Australian government in a reverse auction (those projects that offer the biggest reduction in carbon emissions for the lowest cost can get government funding to incentivise quality projects). Here, the *Clean Energy Regulator* (CER) supervises and controls the issue of ACCUs (carbon credits). Firms that exceed certain threshold levels of emissions are required to purchase permits from the CER, competing in the carbon market against other polluters to determine the price or cost of carbon credits.

As shown in Figure 8.16, the market price of our ACCUs is far lower than those for NZ or EU permits, showing the more limited nature and weaker effectiveness of our current scheme. This is one reason why critics feel that changes are needed to deliver the emissions reductions we now seek.

FIGURE 8.16 Recent changes in the price (measured in A$ per tonne of CO_2) of carbon pollution for selected countries or areas (Australia — ACCCs, NZ, EU)



Source: ACCUs.com.au; CommTrade.co.nz; Refinitiv; Clean Energy Regulator.

Another element of Australia's environmental policy that may help us reach our target is our *Renewable Energy Target* (currently to reach a level of 500 Gigawatts by 2030 — an energy sector that is growing quickly in size).

8.7.3 The payment of subsidies to consumers and producers can change behaviour

Subsidies *are financial incentives provided by the government. They represent another market-based environmental policy designed to help reduce carbon emissions by rewarding producers or consumers who change their behaviour and lower their emissions.*

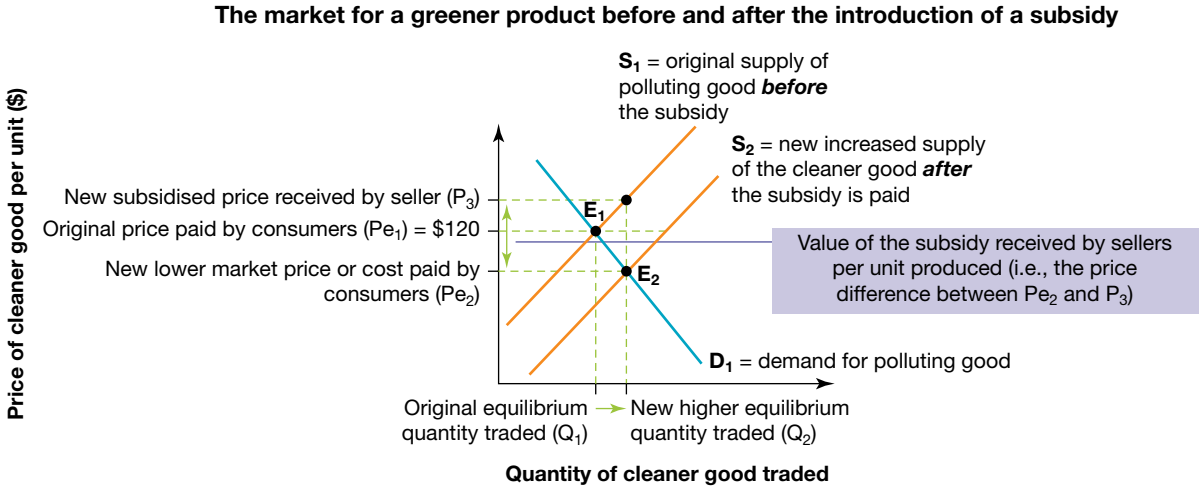
These government subsidies can take different forms and involve:

- the payment of *cash grants* to reduce the cost to firms of production, or those for households that consume fewer polluting goods
- *tax concessions*, allowing the deductibility of costs of materials and equipment associated with cutting pollution, and may include tax-free holidays for firms 'greening' their operations
- *low interest loans* to businesses when producing, or provided to consumers when buying goods, with lower emissions.

Essentially, subsidies are the opposite to having a tax or price on carbon emissions — subsidies provide financial incentives or rewards, whereas a tax is a disincentive or punishment.

Figure 8.17 uses a demand–supply diagram to hypothetically illustrate the effect of paying a government subsidy to encourage businesses to produce a cleaner, less environmentally damaging product. Notice that following the introduction of a subsidy, there is an increase in the quantity of the desired good supplied at a given price (the increase in supply from S_1 to S_2). This is because supply conditions have become more favourable and *profitable* for sellers. Initially, a market glut is created, forcing the equilibrium price paid by consumers downwards (the price drop from P_1 to P_2). As the market price of this more environmentally friendly good falls, equilibrium is gradually restored (the move from E_1 to E_2).

FIGURE 8.17 The impact on the market of a government subsidy paid to businesses to encourage the production of a cleaner, less environmentally damaging product



To recap, subsidies can be used as a positive financial incentive to reward economic agents who change their behaviour in a beneficial way that helps the environment.

- Firstly, the addition of subsidies has made the *production* of this environmentally friendly good more attractive and profitable. This is because firms now receive the new higher price (P_3 — that is not an equilibrium price) for each unit sold that is equal in value to the new equilibrium price, Pe_2, *plus* the top-up government subsidy. Firms respond to this positive market signal by allocating more resources, and lifting their production and the quantity traded (the rise from Qe_1 to Qe_2).
- Secondly, *consumer* behaviour has been changed. Following the subsidy, the market price falls towards Pe_2. As it drops, consumer demand for this lower-emissions product *expands* (and although not shown here, at the same time as the demand for the now more expensive dirty substitute product falls).

Because of changed behaviour, CO_2 emissions levels are down, improving environmental sustainability for current and future generations.

Governments around the world now use subsidies as one way to encourage the production and consumption of environmentally friendly goods. For example, the rapid growth of the Chinese economy has involved environmental trade-offs including smog and deteriorating air quality. This has endangered the health of tens of millions. As a response in 2016, the government decided (amongst other measures) to use subsidies (including tax concessions and a policy of priority procurement for the firms involved) to help make enterprises more enthusiastic about reducing their CO_2. Their target was to cut emissions for each unit of GDP produced by 60–65 per cent by 2030, against 2005 levels.

Australia also uses subsidies. For instance, subsidies are provided through the government's *Emissions Reduction Fund*. They incentivise firms with projects that can deliver the maximum reduction in CO_2 at the lowest cost per tonne. Subsidies are also provided for the installation of *solar panels* to reduce dependence on high-emission, coal-fired electricity. Indeed, 25 per cent of Australian homes now have solar panels, and $20 billion has been committed by the government for encouraging low emissions technology. In 2022, the new Australian Labour government has promised to introduce subsidies to make electric vehicles cheaper and change consumer behaviour.

However, subsidies need to be used carefully. For example, it seems contradictory that the Australian government still has a long-standing policy that heavily *subsidises the coal industry* and hence encourages the burning of fossil fuels. Surely this would seem to undermine the effectiveness of our other environmental policies! Instead, perhaps the gradual withdrawal of fossil-fuel subsidies could help to accelerate technical research and innovation, create business opportunities for new firms, and help to clean up the environment.

8.7.4 Government laws or regulations can change behaviour

Often, governments prefer to use *market-based policies* (e.g. a carbon tax, an emissions trading scheme, the payment of subsidies) to help improve environmental outcomes. This intervention works by changing the behaviour of consumers and producers to either encourage beneficial activities or discourage harmful economic production. However, most governments also find they need to have regulations backed up by laws with penalties for those that fail to comply. One example of legislation was the *Clean Energy Act 2011*. This allowed the government to introduce the Carbon Tax (although along with the tax, the law was repealed in 2014).

In Australia today, the main piece of federal legislation is the *Environment Protection and Biodiversity Conservation Act*. This covers a range of areas:

- the Great Barrier Reef Marine Park
- listed threatened species and ecological communities
- Commonwealth marine areas
- national heritage places
- wetlands of international importance (listed under the Ramsar Convention)
- migratory species protected under international agreements
- world heritage properties
- nuclear actions (this includes uranium mines).

State governments also have environment protection acts that include sections on waste management. These are enforced by the *Environmental Protection Authority* (EPA).

8.7.5 International collaboration and agreements to set targets can help improve environmental sustainability

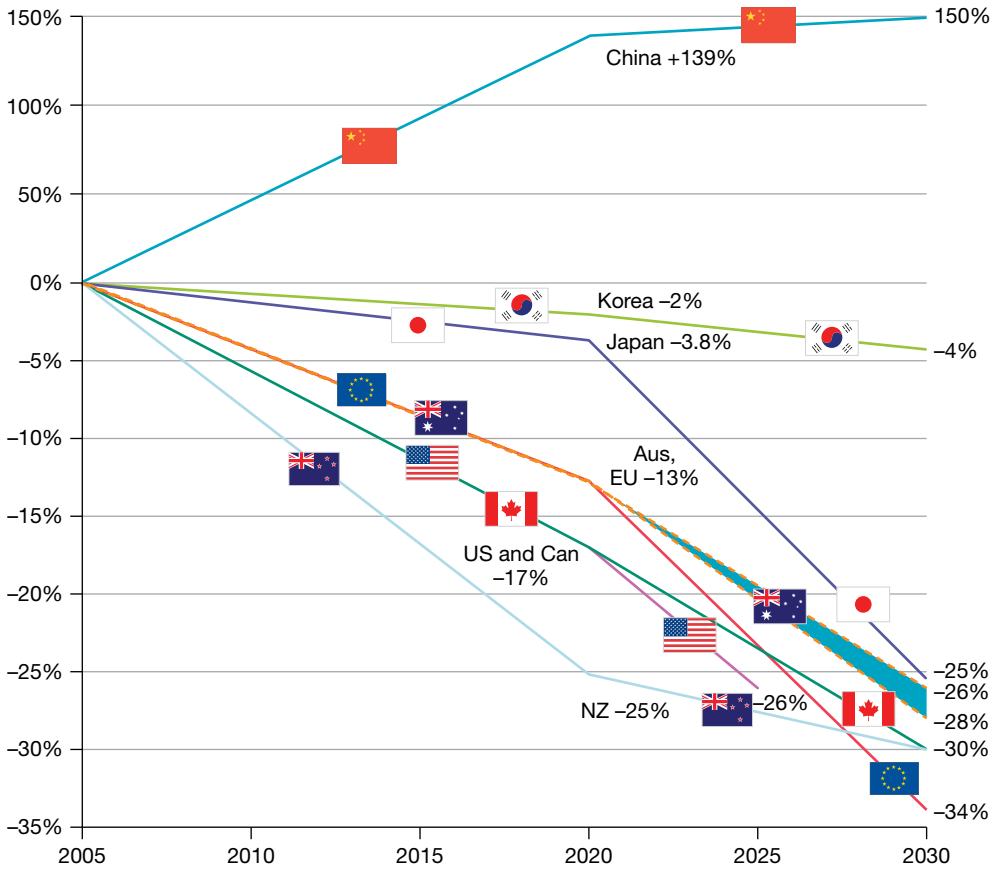
Climate change is both a national and global problem, so fixing it requires international collaboration that includes the following:

- ***Kyoto Agreement 2008:*** Early in 2008, the Australian government signed the **Kyoto agreement**. This was an international agreement initiated in 1997 through the United Nations, aiming to stabilise the concentration of greenhouse gases in the environment that are linked to climate change and global warming. By 2011, over 190 countries supported this accord. In order to reach the agreed emissions targets,

several countries committed to a *carbon tax* including Denmark, Finland, Germany, Italy, the UK, South Africa and India, while some nations relied on an *emissions trading scheme* to put a price or cost on carbon pollution and reduce emissions. From Australia's point of view, signing the 2008 accord initially committed us to limiting our greenhouse gas emissions, for the period 2008–12, to a target of 108 per cent of the 1990 emissions level.

- ***Paris Climate summit 2015:*** In late 2015, there was the **Paris Climate Summit**. Here, Australia agreed to a 26–28 per cent reduction in carbon emissions by 2030, compared with levels in 2005. Figure 8.18 shows the progress and projected cuts to emissions for selected countries for the period, 2005–30.

FIGURE 8.18 Paris climate summit 2015 — percentage change in carbon emissions in selected countries, 2005–30



Source: Australian Government, Department of the Environment, see https://www.pmc.gov.au/sites/default/files/publications/Summary%20Report%20Australias%202030%20Emission%20Reduction%20Target.pdf.

- Notice that by 2020, Australia hoped to reduce its emissions by 13 per cent, initially stepping up to a 26–28 per cent reduction by 2030. However, following the election of the new Labor government in 2022, the commitment is now more ambitious, with a cut of 43 per cent on 2005 levels by 2030.
- China's emissions are likely to keep on rising to 2030 by 150 per cent of 2005 levels, while those for South Korea's may fall by a mere 4 per cent. Japan too will find it hard to reach its 2030 target, given there was little progress by 2020.

- ***UN Climate Conference, 2021 (CoP26):*** More recently, at the **UN Climate Conference** at Glasgow, the Australian government made a commitment to *net zero emissions* by 2050. The aim now is to limit global warming to 1.5 degrees Celsius on levels in the late 1800s (a target set at the Paris agreement). Already, average global temperatures are up 1.1 degrees Celsius. Over 70 countries including the heaviest polluters, USA, China and the European Union, have now signed up to the commitment. This means that the agreement already covers 75 per cent of all global emissions. In addition, over 1200 large companies, 1000 cities, more than 1000 educational institutions and over 400 banks and other financial institutions are in the *Race to Zero* that, by 2030, is expected to cut global emissions by 50 per cent.

8.7.6 Moving towards a circular economy can reduce environmental damage

A circular economy is a more sustainable approach to production and consumption of goods and services. It involves a *'take-make-recycle-reuse'* approach rather than a *'take-make-throw away'* economy. It is designed to:

- reduce the extraction or demand for resources (especially non-renewable resources) currently running at over 90 billion tonnes a year
- dramatically improve *recycling* to greatly cut levels of landfill waste of chemicals, plastics, textiles, food, electronics, and metal objects that reduce human health and degrade the environment
- lower the levels of *emissions* and limit the environmental footprint caused by economic activity.

With this idea in mind, the *World Economic Forum* recently published its White Paper outlining the shift to a *waste-free global* economy by 2050. Such a shift would require much international collaboration since, currently, less than 9 per cent of the world's economy is circular in nature. Some estimates suggest that the elimination of waste and the safe use of natural resources would generate a benefit worth up to $4.5 trillion in the years to 2030. Interestingly, the Netherlands government recently set out its *goal to create a circular economy by 2050,* predicting that by 2030 it will have cut its consumption of primary raw materials by 50 per cent.

8.7 Activities

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8.7 Quick quiz on

8.7 Exercise

8.7 Exercise

1. **Outline** two important types of responses, at the local or international level, to the issue of climate change and environmental sustainability. **(4 marks)**
2. a. **Explain** how international collaboration has and is being used to help reduce environmental damage and promote environmental sustainability. **(2 marks)**
   b. **Identify** which countries have committed to the largest reductions in their emissions to 2030 and beyond, and which to the lowest. **(2 marks)**
   c. **Outline** Australia's target for emissions reductions by 2030, against the levels in 2005. **(1 mark)**
3. There has been overfishing leading to reduced wild fish stocks in oceans. This represents a problem in the use of common access or environmental resources. **Outline** two ways the government could solve the problem of overfishing. **(2 marks)**
4. **Explain** how the following policies could be used to help limit global warming to 1.5 degrees Celsius by 2050:
   a. Using carbon taxes **(2 marks)**
   b. Using government subsidies **(2 marks)**
   c. Developing a circular economy **(2 marks)**
5. **Imagine** you were asked to make policy recommendations to the Australian government to help reduce the environmental issues caused by the overuse of plastics.

   Background: Plastics are a big problem for our environment. They are normally made from oil — a non-renewable natural resource. Australia consumes over 3.5 million tonnes annually (1.0 million tonnes is single-use plastic and there is an estimated 70 billion pieces of soft 'scrunchable' plastics like food wrappers thrown out as rubbish). Of all plastic consumed, 60 per cent is imported, only 13 per cent is recycled, and the rest is landfill. Most plastics are not biodegradable, take years to break down, poison waterways, and enter the food chain, posing a threat to our health.

   Identify and **explain** two important government actions that, potentially, could help to reduce environmental issues associated with plastics. **(5 marks)**

Solutions and sample responses are available online.

8.8 Review

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8.8.1 Summary

Definition and general nature of environmental sustainability

- *There are lots of definitions of environmental sustainability:*
  - *Environmental sustainability* would mean that 'the rates of harvesting renewable resources, creating pollution, and depleting non-renewable natural resources because of economic activity, can be continued indefinitely into the future'.
  - *Environmental sustainability* can be defined as the 'responsible interaction with the environment to avoid the depletion or degradation of natural resources and allow for long-term environmental quality'.
  - *Sustainable economic growth* is commonly defined as 'a method of expanding the economy's production levels to meet the needs for goods and services of the present population, without undermining the ability of future generations to meet their needs'.

Measures of the environmental sustainability of economic activity

- Some measures of the environmental sustainability of global economic activity include the following:
  - Changes in total *world CO_2 emissions* (that are linked with global warming and reduced crop yields).
  - *Environmental Performance Index* (EPI) — measures the environmental health (based on air quality, water quality, heavy metals, biodiversity, forests and fisheries), as well the vitality of ecosystems (based on CO_2 and other greenhouse gas emissions, treatment of water waste, and nitrogen management in agriculture).
  - *Recycling rates* by country helps provides an indication of the likely impact on the depletion of non-renewable resources and the problems of safely disposing of waste as landfill.
  - The *type and amount of energy consumption by a country* provides an indicator of the level of environmental damage and contribution to global warming and climate change. For example, most energy currently comes from coal that has high greenhouse gas emissions that add greatly to climate change.
- Measures of the environmental sustainability of Australia's economic activity:
  - Changes in Australia's *per capita CO_2 emissions* and *emissions per dollar of GDP* have fallen. This is a good sign given that rising GDP is normally linked with higher CO_2 emissions.
  - Changes in the *origin of emissions* suggests that coal is now making a much smaller contribution to our total emissions.
  - The number of *hot days* and *bushfires* can provide a guide to the direction of climate change and the sustainability of economic activity. These two indicators have increased markedly over recent decades, adding to deaths and property damage.

The reasons why environmental sustainability is of importance to Australia and globally

- Environmental sustainability is an important issue because it affects the material and non-material living standards of both current and future generations.
- Environmental sustainability helps to maintain our *material living standards* (related to the levels of production, employment, incomes, and consumption). However, for decades, rising economic activity has come at a high cost to the environment. This has led to global warming and severe weather events that have reduced GDP by $120 billion over the last 50 years. For example, think of the devastating effects of severe drought, frequent bushfires, and recent floods on Australia's production, employment, and incomes.

If climate change is not limited, this cost is forecast to rise to a cumulative total of $1000 billion over the next 30 years, destroying jobs and cutting incomes. Across the world, climate change due to unsustainable economic growth had led to lower crop yields and more hunger, than would be the case without climate change.

- Environmental sustainability also affects our *non-material living standards* (related to levels of happiness, life expectancy, mental and physical health, stress). Recent severe weather events due to climate change, have reduced mental and physical health, increased domestic violence, and added to the number of lives lost through heat, floods, and fires. In addition, there has been a loss of biodiversity, an increase in damage to vital ecosystems needed to support life, and huge harm to areas of natural beauty used for recreation and contemplation.

The economic factors influencing the extent of environmental sustainability

- The degree to which higher GDP is environmentally sustainable is not only affected by the *level* and *speed* of increases in national or global output, but also by the *types* of goods and services produced and consumed.
- A typical starting point in understanding the causes of environmental problems is the concept of *market failure*. Market failure exists where, in the absence of government intervention, the free or unregulated operation of demand, supply, and the price system, cause resources to be allocated inefficiently into uses that do not maximise the community's general wellbeing. There are *two* main types of market failure that are especially relevant to environmental sustainability:
  - *Negative externalities* (i.e. *costs* associated with the production and or consumption of goods and services that are *not* paid internally by those involved with the particular economic activity, but instead are passed onto external *third parties* who gain no direct benefit). Negative externalities associated with some types of economic activities might include reduced food production, hunger, lower incomes, forced migration due to rising sea levels, and the loss of life. Because these costs are not reflected in the prices paid for some goods and services, the market mis-allocates resources, reduces efficiency and lowers the general wellbeing of society.
  - Some economic activities cause environmental or *common access resources* to be abused and degraded (e.g. air, rivers, oceans, ecosystems, native forests, and wild fish stocks). This is because they are *non-excludable* and hence are seen as free. They are also *rivalrous* where one person's consumption can prevent others from access to the same resource. Without a market price to indicate how valuable these resources are, they will be exploited and decline in quality.
- Other factors also affect the extent of environmental sustainability and damage:
  - The growth rate in global GDP and some types of economic activity can reduce environmental sustainability at the local, national and global level. Usually, higher GDP leads to more environmental damage as a result of resource depletion, increased levels of waste, and higher CO_2 emissions that accelerate climate change and cause negative externalities. But not all types of output have the same impact on the environment. For example, single-use products may cause more damage than reusable and durable products with a long life that can also be recycled. Products produced locally rather than imported and transported across the world, have a lower impact on CO_2 emissions and climate change. The production and consumption of some foods like meat tends to have far greater negative impacts on the environment than plant-based foods, and some meats (e.g. beef) are worse than others (lamb, chicken, and fish). And products that use renewable and biodegradable natural resources can be less damaging, than those using non-renewable and non-biodegradable inputs.
  - The rapid *growth in global population* has worsened environmental damage since more people need more resources and energy. This accelerates resource depletion and creates more waste.
  - Recently, *increased knowledge* about environmental sustainability has helped people to change consumer and business behaviour. This has increased pressure on governments and others to make changes that reduce our carbon footprint.

Different perspectives about the issue of environmental sustainability

- Especially over the last 5–10 years, there has been a growing awareness amongst households, businesses, and governments, of environmental issues including climate change. There has also been a greater acceptance of the need for decisive action. Even so, there are some differences in perspective amongst various economic agents.
- *Consumer perspective:* As consumers, all of us affect the environment by what we buy, how we use it and how we dispose of it when it is no longer useful. Over recent years, there has been a massive shift in consumer support for improving environmental sustainability.
- *Business perspective:* Until recently, many businesses tended to downplay environmental concerns associated with market failure like negative externalities and the abuse of common access resources. More recently, things have changed. The BCA, for example, believes that the momentum for moving towards net zero by 2050 is 'unstoppable'. It is therefore important to embrace decarbonisation and seize a competitive advantage in developing new technologies and export industries; or be left behind and pay the price.
- *Union perspective:* Most in the union movement and the ACTU see the global shift towards net zero emissions as presenting huge opportunities to create new and secure jobs for workers across Australia, and a chance to grow exports and incomes.
- *Government perspective:* As economic agents, federal, state and local governments have a significant impact on the environment and how resources are used. This often occurs through decisions related to the location of rubbish tips, zoning of land use, the position that is adopted on international treaties (e.g. about fishing, greenhouse emissions, world heritage area listings, defence treaties), policies related to indirect taxation on particular goods, and budget allocations towards the support of public transport. More specifically, over the last 12 years the views of the Australian government on environmental sustainability and climate have altered. This has been largely driven by the change in voter attitudes, national politics and international pressure. For example:
  - Initially, there was denial of a climate issue
  - In 2007, Australia signed the Kyoto protocol targets to cut emissions to 108 per cent of 1990 levels.
  - Next came the start of the carbon tax in 2012.
  - In 2014, the carbon tax was abolished and replaced with a policy called *Direct Action*.
  - Australia ratified the Paris Climate Agreement in 2016 to reduce emissions by between 26–28 per cent on 2005 levels by 2030. In 2022, the 2030 target was increased to a cut by 43 per cent.
  - In late 2021, the Australian government made a commitment at the UN Glasgow Climate Pact, to work towards net zero emissions for the Australian economy by 2050.
- One reason why initially some governments were not been over enthusiastic about promoting environmental sustainability, is the fear of a *trade-off* between protecting the environment and slowing climate change, and economic growth — the belief that action would lead to a loss of jobs and lower incomes, rather than seeing it as creating opportunities.

The economic responses by economic agents to improve environmental sustainability

- There has been a range of responses by consumers, businesses, and governments here in Australia and around the world. Below are some of the most popular ones in current use.
- *Use a carbon tax:* A market-based *carbon tax* puts a price on carbon pollution and makes it more costly and less profitable. As a negative incentive or punishment, it encourages both firms and consumers to switch to cleaner substitutes. Polluters are forced to pay for some of the negative externalities they generate. On a demand–supply diagram representing a market for a high-emissions good, the tax decreases the quantity of the good supplied by firms at a given price, pushing the equilibrium price upwards. As the equilibrium price rises, this causes consumer demand to contract. Consumers switch to a cleaner product, reducing emissions.
- *Use a carbon emissions trading scheme:* Another market-based approach is a *carbon emissions trading scheme*. This also puts an internal price or cost on pollution. It does this by requiring all polluters to have tradeable pollution permits sufficient to offset their emissions levels. These permits or offsets can be purchased creating a demand in the carbon market, the supply of which is usually *capped* or limited by the government at a level that enables the pollution reduction target to be achieved. A strong demand

for permits by dirty firms, drives up the market equilibrium price, making it more costly to pollute and encouraging firms to find cleaner alternative products and production methods. The added cost of purchasing the pollution permits forces firms to charge a higher price for their good, contracting consumer demand. Negative externalities and damage to the environment are reduced.

- *Use subsidies paid to consumers and producers:* Subsidies are another market-based environmental policy designed to reduce carbon emissions by creating positive financial incentives that can change consumer and business behaviour to encourage a shift towards cleaner economic activities with fewer emissions. Essentially, by rewarding more sustainable behaviour, subsidies work in the opposite way to having a tax or price on carbon which simply punishes polluting behaviour.
- *Use government laws or regulations:* While market-based policies to reduce emissions can work well, most governments find they also need to have regulations that are backed up by laws and penalties for those that fail to comply. One example of legislation was the *Clean Energy Act 2011* that allowed the government to introduce the Carbon Tax in 2012. However, along with the tax, the Act was repealed in 2014. In Australia today, the main piece of federal legislation is the *Environment Protection and Biodiversity Conservation Act*.
- *International collaboration and agreements to set emissions targets:* Climate change is both a national and global problem, so international collaboration is essential. Australia has made commitments to reduce emissions and join the fight to limit climate change. These include:
  - *Kyoto Agreement 2008*
  - *Paris Climate summit 2015* — Australia agreed to a 26–28 per cent reduction, compared with carbon emissions levels in 2005, by 2030 (in 2022, the new government increased the target to a 43 per cent reduction).
  - *UN Climate Conference, 2021 or CoP26* — the Australian government committed to *net zero emissions* by 2050 designed to limit global warming to 1.5 degrees Celsius on levels in the 1880s — a target set at the Paris agreement.
  - *Move towards a circular economy:* A circular economy is a more sustainable approach to production and consumption of goods and services. It involves a *'take-make-recycle-reuse'* approach, rather than a *'take-make-throw away'* economy. It is designed to reduce the extraction of resources, improve *recycling* to cut landfill waste, and lower levels of emissions from economic activity.

8.8.2 Key terms

A **carbon tax** (during 2012–14) was designed to put a price on Australia's 500 worst-polluting companies (typically in electricity generation, waste disposal by councils, and in steel and aluminium smelting). This made polluting costly and less profitable, bringing about a positive change in business and consumer decisions affecting the environment. External costs became internal costs. The starting tax rate was $23 for each tonne of carbon emissions by firms.

A **circular economy** involves one where resources that are extracted from nature are recycled and reused, rather than being dumped as rubbish into landfill. This helps to slow the demand for non-renewable resources, reduce non-degradable wastes thrown onto rubbish tips and/or left to pollute water ways and ecosystems.

CO_2 emissions involve the release of carbon dioxide into the atmosphere mostly as a result of the combustion of fossil fuels during the production and consumption of goods and services. By preventing the escape of heat from the earth's atmosphere, rising CO_2 emissions have led to global warming and increasing damage, resulting from more frequent and severe weather events involving huge costs for individuals and business.

Common access resources are those things we all share and depend on — like air, rivers and oceans. Their use is non-excludable (this makes them free) and rivalrous (the use by one deprives others from their consumption). This leads to their abuse and market failure because there are no price signals here to cause resources to be allocated efficiently in ways that maximise social wellbeing.

The **Direct Action** emissions reduction policy relies on a $2.55 billion Emissions Reduction Fund (ERF) or, more recently, the government's new Climate Solutions Fund. Firms bid for the available money in a reverse auction system, by proposing new projects where there is the greatest reduction in emissions for the lowest possible cost to the government and taxpayer.

Ecological footprint is a measure of environmental sustainability based on the *world's limited carrying capacity*. It involves measuring the quantity of environmental resources needed to produce the quantity of goods and services required to support a particular lifestyle or living standard.

An **Emissions trading scheme (ETS)** *or carbon emissions trading scheme* is a market-based, environmental policy that puts a price on carbon emissions by the sale of tradeable pollution permits or offsets. The demand for pollution permits comes from polluters and the supply of permits is capped by the government. A strong demand for permits by polluting firms drives up the market equilibrium price, making it more costly to pollute. The encourages firms to find cleaner alternative products and production methods.

Environmental economics looks at the financial side of environmental protection and how various policies can improve outcomes.

Environmental performance Index (EPI) is a general measure of environmental sustainability. It uses data relating to environmental health (based on air quality, water quality, heavy metals, biodiversity, forests and fisheries), as well the vitality of ecosystems (based on CO_2 and other greenhouse gas emissions, treatment of water waste, and nitrogen management in agriculture).

Environmental resources include the gifts of nature like clean air, stable climatic conditions, unpolluted oceans (stocked with fish) and a healthy stratosphere. Environmental resources are communally used and belong to no particular nation. Since they are nobody's to own or sell, they are viewed as being free goods. Because of this, they often have no market price to act as a barometer of their relative scarcity. This makes them different from, say, scarce minerals, which can be readily sold and for which market prices rise to reflect their increasing scarcity.

Environmental sustainability means that 'the rates of harvesting renewable resources, creating pollution, and depleting non-renewable natural resources as a result of economic activity can be continued indefinitely into the future'.

greenhouse gas emissions involve the release of polluting substances into the atmosphere as a result of the production and consumption of goods and services, leading to global warming. These gasses include carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. By preventing the escape of heat from the earth's atmosphere, these emissions lead to global warming and increasing damage to our wellbeing that results from more frequent and severe weather events.

The **Kyoto Agreement** was a UN international accord reached in 2008. It sought to limit the levels of greenhouse gas emissions, for the period 2008–12, to a target of 108 per cent of the level of emissions in 1990.

Market failure a situation where the free operation of demand, supply, and the price system does not direct resources efficiently into specific types of production that maximise the general long-term wellbeing of society. Negative externalities, the use of common access resources, and having incomplete knowledge, are all examples of market failure that can lower society's general wellbeing.

Natural and environmental sector shows the two-way interactions between *economic activity* and the *natural environment*.

Negative externalities are a type of market failure where some of the costs resulting from the production and consumption of goods and services are transferred to external third parties who are not directly involved with the particular economic activity. Some types of economic activities have especially large costs for others. Climate change caused by high CO_2 emissions, is an example of a negative externality, associated with some types of economic activity.

Non-excludable are those goods where individuals who refuse to pay cannot easily be prevented from consuming them or gaining benefit. Examples of such goods might include common access resources, like the air we breathe, and public goods such as national defence, fire prevention, the police and street lighting.

Non-renewable natural resources are inputs that cannot be readily replaced once they have been used up (e.g. all minerals and oil).

Non-renewable resources are inputs used in production that cannot be readily replaced once they have been used up (e.g. all minerals and oil).

The **Paris Climate Summit** involved most countries entering an agreement in 2015 to limit their emissions of greenhouse gasses. Australia's target by 2030 was initially set at 26–28 per cent reduction compared with carbon emissions levels in 2005. In 2022, the new federal government lifted this reduction target to 43 per cent by 2030.

Renewable energy refers to that derived from solar and wind sources that, unlike the burning of non-renewable fossil fuels, is sustainable into the future and can help reduce greenhouse gas emissions.

Renewable resources are those found in nature that can be replenished or replaced over a fairly short period of time. Here, we think of some plants and animals, and energy from solar and wind sources.

Resources are labour, capital and natural inputs needed by producers to make goods and services.

