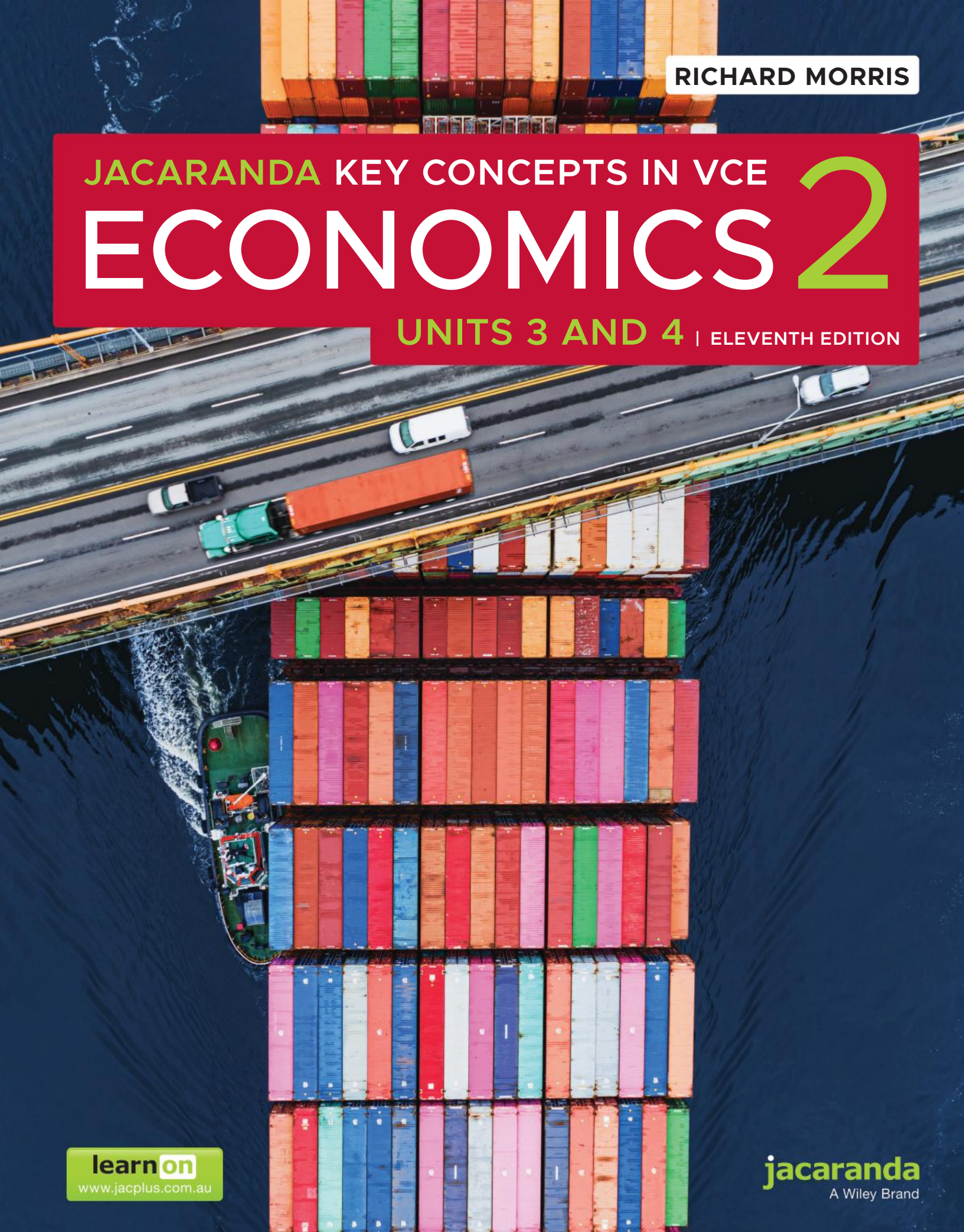


RICHARD MORRIS

JACARANDA KEY CONCEPTS IN VCE

ECONOMICS 2

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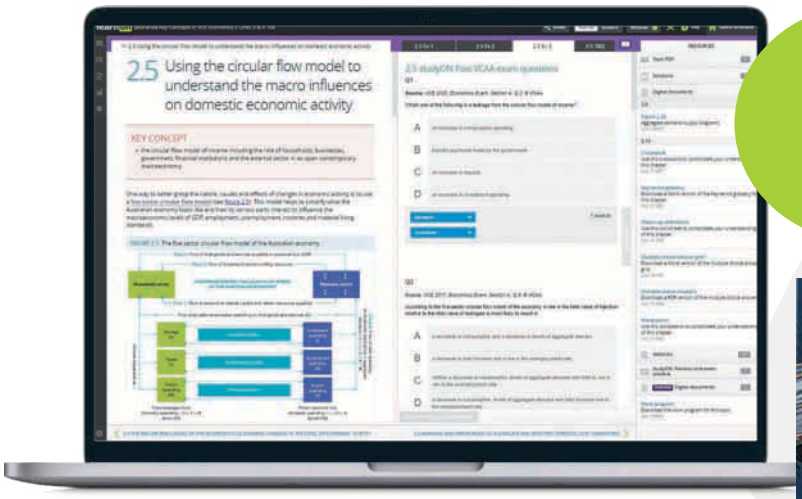
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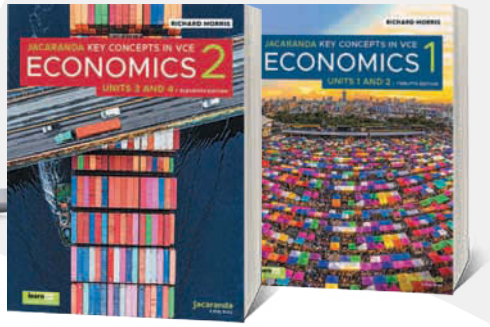
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JACARANDA KEY CONCEPTS IN VCE

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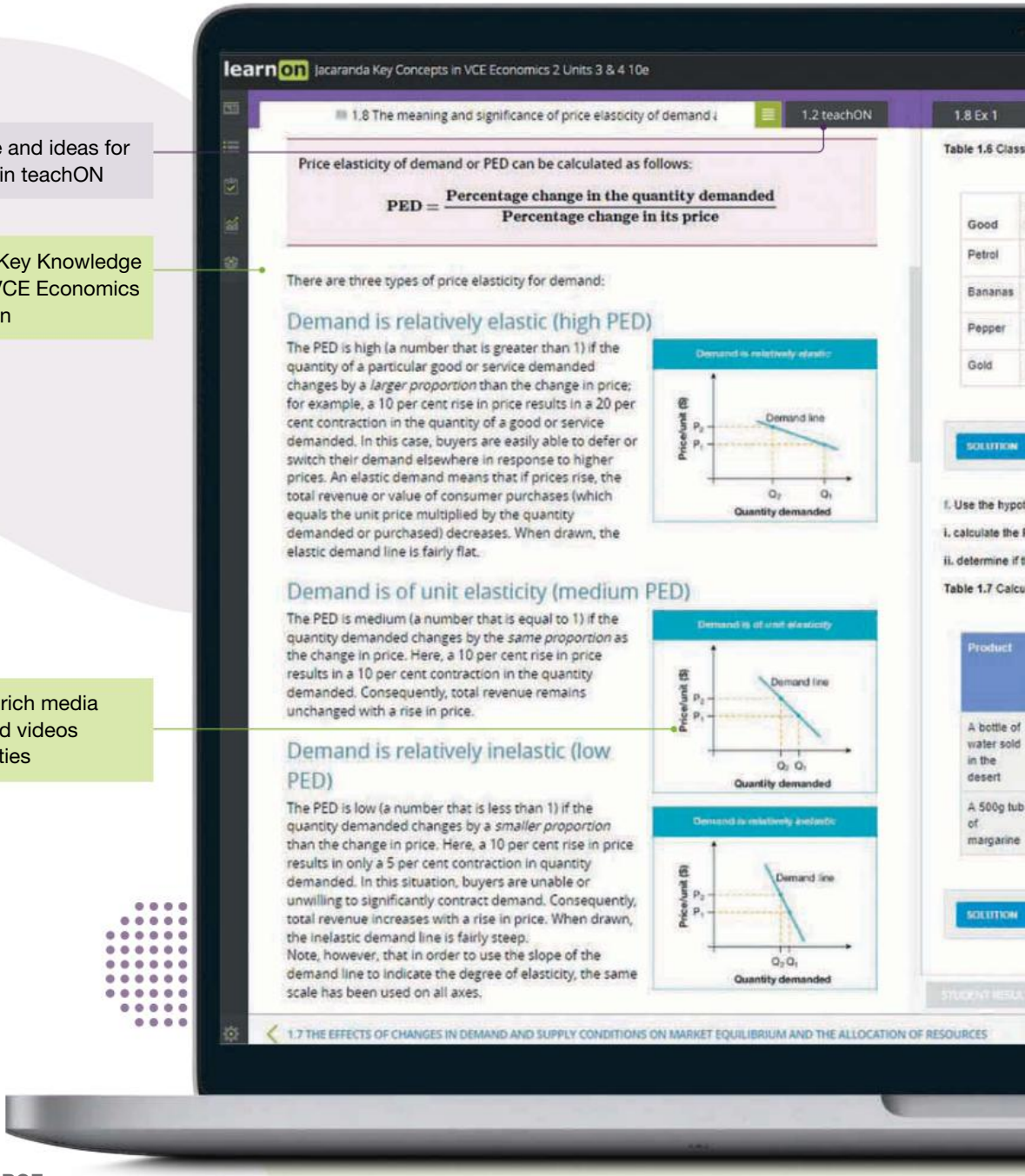
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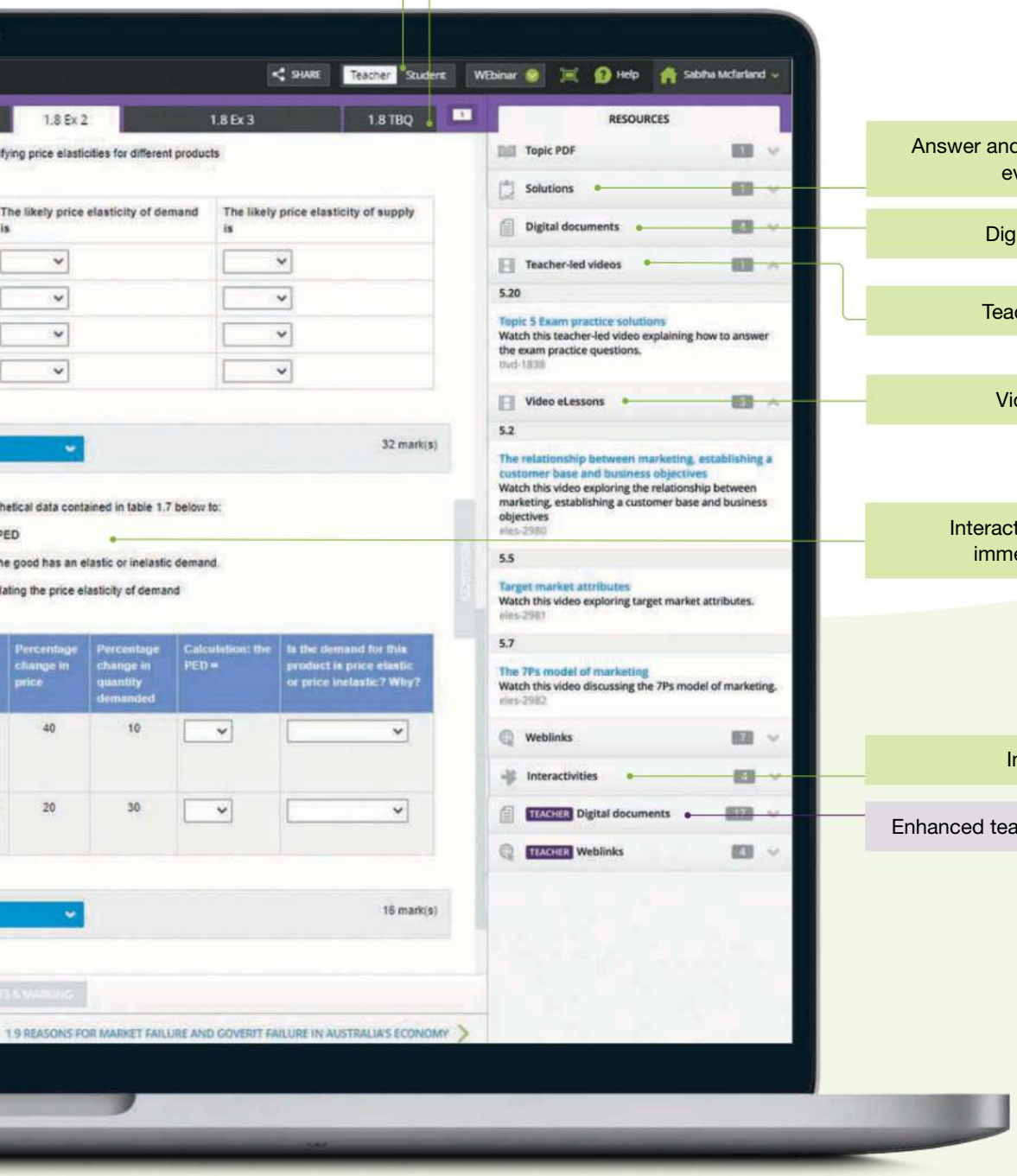
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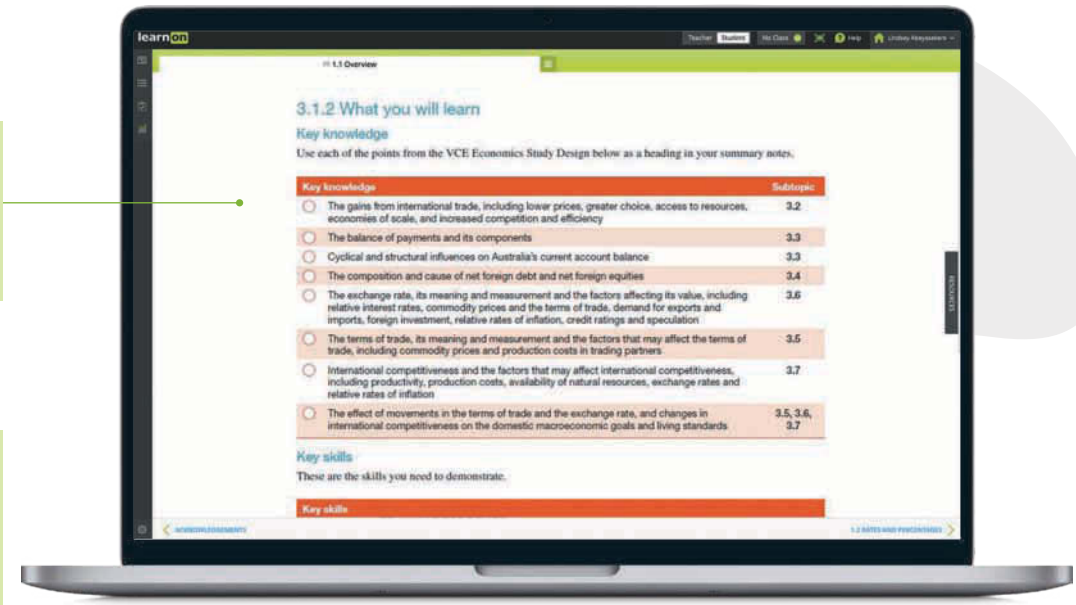
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Each subtopic is linked to Key Knowledge and Key Skills from the VCE Economics Study Design.

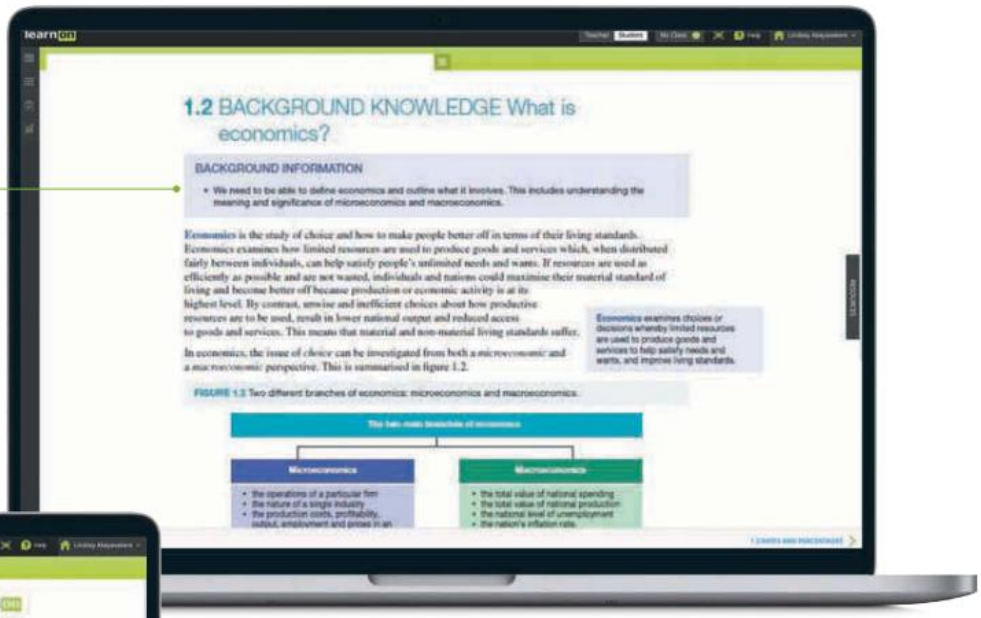




onResources link to targeted digital resources including video eLessons and weblinks.

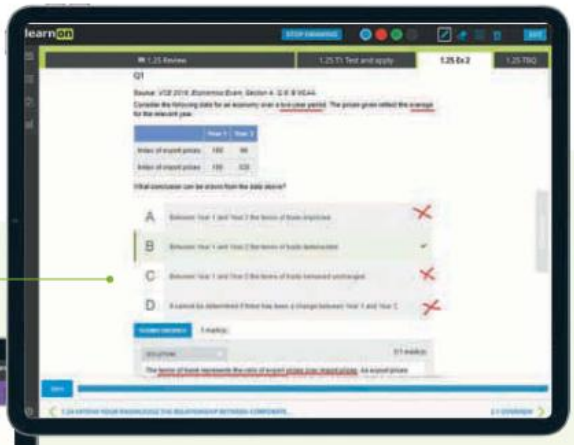
Interactive glossary terms help develop and support literacy.

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

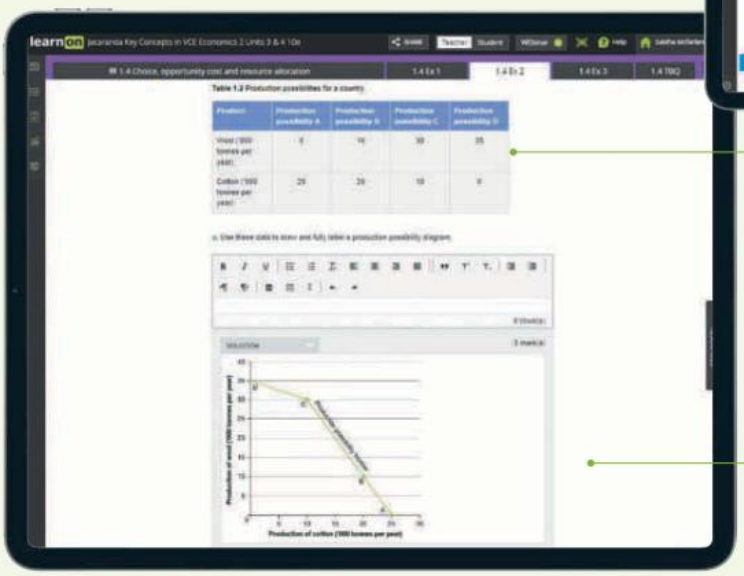




Three sets of questions at the end of each subtopic: Quick quiz, Exercise and Exam questions (containing relevant past VCAA exam questions) encourage students to practise and apply the concepts they are studying.



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



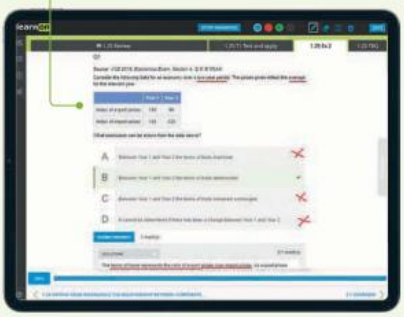
- Online and offline question sets contain quiz questions, practice questions, exam-style questions and past VCAA exam questions, with exemplary responses and marking guides.
- Every question has immediate, corrective feedback to help students overcome misconceptions as they occur and to study independently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

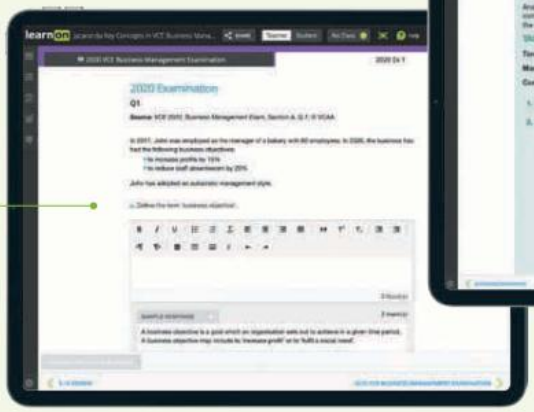


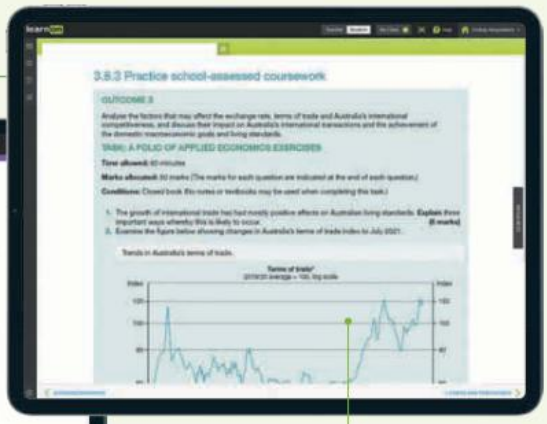
End-of-topic exam questions include relevant past VCE exam questions and are supported by teacher-led videos.



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.



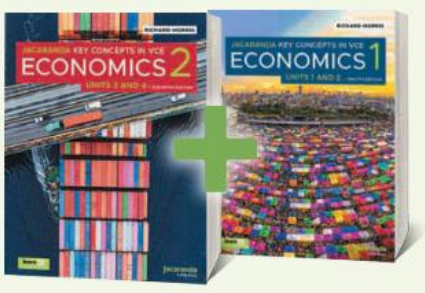


Practice, customisable SACs are available to build student competence and confidence.

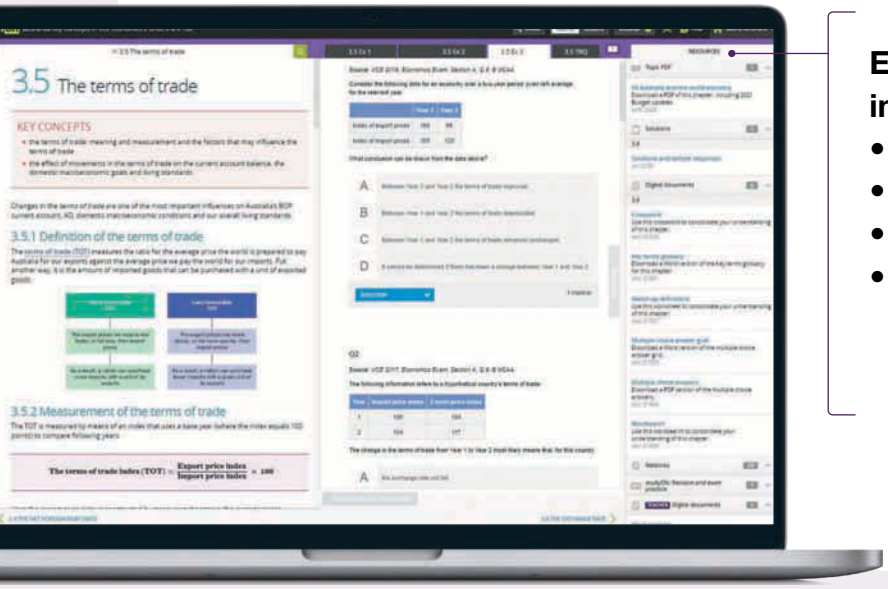
Combine units flexibly with the Jacaranda Supercourse

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!





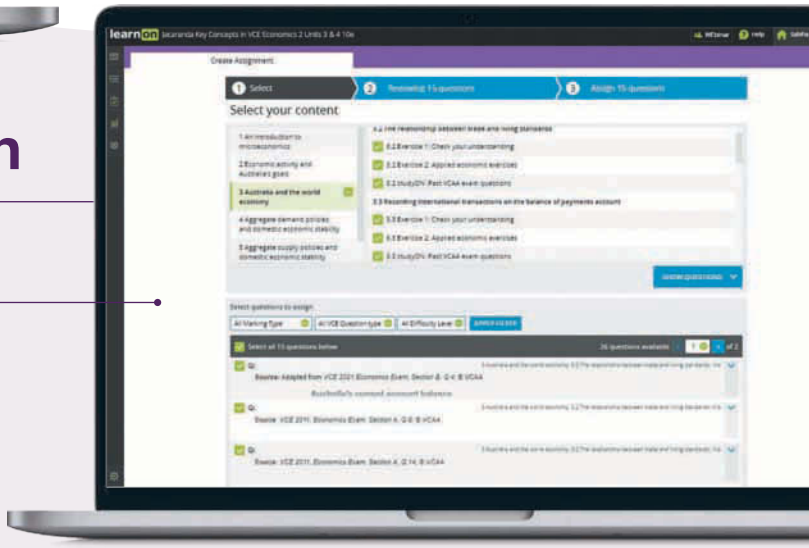
A wealth of teacher resources



Enhanced teacher support resources, including:

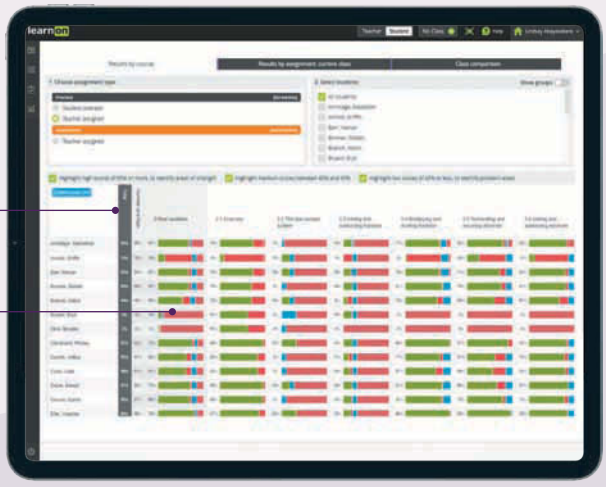
- work programs and curriculum grids
- teaching advice and additional activities
- quarantined topic tests (with solutions)
- quarantined case studies and SACs (with worked solutions and marking rubrics).

Customise and assign



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.

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UNIT

3 Australia's living standards

AREA OF STUDY 1

An introduction to microeconomics: the market system, resource allocation and government intervention

OUTCOME 1

Analyse how markets operate to allocate resources and evaluate the role of markets and government intervention in achieving efficient outcomes

1 An introduction to microeconomics 3

AREA OF STUDY 2

Domestic macroeconomic goals

OUTCOME 2

Analyse key contemporary factors that may have affected domestic macroeconomic goals over the past two years, evaluate the extent to which the goals have been achieved and discuss the effects on living standards.

2 Domestic macroeconomic goals 101

AREA OF STUDY 3

Australia and the international economy

OUTCOME 3

Analyse the factors that may affect the exchange rate, terms of trade and Australia's international competitiveness, and discuss their impact on Australia's international transactions and the achievement of the domestic macroeconomic goals and living standards.

3 Australia and the international economy 233

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TOPIC

1 An introduction to microeconomics

UNIT 3 AREA OF STUDY 1

An introduction to microeconomics: the market system, resource allocation and government intervention

OUTCOME 1

On completion of this unit the student should be able to analyse how markets operate to allocate resources and evaluate the role of markets and government intervention in achieving efficient outcomes.

LEARNING SEQUENCE

1.1 Overview 4
1.2 **BACKGROUND KNOWLEDGE** What is economics? 6
1.3 Relative scarcity 8
1.4 Choice, opportunity cost and efficiency in resource allocation 14
1.5 Market structure and the conditions for a free and perfectly competitive market 23
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1.7 The effects of changes in non-price demand and supply factors on market equilibrium and the allocation of resources 38
1.8 The meaning and significance of price elasticity of demand and supply 53
1.9 Types of market failure, and government intervention to address market failure in Australia's economy 58
1.10 Government intervention in markets that unintentionally leads to decreased efficiency 73
1.11 Review 83



1.1 Overview

Hey students! Bring these pages to life online

Watch videos

Engage with interactivities

Answer questions and check results

Find all this and MORE in jacPLUS



1.1.1 Introduction

Most people throughout the world would probably like to be better off and enjoy improved *living standards* and wellbeing. This is true in both poor and rich countries.

- In economically *poor countries*, improvement may come from access to more food, to vaccinations against preventable diseases like malaria, to clean drinking water and basic education, and to dwellings that protect them from the elements.
- In economically *rich countries*, however, people often expect much more. Not only will most of their basic wants be met, but many also expect to have access to a range of other, largely non-essential consumer goods and services — wants like touch-screen phones and Bluetooth headphones, the latest music, a tropical holiday among whispering palm trees and warm sapphire waters, body makeovers, an extensive wardrobe with something fashionable for every occasion, and the newest appliances for their massive, energy-devouring designer homes. Added to this good material life, people in high income countries also expect non-material things like living in freedom with justice, far away from the ravages of war and violence, in a pristinely-clean environment, with job satisfaction, a lot of leisure time and personal happiness all round!

FIGURE 1.1 Expectations of living standards and wellbeing can be extremely different between economically poor and rich countries.





Without natural resources including land, labour resources and capital resources or equipment such as crop harvesters, it is not possible to produce food or other goods and services that allow us to enjoy reasonable living standards. Unfortunately, resources are scarce or limited, especially in low-income countries. This restricts production levels and therefore material living standards.



The challenge in meeting the aspirations in all countries is how to deliver improvements in living standards through increased satisfaction of society's seemingly-endless needs and wants, both now and into the future.

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
○ The concept of relative scarcity, including needs, wants, resources, opportunity cost and the production possibility frontier (PPF) model, and the three basic economic questions	**1.3, 1.4**
○ The meaning and significance of economic efficiency, including allocative efficiency, productive efficiency, dynamic efficiency and intertemporal efficiency and their relationship to the PPF model	**1.4**
○ The conditions for a free and perfectly competitive market	**1.5**
○ The law of demand and the theory of the law of demand, including the income effect and the substitution effect	**1.6**
○ Non-price factors likely to affect demand and the position of the demand curve, including changes in disposable income, the prices of substitutes and complements, preferences and tastes, interest rates, population demographics and consumer confidence	**1.7**
○ The law of supply and the theory of the law of supply including the profit motive	**1.6**
○ Non-price factors likely to affect supply and the position of the supply curve, including changes in the costs of production, number of suppliers, technology, productivity and climatic conditions	**1.7**
○ The effects of changes in supply and demand on equilibrium prices and quantity traded	**1.7**
○ The meaning and significance of price elasticity of demand and supply	**1.8**
○ Factors affecting price elasticity of demand, including degree of necessity, availability of substitutes, proportion of income and time	**1.8**
○ Factors affecting price elasticity of supply, including spare capacity, production period and durability of goods	**1.8**
○ The role of relative prices in the allocation of resources	**1.4**
○ The role of free and competitive markets in promoting an efficient allocation of resources and improved living standards	**1.5, 1.7**
○ Types of market failure, including public goods, externalities, asymmetric information and common access resources	**1.9**
○ The role and effect of indirect taxation, subsidies, regulations, advertising and direct provision as forms of government intervention in the market to address market failure	**1.9**
○ One example of a government intervention in markets that unintentionally leads to a decrease in one of allocative, productive, dynamic or intertemporal efficiency	**1.10**

Key skills

These are the skills you need to demonstrate.

Key skills
○ Define key economic concepts and terms and use them appropriately
○ Construct and interpret demand and supply diagrams and a PPF model
○ Interpret and analyse statistical and graphical data

Key skills
◯ Gather, synthesise and use economic data and information from a wide range of sources to analyse economic issues
◯ Analyse how the forces of demand and supply affect equilibrium price and quantity traded
◯ Analyse the responsiveness of the quantity demanded and the quantity supplied to changes in price
◯ Evaluate the role of free and competitive markets in achieving an efficient allocation of resources

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on Resources

Digital document Key terms glossary (doc-34511)

1.2 BACKGROUND KNOWLEDGE What is economics?

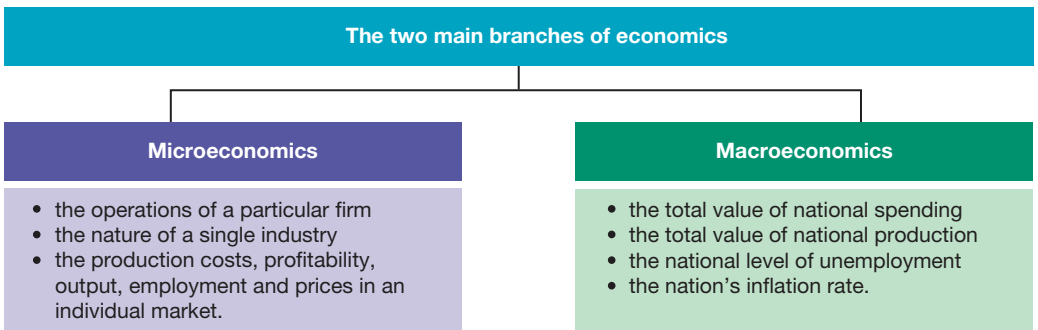
BACKGROUND INFORMATION

- We need to be able to define economics and outline what it involves. This includes understanding the meaning and significance of microeconomics and macroeconomics.

Economics is the study of choice and how to make people better off in terms of their living standards. Economics examines how limited resources are used to produce goods and services which, when distributed fairly between individuals, can help satisfy people's unlimited needs and wants. If resources are used as efficiently as possible and are not wasted, individuals and nations could maximise their material standard of living and become better off because production or economic activity is at its highest level. By contrast, unwise and inefficient choices about how productive resources are to be used, result in lower national output and reduced access to goods and services. This means that material and non-material living standards suffer.

In economics, the issue of *choice* can be investigated from both a *microeconomic* and a *macroeconomic* perspective. This is summarised in figure 1.2.

FIGURE 1.2 Two different branches of economics: microeconomics and macroeconomics.



- **Microeconomics** involves looking at the operation of the smaller parts that make up the wider Australian economy. It therefore focuses on a single firm, industry, sector or a particular market.
- **Macroeconomics**, looks at the broader picture combining all markets andindustries and the overall state of the country's economy. It therefore concentrates on areas like national spending, output, income, employment, the inflation rate and overall material living standards.

Despite these differences, almost any issue can be examined from both a microeconomic and a macroeconomic perspective.

This topic focuses mostly on the choices or decisions made at the *microeconomic* level, and how these may impact on Australia's allocation of resources and general living standards.

on Resources

Weblinks What is economics?
Measuring the standard of living
60-second adventures in economics

1.2 Activities

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1.2 Quick quiz on | **1.2 Exercise**

1.2 Exercise

1. **Outline** what is involved in the study of *economics*. **(2 marks)**
2. **Explain** the difference between the study of *microeconomics* and *macroeconomics*. **(2 marks)**
3. Giving brief reasons, **classify** each of the issues as *primarily* areas of *microeconomic* studies or *macroeconomic* studies. **(7 marks)**

Issue	Classification of issue
(a) the reasons for Australia's lower inflation rate	
(b) the effects of a reduction in personal income tax rates	
(c) the pricing of petrol by oil companies	
(d) the causes of lower output and the decline of employment in the sugar industry	
(e) the impact of rising debt levels on farmers in the Riverina area	
(f) the effects of a slowdown in a country's rate of economic growth	
(g) the impact of COVID-19 on unemployment in the food and tourism sectors.	

Solutions and sample responses are available online.

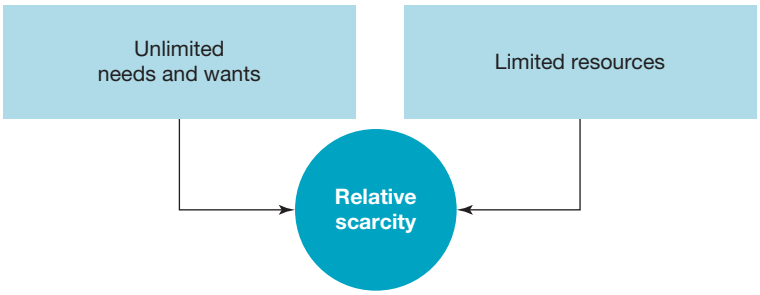
1.3 Relative scarcity

KEY KNOWLEDGE

- The concept of relative scarcity, including needs, wants, resources and the three basic economic questions

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The central problem in economics is *relative scarcity.* This involves society's unlimited wants on the one hand, relative to limited resources on the other that are needed to produce goods and services needed to help satisfy these wants. As a consequence, society must make choices as to which wants will be met. Let us expand on this idea.



1.3.1 Our unlimited needs and wants

A fundamental assumption in economics is that people's needs (goods and services necessary for survival) and especially their collective wants (goods and services that make life more enjoyable) are infinite or unlimited. As a nation, for instance, we would like to have far more things than we can possibly produce. As summarised in figure 1.3, there are four main groups or **economic agents** expressing their needs and wants for Australian goods and services.

FIGURE 1.3 The needs and wants for Australian goods and services.



The needs and wants of households for consumer goods and services

Australian individuals and households *need* essential consumer goods and services like food, housing, clothing, education and health services. We also have *wants* for less essential consumer items that help make life more enjoyable, such as mobile phones, the latest jeans, and ice cream. In part, satisfying even some of these needs and wants generally takes money. Many factors influence the spending decisions made by consumers, including their level of income after tax, how optimistic they are about the future, fashions and advertising, and their desire to maximise the satisfaction gained from the choices they make.

The needs and wants of private businesses

Australian firms need to purchase various resources or productive inputs to make finished goods and services. For example, they must buy producer goods like capital equipment (machines and buildings), raw and processed materials including oil and steel, hire employees and pay for finance or credit for expanding the business. In making their spending decisions, firms will be affected by their production costs, profitability, market share, the availability and impact of new technology, and changes in consumer tastes.

The needs and wants of governments

In Australia, federal, state and local governments also have needs and wants. They must obtain capital equipment (such as kindergartens, power generators and infrastructure including roads and dams for water supply), land, finished consumer goods (e.g. stationery) and the services of staff (such as economists, doctors, teachers and defence personnel). The purpose of buying all these things is to make it possible for the public sector to produce certain goods and services that will help to satisfy the needs and wants of society that are not met fully by the private business sector. Ultimately, this should help to raise general living standards.

The needs and wants of the overseas sector

Foreign governments, firms and households living overseas purchase Australian-made goods and services to help satisfy their particular needs and wants. They buy our exports of wool, wheat, minerals, tourism, education and manufactured items. Their decisions may be influenced by factors such as how many and what sort of resources they have, or by production costs. Offsetting these exports are Australia's needs for imports of goods and services such as oil, electronics, machinery and travel. We import goods and services because we are not self-sufficient and may lack the necessary resources.

The sources of our unlimited needs and wants

We have seen that society's needs and wants arise from several sources including the household, business, government and overseas sectors. All contribute to *unlimited* needs and wants, and place a strain on our resources. Additionally, the problem of unlimited wants is made even more severe by the following:

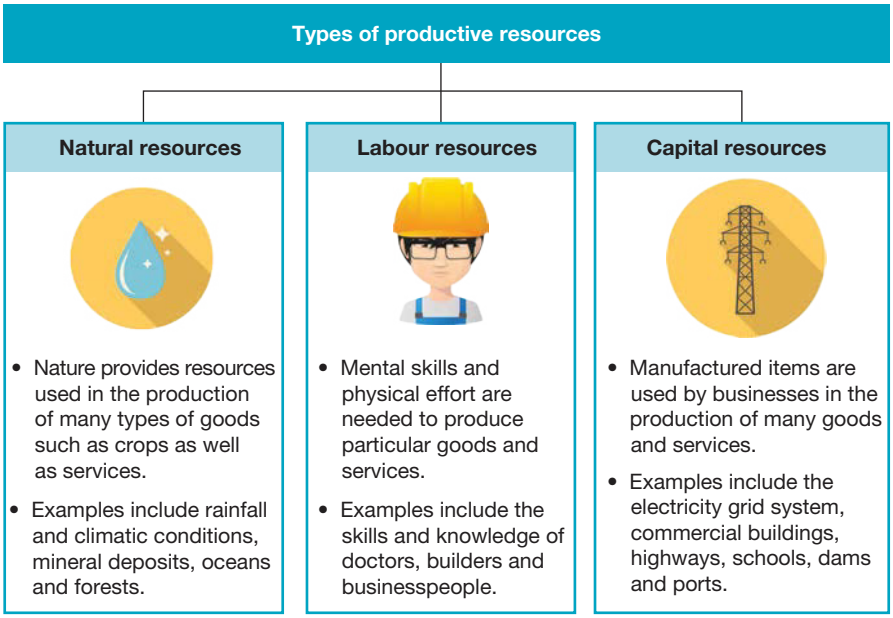
- *Many needs and wants* recur, for example, the need for food, petrol for the car.
- *Our expectations of material things* tend to grow since the more we have, the more we want.
- *Population growth* adds to the number of wants.
- *Advertising and the latest fashions*.
- *Planned or built-in obsolescence*, such as the toaster that is designed to last for only two years, contribute to our growing wants.
- *The widespread acceptance of materialism* as a personal goal (ownership of more possessions), along with growing affluence, contribute to the escalation of society's wants.

1.3.2 Limited resources restrict national production

Resources (sometimes these are also called the *factors of production*) *are the productive inputs required to make any good or service*. Unfortunately, the quantity or quality of resources available is limited, so Australia's capacity to produce is severely restricted. In turn, this means that we are not able to fully satisfy society's unlimited needs and wants.

There are *three* main types of resources or inputs required for production (see figure 1.4).

FIGURE 1.4 The three main types of productive resource available in an economy.



Natural resources

Natural resources represent those found in nature and include arable land, oil, minerals, rivers, climate, native forests, air quality and oceans. Natural resources have the potential to support a variety of primary (extractive), secondary (manufacturing) and even tertiary (service) industries.



Labour resources

Skilled and unskilled **labour resources** provide physical power, mental talents, and other specialised services that are used in the production process such as those of an architect, mechanic or shop attendant. Entrepreneurship is a specialised type of labour resource and represents the skills of management, company leadership and organisation. Most of Australia's labour force is employed in tertiary industry.



Capital resources



In economics, **capital resources** are manufactured items set aside from past production, often involving physical plant and equipment (such as machinery, factories, power generators, computer systems, trucks, dams, railways and roads) used by businesses and governments to help make other goods and services. Capital equipment also incorporates new technology that results from research and development (R&D). Perhaps the main feature of increased capital resources is that they help lift the efficiency or productivity of natural and labour resources. In turn, if resources are more productive so that output per worker in an hour is greater, a nation can enjoy higher per capita incomes, consumption and material living standards.

The big problem for Australia (and all countries) is that we don't have the quantities of resources, and resources of sufficient quality, to produce the amount of goods and services required to satisfy our unlimited wants. Our **productive capacity** and material living standards are therefore limited by the scarce resources available.

1.3.3 Relative scarcity and the three basic economic questions

Relative scarcity is the concept that simply describes the *imbalance* that exists between our unlimited wants for goods and services on the one hand, relative to the limited or finite resources that are available to help satisfy these wants, on the other hand.

If the problem of scarcity did not exist, goods and services would be *free* and available to all in infinite quantities. Regrettably, this is not the case and the *price* of one good or service *compared* with another, is often used as a guide to each item's *relative scarcity*.

For instance, because diamonds are relatively scarcer than air, they have a high price, while air is usually free and has a zero price.

Given the basic problem of relative scarcity, individuals, governments and nations cannot produce and have all the things they would like. They are all forced to make difficult choices between alternative ways of using their limited resources, based on their priorities. Only the most important wants can be satisfied, while less important ones that provide lower satisfaction, pleasure, or utility, must be abandoned.

So, because of scarcity, every nation has an *economic system* or institution that helps it to make these *choices* or *decisions*, and answer *three* basic economic questions:

The 'what and how much to produce' question

Because of scarcity, individuals, businesses and governments need to decide the specific types and quantities of each good (such as chocolate bars, tourist accommodation, butter, guns) or service (such as education, health, finance, entertainment) that is to be produced with the limited resources available. This decision may be influenced by what consumers want most, their tastes and fashions, advertising, the time of the year, the relative profitability of producing each good or service, and even government laws and regulations that may ban some types of production.

The 'how to produce' question

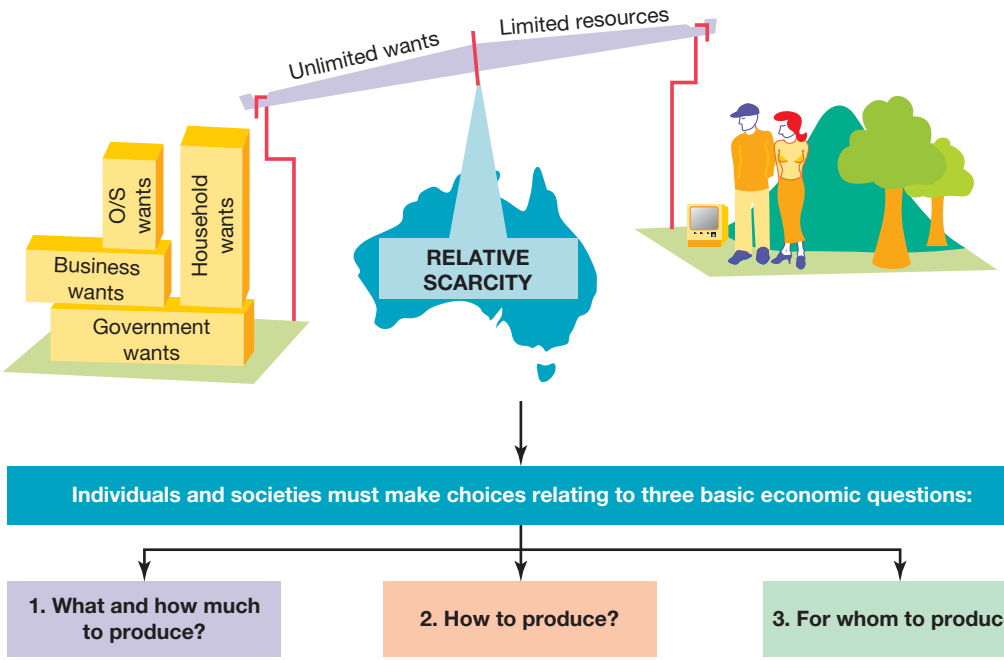
Given scarcity, businesses need to produce their goods and services in the most efficient way. For instance, in making a particular type of good or service, often labour resources can be replaced by capital resources or technology including robotics. Whether labour-intensive or capital-intensive production methods are selected by a business, often depends on which production method is the cheapest and most profitable. Sometimes too, government policies will affect a firm's decisions about its production methods. For instance, the government may set legal minimum wages at a level higher than otherwise, or perhaps impose laws about occupational health and safety in the workplace.

The 'for whom to produce' question

In using our limited resources, decisions must also be made about how the nation's goods, services, and incomes will be shared, distributed or divided between members of society. Who should gain access to consume or use the goods and services that have been produced? Should this mostly depend on the level of each person's income that in turn may reflect their personal economic contribution towards making these goods and services, or should the government also help to decide who can gain access to these things, perhaps by taxing the rich and paying welfare to the neediest, or by making some services available to all free of charge?

The concept of relative scarcity, and the need for choice or decisions in providing answers to the three basic economic questions, is shown in figure 1.5.

FIGURE 1.5 Relative scarcity reflects unlimited wants compared with limited resources available, necessitates making choices and answering three basic economic questions.



on Resources

Weblinks Basic concepts in economics
Scarcity, choices and exchange (EconMovies 1: Star Wars)

1.3 Activities

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1.3 Quick quiz on

1.3 Exercise

1.3 Exercise

1. a. **Outline** the difference between needs and wants. **(2 marks)**
   b. **Explain** why we say that wants are unlimited. **(2 marks)**
2. **Define** and give examples of the three main categories of productive resources that are available to a nation.
   a. natural resources
   b. labour resources
   c. capital resources. **(3 marks)**
3. **Explain** the basic economic problem of relative scarcity. **(2 marks)**
4. a. **Classify** the following resources as natural, labour or capital resources. **(5 marks)**

Resources	Type of resource — natural, labour or capital resource
i. The new NBN cables	
ii. A computer at BHP	
iii. The fertile soils in the Western District of Victoria	
iv. The MCG sports oval and complex	
v. The school principal	
vi. Port Phillip Bay	
vii. The Sydney Opera House	
viii. The M80 Ringroad or East Link	
ix. Native forests in Tasmania	
x. Ashleigh Barty (Australian tennis player)	

   b. **Distinguish** *capital* resources from *natural* resources. **(2 marks)**
   c. **Explain** why *capital resources* are such an important influence on a nation's productive capacity and material living standards. **(2 marks)**

Solutions and sample responses are available online.

1.4 Choice, opportunity cost and efficiency in resource allocation

KEY KNOWLEDGE

- The concept of relative scarcity, including opportunity cost and the production possibility frontier (PPF) model
- The meaning and significance of economic efficiency, including allocative efficiency, productive efficiency, dynamic efficiency and intertemporal efficiency and their relationship to the PPF model
- The role of relative prices in the allocation of resources

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If our collective wants were not unlimited and if resources were infinite, scarcity would not exist as a central economic problem facing society. Sadly, this is not the case, so we are forced to make *choices* or *decisions* about how scarce resources are to be used or allocated.

1.4.1 The need to make choices when allocating resources

Resource allocation *involves making choices or decisions about how scarce natural, labour and capital inputs are to be used or distributed among competing areas of production.*

Resources have a host of possible uses. For instance, should resources be devoted to the production of childcare centres or freeways, to national defence or to primary production, or to the production of consumer goods or to making capital equipment? Because of the problem of relative scarcity — there are not enough resources to produce everything we would like — individuals and nations are forced to choose between alternative or competing areas of production. This raises the problem of *opportunity cost*.

1.4.2 Opportunity cost and its role in deciding how resources are used or allocated

Opportunity costs arise out of the choices made by individuals and nations. When *all* available resources are fully and most efficiently used in production, a decision to produce more of one type of good or service means reduced production in some other area. This sacrifice in production is required to free up scarce resources. *The opportunity cost is therefore the cost of the benefit forgone or given up, when resources are used in the production of the next best alternative good or service.*

Apart from the benefits forgone when resources are redirected, opportunity cost can also be measured in other ways. For instance, a particular choice may involve the cost in dollar terms, the cost in time and external costs — these are costs transferred or passed on to others (such as the cost to your neighbours of lost sleep, if you decide to have a noisy party).

Opportunity cost is commonplace, for individuals as well as nations and governments.

- ***Opportunity costs for individuals.***
  For example, your wise choice to use your time to study a great subject like economics may mean that you were forced to forgo having fun in, say, chemistry or biology. Alternatively, your decision to stay at school until the end of Year 12 so that you can benefit from tertiary study, may mean sacrificing income that you could have earned by having a fulltime job. In addition, the payment of school fees meant your parents forewent using the money to travel abroad.

- ***Opportunity costs for nations and governments*.**
  In 2022–23, for example, the Australian government planned to spend around $38 billion on defence. While this decision has benefits and some of society's wants could be satisfied from it, it is a sobering thought to reflect on how these same resources could have been redeployed or reallocated. It is likely that welfare, childcare, health and industry assistance all suffered cutbacks because of this decision, and/or taxes were higher than otherwise to pay for defence spending. Environmental opportunity costs also result from various economic activities in Australia, especially coal-generated power, product packaging, aspects of the timber industry, a transport system dependent on the private motor car, water usage and irrigation-based agriculture in arid regions, and aviation and tourism. These activities are linked with the costs of accelerated global warming and serious climate change.

Perhaps you might like to consider the opportunity cost of a decision to allow expanded uranium mining in Kakadu National Park (Northern Territory), the Adani Carmichael coal mine (Queensland), and its impact on accelerating climate change or further wood chipping in the Otways (Victoria) or in Tasmania. Given that a decision to produce one type of good or service can adversely affect the output of another, it is important that the production options are carefully weighed. Increasingly, firms and governments use a *cost–benefit analysis* to assist them in making choices that minimise opportunity costs. Failure to consider such matters results in overall lower living standards than could otherwise be the case.

1.4.3 The production possibility diagram

The **production possibility diagram** *is a way of illustrating the different production options, combinations or choices available for an economy*. As such, it is used by economists to better understand various concepts and ideas including the following:

- the basic economic problem of *relative scarcity*
- the concepts of *efficiency* and *inefficiency* in *allocating resources* and their connection with material living standards
- how a nation's *productive capacity* or ability to produce goods and services is limited at a point in time
- that careful *choices* must be made in deciding how resources are allocated and which needs and wants are to be satisfied
- all choices or economic decisions about production and the allocation of resources involve an *opportunity cost*
- how, over a period of time, a country's production levels or its economy may grow.

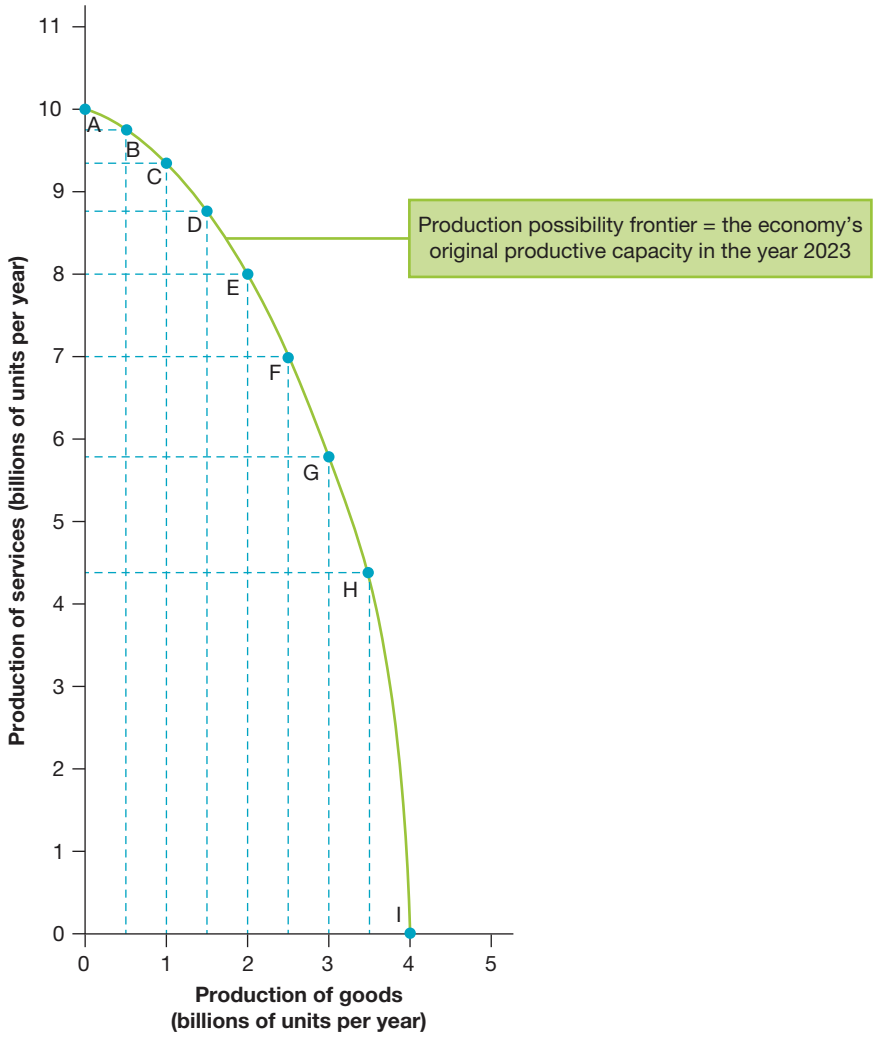
Constructing a production possibility diagram

In order to construct the *production possibility diagram* (PPD) shown in figure 1.6 illustrating the output choices available for a nation, we need to understand that it is based on some simplifying *assumptions*:

- It assumes that only *two* types of output can be produced by a nation — in this case, the country can produce *goods* or it can produce *services* (or perhaps some combination of the two).
- It is assumed that the nation *fully* uses its scarce natural, labour or capital resources to produce goods or services, so that no resources are unemployed, wasted or lying idle (since this would mean that the country was not operating at its capacity or potential output).
- At a point in time (e.g. 2023), the total *quantity* or volume of productive resources available for the nation is fixed or limited, although how these resources are allocated between the production of goods or the production of services (i.e. the product mix) can change.
- It is assumed that the nation uses the most *efficient* production methods now available, or the best practice permitted by current technology.