Rivalrous is a feature of common access or environmental resources where the consumption of an input by one person prevents others from having access to that same quantity or quality of resources (e.g. air, fish stock, forests, water).
Subsidies are government cash payments (or tax concessions) that act as a positive incentive to change the behaviour of consumers and/or producers of some types of goods and services in a particular way that benefits the environment. They can be used to reward some types of sustainable economic activities, discourage unsustainable ones, and thus improve environmental outcomes.
Sustainable economic growth is commonly defined as a method of expanding the economy's production levels to meet the needs for goods and services of the present population, without undermining the ability of future generations to meet their own needs.
Sustainable economic growth is commonly defined as a method of expanding the economy's production levels to meet the needs for goods and services of the present population, without undermining the ability of future generations to meet their own needs.
A **trade-off** is a cost, based on what has to be sacrificed or given up, following a decision or choice. To date, there has been a trade-off between global economic growth and the quality of the environment.
The **UN Climate Conference (CoP26)** in 2021 brought many nations together (including Australia) to reach an agreement on climate action needed to limit the rise in global temperature to 1.5 degrees Celsius above the levels in 1880. As a result, many countries including Australia, committed to reaching *net zero emissions* by 2050.

on Resources

Digital documents
- Topic summary (doc-37980)
- Key terms glossary (doc-37981)
- Crossword (doc-38883)
- Wordsearch (doc-38884)
- Match-up definition (doc-39035)

8.8.3 Practice school-assessed coursework

OUTCOME 2

Explain the factors that affect two economic issues at a local, national and international level and evaluate actions to address the issues.

TASK: ECONOMIC SIMULATION ACTIVITY — A ROLE PLAY

The United Nations (UN) has called another Climate Crisis summit to discuss the situation and actions required by key nations, to slow climate change and make their economies more environmentally sustainable. It will be attended by groups from key countries or areas. These might include:
- the USA
- China
- a group representing the EU
- Britain
- Australia
- a group representing Pacific Island nations
- the Netherlands.

Before starting, the Economics class needs to be broken into groups, one for each country or area. After completing research and preparation, a spokesperson from each group is required to deliver a speech (maximum 5 minutes). The speech should cover the following areas:
- The country's or the group's current views or attitudes about climate change
- How climate change has affected the country or group
- An outline of the target for emissions reductions for the country or group, and progress so far in reducing emissions
- An explanation of the policies that are in current use and may be used in the future to reduce environmental impacts and climate change.

This activity will require that each group researches the necessary information for their country using a computer and a range of online sites (remember to include web addresses for all information sources).

At the end of the speeches, *each* class member is required to prepare and submit a *summary report* (for assessment purposes). As a guide, this should have a length of perhaps 700 to 1000 words, or about 1–2 pages. It might also contain relevant tables, graphs, photos, illustrations, or cartoons. This document should be formatted so that it is suitable for release to the media (including newspapers).

It should try to sum up what happened at the UN's Climate Conference, including the general tone or sentiment, any surprising revelations, and any outcome or consensus amongst the nations or groups.

on Resources

Digital document Practice school-assessed coursework (doc-38081)

8.8 Exam questions

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8.8 Section A: Multiple choice questions

Question 1

Global climate change has tended to result in:

A. starvation following reduced agricultural productivity in some countries.
B. the displacement of island communities and the destruction of their culture, even though they were not responsible.
C. reduced production, incomes, mental and physical health, and biodiversity.
D. all of the above.

Question 2

Which of the following government measures would *not* normally be classified as a *market-based* environmental policy to reduce carbon emissions?

A. Putting a price on carbon pollution permits or offsets to be determined in a cap-and-trade scheme to reduce negative externalities associated with economic activities
B. The government passing a law that closes the economic activities of all coal-fired power stations
C. The withdrawal of fossil fuel subsidies currently paid to the coal industry
D. Introducing tax concessions for firms able to cut emissions by 5 per cent a year.

Question 3

Which of the following statements about environmental issues is *least* correct?

A. In the absence of government action, the rise in greenhouse gas emissions are a market failure associated with the abuse of common access resources and linked with global warming that reduces living standards.
B. Currently in Australia, CO_2 emissions are seen as a negative externality or cost that is paid by most polluters, thereby slowing climate change.
C. Market-based environmental policies that use financial incentives to change the behaviour of polluters, can help improve living standards and make them more sustainable for current and future generations.
D. Especially in the short-term it is possible that environmental policies may cause a rise in structural unemployment and make supply conditions less favourable for some firms.

Question 4

Which of the following government policy measures would be *least* effective in helping to combat environmental problems experienced in an expanding economy?

A. A new government indirect tax imposed on single-use disposable products that create high emissions
B. Building a new freeway to carry more cars
C. Government spending to improve the quality, reliability, comfort and convenience of public transport
D. Using budget subsidies to encourage local businesses to purchase new technology that reduces emissions.

Question 5

Economic growth can result in:

A. a fall in the quality of air, the extinction of native plants and animals, and the destruction of healthy rivers and oceans.
B. greater consumer choice, better health, and longer life expectancy.
C. the growth of cities and of urban problems such as traffic congestion and waste disposal.
D. all of the above.

Question 6

Which statement is *most* correct? Common access environmental resources include:

A. all resources found in nature as well as those provided by people.
B. minerals.
C. equipment.
D. climate, air, oceans, ecosystems and the stratosphere.

Question 7

Environmental problems have become more severe because:

A. firms seek to maximise profits, minimise costs and exploit common access and environmental resources, for which they are usually not charged a price.
B. the recycling of waste by households and firms has been inadequate.
C. increasing population pressures mean that more production is necessary just to maintain current living standards.
D. all of the above are correct.

Question 8

Regarding *market failure*, which statement is *least* correct?

A. Failure occurs when resources are allocated to the production of certain types of goods and services that lower the general satisfaction of society's wants and wellbeing.
B. Clean air is normally a non-rivalrous but excludable natural resource.
C. Improvements in the quality of information that people have about the environment can help reduce market failure and improve environmental outcomes.
D. Market failure and environmental damage can be reduced by government taxes on products involving high emissions and that are single-use.

Question 9

The greatest negative externalities are most *likely* to result from the production and consumption of which of the following?

A. Products that can be totally recycled
B. Oranges
C. Meat
D. Wheat

Question 10

Which of the following is *not* generally regarded as a *rivalrous* good or service?

A. A wild fish caught in Bass Strait near Tasmania.
B. A tree felled in an old growth forest in the Otways.
C. Free to air TV program viewing on the ABC.
D. A bed in a private hospital.

Question 11

Which of the following is *not* generally regarded as an *excludable* good or service?

A. A box of breakfast cereal
B. A tonne of iron ore
C. Street lighting provided by the local council
D. A glass of water taken from the river

Question 12

Which statement about market failure is *least* correct?

A. Market failure means that the price system always directs resources to where they are most wanted by society.
B. Market failure can include negative externalities and the use of common access environmental resources where not all costs are reflected in the price paid for a good or service.
C. Market failure is normally reduced by government intervention to change the decisions made by consumers and businesses.
D. Market failure lowers society's general welfare.

Question 13

Concerning international collaboration to help improve global environmental sustainability, which of the following is *least* correct?

A. The UN has recently published a plan for the transition to a circular economy with zero waste.
B. The UN's CoP26 in Glasgow in late-2021 resulted in every country making a commitment to reach net zero emissions by 2050.
C. Following the Paris Climate agreement, Australia committed to reducing its emissions by 26–28 per cent of 2005 levels by 2030 that has now been updated to a 43 per cent reduction.
D. The current aim is to limit climate warming to a rise of 1.5 degrees Celsius by 2050, on levels that existed in the 1880s.

Question 14

Which of the following is *most likely* to be environmentally sustainable?

A. For residents of Melbourne, holidaying at Noosa, Queensland rather than Torquay, Victoria
B. Using coal-fired electricity to charge your phone
C. Buying goods like wine produced locally rather than imported from France
D. Buying food packaged in thin scrunchable plastic wrapping

Question 15

As environmental indicators for Australia, which of the following is *least* correct?

A. The level of CO_2 emissions per $1 of GDP has generally fallen over recent years.
B. The frequency of droughts, fires and floods has tended to increase.
C. Our CO_2 emissions have decreased overall during the last 15 years.
D. Thankfully, the number of days with temperatures over 40 degrees Celsius has decreased because of our overall reduction in CO_2 emissions in recent times.

Question 16

Which of the following products is *least* bio-degradable?

A. Paper tissues
B. A tin of leftover house paint
C. Vegetable peelings and food scraps
D. Timber offcuts from your project to make a coffee table

Question 17

A carbon tax usually results in:

A. a decrease in the quantity of a high emissions good demanded at a given price and no change in the supply of the good at a given price, decreasing the market equilibrium price of the good.
B. a decrease in the supply of the high emissions good at a given price and a contraction in demand as the market equilibrium price rises.
C. a decrease in both the quantity of a high emissions good demanded and supplied at a given price decreasing the market equilibrium price.
D. a decrease in the quantity of a high emissions good demanded at a given price by consumers, and an increase in the supply of the good at a given price by sellers.

Question 18

With the operation of a carbon emissions trading scheme:

A. the quantity of pollution permits supplied is usually capped or limited by the government.
B. the quantity of pollution permits demanded mostly depends on the level of pollution resulting from changes in business activity.
C. a rise in the market price or cost of pollution permits will tend to act as a negative financial incentive that will repel resources from products with high emissions.
D. all of the above are likely to occur.

Question 19

A negative externality is *best* illustrated by which of the following examples?

A. You pay for the cost of renovating the inside of your house.
B. You clean up and beautify your front garden, which is visible from the street.
C. The club near your house runs its noisy and unruly venue each Friday and Saturday night until 3 am.
D. A bauxite mining company restores a damaged mine site and replants the native vegetation.

on Resources

Digital documents Multiple choice answer grid (doc-37982)
Multiple choice answers (doc-37983)

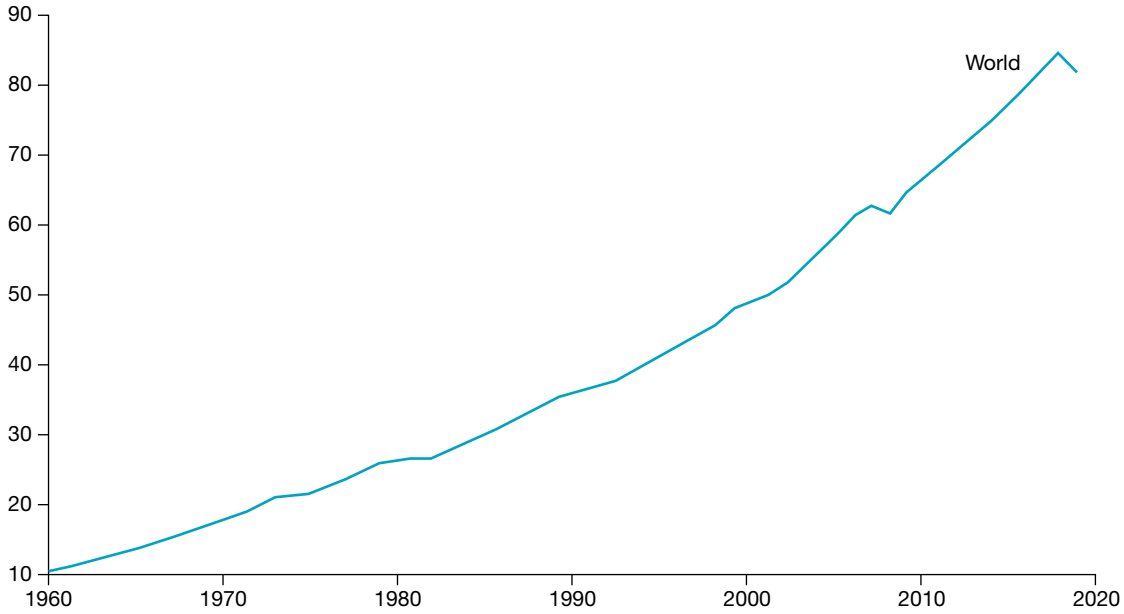
8.8 Section B: Extended response questions

Question 1 (14 marks)

a. **Explain** what is meant by the term, *environmental sustainability*. **(2 marks)**

Before answering the questions that follow, **examine** the graph below showing the change in global GDP.

The change in the value of global GDP ($US trillions)



Source: World Bank, https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.

b. Referring to data drawn from the graph, **describe** the change in global GDP over the period. **(2 marks)**

c. Giving clear reasons, **explain** whether this change in real GDP is likely to have been environmentally sustainable. **(4 marks)**

d. **Identify** and **outline** two commonly used measures to indicate changes in the degree of global environmental sustainability. **(2 marks)**

e. There has been a rise in greenhouse gas emissions. **Explain** why humanity should be alarmed. **(4 marks)**

Question 2 (9 marks)

There is now growing concern about the environment and an acceptance of the need for policies to reduce CO_2 emissions to help protect our current and future living standards.

a. **Outline** what is meant by a *carbon tax*. **(1 mark)**

b. **Draw** and fully **label** a demand–supply diagram representing the market for coal-generated electricity. On this diagram, **show** the effects of the government deciding to put a tax on polluting power companies that use coal. **Explain** how this tax could help reduce CO_2 emissions and limit climate change. **(4 marks)**

c. **Explain** how a carbon tax might affect each of the following:

- the unemployment rate, especially over the short-term **(2 marks)**
- the rate of inflation. **(2 marks)**

Question 3 (7 marks)

Government subsidies are used to affect the behaviour of producers and consumers.

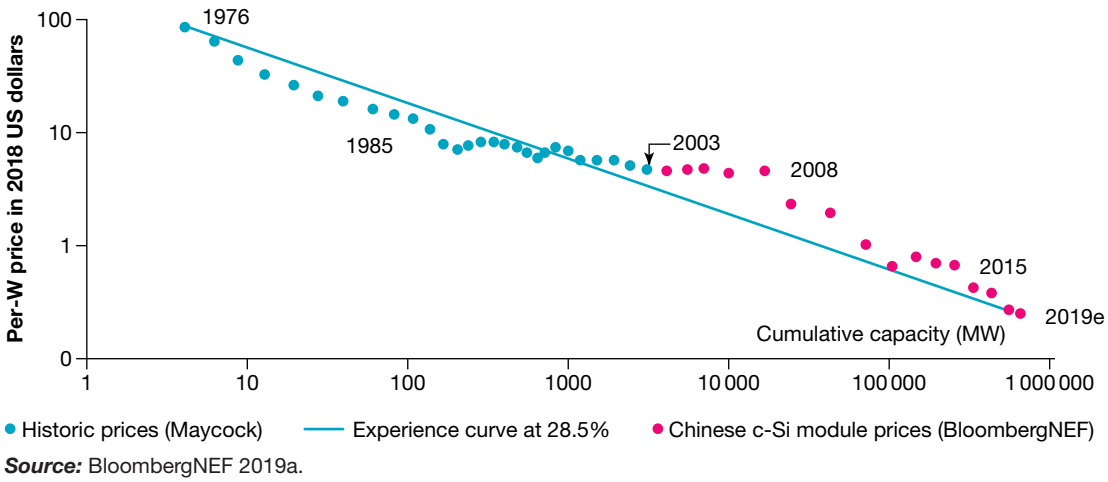
a. **Define** the term, *subsidy*. **(1 mark)**

b. **Draw** and fully **label** a demand–supply diagram representing the market for a desirable low-emissions product like wind-powered generators (that are a substitute for initially cheaper high-emissions product like coal-fired electricity). On this diagram, **show** the effects of the government's decision to pay a subsidy to those firms installing wind-generated electricity. **Explain** how this subsidy could help reduce CO_2 emissions and limit the effects of climate change. **(4 marks)**

c. **Explain** how this subsidy is *different* to a carbon tax in the way it works to reduce emissions. **(2 marks)**

Question 4 (4 marks)

Before answering the questions that follow, **examine** the graph below showing the change in the price of solar panels per watt of electricity produced, 1976–2019.



Source: BloombergNEF 2019a.

a. Referring to the graph, **describe** the change in the cost of solar panels per watt of electricity produced over the period. **(1 mark)**

b. **Suggest** one likely reason for the fall in the price of solar panels. **(1 mark)**

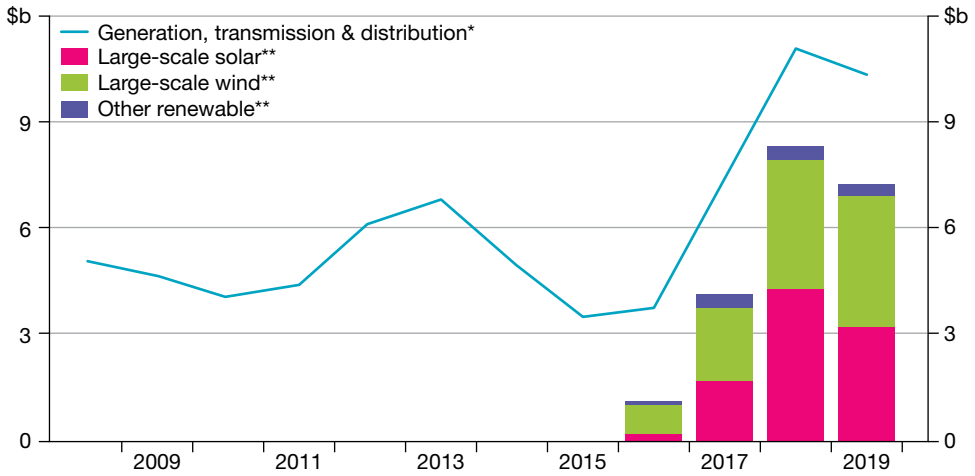
c. **Explain** how this change in the cost of panels would be likely to affect the demand for panels by households and businesses. **(1 mark)**

d. **Explain** how this trend in prices might affect CO_2 emissions. **(1 mark)**

Question 5 (4 marks)

Before answering the questions that follow, **examine** the figure below showing changes in large-scale business investment by power companies in Australia, 2009–2019 (A$ billions).

Electricity-related investment



* Renewable and non-renewable; work done by the private sector for the private sector; 2019 observation annualised

** Capital expenditure is assumed to be distributed equally over the project's life; 'other renewable' includes large-scale battery, biomass, pumped hydro and hybrid

Source: RBA, see https://www.rba.gov.au/publications/bulletin/2020/mar/renewable-energy-investment-in-australia.html.

a. Referring to the graph, **list** the main types of electricity-related investment spending by large privately owned power companies. **(1 mark)**

b. **Identify** the most important change in the type of investment spending during 2018 and 2019, as compared with the years 2009–2015. **(1 mark)**

c. **Explain** the impact of this change in the type of investment on Australia's level of CO_2 emissions. **(2 marks)**

Question 6 (5 marks)

Discuss the following statement: 'The costs of not having an effective environmental policy to deal with the climate crisis would do more to harm to our living standards than implementing an effective market-based environmental policy.'

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APPENDIX
Task words used in VCE Economics assessable tasks and examinations

It is important to understand the meaning of the terms used in assessed tasks and the short and extended-response questions of the examination. The terms listed below are the most frequently used.

Term	Explanation
account for	State reasons for; report on.
account of	Describe a series of events or transactions.
analyse	Identify components/elements and the significance of the relationship between them; draw out and relate implications; determine logic and reasonableness of information.
apply	Use; employ in a particular situation or context.
assess	Make a judgment about, or measure, determine or estimate, the value, quality, outcomes, results, size, significance, nature or extent of something.
calculate	Determine from given facts, figures or information; obtain a numerical answer showing the relevant stages in the working; determine or find (e.g. a number, answer) by using mathematical processes.
clarify	Make a statement or situation more comprehensible.
compare	Recognise similarities and differences and the significance of these similarities and differences.
construct	Make, build, create or put together by arranging ideas or items (e.g. an argument, artefact or solution); display information in a diagrammatic or logical form.
contrast	Show how things are different or opposite.
deduce	Draw a conclusion from given information, data, a narrative, an argument, an opinion, a design and/or a plan.
define	Give the precise meaning and identify essential qualities of a word, phrase, concept or physical quantity.
demonstrate	Show ideas, how something can be done or that something is true by using examples or practical applications, or by applying algorithms or formulas.
describe	Provide characteristics, features and qualities of a given concept, opinion, situation, event, process, effect, argument, narrative, text, experiment, artwork, performance piece or other artefact in an accurate way.
discuss	Present a clear, considered and balanced argument or prose that identifies issues and shows the strengths and weaknesses of, or points for and against, one or more arguments, concepts, factors, hypotheses, narratives and/or opinions.
distinguish	Make clear the differences between two or more arguments, concepts, opinions, narratives, artefacts, data points, trends and/or items.
evaluate	Ascertain the value or amount of; make a judgment using the information supplied, criteria and/or own knowledge and understanding to consider a logical argument and/or supporting evidence for and against different points, arguments, concepts, processes, opinions or other information.

Term	Explanation
examine	Consider an argument, concept, debate, data point, trend or artefact in a way that identifies assumptions, possibilities and interrelationships.
explain	Give a detailed account of why and/or how with reference to causes, effects, continuity, change, reasons or mechanisms; make the relationships between things evident.
extract	Select relevant and/or appropriate detail from an argument, issue or artefact.
extrapolate	Infer and/or extend information that may not be clearly stated from a narrative, opinion, graph or image by assuming existing trends will continue.
identify	Recognise and name and/or select an event, feature, ingredient, element, speaker and/or part from a list or extended narrative or argument, or within a diagram, structure, artwork or experiment.
infer	Derive conclusions from available information or evidence, or through reasoning, rather than through explicit statements.
interpret	Draw meaning from an argument, point of view, description or diagram, text, image or artwork and determine significance within context.
investigate	Observe, study or carry out an examination in order to establish facts and reach new conclusions.
justify	Show, prove or defend, with reasoning and evidence, an argument, decision and/or point of view using given data and/or other information.
list	Provide a series of related words, names, numbers or items that are arranged consecutively.
name	Provide a word or term (something that is known and distinguished from other people or things) used to identify an object, person, thing, place etc.
outline	Provide an overview or the main features of an argument, point of view, text, narrative, diagram or image.
persuade	Induce (someone) to do something through reasoning or argument; convince.
predict	Give an expected result of an upcoming action or event; suggest what may happen based on available information.
propose	Suggest or put forward a point of view, idea, argument, diagram, plan and/or suggestion based on given data or stimulus material for consideration or action.
recall	Present remembered ideas, facts and/or experiences.
recommend	Put forward and/or approve (someone or something) as being suitable for a particular purpose or role.
recount	Retell a series of events or steps in a process, usually in order.
state	Give a specific name or value or other brief answer without explanation or calculation.
suggest	Put forward for consideration a solution, hypothesis, idea or other possible answer.
summarise	Retell concisely the relevant and major details of one or more arguments, text, narratives, methodologies, processes, outcomes and/or sequences of events.
synthesise	Combine various elements to make a whole or an overall point.

Source: © VCAA, *Glossary of command words*, https://www.vcaa.vic.edu.au/assessment/vce-assessment/Pages/GlossaryofCommandTerms.aspx

ECONOMICS DICTIONARY

Absolute cost advantage occurs in international trade when one country can produce a product more cheaply and efficiently than all other nations.

Absolute poverty occurs when people's basic survival needs for adequate food, shelter, clothing and health, are not generally met.

Accommodative (or expansionary) monetary policy stance is when the RBA has a low cash rate target of less than 3.0 per cent. It is designed to stimulate spending and the level of domestic economic activity.

Age–sex distribution of the population is the way the nation's total population is spread among different age and gender groups; for example, 0–4 years, 45–49 years and so on.

Aged pension is a cash welfare payment or transfer to aged individuals who meet the assets and means tests. Until recently, this could be accessed by those eligible over 64 years of age. A few years ago, it was announced that the pension age would be slowly increased to 67 years by July 2023. *See* welfare benefits.

Ageing population occurs when the median age of a country's population is rising and there is a larger proportion in older age groups. This problem has implications for Australia's rate of economic growth and government budget outcomes.

Aggregate demand (AD) is the sum or total value of all spending or demand on final (finished) goods and services produced by a nation and measured over a period of time. It represents the total value of effective demand composed of private consumption spending (C), plus private investment spending (I), plus government consumption or current spending (G_1), plus government investment or capital spending (G_2), plus spending on exports of goods and services (X) minus spending on imports of goods and services (M); that is:

$$\text{Aggregate demand} = C + I + G_1 + G_2 + X - M$$

The growth in these components of AD is affected by changes in aggregate demand conditions/factors. Here we think of factors like consumer confidence, business confidence, overseas economic activity, disposable income and interest rates. *See* aggregate demand management policies; budgetary policy; countercyclical budgetary policies; Keynes, John Maynard; monetary policy.

Aggregate demand factors or **conditions** are the key macroeconomic influences on the total level of spending in an economy. They affect the level of AD and its components, C + I + G + X − M. Here we think of influences such as changes in consumer confidence, business confidence, tax rates, disposable income, the exchange rate for the Australian dollar, the terms of trade, the stance of government budgetary and monetary policies (interest rates), the rate of growth in population and the level of overseas economic activity (in China or the US, for example). Generally stronger aggregate demand conditions cause spending and economic activity to rise, while generally weaker conditions cause spending and economic activity to slow. *See* aggregate demand management policies; boom; countercyclical budgetary policies; recession.

Aggregate demand management policies include a mixture of macroeconomic budgetary policies and monetary policies designed to regulate or influence the overall level of spending on domestically-made goods and services, or AD (C + I + G + X − M). Their aim is to reduce the short-term or cyclical changes in the level of economic activity through applying policies in a countercyclical way. Hence these policies need to be expansionary during slowdowns to lift AD and contractionary in booms to slow AD to sustainable levels.

Aggregate demand–supply diagram is a diagram showing that the equilibrium level of economic activity is dictated by the levels of both aggregate demand and aggregate supply. Equilibrium occurs at the level where the two lines intersect, producing a certain level of national output, employment and prices.

Aggregate supply (AS) is the total physical supply of goods and services from all sectors produced at different price levels over a period of time in the economy. In a general sense, aggregate supply (AS) is influenced by the willingness or ability of producers and firms to supply goods and services. In turn, this responds to a number of factors. For example:

- the quantity or volume of resources available (e.g. may be affected by supply chain issues, new discoveries, climatic conditions) influences productive capacity and AS
- the quality or efficiency with which resources are used influences productive capacity and AS
- the level of production costs (wages, interest rates, taxes, government charges, raw materials), and their impact on business profitability, affects productive capacity and AS. *See* supply-side economic theory.

Aggregate supply budgetary policy measures seek to use changes in budget receipts and/or outlays to help allocate more resources into key areas, correct market failure, promote greater efficiency, reduce production costs and build the economy's long-term productive capacity. Examples include government investment in infrastructure, the reduction of tax rates on companies and individuals, outlays on education, training and R&D.

Aggregate supply factors are the macroeconomic influences on an economy's productive capacity or potential level of GDP. They include changes in the quantity and quality of natural resources (such as water, climate and mineral deposits), capital equipment (e.g. machines and technology) and labour resources (mental talents and physical power), general business costs (such as RULCs, interest rates, local and imported materials and equipment, oil prices) and profitability levels, climatic conditions including drought, productivity levels, labour force growth and participation rates, the ageing population, access to adequate infrastructure, pandemics and disruptions to supply chains, and government aggregate supply policies (e.g. microeconomic reforms, aspects of budgetary policy like tax rates and infrastructure spending, immigration policy and environmental policies). *See* aggregate supply policies.

Aggregate supply policies are cost-cutting, efficiency-promoting, incentive creating government measures that aim to make the conditions for firms and individuals producing or supplying goods and services more favourable in the long term, so economic activity will flourish and expand the economy's productive capacity and hence, the potential rate of economic growth. These measures include aggregate supply aspects of budgetary policy (e.g. outlays on subsidies, education and training, R&D grants, targeted subsidies and government investment spending on national infrastructure projects), trade liberalisation, tax reforms, environmental policies and immigration policy (setting targets for the inflow of migrants, especially those with skills). *See* aggregate supply factors.

Allocation of resources is how a nation will use its scarce factors of production, including land and natural resources, labour and entrepreneurial skills, and capital goods and technology. For example, will resources be used to produce cotton or wool, cars or public transport, education or hospitals? *See* efficient allocation of resources.

Allocative efficiency is a desirable situation where resources are used for producing the particular types of goods and services that best satisfy society's needs and wants. Producing the 'right' goods and services means that, generally, consumers get what they most want. Many economists argue that this is more likely to occur in highly competitive markets using the price system. *See* efficiency.

Amazon.com's flywheel is the model used to progressively grow online sales and the company, by maximising the customer's online shopping experience, boosting sales and traffic, attracting more sellers and competition, broadening the selection or product range available, further enhancing the consumer's experience, and so on.

Anchoring effect comes from behavioural economics. Anchoring is an arbitrary starting or reference point that affects a consumer's perception. It is used by consumers to make a judgement, comparison, assessment or ranking of possible choices. It can be used by businesses to manipulate consumer choice.

Appreciation of the exchange rate occurs when one A$ will buy more units of another currency when it is swapped in the foreign exchange market. This makes imports from abroad relatively cheaper, but it also makes our exports less attractive to overseas customers. For example, before an appreciation of the exchange rate was A$100 = US$100; after an appreciation of Australia's exchange rate, A$100 = US$120.

Asia–Pacific Economic Cooperation (APEC) is a regional forum aimed at promoting freer trade among 21 member countries.

Assets are items of value owned by a person, bank or company. In the case of bank assets, assets include bank buildings, loans and advances and liquid reserves.

Assets test is used to help decide who is eligible for an aged pension and some other types of government welfare benefits. The family home is

excluded from this test, but other assets exceeding a given value are not. *See* means test.

Asymmetric information is an example of market failure. It occurs when one group has more knowledge of the market or product than others. For markets to allocate resources efficiently, buyers and sellers need to have complete and reliable knowledge of all the relevant information affecting their decisions. Unfortunately, this sometimes does not happen. Often, for example, sellers have more information than buyers in a transaction, so rational choices and efficient decisions about resource allocation cannot be made. Here, the market fails to work well and it is one instance of market failure. There are many instances of this type of market failure; for example, insider trading in the share market; the sale of properties where the current homeowner knows more about the property than the prospective tenant/buyer; the sale of secondhand cars where the seller knows more about the vehicle quality than prospective buyers; and online dating sites where one individual knows more than the other. *See* market failure.

***Australian Competition and Consumer Act* (2010)** is legislation that makes price and other forms of collusion and price fixing by firms illegal.

Australian Competition and Consumer Commission (ACCC) is a government institution created in 1995 to help promote competition and increase productivity. It enforces the provisions of the *Australian Competition and Consumer Act* of 2010. This law outlaws strategies that limit price competition by sellers, including price fixing, price collusion, market zoning, collusive tendering and price gouging. The ACCC may also approve takeovers and mergers if these are in the public interest, and is involved with surveillance of prices in industries where competition between private and/or public firms is weak.

Australian Trade Commission (Austrade) is a government statutory authority designed to promote Australian exports abroad.

Automatic stabilisers or **cyclical stabilisers** are components of the budget (tax receipts and welfare outlays) that are automatically activated with changes in the business cycle, to help iron out cyclical booms and recessions in a countercyclical way. They work by changing the level of aggregate demand and economic activity in the desired direction without the need to resort to discretionary policy changes. For example, during a slowdown, revenues from excise, personal and company tax automatically start to drop because of falling sales, incomes and profits; simultaneously, welfare outlays (especially spending on unemployment benefits) rise because more people qualify due to lower incomes. This makes the budget more expansionary on AD and economic activity. In reverse, during rising economic activity, tax revenues gradually rise and welfare outlays fall automatically, making the budget less expansionary and eventually more contractionary.

Average weekly earnings (AWE) represent the gross weekly earnings before tax and other deductions per worker. The ABS derives these figures by dividing gross earnings by estimates of employment using a sample survey technique.

Award wage is the legal minimum wage that can be paid by an employer. It is set by the Fair Work Commission and acts as a safety net for low-paid workers. From July 2022, this is set at $812.60 for a fulltime adult employee (up 5.2 per cent on the level in 2021–22).

Baby boomers refers to the larger than average group of people born in the 10–15 years or so following the end of World War II in 1945. There was a boom in the birth rate at this time following disruptions associated with war. Currently, this group is at, or nearing, retirement age and this is likely to slow government tax revenue in the budget and increase health and welfare outlays.

Balance of (merchandise) trade or **trade balance** represents the difference between the total value of exported merchandise (goods) and the total value of imported merchandise. It is normally measured 'free on board' (FOB): it excludes freight and insurance, which are included under 'net services'. *See* net goods.

Balance of payments account is an annual financial summary of credit and debit transactions between Australia and the rest of the world. The overall balance of payments is broken into *two* main *sub-accounts:*

1. *The balance on current account*. This represents the difference between the total value of credits minus debits for merchandise (goods), services, primary incomes and secondary incomes over a given period of time.
2. *The balance on capital and financial accounts*. The balance on *capital* account represents the difference between total credits minus debits for capital transfers and the acquisition of non-produced, non-financial assets. The balance on *financial* account is the difference between total

credits minus debits for direct, portfolio and other capital along with reserve assets. In addition, any errors and omissions are factored into the final result.

Balanced budget occurs when the total value of government outlays equals the total value of government receipts in a given year's budget. Generally, these budgets have a neutral impact on the level of economic activity. *See* fiscal balance.

Balance on goods and services (BOGS) represents the difference between the total value of goods and services exported, minus the total value of goods and services imported, measured over a period of time. See also the *balance of trade*.

Bank overdraft is where the bank agrees with a client to allow an account to be overdrawn in return for the payment of interest. This provides a client with credit.

Barriers to entry occur when monopolies and oligopolies try to suppress competition by would-be rivals in an industry. These barriers may include the conduct of a price or advertising war, or collusion with existing firms to exclude newcomers. Other barriers to entry of rival firms in a market might also include product patents, high start up costs and government regulations.

Base year is a concept used in the construction of statistical indices (such as CPI, TWI) where a particular year is designated as the period or standard against which others are compared. Usually the base year is given a value of 100 index points.

Behavioural economics is a study that examines the factors that influence the way consumers and producers respond or interact. For example, traditional theory of behaviour suggests that consumers and producers make decisions in a rational self-interested and informed way, but we now know that it is far more complex — peoples' behaviour is affected by psychological, emotional, cognitive, social and cultural factors. They take short cuts such as adopting herd behaviour or applying the status quo. This occurs because we have, for example, limited time to complete research and inadequate brainpower to weigh up all the possibilities.

Benefit to cost ratio is calculated by dividing the total value of expected benefits by the total value of expected costs. The result may be positive (an answer that is greater than 1.0) or negative (an answer less than 1.0). This helps decision makers to select the best option.

Bilateral trade agreements are trading arrangements between two nations designed to foster the exchange of goods and services (e.g. Australia's Closer Economic Relations Trade Agreement (CER) with New Zealand) along with free trade agreements with the US, Singapore, Thailand, China, ASEAN, Korea, Japan, China, Malaysia and Chile. Negotiations are also under way with India and the European Union.

Black market is the illegal sale of goods and services. This sector's production is not included in calculations of the value of GDP.

Boom is a period of economic instability where the level of economic activity is excessively strong, there is overfull employment and rapid inflation caused by aggregate demand outstripping the economy's productive capacity or aggregate supply. This undesirable situation cannot be sustained and may lead to uncertainty, reduced purchasing power of incomes, the redistribution of income creating greater inequality, and deterioration in a nation's trading position. Typically, governments adopt more contractionary aggregate demand policies in booms (e.g. higher interest rates) to help slow spending and inflation.

Bottlenecks to production are limiting factors that restrict the increase in the national supply of goods and services (GDP). There are many potential aggregate supply-side bottlenecks that stop or slow down the growth in a country's production possibility frontier or that limit the size of the AS line. These factors included the lack of public infrastructure in areas like power, water, transport and communications, a shortage of skilled labour, the drought, an ageing population and areas of inadequate natural resources. These slow the sustainable rate of economic growth. Aggregate supply policies are needed to correct these bottlenecks. *See* aggregate supply policies; immigration policy.

Bounded rationalism or **rationality** challenges the traditional belief that consumers always make rational economic decisions where they conduct careful research, order priorities, and weigh up the pros and cons. Instead, this theory suggests that consumers take short cuts in making economic decisions by following the status quo or adopting herd behaviour; for example, because they lack the time, did not always have access to the necessary knowledge or have the intellectual capacity to accurately weigh up the evidence.

Bounded self-interest is an idea that comes from behavioural economics. It says that while consumers can be selfish, this is not always the case. Their decisions can be affected by other beliefs like fairness and a desire to help others.

Bounded willpower is an idea from behavioural economics, and says that sometimes, consumers do not have the necessary willpower or determination to make rational decisions. Instead, they can end up taking the easy and less rational option, which may not be in their best long-term interest and hence, they may later regret their choice.

Bracket creep or **fiscal drag** occurs when recipients of rising income gradually move into higher marginal rates of income tax, which raises their tax burden. From time to time, this will be offset by changes to marginal tax rates and tax thresholds.

Budget is a document that sets out the level and composition of the government's planned receipts and outlays for the next financial year, based on certain assumptions. Receipts predominantly come from PAYG and company tax, while outlays are directed into welfare, education, defence and health. The budget can be used as an aggregate demand policy to regulate the level of spending, but it can also be used as an aggregate supply policy designed to grow a nation's productive capacity.

Budget deficit represents a situation where the total value of government outlays exceeds the total value of its receipts for a period of time (for example, between 2008–09 and 2022–23). Larger deficits expressed as a percentage of GDP, especially, have an expansionary effect on aggregate demand and hence economic activity. *See* aggregate demand management policies; automatic stabilisers; discretionary stabilisers; expansionary budget.

Budget expenses or outlays in the budget are expenses involving, for example, the provision of goods and services for the community like health, education and welfare.

Budget outcome refers to the difference in value between budget receipts and budget outlays, measured over a period of time. There are three types of outcome: budget deficit (outlays are greater than receipts), budget surplus (outlays are less than receipts) or budget balance (receipts and outlays are equal).

Budget repair or **fiscal consolidation** represents attempts by government to reduce the size of the budget deficit by discretionary rises in the value of receipts and/or cuts in the value of outlays.

Budget revenues or receipts are the federal government's incoming receipts of money that pay for budget outlays. Taxation, for example, is a major source of revenue for the government.

Budget stance refers to whether the budget is neutral, expansionary or contractionary in its impact on the level of AD and economic activity. For example, a reduction in the size of the budget deficit between one year and the next, expressed as a ratio of GDP, would generally be seen as a relatively less expansionary stance that would tend to reduce the level of stimulus provided for AD and economic activity. However, a rise in the size of the budget deficit between one year and the next, expressed as a ratio of GDP, would usually be seen as a relatively more expansionary stance that would tend to further boost AD and economic activity.

Budget surplus represents a situation where the total value of government outlays is less than the total value of its receipts for a period of time. Budget surpluses occurred between 2006–07 and 2007–08. Larger surpluses may have a more contractionary effect on aggregate demand and hence on economic activity, and are suitable for slowing inflationary booms. *See* aggregate demand management policies; automatic stabilisers; contractionary budget; discretionary stabilisers.

Budgetary policy or **fiscal policy** is a macroeconomic or aggregate demand management strategy involving changes in the level and composition of the government's estimates of the value of its receipts (such as from personal income tax, company tax, customs duties, sales tax, capital gains and excise duties) and the expected value of its outlays (e.g. on social security and welfare, defence, health, education, housing, payments to the states, general public services and economic services), usually based on a one-year period. As an aggregate demand policy, budgetary policy is applied countercyclically to help promote economic stability. During an inflationary boom, the budget outcome switches to a more contractionary surplus by the operation of automatic and discretionary rises in receipts and reductions in outlays. This slows aggregate demand, economic activity and inflation. However, during downswings or recessions, the budget switches to a more expansionary stance. Typically there is a budget deficit as a result of automatic and discretionary reductions in receipts and rises in outlays. This tends to lift aggregate demand and economic activity. The medium-term goal of recent budgetary

policy is for a return to surplus in the next few years. *See* automatic stabilisers; discretionary stabilisers.

Built-in stabilisers *See* automatic stabilisers.

Business and skilled migration programs have been an important part of the federal government's immigration policy for some years. These programs try to attract skilled migrants (including business people) to Australia to help cover the skills shortages and grow our productive capacity. Generally, this group makes up around 65 to 70 per cent of all migrants, although it fell for 2020–21–22 due to the pandemic and border closures. *See* immigration.

Business behaviour looks at the factors influencing how firms make decisions about the production and sale of particular goods and services. There are various explanations of business behaviour. However, for most firms, profit maximisation is perhaps the most important influence.

Business concentration or **market power** occurs when businesses have used takeovers, mergers, integration and other devices to create monopolies and oligopolies, and where there is a high degree of economic power in the hands of a few (e.g. petrol, banking and water). High levels of business concentration can lead to inflation, exploitation and resource misallocation. *See* concentration of industry and ownership.

Business confidence is an aggregate demand factor and involves predictions made by business about the future trends in their output, sales and profits. If there is optimism and expectations are of rising sales and falling stocks of goods, business may well decide to expand output and investment, leading to increased AD and economic activity. In reverse, pessimism slows AD and economic activity.

Business cycle is often illustrated diagrammatically and shows the ups and downs in the level of economic activity (measured by changes in real GDP) that an economy experiences over a period of time as it passes through four phases. Typically the phases include a period of expansion, peak (perhaps an inflationary boom), contraction and trough (perhaps a recession). The ideal level is to achieve domestic economic stability. As a result of variations in the level of activity, unemployment, inflation and even the CAD will change. *See* boom; economic activity; recession.

Business or producer sector comprises different types of firms and enterprises producing goods and services.

Cap and trade scheme is commonly part of a market-based environmental policy involving an emissions trading scheme (ETS). It is designed to reduce CO_2 pollution to a predetermined target level. It involves a 'cap' or limit on the maximum number of pollution permits supplied to the market by a government authority, in order to achieve the maximum annual CO_2 emissions target. 'Trade' refers to the limited number of pollution permits that will need to be bought by polluting businesses at a price or cost that is determined in the market for carbon pollution permits. This seeks to change behaviour by making pollution more expensive and less profitable.

Capital deepening is a situation where the ratio of the stock of capital to population or the labour force is rising. Capital equipment available to each user is improving in quantity and quality, thus accelerating the growth of productivity and material living standards (in the long run).

Capital equipment is made up of plant and machinery to help producers make other goods and services. This is an important determinant of a nation's productive capacity. *See* capital expenditure; capital, investment goods; capital resources.

Capital expenditure is spending on plant and equipment designed to grow productive capacity and satisfy a nation's future needs and wants. In Australia this is undertaken by both private individuals and companies, and by governments:

$$\text{Total capital expenditure} = \text{Private investment (I)} + \text{Government investment } (G_2)$$

See capital, investment goods; capital equipment.

Capital gains tax is a direct tax levied on the gains or profits made from the sale of a capital asset, such as land or shares.

Capital inflow is the movement of money capital into a country from overseas sources in the form of non-official private inflow (direct or portfolio investment) or official government borrowing from abroad.

Capital-intensive method of production is a method of production which relies heavily on the substitution of machinery for labour in the production of goods and services.

Capital, investment goods is an input or resource used to assist labour that includes machinery, plant and equipment such as factories, dams, railways, hospital buildings, computers used in industry,

roads, tractors and smelters for ores. These may be provided by either the private sector (I) or the government sector (G_2), and involve producer or investment goods help that satisfy future needs and wants by expanding a nation's productive capacity — that is, goods used to help produce other goods and services. *See* capital inflow.

Capital market is an institution where buyers (borrowers) and sellers (lenders) of money capital negotiate the price of capital, which is called the 'interest rate'. Institutions comprising this market in Australia include banks and non-bank financial institutions (NBFIs) such as building societies.

Capital resources (i.e. physical capital) are producer or investment goods (e.g. plant and equipment) that help lift productive capacity and make other labour and natural resources more productive or efficient. *See* capital, investment goods.

Capital widening is a situation where the ratio of capital to population or labour is falling. Capital equipment is spread out more thinly among its users, causing productivity and material living standards to rise less rapidly. *See* capital deepening.

Capitalism involves private ownership of land, capital and the means of production (such as farms, mines, banks, factories and shops) where profits tend to dictate decisions made by owners of resources. This is dominant in countries such as Australia, the United States, Britain and Japan.

Capitalist economy *See* capitalism; market capitalist economy.

Carbon emissions permits *See* carbon emissions trading scheme, cap and trade scheme, environmental policies.

Carbon emissions trading scheme is one type of environmental policy. It puts a price on carbon emissions by allowing this to be decided by demand and supply for pollution permits in the carbon market. Having a price on emissions changes the behaviour of economic agents by internalising the costs associated with the production or consumption of goods and services.

Carbon leakage refers to the relocation of firms and industries from a country that has an emissions trading scheme or carbon tax to one where there are low or no restrictions on emissions.

Carbon tax was used in Australia between July 2012 and July 2014. It was an environmental policy that involved putting an indirect and regressive tax on large firms emitting carbon. By making emissions more expensive, it sought to change the behaviour of both producers and consumers whose activities caused pollution. By internalising the costs of emissions, the tax encouraged a switch to cleaner and cheaper alternatives or substitutes like wind, solar, hydro and nuclear power on which there would be no carbon tax. *See* Direct Action climate change policy; emissions trading scheme (ETS).

Cash economy are the goods and services (e.g. performed by some tradespeople) that are produced and sold for cash, often outside official business records, to help minimise the payment of tax. The value of these items is usually not declared or included in official estimates of GDP.

Cash flow effect is a transmission mechanism of monetary policy where changes in interest rates affect the amount of leftover income available for spending on other goods and services, by those making interest payments on variable loans.

Cash rate is the price at which cash is borrowed and lent between banks in the short-term money market. This is a reference rate that affects longer term interest rates and the level of AD.

Cash rate target is the RBA's announced level of interest rates set for the short-term money market. A change in the level of the cash rate target is taken as an indicator of a change in the stance for monetary policy. Official interest rates below about 3.0 per cent (which occurred between 2012–22) are typically seen as relatively expansionary, while rates above about 3 per cent (e.g. 2005–08) are seen as relatively contractionary on the levels of AD and economic activity.

Cash welfare assistance or **income support** is given by the government to the neediest individuals to allow them to purchase basic goods and services. It helps reduce inequality in income distribution.

Centralised wage system is a method of fixing minimum wages and conditions by a government authority, the Fair Work Commission. This wage system has declined in popularity over the past 15–20 years, and nowadays covers only around 15 per cent of the labour force. Other employees are usually covered by decentralised enterprise agreements. *See* Fair Work Commission.

Chain price indexes measure the change in the prices of different types of goods and services (e.g. prices of household consumer items, private investment or capital goods, items of government expenditure, and items exported and imported) making up expenditure on GDP. These inflation indexes use a moving reference or base year as the basis of comparing prices and this base advances by one year, every year. Hence, the base year is the year

immediately before the current year, and this is given a value equal to 100 index points. For example, the base year for the 2021–22 chain price indexes is 2020–21. Chain price indexes are used to remove, statistically, the effects of price variations on the value of GDP so that it can be determined whether there has been a rise or fall in the actual volume of goods and services produced between one year and the next (called chain volume GDP).

Chain volume GDP *See* gross domestic product at constant prices, real GDP.

Checklist approach to inflation targeting by the RBA is the approach used by the RBA Board when it reviews its monetary policy stance or setting. This checklist may include the CPI and underlying measures of inflation, indicators of spending and retail sales, indicators of labour market conditions, indicators of overseas economic activity, indicators of consumer and business confidence, trends in the Australian dollar and consideration of the stance of budgetary policy.

Circular economy involves one where resources that are extracted from nature are recycled and reused, rather than being dumped as rubbish into landfill. It seeks to slow the demand for non-renewable resources, and reduce non-degradable wastes that pollute waterways and ecosystems.

Circular flow model of an economy illustrates how the Australian economy works and how its different parts are interrelated. Additionally, it identifies some of the macroeconomic variables affecting our country's economic conditions.

Clean Energy Act (commenced in 2011 and abolished in 2014) was the cornerstone of the federal Labor government's environmental policy and led to the implementation of a carbon tax between 2012 and 2014. *See* emissions trading scheme (ETS).

Clean floating or **free floating exchange rate** is where the exchange rate is determined at equilibrium by market forces of supply and demand for the Australian dollar in the absence of RBA interference in the foreign exchange market.

Climate change refers to unusual variations in average global temperatures and the distribution of rainfall. Most research suggests that global warming is connected with rising levels of economic activity and associated increases in CO_2 emissions due to the burning of fossil fuels.

CO_2 emissions involve the release of carbon dioxide gas from the combustion of fossil fuels during the production and consumption of goods and services, into the atmosphere.

Collective bargaining occurs when wages are negotiated directly between employees and employers without government interference. *See* decentralised wage fixing.

Collective goods and services or wants are outputs generally made available to the community by the government. Examples include roads, parks, schools and health, which are generally financed out of government revenue. *See* infrastructure.

Collusion occurs when companies get together to set prices and establish selling arrangements in a non-competitive way. A common aim of such action is to help companies sell at a higher price than would otherwise occur, thus raising profits. This is one type of illegal restrictive trade practice. *See* restrictive trade practices.

Commodity markets are institutions that involve the buying and selling of raw materials (such as minerals, wool, wheat, iron ore and oil) for use by businesses.

Commodity prices are the prices received according to demand and supply on world markets for goods such as grains, gold, beef, oil and natural gas.

Common access resources or goods are those things we all share and depend on like air, rivers and oceans. Without government intervention, they tend to be overused and abused, since they are rivalrous and non-excludable.

Company tax is a flat or proportional tax levied directly on company profits. Over the years, the rate of company tax has been cut from a high of 49% in 1987–88 to a current rate of 30% for large firms and 25% for small-medium firms. Lower rates boost after-tax profits and encourage business expansion, expanding aggregate supply. Even so, these rates are still above the 22 per cent OECD average for similar sized economies.

Comparative cost advantage is the principle that a nation should specialise in those select areas of production in which it has the greatest cost advantage or least cost disadvantage. In so doing, opportunity costs should be minimised, efficiency in resource allocation enhanced and the gains in international trade maximised.

Compatible government goals are goals that enhance the achievement of another goal; for example, pursuing the goal of strong and sustainable economic growth usually helps to achieve the goal of full employment. Pursuing the goal of low inflation can enhance international competitiveness and external stability. Such goals

are regarded as consistent or compatible. For contrast, *see* conflicting government goals.

Compatible policies are policies that reinforce or help other policies in their pursuit of a particular government economic objective. For instance, a contractionary monetary stance with higher cash rates aimed at slowing demand inflation combines well with efficiency promoting aggregate supply policies designed to cut cost inflation to help achieve the goal of low inflation.

Compatible relationships can exist between two economic variables where progress in one variable brings benefits to another. For example, strong economic growth usually helps to increase employment, or greater efficiency helps to slow inflation.

Competition refers to market rivalry between sellers of a good or service. It is usually seen as beneficial since it helps to lift efficiency in production, keeps prices lower for consumers and lifts the quality of products sold.

Competition and Consumer Act *See Australian Competition and Consumer Act* (2010).

Competitive advantage occurs when a firm, industry or economy has a lower cost price structure than its rivals. In this situation, goods and services can be sold more cheaply, undercutting competitors, and expanding domestic and foreign sales. The concept can also be extended to product quality range and flexibility in adapting to new trends in the market.

Competitive markets are institutions where various preconditions are largely met. These include many buyers and sellers in a market so there is strong competition or rivalry, the absence of market power, products are fairly undifferentiated and homogeneous, buyers and sellers have a good knowledge or information about the product, and the barriers to entry or exit are relatively low. *See* market capitalist economy.

Complementary goods and services or products are those goods and services for which demands are linked in a positive way. For instance, a rise in the demand for tea may tend to cause a rise in the demands for milk, sugar and tea sets.

Composition of trade deals with the type of goods and services exported and imported. Australia's trade is composed of goods such as minerals and primary products.

Concentration of industry and ownership relates to the proportion of an industry's output controlled by a given number of firms. In the case of monopolies and oligopolies, the concentration is said to be high, whereas in purely market economies the concentration of industry should be low. *See* business concentration.

Conditions of demand at the microeconomic level are the non-price factors that affect the quantity of a good or service that buyers are prepared to purchase or demand at a given price. Conditions affecting demand include changes in tastes, fashions, the seasons, disposable income level, and the price and availability of substitute products. Changes in such factors would shift the position of the whole demand line and create a new demand line on a demand–supply diagram for a given product.

Conditions of supply at the microeconomic level are the non-price factors that affect the quantity of a good or service that producers are willing to make available at a given price. Conditions affecting supply include severe weather conditions (floods, drought, cyclones) for crops and other products, the availability of new technology for producers and changes in production costs like wages. Changes in such factors would shift the position of the whole supply line and create a new supply line on a demand–supply diagram for a given product.

Conflicting government goals occur when the pursuit of one economic goal reduces the chance of achieving another goal. For example, the pursuit of equitable income distribution may reduce the chance of achieving another goal, such as strong and sustainable economic growth (due to a possible trade-off with efficiency).

Conflicting policies can exist when the use of one policy undermines the effectiveness of another policy in the pursuit of a particular goal. For instance, in a recession, large budget deficits financed by local borrowing may put upward pressure on domestic interest rates and undermine efforts by the RBA to cut rates. In so doing, government spending is 'crowding out' private consumption and investment spending that is financed by the borrowing of credit. Another example is that large budget deficits financed by overseas borrowing tend to undermine policies designed to reduce the CAD.

Conflicting relationships can exist between two economic variables or government policies. For example, stronger rates of economic growth may undermine the environment and non-material living standards. Conflicting relationships may also accelerate inflationary pressures and weaken the current account balance.

Constant prices are used to give a more accurate and useful impression of real changes in a variable after removing the exaggerations caused by the effects of inflation, or the underestimation of value caused by deflation. Many indicators (such as GDP, national income and government expenditures) are expressed in terms of constant prices. Generally, using constant prices involves the recalculation of figures in terms of those applying in some representative base year.

Constraints on policy action are factors that restrict the use or reduce the effectiveness of a government economic measure designed to improve conditions. They may include political, social, and financial constraints. For example, in recessions when spending is weak, governments often run expansionary budget deficits financed by borrowing. This inreases the burden of government debt and interest repayments for taxpayers. Because of concern over rising debt, sometimes budget deficits are smaller than those actually needed to provide economic stimulus. This is an example of a *financial constraint*. In contrast, during a boom, there can be a *political constraint*. This is because in slowing spending a surplus budget is typically used, involving a rise in taxes and cuts in government outlays. Because most voters dislike higher taxes or cuts in government outlays, the surplus may be smaller than that needed to adequately slow the economy.

Consumer is an individual, organisation or group that gains satisfaction from buying goods and services.

Consumer behaviour looks at why, how, where and when consumers choose to purchase or not purchase a good or service. Traditionally, it was thought that consumers behave rationally and make informed economic decisions that maximise their pleasure and minimise pain. However, more recent research by behavioural economists has shown that this is not always the case. Some suggest that 'bounded rationalism' is a more appropriate description, where consumers lack time and access to knowledge to make every decision in a rational way. Instead, they sometimes take short cuts by following the mob (herd behaviour) or sticking to the status quo.

Consumer confidence refers to the psychological state or attitude of private individuals or householders about their future income, employment and unemployment prospects, and expectations about trends in prices. This is an aggregate demand factor in the economy. Whether people are generally feeling optimistic or pessimistic in the short to medium term affects private consumption spending (C) involving major purchases (such as the purchase of a new house, car or TV) in the coming period of time.

Consumer goods and services are production that satisfies our immediate needs (such as food, shelter and clothing) and wants (e.g. luxuries). These goods may be single-use, such as food, or of a durable or lasting type, such as a car.

Consumer price index (CPI) is an indicator of average changes in retail prices for those 80 000 goods and services that represent a high proportion of the expenditure for typical Australian metropolitan households. Included in the regimen or basket of goods and services surveyed by the ABS are food, clothing, household equipment and operation, housing, transport, tobacco and alcohol, health and personal care, and recreation and education. Each item is 'weighted' to reflect its relative importance. Since the measure is expressed as an index, the average cost of this weighted basket is measured in terms of prices in a base year, such as 2011–12, which is made equal to 100 points.

Consumer sovereignty is the ability of the consumer in a competitive market economy to direct or allocate resources. Producers must simply respond to the 'dollar votes' cast by consumers or go bankrupt. The opposite approach is to have government sovereignty.

Consumption spending is expenditure designed to satisfy immediate needs and wants. It consists of private household consumption (C) and government consumption (G_1) spending on goods and services.

Contemporary market capitalist economy is a modern-day market economy where decisions essentially made by market forces or the price mechanism are modified by government guidance, unions, advertising and business. In such an economy (e.g. Australia, the United Kingdom, the United States, Japan, Canada, New Zealand and Germany) the conditions required for pure competition are, hence, not entirely met.

Contraction is a downturn phase of the business cycle associated with rising unemployment, slowing output levels, often lower inflation, and a stronger current account and exchange rate (as occurred in 2019–20). A contraction may lead to a recession or depression if it is sufficiently severe. It is usually caused by a drop in aggregate demand. In response, governments often use more expansionary

aggregate demand policies to help lift AD and reduce the severity of the slowdown.

Contractionary budget is one where the government uses measures to deliberately slow aggregate demand by a fall in the value of its proposed outlays relative to its receipts. Typically, a rise in the size of a budget surplus is seen as more contractionary (e.g. 2006–08), but a reduction in the size of the budget deficit as seen between 2020–21 and 2022–23, might be seen as less expansionary. *See* budget surplus; contractionary monetary policy stance.

Contractionary or **restrictive monetary policy stance** is used to slow or reduce aggregate demand and economic activity by rises in the cash rate target to a level above 3.0 per cent. Such a policy may be appropriate for dealing with booms and rapid demand inflation.

Conventional monetary policy involves the RBA countercyclically changing the cash rate in the short-term money market to indirectly alter other interest rates and AD. Typically this means that the RBA would drive up interest rates in booms and cut them during slowdowns.

Core rate of inflation is the underlying inflation rate that excludes the prices of volatile items that are affected by one-off events. The RBA Board often prefers to use this measure when making its policy decisions.

Corporatisation occurs when government business enterprises (GBEs) are expected to be run along the lines of private companies — to be fully accountable for expenditures, to pay tax, to seek profit maximisation and to raise efficiency. This has been a feature of recent microeconomic reforms in the public sector.

Cost–benefit analysis is performed by adding up all the anticipated direct and indirect costs of a particular decision (e.g. resource and monetary costs, time, opportunity costs) in both the short and long terms, and comparing these against the total value of the anticipated benefits. The aim is to ensure that the benefits of a decision will outweigh the costs (including the benefits forgone or opportunity costs of other decisions or uses of resources).

Cost inflation occurs when rising costs of production (such as wages, salaries, profits, rents, interest rates, the cost of imported inputs, and government charges and taxes) cause prices to be increased so that firms can protect their profits. Unlike demand inflation, this may occur even under conditions of quite high unemployment. Cost inflation is sometimes termed 'cost-push' inflation.

Costs of production are business expenses involved in producing goods and services, such as wages for labour, interest paid on borrowed capital, imported materials and equipment, and rent paid on property. The final price at which a good or service sells will partly reflect how much it costs to produce. Rising production costs can cause the aggregate supply line to shift inwards if such rises erode the profit margins of firms. This causes the economy to reach equilibrium at a higher level of prices and a lower level of output. *See* aggregate supply policies; microeconomic reforms.

Countercyclical budgetary policies are aggregate demand budgetary and monetary policies designed to manipulate the strength of AD in a countercyclical way. Through the use of automatic and discretionary changes in budget receipts relative to outlays, these stabilisers can help iron out or reduce the severity of inflationary booms and recessions; that is, they are used to make the business cycle less severe. Keynesian economic theory suggested that during slowdowns or recessions, expansionary budget deficits (e.g. tax cuts and rises in outlays) typically should be used to boost aggregate demand. However, during inflationary booms, aggregate demand should be slowed using contractionary budgetary measures (e.g. higher taxes and lower outlays leading to bigger budget surpluses). *See* aggregate demand management policies; automatic stabilisers; budgetary policy.

Countercyclical monetary policy means that the RBA uses countercyclical changes in the level of interest rates to help stabilise AD and economic activity. Hence, during a slowdown, the RBA will cut interest rates (i.e. adopt a more expansionary stance) to increase AD and lift economic activity, but raise interest rates (i.e. adopt a less expansionary or more contractionary stance) during an inflationary upturn or boom to slow AD and control inflation.

CPI *See* consumer price index.

Credit rating relates to the riskiness of a borrower. For example, Australia has an AAA credit rating because we are unlikely to default on the repayment of debt. This means we can borrow at relatively lower interest rates. In contrast, Sri Lanka only has a CCC+ credit rating.

Credits on the balance of payments account are money received from overseas for exports of goods

and services, primary incomes, secondary incomes and capital inflow. Credits are regarded as a positive item or receipt on Australia's balance of payments account.

Crowding in theory is when the federal government runs large contractionary budget surpluses that increase the level of public sector savings. This tends to put downward pressure on domestic interest rates at a time when the RBA may want to push up the cash rate to control inflation. If this occurs, budgetary policy can reduce the effectiveness of monetary policy in managing the level of AD and economic activity.

Crowding out theory suggests that there may be a clash during a recession or slowdown between large, expansionary budget deficits financed locally to increase aggregate demand, and an expansionary monetary policy designed to bring down interest rates to raise aggregate demand. When the government borrows locally, the demand for and price of credit tends to rise (higher interest rates), depriving the private sector of access to funds to finance consumption and investment. This upward pressure on interest rates caused by the budget tends to make the RBA's efforts to lower interest rates less effective. Stabilisation policy thus becomes less effective.

Cryptocurrency markets involve buyers and sellers of virtual or digital currencies. Trading these currencies is often seen as an investment where profits can be made as a result of changes in their price over a period of time.

Current account *See* balance of payments account.

Current account deficit (CAD) is where the total value of current payments (debits) for goods, services, primary incomes and secondary incomes exceeds the total value of equivalent receipts (credits).

Current account surplus (CAS) is where the total annual value of credits exceeds the value of debits for goods, services, primary incomes and secondary incomes.

Current expenditure *See* consumer goods and services; consumption spending.

Current spending *See* consumer goods and services; consumption spending.

Current transactions on Australia's balance of payment account involve credits and debits for merchandise, services, primary incomes and secondary incomes involved in international transactions. *See* balance of payments account.

Cyclical budget deficit occurs when there is a slowdown in the level of economic activity which causes budget receipts to automatically rise and outlays to fall. *See* automatic stabilisers.

Cyclical cause of changes in economic growth refers to how the rate of economic growth rises and falls cyclically with the level of spending or AD, in response to changes in aggregate demand conditions that affect total spending. This causes booms and recessions. *See* boom; business cycle; recession

Cyclical cause of inflation refers to how, during an upswing in the business cycle or boom, there is often a cyclical increase in the inflation rate caused by the pressure of rising spending and widespread shortages of goods and services because there is no (or limited) unused capacity available to permit an increase in production. This represents demand inflation. *See* boom; demand inflation.

Cyclical causes of inequity in income distribution refers to how both unemployment and inflation can lead to reduced equity or access to basic goods and services for some individuals. Unemployment lowers incomes and purchasing power, and causes wealth to be run down. Inflation makes basic goods and services less affordable for those whose incomes rise more slowly than inflation.

Cyclical current account deficit (CAD) refers to how, when there is a rise in the CAD:GDP ratio resulting from a periodic rise in the level of economic activity, the cause is a cyclical rise in spending on imports and a reduction in the level of our exportable surplus.

Cyclical influences on the current account reflect stronger or weaker aggregate demand conditions affecting the ups and downs in the level of economic activity. For example, when local spending is cyclically strong (e.g. perhaps due to increased consumer or business confidence), typically expenditure on imports rises and our exportable surplus falls. This weakens the current account balance. In contrast, when there is strong economic activity overseas and their spending on our exports rises, this tends to cyclically strengthen our current account balance.

Cyclical unemployment is unemployment caused when there is not enough aggregate demand (due to weakened demand-side conditions), as occurs during and following slowdowns or recessions (e.g. 2020) and depressions (1929–33). In recent times, cyclical unemployment typically exists when the overall unemployment rate is above perhaps 4.5 per cent. Governments try to minimise this type

of unemployment in their quest to achieve the goal of full employment. They do this using expansionary macroeconomic budgetary and monetary policies to accelerate or lift the level of aggregate demand. This causes firms to grow their output and employ more staff, lowering cyclical unemployment.

Debits on Australia's balance of payments account are for imports of merchandise and services, primary incomes, secondary incomes and capital outflow. *See* balance of payments account.

Debt repayment exists when credit is borrowed by governments or individuals. It can be a burden and involves not only paying regular interest, but also returning the original amount of money or principal borrowed.