With these things in mind, let us now take a closer look at the PPD shown in figure 1.6.

FIGURE 1.6 Production possibility diagram for the hypothetical country in 2023.



Production combination	Production of services (billions of units per year)	Production of goods (billions of units per year)
A	10.0	0.0
B	9.8	0.5
C	9.4	1.0
D	8.8	1.5
E	8.0	2.0
F	7.0	2.5
G	5.8	3.0
H	4.4	3.5
I	0.0	4.0

Perhaps the first thing to note is that the PPD has *two* axes:

- The total quantity of *goods* produced is shown on the *horizontal axis* of the diagram.
- The total quantity of *services* produced is shown on the *vertical axis* of the diagram.

This PPD contains a *production possibility frontier* (PPF) for the country. This represents the *productive capacity* or a nation's potential output of goods and/or services for 2023, given the efficient and complete use of all resources available. The PPF hence marks the *current* boundary or border between *possible* and *impossible* production combinations of goods and/or services.

The PPF has been drawn using the table of hypothetical data located at the foot of the diagram. Notice that there are nine *production possibilities* or combinations of goods and/or services (labelled A to I) from which this country could choose. However, whatever production possibility, product mix or point on the PPF is selected (e.g. point A or point I), there will always be an *opportunity cost*. By opportunity cost we mean that the production of one thing has to be forgone to produce more of the next best alternative. The scarcity of resources means that it is not possible for the nation to produce maximum quantities of both goods (i.e. a limit of 4 billion units per year) and services (i.e. a limit of 10 billion units per year) at the *same* time.

For example, if production possibility A is chosen and the country produces 10 billion units of services annually, rather than selecting production possibility I, it is clear that the production of goods will have to be cut from 4 billion units a year to 0 units, so as to free up the necessary resources. Here, the opportunity cost of selecting point A rather than I is said to be 4 million units of goods. Notice too that as this gradual shift occurs — moving up and around the PPF from point I through points H, G, F, E, D, C and B, towards point A — the size of the opportunity cost of increasing the production of services gradually rises. It starts off small but progressively increases.

In reverse, if the nation chose point I rather than point A on the PPF, increasing the production of goods from 0 to 4 billion units each year would mean cutting the production of services from 10 billion units to 0 units. The opportunity cost of gaining 4 billion units of goods would be 10 billion units of services. Again notice that in this latter case, the opportunity cost of moving down around the PPF — from point A through points B, C, D, E, F, G and H, to I — would start off quite small and then progressively increase.

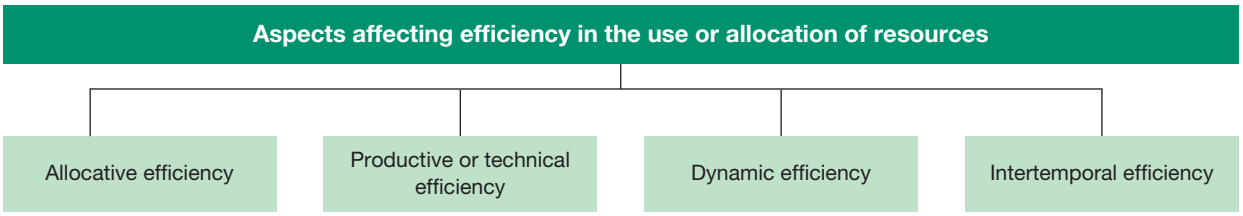
Showing the relationship between efficiency in resource allocation, the PPF and society's living standards

Allocative efficiency, or the *efficient allocation of resources*, is defined as a desirable situation where resources are used to produce particular types of goods and services that best maximise the overall satisfaction of society's needs and wants, wellbeing or living standards (both in the short- and long-term). Resources go to where they are most wanted. As mentioned already, all nine production possibilities (labelled A to I) making up the 2023 PPF shown in figure 1.6, *could* represent an *efficient* use of resources. We know this simply because for all points on the PPF, output is at its limit. It is not possible for the country to increase its production of one thing without reducing the production of the other. So any particular product mix that is selected from those making up the PPF can *potentially* maximise the satisfaction of society's wants. Nevertheless, some of you may still question whether there is one output mix on the PPF that is superior or better than another. The answer is that all production possibilities (for instance, B, D or G) can potentially optimise society's general welfare, and that the final combination chosen depends on the personal values held by those making the decisions. However, what we can say is that a production point that is somewhere inside the PPF is using resources *inefficiently*. This will certainly limit the extent to which society's wants can be satisfied and lower material living standards.

Apart from *allocative efficiency* (using resources in ways that maximise society's satisfaction overall), figure 1.7 shows that there are also at least three other ways of describing **economic efficiency**:

- ***Productive* or *technical efficiency*** implies using the *lowest cost* production methods, and minimising wastage of resources in making goods and services. At a point in time, any one choice selected by a society on the PPF could represent maximum efficiency where output per unit of input is at its maximum. However, over time, changes in allocative efficiency will affect the overall size of the PPF and hence whether the frontier moves outwards or inwards. For example, an increase in technical efficiency would help shift the PPF outwards allowing for the satisfaction of even more wants, also increasing *allocative efficiency*.
- ***Dynamic efficiency*** occurs when resources are reallocated quickly in response to the *changing* needs and tastes of consumers. Thinking of the PPD, dynamic efficiency would influence the speed of change from one point selected by society on the PPF, to another point on the PPF. Moving quickly implies that resources are highly mobile and can be reallocated easily between alternative uses when relative prices change. Increased dynamic efficiency will also help to boost *allocative efficiency* and ensure that resources go to where they are most wanted or valued by society.
- ***Intertemporal efficiency*** refers to finding the optimal balance between current consumption or the spending of income, versus saving income to finance investment and hence increase *future* consumption. It is often a matter of finding the right balance between satisfying our immediate wants for goods and services, versus those of future generations. Another way of looking at it is from the perspective involving environmental sustainability. Faster economic growth now will deplete resources and accelerate climate change, limiting the choices of future generations and the extent to which they can satisfy their wants. Clearly this too can affect *allocative efficiency*.

FIGURE 1.7 Elements affecting efficiency in the use of Australia's scarce resources.

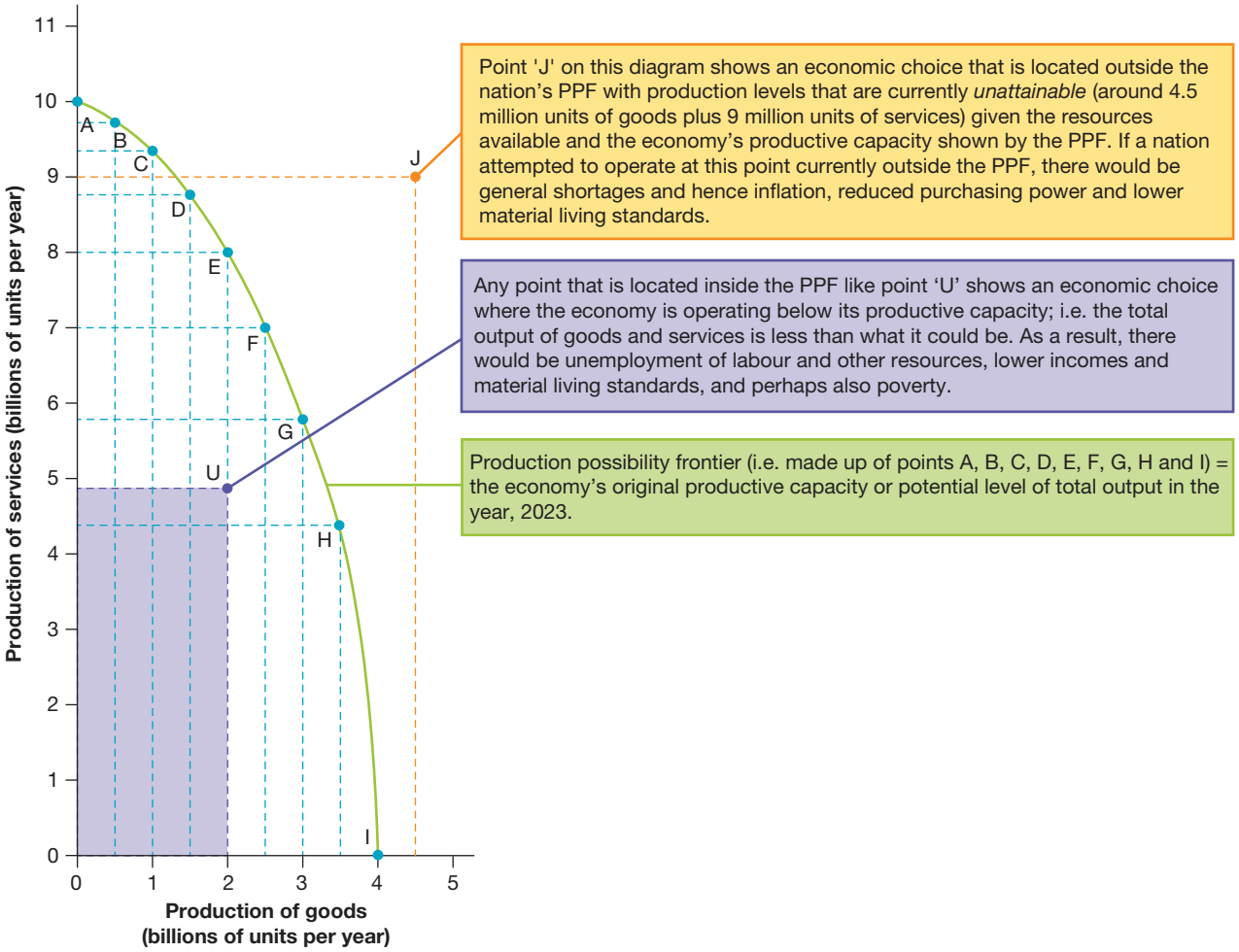


Showing decisions or choices that result in reduced efficiency and unemployment of resources

Earlier mention was made of the fact that if a nation chooses to produce at a point *inside* the PPF rather than somewhere *on* the PPF, this is regarded as an *inefficient or* wasteful use of resources, where there is unemployment. The shaded area inside the PPF in figure 1.8 shows this situation. The economy is clearly not operating at its capacity.

Here, the total level of national output is lower than it could be and the combined production levels of both goods and services would be too low to ensure that all resources are fully employed. In other words, there would be unemployment of labour and other inputs, and material living standards would thus be reduced.

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



Increasing the nation's productive capacity and living standards

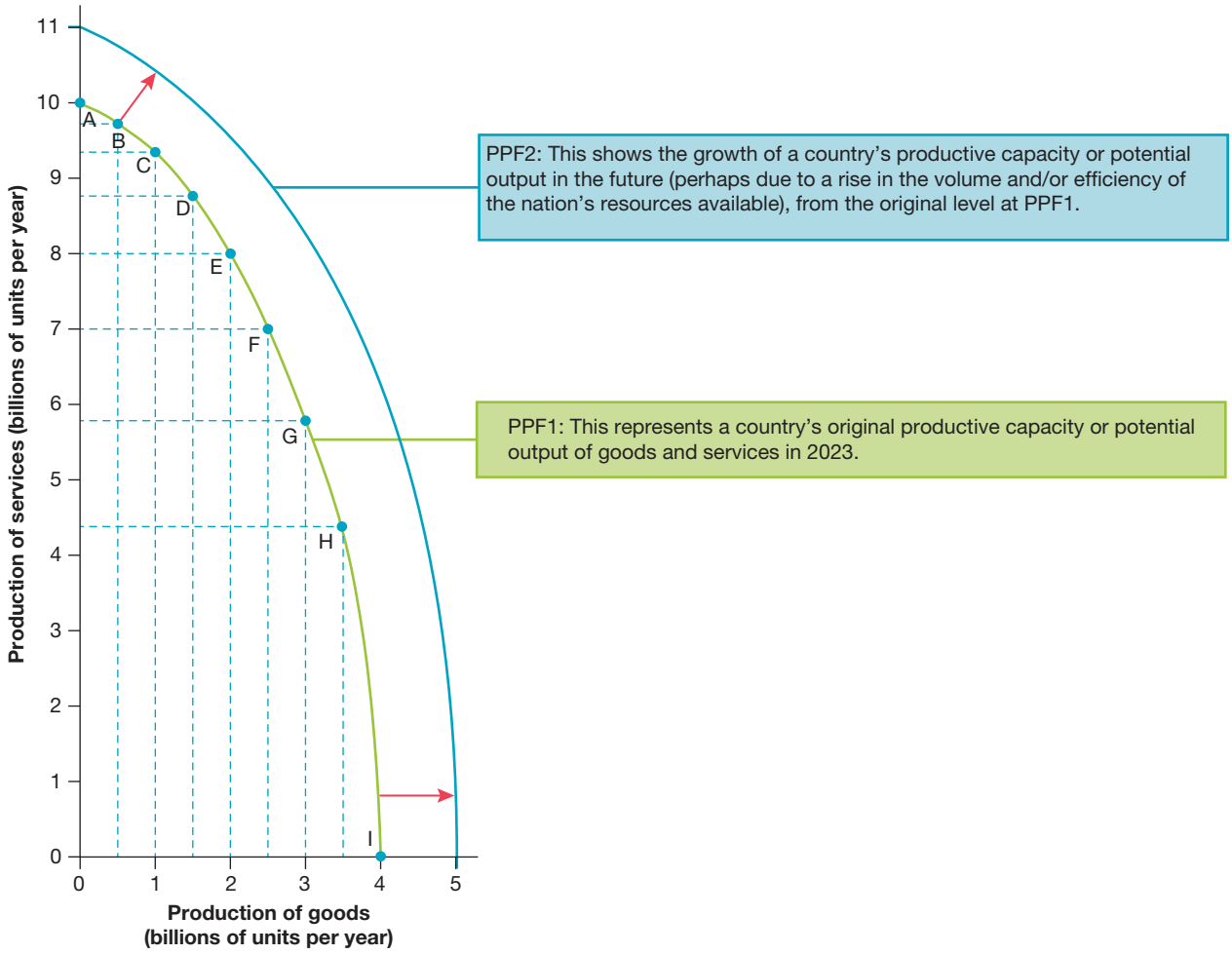
Any point on the diagram located somewhere *outside* the PPF involves national production levels that cannot be obtained *currently* because of the lack of resources available.

The economy simply does not have sufficient productive capacity. However, as shown in figure 1.9, if there was an increase in the volume and/or efficiency of productive resources available in the future, the whole PPF could grow and shift outwards from PPF1 to PPF2. The potential level of national output would rise and the country would experience economic growth and possibly, higher average material living standards.

Over time, there are many things that could increase the volume and efficiency of a nation's resources and expand the PPF. For example:

- a rise in foreign investment
- an increase in the level of skilled immigration
- discovery of new mineral deposits or other natural resources
- technological breakthroughs
- government spending on education and training of the labour force, or a rise in outlays on R&D
- rises in worker productivity or efficiency
- the building of new infrastructure such as roads, water and telecommunications.

FIGURE 1.9 Using the production possibility diagram to show the effect on a nation's productive capacity, of growing the volume and/or efficiency of resources available.



These types of developments could grow the nation's productive capacity, enabling points originally outside the 2023 PPF to now be attainable. In turn, it is quite possible that this outward shift of the PPF should help increase incomes and improve average material living standards.

1.4.4 Factors affecting the choices or economic decisions made by individuals, businesses and governments

Individuals, businesses and governments make choices or economic decisions every day that take *opportunity costs* into account. Each group realises that its resources are scarce and hence all decisions made involve an opportunity cost — giving up one good or service in order to free up resources for an alternative use. In so doing, each group is influenced by many factors.

Choices and decisions by individuals



Individuals generally make decisions to maximise their overall satisfaction and to minimise their opportunity cost. For example, when you decide to go to the cinema, an opportunity cost might be that you can't go surfing or get take-away. These decisions made by individuals are based on many factors:

- limited level of disposable income
- personal tastes and beliefs
- advertising and fashions
- seasonal conditions
- rational and non-rational behaviour
- government policy decisions that alter consumer behaviour.

Choices and decisions by businesses



Businesses, too, make economic decisions or choices about how to use their resources. For example, there is a potential opportunity cost when a farmer decides to produce wheat rather than canola, or to buy new machinery. This sort of decision might reflect the following:

- production costs and profitability
- decisions of rival firms in their industry
- community feelings and opinions
- government decisions and policies that alter business behaviour.

Choices and decisions by governments



Governments also have to make choices or economic decisions involving the allocation of resources and opportunity costs. For instance, a decision to be more generous with welfare benefits for the neediest members of society, or provide tax cuts to individuals or businesses, is likely to mean a reduction in resources available for schools or health or defence. Such decisions could be motivated by various considerations:

- political survival and election promises
- voter attitudes and expectations
- the political party's values
- a desire to correct problems that would otherwise occur if nothing was done.

on Resources

Weblinks Scarcity
Opportunity cost
Production possibilities curve
Shifting the production possibilities curve (PPC)
Production possibilities curve (EconMovies 3: Monsters Inc)
Introduction to economics

1.4 Activities

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1.4 Quick quiz on | **1.4 Exercise**

1.4 Exercise

1. **Explain** why it is necessary for society to make economic *choices* or decisions about production and resource allocation or use. **(2 marks)**
2. **Define** what is meant by *opportunity cost* and **explain** why it exists. **(2 marks)**
3. **Outline** the general factors that affect the overall size of a nation's *production possibility frontier*. **(2 marks)**
4. **Explain** what is meant by an *efficient* allocation of resources. **(2 marks)**
5. Because of the existence of *scarcity*, society is forced to make choices or decisions about how resources should be allocated or used between alternative uses. Give *two* examples of the typical choices made by each of the following, that result in opportunity costs:
   - **a.** you, as a VCE student
   - **b.** your parents
   - **c.** mining company, BHP
   - **d.** the Australian government. **(4 marks)**
6. **Distinguish** between the following pairs of terms:
   - **a.** allocative efficiency and productive (technical) efficiency **(2 marks)**
   - **b.** intertemporal efficiency and dynamic efficiency. **(2 marks)**
7. Thinking of the production possibility diagram:
   - **a. Explain** what is meant by an economy's productive capacity. **(2 marks)**
   - **b. Explain** the problems that arise when a nation is not operating at its productive capacity. **(2 marks)**

   Examine the table below showing annual production possibilities ('000 tonnes per year) for a country that can produce only wool or cotton with the resources available.

Product	Production possibility A	Production possibility B	Production possibility C	Production possibility D
Wool ('000 tonnes per year)	0	10	30	35
Cotton ('000 tonnes per year)	25	20	10	0

   - **c.** Use these data to **draw** and fully label a production possibility diagram. **(3 marks)**
   - **d. Define** what is meant by an *efficient allocation of resources*, giving examples and referring to the data in the table. **(2 marks)**
   - **e. Calculate** the *opportunity cost* for each of the following economic decisions:
     - **i.** producing 25 000 tonnes of cotton per year
     - **ii.** producing 35000 tonnes of wool per year
     - **iii.** moving from production possibility B to possibility C. **(3 marks)**
8. In 2022–23, the Australian government planned to spend $38 billion (6 per cent of budget outlays) on defence. **Explain** likely opportunity costs arising from this decision. **(2 marks)**
9. In recent years, the federal government has progressively reduced the rate of tax paid by small and medium-sized companies from 30 per cent to 26 and now 25 per cent. **Explain** a likely opportunity cost arising from this decision. **(2 marks)**
10. The federal government has paid cash subsidies to coal mining companies equal to around $5 per tonne. **Explain** likely opportunity costs arising from this policy decision. **(2 marks)**

Solutions and sample responses are available online.

1.5 Market structure and the conditions for a free and perfectly competitive market

KEY KNOWLEDGE

- The conditions for a free and perfectly competitive market
- The role of free and competitive markets in promoting an efficient allocation of resources, and improved living standards

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Australia has a contemporary **market capitalist economy** or **economic system**. Among other things, this means that most of the important *economic decisions* are made through the *operation of markets*, rather than through centralised government economic planning as still occurs in a few countries like North Korea. So what exactly do we mean when we refer to a 'market'?

1.5.1 Definition and nature of markets

A **market** is an institution where *buyers* (consumers or demanders including households, businesses and governments) of goods and services, and *sellers* (producers or suppliers including businesses and governments) of goods and services, negotiate the **price** for each good or service.

A market can exist in a particular physical location (such as the Queen Victoria Market) although, with the internet, buyers and sellers do not even have to meet face to face. In Australia's market economy there are hundreds of different markets, each with buyers and sellers. Examples include the labour market, the capital or financial market, the foreign exchange market, the property market, the carbon market, the grocery market, the share market, the entertainment market, the fruit market, the fish market, the aviation market, and commodity markets such as those for wool, wheat, coal or iron ore.



Markets (in a capitalist economy like ours) are usually based on self-interest and competition. Typically the buyer wants to purchase a good or service at the lowest possible price, while the seller wants to sell at the highest price. As in a property auction, this process of price negotiation between buyers and sellers is one of trial and error, offer and counteroffer, until a mutually agreed market price is reached. The good or service will be sold to the buyer who is prepared to pay the highest price, and by the seller who is prepared to accept the lowest price.



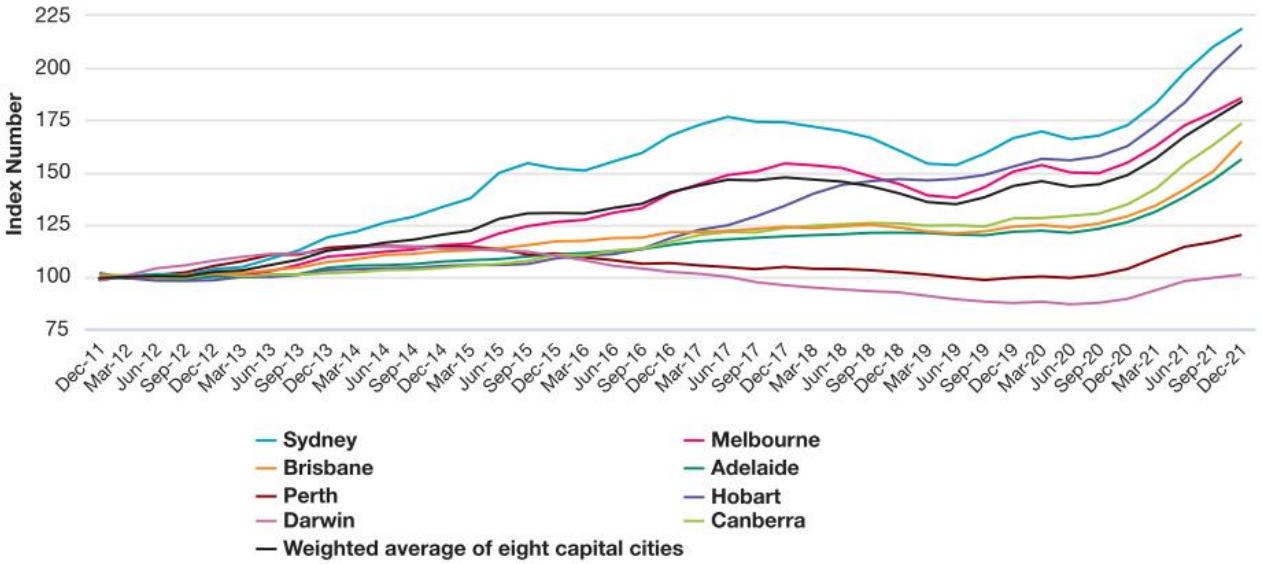
Over a period of time, the market price for a particular good or service might rise or fall, relative to another. This is due to *changing non-price conditions* that affect the decisions of buyers and sellers:

- If there are more buyers and/or fewer sellers at a given price, the market *price rises*.
- Conversely, if there are fewer buyers and/or more sellers at a given price, the market *price falls*.

Figure 1.10 (parts 1 and 2) illustrates the changeable level of prices (measured using price indexes against a base period) over recent years in Australia's property and share markets. When market prices like these change, they generate *signals* and create positive and negative incentives that help owners of resources make important economic decisions and answer the three basic economic questions (i.e. what and how much to produce, how to produce and for whom to produce).

FIGURE 1.10 How the market prices of Australian property and shares have changed in recent years.

Part 1 — Change in Australian residential property prices in capital cities (measured quarterly using a price index with a base value in 2011–12 of 100 points).



2011–12 = 100.0

Source: Australian Bureau of Statistics, Residential Property Price Indexes: Eight Capital Cities December 2021.

Part 2 — An index that measures changes in the share prices for Australia's top 200 companies.



Source: Market Index, see https://www.marketindex.com.au/asx200.

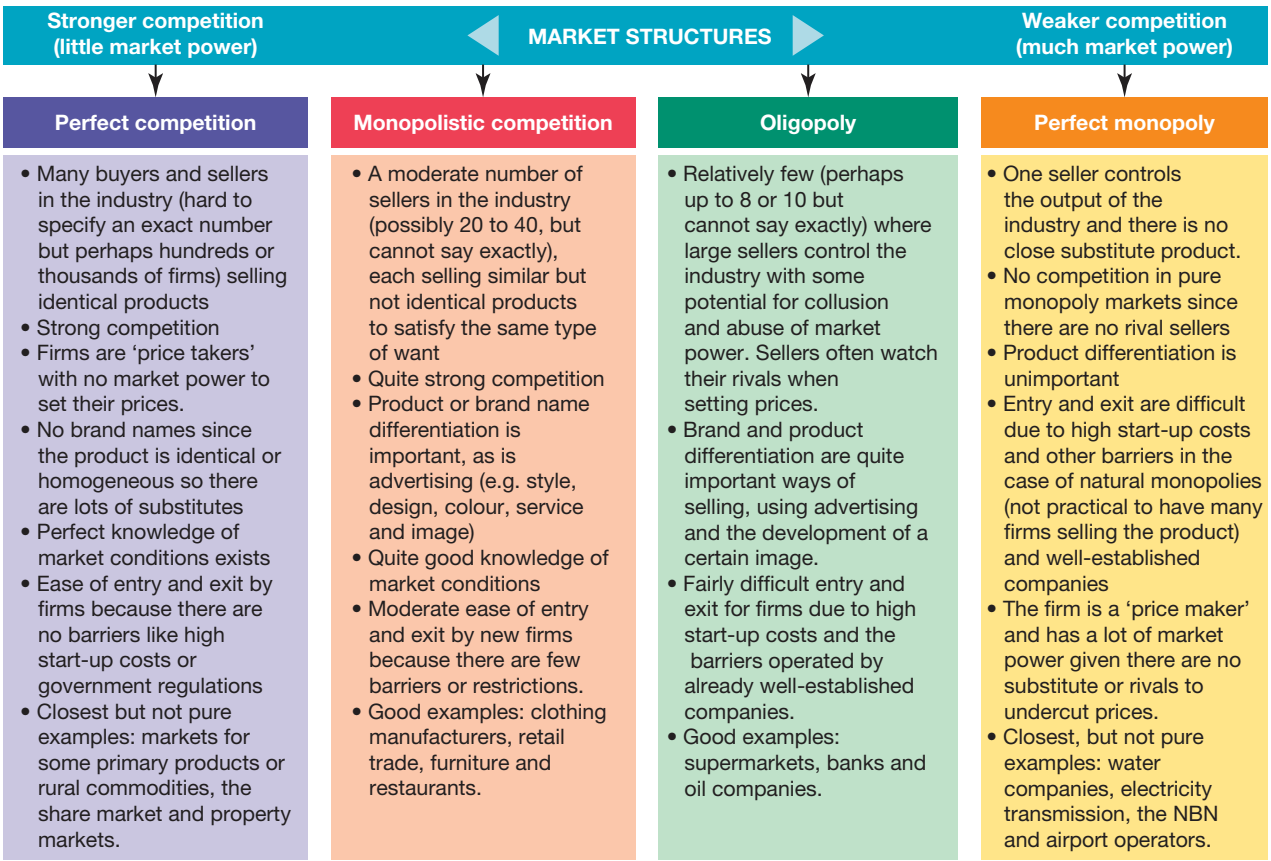
1.5.2 Types of market structure

As institutions for making economic decisions, *markets* generally operate best or most efficiently when they are *free* or *perfectly* competitive. Perfect or pure competition involves strong rivalry between many firms in a particular market where each seller tries to undercut the price and exceed the product quality of the rival firm. However, this ideal situation does not always exist in our economy. Indeed, there are a variety of market structures. Here, the concept of **market structure** refers to the type of competition (**perfect or pure competition**, **monopolistic competition**, **oligopoly,** and **perfect or pure monopoly**) that exists in a particular market. Indeed, markets are often characterised or distinguished by the following features:

- the *number of rival firms* operating in a market
- how much *market power* or control a particular firm has in setting its level of prices
- the barriers or *ease of entry or exit* of firms into an industry or market
- the importance of *product differentiation and advertising* — the degree of product homogeneity or substitutability
- the accuracy and level of information or *knowledge* that exists among buyers and sellers, about the market and its conditions.