Decentralised wage fixing is a system where wages and working conditions applicable to employees are decided by negotiations on a firm-by-firm basis (enterprise level), as opposed to being set uniformly by some central government institution, such as the Fair Work Commission. Decentralisation in wage fixing has been extended since 1991, when enterprise bargaining was officially sanctioned. These days, enterprise agreements cover over 85 per cent of all employees.

Decision makers are the economic agents and institutions that make decisions about the economic questions involving resource allocation, production methods and income distribution. Each country has a unique combination of institutions for making decisions. In Australia, important decision makers include the consumer operating in the marketplace, governments, unions, business monopolies and oligopolies, advertising, pressure groups and traditions. However, the relative importance of each varies from country to country and from time to time.

Deficit budget *See* budget deficit; expansionary budget; government borrowing.

Deficit on the balance of payments *See* balance of payments account.

Deficit on the balance of payments current account is when the value of total debits exceeds the value of total credits for goods, services, primary incomes and secondary incomes in international transactions. *See* balance of payments account.

Deflation is a term describing generally falling prices over a period of time. It can happen in recessions.

Deflationary or contractionary budget often involves a budget surplus with increases in the value of government receipts relative to outlays to reduce the level of aggregate demand, economic activity and demand inflation. Such a budget may be appropriate during booms and periods of demand inflation.

Demand is a need or want of consumers expressed by the spending of income. More specifically, demand is the quantity of a particular good or service that is purchased at a given price. Demand for a particular commodity decreases as the price increases (an inverse relationship). *See* law of demand.

Demand curve or **line** shows that quantity of a product that consumers are willing to buy varies inversely with price. If plotted graphically, it has a negative slope and illustrates the law of demand. For instance, a rise in price causes the quantity demanded to contract, while a fall in price causes it to expand. This gives the line a negative slope down and to the right. Movements 'along' the demand line are caused by changes in price. *See* demand.

Demand inflation often exists in booms and occurs when general prices rise because spending or aggregate demand runs ahead of production or aggregate supply in an economy with full employment or little unused productive capacity available in the economy. There are widespread shortages of goods and services. Rising prices act as a safety valve to ration out scarce goods and services among competing buyers. Demand inflation mainly occurs when aggregate demand expands quickly under conditions where resources are already fully employed or utilised.

Demand management policies *See* aggregate demand management policies; budgetary policy; countercyclical budgetary policies; macroeconomic policy; monetary policy.

Demand-side factors or **conditions** at the macroeconomic level are the influences on the total level of expenditure or aggregate demand (the things that affect the level of AD, consisting of C, I, G and net X). Examples of demand-side factors include consumer confidence, business confidence, interest rates, the budget outcome, the Australian dollar, terms of trade and overseas economic conditions. By changing the growth of AD, the levels of sales, stocks and production alter accordingly. *See* aggregate demand factors or conditions.

Demand-side theory was developed by economist, John Maynard Keynes. It attributes changes in a nation's economic activity, production, employment and prices to changes in the level of aggregate

demand or total spending. Here spending on locally made goods and services (C + I + G + X – M) responds to changes in aggregate demand-side factors such as changes in disposable income, savings ratios, interest rates, the terms of trade, the exchange rate, consumer confidence, business confidence, government policy and overseas economic activity.

Demand–supply diagrams are used in the study of microeconomics and illustrate the behaviour of buyers and sellers of a particular good or service in a market and how prices are determined.

Demerit goods are those where their production and/or consumption result in negative externalities that lower the general wellbeing of society (e.g. pollution caused by the production and consumption of brown coal generated electricity).

Democracy is a transparent political system that allows ordinary people to have a free choice, every few years, of who represents them in parliament.

Demographic change involves trends in a nation's population size and aspects of its distribution measured over a period of time.

Demography is the study of population. It might include looking at Australia's population distribution, the birth and death rates, and the immigration and emigration rates.

Depreciation of the exchange rate occurs when the currency of a country is exchanged for less of another currency than previously. It is caused by a decrease in the demand for the currency relative to its supply in the foreign exchange market. For example, exchange rate before depreciation: A$100 = US$100; exchange rate after depreciation: A$100 = US$80. This causes a nation's exports to become relatively cheaper and more attractive overseas, while imports become more expensive and less attractive, thereby tending to strengthen the current account balance.

Depression is a large economic downturn, such as those that occurred in 1889–93 and 1929–33, caused by a significant fall in the level of aggregate demand. This results in large cutbacks in production, in turn resulting in high levels of unemployment and on occasions falling prices.

Deregulation is the reduction of unnecessary, direct government controls, restrictions and supervision in various areas of the economy. In Australia between the 1980s and 2010s, there were moves to deregulate aspects of the economy such as the capital markets; along with other markets for labour, telecommunications, airlines, ports and shipping, water, power, primary produce and retail. This is regarded as part of microeconomic policy.

Deregulation of the financial system involves removing unnecessary government restrictions and other impediments to efficiency by creating a more competitive financial system. Since the 2008–09 global financial crisis (GFC), there was some re-regulation to make the system more robust in the face of external shocks.

Deregulation of the labour market is when the government reduces its controls over wage levels and working conditions. In particular, rather than having direct and nationally uniform, government regulation of wages and working conditions, there is increased reliance on firm by firm, enterprise bargaining. Here changes in wages and conditions more closely reflect changes in worker productivity and the value of work as determined by a firm's particular demand and supply conditions.

Derived demand is when a resource is only wanted when another good or service is purchased that uses that resource as an input for its production.

Development is nowadays seen as the economic, social, political and institutional changes needed in low-income countries to improve material and non-material elements affecting the quality of daily life.

Development economics uses economic theory to come up with practical strategies and policies designed to increase development and improve the overall living standards of people in low-income nations.

Direct Action climate change policy was the Coalition government's carbon pollution reduction measure used since 2014 and designed to help alleviate climate change. It involves two main parts:

1. There are *financial incentives* for firms to reduce their emissions. This is centred on a $2.5 billion emissions reduction fund (ERF). In 2019, an additional $2 billion was added to the fund and the name re-badged. It is now called the Climate Solutions Fund or CSF. It seeks to encourage firms to bid for money under a reverse auction process in which the lowest cost applications for maximum emissions reductions will win grants — from projects for increasing energy efficiency in manufacturing and buildings, to planting trees.
2. Businesses are required to have *emissions below a set baseline*.

Direct benefits include the income supplements or cash transfers paid by governments to the neediest

individuals through social welfare (e.g. the dole, payments to the unemployed, sick, aged and families). These are usually means or assets tested to target the neediest in the community and to reduce the cost to taxpayers. They reduce the income gap between high- and low-paid individuals. They also increase the disposable income of recipients so they can better afford to purchase basic goods and services.

Direct investment is the movement of money capital into Australia from overseas, or out of Australia to overseas, associated with setting up a new business, buying an existing business, or a takeover or merger. For Australia, the value of direct foreign investment coming in from overseas is recorded as a credit on the balance of payments financial account, and this is greater than our investment abroad going out that is recorded as a debit.

Direct taxes are government budget revenue measures levied as a proportion of income received by individuals and firms — for example, personal income tax (PAYG), capital gains tax and company tax.

Direction of international transactions refers to the countries with whom Australia exchanges goods, services and money capital.

Dirty floating exchange rate occurs in the foreign exchange market when the RBA becomes a net buyer or net seller of the Australian dollar with the intention of lifting or depressing the exchange rate.

Discretionary stabilisers or **structural stabilisers** are aspects of tax and outlays in the budget that are *deliberately* changed through a decision announced by the treasurer. Examples might include reductions in the rates of personal and company tax, a change in the generosity of welfare payments or the announcement of increased budget outlays on infrastructure. Sometimes they are used to help iron out fluctuations in aggregate demand and economic activity. These can reinforce the operation of automatic stabilisers. For instance, in a prolonged and severe downturn or recession, the treasurer may decide to reduce marginal tax rates and/or increase particular government outlays (such as increased spending on infrastructure projects and special one-off payments to households) to help boost AD and economic activity. Unlike automatic stabilisers (that operate quickly on AD without significant time lags), discretionary stabilisers need to be deliberately altered and announced, sometimes making the implementation and impact time lags quite long, especially in the case of national infrastructure projects. For contrast, *see* automatic stabilisers.

Disguised unemployment *See* underemployment.

Disincentives are used by the government to discourage certain types of consumer and business behaviour. Examples include the imposition of taxes or the application of government regulations, laws and fines.

Disinflation is a term to describe a situation where there has been a slowdown in the rate of inflation, and prices are rising more gently than previously — for example, the inflation rate slows from 3 per cent to 2 per cent a year.

Disposable income is income available for spending after the receipt of welfare benefits and deduction of personal taxes. This is a major determinant of the level of private consumption spending (C) and imports (M) and hence is a demand-side factor.

Distribution of income *See* income distribution.

Distribution of the population refers to the way our people are spread between different age groups, genders, ethnic backgrounds, states and regions.

Dole is the unemployment benefit paid by the government. *See* welfare benefits.

Domestic economic stability is an ideal internal situation for an economy where there is the simultaneous achievement of three government domestic macroeconomic goals, namely:

1. strong and sustainable economic growth (the fastest rise in GDP, perhaps around 3 per cent, that does not cause inflation or undermine the achievement of other goals)
2. low and stable inflation (average inflation rate of between 2–3 per cent a year over time)
3. full employment (the lowest unemployment rate, perhaps 4.0–4.5 per cent, that does not increase inflation).

Domestic macroeconomic goals include three key internal objectives — strong and sustainable economic growth (the fastest annual rise in GDP, perhaps 3 per cent, that does not accelerate inflation or undermine the achievement of other goals), low and stable inflation (where general consumer prices are rising by between 2–3 per cent on average per year) and full employment (the lowest rate of unemployment, perhaps 4.0–4.5 per cent, that does not accelerate inflation). The achievement of domestic economic stability, creates conditions that are mostly optimal for improved material and non-material living standards.

Dumping refers to the actions of an overseas competitor who sells a good below its cost price,

thus damaging local producers. This is regarded as unfair competition.

Duration of unemployment shows the average number of weeks spent by the unemployed before work is found.

Dynamic efficiency relates to how quickly firms can change the way resources are used in response to changing technology, shifting tastes and preferences by consumers, for particular types of goods and services. *See* efficiency.

Earned income is a reward for labour's contribution towards production. Its most common form is wages.

Earnings generally include wages, salaries and special allowances paid to labour.

Ecological footprint is a measure of environmental sustainability based on the *world's limited carrying capacity*. It involves measuring the quantity of environmental resources needed to produce the quantity of goods and services required to support a particular lifestyle or living standard.

E-commerce market is where firms register on and use the internet to buy and sell goods and/or services.

Economic activity relates to the production of goods and services. Changes in the level of economic activity affect the rates of economic growth, unemployment, incomes and inflation. The level of economic activity relates to the state or pace at which the economy is operating; it may experience boom (which perhaps occurred in 2007–08), recession (e.g. in 2019–20), depression (1929–33), internal stability, or stagflation (such as in 1982–83). For example, a very high level of economic activity is often indicated by overfull employment (unemployment less than the NAIRU of around 4.0–4.5 per cent), unsustainably fast economic growth in GDP (regularly exceeding 4.0–5.0 per cent), rapid inflation and a large current account deficit. *See* boom; depression; Keynes, John Maynard; recession; stagflation.

Economic agents include those who make decisions in an economy. In Australia for example, they include consumers, producers, governments and the RBA.

Economic balance or stability is the ideal level of domestic economic activity — neither too strong, causing demand or cost inflation, nor too weak, leading to cyclical unemployment. In other words, simultaneously there is low inflation, strong economic growth and full employment.

Economic choices involve decisions made by individuals, firms and/or governments about which needs and wants to satisfy, and what types of goods and services to produce and buy. Choices arise because of the economic problem of scarcity.

Economic efficiency means that resources are used to produce particular goods and services that maximise the general satisfaction of society's needs and wants, and wellbeing.

Economic globalisation *See* globalisation.

Economic goals of the Australian government are used as a means for improving general living standards. Currently the federal government has five main economic goals (although these may change in importance over time):

1. *Goal of low and stable inflation* (also called price stability), where rapid inflation is avoided and prices are rising by an average of between 2–3 per cent over time. These rates should normally help to ensure that other economic goals of government, such as price and external stability, equity in the distribution of income, long-term economic and employment growth, are not jeopardised or undermined.
2. *Goal of strong and sustainable economic growth*, is the fastest rise in real GDP, perhaps averaging 3 per cent or a little more, that does not accelerate inflation or undermine the achievement of other economic and environmental goals. Rates above this target band are likely to worsen the CAD, unduly damage the natural environment and cause faster inflation, while lower rates may cause higher unemployment and reduced equity.
3. *Goal of full employment*, is the lowest rate of unemployment, today around 4.0–4.5 per cent, that does not accelerate inflation (NAIRU). Here there will be no cyclical unemployment due to recession, but there will be some natural unemployment due to structural, frictional, seasonal and hard-core factors. Rates below this target will accelerate inflation, while higher rates are a sign of a weak economy.
4. *Goal of external stability*, where Australia 'pays its way' in its international trade and financial dealings, and is internationally competitive.
5. *Goal of an equitable distribution of personal income*, where everyone has access to the basic goods and services needed to avoid poverty and maintain basic material living standards at a level deemed generally acceptable to society. It does

not imply that there should be equality, but that there should be a *fair* final distribution of income. *See* individual listings for each goal.

Economic growth occurs when a nation increases the volume (real value) of goods and services produced over a period of time. The most commonly used general measure of this is the annual rate of growth in real GDP, but this measure has weaknesses. With this in mind, other indicators have been proposed. One of the government's economic goals in Australia is to promote a strong and sustainable (economically and environmentally) rate of growth in annual output averaging around a 3 per cent rise in GDP, because this helps to generate jobs, improves material welfare and eases social tensions. Nevertheless, it can also result in negative externalities such as pollution and reduced leisure. *See* goal of strong and sustainable economic growth.

Economic infrastructure involves the provision of capital equipment, such as roads, railways, telecommunications and water supply, often by governments, that is mainly used collectively by firms to produce other goods and services. Improved infrastructure is regarded as a favourable aggregate supply factor, but spending on infrastructure will also strengthen AD.

Economic instability is a term used to describe an unfavourable internal or external economic conditions. *See* boom; depression; external stability; internal stability; recession; stagflation.

Economic management occurs when the government uses aggregate demand and aggregate supply policies designed to help promote:

1. domestic economic stability (the simultaneous achievement of the goals of low inflation, strong and sustainable economic growth and full employment)
2. international competitiveness
3. an equitable distribution of personal income.

The ultimate aim of promoting these goals is to improve Australian living standards.

Economic or market power is the capacity to influence the economic outcomes in decision making. When there are monopolies and oligopolies, weak competition and high market concentration mean that some firms are price makers rather than price takers. *See* business concentration; decision makers.

Economic policies are measures or strategies used by the government to pursue economic and other goals. These include two main categories:

1. aggregate demand management or macroeconomic budgetary policy and monetary policy
2. aggregate supply management policies including aspects of budgetary policy, immigration policies, trade liberalisation policies, and environmental policies.

Economic problem is the basic challenge facing society involving relative scarcity, where needs and wants are unlimited relative to the scarce or limited resources available for production. This means that not all wants can be satisfied. Choices or decisions need to be made about how to allocate limited resources between competing uses. Not all wants can be satisfied. *See* scarcity.

Economic prosperity is taken to mean having high incomes per person and being able to consume or purchase more goods and services.

Economic stabilisation is the process of deliberately using selected government aggregate demand policies (budgetary and monetary policies), applied in a countercyclical way, to help iron out cyclical or short-term fluctuations in the level of economic activity. This means that these policies become more contractionary when AD and economic activity are too strong, and expansionary when they are too weak. *See* economic stability.

Economic stability is the avoidance of rapid inflation (booms), high unemployment and falling production (recession or depression). *See* economic activity; economic balance or stability.

Economic system is a collection of institutions involved in directing and organising the production and distribution of goods, services and incomes in an economy. There are four main types:

1. market economies
2. mixed economies
3. planned economies
4. traditional economies.

More specifically, the economic system answers three important questions: (1) 'what and how much to produce', (2) 'how to produce', and (3) 'for whom to produce'.

Economic theory describes the beliefs and tentative predictions in explaining economic relationships and conditions such as booms and recessions. There are the theories of economists such as J.M. Keynes, J.K. Galbraith, M. Friedman, A. Laffer and A. Smith. *See* Keynes, John Maynard.

Economic welfare or wellbeing involves the level of material wellbeing of individuals reflecting per capita incomes and the quantities of goods and

services available for consumption. One commonly used although rather rough indicator of the average level of national economic welfare is:

$$\text{Average economic welfare (\$)} = \frac{\text{Real GDP (\$)}}{\text{Total population size}}$$

See standard of living.

Economics is a social science that studies how to use our limited resources in ways that help to make individuals and society better off materially, so that current and future living standards can be increased.

Economies of large-scale production occur when larger firms produce goods and services more cheaply than smaller ones. Economies of large scale are the reductions in average per-unit costs of production as a firm grows its annual production volumes. Here, costs, such as advertising, raw materials, management, product development and research, and some equipment can be spread more thinly over larger volumes.

Economists are practitioners of the study of economics, which involves identifying an issue or problem, collecting data or facts and observations, drawing out generalisations and theories, and making policy recommendations. *See* economic theory; Keynes, John Maynard.

Economy *See* economic system.

EEC or **EU** *See* European Economic Community or European Union.

Efficiency can be equated with productivity and related to the value of goods and services produced per year per unit of input or resources used. There are *four* main types of efficiency:

1. *allocative efficiency*, ensuring that resources are used for producing the type of output that best satisfies society's needs and wants, and general wellbeing
2. *productive (technical) efficiency*, firms using the lowest-cost method of production by employing 'best practice' and minimising the resources used
3. *intertemporal efficiency*, where there is an optimum allocation of resources between their use for current consumption as opposed to use by future generations
4. *dynamic efficiency*, relates to how quickly resources can be moved from one use to another in responses to changing consumer preferences.

Efficient allocation of resources occurs when productive inputs are used in a way that maximises the overall satisfaction of society's needs and wants. When resources are allocated efficiently, it is not possible to lift national output (GDP) further by changing the way resources are used. Allocating resources to areas of comparative cost advantage also helps to satisfy more wants by maximising efficiency and production and minimising opportunity costs.

Elasticity is a concept that describes the degree of responsiveness of the quantity demanded or supplied, given a change in a product's price.

Embargo is a ban on the trade of certain goods, services or movements of capital.

Emissions trading scheme (ETS) is a market-based environmental policy that can be used to affect aggregate supply. It is designed to help reduce greenhouse gas emissions by putting a price on pollution, thereby changing the behaviour of producers and consumers of goods and services. It means that negative externalities or costs paid by third parties are internalised, reducing market failure. Essentially, the cost of each tonne of carbon dioxide (or other gases) would be established at equilibrium, in a carbon emissions market by the forces of demand (from buyers) and supply (from sellers). Those wanting to pollute would need to purchase a sufficient quantity of carbon emissions permits at the going market price (e.g. perhaps around $30 for each one-tonne permit) from those whose low-polluting economic activities generated a surplus of permits. *See* carbon tax.

Employed persons are those aged 15 and over who have jobs and work for money.

Employment involves those members of the labour force with paid jobs who work for more than one hour per week. The exception occurs in the case of family members working without pay in the family business for 15 or more hours per week (these people are also regarded as employed).

Enterprise bargaining is a system where wages and working conditions are negotiated between workers and the employer at each individual workplace. This system was introduced in the early 1990s as part of the deregulation of the labour market and is now widely used. It represents a government aggregate supply policy designed to help boost productive capacity and the potential rate of economic growth by increasing flexibility for businesses and workers to negotiate wages on a firm-by-firm basis that better reflects an employee's efficiency, value or worth.

Entrepreneur is a person who has business managerial skills — one who is prepared to take risks and organise production processes, such as

Kerry Stokes, Janet Holmes à Court and Rupert Murdoch.

Environmental economics looks at the financial side of environmental protection and how various policies can improve outcomes.

Environmental footprint is how human activity impacts on the natural environment; for example, CO_2 emissions, waste disposal, water and energy consumption, global warming and resource depletion.

Environmental natural resources or **common access resources** are the inputs from nature that are used for human survival and the production of goods and services. They include air, oceans, rivers, forests, wild fish stocks, biodiversity, and ecosystems. These are non-excludable, so although valuable, they have no price and are regarded as being free. This means that the prices of goods that have used them for production, do not reflect the scarcity or value of these resources. These resources end up deteriorating in quality and represent an example of market failure.

Environmental Performance Index (EPI) is a general measure of environmental sustainability. It uses data relating to environmental health (based on air quality, water quality, heavy metals, biodiversity, forests and fisheries), as well the vitality of ecosystems (based on CO_2 and other greenhouse gas emissions, treatment of water waste, and nitrogen management in agriculture).

Environmental policies are aggregate supply-side government measures designed to reduce environmental damage and climate change. Examples of environmental policies might include a market-based carbon emissions trading scheme (ETS) or alternatively, the imposition of a carbon tax placed on the economic activities that generate CO_2 emissions. In both cases, the intention is to reduce negative externalities as a market failure, and internalise the costs of pollution so that producers and consumers generating emissions pay, rather than these being transferred to some third party. A consequence of putting a price on emissions, is to create financial incentives. Firms will find it more profitable to produce cleaner products using better technologies that create lower emissions. With higher prices for polluting products, consumers too would look for cheaper cleaner products, reducing emissions. Another example of environmental policy is mandated renewable energy targets that may be pursued using government subsidies to make their use more attractive.

Environmental resources include the gifts of nature like clean air, stable climatic conditions, unpolluted oceans (stocked with wild fish) and a healthy stratosphere. Environmental resources are communally used and belong to no particular nation. Since they are nobody's to own or sell, they are viewed as being free goods. Because of this, they often have no market price to act as a barometer of their relative scarcity. This makes them different from, say, scarce minerals, which can be readily sold and for which market prices rise to reflect their increasing scarcity.

Environmental sustainability means that increasing economic prosperity can be continued indefinitely into the future.

Equilibrium is a resting point in a market where the forces of supply and demand are equally matched, and where the market is 'cleared'. At this point there is agreement between buyers and sellers of goods and services, so there is neither a market glut nor shortage. The price at which this takes place is called the 'equilibrium price' and the volume involved is called the 'equilibrium quantity' (the quantity supplied exactly equals the quantity demanded so there is neither a glut nor shortage).

Equilibrium price *See* equilibrium.

Equilibrium quantity *See* equilibrium.

Equity in the distribution of income as a government goal is one of the federal government's goals. It is where everyone has access to essential goods and services needed to avoid absolute poverty and to guarantee basic material living standards at a level deemed generally acceptable to society. It does not imply that there should be equality, but that there should be a *fair* final distribution of personal income. Government policies used to pursue this goal include progressive taxes, welfare benefits or income support, provision of affordable government services and maintaining the minimum wage.

Equivalence scales are used to make adjustments to the incomes of individuals to reflect differences in the personal circumstances of various types of income units; for example, a single person; a couple without children.

Equivalised disposable income is the level of income from private sources (such as wages) and welfare after payment of personal income tax and special adjustments to reflect family circumstances (e.g. family size and age). *See* disposable income.

Ethical issues are related to personal attitudes and values about what is seen as right or wrong, good or bad, desirable or undesirable.

European Union (EU) was established in 1993 and was designed to promote economic, political and defence unification. There is a common currency called the Euro, and no tariffs apply on trade between nations. Today the EU consists of 27 nations including Germany, Belgium, France, Italy, Austria, Bulgaria, Cyprus, the Czech Republic, Croatia, Denmark, Estonia, Malta, Finland, Greece, Hungary, Ireland, Latvia, Lithuania, the Netherlands, Poland, Purtugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden and Luxembourg. The UK left the EU in 2020.

Exchange rate is the ratio at which one nation's currency is exchanged or swapped for that of another. For example, in July 2014 and July 2022, the following exchange rates applied to the Australian dollar:

	July 2014	July 2022
A$1 =	0.95 US dollars	US$0.68
A$1 =	0.55 Pounds sterling	£0.56
A$1 =	95.93 Yen	¥92.20
A$1 =	0.69 Euro	€0.65

The exchange rate affects the relative attractiveness of foreign transactions including exports and imports, that are recorded on the balance of payments account. Prior to 12 December 1983, Australia's exchange rate was 'fixed' or set by the Reserve Bank and was seldom changed. Since then, Australia has had a floating or flexible exchange rate. Under this system, the forces of supply relative to demand for a nation's currency in the market for foreign exchange have primarily decided the exchange rate. Changes in the exchange rate can affect the levels of both aggregate demand by influencing net export spending, and aggregate supply by changing production costs and international competitiveness.

Exchange rate effect is a transmission mechanism of monetary policy whereby a change in interest rates relative to those in other countries, affects the decisions of international investors, and hence their levels of capital inflow and outflow. In turn, this affects both the demand and supply of the A$ in the foreign exchange market, thereby impacting the exchange rate, the values of exports and imports (net X), and the AD.

Excise tax is an indirect tax levied on selected goods such as alcohol, tobacco and petrol at the point of sale. Increasing this lifts the price of excised goods, and alters resource allocation and government revenue.

Excludable goods are those where an individual who refuses to pay for a good can be prevented from consuming that good. This applied to the items we purchase at retail stores.

Expansion is a period in which levels of national production and employment are rising (e.g. 2020–21–22).

Expansionary budget is one where the government increases aggregate demand by a rise in the value of its outlays relative to its receipts (e.g. 2019–20). For example, bigger budget deficit expressed as a percentage of GDP (compared with the previous year) is usually seen as more expansionary, while a reduction in the deficit could be seen as less expansionary. *See* budget deficit; expansionary policy.

Expansionary monetary policy is when the RBA attempts to boost AD through cuts in official interest rates to low levels (e.g. 2012–21). For example, a cut in the cash rate target from 3.0 per cent to 1.0 per cent is highly accommodative or expansionary, stimulating AD. Such actions are appropriate for dealing with recessions and unemployment. *See* monetary policy.

Expansionary policy is typically used during a slowdown or recession when the government deliberately attempts to boost AD, stimulate economic activity and reduce cyclical unemployment. Expansionary aggregate demand policies might include bigger budget deficits (such as occurred in 2019–21), along with when the RBA cuts its cash rate target in the short-term money market (a loose or accommodative monetary policy stance as between 2011 and May 2022). *See* expansionary budget; expansionary monetary policy.

Expenditure is an alternative word for 'spending' or 'demand'. In the short term, this is a major determinant of the level of economic activity. Expenditure on GDP = $(C + I) + (G_1 + G_2) + (X - M)$. *See* aggregate demand.

Export price index is a measure of changes in the average prices received for important exports.

Export spending (X) represents expenditure by people overseas on Australian-made goods and services, which is designed to help satisfy their needs and wants (e.g. wool, minerals, travel).

Exports are goods and services sold to overseas countries. These are regarded as credit or receipts on the balance of payments current account.

External balance *See* external stability.

External stability is a government goal where Australia is internationally competitive and 'pays its way' in its international trade and financial dealings, without the onset of adverse developments like a large CAD:GDP ratio, dramatic and unwanted swings in the exchange rate, unsustainable rises in the net foreign debt (NFD).

Externalities are positive benefits or negative costs passed on to third parties not directly involved in the production or consumption of particular types of goods or services. *See* negative externalities.

Factor income is a reward paid to factors of production for supplying resources to firms.

Factor markets are institutions where various resources or factors of production are bought and sold at a price that reflects their relative scarcity.

Factors or **conditions of demand** are the non-price influences on the quantity of a particular good or service that buyers are prepared to purchase or demand at a given price (e.g. changes in disposable income, tastes, confidence, interest rates, seasons, the price of substitutes and complements). When demand conditions change, this shifts the whole demand line to the right (an increase in the quantity demanded at a given price) or to the left (a decrease in the quantity demanded at a given price) of the original demand line, thereby affecting the equilibrium price.

Factors or **conditions of supply** represent the non-price influences on the quantity of a particular good or service that sellers are prepared to produce or sell at a given price (e.g. production costs like wages, electricity, materials, interest rates along with government taxes, and climatic conditions). When supply conditions change, this shifts the whole supply line to the right (an increase in the quantity supplied at a given price) or to the left (a decrease in the quantity supplied at a given price), thereby affecting the equilibrium price.

Factors of production *See* resources.

Fair or **equitable distribution of income** *See* assets test; equity in the distribution of income as a government goal; income distribution; means test; poverty; progressive taxes; social security or welfare.

Fair Work Commission (FWC) sets minimum wages and conditions for workers not on enterprise agreements. In making its annual wage decisions, the FWC takes into account:

- the promotion of the economic prosperity of the people of Australia
- the capacity for the unemployed and low paid to obtain and remain in employment
- employment and competitiveness across the economy
- providing a safety net for the low paid
- providing minimum wages for junior employees to whom training arrangements apply and employees with disabilities that ensure those employees are competitive in the labour market.

See minimum wage.

Family allowances are cash or transfer payments from the government to the neediest families to assist with the costs associated with raising dependent children in specific circumstances.

Favourable aggregate supply factors are those that grow an economy's productive capacity and potential GDP. They cause firms to become more willing and able to produce goods and services than previously, perhaps due to lower costs, higher profits and reduced closures.

Favourable balance of net goods occurs when, over a period of time, the value of imports of goods is less than the value of export of goods on Australia's balance of payments account.

Favourable terms of trade *See* terms of trade index.

Final distribution of income is how private or market income is shared between individuals after allowing for all government redistribution by means of welfare benefits, the provision of free or subsidised services, direct progressive taxes and indirect taxes. Final income determines the access of individuals to goods and services.

Final income refers to the level of market or private income after allowing for the effects of government income redistribution policies including welfare, free or subsidised public services, the payment of direct personal income tax and the payment of indirect taxes.

Final markets are the meeting place for buyers and sellers of particular final goods and services produced by a nation each year. Together, these market forces negotiate final prices for each type of good and service. These are distinct from resource and intermediate markets.

Financial constraints represent a situation where the lack of money or finance limits or restricts a certain action or policy being implemented. In a slowdown, financial or budgetary constraints and fear of large

budget deficits, and a rise in government debt and the burden on future generations for instance, can help to prevent governments from making excessive tax cuts and/or being over-generous with its spending on infrastructure, education, and subsidies.

Financial institutions are organisations, such as banks, building societies and insurance companies, that operate in the capital market as borrowers and lenders of money.

Financial market *See* capital market; financial institutions; financial sector.

Financial sector is that part of the economy concerned with the collection of savings and the relending of these to borrowers and investors. It comprises banks and non-bank financial institutions, such as building societies.

Financing the deficit budget *See* government borrowing.

First Home Loan Deposit Scheme is used by the government to help 10 000 eligible low-income buyers to purchase their first home sooner with a saved deposit of as little as 5 per cent of the purchase price (normally the required deposit for a bank loan is $20 000). It aims to be an incentive for home ownership.

Fiscal balance is a medium-term operating aim of budgetary policy to run an actual *fiscal balance* over the duration of the economic cycle. This means that budget surpluses during upswings should be more than adequate to finance budget deficits during downswings in economic activity, without the need for increased borrowing. *See* budget outcome.

Fiscal consolidation is a term used to describe the treasurer's attempts to reduce the size of the budget deficit and return to surplus by increasing tax and other receipts relative to outlays.

Fiscal policy is another name for budgetary policy and involves changes to the level and composition of government receipts and outlays. *See* aggregate demand management policies; budgetary policy; countercyclical budgetary policies.

Five Ps of marketing the combination of five elements involved in selling to consumers — Product, Price, People, Place, and Promotion.

Five-sector circular flow model is a diagram representing the various relationships that exist between the five key parts or sectors making up an economy. (i.e., households, businesses, financial institutions, government and overseas sectors). It can be useful in understanding the causes of macroeconomic problems like booms and recessions, and in making predictions about the consequences of changes in the levels of national spending, production and income.

Fixed costs are those that change little when a business increases production levels (e.g. advertising, product design).

Fixed exchange rate is where the central bank maintains a given rate of exchange against other currencies. This was used by Australia until 12 December 1983. *See* floating exchange rate.

Fixed income earners are people whose incomes remain relatively fixed or lag behind rises in prices and inflation. Many retired people, for example, are on a fixed income.

Fixed incomes are incomes that remain relatively fixed or unchanged over time. Retirees, for example, are usually on fixed incomes as they may receive a pension that will change only if the government decides to increase the pension.