There are *four* main types of market structure ranging from *pure competition* (many rival firms) at one extreme, through *monopolistic competition*, to *oligopoly* and *pure monopoly* (one seller that controls the market and sets prices) at the other extreme. Each structure has different characteristics (see figure 1.11).

FIGURE 1.11 The main types of market structure found in Australia reflect the level of competition and other features.



1.5.3 The conditions for a free or perfectly competitive market

As mentioned, markets usually work best if there is strong competition between sellers and between buyers.

However, in addition to this requirement, markets generally make better and more efficient decisions when more of the following **preconditions** are met:

- ***Consumer sovereignty exists.***
  Consumer sovereignty means that consumers of goods and services, not governments, dictate how resources will be used. Consumers make individual decisions about the goods and services they choose to buy and those they choose to reject, and collectively these decisions largely determine how most of Australia's resources are allocated. This affects **relative prices** and **relative profits** in different areas of production, and hence the decisions made by businesses. Consumer sovereignty is perhaps the most important precondition of a purely competitive market. It is the opposite to government planning, regulation and control.
- ***Firms have no market power or control over prices.***
  Because there may be hundreds or thousands of firms producing identical products, each with a miniscule share of the market, businesses have no market power and their individual actions are unable to influence prices. They are therefore *price takers* in a free or perfectly competitive market (unlike a firm in a monopoly market that is a *price maker*).
- ***Firms have ease of entry or exit or no barriers.***
  In a perfectly competitive market, firms need to respond to changes in relative prices and profits, and alter their allocation of resources. For this to happen, there should be relative ease of entry by new firms wishing to start up, and ease of exit for existing firms to leave the market if they want to change the things they produce. Barriers to entry — like high start-up costs, licencing laws and bureaucracy, and restrictions by well-established firms — are minimal when there is perfect competition.
- ***The products are homogeneous.***
  In a perfectly competitive market, it is assumed that the products sold in the market are homogeneous and each is an exact substitute for another sold by a different supplier. They are identical and not differentiated using brand names, design differences or advertising. This may be hard for us to imagine but sections of primary industry such as grains, and perhaps a particular company's shares traded on the stock market, come closest to the mark.
- ***Resources are mobile.***
  When relative prices increase or decrease in a market, resources will either be attracted to or repelled from that market, depending on what the change in price does to the level of relative profits. In a purely competitive market, it is assumed that resources are mobile. Mobile resources can be easily and quickly moved from one use to another to take advantage of changes in relative profits.
- ***Behaviour is rational and includes profit maximisation.***
  Owners of resources in a purely competitive market are assumed to engage in rational behaviour and want to maximise their profits or incomes. They do this by minimising production costs, producing things that are wanted by consumers, and selling these at the highest possible price. Consumers or buyers are also assumed to generally make rational decisions that are in their own self-interest. This includes wanting to buy at the lowest possible price.
- ***There is perfect knowledge of the market.***
  Since buyers and sellers are guided by changes in relative prices, a market system can operate effectively only when buyers and sellers have complete, accurate or perfect knowledge of the market and the goods being traded. Armed with this information, they can then make rational and *informed* decisions about how resources should be used. This helps to improve the satisfaction of wants and hence increases efficiency in the use of resources.

Looking at this formidable list, one would struggle to find examples of perfectly competitive markets that tick all the required boxes. However, there are some markets that come close and it is a useful theoretical starting point for further investigations into the operation of the market system.

1.5.4 An outline of how free and perfectly competitive markets can improve efficiency and living standards

Most economists believe that a reliance on *competitive markets* to make key economic decisions, *generally* causes scarce resources to be used or allocated efficiently. This enhances the extent to which society's needs and wants can be satisfied, wellbeing maximised, and living standards improved. There are several possible reasons for this:

Strong competition can lead to *higher efficiency* in resource allocation

Efficiency must be considered when decisions are made about how we should use our scarce resources so as to maximise the general satisfaction of society's wants and improve living standards. Resources are directed to areas where they are most wanted. Efficiency can also mean there is more national output gained from a given quantity of factor inputs.

There are powerful reasons why efficiency is more likely to be at its highest when there is strong competition:

- With many rivals and no power to set prices, firms in competitive markets need to find ways to *cut costs* and to produce more with less. They are forced to have *allocative efficiency* to ensure they use their resources in ways that minimise the opportunity costs of their decisions.
- To survive, firms need to *innovate* by using the latest technology. This leads to *productive* or *technical efficiency*.
- Firms need to be even more *responsive* to rapid market shifts in fashions, products and customer requirements. This leads to increased *dynamic efficiency*.
- Strong competition in various markets can lead to *intertemporal efficiency* where there is the right balance between resources allocated for current consumption, as opposed to those set aside through saving and investment for future use.

As mentioned earlier, in competitive markets where there is strong competition, firms are forced to cut production costs and use resources more efficiently, so they gain more output from the same inputs. In turn, this can help to grow a nation's productive capacity, shifting the PPF outwards. This means that the potential levels of national output, and hence income, should be higher than otherwise, possibly leading to improvements in average living standards.

Strong competition can lead to *lower prices* and greater purchasing power of incomes

Strong competition and rivalry between firms in various markets and industries is most likely to lead to higher efficiency (for the reasons already noted above), along with lower costs and prices for goods and services. Firms in competitive markets are *price takers* rather than *price makers*, so exploitation of consumers through artificially higher prices is impossible. As a result of lower prices, consumers will have more purchasing power and generally higher consumption levels and material living standards.

Strong competition can lead to *better quality* goods and services and improved customer service

In general, strong competition between firms to win over customers, along with improved efficiency, is likely to lead to the creation of better-quality products. After all, unhappy customers can choose from many other rival suppliers if they feel they are getting shonky items and poor service from staff. This too can help improve living standards.

Can *too much* competition be bad?

There are, however, some instances of where excessive competition can have negative effects:

- For example, aggressive cost cutting by profit-hungry rival firms struggling to survive (such as often occurs in aviation, manufacturing and food production) may, in the short-term, actually reduce public safety, product durability, quality assurance and customer satisfaction. Governments need to safeguard against these dangers when introducing policies to promote stronger competition such as some restrictions on business take-overs and mergers.

- In addition, if there are many rival firms competing in a single market, it is likely that their size will be relatively small with low sales volumes. In turn, this may prevent a company from becoming efficient since business would be less likely to gain *economies of large-scale production* where *average unit costs* can be reduced as annual production levels are increased. For instance, these cost reductions or savings might be the result of buying resources more cheaply in bulk, using expensive technology that is only possible when producing on a big scale, spreading the costs of research, development and advertising, and using improved management systems.

on Resources

Weblinks Introduction to market structures
Market structures
Oligopolies and game theory (EconMovies 8: The Dark Knight)
Efficiency and market failures (EconMovies 7: Anchorman)

1.5 Activities

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1.5 Quick quiz on

1.5 Exercise

1.5 Exercise

1. **Explain** what is meant by a *market*. **(2 marks)**
2. **Outline** what is meant by the term *market structure.* Show this diagrammatically. **(2 marks)**
3. **Distinguish** the following pairs of terms involving market structures and give typical examples of industries where these are found in Australia's economy:
   a. perfect (pure) competition and monopolistic competition
   b. oligopoly and perfect (pure) monopoly
   c. price maker and price taker
   d. homogeneous product and product differentiation
   e. ease of entry and barriers to entry. **(10 marks)**
4. a. **Outline** five important *preconditions* that must normally be met for a market to be regarded as *purely competitive*. **(5 marks)**
   b. **Explain** how the *price* of a particular good or service is normally determined in a fairly competitive market, such as for property. **(2 marks)**
   c. **Explain** why we would normally expect a highly *competitive* market to be more efficient in allocating resources than a *monopoly* type market. Can monopoly markets sometimes be more efficient users of resources than competitive markets? **(4 marks)**
   d. Apart from generally being more efficient in allocating resources, **identify** and **explain** *two* other likely beneficial effects of competitive markets. **(2 marks)**
   e. For Australia, **explain** the ways in which the markets for groceries and banking are *different* from those for the growing of grains and the trading of a company's shares. **(4 marks)**
   f. **Explain** why Australia's clothing industry would probably be regarded as a market where there is monopolistic competition, while those for water or the NBN would normally be seen as a monopoly market. **(2 marks)**

Solutions and sample responses are available online.

1.6 Microeconomics — the market as an important decision maker in Australia's economy

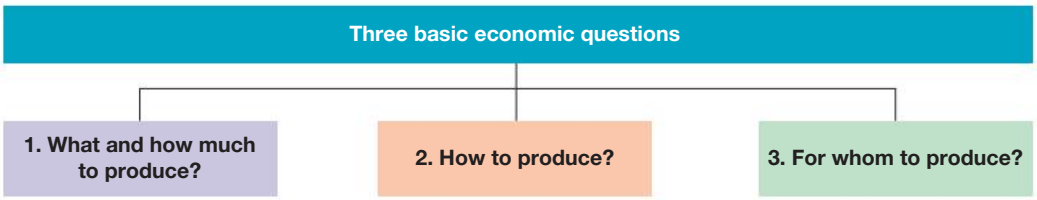
KEY KNOWLEDGE

- The law of demand and the theory of the law of demand, including the income effect and the substitution effect
- The demand curve, including movements along and shifts of the demand curve
- The law of supply and the theory of the law of supply, including the profit motive
- The supply curve including movements along and shifts of the supply curve

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As discussed earlier, Australia has a contemporary *market capitalist economy*. Here, most of the important *economic decisions* are made through the free interaction of individual *buyers* and *sellers* of goods and services — in thousands of markets, 24 hours a day — rather than through centralised government economic planning.

As already mentioned, there are *three key economic questions* (or decisions) that are largely answered through the relatively free operation of our *market system*:





1. ***The 'what and how much to produce' question***.
   By creating price signals or incentives, the market is used to make most decisions about the specific types and quantities of each good (such as chocolate bars, tourist accommodation, butter, guns) or service (such as education, health, finance, entertainment) that is to be produced. The market provides the price signals or information that allows firms to select only the most profitable items and those most wanted by consumers.
2. ***The 'how to produce' question.***
   The market also helps to make decisions about the specific production method to be used by a business (the combinations of labour and capital equipment) in order to make each particular good or service, by establishing the relative price or cost of each resource or input used by firms. This allows businesses to determine the cheapest and most efficient production methods available so they can maximise their profits.
3. ***The 'for whom to produce' question.***
   The market helps to make decisions about how the nation's goods, services and incomes will be shared or divided between members of society. Here, people's incomes largely depend on the value of their economic contribution as judged by the market. Those with higher incomes are able to purchase a greater quantity of goods and services than those on lower incomes.

FIGURE 1.12 Australia has a market economic system or economy. This means that rising or falling prices in thousands of different markets, both in Australia and overseas, provide price signals or instructions to the owners of resources. Based on these price signals, the owners can make key economic decisions in order to help them maximise their profits and satisfy people's wants. The share market is one of the markets used to help make decisions. Share prices can suddenly plunge, causing panic selling from investors wanting to get out of the market. Both rising and falling share prices will affect the investment decisions made by owners of financial resources.



1.6.1 An overview of how the market or price system operates as a decision maker

In most economies around the world (including that for Australia), the *three* basic economic questions are answered through the operation of the market system where buyers and sellers negotiate to determine the relative price of each type of good or service. Figure 1.13 provides an overview of how the market or price system operates as the most important decision maker in countries around the world.

With this general background in mind, we are ready to drill deeper into our study of microeconomics. Remember that *microeconomics* focuses on the behaviour of the smaller units (a consumer, single firm, an individual market, a particular industry) that make up our overall economy; what motivates their choices and what are the effects of their decisions. In contrast, *macroeconomics* (described in detail in Topic 2) examines the combined decisions occurring in all markets that make up the overall economy and determine levels of national production, employment and inflation.

Our study of microeconomics will involve a closer look at:

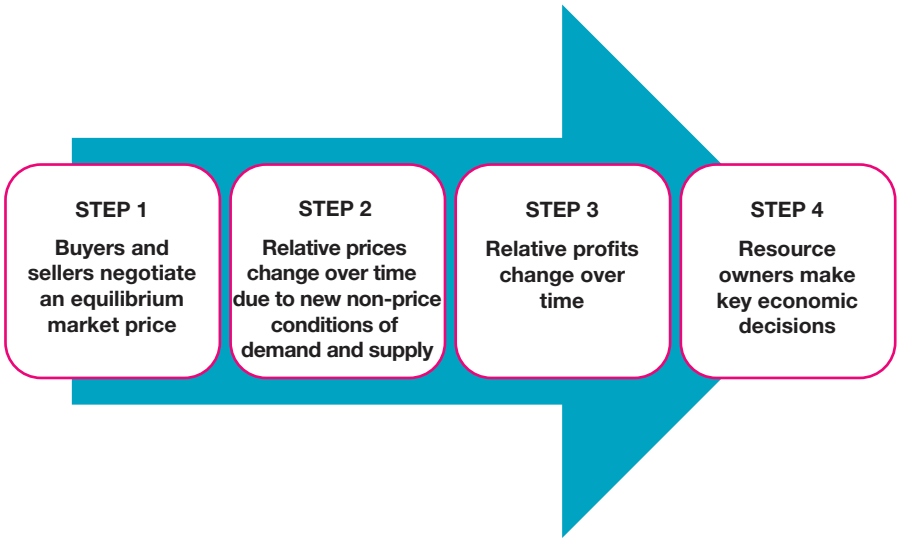
- buyers and the law of demand
- sellers and the law of supply
- market equilibrium
- changes in market equilibrium due to new non-price conditions
- the allocation of resources.

Some of our analysis will involve **demand–supply diagrams**. These are used to represent a particular market and the behaviour of buyers and sellers in that market.

FIGURE 1.13 Overview — understanding the role of the price or market system in making key economic decisions and allocating resources between alternative uses.

BACKGROUND

- All countries face the basic economic problem of relative scarcity (i.e. on the one hand, unlimited wants but on the other, limited resources available to try and satisfy those wants).
- Because of scarcity, people cannot have all the goods and services they would like. Hence, choices or decisions must be made by consumers as to which wants are most important.
- In most economies, these choices or decisions are usually made through the operation of the *market system* (also called the *price system* or market mechanism) involving buyers and sellers, and the forces of demand and supply.



STEP 1 Buyers and sellers negotiate an equilibrium market price	In thousands of markets, buyers/consumer demand and sellers/producer supply negotiate an appropriate *equilibrium market price* for each good or service. Buyers want to purchase at the lowest possible price, while sellers want to supply at the highest possible price. This conflict of interest is resolved by negotiation — offer and counteroffer. At equilibrium, there is agreement where the quantity demanded is equal to the quantity supplied. This helps to establish the *relative price* of each good or service – that is, the price of one good or service (e.g. wool) compared with the price of another (e.g. wheat).
STEP 2 Relative prices change over time due to new non-price conditions of demand and supply	Over a period of time, because both buyers and sellers in each market change their decisions in response to new conditions (i.e. new non-price factors develop that affect the quantity demanded and supplied at a given price), this brings about a change the *relative price* of each good or service (i.e. upwards or downwards) against that for another good or service. Prices rise when a *market shortage* develops (demand rises relative to supply) and fall when there is a *market surplus* (demand falls relative to supply).
STEP 3 Relative profits change over time	Changes in the *relative price* of one good or service against that of another, will generally affect the *relative profitability* of each type of production – some things become more profitable, while others become less profitable or attractive.
STEP 4 Resource owners make key economic decisions	These *price signals* from markets provide profit-seeking owners of resources with the *information* they need to make key *economic decisions* (that is, to decide *what and how much* to produce, *how* to produce and *for whom* to produce). A *higher* relative price due to increased demand normally acts as an *incentive* to resource owners, asking them to allocate more resources and lift production (since there is a shortage), while a *lower* relative price due to decreased demand acts as a *disincentive* that repels resources, since too much has been supplied. Here, the price system (involving the operation of the forces of demand and supply) ensures that scarce resources are generally allocated efficiently to produce those goods and services that are most wanted or valued by consumers.

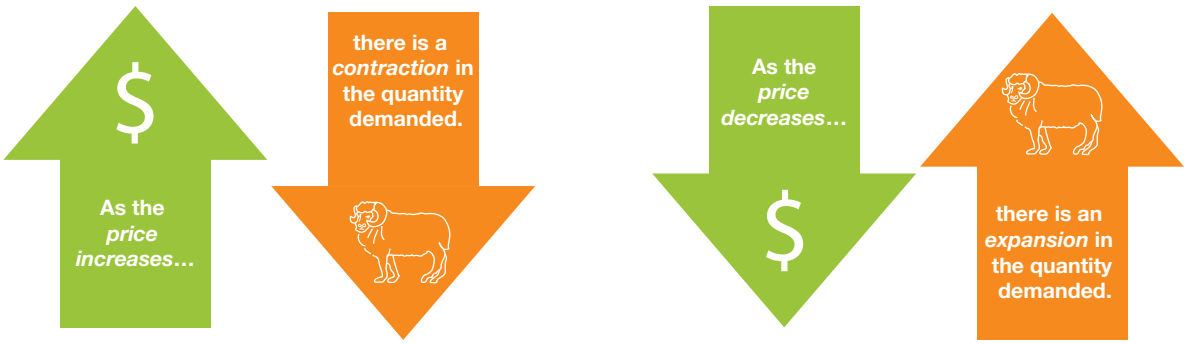
1.6.2 The law of demand and theories of the law of demand — how changes in price cause a movement along the demand curve

Given that there is *consumer sovereignty*, buyers are a really important group in any market. They **demand** or want to purchase various goods and services. 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 greatly affected by price. They are more willing to purchase a good or service at a lower price rather than at a higher price. This observation is expressed in the *law of demand*.

The law of demand

The **law of demand** *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.* Hence:

- As the *price increases*, there is a *contraction* in the quantity demanded.
- As the *price decreases*, there is an *expansion* in the quantity demanded.



Theories explaining the law of demand

In explaining the law of demand, economists have proposed various theories about why consumers behave like this when there is a change in the price of a product. For example, as the *price of a product rises*, the quantity demanded by consumers *contracts* because of the income effect and the substitution effect:

- ***The income effect:*** When the good or service becomes more expensive and less affordable for most, fewer people have the necessary income to spend on it, and so the quantity demanded contracts.
- ***The substitution effect:*** When the good or service becomes more expensive, buyers also look for cheaper alternatives or substitutes, so again, the quantity demanded contracts.

In reverse, these *theories of demand* involving the *income* and *substitution effects*, also help us to explain why the quantity demanded *expands* as the price of a good *falls*.

Drawing the demand line or curve

Using the table or schedule of hypothetical data for the demand of wool shown in figure 1.14, the relationship between the quantity demanded and the price can be illustrated diagrammatically.

- When the data for points A, B, C, D and E in the table are plotted on a graph (see figure 1.14), notice that the resulting *demand line* (called a *demand curve*) falls downwards and to the right. It thus has a negative slope which visually illustrates the *law of demand*. Here it is worth noting that for simplicity, this basic demand line has been drawn *straight* rather than *curved* in shape, as might appear in reality. However, either way, the line or curve has a negative slope and visually illustrates the *law of demand*.

- A move *upwards along* the demand line (or curve) from point A and progressing through B, C and D to point E, is called a *contraction in demand* and is caused only by a *rise in price*. In this case, the quantity demanded *contracts* from 25 000 million kilograms per year at a price of $2 per kilogram (point A), to only 5000 million kilograms per year if the price rises to $10 per kilogram (point E).
- In reverse, a move *downward along* the demand line (or curve) from point E and progressing through D, C and B to point A, is called an *expansion in demand* and is only caused by a *fall in price.* In this case, as the price falls from $10 to $2 per kilogram, there is an *expansion* in the quantity demanded from 5000 to 25 000 million kilograms.

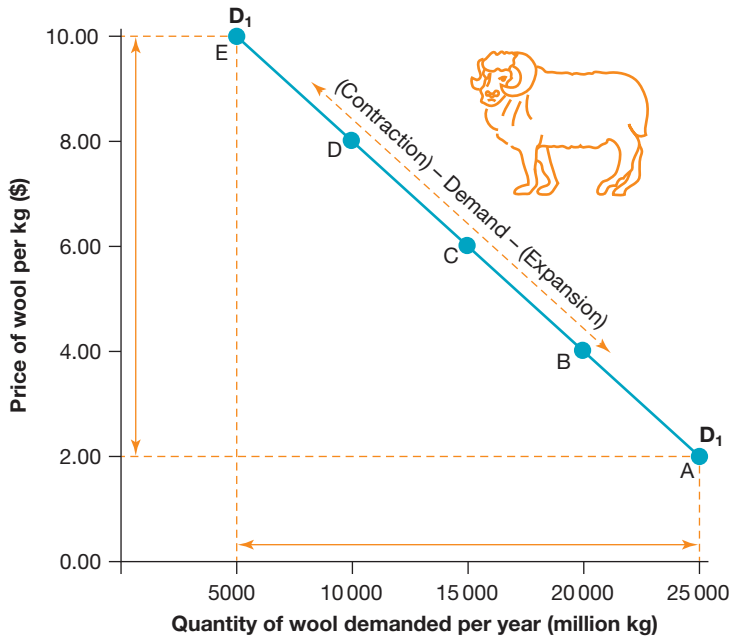
It is really important to understand that these *movements up or down along the demand line* or curve (called an *expansion* or *contraction* in the quantity demanded) are *only* caused by a *change in price*.

While our example here has been the demand for wool, the same sort of buyer behaviour could be expected for any other good (such as grapes, hot dogs, soft drinks, TVs or iron ore) or service (such as finance, medicine, skiing instruction, gardening or entertainment) in a fairly competitive market. Remember that …

… movements *along a demand line* or curve illustrate the *law of demand*:

If there is a *rise* in price then. . .	**. . . demand *contracts***
If there is a *fall* in price then. . .	**. . . demand *expands***

FIGURE 1.14 The law of demand for wool and the demand line (or curve).



If the market price per kilogram of wool was . . .		. . . then the quantity of wool demanded per year (D_1) would be . . .
A	$2.00/kg	25 000 million kg
B	$4.00/kg	20 000 million kg
C	$6.00/kg	15 000 million kg
D	$8.00/kg	10 000 million kg
E	$10.00/kg	5000 million kg

1.6.3 The law of supply and theories of supply — how changes in price cause a movement along the supply curve

Sellers are also an important group in any market. They sell or **supply** goods or services wanted by consumers. This group might include individuals, firms and governments. Price is perhaps the most important thing affecting suppliers. They are happier and more willing to produce and sell a good or service at a higher price rather than at a lower price. This observation is expressed in the *law of supply*.

The law of supply

The **law of supply** *states that the quantity of a particular good or service that sellers are prepared to produce varies directly (in the same direction) with the change in price.* Hence:

- As the *price increases*, there is an *expansion* in the quantity supplied.
- As the *price decreases*, there is a *contraction* in the quantity supplied.



Theories explaining the law of supply

Again, in explaining the law of supply, economists have proposed various theories including the profit motive, cost recovery and opportunity costs. For example, as the *price of a product rises*, the quantity supplied *expands* for two reasons — the profit motive and consideration of opportunity costs:

- ***The profit motive:*** Other things like production costs remaining equal or unchanged, a higher selling price in the market usually means an increase in sales revenue and profits, making the production or supply of this good more attractive than if it is sold at a lower unit price. Sellers expand supply.
- ***Consideration of opportunity costs:*** Again, if sellers receive a higher price for what they sell, other things being unchanged, the opportunity costs of producing another good or service rise, making it more profitable to reallocate resources away from other uses so that output can be increased, thus expanding supply.

Drawing the supply line or curve

Using the table or schedule of hypothetical data for the supply of wool shown in figure 1.15, the relationship between the quantity supplied and the price can be illustrated diagrammatically.

- When the data for points A, B, C, D and E in the table are plotted on a graph (see figure 1.15), the resulting supply line (called a *supply curve*) slopes up and to the right. It thus has a positive slope which visually illustrates the law of supply. Here it is again worth noting that for simplicity, this basic supply line has been drawn *straight* rather than *curved* in shape, as might appear in reality. However, either way, the line has a positive slope and visually illustrates the *law of supply*.
- A move upwards along the supply line (or curve) from point A and progressing through B, C and D to point E, is called an *expansion in supply* and is caused only by a *rise in price*. In this case, the quantity supplied *expands* from 5000 million kilograms per year at a low price of $2 per kilogram (point A), to a huge 25 000 million kilograms per year if the price rises to $10 per kilogram (point E).

- In reverse, a move downward along the supply line (or curve) from point E and progressing through D, C and B to point A, is called a *contraction* in supply and is only caused by a *fall in price.* In this case, as the price falls from $10 to $2 per kilogram, there is a *contraction* in the quantity supplied from 25 000 million to just 5000 million kilograms per year.

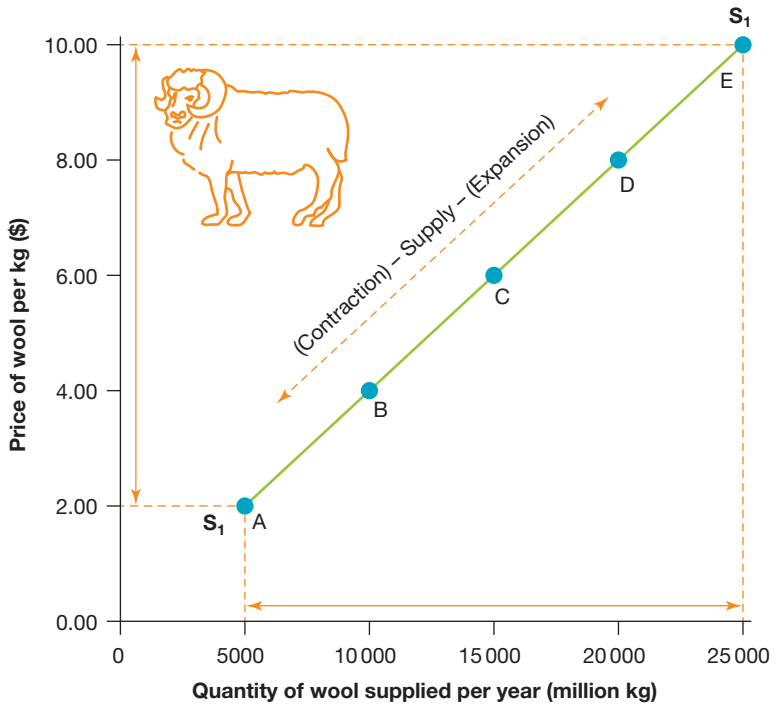
Again, it is really important to understand that these *movements along the supply line or curve* (called an *expansion* or *contraction* in the quantity supplied) are caused solely by a *change in price*.

While our example here has been the supply for wool, the same sort of seller behaviour could be expected for any other good (such as grapes, hot dogs, soft drinks, TVs or iron ore) or service (such as finance, health, education, gardening or entertainment) in a fairly competitive market. Remember that …

… movements *along a supply line* or curve illustrate the *law of supply*:

If there is a *rise* in price then. . .	**. . . supply *expands***
If there is a *fall* in price then. . .	**. . . supply *contracts***

FIGURE 1.15 The law of supply for wool and the supply line.



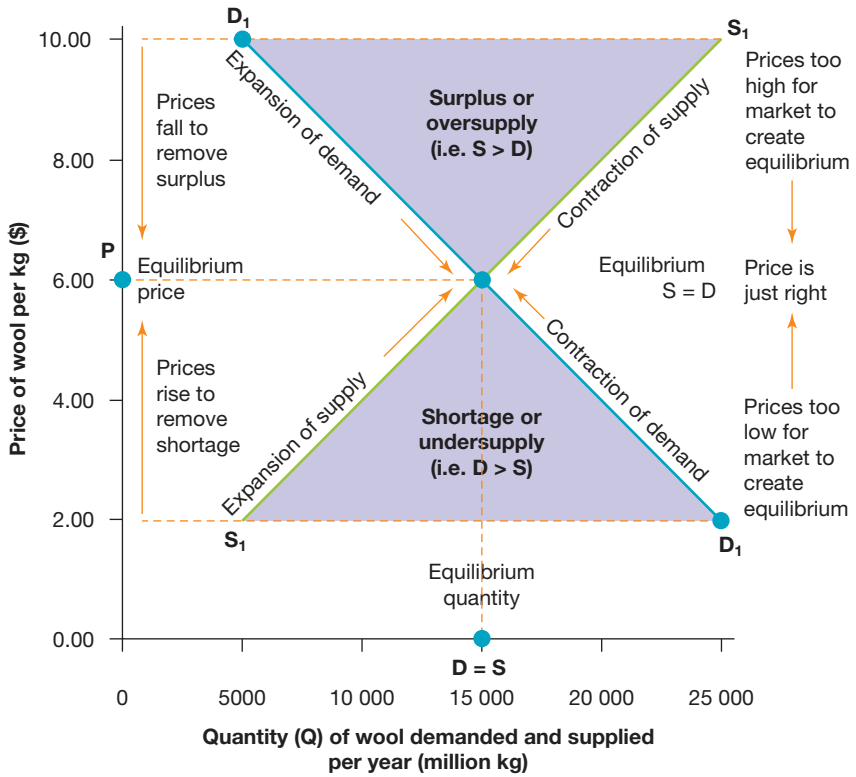
If the market price per kilogram of wool was . . .		. . . then the quantity of wool supplied per year (S_1) would be . . .
A	$2.00/kg	5000 million kg
B	$4.00/kg	10 000 million kg
C	$6.00/kg	15 000 million kg
D	$8.00/kg	20 000 million kg
E	$10.00/kg	25 000 million kg

1.6.4 Determining the market equilibrium price and quantity traded

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 is resolved by 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 for a given period of time*. There is *neither* a **market glut** putting downward pressure on the price, nor a **market shortage** putting upward pressure on the price.

As seen in figure 1.16, apart from the equilibrium price of $6 per kilogram (row C in the table), there is no alternate market price where this compromise can occur. Only at this price is both the quantity demanded and the quantity supplied exactly *equal* to 15 000 million kilograms per year. Both buyers and sellers are happy with the deal and the market is nicely cleared of either a *shortage* or a *surplus*.

FIGURE 1.16 A demand–supply graph showing how the free operation of market forces determines the equilibrium price of wool.



Possible market price per kilogram	Quantity of wool demanded (D_1) per year (million kg)	Quantity of wool supplied (S_1) per year (million kg)	Market situation and direction of pressure on market prices
A $2.00	25 000	5000	Market shortages/prices rise
B $4.00	20 000	10 000	Market shortages/prices rise
C $6.00	15 000	15 000	Market equilibrium/prices stable
D $8.00	10 000	20 000	Market surplus/prices fall
E $10.00	5000	25 000	Market surplus/prices fall

The process of actually reaching market equilibrium is a simple one.

- *At prices below equilibrium*. At a very low price of say $2 per kilogram (see row A in the table), equilibrium cannot occur simply because 25 000 kilograms per year are demanded yet only 5000 kilograms are supplied at that price. An exceedingly low price like this creates a *market shortage* of 20 000 million kilograms, making buyers very unhappy. Given this shortage, the price of wool needs to *rise*. As the price moves upwards, there is a *contraction along the demand line* as well as an *expansion along the supply line* (the laws of demand and supply apply) until this shortage disappears and the market reaches a new *equilibrium* point where the quantities demanded and supplied are again exactly *equal*.
- *At prices above equilibrium*. Equilibrium is also not possible at an excessively high price of $10 (see row E in the table). The problem here is a *market surplus* or glut of 20 000 million kilograms. This arises due to a demand of only 5000 million kilograms compared with a supply of 25 000 kilograms at that price. Sellers would be most unhappy and be forced to clear their excess stock by cutting their price. As the price falls, *demand would expand* and *supply would contract*, reaching a new *equilibrium* where the quantities demanded and supplied were again exactly *equal*.

In our analysis so far, we have seen that market forces involving the demand and supply for wool determine the actual *equilibrium price* and *equilibrium quantity* traded. However, the same explanation would apply to the price paid for any type of good or service in a free or competitive market — whether for oranges, property, company shares, an airfare, a plumber, a soft drink or a hamburger. All competitive markets operate the same way.

1.6 Activities

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1.6 Quick quiz on | 1.6 Exercise

1.6 Exercise

1. **Describe** the main features of typical demand–supply diagrams. **(2 marks)**
2. In a market, **explain** the law of demand. **Outline** two theories that explain the law of demand. **(3 marks)**
3. **Explain** the difference between an *expansion* in demand and a *contraction* in demand. **(2 marks)**
4. In a market, **explain** the law of supply, **outlining** one theory that explains this law. **(2 marks)**
5. **Explain** the difference between an *expansion* in supply and a *contraction* in supply. **(2 marks)**
6. **Define** market equilibrium. **(1 mark)**
7. Examine the table below showing the schedule relating to the demand and supply for coffee beans in a competitive market and answer the questions that follow.

Price of coffee beans per kilo	Quantity of coffee beans demanded in kilos (D_1)	Quantity of coffee beans supplied in kilos (S_1)
$4.00	1600	200
$6.00	1400	400
$8.00	1200	600
$10.00	1000	800
$12.00	800	1000
$14.00	600	1200
$16.00	400	1400

a. **Describe** the *law of demand* for coffee beans, quoting information from the table. **(2 marks)**
b. **Describe** the *law of supply* for coffee beans, quoting information from the table. **(2 marks)**
c. Use this table of data to accurately **construct** and fully **label** a demand–supply diagram representing the market for coffee beans. **(3 marks)**
d. Assume that the market for coffee beans is a perfectly competitive one. On the diagram you have drawn, clearly **identify** and label the *equilibrium price* and *equilibrium quantity* traded. In addition, clearly **explain** what is meant by the term 'equilibrium'. **(2 marks)**
e. Quoting information from the table, **explain** the *type of situation* that exists in the market for coffee beans, at each of the following prices:
   i. $4.00 per kilo
   ii. $11.00 per kilo
   iii. $16.00 per kilo. **(3 marks)**
f. Describe the process by which the price would move from a starting point of $4.00 per kilo, to reach the equilibrium. **(3 marks)**

Solutions and sample responses are available online.

1.7 The effects of changes in non-price demand and supply factors on market equilibrium and the allocation of resources

KEY KNOWLEDGE

- Non-price factors likely to affect demand and the position of the demand curve, including changes in disposable income, the prices of substitutes and complements, preferences and tastes, interest rates, population demographics and consumer confidence
- Non-price factors likely to affect supply and the position of the supply curve, including changes in the costs of production, number of suppliers, technology, productivity and climatic conditions.
- The effects of changes in supply and demand on equilibrium prices and quantity traded
- The role of free and competitive markets in promoting an efficient allocation of resources and improved living standards

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Looking around us, we notice that the prices of most goods and services are always changing from week to week, day to day, and even hour to hour. This is the result of changes in the *quantity* of a good or service that *buyers* are prepared to demand or purchase *at any given price*, or changes in the *quantity* of a good or service that *sellers* are prepared to produce or supply *at any given price*. We will see that these changes in buyer and seller behaviour are the result of new non-price *conditions of demand* and/or new non-price *conditions of supply*. These conditions *shift* the position of the whole demand and/or supply line (or curve) at any given price horizontally to the right or left of the original lines.

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

By altering the position of the demand line and/or the supply line, new *non-price demand–supply conditions* will bring about a change in *relative prices* (the price level of a particular good or service relative to that of another).

This has a knock-on effect by altering the *relative profitability* of producing a particular good or service, causing scarce resources to then be reallocated among competing uses by their profit-seeking owners.

1.7.1 Non-price factors that shift the position of the demand curve and market equilibrium

There are *non-price* microeconomic factors or **conditions of demand**. These conditions might either increase or decrease the quantity of a particular good or service that buyers are prepared to *demand at a given price*, leading to either an increase or a decrease in the demand line on the demand–supply diagram. These conditions that shift the position of the whole *demand line* or curve at any given price, horizontally to the right or left of the original, might include the following:

- ***Changes in disposable income.***
  In general, having more disposable income (such as after a pay rise, an increase in welfare benefits or a tax cut) tends to increase the demand for particular types of goods and services at any given price. By contrast, a cut in disposable income generally lowers the quantity demanded at all possible prices. However, there are exceptions. For instance, a cut in disposable income might actually increase the demand for lower quality substitutes (inferior goods) to replace the more expensive ones (superior goods).
- ***Changes in demographics — the population size and age distribution.***
  Generally, a rise in population will increase the demand for most types of goods and services at a given price, whereas a decline in population would be expected to reduce demand. Australia's population is ageing, with a larger proportion of people in older age groups relative to younger age groups. This has mixed effects — increasing the demand for some things (such as aged care) but decreasing the demand for other things (such as nappies and children's games). Recently, a population shift out of capital cities to escape the COVID-19 pandemic lockdowns meant a fall in the demand for goods and services in the cities and a rise in demand in rural and regional areas.
- ***Changes in fashions and tastes.***
  Over time, some goods and services become more fashionable and wanted. Technology and the advertising of new products (such as for the latest digital devices and trendy clothing) can play an important role in increasing the demand at a given price. By contrast, other things become obsolete and face a falling level of demand by consumers.
- ***Changes in interest rates on borrowed money.***
  Some people and businesses need to borrow money (known as credit) from banks and pay interest on that money in order to finance their spending. Expensive items like houses, cars and holidays are especially sensitive to changes in interest rates. Generally, higher interest rates will lower the demand at a given price for these types of goods and services, while lower interest rates tend to increase demand. Interest rates on credit card balances can also have some effect on the position of the demand line for such products.
- ***Changes in the price of substitutes.***
  Substitutes are a particular good or service that can be easily replaced by another. Margarine, for instance, can be a substitute for butter, and cotton can be a substitute for wool. When the price of the original product being purchased goes up, buyers sometimes switch to a cheaper substitute. This decreases the demand for the original item at a given price but increases the demand for the substitute.
- ***Changes in the price of complementary goods and services.***
  Complementary goods and services are those used or bought at the same time. For example, the purchase of a new car also leads to an increase in the demand for fuel, tyres, motor mechanics, accident repairers and roads. Hence when the price of a car rises, the demand for complementary goods and services at any given price is likely to decrease.
- ***Changes in the levels of consumer and business confidence.***
  Confidence levels relate to how households and businesses feel about their future economic situations and conditions. This affects whether they spend or save, which in turn will affect the level of demand for particular types of goods and services. For instance, pessimism about the future is reflected in a slower rise or even a decline in the demand for some goods (new cars and household items, and new business equipment) and services (entertainment and holidays).

- ***Changes in the seasons.***
  In summer, the demand at any given price rises for products such as ice cream, surfboards and air conditioners, while the onset of winter might see a rise in the demand for products such as snow skis, cough medicine, electric blankets, footballs and woollen jumpers.
- ***Changes in government policy and regulations.***
  Governments sometimes find it necessary to affect the demand for particular goods and services. They might do this through spending outlays and taxes in the budget, or through legislation. For instance, government spending on transport might generate a rise in the demand for building and road-making materials, along with the demand for workers. Cash subsidies can be used to encourage households or businesses to increase their demand for some items like solar panels or rainwater tanks. Alternatively, bans, taxes or restrictions on consumption can be used to reduce the demand for socially undesirable goods and services. During the COVID-19 pandemic, laws requiring the wearing of face masks were used to help stem the transmission of the virus. This led to a rise in the quantity of masks purchased at all possible prices.

The effect of a decrease in the quantity demanded at a given price

When the non-price *conditions of demand weaken* or become weaker, this decreases the *quantity* of a particular good or service that buyers are willing to purchase *at any given price*. As a result, the whole demand line for the market will shift *inwards* and to the *left* of the original line.

Let us return to the example of the wool market shown in figure 1.17 (diagram A). When the *quantity* of wool demanded at all possible prices *decreases* because of new weaker non-price conditions (perhaps due to the onset of summer or the availability of cheaper substitutes), this shifts the position of the whole demand line horizontally inwards and to the left, from D_1 to D_0. As a result, the equilibrium price of wool falls from $6 (at P_1) to just $5 a kilogram (at P_0). This fall in the equilibrium price is necessary to clear the *market glut* or surplus (note the small shaded triangular area where the quantity supplied exceeds the quantity demanded) that would exist if the price had remained at $6. As the price drops towards $5, demand *expands* and supply *contracts* (the operation of the laws of demand and supply) until the new lower equilibrium price (P_0) is reached where demand again equals supply. Notice also that there is a fall in the equilibrium quantity from 15 000 (at Q_1) to 12 500 million kilograms a year (at Q_0). This new equilibrium will prevail in the market unless non-price *conditions of demand* again change.

The effect of an increase in the quantity demanded at a given price

When the non-price *conditions of demand strengthen* and increase the *quantity* of a particular good or service that buyers are willing to purchase *at any given price*, the whole demand line for the market will shift horizontally *outwards* and to the *right* of the original demand line.

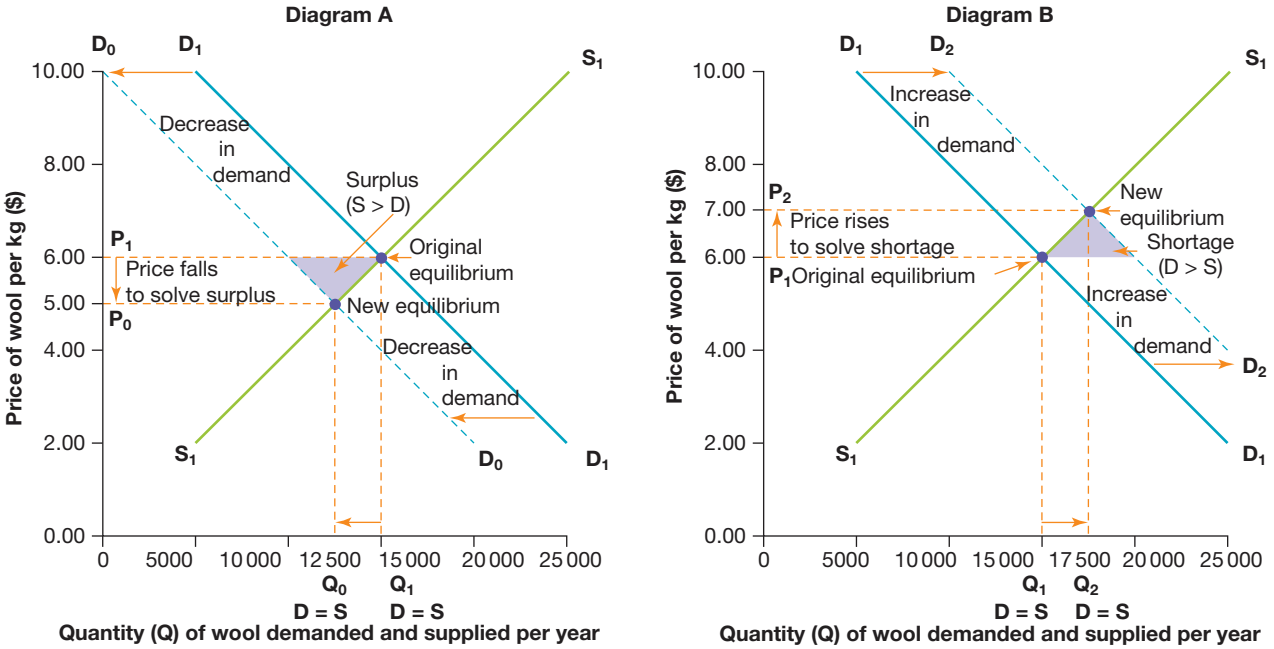
Again, let us return to the example of the wool market shown in figure 1.17 (diagram B). When the quantity of wool demanded at all possible prices *increases* because of new stronger non-price conditions (perhaps due to a new fashion trend favouring long woollen dresses rather than miniskirts, or a rise in disposable income), this *shifts the position* of the whole demand line from D_1 to D_2. As a result, the market equilibrium price of wool rises from $6 (at P_1) to $7 a kilogram (at P_2). This rise in the equilibrium price is necessary to clear the *market shortage* (note the small shaded triangular area where the quantity demanded exceeds the quantity supplied) that would exist if the price had remained at $6. As the price rises towards $7, demand *contracts* and supply *expands* (the 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 15 000 (at Q_1) to 17 500 million kilograms a year (at Q_2). This new equilibrium will prevail in the market unless non-price *conditions of demand* again change.

Important to remember

… *shifts in the position* of the whole demand line or curve are due to changes in *non-price demand conditions*:

Stronger demand conditions cause. . .	**. . . an increase the quantity demanded at a given price — shifts the demand line to the right (e.g. D_1 to D_2 at P_1)**
Weaker demand conditions cause. . .	**. . . a decrease the quantity demanded at a given price — shifts the demand line to the left (e.g. D_1 to D_0 at P_1)**

FIGURE 1.17 Graphs showing how changed non-price market conditions that increase or decrease the demand for wool at a given price shift the whole demand line and affect the equilibrium market price.



A decrease in demand at a given price, i.e. a shift from D_1 → D_0 above

This may be the result of weaker demand conditions:
- reduced disposable income
- less fashionable product or seasonal changes
- lower price of substitutes
- future availability assured
- higher taxes
- reduced population or number of consumers
- higher interest rate on borrowed credit.

An increase in demand at a given price, i.e. a shift from D_1 → D_2 above

This may be the result of stronger demand conditions:
- increased disposable income
- more fashionable product or seasonal changes
- higher price of substitutes
- future availability at risk
- lower taxes
- increased population or number of consumers
- lower interest rate on borrowed credit.

Possible price ($) per kg for wool	Original quantity of wool demanded (D_1) per year (million kg)	Original quantity of wool supplied (S_1) per year (million kg)	A decrease in the quantity of wool demanded at a given price (D_0) per year (million kg)	An increase in the quantity of wool demanded at a given price (D_2) per year (million kg)
A $2.00	25 000	5000	20 000	30 000
B $4.00	20 000	10 000	15 000	25 000
C $6.00	15 000	15 000	10 000	20 000
D $8.00	10 000	20 000	5000	15 000
E $10.00	5000	25 000	0	10 000

1.7.2 Non-price factors that shift the position of the supply curve and market equilibrium

Just as buyers react to changing non-price circumstances, sellers also respond to various non-price microeconomic factors or **conditions of supply**. These conditions might either increase or decrease the *quantity* of a particular good or service that sellers are prepared to supply *at any given price*, leading to either an increase or a decrease in the supply line shown on the demand–supply diagram. There are several common non-price *microeconomic supply-side conditions* that can *shift* the position of the whole supply line horizontally, either to the right (an increase) or to the left (a decrease) of the original supply line:

- ***Changes in costs of production.***
  Businesses need to purchase resources (natural, labour and capital) in order to make goods and services. These purchases represent production costs. When the cost of resources increases — such as wage and other on-costs for staff like compulsory superannuation contributions; or the cost of utilities, raw materials and interest rates charged on business overdrafts — these are seen as less favourable supply-side conditions. They decrease the amount firms are willing to supply at a given price. By contrast, when the cost of resources falls, this is more favourable. Firms are now prepared to increase their supply of a good or service at any given price.
- ***Changes in technology and productivity.***
  The use of new technology in an industry (such as automated warehouses, robotics and online trading) often lifts efficiency and therefore cuts unit production costs. Improved productivity for example, usually makes firms more willing and able to increase their supply at a given price.



- ***Changes in climatic conditions.***
  Climatic conditions affect rural and even mineral suppliers. For instance, recent cyclones and floods in parts of Queensland and NSW reduced the supply of particular fruit and vegetable crops. They also forced the closure of flooded mines and destroyed infrastructure needed to transport minerals to terminals. Climate change such as the 2012–2023 drought, fires and floods in parts of northern and eastern Australia also decreased the supply of certain commodities. By contrast, favourable weather conditions will increase the supply of some commodities at a given price.
- ***Changes in some government policies.***
  On the one hand, governments provide financial assistance or subsidies to businesses operating in some manufacturing industries, along with funding for private schools and hospitals. This assistance helps businesses in these industries to cover some of their costs and makes them more profitable, thereby increasing the quantity supplied at a given price. On the other hand, the government also levies taxes on some goods sold and on the incomes of households and companies. This taxation tends to decrease the supply of particular goods and services.

The effect of a decrease in the quantity supplied at a given price

When the *conditions of supply weaken* and become less favourable, there is a *decrease in supply* (the quantity of a particular good or service that sellers are willing to produce or sell *at any given price*). As a result, the whole supply line for the market will shift horizontally *inwards* and to the *left* of the original line.

Let us again return to the example of the wool market shown in figure 1.18 (diagram A). When the quantity of wool supplied at all possible prices *decreases* because of new, weaker, less favourable conditions (perhaps reflecting the effects of severe drought or higher production costs for farmers), this shifts the position of the whole supply line outwards and to the left, from S_1 to S_0. As a result, the equilibrium price of wool *rises* from \$6 (at P_1) to \$7 a kilogram (at P_0). This rise in the equilibrium price is necessary to clear the *market shortage* (note the small shaded triangular area where the quantity demanded exceeds the quantity supplied)

that would exist if the price had remained at $6. As the price rises towards $7, supply *expands* and demand *contracts* (the 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 15 000 (at Q_1) to 12 500 million kilograms a year (at Q_0). This new equilibrium will prevail in the market unless non-price *conditions of supply* again change.

The effect of an increase in the quantity supplied at a given price

When the *conditions of supply strengthen* or become more favourable, there is an *increase in supply* (a rise in the quantity of a particular good or service that sellers are willing to produce *at any given price*). The whole supply line for the market will shift down and to the right of the original line.

Again, let us return to the example of the wool market shown in figure 1.18 (diagram B). When the *quantity* of wool supplied at all possible prices *increases* because of new, more favourable conditions (perhaps reflecting the effects of ideal climatic conditions and plenty of feed for stock, or lower costs and better profits for farmers), this *shifts the position* of the whole supply line out and to the right from S_1 to S_2. As a result, the equilibrium price of wool *falls* from $6 (at P_1) to just $5 a kilogram (at P_2). This fall in the equilibrium price is necessary to clear the *market glut* or surplus (note the small shaded triangular area where the quantity supplied exceeds the quantity demanded) that would exist if the price had remained at $6. As the price falls towards $5, supply *contracts* and demand *expands* (the 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 15 000 (at Q_1) to 17 500 million kilograms a year (at Q_2). This new equilibrium will prevail in the market unless non-price *conditions of supply* again change.

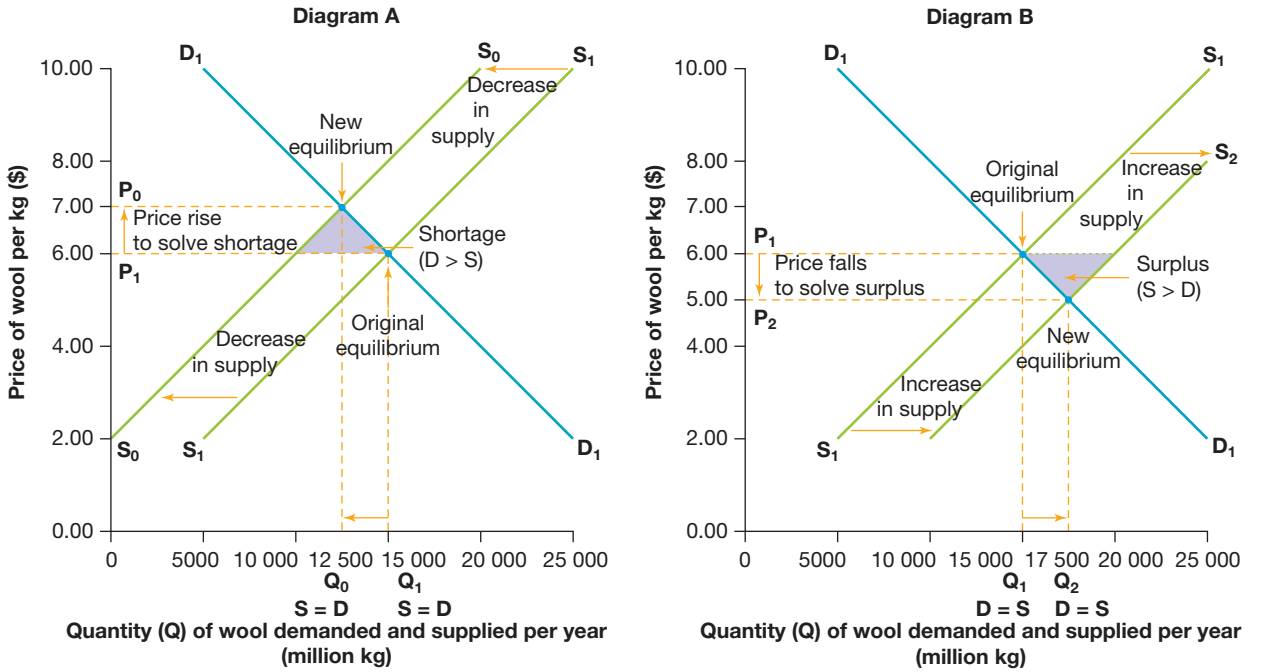
Important to remember

***… shifts in the position* of the whole supply curve or line are due to changes in *non-price supply conditions*:**

Stronger supply conditions cause …	**… an increase the quantity supplied at a given price — shifts the supply line to the right (e.g. S_1 to S_2 at P_1)**
Weaker supply conditions cause …	**… a decrease the quantity supplied at a given price — shifts the supply line to the left (e.g. S_1 to S_0 at P_1)**

This same analysis would apply to any good or service in a free or competitive market where there were similar changes in non-price demand or supply conditions. It makes no difference whether we are dealing with alterations in the conditions for wool, oranges, computers, fish, beer, electricians, minerals, the Australian dollar or even labour. All free and competitive markets operate the same way.

FIGURE 1.18 Graphs showing how changed new non-price market conditions that decrease or increase the supply of wool at a given price, and shift the supply line, affect the equilibrium market price.



A decrease in supply at a given price, i.e. a shift from S_1 → S_0 above

This may be the result of weaker supply conditions:
- reduced profitability
- increased production costs
- less efficient technology
- adverse climatic conditions
- fewer producers, sellers or firms
- reduced producer preference and expectations
- obstacles to production like a new tax.

An increase in supply at a given price, i.e. a shift from S_1 → S_2 above

This may be the result of stronger supply conditions:
- increased profitablity
- decreased production costs
- more efficient technology
- favourable climatic conditions
- more producer, sellers or firms
- increased producer preference and expectations
- inducements to production like a subsidy.

Possible price ($) per kg for wool	Original quantity of wool demanded (D_1) per year (million kg)	Original quantity of wool supplied (S_1) per year (million kg)	A decrease in the quantity of wool supplied (S_0) per year (million kg)	An increase in the quantity of wool supplied (S_2) per year (million kg)
A $2.00	25 000	5000	0	10 000
B $4.00	20 000	10 000	5000	15 000
C $6.00	15 000	15 000	10 000	20 000
D $8.00	10 000	20 000	15 000	25 000
E $10.00	5000	25 000	20 000	30 000 not graphed

1.7.3 The role of competitive markets and relative prices in allocating resources efficiently, and improving living standards

You may recall that Australia has a contemporary market economy where the three important economic questions (the 'what and how much to produce', 'how to produce' and 'for whom to produce' questions) are answered largely through the operation of the price or *market system*. The main operational principles of this system are again summarised below.