Floating exchange rate is where the price of one nation's currency against that of others is established by the forces of supply and demand for the currency in the foreign exchange market. Australia has had a floating exchange rate since 12 December 1983. If it is a free-floating exchange rate, the Reserve Bank will usually not intervene to alter the exchange rate. *See* exchange rate; fixed exchange rate; foreign exchange market.

Floor price is a minimum price set by the government in a given market for goods or services that is at a level above the free equilibrium price in an attempt to keep the price higher for sellers. It results in a market glut where the quantity supplied exceeds the quantity demanded. A floor price for wool was used some years ago; another example is the minimum award wage.

Foreign exchange market is an institution where buyers (D) and sellers (S) of foreign currencies negotiate the rate at which one nation's currency is swapped for another's. The price or exchange rate for each nation's currency is continually responding to market forces, reflecting the currency's value or relative scarcity.

Foreign exchange reserves are Reserve Bank holdings largely made up of important foreign currencies, such as US dollars, pounds sterling, Chinese renminbi and Japanese yen. Under a floating exchange rate, these reserves may be drawn on to permit a 'dirty' float where the Reserve Bank wishes to iron out a sudden and unwarranted drop in the exchange rate by buying Australian dollars in

the foreign exchange market. *See* dirty floating exchange rate; floating exchange rate.

Foreign investment occurs when there is direct or portfolio capital inflow from abroad. For example, non-residents establish or expand the plant and equipment of a nation, thus adding to capital formation. This increases a country's foreign liabilities or debt. *See* capital inflow; direct investment; government borrowing.

Foreign or **overseas debt** indicates the borrowings from the rest of the world by our government and private residents. In Australia's case, it reflects the large savings–investment gap and our dependence on overseas savings. This can lead to a large CAD.

Framing bias is an idea from behavioural economics. It says that consumer choices can depend on how the *same* information, facts or ideas are presented to them. It can be used by governments and businesses to increase the likelihood that a particular choice will be made.

Free enterprise is an economic system based on the assumption that the needs and wants of individuals are best served when they are free to pursue their own self-interest in the absence of widespread government direction. Such a system depends on the forces of the market in decision making about resource allocation and income distribution. *See* market capitalist economy.

Free goods are things which have no direct price because, relatively, they are not scarce; for example, air. Often the government provides health and education free of direct charge to the community.

Free markets are those markets where the government allows prices to be fully set at equilibrium by the competitive forces of supply and demand. These are most common in market capitalist economies. *See* deregulation; floating exchange rate.

Free rider problem is an example of market failure. It occurs when the unrestricted operation of the market fails to allocate resources efficiently into socially desirable areas that benefit the community. This is because in instances like the provision of street lighting, minor public roads, law and order, lighthouses, and national parks and beaches, it is often very difficult for companies providing the service to make a profit by charging the users and excluding those who benefit from the service, but who do not pay. This is called the free rider problem. Clearly, without government intervention, many public services would be underproduced partly because their broader positive externalities are ignored.

Free trade theory states that international trade should be conducted without the use of government policies involving industry protection (e.g. tariffs, subsidies and import quotas). As a consequence, resources are used most efficiently in areas of comparative cost advantage, thereby maximising output and material living standards. Writing in the early 1800s, influential English economist David Ricardo first explained the advantages of free trade. This notion was behind the Australian government's policy of trade liberalisation that included the general tariff cuts of 1972–2005, 2010 and 2015 for textiles, clothing and footwear. It is also the basis of free trade agreements (FTAs). *See* protection.

Free trade agreements (FTAs) are bilateral (or multilateral) trade agreements between two (or more) countries where tariffs, subsidies, import quotas and restrictions on the free flow of money capital are removed. By mid 2022, Australia had 16 FTAs: New Zealand (1983, also known as Closer Economic Relations), Singapore (2005), Thailand (2005), the United States (2005), Chile (2007), ASEAN–Australia–New Zealand (2009), Malaysia (2012), Korea (2014), Japan (2014), China (2015), Comprehensive and Progressive Agreement for Trans-Pacific Partnership (30 December 2018), Indonesia–Australia Comprehensive Economic Partnership Agreement (2020), Pacific Agreements on Closer economic relations (2020), Regional Comprehensive Agreement (2022). In addition, FTA negotiations are underway with India, the United Kingdom and the European Union.

Frictional unemployment refers to people temporarily unemployed between leaving one job and starting another. This commonly occurs among tradespeople.

Fringe benefit is a special reward given by an employer to selected employees in lieu of income (e.g. a free house, company car).

Fringe benefits tax (FBT) is a tax on the value of company-provided benefits for employees in lieu of income; for example, cars, house loans, air tickets and entertainment.

Full employment *See* goal of full employment.

Full-time workers (employment) are employees who work for 35 or more hours per week.

Future Fund was created in 2005 to help lift national savings, improve the government's long-term financial position and increase the government's ability to meet its unfunded public sector

superannuation liabilities of around $100 billion. This money has been used to create a giant investment portfolio involving six special purpose funds (of which the Future Fund is easily the largest) that by March 2022, has grown to a total of $249 billion through the generation of income, topped up with extra money from further asset sales and future budget surpluses.

G20 is an international group formed in 1999, made up of the finance ministers from each of the top 20 trading economies, including Australia and the European Union. The group's aim is to deal with economic issues of common concern to members. In recent years, this has involved developing strategies to deal with the GFC, global financial instability and high levels of government debt in some countries.

GDP *See* gross domestic product.

GDP at constant prices *See* gross domestic product at constant prices.

GDP per capita *See* gross domestic product at constant prices per capita.

General agreement on tariffs and trade (GATT) is an international agreement which, among other things, has attempted to foster trade and reduce the level of tariffs among members of the agreement.

General or overall living standards and general welfare reflect both economic living standards (perhaps indicated by annual GDP per head or real income or consumption per head) as well as non-economic living standards (perhaps affected by freedom, happiness, mental and physical health, life expectancy, job satisfaction, the environment, crime, mobility). *See* economic welfare; non-economic living standards.

Gini coefficient is a number between 0 and 1 that indicates the degree of inequality in the distribution of income or wealth. A coefficient of 0 is recorded if there is absolute equality in distribution, while a coefficient of 1 indicates there is absolute inequality in income or wealth distribution. It is calculated as the area on a Lorenz diagram between the diagonal line of total equality and the actual Lorenz curve for a country. The greater the deviation of the Lorenz curve from the diagonal, the higher the Gini coefficient.

Global financial crisis (GFC) occurred in 2008–09 when greed and unsound lending practices sparked a series of banking, financial and corporate collapses around the world, shattering consumer confidence and causing businesses to collapse. Typically, governments internationally initiated various rescue packages involving cutting interest rates, providing extra credit to prevent further financial and corporate collapses, cutting taxes and increasing budget outlays.

Globalisation is the spread of business and international trade across national borders as if there was only one large market.

Glut is a market situation of oversupply (surplus output) relative to demand. Under the operation of free market forces, this should force prices down to clear the market and restore equilibrium.

Goal of an equitable distribution of personal income is an Australian government goal where everyone should have access to basic goods and services, enjoy reasonable living standards at a level deemed generally acceptable to society, and avoid poverty.

Goal of external stability is a desirable economic situation where Australia is *living within its means* and *able to pay its way* in its international financial transactions without the burden of high overseas payments causing severe problems that could reduce our living standards. It also means that Australian firms and the economy, is internationally competitive and able the sell goods and services at an attractive price here and overseas, against foreign competition.

Goal of full employment is a government target that represents the lowest rate of unemployment that will not cause inflation to accelerate (NAIRU). Here there will be no cyclical unemployment due to weak AD or recession. However, around 4.0–4.5 per cent of the labour force will be naturally unemployed due mostly to structural causes and other changes in supply-side conditions.

Goal of low and stable inflation or **price stability** is achieved when general prices for consumer goods and services are increasing fairly slowly, within the current RBA target range of 2–3 per cent a year on average, over time.

Goal of strong and sustainable economic growth is a government target defined as the fastest increase in real GDP, perhaps 3 per cent or a little more, that does not cause inflation or undermine the achievement of other economic or environmental goals. Higher rates of economic growth are not sustainable because they tend to significantly worsen inflation, weaken the current account, undermine the exchange rate and cause environmental damage including pollution and resource depletion. Conversely, lower rates jeopardise full employment and equity.

Goods are material or physical objects capable of partially satisfying our needs and wants. They may be of a lasting form (durables) or they may be single-use items.

Goods and services tax (GST) was introduced on 1 July 2000. Currently it involves a 10 per cent broad-based tax on goods and services purchased, with few exemptions other than for basic food, residential rent, dwelling construction, community services, export production, education, and health and financial services. One problem with the GST is that it is regarded as a regressive tax, where the burden falls disproportionally on low-income earners.

Government bonds *See* government securities

Government borrowing may be used to finance a budget deficit. The government may borrow from several sources:

1. Borrowing from the non-bank Australian public through the sale of government securities tends to leave the money supply unchanged.
2. Borrowing from the Reserve Bank is termed 'printing' money and this normally increases the money supply.
3. Borrowing from other Australian banks by selling them government securities initially has little effect on the money supply, but generally expands it once the government starts to spend the finance raised.
4. Borrowing from overseas through the sale of government bonds tends to increase our foreign debt and the CAD.

Government business enterprises (GBEs) are businesses run by the government in a way that is similar to private firms. They seek to run profitably by keeping costs down and selling their goods and services at an adequate price to cover their costs.

Government capital or investment spending (G_2) involves the provision and purchase of capital goods used to produce other goods and services. It includes spending on infrastructure such as highways, railways, airports, water supply, power generators, public buildings, pipelines and ports. It helps to grow Australia's productive capacity.

Government current or consumption spending (G_1) consists of budget outlays or public expenditure on the purchase of goods and services for immediate use. It covers the day-to-day running expenses of government departments and may include the purchase of stationery and other office supplies, and the wages of public servants.

Government debt is money or credit borrowed by the government either locally or overseas to finance its budget deficits (i.e. where the value of budget outlays exceeds the value of government receipts). Interest has to be paid on this debt.

Government deregulation refers to the removal of direct government controls, restrictions and supervision of various markets and other areas of the economy.

Government economic services spending or expenditure is government budget outlays on the provision of electricity, water, gas and employment schemes etc.

Government failure is a situation where government intervention or regulation of a market unintentionally results in lower efficiency and a reduction in society's general wellbeing or living standards. One example of this in Australia is the payment of large subsidies for the coal industry that encourage demand and pollution, and accelerate climate change. Another possible example is the setting of the minimum wage that some claim leads to higher wage costs, reduced competitiveness, lower business profitability and business closures, in turn adding to structural unemployment. Finally, government intervention in the housing market to reduce costs to first-home buyers has added more to demand for housing rather than increasing the supply of housing, doing little or nothing to make housing more affordable.

Government goals *See* economic goals of the Australian government.

Government outlays are the expenses of the government or how the money raised from taxes is used to pay for welfare, education, defence and health. Being an injection in the economy, these add to AD.

Government receipts are government income from various sources such as taxes and non-tax sources. Being a leakage in the economy, these slow AD.

Government sector is that part of the economy concerned with raising tax revenue and its spending or outlays.

Government securities or **bonds** are IOUs where there is a promise to repay borrowed credit at a certain date and rate of interest. Investors are attracted by the government guarantee of security. They are usually sold in Australia and overseas to raise finance to cover budget deficits where government outlays exceed receipts. The sale of new government securities increases the level of

public sector debt and causes a rise in interest rates. *See* government borrowing.

Government spending consists of *two* main types:

1. Government consumption or current spending (G_1) on, for example, the payment of public servant wages, defence equipment and day-to-day running costs of departments. The level of this spending is relatively inflexible.
2. Government investment or capital spending (G_2) on infrastructure, for example, construction of buildings, roads and power generators.

Note that, by contrast, the budget also includes government outlays on transfer payments that do not actually represent government 'spending' since the actual spending is done by the recipients of welfare or subsidies.

Government spending on training and education represents another outlay in the budget that can be used in the long term to cultivate the skills, productivity and creativity of Australia's labour resources (grow our human capital). Such outlays help grow our productive capacity and increase aggregate supply. They involve both (1) current spending on materials and wages, outlays on fees and other support for families and students; and (2) capital or investment spending on buildings, equipment, facilities and infrastructure for pre-school, primary and secondary schools, VET training, universities, TAFE education and libraries. Recently, it also includes outlays on the JobTrainer scheme designed to provide free of low cost courses to improve the employability of those looking for work.

Government subsidies are cash payments by the government designed to lower business costs and help producers compete by enabling them to sell their product at a lower price than would otherwise occur. These can be used to correct market failure.

Great Depression was a severe fall in economic activity experienced throughout the world between 1929 and 1933. In Australia, unemployment exceeded 29 per cent, real per capita incomes fell by about 27 per cent, and there was widespread poverty and suffering.

Green GDP is a measure of a nation's economic growth adjusted downwards for the environmental impacts of producing goods and services such as the depletion of resources, environmental degradation and loss of biodiversity.

Greenhouse gas emissions include methane, nitrous oxide, sulfur hexafluoride and hydrofluorocarbons released into the atmosphere as a result of economic activity and the burning of fossil fuels. These gases are contributing to global warming, melting of the polar ice caps, rising sea levels and extreme weather events like droughts, fires, floods and storms. Many feel that unless a price is put on carbon emissions (or CO_2) by means of a tax, or a market-based emissions trading scheme, they will continue to rise. Emissions are a good example of negative externalities, since part of the cost of economic activities is passed onto third parties (both current and future generations) not directly involved with these economic activities. Australia now seeks to achieve net zero emissions by 2050.

Gross domestic product (GDP) is commonly taken as an indicator of the total value of a nation's output, measured quarterly and annually. It represents the total market value (unless expressed at 'constant' prices) of final goods and services produced by a country over a period of time (generally a year), minus the costs of inputs used up in production other than the cost of capital equipment. Apart from measuring the *total value added in production* by businesses, GDP is also calculated in two other ways:

1. The aggregate expenditure method = $(C + I) + (G_1 + G_2) + (X - M)$ (the sum of expenditure or demand on final output).
2. The aggregate incomes or cost method = wages, salaries, and supplements, plus gross operating surplus of enterprises, minus imputed bank charges, plus indirect taxes minus subsidies. Nowadays, the chain volume approach to measuring GDP is used.

See chain price indexes.

Gross domestic product at constant prices is the value of final output of a nation's goods and services. It is measured over a period of time and is adjusted statistically downwards to compensate for the effects of inflation, or upwards to compensate for the effects of deflation, on the value of national production. To make these adjustments, the implicit price deflator index for production is used. After such adjustments, changes in real GDP (GDP at constant prices) reflect changes in the actual quantity of goods and services produced over a period of time. This makes it a highly useful and reliable measure of economic growth. Since 1998, this measure has been replaced with the chain volume estimate of GDP. *See* gross domestic product — the chain volume approach to measurement.

Gross domestic product at constant prices per capita is a measure commonly used as a rough indicator of the average level of material living standards or wellbeing of a nation's people. It is equal to the value of real GDP measured over a period of time, divided by the nation's population size. However, this is not a good measure of economic wellbeing for many reasons, including its failure to take account of the pattern of income distribution and the level of income inequality. In addition, it tells us nothing about non-material living standards.

Gross domestic product — the chain volume approach to measurement has been used since September 1998 by the ABS to measure GDP. This is a very complex and technical development in the estimation of Australia's volume of national production. It is designed to make Australia consistent with some of the world's leading statistical agencies. The main reason for this shift is that chain volume measures that are annually linked and reweighted provide more accurate indications of changes in real output and expenditures than the traditional constant price estimates of GDP.

Gross income represents the total of private or market income received before tax, along with income received from government welfare benefits.

Gross national expenditure (GNE) is the sum of expenditures on goods and services purchased for use within Australia. As such, it includes spending on imports but not spending on our exports of goods and services.

Gross National Happiness (GNH) is a broader composite index of living standards or wellbeing made up of several indicators such as GDP per head, social support, health and life expectancy, freedom to make life's choices, generosity and trust.

Growth rate is the increase in the quantity or real value of goods and services produced by a nation against the previous year, expressed as a percentage. *See* economic growth.

Hard-core unemployment is part of natural unemployment. It is experienced by individuals who find it difficult to obtain or hold a job because of personal characteristics, such as disabilities, illness and poor attitude or work ethic. *See* unemployable persons.

Headline cash balance refers to the difference between the total cash value of budget receipts minus the cash value of total outlays from all sources, without the removal of items that are affected by one-off events such as asset sales and debt repayments.

Headline budget position *See* budget outcome.

Headline inflation is measured by estimating the average annual change in retail prices across a regimen or basket which contains more than 100 000 individual goods and services made locally or overseas. Some of these items (such as fresh foods) are subject to volatile price changes caused by one-off events (e.g. weather conditions). For this reason, a more popular measure of fundamental inflationary pressures is the *underlying inflation rate* which is calculated by removing about 20 000 volatile items from the CPI regimen. The RBA's and government's goal of low inflation involves having average annual inflation within the 2–3 per cent target over time.

Health insurance rebate is a government incentive designed to subsidise consumers to take out private health insurance rather than rely on the public health system. It helps to lower the cost of insurance premiums.

Herd behaviour is an idea from behavioural economics and suggests that, sometimes, consumers just follow what the rest of their peers are doing, rather than reaching their own rational decision.

Henderson report *See* poverty; poverty line.

Hidden unemployment includes those individuals who would like a job or longer hours of work (more work than they currently have). They are not recorded by the ABS in official statistics as unemployed because they are not actively seeking a job. However, they would look for work if they thought they had a reasonable chance of gaining employment. This leads to a serious underestimation of the actual unemployment rate in Australia.

High-income nations are defined by the UN as those where average incomes are over $12 736 per person a year.

Homogeneous product is a product or service where there is no product differentiation, so the good or service supplied by one producer is identical to that type of good or service supplied by other producers. Homogenous products are assumed to exist in a purely competitive market, but this is not the case when brand names exist or other types of product differentiation occur.

Horizontal integration is when firms are joined together to become a bigger business in the same industry. This can increase economies of large-scale production.

Household or consumer sector is that part of the economy comprising all individual consumers. In a capitalist economy, these people are also the owners or suppliers of resources.

Human capital is a term that refers to the quality or skills of the labour force that affects its productivity.

Human Development Index (HDI) is another measure comparing the wellbeing of people in different countries. It takes into account both positive and negative indicators (e.g. the level of income per person per year adjusted to international dollars, life expectancy, level of education), and combines them into a single statistical index number between 0 and 1.

Hyperinflation is an extreme situation where prices rise very quickly.

Ideal labour market conditions exist when there is a balance between the demand for and supply of labour. Here, conditions should not be so strong that there are labour shortages leading to inflation, nor so weak that there is high unemployment.

Immigration is people entering a country as permanent residents.

Immigration policy is an aggregate supply policy that is now closely geared to help meet the needs of the labour market in our growing economy with an ageing population. It involves setting an annual cap on the number of permanent visas available; for instance, 160 000 for 2022–23, to manage the overall number, composition, skills and age of migrant arrivals from overseas. It prioritises those who are more likely to make a valuable and ongoing economic contribution to the Australian economy.

Immigration target represents the desired level of immigration (with subcategories or streams including skilled, family and humanitarian).

Impact lag *See* time lag.

Implementation lag *See* time lag.

Implicit price deflator indices (IPDI) were prepared by the ABS and used to remove exaggerations in the national aggregates caused by the effects of inflation. Being based on a broader range of commodities and services, the IPDI for production is preferred to the CPI in adjusting, for example, the GDP to constant prices. More recently, chain price indexes have been used for this purpose.

Import quotas are quantitative government restrictions imposed to limit imports through the issue of licences to importers. For instance, over the years, foreign cars, electrical goods, textiles and footwear have been restricted by this means, despite the fact that quotas may lead to reduced competition, higher prices, inefficiency and a misallocation of resources in the Australian economy. Since 1992, these quotas have been progressively abolished (with the last quota on cheese abolished in 2001).

Import spending (M) is expenditure by Australians on foreign-made goods and services, which is designed to help satisfy our needs and wants (e.g. oil, electronics, travel).

Import substitution occurs when local industries produce goods and services that could be imported. These displace imports.

Imports are goods and services produced overseas and brought into the country. Major imports are oil, machinery, consumer durables, travel abroad and property income payable overseas. These are regarded as debits on the balance of payments current account.

Incentives are designed to change or modify the behaviour that would otherwise occur. They can be of four types:

- positive incentives or rewards (e.g. cash subsidies, a pay rise, a special award)
- negative incentives or punishment (e.g. a new tax)
- monetary incentives (e.g. involving money rewards or a special award)
- non-monetary incentives (e.g. points for speeding on the roads).

Incidence of tax refers to which groups of people bear the main tax burden.

Income is rewards to those supplying productive resources. In turn, income gives individuals command over the purchase of goods and services to satisfy needs and wants. Income may take various forms, including:

- wages and salaries paid to workers
- rent paid to landlords
- interest paid to owners of capital
- profits paid to risk takers
- transfer payments, income support or welfare from the government to the needy.

Earned income (e.g. wages and salaries) is from working, while unearned income (such as interest and dividends) is from investments.

Income distribution is the pattern or way in which income is divided between individuals, groups or sectors within an economy. This pattern may be highly unequal (as occurs in some oil-producing countries, for example), moderately unequal (e.g. in Australia) or fairly even (such as in Scandinavian countries). In Australia, inequalities exist in wages

and salaries, and especially in the ownership of wealth. Moreover, there are inequalities based on age, sex, education, geographic location, luck and inheritance. *See* equity in the distribution of income as a government goal; poverty.

Income redistribution is where the government seeks to alter the allocation of income that would otherwise occur in the economy. Generally, this has involved narrowing the income and purchasing power gap between those on high as opposed to low incomes using progressive taxes, direct means-tested welfare benefits and government spending on indirect benefits such as health. In this way the government pursues its goal of an equitable income distribution where everyone has access to basic goods and services at a level deemed generally acceptable to society.

Income support *See* aged pension; welfare benefits.

Income unit is a term used in measuring the number of Australians living in poverty. It refers to a group of people dependent upon a given source of income. *See* poverty.

Index numbers are used by statisticians to show changes in a variable over a period of time measured against some base year which is usually made equal to 100 index points. *See* constant prices.

Indexation is the adjustment of a variable (such as wages, social welfare benefits or taxes) to make allowances for the adverse effects produced by inflation.

Indirect benefits normally help the poor in an indirect way through governments providing low-cost or free access to certain basic goods or services, such as public housing, health and education. Most are regarded as merit goods that are socially beneficial.

Indirect taxes are levied on the buyers of goods and services at the point of sale, rather than directly on incomes. Tariffs, GST, the carbon tax, excise duties and sales taxes are examples. Traditionally, such taxes have often been fairly regressive, thus tending to exaggerate income inequalities. However, if luxuries are taxed in this way (e.g. imported cigars, wines and spirits), the impact may be progressive because the incidence generally falls more on wealthy buyers.

Industrial conflict is the differences between workers (or their unions) and employers over such issues as wages, conditions and holidays. Industrial conflict may take many forms — strikes, bans, pickets, go-slows, absenteeism and boycotts.

Industry protection *See* protection.

Inelastic demand occurs in a market when the demand for a particular good or service is relatively unresponsive and changes *less than proportionally* to the change in price (e.g. a 10 per cent fall in price results in a 5 per cent rise in quantity demanded). In this instance, total revenue decreases following a fall in price.

Inelastic supply occurs in a market when the quantity of a good or service supplied is relatively unresponsive and changes by a *smaller proportion* than the change in price (e.g. a 10 per cent price rise produces only a 5 per cent rise in the quantity supplied).

Inequality in personal income is the wide gap between those Australians on high incomes and those on low incomes. Here, the income cake is divided unevenly and there are large differences in living standards.

Inequitable distribution of income refers to a situation where a nation's income cake is divided unfairly and where many people are unable to enjoy access to basic goods and services and reasonable living standards at a level deemed generally acceptable to the community.

Infant industry argument is based on the fact that new industries that are just being established will have higher production costs than those that are well established. This justifies helping them to get started using tariffs or some other form of trade protection measure.

Inferior goods are those that are replaced by better quality goods as disposable income rises (e.g. steak replaces basic sausages, or an air conditioner replaces a fan).

Inflation is a situation where average prices for goods and services are rising. In this situation, there may be a redistribution of income, an adverse external effect on overseas reserves and the exchange rate, unemployment and the erosion of business confidence. Generally, economists distinguish two main types of inflation — cost and demand. *See* cost inflation; demand inflation.

Inflation rate is the increase in average prices of a basket of consumer goods and services, expressed as a percentage rise on those in the previous year. The most common measure of the inflation rate is the consumer price index (CPI). Inflation reduces the purchasing power of incomes and makes most people worse off.

Inflation targeting or **fight inflation first** has been used by the RBA as the priority guiding changes in its monetary policy stance. These days, inflation

targeting means achieving an underlying inflation rate averaging between 2–3 per cent a year over time. This is the medium-term aim of monetary policy. *See* checklist approach to inflation targeting by the RBA.

Inflationary expectations occur when the community comes to expect a continuation of rising prices, which causes people to press for higher wages, salaries, rents and interest to compensate them and to protect their real disposable incomes. Using monetary policy to control these expectations is vital for successful government stabilisation policy.

Infrastructure consists of two types: (1) economic infrastructure, (e.g. power, water, roads, ports, rail links and communications including the national broadband network), which is often used to assist industry; and (2) social infrastructure (such as schools, universities and hospitals). Overall, improved infrastructure is seen as a favourable aggregate supply factor because it helps to expand an economy's productive capacity and potential rate of GDP growth, and improves the community's living standards. It also encourages the growth of new industries. In recent years, there have been bottlenecks in economic and social infrastructure, and these have limited the growth in Australia's productive capacity, aggregate supply and the sustainable rate of economic growth. *See* collective goods and services or wants; Infrastructure Australia.

Infrastructure Australia (IA) is the institution through which the construction of nationally significant infrastructure projects is being made. Taking recommendations and acting in consultation with the federal and state governments, the IA allocates funds and commences projects.

Infrastructure investment can be regarded as an aspect of aggregate supply budgetary policy that involves federal government outlays on the capital resources (G_2) that are in turn used by suppliers to produce other goods and services. Infrastructure may be of two types: (1) social infrastructure, which especially involves the provision of capital goods to facilitate services like education and health; and (2) economic infrastructure, which typically includes highways, railways, sea ports, airports, electricity capacity and delivery, gas, tele-communications including the broadband network, sewerage and water supply. Investment in better infrastructure helps lift efficiency and lower production costs, strengthening business profits and leading to the growth of productive capacity.

Initial distribution of income is the way private or market income (such as wages, rent, interest and profits) is divided among members of society before government redistribution measures are applied. The initial distribution of income is influenced by factors such as education, luck, inheritance, family attitudes, peer group pressures to succeed, unemployment, the participation rate, hours worked, gender, age and personal abilities. Governments alter the initial distribution of income. They redistribute incomes using progressive taxes, welfare and free services so that the final distribution of Australian income is more even than the initial income distribution.

Injections are additions to the flow of total spending made up of private investment (I), government (G) and export spending (X). These tend to raise economic activity.

Interest rate is the annual cost of borrowing credit or the annual return on invested savings. Rates are closely related to the nation's inflation rate and are largely determined at equilibrium in financial markets by the forces of supply (by savers) and demand for credit (by borrowers). Australia has higher interest rates than some countries because of the lack of national savings (a savings–investment gap). This puts us at a competitive or cost disadvantage. It also leads to a rise in the net foreign debt and current account deficit. *See* interest rate policy; monetary policy; cash rate target; rate of interest.

Interest rate corridor is an interest rate guidance system set up by the RBA within the short-term money market. It involves the RBA legally setting the boundaries for overnight borrowing and the lending interest rates for banks. At the upper end of the corridor is the RBA's ceiling or lending rate (normally set at the cash rate, plus 0.25 percentage points) for banks with a cash shortfall in their exchange settlement account. At the other end, the lower floor deposit rate (normally set at the cash rate, minus 0.25 percentage points) is for banks with a cash surplus in their exchange settlement account. It allows the RBA to directly guide the actual short-term cash rate towards its monetary policy cash rate target, chosen as the appropriate policy setting given current economic trends. Ultimately, the corridor allows the RBA to affect longer term interest rates, and hence AD and economic activity.

Interest rate policy is the deliberate attempts of the Reserve Bank of Australia (RBA) to bring about

changes in the cost, availability and demand for credit. This policy involves the RBA Board announcing a certain cash rate target, giving justifications for its decision. Following the announcement of a new cash rate, the whole interest rate corridor automatically shifts vertically upwards or vertically downwards in the short-term money market. Through incentives, the corridor guides the actual cash rate towards the RBA's cash rate policy target, in turn affecting other longer term interest rates, AD and economic activity. Once established, the RBA may have to use its open market operations that involve the RBA selling or repurchasing government securities to affect liquidity to help achieve its cash rate target. As part of countercyclical policy, the RBA normally raises interest rates during booms or when inflation is too high (e.g. four rises in May–June–July–August 2022) to slow AD and economic activity, and thus avoid adding to inflationary pressures. By contrast, it cuts interest rates when there is weak AD, slowing economic activity, recession and rising cyclical unemployment (such as the 18 consecutive cuts between late 2011 and May 2022). Changes in interest rates work to alter the level of AD and economic activity through the operation of various transmission mechanisms. *See* transmission mechanism for monetary policy.

Intergenerational reports (the latest released in 2021) predict the outlook for Australia's economy and the Australian Government's financial position over the next 40 years. They also review the sustainability of recent policies and the effects of changing demographics, technology and other factors.

Interlocking directorships occur when the director of one company is also on the board of another company in the same line of business. Such a person may be in a position to restrain competition between the two companies.

Internal balance *See* domestic economic stability; economic stability.

Internal stability or **domestic economic stability** is a desirable or ideal economic situation pursued by the government involving the simultaneous achievement of full employment/production and low inflation. *See* domestic economic stability.

International competitiveness involves local firms and producers being able to sell their comparable quality goods and services at prices that are relatively low and relatively attractive against those charged by overseas rivals. International competitiveness may be affected by variables like wage costs, productivity, costs of utilities, tax rates on companies, the exchange rate, transport costs and government red tape. Local firms often need to cut their production costs, improve quality, widen their product range, and raise efficiency in production and marketing to become more internationally competitive. *See* microeconomic reforms.

International Monetary Fund (IMF) is a global organisation that keeps an eye on the world's financial system. It was set up in 1944 to help stabilise international exchange rates, promote economic development, provide technical assistance and act as a lender of last resort to governments with financial troubles.

International trade and transactions is the exchange of goods, services, primary incomes, secondary incomes and money capital between nations as recorded on the balance of payments account. *See* balance of payments account.

International transactions involve the buying of imports of goods and services from overseas, and the selling of exports of goods and services abroad. Additionally, these transactions include the movement of finance or money capital between Australia and the rest of the world as nations undertake international investment.

Internationally competitive firms are those with goods and services (of a given quality) that can sell profitably at a lower price in both domestic and international markets without tariff protection or special government financial assistance.

Intertemporal efficiency means that there is a suitable balance between resources being allocated towards current consumption on the one hand and on the other, diverting some resources for future use. *See* efficiency.

Investment is capital equipment (plant and machinery) installed by enterprises to help make other goods and services and to raise productive capacity. *See* capital, investment goods; capital resources.

Investment spending is expenditure on the accumulation of capital or producer goods such as plant and equipment. These can grow efficiency and a nation's productive capacity. It may be undertaken privately (I), or by the government (G_2). Private investment has traditionally been highly unstable and is greatly influenced by business expectations. *See* capital expenditure; capital, investment goods.

JobSeeker allowance is a government welfare benefit (previously called the Newstart Allowance). The rate in July 2022 started at around $643 (for a single, no dependents) per fortnight. It is paid to those aged 22 and over who are actively looking for work and cannot find it, and who meet the assets and means test. As a temporary stimulus measure during COVID-19, the payment rate was doubled to help support spending.

JobKeeper was a temporary government wage subsidy scheme started during the COVID-19 lockdowns. Here, local firms that had suffered a fall in turnover of 30 per cent or more could use these government payments to continue employing staff and paying wages. The aim was to support disposable incomes, spending and economic activity during the recession and slowdown.

JobMaker is a scheme that started in 2020 and provides financial incentives in the form of hiring credits for businesses who employ young job seekers aged 16–35 years. It aims to get young people into paid work.