Five ideas about how the operation of the price system helps to make key economic decisions

1. Because we face the problem of *relative scarcity*, economic decisions must be made about how to allocate our resources efficiently between competing uses, so as to maximise the overall satisfaction of our wants, wellbeing, and living standards.
2. As Australia has a *market economy*, key economic decisions are usually made through the operation of the market system, or price mechanism. This involves buyers (demand) and sellers (supply) of particular goods and services interacting to negotiate relative prices.
3. Over a period of time, changes in non-price microeconomic *demand conditions* and/or *supply conditions* alter the quantity demanded and/or supplied for each good or service at any given price, thus bringing about a change in the equilibrium level of *relative prices* (the price of one good or service compared with the price of another).
4. In turn, changes in the relative price of a particular good or service can affect production costs or the prices of resources used, as well as its level of *relative profits*. Incomes of those producing this product will also be affected.
5. By closely monitoring the *price and profit signals* coming from each market, owners of resources seeking to minimise their costs, and maximise their profits and incomes, will make appropriate economic decisions about how best to *allocate their scarce resources* efficiently among competing uses. For example, higher relative profits in an industry will normally attract extra resources to that particular use, market or industry, while lower profits will usually repel resources. This ensures that in most cases, resources are directed into areas where they are most wanted.

Let us now examine in more detail exactly how the market system can answer the three basic economic questions ('what, how and for whom to produce') faced by our economy.

Changes in relative prices alter 'what and how much' is produced

As discussed, markets operate to determine relative prices of goods and services through the interaction of buyers and sellers. So when the *relative price* of one particular type of good or service (such as wool) rises or falls against the price of another (such as wheat), this alters the *relative profits* made from producing each type of product. In turn, this usually dictates how Australia's resources are allocated efficiently among competing uses and answers the 'what and how much' to produce question.

For instance, *a rise in the relative price* of a particular good or service in a given market, normally signals to suppliers or owners of resources that there is a general shortage or *underproduction*, and that buyers are keen to purchase the product. In turn, better prices gained from selling one particular type of good or service relative to the price of another, will usually increase relative profits. Higher relative profits should then encourage profit-seeking owners of resources to allocate more of their natural, labour and capital resources towards this particular area of production. Attracting more resources to this relatively more profitable area may even repel resources from other areas. By contrast, *a fall in the relative price* of a particular good or service signals that there has been *overproduction* and that consumers no longer want this item. As a result, relative profits and incomes gained from this type of production will usually fall, thereby repelling resources from this particular area of production. This answers the 'what and how much to produce' question.

Figure 1.19 shows three examples of how changing non-price factors or conditions and the forces of demand and supply in various markets, have recently affected relative prices and hence profits. In turn, this impacts how Australia's resource are allocated, along with the way incomes are distributed.

The graph in part A of figure 1.19 shows an index of changes in rural and mineral commodity prices since 1988 (where the price index in 2020–21 due to stronger demand relative to supply equalled 100 points). Changing commodity prices have greatly affected the decisions made by owners of resources. The spectacular rise between 2005 and 2011 corresponds with the commodity boom driven by strong overseas demand relative to

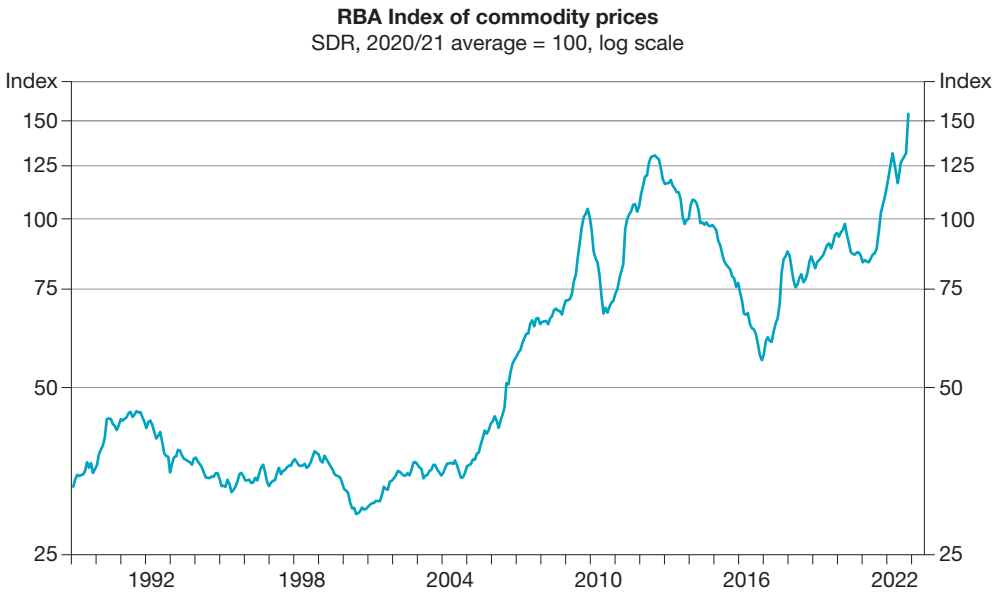
supply. Rising relative prices and profits attracted more resources into the area. However, commodity prices subsequently dropped dramatically till late 2015 by almost 50 per cent, due especially to the drop in demand relative to supply. This repelled resources because of relatively lower profits. More recently, commodity prices and profits rose strongly during 2020–21–22, due to stronger demand relative to supply again attracting increased resource allocation.

The graph in part B of figure 1.19 shows relative changes in capital city housing prices measured as an index with a base of 100 points in 2011–12. Note the steep price rises in capital cities such as Melbourne and Sydney between 2013 and early 2017. This was due to rising demand fuelled by low interest rates and population growth (including immigration), relative to supply. This price rise attracted many more resources into property due to the potential for making relatively higher profits. However, during 2018–19, most property prices dropped, before taking off again during 2020–21 and 2021–22.

The graph in part C of figure 1.19 shows changes in the price or exchange rate for the Australian dollar, again measured as a price index with a base of 100 points (in 1970), when it is swapped into other currencies — US dollars, yen or euros. These have also affected the decisions made by owners of resources. For instance, the relatively high Australian dollar during 2009 and 2012 caused locally manufactured goods and services to be too expensive for local consumers relative to those made abroad. At the same time, the high dollar also meant that Australian made exports of goods and services were dearer and less attractive for overseas buyers. Locally, higher imports and fewer exports meant reduced sales, lower profits and business closures. Consequently, resources were reallocated elsewhere. By comparison, there was an overall fall in the value of the Australian dollar between 2012 and early 2020. This made local goods and services relatively more attractive and profitable than imported ones, resulting in more resources being allocated in this direction. Here resources are usually allocated efficiently to where they are most wanted, improving living standards.

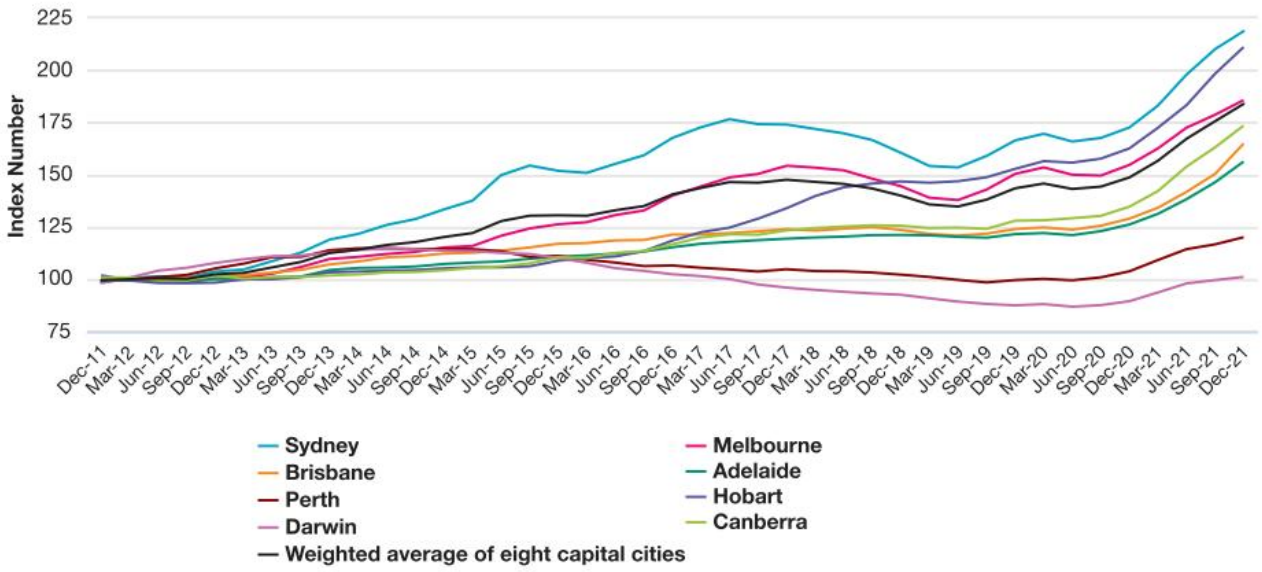
FIGURE 1.19 Some examples of how the operation of buyers and sellers in markets has affected relative prices, profits, and decisions about the allocation of Australia's resources.

Part A — Changes in the index of Australia's commodity prices received by producers.



Source: © RBA.

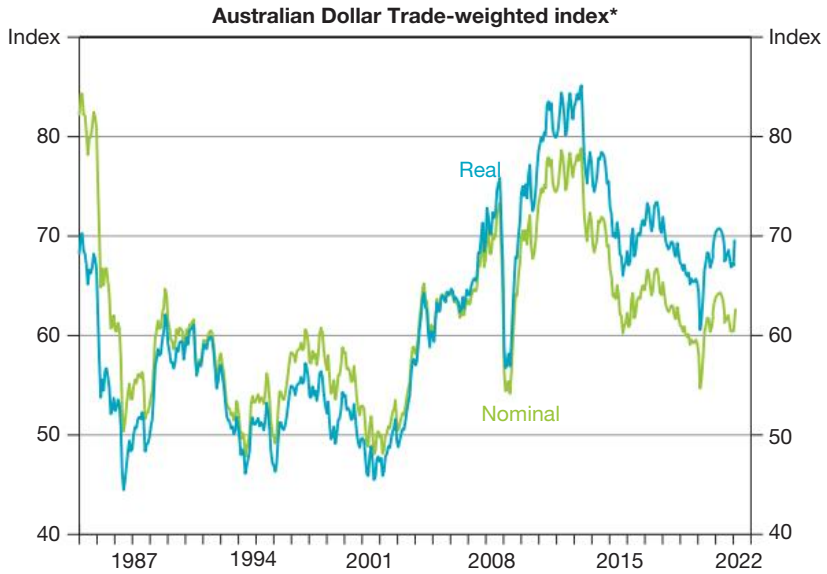
Part B — Change in Australian residential property prices in capital cities (measured quarterly using a price index with a base value in 2011–12 of 100 points).



2011–12 = 100.0

Source: Australian Bureau of Statistics, Residential Property Price Indexes: Eight Capital Cities December 2021.

Part C — Changes in the price of the average Australian dollar using the trade-weighted index (TWI)* as a measure.



*May 1970 = 100 for nominal; real indexed to equate post-float averages; latest observations for real TWI are estimates.

Sources: © Australian Bureau of Statistics; RBA; Refinitiv; WM/Reuters.

Changes in relative prices alter 'how' goods and services are produced

Markets also operate to determine the price or cost of most resources. They thus provide useful information needed by businesses to make decisions about their production methods. For instance, changes in the cost or market price of one resource relative to the price of another (such as the cost of labour relative to the price of machinery or capital resources), may alter how firms produce a particular good or service — that is, the price

or market system answers the 'how to produce' question. This is because most firms make their production decisions to try to maximise their profits and efficiency by minimising production costs (the prices of resources). So if the market price of labour resources (wages as determined in the labour market by buyers and sellers) rises relative to the price or cost of capital resources such as technology or machinery (perhaps also affected by the interest rate or cost of credit determined in financial markets), then producers would be likely to select the cheaper alternative of using capital equipment, so long as the capital can be substituted for labour in the production process. Again the free operation of the market should usually help to ensure resources are used efficiently, thereby helping to improve living standards.

Changes in relative prices alter 'for whom' goods and services (the distribution of income)

When the price of a particular good or service changes against that of another due to new non-price conditions of demand relative to those for supply, the distribution of income and ability of particular individuals to purchase goods and services and enjoy reasonable living standards is affected — that is, the price system answers the 'for whom to produce' question. For instance, individuals selling labour and other resources that are relatively scarce and especially wanted, or firms selling finished products that are in strong demand by consumers, will tend to enjoy relatively higher incomes and better profits. In this case, extra labour and other inputs will be attracted into the area, so the price system is again helping to ensure that scarce labour and other resources are generally allocated efficiently into areas where they are most wanted. In turn, this affects the distribution of incomes, goods and services.

on Resources

Digital document Demand–supply diagrams (doc-19220)

1.7 Activities

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1.7 Quick quiz on | **1.7 Exercise**

1.7 Exercise

1. **Define** non-price *demand factors* or conditions and **explain** how they might affect the market equilibrium price and the quantity traded. **(2 marks)**
2. **Define** non-price *supply factors* or conditions and **explain** how they might affect the market equilibrium price and the quantity traded. **(2 marks)**
3. **Distinguish** between each of the following:
   a. a *movement along* a demand line and a *shift* of the demand line. **(2 marks)**
   b. a *movement along* the supply line and a *shift* of the supply line. **(2 marks)**
4. **Explain** what is meant by *relative prices* and *relative profits*, and how these affect the way resources are used or allocated in a perfectly competitive market. **(4 marks)**
5. All economic systems seek to answer *three* basic economic questions involving 'what and how much to produce', 'how to produce' and 'for whom to produce'. **Explain** how the market or *price system* answers *each* of these three questions. **(3 marks)**

6. a. **Explain** what is meant by the term *relative prices*. **(1 mark)**

b. Examine the table below showing hypothetical changes in the relative prices for bananas and pineapples between 2020 and 2023.

Type of product	2020	2021	2022	2023
Bananas ($ per kilo)	3	4	4	4
Pineapples ($ per pineapple)	4	7	10	3

Referring to the table, **describe** what has happened to the relative price of bananas and pineapples during each of the following periods:

i. 2020–22 ii. 2022–23. **(2 marks)**

c. **List** two likely non-price factors or conditions that explain the change in the price of pineapples during each of the following periods:

i. 2020–22 ii. 2022–23. **(2 marks)**

d. **Identify** which two products are likely to be relatively the most profitable for growers, assuming no change in production costs over the period, 2020–22. **Explain** how this might affect the allocation of resources at this time. **(2 marks)**

7. Examine the table below showing the schedule relating to the demand and supply for coffee beans in a competitive market. In this market, supply has changed from S_1 to S_2.

Price of coffee beans per kilo	Original quantity of coffee beans demanded in kilos (D_1)	Original quantity of coffee beans supplied in kilos (S_1)	New quantity of coffee beans supplied in kilos (S_2)
$4.00	1600	200	400
$6.00	1400	400	600
$8.00	1200	600	800
$10.00	1000	800	1000
$12.00	800	1000	1200
$14.00	600	1200	1400
$16.00	400	1400	1600

a. Use this table of data to accurately **construct** and fully label a demand–supply diagram representing the market for coffee beans, labelling all lines and points including D_1, S_1, S_2, E_1, E_2, P_1, P_2, Q_1 and Q_2. **(3 marks)**

b. **Describe** the change that has occurred in the *supply* of coffee beans, identifying *two* important and likely non-price microeconomic factors that might cause this change in the market conditions for coffee beans. **(2 marks)**

c. **Explain** the *process* or steps whereby there is a change in equilibrium from E_1 to E_2 in this market for coffee beans, referring to data from your graph and the table. **(3 marks)**

d. Quoting statistics, **describe** what has happened to the equilibrium market *price and quantity* of coffee beans traded in this market. **(2 marks)**

e. Other things remaining constant, **explain** how you might expect this change in the equilibrium price to impact on the *allocation of scarce resources* towards the production of coffee beans. **(3 marks)**

f. Coffee and tea are partial substitute drinks. **Explain** how would you expect a *fall* in the price of *tea* to affect the market for coffee beans. **(1 mark)**

g. If the *prices* of coffee sweetener and Teddy Bear biscuits used as *complements* with drinking coffee fell, explain how this would affect the market for coffee beans. **(1 mark)**

8. Examine the demand–supply diagram in the figure shown, representing a *competitive market* for soft drinks before answering the questions that follow.

a. **Define** the *law of demand*. **(1 mark)**

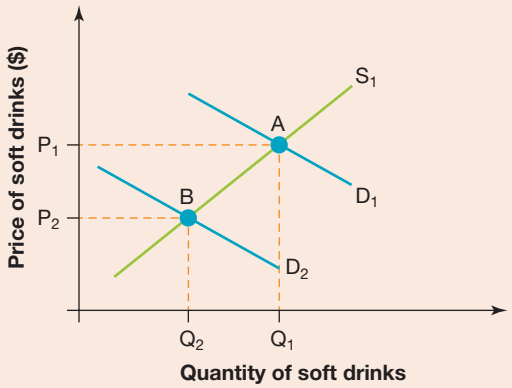
b. **Describe** the change in the demand for soft drinks from D_1 to D_2. **Identify** and **explain** *two* likely factors or conditions which theoretically may account for the change in the demand for soft drinks from D_1 to D_2 as shown on the diagram. **(3 marks)**

c. Referring to the figure, **describe** the *process* or steps whereby the *equilibrium* in the soft drink market adjusts from equilibrium A to equilibrium B. **(3 marks)**

d. On a fully labelled demand–supply diagram, **illustrate** the hypothetical impact on the soft drink market of a rise in the price of bottled water as a *substitute* product. Show the *before* and the *after* situations in the soft drink market. **(2 marks)**

e. **Explain** the likely impact on the soft drink market of a *rise* in the price of plastic bottles and the wages paid to soft drink workers. **(2 marks)**

The market for soft drinks.

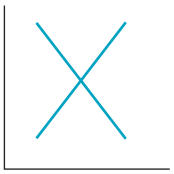


9. Complete and fully label D–S diagrams representing an individual competitive market to **illustrate** the hypothetical effects of an event that alters either the conditions of demand and/or supply, and hence the market equilibrium price and quantity. In most cases, you will need to add a second D line (D_2) and/or a second S line (S_2), along with a new equilibrium price (P_2) and quantity (Q_2). **(9 marks)**

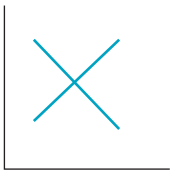
a. The banana crop in Queensland is destroyed by a cyclone



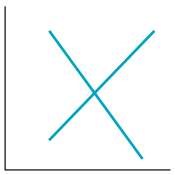
b. The effect of a heatwave on the market for air conditioners



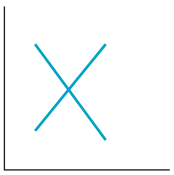
c. The effect of a successful advertising campaign, 'Put some pork on your fork'.



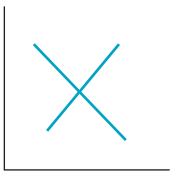
d. A slowdown in China's economy and the market for iron ore



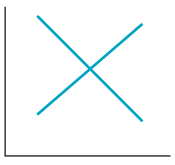
e. A rise in petrol prices on the market for large 4WDs



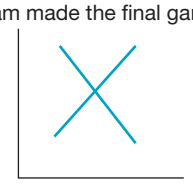
f. A rise in consumer confidence and disposable income for air travel



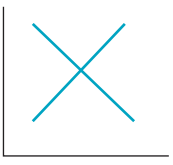
g. The government increases the excise tax on the sale of cigarettes



h. The aviation market one week before the AFL grand final when a non-Victorian AFL team made the final game



i. An increase in the government subsidy paid to childcare providers



10. Examine the figure below showing changes in the market price (in US$) of crude oil (used to make petrol, synthetic fabrics and plastics) between 1986 and 2022 and use it to answer the questions that follow.



Source: Trading Economics, see https://tradingeconomics.com/commodity/crude-oil.

a. Assume that there was a free and competitive international market for oil. With reference to demand and supply factors (market theory), **list** *two* important reasons that could explain why the price of oil was generally lower in the period between 2014 and 2020 (before the rise in 2021 and 2022). **(4 marks)**

b. Assuming that the *production costs* (prices of resources used) paid by oil producers had been fairly *steady* between 2014 and 2022,

i. **Explain** the likely *effects* on the *allocation of resources*, given that oil prices have been relatively low recently.

ii. **Explain**, giving reasons, which particular industries or types of production would be likely to attract *extra* resources and which areas would probably *repel* resources as a result of this recent price signal from the oil market.

c. **Explain** how the Australian government's heavy excise tax placed on sellers of petrol might affect the allocation of Australia's resources between various uses. Use a fully labelled demand–supply diagram to show the oil market, *both* before and *after* the imposition of an excise tax on sellers. **(4 marks)**

11. Examine the figure below, which compares forecast percentage changes in the relative prices expected for selected crops and livestock over 2022–23, and answer the questions that follow.

a. **i.** **Explain** what is meant by *relative prices.*

ii. **Describe** the forecast changes in the relative market prices for crops as opposed to lamb, milk and wool. **(2 marks)**

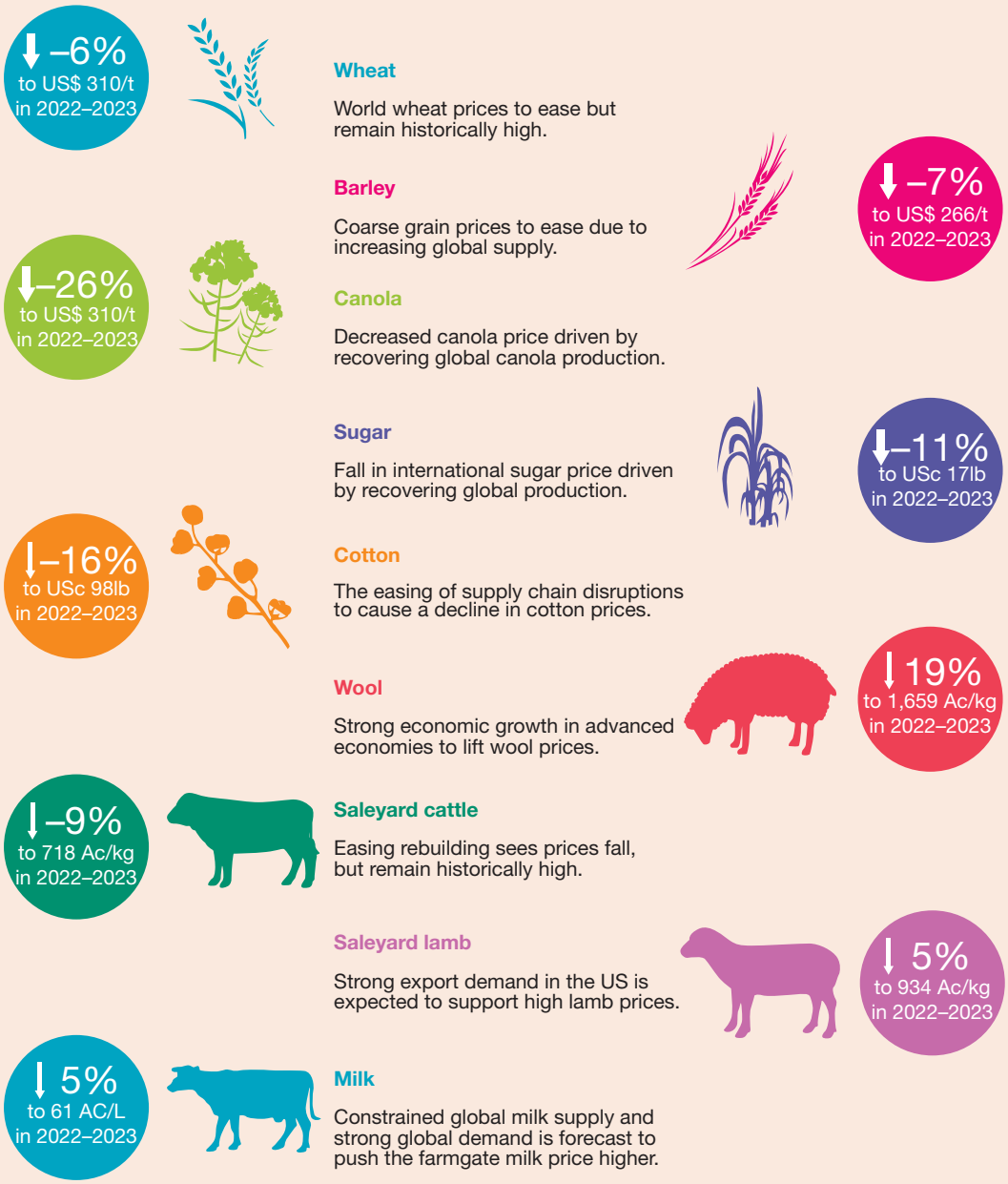
b. **List** *two* likely microeconomic *demand factors* that, hypothetically, may cause the forecast changes in *relative prices* in these rural commodity markets. **(2 marks)**

c. **List** *two* microeconomic *supply factors* that might cause these forecast changes in relative prices in these markets. **(2 marks)**

d. In the Australian economy, when owners of resources are making decisions about resource allocation, they are largely motivated to maximise their profits. **Explain** how the forecast changes in *relative prices* of rural commodities are likely to affect the *relative profitability* of these selected areas of farming. **(2 marks)**

e. **Explain** how you would allocate resources between particular rural commodities, assuming your resources were completely mobile. **Justify** you answer. **(2 marks)**

Some recent events affecting the markets for crops and livestock.



Source: Images copied from Department of Agriculture, water and the environment, ABARES, Agricultural forecasts and outlook, March 2022, Volume 12.1, various pages, see https://daff.ent.sirsidynix.net.au/client/en_AU/search/asset/1033304/0.

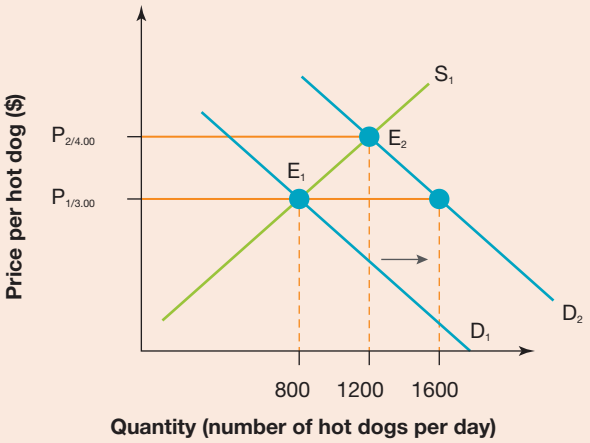
12. Examine the figure below, which represents a hypothetical demand and supply graph for hot dogs purchased from competing shops along St Kilda Beach in Melbourne.

a. **Describe** the change in the demand for hot dogs from D_1 to D_2. **Outline** *one* microeconomic *demand*-side factor that might have caused this change in demand. **(2 marks)**

b. **Explain** how the *equilibrium market price* and *equilibrium market quantity* of hot dogs adjusts from E_1 to E_2. **(3 marks)**

c. With reference to this market for hot dogs, **explain** the role of the price mechanism (market mechanism) in changing the pattern of resource allocation. **(2 marks)**

The demand and supply of hot dogs.



13. **Explain** how the operation of Australia's market system normally allocates scarce resources *efficiently* between competing uses. **Support** your explanation with reference to recent price changes that have occurred in various Australian or global markets. **(6 marks)**

Solutions and sample responses are available online.

1.8 The meaning and significance of price elasticity of demand and supply

KEY KNOWLEDGE

- The meaning and significance of price elasticity of demand and supply
- Factors affecting price elasticity of demand, including degree of necessity, availability of substitutes, proportion of income and time
- Factors affecting price elasticity of supply, including spare capacity, production period and durability of goods

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

We already know that the *quantity* of a good or service demanded or supplied either *expands* or *contracts* when there is a change in its price (i.e. this is illustrated by a movement upwards or downwards *along* the line or curve). Indeed, this is the basis of the laws of demand and supply. Price **elasticity** further refines this concept by measuring the *degree of responsiveness* or sensitivity of the quantity demanded or supplied, to a given change in price.

1.8.1 Factors affecting the price elasticity of demand

According to the law of demand, the quantity demanded varies inversely with a change in its price — when the price goes up, demand contracts; when the price goes down, demand expands. However, the **price elasticity of demand** measures the *responsiveness* of the quantity demanded relative to the percentage change in price. For instance, given a rise in price, elasticity measures whether, in percentage terms, the quantity demanded contracts by a lot or just a little.