JobTrainer is a government scheme introduced in 2020 to make training and some courses available free or at a low cost, so that individuals become more employable and gain the skills needed to get a job.

Job vacancies are a labour market indicator, and reflect the demand for labour by firms. They are unfilled offers of work made by employers. These rise in periods of high economic activity and fall in times of low activity.

Keynes, John Maynard was a famous British economist (1883–1946) who wrote *The General Theory of Employment, Interest and Money* (1936). The ideas contained in this macroeconomic theory revolutionised the attitude and approach by governments to economic instability (booms and depressions). Keynes believed that a market capitalist economy was inherently unstable because the level of aggregate demand (effective demand) was unstable. From time to time the economy may experience recessions and depressions caused by an insufficiency of spending, which he believed could be solved by taking measures to lift spending to the extent needed to generate full production and employment (e.g. by lowering taxes and increasing government spending). At other times, the economy may experience booms, which are caused by an excess of spending. The macroeconomic solution proposed was simply the reverse to that adopted in recessions. Thus, countercyclical policies could be used to help iron out serious economic fluctuations. Today, Keynesian economics still forms the cornerstone of government policy in most Western nations.

Kyoto agreement is an international agreement designed to try to limit greenhouse gas emissions. It commits Australia to limiting its greenhouse gas emissions for the period 2008–12 to a target of 108 per cent of the 1990 emissions level. The Australian government's updated target in 2014 was to cut emissions 5 per cent below the 2000 levels by 2020.

Labour costs include wages paid to staff involved in the production of goods and services. Weak productivity is a less favourable aggregate supply factor slowing the growth in productive capacity.

Labour efficiency or productivity *See* productivity.

Labour force generally includes individuals who are aged over 15 years and who are:

1. employed for wages or gain, or
2. unemployed — that is, those without a job but who are willing and able to work.

Today, Australia's labour force consists of around 14 million workers. *See* employment; participation rate; unemployment.

Labour force survey is conducted monthly by the ABS. It measures various aspects of the labour market including employment, unemployment, underemployment, under-utilisation, hours worked, participation and duration of unemployment.

Labour force under-utilisation rate is the extent to which the labour force is not working to its capacity. It is calculated by adding the unemployment rate with the underemployment rate.

Labour market is an institution where buyers and sellers of labour negotiate wages and conditions. Even today, this market is not fully competitive because of intervention by governments, large unions and employers. However, there has been significant labour market deregulation and an extension of workplace agreements.

Labour market conditions refer to whether the demand for labour is strong, steady or weak, relative to the supply of labour. Typically, strong labour market conditions appear when economic activity is rising and are indicated by low unemployment rates of around 4.0–4.5 per cent, many job vacancies, a declining duration of unemployment and increasing hours of work. By contrast, weak labour market conditions appear in recession and are reflected in high unemployment rates of say 8–10 per cent or more, few job

vacancies, a rising duration of unemployment and decreasing hours of work.

Labour market deregulation or reform has involved the introduction of enterprise bargaining in the 1990s and 2000s, where wages are linked closely to increased efficiency rather than being set fairly uniformly by a central government authority.

Labour market reforms involve changing the way wages and working conditions are determined. They represent an aggregate supply policy and are primarily designed to improve the efficiency or productivity of Australia's labour resources and to help slow wage and on-costs. They often focus on promoting greater flexibility in employment, along with stronger competition and incentives for workers to lift productivity. The main measures have included a reduced emphasis on and importance of the centralised minimum wage system, and the encouragement of a decentralised wage system of enterprise or workplace agreements that emphasise improved productivity in exchange for pay rises. In addition, awards have been combined and simplified, union amalgamation has been encouraged, unfair dismissal laws were relaxed, the role of unions has been reduced, and new legislation has been passed including the *Fair Work Amendment Act* (2012).

Labour productivity or efficiency reflects the value of output (GDP) per hour worked. *See* efficiency; productivity.

Labour resources provide physical power and mental talents to the production process, generally in exchange for wages and salaries.

Lagging indicators show changes in economic activity sometime after the event has occurred because they take time to respond.

Lags *See* time lag.

Land as a natural resource includes arable land, urban land and mining leases, which are regarded as productive resources. Usually land is taken also to include naturally occurring resources such as minerals, forests, water and climate.

Law of demand states that the quantity of a good or service demanded varies inversely to price. For instance, as the price rises, demand contracts and as the price falls, demand expands. This involves a movement *along* the demand line.

Law of supply states that the quantity of a good or service supplied varies directly with price. For instance, as the price rises, supply expands and as the price falls, supply contracts. This involves a movement *along* the supply line.

Leading indicators are statistical measures that give policy makers advance warning of changes in economic activity; for example, consumer and business confidence, new building approvals and the composite leading indicator.

Leakages of spending represent a loss of expenditure, causing a drop in economic activity. They act as a brake to slow the economy and include savings (S), imports (M) and government taxes (T).

Level of economic activity refers to the changing pace or speed at which the economy is operating. It mainly relates to the level of national production indicated by GDP, but this is also reflected in the rates of inflation and unemployment. The level of economic activity changes in a cyclical or wave-like manner. This is called the business cycle. Typically, the level of economic activity passes through four phases:

1. the *expansion* or *recovery* in GDP
2. the *peak in GDP*
3. the *contraction* or *slowdown* in GDP
4. the *trough*.

See boom; business cycle; contraction; depression; economic activity; expansion; recession.

Liquidity is the ability to convert assets into cash or purchasing power. The RBA is also able to influence the liquidity or cash holdings of banks in the short-term money market by its daily open market operations (the repurchasing and sale of government bonds to banks).

Living standards refers to how well-off a nation is overall. There are *two* components:

1. *economic or material living standards* (relates to the level of incomes and the *quantity* of goods and services consumed by each person each year)
2. *non-material living standards* (relates to the *quality* of daily life for individuals as affected by subjective elements including levels of happiness, job satisfaction, crime, environmental health, mental and physical health, life expectancy, urban congestion, hours of work and leisure, family tensions and stress).

Clearly, average GDP per capita cannot adequately measure material and especially non-material living standards. These two elements of wellbeing also affect each other in compatible and conflicting ways. For instance, increased economic living standards may cause negative externalities associated with increased pollution, hours of work and stress. These undermine non-material living standards. Alternatively, efforts to reduce

environmental damage may slow the growth of some industries and the economy, and undermine material living standards. *See* economic welfare or wellbeing; general or overall living standards and general welfare; non-economic living standards.

Localisation is the opposite of economic globalisation. Here, goods, services and investment are localised in a small region or area within a particular country's economy and are not interdependent with other areas, regions or countries.

Long-term or **long-run** is a period of time, possibly more than a couple of years in length. Often the consequences of a policy, event or development have different impacts in the longer term, compared with those in the short-term. For instance, in the short-term, environmental policies might slow the sustainable rate of economic growth, but in the longer term, this rate of growth might increase.

Long-term economic prosperity means that all future generations are able to also enjoy high incomes and consumption levels.

Long-term trend is the general or average direction (upwards, downwards or horizontal) of a variable, usually established over a number of years (perhaps 10 or 20 years).

Long-term unemployment refers to members of the labour force who have been out of work for more than one year (i.e. unemployed for more than 52 weeks).

Lorenz curve is that part of the Lorenz diagram that depicts the degree of income or wealth equality or inequality. The greater the deviation of the income or wealth lines from the diagonal line of absolute equality, the greater the inequalities in income or wealth distribution in a country.

Lorenz diagram is a diagram designed to illustrate the degree of income or wealth inequality. *See* Lorenz curve.

Low-income countries are those where people subsist on a mere $2.86 or less per day (around $1045 per year per person), and where typically there is great physical deprivation, poverty, hunger, inequality, insecurity, poor health, illiteracy, persecution, and the absence of hope and opportunity.

Low and stable inflation as a government economic goal or **price stability** is defined by the RBA as meaning a slow annual rise in consumer prices of between 2–3 per cent per year on average over time. This is seen as consistent with achieving other important government goals like full employment, strong and sustainable economic growth, external stability and an equitable distribution of personal income. Ultimately, achieving this goal generally helps to improve our living standards.

Macroeconomic policy is associated with government budgetary policy and RBA monetary policy used to deliberately alter the level of aggregate demand in a countercyclical way. First proposed by economist John Maynard Keynes in 1936, these aggregate demand policies are usually tightened to slow AD during an inflationary upswing (e.g. bigger surplus budgets and higher official interest rates) and loosened to stimulate AD during a recessionary downswing (e.g. smaller budget surpluses or bigger deficits and cuts in official interest rates). *See* aggregate demand management policies; budgetary policy; countercyclical budgetary policies; Keynes, John Maynard; monetary policy.

Macroeconomics is the branch of economics that emphasises the central role played by the level of expenditure or aggregate demand. Developed by economist John Maynard Keynes during the 1930s, macroeconomics also involves looking at the general influences on national spending, output, income, employment and overall material living standards. It emphasises the need for some degree of government regulation of AD and economic activity using aggregate demand management policies applied in a countercyclical manner. By contrast, microeconomics involves an analysis of how the various parts making up the total Australian economy (sectors including firms, industries and households) actually operate. Microeconomics thus studies the supply side of the economy. *See* aggregate demand; economic activity.

Mandated renewable energy target or **renewable energy target (RET)** is a legislative attempt by the government to increase the level of renewable energy derived from wind, solar and other sources with low carbon emissions to around 20 per cent of energy needs.

Marginal utility refers to the increased satisfaction gained by individuals from the consumption of an extra unit of a product at a point in time.

Market is an institution or organisation used to make key economic decisions (answer the three questions — what, how and for whom to produce). Here, goods and services are bought and sold at prices which are negotiated between buyers and sellers, and set at equilibrium between demand and supply. Traditionally, markets were set up in the centre of

towns or cities, and involved face-to-face contact between sellers and buyers of goods and services. Nowadays, this has been changed by the revolution in communications on national and international levels. *See* final markets.

Market-based environmental policies might include the use of a carbon tax, emissions trading scheme or subsidies. They work through price signals or incentives that are established in various markets for goods and services (including the carbon market). These policies are designed to alter the behaviour of producers and consumers and thereby, reduce emissions of greenhouse gases into the environment, slowing climate change and its negative impact on society's wellbeing. *See* emissions trading scheme.

Market capitalist economy is an economic system with private ownership of most means of production, and the price mechanism or market forces of supply and demand largely determining resource allocation, income distribution and ownership of the means of production. As an instrument for making key economic decisions, market forces would:

1. set relative prices of resources and final products, thereby dictating which types of goods and services would be most profitable. These products would then be produced.
2. dictate the cheapest, most profitable and efficient methods used by private enterprise. The lowest cost combination of inputs of labour, natural resources and capital would be used.
3. operate to distribute incomes to those who had contributed to production. This economic contribution would be priced by the market, thereby creating income differences.

In a pure market capitalist economy, certain preconditions would need to exist, including competition between many small independent buyers and sellers, lack of product differentiation, a desire to maximise profits and self-interest, a perfect knowledge of market conditions, lack of government interference, no unions or business monopolies, and freedom of entry into the market.

Market deregulation is a process to increase efficiency whereby the government reduces controls and restrictions that limit competition or the free operation of demand and supply in the determination of market prices.

Market economy is an economic system where most decisions about what and how much to produce, how to produce (production methods) and for whom to produce (how the income cake is divided) are made primarily through the free operation of the price or market system. Here, changes in relative prices affect the relative profits of producing different products, generally causing resources to be reallocated to maximise the general satisfaction of society's wants.

Market failure occurs when the operation of the price system involving the forces of demand and supply, do not allocate resources efficiently to maximise the general satisfaction of society's needs and wants. Market failure can arise when:

1. competition between firms in markets is weak and there are monopolies and oligopolies
2. the market does not produce enough socially desirable public goods and services at a low and affordable price (so that everyone can access these)
3. those who do not directly pay for a service (such as street lighting or defence) cannot easily be excluded from gaining benefits (the free rider problem). Here it is hard to make profits so there is underproduction.
4. there are both positive and negative externalities arising from the production and consumption of goods and services. Market failure may mean that the market overproduces socially undesirable goods and services that impose costs on others in society, because some individuals are ill-informed or immature in their judgements and profits are high
5. there is asymmetric information: one party to a transaction knows more than another, undermining effective and rational decision making.

See asymmetric information; free rider problem.

Market for foreign exchange *See* foreign exchange market.

Market forces are an instrument for making decisions in most economies, involving the operation of demand and supply in a market to determine the equilibrium price. By affecting the level of relative prices, changes in conditions of demand and supply also affect relative profits, and hence create signals that help the profit-seeking owners of resources to make key economic decisions. Resources are directed into the areas where they are most wanted by consumers. *See* market capitalist economy; market mechanism.

Market glut or **surplus** occurs at a price that is too high and above the equilibrium price. Here, the quantity demanded is less than the quantity

supplied, putting downward pressure on the price until equilibrium is established where demand equals supply.

Market income *See* private income.

Market mechanism is the system of decision making whereby the free forces of supply of and demand for particular goods and services operate to set relative prices at the point of market equilibrium. In turn, price changes upwards and downwards act as signals to tell or inform producers of changing consumer decisions about particular types of goods and services they want to see produced. When relative prices of different goods or services change, this affects relative profits and hence the allocation of resources between alternative uses. It is most prevalent in contemporary market economies like Australia where it operates to allocate perhaps over 80 per cent of all resources.

Market operations *See* open market operations.

Market power relates to the ability of a firm to control or influence prices and the output of an industry. With high levels of market power, firms become price makers, whereas with low levels, they are price takers. *See* market structure or power; monopoly; oligopoly; perfect competition.

Market price is the cost of goods or services established at the point of equilibrium by the operation of the forces of supply and demand. *See* market capitalist economy; market mechanism.

Market shortage occurs at a price that is too low and below the equilibrium price. Here, the quantity demanded is greater than the quantity supplied.

Market socialism is a type of economic system where, despite the existence of widespread government direction and collective ownership, economic decisions about resource allocation and income distribution are strongly and increasingly influenced by the operation of the price mechanism, which sends out signals to owners of resources. China is an example of market socialism.

Market structure or **power** reflects the nature or degree of competition that exists between manufacturers and sellers in an industry. This can vary from very strong (a purely competitive market) to very weak (a restricted or monopolistic market). Between these extremes, there is monopolistic competition and oligopoly.

Market zoning occurs when firms that usually compete with each other decide not to compete with each other over price in a particular area or zone.

Material living standards relate to the 'quantity' of goods and services individuals consume. It reflects our level of economic wellbeing influenced by the annual levels of per capita GDP, incomes and consumption of goods and services. To calculate average material living standards, GDP per head could be used. It is calculated as follows:

$$\text{Average GDP per head} = \frac{\text{Real GDP (\$)}}{\text{Total population of nation}}$$

One important problem with this measure is that it assumes that the goods and services are distributed evenly across society and geographic regions. Another is that it fails to take account of negative externalities that impact adversely on our wellbeing. *See* Human Development Index (HDI); living standards; Measuring Australia's Progress (MAP).

Maximum or ceiling price is a price in a market that is set by the government at a level below the equilibrium in an attempt to make the item more affordable.

Means of production are factors that enable production to take place, including farms, mines, shops, banks and factories.

Means test is often applied to individuals to decide whether or not they are sufficiently needy or eligible to receive government social services. It is designed to exclude relatively higher income earners, with the main intention being to close the income gap between the relatively rich and the poor. Only those whose incomes fall below the cut-off or means test may receive the government transfer payment. *See* assets test.

Measuring Australia's Progress (MAP) is not a single or composite statistical indicator of welfare like GDP or GPI. Rather, it is a suite or collection of measures published periodically by the Australian Bureau of Statistics and used to indicate whether life in Australia has improved and whether it can be sustained. Four main categories of measures are used, each with a range of indicators: individual indicators (such as personal health); the economy (e.g. per capita incomes, inflation); the environment (such as pollution levels); and living together (crime rates, for example). *See* gross domestic product (GDP); Human Development Index (HDI).

Medical Research Fund is a special savings fund where seed capital contributed by the government has been invested to earn returns, that can be then used to help cover the renewal and refurbishment of hospitals and health facilities, as well as fund some important medical research projects.

Medium-term operational goal of budgetary policy is to gradually return the budget to surplus in the next few years at a prudent rate, when economic circumstances permit this to occur.

Medium-term operational goal of the RBA is to keep annual average inflation at a low rate within the 2–3 per cent range. If inflation is not a threat, the RBA's monetary policy will then try to promote strong and sustainable economic growth and full employment.

Merger is the joining together of two or more companies to form one. Although this may restrict competition, it may also produce economies of large scale.

Merit goods are goods where the broader social benefit exceeds the private benefit of the consumer. These are often associated with positive externalities, whose full benefits have not been fully recognised or taken into account and, hence, are under-produced unless governments intervene in the market, perhaps using subsidies to encourage production and consumption. Here we might think of health and education.

Microeconomic reforms are another type of government aggregate supply-side policy that often focus on the smaller parts that make up the overall economy, such as a particular industry or a single market. These measures seek to promote greater efficiency often through strengthening competition, keeping production costs down, and by using various motivational incentives for suppliers of goods and services. These policies might include deregulation of the labour and other markets, welfare reform, tax reform and trade liberalisation. *See* aggregate supply policies.

Microeconomics studies the operation of the smaller fragments or units making up the whole economy, such as a particular firm, an industry or a specific market. In particular, it often examines how demand and supply interact in a market to determine an equilibrium price and quantity traded.

Millennium Development Goals were first outlined by the United Nations in 2000 and involve the setting of targets or milestones designed to improve living conditions in low-income countries. One of the key goals involved the halving of severe poverty by 2015.

Mini-budget is a smaller budget that supplements the main budget that comes out once a year. A mini-budget may be required in response to unexpected changes in various indicators.

Minimum price *See* floor price.

Minimum wage is fixed by the Fair Work Commission, which has the capacity to fix (usually once a year) legal minimum award wages and conditions of work governing employment. This provides workers with the means to have a certain minimum living standard. For example, in July 2022, the minimum wage increased to $812.60 a week. However, with the introduction of decentralised enterprise bargaining, the importance of this centralised wage system has declined to cover only around 15 per cent of workers. *See* Fair Work Australia; Fair Work Commission.

Mixed economies are a popular type of economic system where most decisions are made by the operation of free markets and the price system, but also where there is a limited degree of government intervention or regulation to reduce market failure and improve living standards. Most countries these days have mixed economies.

Misallocation of resources occurs when resources are used inefficiently or for purposes that reduce our living standards or the general satisfaction of society's needs and wants. Market failure and government failre can both result in the misallocation of resources.

Monetarism is an economic theory that emphasises the key role played by the volume of money in influencing output, employment and prices.

Monetary policy is a major category of government aggregate demand management or macroeconomic policy that is implemented by the RBA. It focuses on changes in the policy interest rate corridor. In turn, changes in this corridor affect the incentive to save, and the cost of borrowing. Through transmission mechanisms, this alters the level of credit-based consumption and investment spending and hence the level of AD. To help stabilise the level of economic activity, the RBA applies its monetary policy in a countercyclical way. This means that the RBA's stance is normally tightened in an inflationary upswing or boom (i.e. a rise in the cash interest rate target), and loosened in a slowdown or recession (i.e. a reduction in the cash interest rate target). By regulating interest rates in this way, the RBA hopes to stabilise AD and improve domestic macroeconomic conditions and living standards. *See* aggregate demand management policies; interest rate policy; open market operations; transmission mechanism for monetary policy.

Monetary policy checklist is used by the RBA's Board to arrive at its decision about changing its

cash rate target that it sets in the short-term money market. The checklist of statistical indicators includes the following categories:

- *inflation rate* — quarterly changes in the headline CPI, underlying CPI, costs of materials used in manufacture and wages costs
- *spending* — trends in consumption and investment spending, AD, retail trade and housing, as well as changes in consumer and business confidence as leading indicators of private spending
- *labour market* — changes in labour market conditions including unemployment, underemployment, hours worked, employment growth, job vacancies and labour force participation rates
- *budgetary policy stance* — the type of budgetary policy outcome (such as surplus or deficit) and stance (e.g. expansionary or contractionary) being adopted by the treasurer
- *international situation* — overseas trends in inflation, economic activity and other events like the terms of trade, as well as changes in Australia's exchange rate and CAD.

After weighing up often conflicting evidence, the RBA then adopts a particular policy stance.

Monetary policy stance depends on economic conditions and relates to whether the intention of the RBA is to slow AD and economic activity (a contractionary stance where there is a rise in the cash rate target to a level above 3.0 per cent) or whether the aim is to boost AD and economic activity (an expansionary or accommodating stance where the cash rate target is cut to a level below 3.0 per cent). *See* monetary policy; monetary policy checklist; neutral monetary policy stance.

Money is a commodity and includes coins and notes, as well as bank and other deposits in financial institutions held by the public. It fulfils various functions including a commonly regarded measure of value, store of value and standard of deferred payments.

Money capital is the finance needed to undertake business investment involving the purchase of physical capital; for example, plant and equipment.

Money income is the income received by people, which is measured in terms of the nominal number of dollars and cents received rather than its purchasing power or the quantity of goods and services that each dollar can buy. In times of inflation, the real purchasing power of incomes is eroded, whereas when there is deflation and things are cheaper, money income goes further and can purchase a greater quantity of goods and services. *See* real incomes.

Monopolistic competition is competition in the market between many buyers and sellers of goods and services that are close but not perfect substitutes because of the existence of brand names and other means of product differentiation.

Monopoly is where a market or industry is dominated by a single producer of goods or services for which there is no close substitute. Such a producer has the potential market power to fix output, prices and profits in a non-competitive way (e.g. power companies, some utilities, possibly BHP steel and CSR). Monopolies occur with both private and government-owned enterprises.

Movement along a demand line is caused by a change in price. It is shown on a demand–supply diagram as a move from one point on the demand line or curve to another point. It occurs when consumers of particular goods and services are prepared to buy less of a good or service as the price rises (a contraction in demand), and more as the price falls (an expansion in demand). It should *not* be confused with a shift in the location of the whole demand line caused by changes in the microeconomic non-price conditions of demand (changes in the quantity purchased at each given price level).

Movement along a supply line is caused by a change in price. It is shown on a demand–supply diagram as a move from one point on the supply line or curve to another point. It occurs when producers of particular goods and services are prepared to supply a larger quantity of a good or service as prices rise (an expansion in supply), and a smaller quantity as prices fall (a contraction in supply). It should *not* be confused with a shift in the location of the whole supply line caused by changes in the microeconomic non-price conditions of supply (changes in the quantity produced at each given price level).

Multicultural society is one based on ethnic diversity.

Multifactor productivity represents a measure of the overall or combined efficiency of labour, capital and other resources.

Multilateral trade agreements are trading arrangements between three or more nations designed to foster international trade; for example, GATT. *See* bilateral trade agreements.

Multinational companies, also called transnationals, are businesses that produce and distribute goods and services in a number of different countries around the world.

Multiple branding occurs when one company sells two or more similar or identical products (e.g. some washing detergents, toothpaste) under different brand names.

NAIRU (the non-accelerating inflation rate of unemployment) is the lowest rate of unemployment that does not add to inflationary pressures (including rising wages). Currently, this involves a changeable unemployment rate equal to around 4.0–4.5 per cent of the labour force.

Narrative fallacy is an aspect of behavioural economics where consumers can be sucked into various scams simply because of the plausible and impressive way information is presented, often focusing on a story with few facts.

National accounts are annual statistical reports prepared by the ABS and designed to monitor changes in macroeconomic variables such as spending, production and incomes. These were first prepared in the 1945 budget and are useful for economic analysis and policy formulation.

National debt is the total of government and private loans still awaiting repayment.

National income equals GDP minus indirect taxes less subsidies minus depreciation allowances minus net income payable overseas.

National savings is money that accumulates when households, firms and governments do not spend all their current income. The government, for example, can save by adopting a budget surplus rather than a budget deficit.

National wage case is considered each year by the Fair Work Commission when it considers the case for a rise in the minimum wage. Typically, there are wage submissions from the ACTU, the government and employers. This and other information is used to make a decision. In July 2022 there was a 5.2 per cent rise to $812.60 per week for fulltime adult workers.

National water initiative (NWI) is an aggregate supply strategy that seeks to develop a national approach to the allocation of water. It encourages water trading between states and improvements in water pricing in order to manage this scarce resource more effectively.

Nationalisation is government takeover of the control and ownership of firms and industries previously owned privately.

Natural monopoly is where there is only one firm in a market due to various circumstances such as the barriers to entry to competitors caused by the huge investment needed, practicalities, government restrictions in the past or some special cost advantage enjoyed. Natural monopolies are common in service delivery areas where competition is limited, such as water and power supply.

Natural resources *See* land.

Natural unemployment is made up of structural, frictional, seasonal and hard-core types of unemployment that exists to some extent, even in a healthy economy. It is caused by various changes in aggregate supply-side conditions such as the effect of new technology, industry restructuring, the mismatch of skills to fill the jobs on offer, business relocation, unemployment for those workers between jobs and those unemployed at the same time each year. For Australia, recent research suggests that currently, 4.0–4.5 per cent of the labour force is naturally unemployed. Attempts to reduce unemployment to a rate less than this, would only cause labour shortages and cost inflation. For Australia, the rate of natural unemployment has changed over the years. For instance, it was around 1–2 per cent in the 1950s, rose to 6.0–7.0 per cent in the 1970s and 80s and recently, fell to around 4.0–4.5 per cent.

Necessity is an essential good or service such as food, shelter and clothing needed for survival.

Negative environmental externalities represent the costs to the environment created by producers and consumers as a result of economic activity. They include pollution, resource depletion, destruction of natural beauty spots, urban congestion and crime that have simply been externalised or passed on to others and future generations.

Negative externalities are adverse consequences or costs imposed on a third party as a result of an individual or firm undertaking economic activities. These are an example of market failure. External costs might include pollution, exhaustion of resources, smoking, urban problems, high-rise housing, stress, crime, traffic congestion, lack of open space, lack of personal identity, global warming and climate change. The pursuit of rapid economic growth here and overseas has been a major cause of negative externalities.

Net economic welfare (NEW) is a measure of welfare developed by American economist Paul Samuelson and designed to improve the usefulness

of GDP in a similar way to the measure of economic welfare.

Net errors and omissions is an item that reflects the inaccuracies in the recording of international transactions. This item may be either positive or negative.

Net foreign debt (NFD) occurs when the value of borrowing abroad by Australian residents (government, public and private) exceeds the value of Australian assets abroad. A rising level of debt need not be a problem provided that the country has a growing capacity to service that debt by expanding its income from abroad (via increases in net exports and productive capacity, for example). This was not the case during the latter 1980s in Australia.

Net foreign equity (NFE) represents the excess value of foreign-owned Australian assets (such as property, shares and the retained earnings of overseas owned companies operating here) over the value of overseas assets owned by Australian residents measured over a period of time.

Net goods represent one category of international transactions recorded on the balance of payments current account. It represents the annual difference between credits for goods exported minus debits for goods imported.

Net investment is recorded on Australia's balance of payments account as a subsection of the capital and financial accounts. It represents the difference between direct and portfolio investment coming into Australia from overseas, and direct and portfolio investment by Australian residents overseas during a period of time.

Net migration is the rate of immigration minus the rate of emigration.

Net overseas spending is the value of spending on exports of goods and services minus the value of spending on imports of goods and services.

Net primary incomes represent one category of international transactions recorded on the balance of payments current account. It involves the payment of primary incomes by Australia overseas and the receipt of primary incomes from overseas in the form of wages, profits, interest, dividends and royalties. Net primary incomes is equal to the value of primary income credits (receipts of incomes from overseas) minus the value of primary income debits (payment of incomes to overseas).

Net reserve assets are recorded on our balance of payments account and involve both RBA and government transactions including foreign currencies, monetary gold, and required contributions to overseas governments and international agencies.

Net secondary incomes represent one category of international transactions recorded on the balance of payments current account. It involves the transfer of funds (e.g. non-capital foreign aid) to and from Australia. Net secondary incomes is equal to the value of secondary income credits minus the value of secondary income debits.

Net services represent a category of international transactions recorded on the balance of payments current account. It involves the purchase by Australia and sale to overseas of services such as shipment, education, other transport and travel. Net services is equal to the value of service credits (from the sale of services to overseas) minus the value of service debits (from the purchase of services from overseas).

Net wealth or net worth represents the value of assets owned by individuals, such as a house or shares, after taking any debt into account.

Net zero emissions is the target for the reduction of CO_2 emissions agreed to by Australia and many other nations at the 2021 UN's Climate Conference in Glasgow. The aim is to limit climate change and global warming to 1.5 degrees Celsius, based on 1880 levels.

Neutral monetary policy stance occurs when the RBA's cash rate target is around the 'normal' 3.0 per cent range. Rates below this (e.g. 1.85 per cent in August 2022) are seen as expansionary to stimulate AD, while rates above this are contractionary (e.g. 3.5 per cent in 2011) and aim to slow AD and economic activity.

Nominal income is simply the number of dollars of income received by an individual measured over a period of time, and does not take into account inflation and deflation that affect its purchasing power.

Non-competitive markets are marketplaces or situations where prices are not set in an atmosphere of keen competition between many small buyers and sellers. In such markets, it is common to find monopolies and oligopolies. *See* monopoly; oligopoly; restrictive trade practices.

Non-economic living standards are value-based elements of human wellbeing that influence that part of our living standards unconnected with material possessions — they affect the quality of our daily lives. Elements may include the level of personal happiness, self-fulfilment, low crime and

death rates, absence of pollution and political freedom, mental and physical health, and life expectancy. Many of these are difficult to measure precisely. *See* general or overall living standards and general welfare; living standards; negative externalities.

Non-excludable goods are those where individuals who refuse to pay, cannot easily be prevented from consuming them or gaining benefit. Examples of such goods might include common access resources like the air we breathe, and public goods such as national defence, fire prevention and the police, and street lighting.

Non-market activity is production by households and individuals not actually sold or marketed, such as home duties, gardening, babysitting and cooking. This means that the value of this production contributes nothing officially to GDP. The same is true of the cash and black market economies.

Non-material living standards relate to the 'quality' of an individual's daily life, not directly related to the consumption of material goods and services. They could be affected by factors like happiness, freedom, pollution, crime rates, democracy, job satisfaction, mental and physical health, and life expectancy. *See* non-economic living standards.

Non-price conditions of demand are the factors other than a change in the price of a product, that can affect the quantity of a good or service purchased at a given price, shifting the position of the whole demand curve to the right or left of the original curve and leading to a change in the equilibrium price and quantity traded. These factors could include a change in disposable income, fashions and tastes, advertising, government laws, and seasons.

Non-price conditions of supply are the factors other than a change in the price of a product that can affect the quantity of a good or service supplied or made available by producers at a given price, shifting the position of the whole supply curve to the right or left of the original curve, and leading to a change in the equilibrium price and quantity traded. These factors could include a change in production costs, tax rates, profits and climatic events.

Non-renewable resources are natural resources that cannot be replaced or remade as they become exhausted; for example, minerals and oil.

Non-rivalrous goods are those where the consumption of a good by an individual does not prevent others from consuming that good. An example might be a public good like national defence or free-to-air TV.

Non-rural commodity markets are institutions where buyers and sellers of raw materials extracted from the ground negotiate prices.

Non-tax revenue is budget receipts that come from sources other than taxes, such as rents from property, profits from government trading enterprises and asset sales.

Non-taxable income is income not subject to tax. For example, income below the tax-free threshold is not taxable. Additionally, some business-related expenses incurred by individuals in gaining income can be subtracted from gross income to arrive at the level of taxable income.

Normative economics involves statements about what should be done, based on personal opinion, likes and dislikes. For instance, to say that the Australian government 'should increase its spending on defence by cutting outlays on welfare benefits' is a statement of personal beliefs, so this represents normative economics.

Nudge is a marketing idea drawn from behavioural economics, designed to change peoples' behaviour. It involves providing a gentle reminder, a prompt, or something that catches attention and seeks to alter people's behaviour in a predictable and wanted way, without forcibly limiting their choices.

Official cash rate is the interest rate target set by the RBA for the short-term money market and indicates its monetary policy stance.

Oligopoly occurs when several large firms control the output of a product for which there is no close substitute; for example, an oil refinery, soap powder, car and tyre manufacturing and electrical goods.

Open market operations or **market operations** represent one specific aspect of monetary policy conducted by the Reserve Bank, designed to keep the actual cash rate in the short-term money market close to the RBA target rate that sits within the policy interest rate corridor. Once the cash rate target has been set, these operations involve the sale and repurchase of government securities or bonds by the RBA: this management of the supply of cash helps keep the actual cash rate close to the RBA's target rate. For instance, if there was a rise in the demand for cash by banks putting upward pressure on the cash rate, the RBA could repurchase bonds from banks, increasing the supply of cash and driving the cash rate down to the close to the target rate. In reverse, if there was a tendency for the cash rate to fall too low below the target rate, the RBA

could sell bonds to the banks, reducing the supply of cash and liquidity, thereby keeping the cash rate at the appropriate level. By directly influencing the actual cash rate, the RBA can then indirectly affect other longer term interest rates to help manage the levels of AD and economic activity. *See* interest rate policy; interest rates corridor; cash rate target; monetary policy.

Opportunity cost is the loss of production (production forgone) that occurs when scarce resources are diverted into their next most productive use. Given resource scarcity, this cost is unavoidable in a fully employed economy working at maximum efficiency. For example, increased military production may be measured in terms of the benefits forgone as a result of reduced civilian production. In international trade, the failure of countries to specialise in the production of goods and services where they have a comparative cost advantage also creates an opportunity costs that lowers efficiency and their general level of wellbeing.

Organisation for Economic Co-operation and Development (OECD) is an international organisation with 24 member nations, including Australia, that is heavily involved in promoting international trade.

Outlays in the budget are the expenses or costs paid by the government in providing public goods and services, and welfare benefits.

Overall balance of payments account (BOP) is an annual statistical record of Australia's financial transactions with the rest of the world. In turn, these transactions are divided into two main types of transactions — current transactions, and transactions involving the capital and financial accounts, each recording credit and debit transactions.

Overconfidence is an aspect of behavioural economics where in making decisions, consumers overestimate their current state of knowledge or skill and hence make ill-founded and non-rational choices.

Overdraft is a type of advance or loan made by banks where individuals or companies are granted permission to overdraw their bank accounts and take out a loan, in exchange for the payment of an interest rate. This is both a demand-side factor affecting spending, and supply-side factor affecting production costs and profitability.

Overnight or **short-term money market** is an institution in which money is borrowed and lent for short periods of time (e.g. overnight). In conducting its interest rate policy, the RBA operates by selling or buying back secondhand government securities in the short-term money market, thereby altering liquidity, the availability of credit and hence official interest rates. *See* interest rate policy; monetary policy; open market operations; short-term money market.

Overseas debt *See* foreign or overseas debt; net foreign debt.

Overseas reserves are holdings of foreign currencies by the Reserve Bank. They may be used by the RBA for a dirty float to support the Australian dollar and to help iron out unwanted or erratic falls in the value of the Australian dollar. *See* dirty floating exchange rate; floating exchange rate; foreign exchange reserves.

Overseas sector is that part of an economy involved in the selling of exports and the purchase of imports of goods and services.

Overtime refers to hours of employment or work outside those normally agreed. Overtime normally increases during booms when labour is in short supply and declines during recessions when unemployment is relatively high.

Paid work is when individuals sell their labour for wages or salaries.

Paris Climate Summit in 2015 involved most countries entering an agreement to limit their emissions of greenhouse gases. Australia's target by 2030 was initially set at a 26–28 per cent reduction compared with carbon emissions levels in 2005, but in 2022, was revised to a 43 per cent reduction.

Participation rate is a term usually applied to the labour force describing the percentage of a given group of individuals of working age who are prepared to work and seek employment. Changes in welfare and tax scales can affect participation. A rise in the participation rate can act as a favourable aggregate supply factor growing the nation's labour resources, productive capacity and potential GDP.

Pattern of income distribution relates to the way the nation's income cake is divided between individuals, groups and regions making up society. Income may be divided unevenly; for instance, as a result of differences in age, sex, geographic location, skill, experience, ethnic background, job responsibility and occupation.

Pay-as-you-go (PAYG) tax on personal incomes is a direct progressive tax levied at marginal rates of zero per cent up to 45 per cent, not including the 2 per cent Medicare levy (2022–23–24). Over recent

years, the Australian government has been implementing a three-stage tax reform package over the next few years to 2024–25 designed to reduce tax rates and restructure tax brackets. *See* personal income tax.

Peak is the upper turning point on the business cycle prior to contraction. It is often associated with higher production and inflation, and lower unemployment. *See* boom.

Perfect competition is a theoretical situation in the marketplace where many buyers and sellers compete by selling a homogeneous product for which there are many perfect substitutes. In this market, market power is low, and firms are price takers. In addition, barriers to entry into the market are relatively low. *See* market capitalist economy.

Perfect knowledge is a precondition for a pure market economy. Here, buyers and sellers have complete and accurate information so they can make rational decisions.

Perfect or pure competition exists when there are many sellers of an identical good or service in a market causing each seller to have almost no market power.

Perfect or pure monopoly occurs when competition in a particular industry or market is weak, and a single firm controls the output of an entire industry for a product where there are no substitutes available.

Personal income tax is an important direct federal tax on the wages and salaries of individuals (PAYG). It is described as progressive because it taxes higher incomes at higher rates than lower incomes. Marginal tax rates on personal income begin at 0 per cent on taxable incomes up to $18 200 per year, rising through steps up to 45 per cent on taxable incomes of more than $180 000 per year, not including the 2 per cent Medicare levy (2022–23–24).

Persuasion is a minor type of monetary policy strategy that may be used by the RBA to talk up or down the level of borrowing, spending and economic activity.

Planned capitalism means that the economic system mainly involves decision making through government economic planning, and there is much private ownership of business or the means of production.

Planned socialism means that the economic system mainly involves decision making through government economic planning, and there is much state or government ownership of business or the means of production.

Policy instruments *See* aggregate demand management policies; aggregate supply policies; budgetary policy; environmental policies; immigration policy; macroeconomic policy; microeconomic reforms; monetary policy.

Policy interest rate corridor *See* interest rate corridor, monetary policy, open market operations, cash rate target.

Policy mix is the combination of particular types of government economic policies (e.g. the mixture of macroeconomic or aggregate demand policies versus aggregate supply policies including microeconomic policies) used to pursue each government economic goal. For instance, controlling inflation is best done using a mixture of aggregate demand monetary policy and efficiency promoting aggregate supply policies — the former is used to control demand inflation and the latter policy is used to curb cost inflation by reforms to promote greater efficiency.

Policy settings relate to whether aggregate demand budgetary and monetary policies need to become more expansionary or more contractionary, given the economic trends.

Policy stance refers to whether aggregate demand management budgetary and monetary policies have an expansionary or contractionary impact on the level of aggregate demand and domestic economic activity. For instance, during a recession or slowdown when unemployment is rising (which occurred in 2020), budgetary policy often becomes more expansionary by automatic and discretionary cuts in receipts relative to outlays. Typically, the budget moves into deficit and this tends to stimulate aggregate demand and economic activity. Similarly, when the RBA announces a lower cash rate target where rates are cut from 2 per cent to 1 per cent, for example, this signals a more accommodative or expansionary stance designed to stimulate aggregate demand and economic activity (e.g. between 2016 and early 2022). By contrast, the stance typically becomes less expansionary or more contractionary to slow aggregate demand during an inflationary upswing in economic activity (e.g. 2021–22–23).

Political constraints are the limits imposed on the use of various policies by the government's desire to remain popular with voters, the lack of a majority in the upper house and by the limits to constitutional powers to take certain action. For

example, rises in tax rates or cuts in welfare outlays are seldom popular with voters.

Population growth equals the rate of natural increase (birth rate minus death rate) plus the rate of net migration (immigration rate minus emigration rate). *See* immigration policy.

Population pyramids are diagrams used to show the distribution of a country's population between different age groups and between males and females. These diagrams are usually shaped like a pyramid, with the sides sloping upward to a point because there are generally fewer people in each successively older age group. However, over the years, economic events such as recession, social events (acceptance of contraceptives and changing roles of women) and political events (e.g. war) in Australia and overseas have caused irregularities in the shape of Australia's population pyramid.

Portfolio investment is investment involving the purchase of bonds and shares generally listed on the stock exchange. It is often regarded as speculative and unstable in nature. This is a major item contributing to non-official (private) capital movements recorded as one item on the balance of payments capital account.

Positive economics analyses issues where the investigation is largely free of personal values, feelings or opinions. It is based on hard evidence about what *is* actually the case. In other words, positive economic analysis often involves basic statements such as 'if A occurs, then B is the result'.

Positive externalities are the benefits that flow to third parties not directly involved in the production or consumption of a particular merit good or service. In such cases, the free market under-produces a socially beneficial good like vaccinations and education.

Potential GDP describes how many goods and services a nation could theoretically produce if all resources were used most efficiently. It is the same as a nation's productive capacity and may be illustrated using the production possibility frontier on a production possibility diagram. It would also be that point on a nation's aggregate supply line where there will be no further rise in production following rises in the general price level.

Poverty is a term that may be taken in *three* senses:

1. absolute poverty — an insufficiency of income to purchase necessities
2. comparative poverty — an individual may be relatively poor given the general community standards of affluence
3. personal poverty — this may be caused when an individual suffers a sudden drop in living standards caused by, for example, unemployment or sickness.

In the Commission of Inquiry into Poverty (1973) by Ronald Henderson and others, it was found that 10 per cent of Australians lived below a poverty line (an austere level of income) and another 8 per cent were rather poor, having incomes less than 20 per cent above the poverty line. The main groups affected were the aged, females, large families, single-parent families, migrants and the unemployed. Some critics of the Henderson measure say that it exaggerates the extent of poverty. Among those most affected are the young, Indigenous Australians and the long-term unemployed. *See* poverty line.

Poverty line is a level of income below which recipients cannot enjoy reasonable food, shelter and clothing. There are several poverty lines to allow for different sized income units. These lines are regularly updated because inflation erodes the purchasing power of incomes. *See* poverty.

Predatory pricing is selling a product or service at such a low price that competitors are effectively driven out of the market.

Present or **short-term bias** is an aspect of behavioural economics where in making a decision, consumers have a preference towards decisions that provide more immediate benefits, rather than being more patient and taking a longer term assessment that may be more beneficial and rational.

Price is the purchase cost or amount paid in exchange for the supply of goods and services. Price often reflects the conditions of demand and supply at equilibrium in a market.

Price ceiling is a limit imposed by the government on the free operation of a market. It involves setting a maximum price that is at a level below the equilibrium price, to make the price of a good more affordable. Unfortunately, this normally results in a market shortage because prices are prevented from rising towards equilibrium where demand equals supply.

Price collusion is where companies join together to set prices that are usually higher than otherwise and establish selling arrangements that restrict competition.

Price elasticity of demand (PED) relates to the degree of *responsiveness* of the quantity demanded, in response to a change in price. For instance, given a rise in price, elasticity relates to whether the demand contracts by a lot or just a little in percentage terms. This can be affected by the availability of substitute products, the product's importance, change in government laws, and the time period involved. Price elasticity of demand can be calculated as follows:

$$\text{PED} = \frac{\text{Percentage change in the quantity demanded}}{\text{Percentage change in its price}}$$

PED is greater than 1 when demand is elastic and less than 1 when it is inelastic.

Price elasticity of supply (PES) relates to the *extent* to which the quantity supplied responds (i.e. whether the quantity supplied expands or contracts by a large or small percentage) to a change in price. It is affected by product storability, time, and resource mobility. Again, elasticity is reflected in the steepness of the supply line and may be affected by the time period, product storability, resource mobility and the level of unused productive capacity. Price elasticity of supply can be calculated as follows:

$$\text{PES} = \frac{\text{Percentage change in the quantity supplied}}{\text{Percentage change in its price}}$$

PES is more than 1 when supply is elastic and less than 1 when supply is inelastic.

Price fixing is anti-competitive and refers to illegal collusion between supposedly rival firms, often involving strategies that increase prices above normal levels.

Price index is a statistical measure used to show changes in the average cost or price of a basket of items. *See* consumer price index (CPI); export price index; implicit price deflator indices (IPDI); terms of trade index.

Price leadership is where a dominant or leading firm takes a lead in setting prices that others follow.

Price makers are sellers of goods and services (e.g. some unions, government enterprises and large businesses) that have the market power to set prices because of the absence of strong competition among suppliers. They are common in markets where monopolies and oligopolies exist and where there are excessive levels of tariff protection.

Price mechanism *See* market mechanism.

Price signals or changes in market prices help to make key economic decisions in a market economy by creating incentives for the owners of resources. When the non-price conditions of demand or supply change in a market, shifting the position of the demand or supply curve or line, they cause a change in relative prices and relative profits, guiding owners to allocate resources to where they are most wanted by consumers. Their level and direction indicate whether there has been over- or underproduction of a good or service in a market economy. Rising relative prices signal shortages or underproduction in a market, while lower prices signal gluts or overproduction. *See* market mechanism.

Price system *See* market mechanism.

Price takers are sellers of goods and services in a market who have no power to influence the prices they receive because they sell an identical product that is sold by many other suppliers. The situation exists in markets when competition between sellers of goods and services is strong.

Primary income *See* net primary incomes.

Private consumption *See* consumption spending.

Private enterprise occurs when the means of production (such as land, farms, mines, services, factories and banks) are owned privately. Usually, owners seek to maximise profits. *See* free enterprise; market capitalist economy.

Private expenditure is spending by private individuals, households and companies designed to help satisfy both immediate and future needs and wants. Both C and I are private components of the aggregate demand equation.

Private income is personal or market income from the sale of resources including wages, interest, rent, dividends and profits, before paying income tax.

Private sector includes small, medium and large businesses that are owned by individuals that produce goods and services. Most try to maximise profits.

Privatisation is the reduction of government ownership of business enterprises and their sale (through the issue of shares) to private individuals or the public (e.g. Telstra, Commonwealth Bank, Qantas). Justification for privatisation includes that it would lift efficiency by improving access to money capital and stronger management, cut costs by the increased desire to maximise profits, and lower prices and improve service quality by increasing the potential for competitors.

Pro-cyclical policy may occur when the government tries to use aggregate demand budgetary and monetary policies to help iron out countercyclical changes in various economic policies, but these actions can sometimes worsen instability. If there are long time lags in recognition, implementation and/or impact, these policies can become mistimed and slow spending, for instance, when there is actually a need to increase spending. If this occurs, they become *pro-cyclical*, worsening economic instability. *See* countercyclical budgetary policies.

Product differentiation is the use of brand names, unique product features, and advertising to establish differences between substitutable products.

Production involves using resources to make goods and services.

Production costs include business expenses such as wages, salaries, rent, interest on loans, prices of local and imported raw materials, and government taxes and charges. They are included in the price of goods and services sold. Production costs affect profits and thus can be seen as an aggregate supply factor.

Production possibility diagrams (PPDs) are used to illustrate some of the production choices available to society in the ways scarce resources may be used. They also show the country's productive capacity or potential output, and can be used to demonstrate the concept of opportunity cost.

Production possibility frontier (PPF) depicts the maximum level of output possible for a country when all resources are used to maximum efficiency. When a nation is located on this curve or frontier, it is impossible to raise the output of one product without reducing the output of another, unless of course productive efficiency and/or the quantity of resources are expanded. The PPF represents a nation's productive capacity or potential level of output. On the aggregate supply line, this occurs at the 'elbow' where the line becomes vertical. Over time, the size of the frontier may grow or shrink due to changes in the quantity of resources available or the efficiency with which resources are used. Aggregate supply factors or conditions affect the size of the frontier. *See* aggregate supply (AS); aggregate supply policies; aggregate supply-side factors; productive capacity.

Productive capacity is the economy's physical limit or potential to produce goods and services (potential level of GDP) when all resources are used to maximum efficiency. This is shown at the point where there is an upward bend in the aggregate supply line. It can also be shown on a production possibility diagram as the production possibility frontier or PPF. Productive capacity may be increased (shifting the AS line or the PPF outwards) by access to additional resources. It may also be enhanced by increased efficiency, high levels of investment in new technology, increased participation rates, higher worker motivation and even lower production costs. *See* aggregate supply (AS); aggregate supply policies; aggregate supply-side factors; bottlenecks to production; production possibility frontier (PPF).

Productive or **technical efficiency** is about firms producing goods and services using the least-cost method and by minimising the resources used. For this to occur, businesses need to employ best practice involving plant, equipment, technology and organisational expertise currently available. A rise in technical efficiency will shift the PPF outwards. *See* efficiency.

Productivity is a measure of efficiency or the output gained per unit of input of resources and this has an important influence on productive capacity and aggregate supply. In the case of labour, productivity is a measure of efficiency calculated by dividing the real value of final output over a period of time by the total number of workers. Multifactor productivity reflects the efficiency of all inputs of resources. Australia's failure to substantially lift productivity/efficiency has contributed to industry's lack of competitiveness in domestic and foreign markets. Microeconomic reforms and industry plans have attempted to help solve this problem. *See* efficiency; microeconomic reforms; multifactor productivity.

Profit margin is the difference between the final price and the total prices or costs of all inputs used. Generally, producers attempt to maximise profits by their actions and allocate resources accordingly.

Profit maximisation is an assumption applicable to the operation of a market capitalist economy where most individuals and firms attempt to achieve the highest rate of income. However, firms may also have other goals such as enlarging their market share.

Profitability is roughly indicated by the total value of a business's sales minus the total value of its costs. Maximising profits is a key goal for most firms.

Progressive taxes are designed to redistribute income more evenly. They do this by increasing the marginal tax rate as personal income levels increase

(e.g. with personal income tax and capital gains tax). This is the opposite type of tax to a regressive tax. *See* personal income tax; regressive tax.

Property market is an institution where buyers and sellers of land, houses, units and industrial sites (property) negotiate a price.

Proportional or **flat tax** is a tax where the tax rate remains constant irrespective of income level; for example, 30 per cent tax on the company profits of large firms (a lower 25 per cent rate applies for small to medium-sized firms).

Protection is a term used in international trade where imported goods and services are excluded or their volume reduced using various devices such as tariffs or import quotas. Protection is the opposite of free trade. Over the period 1972 to 2022, the federal government reduced the level of protection as part of its microeconomic policy designed to lift efficiency in the allocation of resources. Many arguments are used to justify protection of local industry including the creation of jobs, support of infant industries, and defence arguments. *See* free trade.

Protectionism *See* protection.

Public debt interest is interest payments on government borrowings.

Public goods and services are those available for all people to use, gain benefit from or enjoy (e.g. the law, defence, parks and beaches, most public roads). They are usually non-excludable and non-rivalrous in nature, and are often associated with the *free rider* problem. Examples of public goods might include the provision of national defence, the police, street lighting, fire prevention measures, free-to-air TV and free on-line training courses. Because users cannot be excluded if they refuse to pay, this reduces the profitability of the public goods, making them unattractive for the private sector, and leading to their underproduction, unless of course, the government steps in to make these available.

Public government ownership is widespread in socialist nations and involves state ownership of the means of production like banks, factories and farms.

Public–private partnerships (PPPs) are infrastructure ventures, such as tunnels and major roads, undertaken by federal and state governments with the private sector. Private money builds, maintains and operates the facility, but the government leases it for periods up to 30 years.

Public sector is that part of the economy involving the government production of goods and services.

Public sector borrowing requirement (PSBR) is the finance required by all levels of government when total budget outlays exceed total receipts (i.e. there are budget deficits). *See* government borrowing.

Public trading enterprise is a government business that tries to sell its goods and services at a profit.

Purchasing power is the actual or real quantity of goods and services that may be bought with a given amount of money or income. Changes in real wages (money wages adjusted for inflation or deflation) may be a useful indicator of changes in purchasing power.

Purchasing power parity (PPP) is used to make adjustments to the purchasing power of money in different countries so as to allow international comparisons of incomes. The adjusted number is usually expressed in international dollars.

Pure competition *See* perfect competition.

Pure market capitalist economy *See* market capitalist economy; perfect competition.

Pure market economy is one where all economic decisions about the production and distribution of output and incomes are made by reference to the price system, without any government interference.

Pure monopoly is an industry structure where one producer controls 100 per cent of the industry's output for which there are no close substitutes. Competition is non-existent and the producer is a price maker.

Purely competitive markets *See* perfect competition.

Purely planned economy is one where all economic decisions about the production and distribution of output are made by reference to government decisions, without a reliance on the market or price system.

Quality of life usually relates to society's level of *non-material* living standards as influenced by a number of subjective or value-based variables; for example, happiness, the crime rate, hours of leisure and work, mental and physical health, relationships, the environment and freedom. *See* non-economic living standards.

Quantitative easing (QE) is an unconventional monetary policy strategy temporarily used by the RBA during 2020–21 and into early 2022, to inject additional cash or liquidity into the financial system. It does this by the RBA repurchasing state and federal government bonds in the secondary market. This increases bank liquidity and helps to hold down the cost of bank credit loans for customers. This strategy was used to support the

operation of conventional monetary policy involving changes in the cash rate.

Quarterly changes in data occurs where statistics are released every three months, or four times a year, as with GDP.

Quintiles represent the five equal-sized groups making up all income earners in Australia. Each quintile therefore represents 20 per cent or one-fifth of all income earners. Comparing income or wealth shares of the income cake by quintiles exposes the degree of inequality.

Quota is the quantity limit or target for production or the import of particular types goods (import quotas).

R&D grants and tax concessions are an aspect of aggregate supply budgetary policy. They are designed to make conditions more favourable for producers by helping to cover some of their production costs, grow knowledge and boost technical efficiency. This can help to expand the economy's productive capacity and international competitiveness.

Rapid economic growth *See* goal of strong and sustainable economic growth.

Rate of interest is the cost of borrowing money or the return for lending money. Broadly, this is determined by market forces although the Reserve Bank may influence its level via its open market operations and other measures. *See* interest rate policy.

Rational behaviour is assumed to occur in competitive markets — the belief that both buyers and sellers behave rationally and act in their own self-interest. For example, it is often assumed that firms maximise profits, and consumers want to purchase goods at the lowest price. *See* asymmetric information, bounded rationalism.

Real GDP is the value of a nation's output measured over a period of time, after statistically removing the effects of price changes, to reveal actual changes in the volume of goods and services produced. *See* gross domestic product at constant prices.

Real incomes refer to the purchasing power or the quantity of goods and services that each dollar of nominal income can buy. When prices fall, the purchasing power of nominal incomes is greater, whereas it is less when prices rise. Real incomes can be calculated by taking the annual percentage change in nominal incomes and *subtracting* the annual percentage change in prices. *See* purchasing power.

Real interest rates represent the actual cost of borrowing calculated by subtracting the inflation rate from the nominal interest rate. Inflation is taken into account because, from a borrower's point of view, it reduces the purchasing power of the moneys being repaid. *See* interest rate.

Real unit labour costs (RULCs) are the average wages paid per worker relative to the average value of output produced per worker measured over a period of time.

Receipts in the budget represent incoming money for the government from direct, indirect and non-tax revenue.

Recession is a downturn in economic activity (such as occurred in 2020) caused by a slowing of aggregate demand leading to reduced sales, above-average levels of cyclical unemployment and a slow rate of economic growth. An economy is said to enter a recession when the real value of production falls in at least two successive quarters (i.e. in six months).

Recover is a period on the business cycle where the levels of national production and employment are rising.

Redistribution of income occurs when government measures such as progressive taxes (direct tax), social welfare benefits (direct benefits) and other needs-based outlays such as education, health and welfare housing for the needy (indirect benefits) create a more equitable income distribution where everyone has access to basic goods and services.

Regimen is the basket of, for example, goods and services or currencies used in the construction of index numbers such as the consumer price index, export price index and trade weighted index. *See* consumer price index (CPI); index numbers.

Regressive tax is a tax that tends to exaggerate income inequalities because low incomes are taxed at higher rates when expressed as a percentage, than high incomes. Indirect taxes (such as the excise on tobacco, alcohol and petrol or the GST on a broad range of goods) are generally regarded as regressive.

Regulated markets are markets where the government restricts the free operation of the market or price mechanism, limiting its influence over resource and income allocations. Regulated markets were found in the former communist states of the Soviet Union and Yugoslavia, and exist today in China, Indonesia and even in Australia.

Relative poverty exists when people are very poor and on low incomes compared with what are

normally regarded as reasonable living standards in their society.

Relative prices describe the price level of one particular type of good or service compared with the price level of another. When relative prices change (perhaps due to changes in the conditions of demand and supply), this affects relative profits and hence influences how scarce resources are allocated among competing wants. For instance, a rise in the price of one good relative to another, often means that the good becomes relatively more profitable to produce, thereby attracting extra resources into this area of production.

Relative profits describe the profits made in one area of production versus another. They are affected by changes in relative prices.

Relative scarcity is where people's needs and wants are virtually unlimited and exceed the limited resources available to satisfy those wants. *See* scarcity.

Renewable resources are resources that can be replaced or renewed, such as some forests and livestock.

Rent is income derived from the use of land or property.

Re-regulation of markets is where the government reintroduces regulations or restrictions governing the operation of particular markets, perhaps designed to provide more certainty, security and stability.

Reserve Bank of Australia (RBA) as part of its charter, is required to ensure that its monetary policy is used to promote stability of the currency (i.e. control inflation), the maintenance of full employment and the general wellbeing of the people of Australian. Its functions include:

1. banker to the government and other banks
2. conducting monetary policy involving manipulating interest rates to promote stability of the currency (low inflation), full employment and the general wellbeing and living standards of Australians
3. keeper of foreign exchange reserves
4. lender of last resort to the banks.

See interest rate policy; monetary policy.

Resource allocation involves how scarce resources are to be used and the purposes or ends to which they are put. For example, will they be used for public or private purposes, for the production of specific consumer or capital goods, or for local or export production? *See* efficient allocation of resources; market failure.

Resources are inputs (also called factors of production) used in the production of goods and services. There are *three* main types:

1. land and natural resources
2. labour and entrepreneurial skills
3. capital and technology.

See individual listings.

Restrictive trade practices are illegal activities of business designed to limit competition, raise prices and expand the income of those undertaking them. Activities include:

1. retail price maintenance
2. collusive bidding and tendering
3. price leadership
4. interlocking directorships
5. predatory pricing.

These are illegal under the *Competition and Consumer Act* of 2010 (formerly the *Trade Practices Act*) which is enforced by the ACCC. *See* collusion; interlocking directorships; price leadership; retail price maintenance.

Retail price maintenance is an illegal trade practice where a producer sets a minimum price for the sale of an article by a retailer.

Revenue in the budget represents government income from various sources such as taxes.

Revenue from federal government enterprise transactions is a category of budgetary revenue collected from the sale of goods and services to the community.

Risk aversion bias is an aspect of behavioural economics where some people make choices that place more weight on avoiding making a loss, rather than making an equivalent gain.

Rivalrous goods are those where the consumption by one individual prevents others from consuming that same good. An example of this might be when you eat an apple, take a seat on a tram, or use up a hospital bed.

Rural commodity markets are institutions where buyers and sellers of farm produce (such as grains) negotiate prices.

Safety net wages are the minimum award wages set by the Fair Work Commission ($812.60 for 2022–23). They are set taking into account unemployment, cost of living, and economic conditions. *See* Fair Work Commission (FWC).

Salary is an agreed amount of money paid to employees for their labour during the year.

Sales tax is an indirect form of tax (like the GST) on selected goods and services levied by the government at the point of sale. Indirect taxes are

often regarded as hidden and are regressive, especially if levied on necessities. They can be made less regressive in their effects on income distribution if they are only levied on luxuries such as French wines or luxury cars purchased largely by higher income groups.

Savings are that portion of income not currently spent. Frequently, savings are deposited in financial institutions and become available for financing investment and consumption spending.

Savings–investment gap occurs when national savings by households, businesses and governments are not enough to finance national investment by households, businesses and governments. There is a savings–investment gap that can only be filled by borrowing savings from overseas. This increases domestic interest rates, net foreign debt and the current account deficit.

Savings reforms and plans have been initiated by the government to boost national savings. Australian households, businesses and governments do not save enough to finance our high level of investment spending. This results in a national savings–investment gap leading to heavy reliance on overseas borrowing, foreign debt and a weaker current account balance. To try to correct this problem, the government has initiated savings reforms (a savings strategy). These measures include the application of fiscal balance (surplus budgets pay for deficits over the economic cycle), the creation of the Future Fund (and other special savings funds), tax concessions for superannuation contributions (and for the withdrawal of benefits after age 60 years), cuts in tax rates to help facilitate more savings and the superannuation co-contributions scheme.

Scarcity is the basic economic problem or question that arises because our unlimited wants far outstrip the limited resources available for production to satisfy these wants. As a result, we need to make choices about which wants are satisfied. This decision results in opportunity costs.

Seasonal pattern in data or graphs are those that occur in the same month or time each year.

Seasonal unemployment occurs when climatic and other factors cause some workers, such as shearers, fruit pickers, holiday resort employees and ski instructors, to be unemployed at the same time each year.

Secondary incomes *See* net secondary incomes.

Sector is a section of the economy; for example, consumers, producers, government, overseas.

Securities *See* government securities; open market operations.

Services are non-material objects produced by people for the benefit of others. Often services are of a non-lasting form and expire as soon as they have been performed. However, in some cases, the consumer of services may derive lasting satisfaction from them.

Shift of the whole demand line or curve occurs when the onset of new non-price, microeconomic demand-side factors, cause buyers to be prepared to purchase a larger quantity of a good or service at any given price (called an increase in demand), or purchase a smaller quantity of a of a good or service at any given price (called an decrease in demand). This concept is not to be confused with an upward movement (demand contracts as the price rises) or downward movement (demand expands as the price falls) along the demand line, and is caused solely by a change in the price of a particular good or service. *See* non-price conditions of demand.

Shift of the whole supply line or curve occurs when the onset of new non-price, microeconomic supply-side factors cause sellers to be prepared to produce a larger quantity of a good or service at any given price (called an increase in supply), or a smaller quantity of a of a good or service at any given price (called an decrease in supply). This is not to be confused with an upward movement (supply expands as the price rises) or downward movement (supply contracts as the price falls) along the supply line, and is caused solely by a change in the price of a good or service. *See* non-price conditions of supply.

Shortage arises in a competitive market when, at a given price, the quantity of a good or service demanded exceeds the quantity supplied. Normally, this would cause the market equilibrium price to rise until demand equals supply.

Short-term refers to a limited time frame, possibly up to a year. Examining statistics covering such a period cannot be regarded as a sound basis for drawing reliable conclusions or trends.

Short-term money market enables the RBA to directly affect the short-term cash rate of interest. In this market, banks are legally required to maintain positive balances in their exchange settlement accounts (ESAs). To do this, between themselves, banks need to borrow and lend cash overnight at a rate determined at equilibrium within the policy interest rate corridor or rate guidance system. This corridor is operated by the RBA. It sets an upper

ceiling or the RBA's lending rate for banks short of cash (normally equal to the cash rate plus 0.25 percentage points), and a lower floor or deposit rate for banks with a cash surplus (normally equal to the cash rate minus 0.25 percentage points). These boundaries create financial incentives for banks to trade at a rate close to the RBA's cash rate target. The RBA will also conduct daily open market operations to manage the supply of cash and offset any tendency for the the actual cash rate to diverge too much from the target, caused by changes in the demand for cash.

Skilled migration program is part of the federal government's immigration policy. Skilled migrants are often recruited to help make up for shortages among the trades and professions, and generally make up nearly 70 per cent of the total migrant intake. *See* immigration policy.

Skills shortages exist from time to time when the supply of some occupations (e.g. engineers, electricians, machinists, doctors) is not enough to fill the number of job vacancies that are on offer in these areas. They represent an aggregate supply barrier, limiting productive capacity and the potential rate of economic growth.

Slump is a downturn. *See* depression; Great Depression; recession.

Small and medium-sized business enterprises (SMEs) are currently defined as those with an annual turnover of less than $50 million. They are taxed at 25 per cent of profits, not the usual 30 per cent.

Social infrastructure includes the government's provision of adequate and affordable health care education and housing. *See* infrastructure.

Social security or welfare represents transfer payments by the government to supplement the income of the neediest individuals generally available only to those who pass the assets test (wealth) and/or a means test (income). They include unemployment benefits, the aged pension, invalid and sickness benefits, single-parent benefits and family allowances, and are designed to promote greater income equality. They help to promote equity by allowing low-income earners to purchase basic goods and services and enjoy reasonable living standards. *See* assets test; direct benefits; means test.