Price elasticity of demand or PED can be calculated as follows:

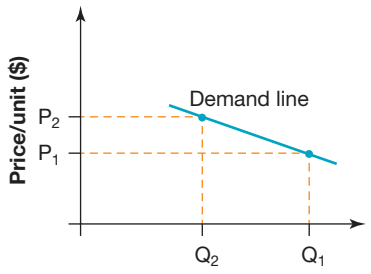
$$\text{PED} = \frac{\text{Percentage change in the quantity demanded}}{\text{Percentage change in its price}}$$

There are *three* types of price elasticity for demand — elastic, inelastic and unit elastic:

Demand is relatively elastic (high PED)

The PED is responsive or high (a number that is greater than 1) if the quantity of a particular good or service demanded changes by a *larger proportion* than the change in price; for example, a 10 per cent rise in price results in a 20 per cent contraction in the quantity of a good or service demanded (i.e. PED = 20/10 = 2). In this case, buyers are easily able to defer or switch their demand elsewhere in response to higher prices. An elastic demand means that if prices rise, the total revenue or value of consumer purchases (which equals the unit price multiplied by the quantity demanded or purchased) decreases. When drawn, the elastic demand line is fairly flat.

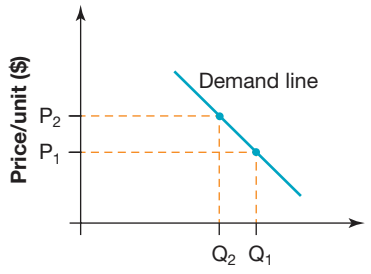
Demand is relatively *elastic* (responsive)



Demand is of unit elasticity (medium PED)

The PED is medium (a number that is equal to 1) if the quantity demanded changes by the *same proportion* as the change in price. Here, a 10 per cent rise in price results in a 10 per cent contraction in the quantity demanded (i.e. PED = 10/10 = 1). Consequently, total revenue remains unchanged with a rise in price.

Demand is of *unit elasticity*

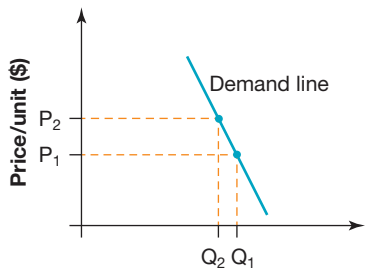


Demand is relatively inelastic (low PED)

The PED is unresponsive or low (a number that is less than 1) if the quantity demanded changes by a *smaller proportion* than the change in price. Here, a 10 per cent rise in price results in only a 5 per cent contraction in quantity demanded (i.e. PED = 5/10 = 0.5). In this situation, buyers are unable or unwilling to significantly contract demand. Consequently, total revenue increases with a rise in price. When drawn, the inelastic demand line is fairly steep.

Note, however, that in order to use the slope of the demand line to indicate the degree of elasticity, the same scale has been used on both axes.

Demand is relatively *inelastic* (unresponsive)



Determinants of the price elasticity of demand

The price elasticity of demand (PED) or responsiveness is affected by a number of factors:

- ***Degree of necessity*.** The demand for necessities, such as basic foods, rental accommodation and medical attention, is normally relatively price inelastic. In contrast, the demand for non-necessities like luxury cars, holidays and entertainment is usually relatively price elastic because demand can be deferred or abandoned altogether. Whether the demand for a good is price elastic (because it is a non-necessity) or price inelastic

(because it is a necessity), can even be affected by changes in government laws. For instance, during the COVID-19 pandemic, the mandatory wearing of face masks made demand less price sensitive, or more inelastic to a change in price.

- ***Availability of substitutes.*** The demand for substitutes (e.g. wool and synthetics, butter and margarine, Australian wheat versus overseas wheat, different breakfast cereal) is usually fairly elastic, while that for unique products (such as petrol for most car owners, eggs) is quite inelastic. Where close substitutes are available, there is greater price sensitivity. In other words, if the price of one substitute rose, consumers would switch their demand to the other product, causing a significant contraction in the quantity of the original product demanded.
- ***The time period.*** Time has an effect on elasticity. In the long-term, the demand for most things tends to be more elastic than in the short-term, when demand is more inelastic. Time gives buyers the opportunity to find alternatives or substitutes, or change their habits.
- ***Proportion of income.*** Expensive things representing a high proportion of household income or spending tend to have a more elastic demand because consumers weigh up the costs and benefits more carefully and are less impulsive. In contrast, cheaper items representing a lower percentage of our spending have a more inelastic demand because the decision is less important and doesn't matter much one way or the other.

1.8.2 Factors affecting the price elasticity of supply

Price elasticity of supply helps us understand the behaviour of sellers in a market. According to the law of supply, the *quantity* supplied of a particular good or service varies directly with a change in its price. It measures the *responsiveness*, or sensitivity of the quantity supplied to the percentage change in price (i.e. whether the quantity supplied expands or contracts by a large or a small percentage). This elasticity is reflected in the steepness of the supply line.

Price elasticity of supply or PES can be calculated as follows:

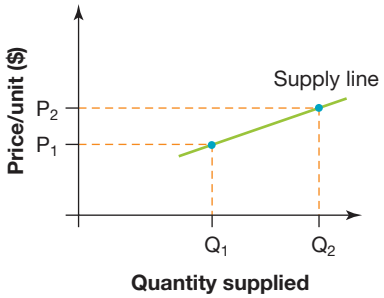
$$\text{PES} = \frac{\text{Percentage change in the quantity supplied}}{\text{Percentage change in its price}}$$

There are three degrees of price elasticity of supply — elastic, inelastic, and unit elastic:

Supply is relatively elastic (high PES)

The PES is said to be responsive or elastic (a number that is greater than 1) if the quantity of a particular good or service offered for sale changes by a *larger proportion* than the change in price; for example, a 10 per cent rise in price results in a 20 per cent expansion in the quantity supplied (i.e. PES = 20/10 = 2). In this case, firms can easily expand output in response to the rise in price. When drawn, the elastic supply line is fairly flat.

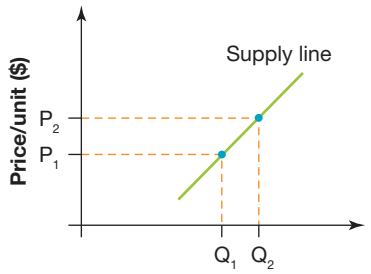
Supply is relatively *elastic* (responsive)



Supply is of unit elasticity (medium PES)

The PES is of medium elasticity (a number that is equal to 1) if the quantity supplied changes by the *same proportion* as the change in price. Here, a 10 per cent rise in price causes a 10 per cent expansion in the quantity supplied (i.e. PES = 10/10 = 1).

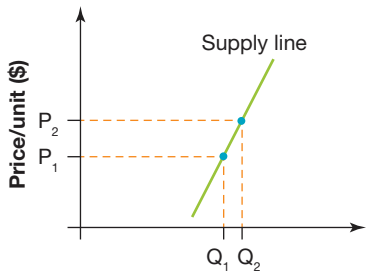
Supply is of *unit elasticity*



Supply is relatively inelastic (low PES)

The PES is described as unresponsive or low (a number that is less than 1) if the quantity supplied changes by a *smaller proportion* than the change in price; for example, a 10 per cent rise in price produces only a 5 per cent expansion in the quantity supplied (i.e. PES = 5/10 = 0.5). Here, firms are relatively unwilling or unable to respond to the rise in price. When drawn, the inelastic supply line is fairly steep.

Supply is relatively *inelastic* (unresponsive)



Determinants of the price elasticity of supply

The price elasticity of supply (PES) is affected by a number of factors:

- ***Product storability and durability.*** Items that are durable and can be stored successfully without deterioration, such as minerals, wheat, wool and red wine, generally face a more price elastic supply line. In such cases, a rise in price means that sellers can quickly and simply access the extra supplies by reducing their stocks of unsold goods. Services tend to face a more price inelastic supply because they cannot generally be stored.
- ***The availability of spare capacity.*** The quantity of a particular item supplied is likely to be more price elastic if production levels can be readily and inexpensively changed by moving resources between industries. Supply is especially elastic when there is unused or spare productive capacity in an industry or firm. Here, the quantity supplied can be expanded quickly following a rise in its price.
- ***The time period.*** In the short-term, it is often difficult for firms to expand supply following a price rise for their product, especially if resources are immobile and can't be moved easily between different uses. In this case, supply is relatively more price inelastic. However, in the long-term, supply becomes more price elastic. Over a greater number of years, the availability of new technology and/or most resources can be shifted or increased, making supply more responsive to price changes.

1.8.3 The significance of price elasticity of demand and supply

Price elasticity has at least two important and practical implications for sellers and governments.

1. ***The pricing policies of sellers.*** When pricing their products, businesses consider the price elasticity of demand for their goods or services. For example, retailers such as Myers, Target or Harris Scarfe frequently have sales offering 10 or 20 per cent discounts on their usual prices. Normally this would be expected to cut their total revenue, but this will not happen if the demand for their goods is responsive or elastic (with a high PED). Other firms are in the fortunate position of being able to increase prices when their products are essential and have no close substitute. Because demand for their goods is relatively unresponsive or inelastic (with a low PED), they will actually increase their revenue and profits.

2. ***The raising of government revenue.*** Governments always seem to be short of revenue. If raising revenue was their main goal, governments would select products with a low or inelastic PED (tobacco, alcohol, petrol, healthcare) and put a heavy excise tax on these items, which would raise their prices. Addicted, ill-informed or trapped consumers with no other choice would mostly keep shopping and pay the higher taxes. Being unresponsive, demand would not contract greatly and the government could raise a lot of revenue. However, if the main aim of the government's excise taxes on alcohol, tobacco or fuel was to substantially contract demand and change buyer habits that are damaging society or individuals, the policy of heavily taxing such products would have limited success if their PED is low.

on Resources

Weblinks
- Demand and supply explained (1 of 2)
- Demand and supply explained (2 of 2)
- Shifting demand and supply
- Demand, supply, equilibrium, curve shifts (EconMovies 4: Indiana Jones)
- Supply and demand
- Price elasticity of supply
- Price elasticity of demand
- The effects of a tax on D–S, taxes on producers
- Marginal analysis (EconMovies 2: Monty Python and the Holy Grail)
- Changes in supply, demand and market equilibrium
- Interactive demand and supply diagram

1.8 Activities

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1.8 Quick quiz on | **1.8 Exercise**

1.8 Exercise

1. a. **Define** price elasticity of demand. **(1 mark)**
   b. **List** three influences on the price elasticity of demand. **(3 marks)**
2. a. **Define** price elasticity of supply. **(1 mark)**
   b. **List** three influences on the price elasticity of supply. **(3 marks)**
3. Using an example, **explain** the economic importance of the concept of elasticity. **(2 marks)**
4. a. **Define** what is meant by the term *price elasticity*. **(1 mark)**
   b. The demand for tobacco is price *inelastic*. **Explain** what this means, providing *two* reasons. **(3 marks)**
   c. Given the price inelasticity of demand for tobacco, **explain** *one* important *advantage* and *one* important *disadvantage* of a government policy that *increases* the *tax* on tobacco *sellers*, by 12 per cent, in an effort to reduce smoking and its harmful effects. **(2 marks)**
   d. In the longer term, the price elasticity of supply for most goods tends to be *more elastic* than in the short-term. **Explain** what this means, suggesting *one* important reason for this observation. **(2 marks)**

e. Examine the table below. **Classify** the various types of goods or services shown in the table, as to whether their demand and supply is likely to be price *elastic* or price *inelastic*, giving brief reasons for your answer. **(4 marks)**

Good	The likely price elasticity of demand is …	The likely price elasticity of supply is …
i. Petrol		
ii. Bananas		
iii. Pepper		
iv. Gold		

f. Use the hypothetical data contained in the table below to:
i. calculate the PED
ii. explain if the good has an elastic or inelastic demand. **(2 marks)**

Product	Percentage change in price	Percentage change in quantity demanded	Calculation-the PED =	Is the demand for this product is price elastic or price inelastic? Why?
A bottle water sold in the desert	40	10	.....	.....
A 500g tub of margarine	20	30	.....	.....

Solutions and sample responses are available online.

1.9 Types of market failure and government intervention to address market failure in Australia's economy

KEY KNOWLEDGE

- Types of market failure, including public goods, externalities, asymmetric information and common access resources
- The role and effect of indirect taxation, subsidies, regulations, advertising and direct provision as forms of government intervention in the market to address market failure

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

We have already seen that *efficiency in resource allocation* occurs when inputs are used to produce particular types of goods and services that help to maximise the general satisfaction of society's needs and wants, and overall wellbeing. In general, the free operation of competitive markets is usually a very efficient way of allocating resources between alternative uses into areas where they are most wanted. This is especially the case when the *preconditions* for competitive markets are largely met; for example:

- strong competition exists between buyers and sellers in the market
- firms are price takers (not price makers) and no firm has significant market power
- product differentiation and brand names do not exist (the product is homogeneous)
- there is a large level of consumer sovereignty that guides how resources are allocated

- buyers and sellers have complete information about the product and market (perfect knowledge)
- there is ease of entry and exit by producers in the market
- sellers and owners of resources aim to maximise their profits and incomes.

FIGURE 1.25 In Australia, we have a largely market economy where buyers and sellers of goods and services negotiate relative prices. While the operation of the market mostly makes good economic decisions that improve society's general wellbeing, sometimes it fails. As a result, it damages our general wellbeing and living standards may suffer. Correction of this may require government regulation or intervention.



In certain circumstances, however, the market fails to use resources efficiently, thereby *lowering* society's general wellbeing. This results in **market failure** where society's general wellbeing is not maximised.

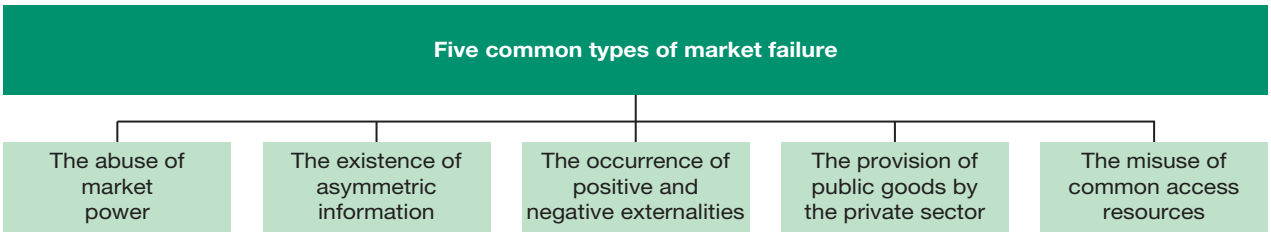
When market failure occurs, governments often *intervene* with a range of *policies* designed to reduce market failure and improve how resources are used. These strategies might include:

- using *indirect taxes* to discourage the production and/or consumption of socially undesirable goods and services
- paying *subsidies* to encourage the production and/or consumption of socially desirable goods and services
- passing various *laws* to alter the behaviour of households and/or businesses
- engaging in educational or *informative advertising* to improve knowledge and consumer and business awareness
- *setting minimum or maximum prices* in selected markets
- using policies that promote strong competition, cut costs and increase efficiency.

In these ways, the Australian government directly or indirectly allocates around 15–20 per cent of all resources. It is worth remembering that government intervention is not always a roaring success. Sadly, as we shall later see, **government failure** sometimes occurs. Whether this interference in resource allocation is justified depends on whether it results in a *net gain* in society's general wellbeing.

The overwhelming reason for having at least some government regulation or influence over resource allocation, is to *correct market failure* and improve society's general living standards. *Market failure exists when the operation of the price system fails to maximise society's general wellbeing.*

As illustrated below, there are at least *five* major instances of market failure that can justify having some government interference or regulation:



1.9.1 Markets can fail due to the abuse of market power

We have already noted that strong competition helps to guarantee good outcomes such as efficiency, quality and relatively low prices. However, economists note that when market power is exercised by oligopolies and monopolies in an industry, it is likely that sellers will sometimes restrict competition and output, lift prices (since such firms are *price makers* rather than *price takers*), reduce efficiency in resource allocation and lower customer service and purchasing power, causing market failure by reducing the general satisfaction of society's wants and wellbeing. In this situation, the government could improve market outcomes through various measures designed to enhance competition.

Government policies to reduce the abuse of market power

There are at least *three* types of government policy designed to reduce market failure associated with the abuse of market power:

- ***Government deregulation of key markets to promote competition***: Over the past three decades there has been partial deregulation (removal of unnecessary government restrictions to competition) of some important markets including those for labour, capital, primary produce, telecommunications, electricity, water, milk and aviation. The hope is that the level of competition between sellers will be greater, creating increased efficiency, lower prices and improved living standards. For instance, in the labour market, the old system of centrally determined minimum wages set by the Fair Work Commission has gradually become less important. Instead, there has been partial deregulation with an extension of a decentralised wage system involving greater flexibility and firm-by firm-enterprise bargaining or pay agreements linked to productivity.

  Deregulation reforms like these expose industries and workers to greater competition by removing government restrictions and by breaking up both public and private monopolies and oligopolies.

- ***Government cutting of import tariffs and liberalising international trade to promote competition***: Tariffs are an indirect tax added to the price of imports. They are designed to make foreign goods dearer and less attractive, thereby reducing competition for local firms. For many years the federal government has been cutting tariff rates and progressively moving towards freer trade. Indeed, from an average tariff protection level of 38 per cent in 1968–69, the general rate of tariffs on most manufactured items fell by 2.5 per cent a year since the late 1980s, to effectively reach less than 1 per cent in recent years. As a result, to lift efficiency in resource allocation and survive, local firms have had to improve product quality, restructure operations and cut their production costs. It means that our resources are increasingly allocated into areas where Australian industry has a comparative cost advantage. As a result, living standards should rise.
- ***Government laws to promote price competition and regulate monopolies***: Generally, competition promotes greater efficiency in resource allocation and hence higher living standards. With this in mind, the Australian *Competition and Consumer Act 2010* (formerly called the *Trade Practices Act*) requires

that Australian firms compete with each other. Activities like price maintenance, price leadership, market zoning, interlocking directorships and exclusive dealing are illegal. Heavy fines of up to $10 million per occasion are imposed on companies that break the law, and directors who break the law may face jail sentences. Company takeovers and mergers not considered to be in the interests of consumers are exposed and closely scrutinised. Furthermore, the Australian Competition and Consumer Commission (ACCC) undertakes ongoing price surveillance of industries where competition is weak, such as petroleum, banking, insurance and power. Firms in both public and private sectors are required to justify increases in the prices they charge.

1.9.2 Markets can fail due to asymmetric information

Asymmetric information is a second situation where there is market failure. For markets to allocate resources efficiently, buyers and sellers need to have complete and reliable knowledge of all the relevant information affecting their economic decisions. Unfortunately, this is not always the reality because one group in the market may have more knowledge than others. 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 because society's overall wellbeing is reduced. This imbalance in knowledge is called *asymmetric information*.

There are many instances of this type of market failure; for example, *insider trading* in the share market (when shares are either bought or sold based on information that is not revealed to the rest of the market, such as the discovery of a new gold mine), those peddling false information perhaps using social media, rogue elements in the used-car market (when sellers hide or cover up mechanical problems with the cars they sell), online shopping and dating (where buyers cannot physically inspect the goods before making their decision), the building trades (where costs have been cut by inferior workmanship), an employer hiring a new employee, and harmful ingredients used in producing food, tobacco and, in the past, asbestos-based cement sheeting.

Government policies to reduce asymmetric information

Again, the logical solution to market failure due to asymmetric information is for governments to intervene using *two* main strategies.

- ***Government laws about full product disclosure***: One approach is that the government could pass laws requiring full *product disclosure* by sellers of all relevant information needed for effective decision making by potential buyers through appropriate legislation, such as useful *labelling* on products including food and medicines. These laws could make it illegal for sellers to withhold certain information; for example, laws about the responsibilities of company directors to accurately inform and update investors of business conditions and prospects that affect decision making, or product labelling requirements that warn users of potential hazards or dangers.
- ***Government informative advertising and educational campaigns***: The government could conduct an *advertising campaign* to educate and inform consumers of potential dangers of products so that more effective choices can be made and resources allocated efficiently to maximise society's wellbeing. An example of this is the QUIT campaign, which aims to make people stop smoking, and the anti-drink driving campaign. In addition, other attempts include the sun protection campaign, and the COVID-19 vaccination campaign to reduce severe illness, deaths and lockdowns. In addition, improving the speed and level of public access to the internet (by, for example, the rollout of the National Broadband Network or NBN) can help facilitate effective research by buyers and sellers, and improve their knowledge and understanding of the consequences of their economic decisions.

1.9.3 Markets can fail due to externalities

Externalities are a third source of market failure that can reduce efficiency in the allocation of resources, and hence undermine society's general wellbeing. They represent extra *costs* or *benefits* for third parties (someone not directly involved in the particular transaction) that may arise when goods and services are produced or consumed. There are *two* types of externalities: *negative* and *positive*.

Negative externalities



- Negative externalities are *costs* paid, or borne, by third parties arising from the production or consumption of a good or service. They can occur, for example, when a factory producing chemicals releases unpleasant odours that we are forced to breathe, even though we do not use that firm's products. The smoking of cigarettes in public also causes costs to third parties in the form of health issues from passive smoking, and the burden on public hospitals and taxpayers who foot the bill from the consumption of tobacco, rather than the tobacco companies. Another example occurs in the generation of coal-fired power stations with the release into the atmosphere of carbon dioxide emissions that lead to global warming, severe weather events and climate change that may then contribute to the flooding of island communities, displacement of populations and wild weather events that damage the properties of others and cause the loss of lives and production. These costs are not paid by the producers who have created the damage. The costs of the damage for them will be zero, thereby inflating their profits. This problem distorts the efficient allocation of resources and causes *socially undesirable* goods and services to be *over-produced*. Negative externalities lead to a misallocation or resources that represent market failure because they lower society's general wellbeing and living standards. Governments often seek to reduce negative externalities and improve living standards using various measures including legislation, indirect taxes, cash subsidies and advertising.

Positive externalities

- Sometimes, there are positive externalities or *benefits* received by third parties that arise from the production and consumption of particular goods or services. For instance, the provision of education and health are good examples of services whose provision and consumption result in positive externalities or wider social benefits, improving our general wellbeing. In other words, if you personally pay for the cost of a vaccination against the flu or measles, there are wider benefits for the general community who also benefit, even though they have paid for this. Similarly, if you pay for gaining an education to improve your knowledge, creativity and skills, others in society also benefit. Positive externalities result in the *under-allocation* of resources and *underproduction* of *socially beneficial goods or services* since decision makers do not factor in the full value of all the wider benefits or satisfaction gained from a given economic activity. Again market failure has occurred because resources are not allocated efficiently in sufficient quantities and our general wellbeing will be lower than it could be.

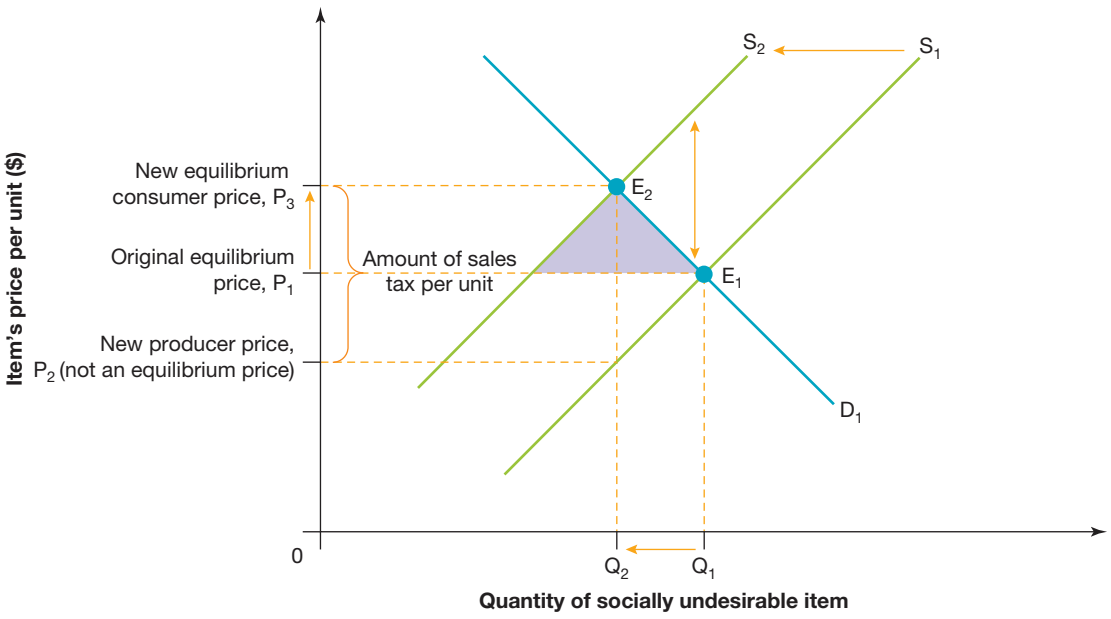
Government policies to reduce externalities

The government can help reduce market failure associated with both *negative* and *positive externalities* using a range of policy measures:

- ***Government laws to reduce negative externalities***: One way the government can reduce negative externalities is by passing laws or legislation to force firms and/or consumers to change their activities or behaviours causing negative externalities. For example, passing laws such as the *Clean Energy Act* in 2011 (that led to the carbon tax between 2012 and 2014) put a cost on carbon pollution. It compelled producers and consumers to take more responsibility for their emissions and change their production and consumption patterns. Similarly, anti-smoking laws have also reduced negative externalities and adverse health issues for society that are associated with active and passive smoking (breathing in second-hand smoke-filled air).
- ***Governments' indirect taxes to reduce negative externalities***: Each year, the consumption of socially undesirable goods such as alcohol and tobacco causes much harm to society and individuals. It adds greatly to the health and safety costs that in turn, have to be paid by governments and taxpayers. Additionally, manufacture of some products generates carbon emissions and adds to global warming. These are linked to severe weather events, rising sea levels, destruction of infrastructure, businesses and property, and deaths. In these two situations, negative externalities or costs are passed on to external third parties. In an attempt to reduce such negative externalities, the federal government has placed taxes on tobacco and alcohol. These taxes raise the price of particular consumer goods, possibly changing decisions made by buyers and sellers, thereby reallocating resources more efficiently to areas where they add most to our general wellbeing.

  More specifically, let us use the demand–supply diagram shown in figure 1.26 to illustrate what happens if the government imposes a *tax* on *producers* or suppliers of an undesirable good or service whose consumption results in negative externalities. Here, for example, we might think of the effects of a carbon tax on production that causes CO_2 pollution such as electricity made from brown coal, a tax on alcoholic drinks or a tax on the sale of cigarettes. As can be seen from figure 1.26, supply-side conditions for firms producing and selling these goods will become less favourable. By having their profits cut, producers will be discouraged from producing or supplying the item, causing a *decrease in supply* at all possible prices.

FIGURE 1.26 The impact on the market of a sales tax imposed on producers or sellers of a socially undesirable good or service (e.g. tobacco, pollution or alcohol) to discourage production and consumption.