Socially desirable goods and services are often associated with positive externalities and are sometimes known as merit goods since they are seen as beneficial for society. Examples here might include education, health care, welfare services, affordable housing, fire protection, refuse collection and public parks. In a free market capitalist economy, these are often under-produced — a market failure. This is partly because they are costly or expensive to produce, and cannot be sold profitably at a low price where all can afford them. To gain the wider social benefits, the government often chooses to provide them, perhaps free of change.

Socially undesirable goods and services are an area of market failure. Examples might include firearms, illegal drugs and pollution. Sometimes these goods or services are overproduced due to their profitability, but their production or consumption nonetheless damages the general wellbeing of society.

Soft loans are offered at a special discounted or favourable interest rate.

Solar panel rebates are a government incentive using subsidies to encourage households to install rooftop solar panels, by making them cheaper. The scheme is designed to help reduce CO_2 environmental emissions and slow climate change.

Special savings–investment funds such as the Future Fund have been created by the government by investing budget money into giant investment portfolios that over time should grow in value.

Specialisation in production occurs when a nation concentrates on making particular goods and/or services where it is relatively most efficient, given the resources available. *See* comparative cost advantage; absolute cost advantage.

Specialisation of labour occurs when workers perform only a narrow range of tasks or concentrate on a particular occupation, trade or skill, using the income gained to satisfy their other needs and wants.

Speed limit for a growing economy is governed by the rate of rise in an economy's productive capacity. This is affected by AS conditions and dictates how fast aggregate demand can expand. It is the maximum rate of economic growth that is possible without causing rapid inflation or a blow-out in the size of current account deficit.

Stabilisation policy involves government measures that seek to regulate the level of AD in a countercyclical way, designed to help flatten the severity of the business cycle. *See* aggregate demand management policies; contractionary monetary policy stance; countercyclical budgetary

policies; economic stabilisation; expansionary monetary policy; Keynes, John Maynard.

Stability of the currency as a government economic goal *See* low inflation as a government economic goal.

Stagflation occurred in Australia in the 1970s and early 1980s. It is the simultaneous occurrence of:

1. high inflation caused by rising costs of production (cost inflation)
2. high unemployment caused by industry being non-competitive and an insufficient growth in aggregate demand to utilise resources fully
3. stagnant or falling production levels.

Some economists believe that the solution to the problem is to stimulate spending while introducing supply-side measures to lift efficiency and to contain wages and other production costs. The latter should help shift the aggregate supply line outwards, thereby slowing domestic inflation. *See* supply-side economic theory.

Stance *See* policy stance.

Standard of living is a concept used to indicate the general level of wellbeing. This is influenced by both material living standards (e.g. the '*quantity*' of goods and services consumed per head reflected in the levels of real per capita GDP, income or consumption) and by non-material living standards (e.g. the '*quality*' of daily life, reflected perhaps in the levels of leisure time, job satisfaction, happiness, family cohesion, mental and physical health, and crime rates). It is the same as the level of general or overall welfare or wellbeing. *See* economic welfare or wellbeing; general or overall living standards and general welfare; living standards; quality of life

Status quo is an aspect of behavioural economics where consumers take short cuts and fail to examine all the options, instead, sticking with what they had previously done.

Stock market is an institution where buyers and sellers of company stocks (shares) negotiate prices.

Stocks are unsold goods that have been produced but not yet sold. Shares in companies are also referred to as stocks.

Strong labour market conditions exist when the demand for labour is high, relative to its supply. Here, unemployment is low and there are many job vacancies. This occurs in a boom.

Structural budget deficits can occur as a result of discretionary policy decisions that cut tax rates and/or lift the generosity of budget outlays.

Structural budget outcome is the budget's financial position when the impacts of cyclical or automatic factors affecting receipts and outlays have been removed. For example following the discretionary stimulus measures introduced during the GFC and again from 2020, some claimed there were structural budget deficits.

Structural causes of income inequality include our reliance on the operation of the labour market to determine wages in different occupations, the system of inheritance of wealth, inequality in the abilities and talents of individuals, racial and gender-based discrimination, geographic factors and the tax system.

Structural causes of inefficiency in resource allocation occur when there is market failure and competition is weak. In addition, structural inefficiency may arise when the balance between resources allocated for immediate consumption, as opposed to future investment, is lopsided, or when there is poor technical or dynamic efficiency. *See* efficiency; productivity.

Structural causes of inflation occur when there are inefficiencies in the way goods and services are produced or markets are structured. Firms are forced to lift their prices to cover costs and protect their profit margins. *See* cost inflation.

Structural change involves firms and institutions altering the way they organise, produce or distribute goods and services. Structural change may involve many aspects including closing down or selling off non-performing subsidiaries or branches, de-merging aspects of the business into separate entities, downsizing staff levels, introducing a flatter management structure where there is emphasis on self-managed teams of workers and introducing the world's best practice. Often such changes are the result of government aggregate supply policies that expose firms to greater competition, such as lower tariffs and market deregulation. The main aim of structural change is to allow the business to control its production costs, raise profitability, become more efficient and improve international competitiveness. *See* microeconomic reforms.

Structural current account deficit (CAD) occurs when supply-side problems result in a preference for imports and overseas borrowing relative to exports and domestic borrowing, and net income debits rise. This weakens the current account balance since locally made goods, services and credit are relatively dearer and less attractive than the overseas counterparts. Another common

structural cause of a weaker current account balance is the lack of domestic savings to fill the national savings–investment gap that is met by increases in the net foreign debt (overseas borrowing).

Structural determinants of the rate of economic growth relate to changing aggregate supply conditions such as the quantity/volume and quality/efficiency of resources available, production costs, business profitability, and some government policies including tax rates. If these conditions or factors are favourable, they help to grow productive capacity and the potential rate of economic growth. If unfavourable, they can act as a barrier lowering capacity and the economy's potential speed limit.

Structural influences on the current account often include the aggregate supply factors that cause locally-made goods and services to be more expensive, less attractive and uncompetitive against foreign-made goods and services. As a result, locals purchase more imports and those overseas purchase fewer Australian-made goods and services, weakening the current account balance. Another structural influence on the current account balance, is the national saving-investment gap, making us highly reliant on overseas capital inflow and borrowing with its associated interest repayments that are recorded as debits on the net primary income account.

Structural problems like weak productivity, inadequate infrastructure, high company tax rates, and poor international competitiveness, are obstacles that exist in an economy that can cause supply-side inefficiency, cost inflation, structural unemployment and low sustainable rates of economic growth. They can relate to the way production is organised by the suppliers of goods and services, such as firms, unions and governments.

Structural reform involves government policy initiatives designed to improve efficiency in resource allocation, reduce production costs and to lift Australia's international competitiveness. Reducing tariff protection, deregulation of various industries and privatisation are all instruments of structural reform. *See* aggregate supply policies; microeconomic reforms.

Structural unemployment involves those who are unable to find work due to the changing composition and organisation of industry, possibly associated with the introduction of new technology and processes (such as the computer), cost cutting by firms (e.g. business rationalisation, relocation), change in the geographic location of a firm/industry, government microeconomic reform (such as tariff cuts and the carbon tax), a mismatch of skills held by the unemployed that prevent them from taking up job vacancies, and by changing fashions and products. Currently, this contributes significantly to the 4.0–4.5 per cent or so natural level of unemployment in Australia.

Subsidies are generally cash payments or tax concessions given by the government to businesses, industries or individuals. They are part of industry protectionist policies. When given to producers (rather than consumers), they can help to reduce production costs, encourage firms to restructure their operations more efficiently to become internationally competitive, expand their productive capacity, and grow aggregate supply in the long term. They can also help to promote society's general interests by reducing market failure, perhaps associated with externalities and the provision of public goods.

Substitute is one product that can easily replace another; for example, margarine for butter.

Superannuation is a pension or lump sum of money payable to some workers upon retirement. This money is accumulated through contributions made by employees, and by employers on behalf of their staff. The contributions are invested and hopefully grow over time to provide extra retirement income. The government uses tax concessions on superannuation as part of budgetary policy to encourage household savings, add to national savings and help close Australia's savings–investment gap that adds to the structural CAD and NFD. *See* superannuation guarantee levy or charge.

Superannuation guarantee levy or **charge (SGC)** is a compulsory levy imposed by the federal government. From 1 January 1993, large companies with payrolls over $1 million per year were required to pay a 5 per cent contribution into a superannuation fund for employees when they retire. Smaller companies were then to pay a 3 per cent levy. After stepped increases, the charge increased to 10.5 per cent in July 2022, with further rises scheduled to 11 per cent in July 2023, 11.5 per cent in July 2024 and finally 12 per cent in July 2025.

Supply is a market force that relates to the quantity of a particular good or service that producers are willing to sell at a given price over a period of time.

This is directly related to price. *See* law of supply; supply curve or line.

Supply chains are the networks that exist between businesses that provide necessary inputs needed for other firms to produce or sell products or services. For example, a trucking company depends on being able to purchase trucks, parts and fuel. Without these, the firm cannot operate. Recently in the COVID-19 pandemic with widespread illness among workers and the disruption to trade meant that some businesses were unable to operate. As a less favourable aggregate supply factor, this had a negative effect on our productive capacity and potential rate of economic growth.

Supply curve or **line**, when plotted on a graph, shows that the supply of most individual products varies directly with price. For instance, a fall in price causes the quantity supplied to contract, while a rise in price causes supply to expand. This gives the line a positive slope up and to the right. Movements 'along' the supply line are caused by changes in price. *See* supply.

Supply management policies *See* aggregate supply policies.

Supply of labour is the number of individuals able and willing to work.

Supply-side aspects of budgetary policy are aspects in the annual budget such as spending on infrastructure projects, lower tax rates, subsidies, R&D grants, and outlays on education that help to lift efficiency and build productive capacity.

Supply-side economic theory attributes changes in economic activity and the general inflation rate to changes in the overall willingness and/or ability of the nation's suppliers of goods and services to produce. Aggregate supply conditions facing producers can become generally more favourable or less favourable for sellers. However, theory suggests that government aggregate supply policies should seek to make these conditions more favourable, leading to an expansion of the economy's productive capacity or AS.

- *Favourable aggregate supply factors* expand the willingness or ability of producers to supply. They may include increased business profits, lower costs of production such as wages, oil or power, increased availability of resources and productive capacity, and government policies (e.g. stronger productivity, increased public works, reductions in company tax rates and reduced interest rates on business loans). They may combine to lift economic activity (production and employment) while depressing cost inflation.
- *Less favourable aggregate supply factors* restrict the willingness or ability of producers to supply. They might include lower productivity, higher wage costs, increased cost of borrowing credit, disrupted supply chains, pandemic related lockdowns, higher costs of electricity for firms, drought and climate change. They can cause business closures and discourage business expansion by raising costs and reducing profits. These adverse conditions may not only reduce activity but may also worsen cost inflation (causing stagflation).

Supply-siders thus advocate government measures to help promote more favourable conditions for suppliers, such as tax cuts and efficiency reforms.

Supply-side factors or **conditions** at the macroeconomic level are the influences that affect the general viability and decisions of firms or producers supplying goods and services in the economy. For instance, when aggregate supply-side conditions are more favourable — for example, when there is better productivity, lower costs, good weather conditions for farmers, reduced company tax rates, lower real unit labour costs and lower interest rates on credit — business owners become more willing or more able to raise their production levels, thereby accelerating economic growth. These same promising conditions can also mean lower production costs for firms, reducing cost pressures that squeeze profit margins and cause inflation. *See* aggregate supply-side factors; aggregate supply policies.

Surplus budget *See* budget surplus.

Surplus on the balance of payments current account occurs when the total value of credits exceeds debits for goods, services, primary incomes and secondary incomes in a nation's international transactions for the year.

Sustainable Development Goals of the United Nations are the 17 targets for development set for the period 2015–30. These include the eradication of poverty.

Sustainable development or **economic growth** is where economic growth meets the needs of the present population without jeopardising the ability of future generations to meet their needs. Clearly this concept must take account of negative externalities. *See* environmental policies; goal of strong and sustainable economic growth.

Sustainable rate of economic growth as a government goal *See* goal of strong and sustainable economic growth.

Swing is a short-term change in the direction of a variable, possibly caused by seasonal factors (e.g. seasonal unemployment). *See* trend.

System for making economic decisions describes how choices are made about what types of goods and services are to be produced, how these should be produced, and for whom these should be produced. It is about whether decisions are made by private individuals (consumer sovereignty, as in a market system), or by the government (as in a planned system).

System of ownership describes who owns the means of production and the businesses (such as farms, mines, shops, banks), and whether there are private owners (in a capitalist system) or whether the government owns most businesses (in a socialist system).

Takeover occurs when a business buys more than 50 per cent of the shares in another business, allowing the buying business to become larger and develop more power in the marketplace to fix prices. The company that is bought out is called a subsidiary.

Tariff is an indirect tax added onto the price of imports to make them dearer to local consumers and protect local industries from overseas competition. As part of its trade liberalisation policy, the Australian government started to cut tariffs in the early 1970s and continued during the 1990s until general tariff rates were reduced to less than 1 per cent by 2022.

Tariff protection of local industries involves restricting competition from overseas rivals through the imposition of a tax on imported goods, which restricts supply and makes imported goods more expensive. *See* protection; tariff.

Tax is a levy imposed by governments on businesses and individuals designed to raise revenue.

Tax base describes whether the coverage of the tax is relatively broad or narrow. For instance, the GST exempts some necessities to make it less regressive, but this narrows the tax base. A broader tax base could allow for more adequate funding of community services and welfare. *See* tax reform.

Tax burden relates to the proportion of an individual's total income that is collected as government revenue. The rich bear a heavier tax burden of progressive taxes than the poor.

Tax mix is the type or combination of taxes used by the federal government to raise its revenue. Currently the tax mix involves a greater reliance on direct rather than indirect taxes.

Tax rebates help to reduce the amount of tax normally paid and hence act as an incentive to encourage a particular type of economic activity.

Tax reform can be regarded as a microeconomic policy and often involves changing the way budget revenue is collected. As an aggregate supply policy, tax reform usually focuses on:

- reducing the tax burden through lower tax rates paid by individuals and companies as a proportion of their income or the price of a good
- reviewing the tax base, coverage or inclusiveness of what types of things are to be taxed or not taxed (e.g. which goods or services, which income, what assets)
- improving the tax mix or combination of different types of tax used to raise revenue (e.g. direct versus indirect, consumption versus income taxes)
- redirecting how the tax revenue that is raised is to be used or spent.

Through these types of changes, governments seek to increase the incentives for businesses to invest and produce, encourage individuals to work harder by rewarding effort, and strengthen Australia's international competitiveness. Overall, tax reforms can help to grow the economy's efficiency, productive capacity and the level of aggregate supply, and through these effects advance Australia's domestic macroeconomic goals and living standards. Two reforms that have especially been important in recent years include the following:

- Company tax rates were cut from 36 to 30 per cent in 2000–02, and since July 2021, small and medium-sized enterprises (with a turnover of less than $50 million per year) now pay 25 per cent tax on their profits.
- PAYG tax thresholds and rates were revised in 2003–10 and again in 2012, when the tax-free threshold increased from $6000 to $18 200. Currently, the Australian government is implementing its three-stage personal income tax reform policy that will be completed in 2024–25. Stage 1 started from July 2018, increased the upper cut off for the 32 per cent tax bracket. Stage 2 was brought forward and commenced in July 2020. It increased the upper cut off for the 19, 32.5 and 37 per cent tax

brackets. Stage 3 will abolish the 32.5 and 37 per cent tax brackets, replacing these with a 30 per cent bracket that runs up to a cut off of $200 000.

Tax revenue is money collected by the government; for example, from wage and salary earners, companies making profits and from the sale of goods and services. This money is then available to the government to provide services for the community.

Tax-free threshold is the cut-off level of taxable income that applies before individuals have to pay income tax. The current PAYG tax-free threshold is $18 200.

Taxable income is income on which tax must be paid (gross income less allowable deductions).

Taxation is a government levy or revenue measure that can be used as part of the budget to affect the level of prices, the growth rate and the distribution of income. Important considerations for taxes are their simplicity, efficiency and equity. Tax reform may involve changes to tax rates, the tax mix, the tax base and the tax burden.

Technical and other assistance in overseas aid involves the donor country or a United Nations agency providing scientific, economic, educational, technical, industrial or agricultural personnel.

Technical efficiency *See* efficiency; productive or technical efficiency.

Term Funding Facilities are part of unconventional monetary policy that can be used by the RBA in a severe downturn (e.g. 2020–21). The measure involves the RBA making large sums of money available to banks at a very low interest rate, to provide them with even cheaper credit for lending to businesses, designed to stimulate AD. *See* unconventional monetary policy.

Terms of trade compares the prices received for our exports against those paid for imports. It is an important factor affecting the value of X – M and hence the level of AD. *See* export price index; terms of trade index.

Terms of trade index is a measure that reflects changes in the weighted average prices received for a basket of exports against average prices paid for a basket of imports. It is the ratio of export to import prices and is measured as follows:

$$\text{Terms of trade index} = \frac{\text{Terms of trade index}}{\text{Import price index}} \times \frac{100}{1}$$

This index shows changes in the actual quantity of imports that may be purchased with a given quantity of exports. A decline in the terms of trade is seen as unfavourable for Australia. This is because it may cause a decline in the exchange rate, a less favourable balance of goods, a slower rise in AD, higher unemployment, declining material living standards and a slower rate of economic growth. Australia suffered a substantial fall in the terms of trade between 2013 and 2016 due to weaker global economic growth. By contrast, in 2020–21–22, Australia enjoyed stronger terms of trade (moved favourably) due to stronger Chinese and global economic growth. This raised the prices received for and value of our exports, contributing to stronger AD, and economic growth and employment. *See* export price index.

Third World refers to a group of nations that have very low subsistence levels of production and income, and hence high levels of poverty.

Three basic economic questions for an economy arise because of the problem of relative scarcity. They include the *what and how much to produce* question (the type and quantity of each good or service), the *how to produce* question (production methods) and the *for whom to produce* question (how goods, services and incomes are distributed).

Three-sector circular flow model is a simple diagram that shows the three key economic agents or parts making up an economy (the household or consumer sector, the private business or producer sector, and the government or public sector). It also shows the ways these sectors interact with each other through the four main flows (i.e. flow 1 – resources, flow 2 – incomes, flow 3 – spending, and flow 4 – production).

Tied loans involve special conditions that are imposed on borrowing countries, such as requiring that the money be used to purchase exports from the donor country.

Time lag is the period of time that elapses between observing an adverse trend in an economic variable (such as rising inflation) and this variable responding to a corrective policy introduced by the government. There are *three* types of time lag:

1. the recognition lag — the time period that elapses before statistical indices pick up an adverse trend. For instance, some measures are published only on a yearly basis.
2. the implementation lag — the time period that elapses before government policy makers select and implement a corrective policy to

deal with the adverse trend. This may be quite long, especially in the case of new discretionary measures in the annual budget.

3. the impact lag — the time period that elapses before a corrective policy takes effect.

Although automatic stabilisers respond and work very quickly, some discretionary budgetary policies (such as infrastructure projects) with long implementation and impact lags are of limited use as a short-term stabiliser. In contrast, while monetary policy has a short implementation lag, its impact lag can be long since it may take up to three years to reach full effect. Long time lags can cause countercyclical measures to become pro-cyclical, reducing economic stability. *See* pro-cyclical policy.

Total equality is a situation in which income is divided evenly between income recipients. On a Lorenz diagram, this would be represented by the diagonal line of absolute equality where each decile receives exactly the same share of the total income cake.

Trade agreements are contracts and sales negotiated by the government with overseas countries and individuals to promote exports abroad. These agreements may be bilateral (such as the agreement with New Zealand, China, and Japan) or multilateral (such as GATT).

Trade balance *See* balance of (merchandise) trade.

Trade barriers are government restrictions such as tariffs, import quotas and subsidies on the movement of goods and services across national borders.

Trade deficit occurs when the total value of a country's imports exceeds the total value of its exports over a period of time.

Trade liberalisation is an aggregate supply policy. It involves the progressive reduction of tariffs, subsidies and import quotas, and a shift towards the idea of free trade where there is an increase in the number of bilateral free trade agreements. Increasingly, national borders no longer restrict the movement of goods, services and money capital between countries. The Australian government has gradually adopted this policy since 1972, but especially in the period since 1990. With freer trade, nations are forced to allocate resources into areas of production where they have a comparative cost advantage (or in areas of least disadvantage). *See* free trade agreements (FTAs); globalisation; import quotas; subsidies.

Trade-offs mean that the benefits of an action, decision or policy may be partly offset by a cost or downside. They can occur when governments are forced to choose between the achievement of one goal and another. For instance, attempts to boost economic growth sometimes lead to increased inflation. Another example is between the pursuit of an equitable distribution of personal income and the level of efficiency and economic growth. Additionally, there is often a trade-off between increased material living standards and the maintenance of non-material living standards.

Trade Practices Act (TPA) *See* restrictive trade practices.

Trade protection is a government policy that involves restricting foreign competition. Typically, this entails using high tariffs, import quotas and subsidies to support local industry so that it can compete with imports. Protection encourages countries to produce goods and services for which they do not have a comparative cost advantage, but it can enable infant industries to become established and grow the economy's capacity. *See* protection.

Trade surplus occurs when the total value of a country's exports exceeds the total value of its imports over a period of time (e.g. 2020–21).

Trade wars can occur when one nation decides to increase tariffs applied to the imports of goods from another nation, causing the other nation to raise its tariffs in retaliation. This can then provoke ongoing rounds of tariff rises. An example of a trade war was that between the United States and China during 2018–19.

Trade weighted index (TWI) is an index or measure reflecting the average movement of the value of the Australian dollar against a basket of currencies of our trading partners, each weighted according to its relative importance. In the base year, the index equals 100 points. However, if our dollar appreciates the index will rise above 100 points, while if it depreciates it will fall below 100 points. In July 2022, for example, Australia's TWI stood at 61.3 index points (where 1970 = 100 points).

Trading competitors usually mean those foreign nations against whom Australian producers must sell in domestic and foreign markets.

Traditional economy is one that today only exists in remote pockets of other economies. The three basic economic decisions are answered according to long-held customs and beliefs.

Traditional viewpoint of consumer behaviour is that when making economic decisions, consumers are rational, self-interested, knowledgeable, try to

maximise marginal utility or satisfaction, and have ordered preferences.

Transfer income *See* transfer payments.

Transfer payments include government cash benefits paid to the neediest individuals (e.g. the unemployed, single parents, the sick, students and the aged), designed to top up their disposable income and promote a more equitable income distribution. In addition, they can also include subsidies paid to particular businesses designed to encourage certain types of production, grants to the states and interest on the public debt. Transfer payments are not seen as part of actual G_1 or G_2 spending, since the actual spending is done by the transfer recipients. *See* social security or welfare.

Transmission mechanism for monetary policy describes the various ways whereby changes in interest rates can be used to regulate the level of AD and economic activity. For example, lower interest rates (e.g. between 2011 and May 2022) help strengthen demand and economic activity in *five* main ways:

1. *The saving-investment or cost of credit effect.* Lower interest rates mean cheaper credit and easier repayments for loans. This stimulates credit-sensitive spending (AD) and discourages saving. This causes a fall in stocks, so firms increase production, boosting economic activity.
2. *The availability of credit effect.* Lower interest rates increase the availability of credit and so more borrowers meet bank lending criteria
3. *The wealth effect.* Lower interest rates increase the price or value of assets like property. As a result of feeling wealthier, people tend to spend more.
4. *The exchange rate effect.* A cut in Australia's interest rates relative to those abroad can cause global investors to seek better returns overseas. This leads to decreased capital inflow reducing the demand for the A$, and more capital outflow, lifting the supply of the A$ in the foreign exchange market. As a result, the $A tends to fall. This would tend to increase foreign purchases of our exports and decrease our purchases of imports. The rise in the value of net exports then helps to stimulate AD and economic activity.
5. *The cash flow effect.* For those with existing variable interest rate loans, a reduction in the cash rate leaves borrowers with more income after meeting their interest repayments. This can encourage spending and lift AD.

Trans-Pacific Partnership Agreement (TPP) is a free trade agreement signed by Australia and six other nations including Japan, Mexico, Canada, New Zealand, Singapore and Vietnam that came into force from 30 December 2018. It eliminates 98 per cent of tariffs on our agricultural exports.

Treasurer is a member of the government responsible for preparing the annual budget which is a statement of the estimated level and composition of receipts and outlays for the year ahead.

Treasury bills are a form of short-term government security sold to the Reserve Bank by the government and designed to provide finance for a deficit budget. This is often referred to as the 'printing of money'.

Treasury notes are a form of short-term government security (13- or 26-week maturities) sold by tender.

Trend is the underlying direction of an economic variable established over a period of time (perhaps five or more years). This is distinct from a short-term or seasonal swing which may or may not become established as a trend with the passage of time. *See* long term or long run; swing.

Trickle-down theory believes that the benefits of economic growth and development will not just benefit the rich but, given time, will eventually improve the daily existence of the poor.

Trough is the lowest point on the business cycle, where unemployment is usually high and production is down (e.g. 2020). *See* business cycle; depression; economic activity; recession.

Ultimate economic objective of the government is the goal of improved material and non-material living standards for everyone. It can be pursued by achieving other subsidiary goals like low inflation, strong and sustainable economic growth, full employment and an equitable distribution of personal income. *See* economic welfare or wellbeing.

UN Climate Conference (COP26) in 2021 brought many nations together (including Australia) to reach an agreement on climate action needed to limit the rise in global temperature to 1.5 degrees Celsius above the levels in 1880. As a result, many countries have committed to reaching *net zero emissions* by 2050.

Unconventional monetary policy was used by the RBA as a special measure during the 2020 recession and the subsequent recovery, to help stimulate AD. It involves the use of measures other than changing interest rates. These may include Quantitative Easing (i.e. where the RBA injects additional cash

or liquidity into the financial system by repurchasing government bonds in the secondary market) and Term Funding Facilities (making loans available to banks to provide them with access to cheaper credit, for lending to businesses).

Underemployment exists where it would be possible to reduce the labour force without a reduction in production levels. This is because workers are not working to their capacity and are employed inefficiently. Disguised unemployment is common, especially in economically poorer countries.

Underlying cash balance represents the headline balance after subtracting the value of one-off volatile items such as asset sales, earnings from the Future Fund, special loans to state governments or debt repayments by other governments.

Underlying inflation rate prepared by the Treasury is measured by removing the 20 000 or so volatile items (such as some fresh food items, including fruit and vegetables) from the 100 000 plus items making up the regimen for measuring the ordinary headline CPI. Sometimes the underlying measure is preferred for some purposes by the RBA and government when shaping its anti-inflationary policies, since it is believed to provide a better guide to changes in fundamental inflationary pressures that may exist in the economy because of the exclusion of those items affected by one-off events. The RBA's target for underlying inflation is to keep annual average price rises between 2–3 per cent over time. *See* headline inflation.

Under-utilisation rate *See* labour force under-utilisation rate.

Unearned income is income gained from the ownership of land (rent) and capital (interest). This is not gained directly from personal effort.

Unemployable persons are those members of the labour force who cannot be employed or who cannot retain a job because of personal or physical characteristics.

Unemployment occurs when those aged 15 and over who are willing and able to work cannot secure a job. A major cause of high levels of unemployment during a recession or depression is a lack of spending on aggregate demand. When there is no cyclical unemployment (as in June 2022 when the rate was only 3.5 per cent), the major cause of unemployment is structural change (structural unemployment). *See* cyclical unemployment; frictional unemployment; natural unemployment; seasonal unemployment; structural unemployment; underemployment; unemployable persons.

Unemployment benefit *See* JobSeeker allowance; dole; social security or welfare.

Unemployment rate is the number of workers in a nation classified as unemployed and then expressed as a percentage of the total labour force. For example, Australia's unemployment rate for 1992–93 was 11 per cent, while in June 2022 it was 3.5 per cent.

Unfavourable terms of trade *See* terms of trade index.

Unionisation of the labour force is the extent to which workers in a particular profession belong to a trade union or industrial organisation.

Unit elasticity of demand refers to a market where the quantity demanded changes by the *same proportion* as the change in price; for example, a 10 per cent fall in price results in a 10 per cent rise in quantity demanded. Here, the total revenue remains unchanged with a fall in price.

Unlimited liability occurs when sole traders and partners are fully responsible for repaying all debts of the firm.

Unpaid work is work performed free of charge.

User-pays principle is the principle that if you use the good or service, you must pay for it. Traditionally, many government services (such as health, education, transport, telecommunications and water) were provided to the public, especially the poor and those living in remote and rural areas, free of direct charge or at a low, subsidised price. Increasingly, however, this is changing. The user of services is increasingly expected to pay as government departments become more commercialised and corporatised following funding cuts.

Utility refers to the total satisfaction received from consuming or demanding a good or service. Utility often decreases the more of a good we consume. Utility also decreases as the price paid for the good increases. This means that the demand for a good will normally contract as the price increases, and expand as the price decreases.

Vacancies are unfilled job positions or offers of employment by business firms. They are a guide to changes in the demand for labour. A fall in job vacancies is usually seen as a sign of a weaker labour market.

Value is determined by both the per-unit price and the number or quantity of units involved. That is:

$$\text{Value} = \text{Unit price} \times \text{Quantity}$$

Values are beliefs or attitudes about what individuals, society or governments consider to be good or bad, right or wrong, important or unimportant. They help to shape our economic system.

Vertical integration is when firms are joined together to become a bigger business in different but often related industries.

Vividness is an aspect of behavioural economics where in making decisions, consumers place undue weight on just a small piece of information that stands out and catches their eye. Other possible and important considerations in a decision are downplayed. This can lead to irrational decisions.

Voluntary unemployment occurs when people of working age deliberately decide not to seek employment.

Wage is the monetary reward of labour, paid in exchange for work.

Wage or profit shares of GDP is an indicator of the distribution of total national income going to workers (the wage share) as a proportion of the income going to owners of businesses.

Wage–price spiral is successive rounds of increases in prices leading to increased wage demands, or increased wage demands leading to increased prices. This problem is more likely to occur when there are strong labour market conditions and unemployment is low.

Wants are desires for goods and services that are not usually considered essential or necessary (e.g. a new bike or a holiday house). These are generated by trends in fashions, advertising, planned obsolescence, population growth and habit.

Weak competition causes market failure. It exists in markets where there are no or few sellers of a good or service, and where the market power of a particular firm is great (e.g. where there are monopolies and perhaps oligopolies).

Weak labour market conditions exist when there is a low demand for labour relative to its supply. Here, unemployment is relatively high and there are few job vacancies. This occurs in recessions.

Wealth is the stock of assets (such as property, capital and antiques) owned by an individual. Substantial income can be earned by owners of wealth. In Australia, wealth is unevenly distributed and is often inherited from one generation to the next.

Wealth or **asset price effect** is a transmission mechanism of monetary policy whereby a change in interest rates affects how wealthy people who own assets, feel about their financial position. In turn, this affects their level of spending and AD. For example, a cut in interest rates that drives up the demand and price of assets like property, can make asset owners feel wealthier and spend more.

Weighting of items in the consumer price index (CPI) reflects the relative importance assigned to each particular good or service included in the basket or regimen, reflecting the spending patterns of typical households.

Welfare benefits are regarded as cash transfer payments from the government (usually via Centrelink) to various categories of people who are classed as needy (e.g. the aged, the sick, widows, families, veterans, the unemployed and single parents). Frequently a means or incomes test, or an assets test, is applied in an effort to help level out income inequalities and cut the cost to taxpayers. These help recipients to buy basic goods and services and enjoy better living standards. *See* aged pension.

Welfare or **wellbeing** *See* living standards; economic welfare or wellbeing.

Welfare trap occurs when income gained from government welfare benefits is too generous or attractive relative to that earned from having full- or part-time work. As a result, some people become trapped on welfare. Alternatively, people are trapped if the tax system is such that personal tax begins at very low income levels when they start earning extra income, thereby discouraging work.

What and how much to produce? is one of three key questions facing all economies involving a choice between alternative types and quantities of output. Should a nation, for example, allocate resources to produce guns or butter, consumer goods or capital goods, in small or large quantities?

Worker efficiency or productivity relates to the value of GDP or output produced per hour worked. As a factor affecting aggregate supply, this has an important effect on production costs and hence aggregate supply. It also impacts on a country's international competitiveness.

Workforce *See* labour force.

World Bank is an international financial institution set up to provide technical and financial help in the form of financial loans and grants to member nations.

World Trade Organization (WTO) is an international institution originally set up in 1995 to promote *free trade* as a means of accelerating global economic growth and development.