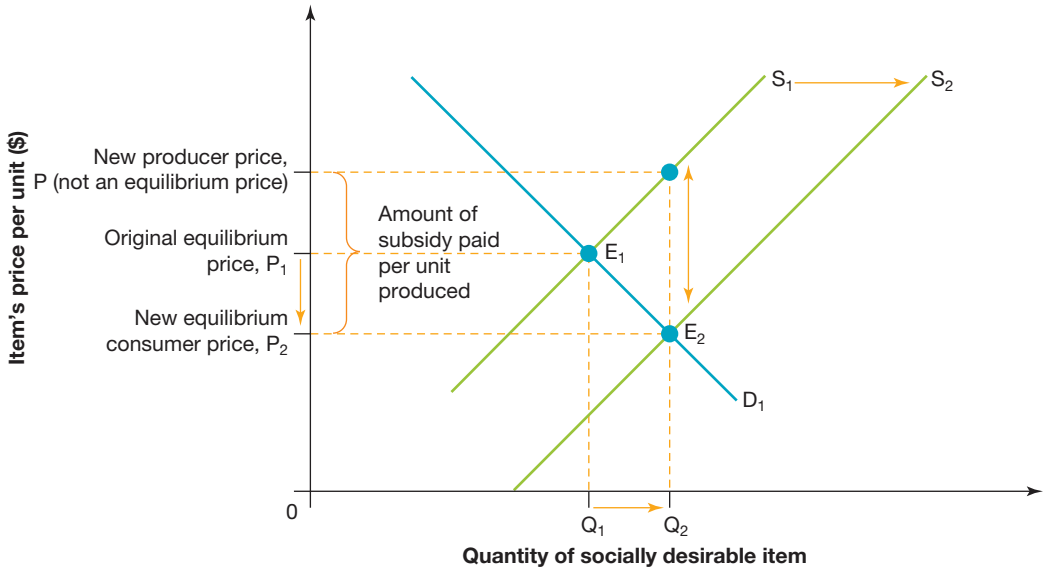
Referring to figure 1.26, this decrease in supply following the introduction of an excise tax, means that the supply line shifts horizontally inwards and to the left, from S_1 to S_2 by an amount equal to the level of tax per unit. This causes the equilibrium price to increase from P_1 to P_2. Following the imposition of the tax, buyers will now pay the new higher, less attractive equilibrium price, P_2, causing demand to contract, reducing the negative externality. At the same time the equilibrium quantity will fall from Q_1 to Q_2. However, following the tax, suppliers of this socially undesirable good or service will receive a much lower, less profitable price equal to P_0 (this is not an equilibrium price). In this case, the difference between the buyer's and seller's new price (P_2 versus P_0) represents the amount of sales tax *per unit* sold, which goes to the government. Here buyers and sellers of this item each share part of the tax burden. This policy changes behaviour and discourages both production and consumption of the item, repelling resources from this socially undesirable area. Market failure is reduced.

However, in practice, because the demand for these fairly addictive type goods is price *inelastic* (unresponsive), the tax has not been especially effective in changing resource allocation by making these items less attractive to consume (even though it has raised much government revenue).

- ***The government can reduce both negative and positive externalities using subsidies***: A government cash *subsidy* could be used to encourage *consumers* of a product to change behaviour and reduce consumption of products that currently cause *negative* externalities. For instance, paying cash incentives to households installing solar panels to make them cheaper, could help reduce negative externalities by cutting the demand for gas or coal fired electricity, slowing CO_2 emissions and climate change.

Additionally, in cases where the existence of *positive* externalities lead to the *underproduction* of merit services that are deemed *socially beneficial* such as education and health (e.g. free COVID-19 testing and vaccination), a case exists for the government to make more of these services available by paying a subsidy to private *producers*. Figure 1.27 uses a demand–supply diagram to show the impact of a government subsidy to suppliers. This policy would make supply conditions for firms more favourable. As a result, the supply of the service at any given price would increase and thus shift the line outwards from S_1 to S_2. Additionally, the equilibrium price would fall from P_1 to P_2. As a result of these changes, the new price paid by buyers would fall to P_2, thereby causing demand or consumption of this socially desirable good to *expand*, improving society's general wellbeing. At the same time, sellers would receive a new higher, more profitable price P_3 (this is not an equilibrium price), encouraging them to increase production and allocate more resources (Q_1 to Q_2) to this beneficial area. In other words, this higher price, P_3, would be equal to the new price P_2, plus the value of the subsidy for *each unit* produced and sold.

FIGURE 1.27 The impact of a government subsidy on increasing the allocation of resources towards socially desirable production (e.g. solar panels, public education, health and housing).



- ***The government can directly provide socially desirable government services reducing the problem of positive externalities***: The Australian government can reduce the market failure associated with *positive externalities* that lead to the *under-production* and *under-consumption* of socially beneficial goods and services, by providing these free of direct charge or at a low subsidised price so that all people can have access. They do this, for example, through building and operating the public health and education systems. These services are paid for by using budget tax revenues and are designed to improve society's general wellbeing.
- ***The government can use educational advertising to change behaviour and reduce externalities***: When consumers or producers have a complete knowledge of the impacts of their economic activities and consumption, negative externalities are less likely to occur. One approach is for the government to conduct an advertising campaign to educate or inform the public, and to encourage a change in behaviour that will help reduce negative externalities (for instance, anti-drink driving and anti-smoking advertisements).

1.9.4 Markets can fail in the provision of public goods

Public goods are particular products or services that can be consumed collectively by an individual, without preventing others from accessing them and from which nobody is excluded from using, even if they do not pay for them. Common examples of *public goods* include national defence, police, free online education courses and knowledge, fire protection, most non-toll roads, free-to-air TV, flood mitigation works, national parks, beaches and street lighting. The important thing to remember when identifying strong examples of *public goods* is that they have *two* preconditions that must be met: they must be *non-excludable* and *non-rivalrous*. This makes *public goods* quite different to the *private goods* that we all buy each day like food or clothes.



Public goods differ from *private goods* (the items most of us purchase every day) in two ways:

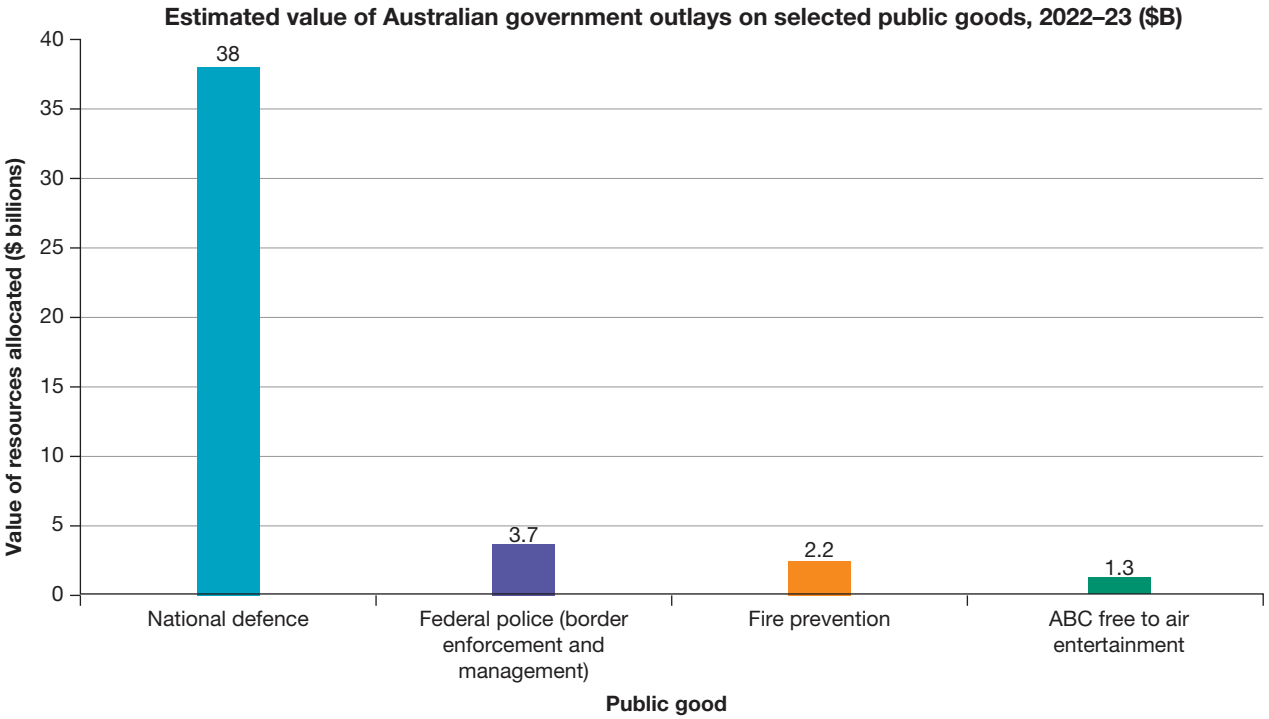
1. **Public goods are *non-excludable***:
   Consumers who don't pay for private goods can easily be refused access. For instance, consumers without the necessary money are *excludable* once they get to pay at the checkout (i.e. they are excluded from buying or accessing the product unless they have the money to pay the price). However, this is not the case with *public goods* where consumers are usually *non-excludable*. Those who do not have the money to pay or choose not to pay for a good, *cannot* easily be refused access to that good. This leads to the **free rider problem** in the provision of public goods where consumers who don't pay can still gain access or benefit. For instance, all of us can benefit from the provision of national defence in times of war, or gain from police protection, even those who have not paid taxes.
2. **Public goods are *non-rivalrous***:
   A person who buys a particular *private good*, prevents another person from buying or benefiting from that exact same item. For instance, if you eat an apple, others cannot consume the same apple. These *private goods* are therefore called *rivalrous goods*. However, this does not occur to the same degree with *public goods*. Public goods are largely *non-rival* in nature. For instance, as a *public good*, one person using street lighting does not prevent another person from gaining benefit, or a person enjoying a free-to-air TV program, doesn't prevent another individual elsewhere, from viewing the same program.

Because it is difficult to force some users of public goods to pay (the *free rider problem*), returns for businesses are likely to be very low. This area is unlikely to attract sufficient resources from the profit-seeking private sector. It means that typically, insufficient resources will be allocated to the production of public goods. In the absence of provision by the government, these goods will be *under-produced* if left to the *private sector*, even though they are usually seen as highly beneficial and improve society's overall satisfaction and wellbeing.

Government policies to improve the provision of public goods

The problem here is that socially beneficial public goods (e.g. national defence and fire prevention) would be under-produced if the decision was left to the private sector and the price system. Given the free access, profits would be low and unattractive. However, government policy can reduce this failure and increase efficiency in resource allocation. The main approach of the government is to use the annual **budget** to provide these items, usually free of direct charge, through various outlays, paid from tax revenue. For example, the estimated value of resources allocated to a selection of public goods by the federal government in 2022–23 is shown in figure 1.28. These outlays should help to reduce the degree of market failure that otherwise would occur if production was left to profit seekers in the private sector.

FIGURE 1.28 Estimates of the value of resources allocated by the Australian government to a selection of socially desirable public goods.



Note: Data does not include outlays by state government in some areas.
Source: Data derived from the Australian government, various budget estimates, 2021–22.

1.9.5 Markets can fail in using common access resources

Common access resources include environmental natural inputs such as air, minerals, oil, forests, river water and wild fish in rivers and oceans. These goods are *non-excludable* and free (because it is not possible to exclude users who do not pay), but are also *rivalrous* (because consuming and overusing them prevents consumption by others). With common access goods that are seen by many as free and unlimited, the market fails to send the proper price signals or information that lead to an efficient allocation of resources. Instead, there is market failure. This is a serious problem for society because the survival of current and future generations may be jeopardised when these goods are overused, exploited or degraded, lowering their quality, and reducing our general wellbeing. Evidence of failure in the use of *common access resources* can be seen in human-induced climate change and severe weather events, the release of toxic substances into the air, soils and water that enters the food chain, deforestation, destruction of areas of outstanding natural beauty, the depletion of fish stocks, and the loss of biodiversity.



Government policies to reduce the abuse of common access resources

In response to *market failure* contributing to the abuse of *common access resources*, decisive policy action needs to be taken at both the national and international level. Here are just a few of the possibilities:

Protection of forests and marine areas as common access resources:

Forests, rivers and oceans are valuable *common access resources* that need protection to reduce their abuse (as a market failure). Australia has over 130 million hectares of native forest and a huge coastline. One policy action shared by state and federal governments, has been to create 28 million hectares of declared *national parks* (i.e. around 4 per cent of our land area). For example, there are six huge Commonwealth national parks (e.g. Kakadu, Daintree and Uluru) and nearly 60 marine parks (e.g. Coral Sea, South-East network). There are also hundreds of state-run national parks (e.g. in Victoria, at Mt Buffalo, Alpine, Little Desert, Wilsons Promontory and the Grampians). These parks, and another 100 million hectares of native forest and reserves, support areas of stunning natural beauty, old growth forests, carbon storage, water catchments, ecosystems, wildlife and biodiversity, First Nations Australian heritage sites, and outdoor recreation. In addition, there are numerous *marine parks* that sustain ecosystems and coral reefs, along with marine plants and animals.

The government's creation of these *national parks* is a vital measure that helps to maintain ecological balance and environmental sustainability. They work by heavily restricting damaging economic activities in these areas, that would otherwise degrade the quality of Australia's common access resources.





Protection of fish stocks in rivers and oceans as a common access resource:

Wild fish stocks in rivers and oceans are another *common access resource* that are protected by federal and especially state governments. There are also international agreements around sustainable fishing.

For Australia, we have *government laws* about catch limits or quotas, fish size, permitted fishing areas (not in marine parks), allowable types of equipment, and protected fish species. In Victoria for instance, recreational and commercial fishing normally requires the purchase of licences. Enforcement is by inspectors from the Victorian Fisheries Authority. At the federal level, fishing in offshore exclusive economic zones is also subject to licences, policing and quotas, and Australia is part of the *UN's international fishing sustainability agreement* to protect fish stocks (especially of migratory species) from illegal and unreported fishing.



Protection of the climate as a common access resource:

Having a stable *climate* is a *common access resource* that has been taken for granted, even though it impacts strongly on global economic and non-economic wellbeing. However, especially over the last 50 years, there has been global warming causing more frequent and severe weather events. It has been largely associated with increased emissions of greenhouse gasses (including CO_2), resulting from higher levels of production and consumption of goods and services.

Unfortunately, inadequate global action and collaboration to reduce emissions (especially by rich countries), has now led to a climate crisis and a rush against the clock to limit warming to 1.5 degrees Celsius by 2050. As an international problem, a global solution is required. With this in mind and since 2007, Australia has made various international commitments to reduce its emissions. For example:

- ***The Paris Agreement on Climate Change***: In 2015, many governments, including Australia's, signed up to the *Paris Agreement on Climate Change*. In this agreement, individual countries sought to reduce CO_2 emissions by varying percentages. Our government initially agreed to a reduction of 26–28 per cent on 2005 levels, by 2030. This target was far less ambitious than those of some other nations (initially, the EU sought a 34 per cent cut and Canada, a 30 per cent reduction). Many felt that Australia's response was too soft and inadequate. In May 2022, the newly elected Australian Labor government announced that it would pursue a 40 per cent emissions cut by 2030.
- ***The United Nations Climate Change Conference (COP26)***: At the UN's climate Change Conference in Glasgow (November 2021), the Australian government agreed to *zero net carbon emissions* by 2050 (a stance reaffirmed by the new incoming government in 2022).

Commitments to reduce emissions are fine, but the real question remains — what government policies could or have been used to help limit climate change and protect *common access resources* for both current and future generations?

- ***Use a carbon tax to reduce CO_2 emissions and climate change***: A *carbon tax* imposes a cost or price on businesses releasing CO_2 emissions into the atmosphere. Instead of these becoming an external cost for third parties to pay, they are internalised — paid directly by polluters. This creates an incentive for firms to find cleaner manufacturing processes and products. The tax also changes the behaviour of consumers because polluting firms will find that their products become more expensive to produce, causing a contraction in their demand. Today, nearly 30 countries have a carbon tax including Canada, Chile, China, Denmark, the European Union, Japan, New Zealand, Norway, Singapore, Sweden and the UK. Beginning in 2012, Australia also had a carbon tax at a starting rate of $23 per tonne of CO_2 emissions. However, this was abolished by the then Coalition government in 2014.
- ***Use the Climate Solutions Fund (CSF) to help protect our common access resources***: In 2014, after the abolition of the carbon tax, the federal Coalition government introduced its *Direct Action Plan* to reduce carbon emissions. Central to this purely voluntary scheme was the setting up of a $2.5 billion *Emissions Reduction Fund* (ERF). Essentially, this makes government money available to successful firms who bid in a reverse auction situation, by submitting plans to get the greatest emissions reduction for the lowest possible cost.
- ***Encouragement of renewable energy to protect common access resources***: Australia has set a target for power generation from low emission, *renewable energy* sources such as wind, solar and hydro. To help achieve this target, state and federal governments have used subsidies and tax concessions to incentivise the installation of clean renewable energy. For instance, one in four homes have taken up the offer of household solar panels rebates.
- ***Powering Australia Plan to reduce climate change***: In 2022, the newly elected Labor government announced its *Powering Australia Plan* — a scheme to cut emissions, create jobs and reduce the cost of electricity. Among other things, it involves large government budget outlays on investing $20 billion to upgrade the electricity grid to cater for more renewable power, setting up partnerships with private enterprise to co-invest $100 million for 85 solar banks spread around the country, installing 400 community batteries at a cost of $200 million to provide shared storage for up to 100,000 households, and providing government subsidies to make electric vehicles cheaper to purchase.
- ***Use an emissions trading scheme to reduce CO_2 emissions and slow climate change***: Another approach to reducing CO_2 emissions and climate change is to set up an *emissions trading scheme*. This puts a cost or price on pollution using *tradeable pollution permits* that must be purchased by firms with high emissions. The price of these permits is determined in a carbon market by the forces of demand (by polluters) and supply (capped or limited by the government to a level that will allow an emissions target to be reached). Such a scheme is used by the European Union, Switzerland, New Zealand, and some parts of the United States.

Faced with strong evidence of a deteriorating quality and quantity of common access environmental resources (for example, global warming, extreme weather events, melting polar ice caps and rising sea levels, acid rain, deteriorating air quality, deforestation, toxic substances in the food chain, and destruction of biodiversity), there is plenty scope for government action to reduce market failure that causes inefficiency in resource allocation. Policy action can be taken at both the national and international level, to ensure that the use of common access goods is sustainable and our wellbeing, protected.

- ***The government could use a carbon tax or have a carbon trading scheme to put a price on carbon emissions to protect our common access resources***: Some governments have put a *price* (i.e. a cost that alters business profits) on carbon emissions that contribute to climate change, global warming, rising sea levels and severe weather events. They have done this using two main approaches. Some have introduced a *carbon tax* on polluters. For instance, between 2012 and 2014, the Australian government imposed the *carbon tax* starting at $23 per tonne of CO_2 emissions, to encourage firms to change to cleaner, greener production. Other governments (the European Union, Switzerland, New Zealand and parts of the United States) have an emissions trading scheme (ETS) where the carbon price is free to move up or down as

determined in the carbon market by the actions of buyers and sellers. Putting a price on carbon emissions acts to reduce negative externalities or costs of pollution that are paid by third parties not directly connected with the production or consumption of particular goods or services. By internalising pollution costs business profits are reduced, making it relatively more attractive for firms to become greener, thereby helping to protect our common access resources.



- ***The Climate Solutions Fund (CSF) to help protect our common access resources***: In 2014, after the abolition of the carbon tax, the federal government introduced its *Direct Action Plan* to reduce carbon emissions. Central to this purely voluntary scheme was the setting up of a $2.5 billion emissions reduction fund (*Climate Solutions Fund* (CSF), that operates in a similar way to the ERF. However, in 2022, many are skeptical about the effectiveness of this policy in meeting our 2030 Paris emissions reduction target.
- ***Encouragement of renewable energy to protect common access resources***: The Australian government has set a target for power generation from low emission *renewable energy* sources such as wind, solar and hydro. It encourages individuals and firms to commit using cash subsidies, tax write-offs and other incentives designed to alter business behaviour in the energy sector. Even so, Government policy here is somewhat contradictory. It still pays very generous subsidies to coal miners, thereby adding to carbon emissions, global warming and the destruction of common access resources!
- ***Joining international agreements to help protect common access resources***: The Australian government has committed to a range of *international agreements* to help protect common access resources. These range from United Nations-sponsored *fishing management treaties*, to meeting promised *targets for lower carbon emissions*.

The *Kyoto Protocol* is an international agreement signed by many countries from early 2005. Essentially, it committed governments to emissions targets expressed against a base level. It was developed through several stages, with an agreement negotiated in 2012 that was signed by 37 countries including Australia and members of the European Union. A post-Kyoto Protocol legal framework was also developed, despite the reluctance of key economies such as the United States, China and India to be bound by certain emissions targets.

In 2015, many governments (including Australia) signed up to the *Paris Agreement on Climate Change*. In this agreement, individual countries sought to reduce CO_2 emissions by varying percentages. Our government agreed to a reduction of 26–28 per cent on 2005 levels by 2030 — a target that seems increasingly challenging to achieve based on current trends. By contrast, Canada approved a 30 per cent reduction, while the European Union agreed to a 34 per cent cut. China's original forecast was for a rise of 139 per cent, but one needs to remember that their per capita emissions of just 5.5 tonnes are relatively low by international standards. More recently during the COP26 meeting in Glasgow, November 2021, the Australian government agreed to aim for *net zero carbon emissions by 2050*, although details of how this is going to be achieved were somewhat vague, and depend on the application of current, emerging and as yet, not discovered, technologies.

on Resources

Weblinks Market failures and reduced outcomes for society
Public versus private goods
Market failure and diminished efficiency in resource allocation
Externalities

1.9 Activities

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1.9 Quick quiz on | **1.9 Exercise**

1.9 Exercise

1. **Explain** what is meant by 'market failure'. **(2 marks)**

2. a. Consider the following areas of market failure. **Explain** how and why the market fails to allocate resources efficiently.
   - i. asymmetric information
   - ii. market power or weak competition
   - iii. public goods and services
   - iv. externalities
   - v. common access resources. **(5 marks)**

   b. Select any *four* of the following situations. Identify and **outline** the possible type(s) of *market failure* involved.
   - i. A person with contagious whooping cough pays $80 to see a doctor and have a vaccination.
   - ii. Toxic waste is poured down the sink.
   - iii. A mining company extracts and sells brown coal.
   - iv. You get driven to school rather than walking, even though it's only 900 metres away.
   - v. Loggers clear rainforest for farming.
   - vi. The neighbours throw a wild party that rages for days.
   - vii. A director of a technology company, knowing that the company is about to fail, sells her shares before the announcement is made to the public.
   - viii. You sell your smartphone after dropping it into a cup of coffee. **(4 marks)**

   c. One way the federal government can try to correct some types of market failure is using aspects of the budget. Examine the table below showing estimates of the federal government's major budget receipts and budget outlays for 2022–23.

Type of budget tax revenue	$b (rounded)	Type of budget outlay	$b (rounded)
Income tax on individuals	270	Social security and welfare	222
Company & resource rent taxes	92	Health	106
Goods and services tax	82	Education	45
Excise taxes	43	Defence	38

Source: © Commonwealth of Australia 2022.

   - i. Select *one budget receipt* and *one budget outlay*. For each chosen item, **explain** *how* the policy measure might affect the way Australia uses or allocates its scarce resources. **(2 marks)**
   - ii. For each of the two items identified in part (i) above, **explain** *why* the government uses the particular policy to alter the allocation of our resources. **(2 marks)**

   d. With the use of a labelled demand–supply diagram, **explain** how the imposition of a carbon tax on companies that pollute, could help to reduce market failure and discourage the abuse of common access resources, improving efficiency in resource allocation. **(4 marks)**

   e. **Explain** what is meant by the *free rider* problem in the provision of public goods as an area of market failure. If left to the private sector, **explain** why defence, the police and street lighting would be *under-produced*, even though they bring wide social benefits. **(2 marks)**

   f. Identify and **explain** *two* policies the government could use to help overcome the *free rider problem*. **(4 marks)**

g. Government subsidies can be used to reduce some types of market failure.

i. **Define** *government subsidy.* **(1 mark)**

ii. **Explain** how subsidies paid to Australia's sugar growers or suppliers to leave the industry would alter the allocation of resources that would otherwise occur in a market economy. Illustrate the impact of this type of subsidy, using a hypothetical demand–supply diagram for the sugar market, to show the *before* and *after* effects of the payment. **(3 marks)**

h. Under Australian law, ingredients must be listed on the packaging of processed foods. **Explain** how this might help reduce market failure associated with the consumption of these goods. **(2 marks)**

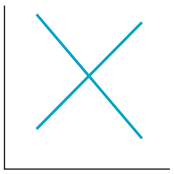
i. **Outline** the type of market failure that may be associated with online dating sites. **(2 marks)**

j. **Explain** why the government provides free vaccinations to school children and some older citizens. **(2 marks)**

k. The federal government currently pays a *tax rebate* of up to 30 per cent for those individuals taking out or buying private health insurance. This is because it helps to correct market failure, improve resource allocation towards socially desirable goods and services, eases pressures on public hospitals and ultimately improves government finances. With the help of a fully labelled demand–supply diagram, explain how this action by the government might help to correct market failure. **(3 marks)**

l. The government applies various policies to help reduce *market failure*. Use small, fully labelled D–S diagrams, each representing a particular market, to **illustrate** hypothetically, the impact of various government policies listed below, on market demand, supply, price, quantity traded and the allocation of resources. Show the market *before* and *after* the change in government policy. **(6 marks)**

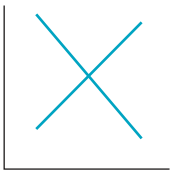
i. The removal of tariffs on imported cars on the local car market



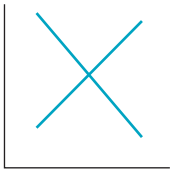
ii. Lifting the legal age for the purchase of alcohol to 21 years on the market for alcohol



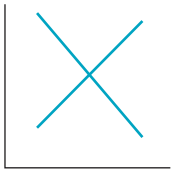
iii. The government allowing the merger of the two largest oil companies



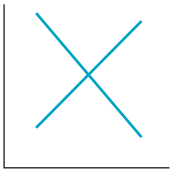
iv. The introduction a tax on firms generating electricity using brown coal, and the effects on the electricity market, the market for brown coal and the market for renewable energy sources



v. Applying a tax on foreign buyers of Australian property on our property market



vi. Freight subsidies paid to Tasmanian fruit growers, on the market for apples in other states



Solutions and sample responses are available online.

1.10 Government intervention in markets that unintentionally leads to decreased efficiency

KEY KNOWLEDGE

- One example of government intervention in markets that unintentionally leads to a decrease in one of allocative, productive, dynamic or intertemporal efficiency

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

We have just seen that sometimes government intervention is necessary to reduce market failure, increase efficiency and satisfaction in resource allocation, and optimise society's general wellbeing. However, sometimes government regulation of various markets also has unfortunate and *unintended negative consequences* or external costs for third parties, thereby reducing efficiency and society's general wellbeing. This is called *government failure*.

The current VCE course requires that students select *one* example of government intervention that has unintentionally decreased efficiency in resource allocation, be it allocative, technical, dynamic or intertemporal.

Three contemporary Australian case studies of possible government failure could include:

1. Setting the minimum wage artificially high to help protect the living standards of low-income employees may unintentionally undermine allocative efficiency and society's wellbeing by:
   - causing a market surplus or glut of labour that represents structural unemployment
   - artificially raising production costs for local firms, reducing labour productivity, undermining international competitiveness, cutting business profits and adding to the closure of firms
   - increasing structural unemployment, driving some people onto welfare and creating a burden for taxpayers.
2. Using government policies designed to help reverse declining home ownership and affordability, may have unintended consequences that undermine allocative efficiency, lower society's wellbeing and lead to failure by:
   - helping to increase the demand for first homes relative to the supply of dwelling, this could raise the price and reduce the affordability of first homes
   - encouraging those individuals who may not be able to afford to make loan repayments, later potentially creating financial stress and the possibility of negative equity during times of falling house prices.
3. Paying **subsidies to the coal industry** to encourage production, exports and employment, may have unintentionally reduced allocative and intertemporal efficiency and society's general wellbeing by:
   - increasing CO_2 emissions, accelerating climate change and severe weather events, adding to negative externalities and lowering living standards
   - creating large opportunity costs for society that reduce our overall wellbeing.

1.10.1 Unintended problems of setting a minimum wage in the labour market

Under a free and purely competitive labour market, wages levels would be set at equilibrium by the forces of labour demand and supply. In theory, wages would rise if labour demand exceeded supply, or fall if supply exceeded demand. Worker wages and conditions would be individually negotiated between a worker and his or her boss on a firm-by-firm basis, without government interference or regulation.

While this sounds fair in theory, in practice it was found that some staff, already working long hours and under poor conditions, were paid such low wages that they could not support their families and enjoy even austere living standards. In a landmark decision called the Harvester Judgement of 1907 (shortly after federation), the Commonwealth Court of Conciliation and Arbitration (an earlier equivalent of today's Fair Work Commission or FWC) determined that wages at McKay's Sunshine Harvester Company were too low and were not 'fair and reasonable' for a 'civilised community'. Since then, wages have generally been increased in most years (in 2022–23, the minimum wage was set at $812.60 for fulltime adults, with a lower rate for youths).

Since 1907, many people have felt that at least some government intervention in the labour market is beneficial because it helps to achieve the following:

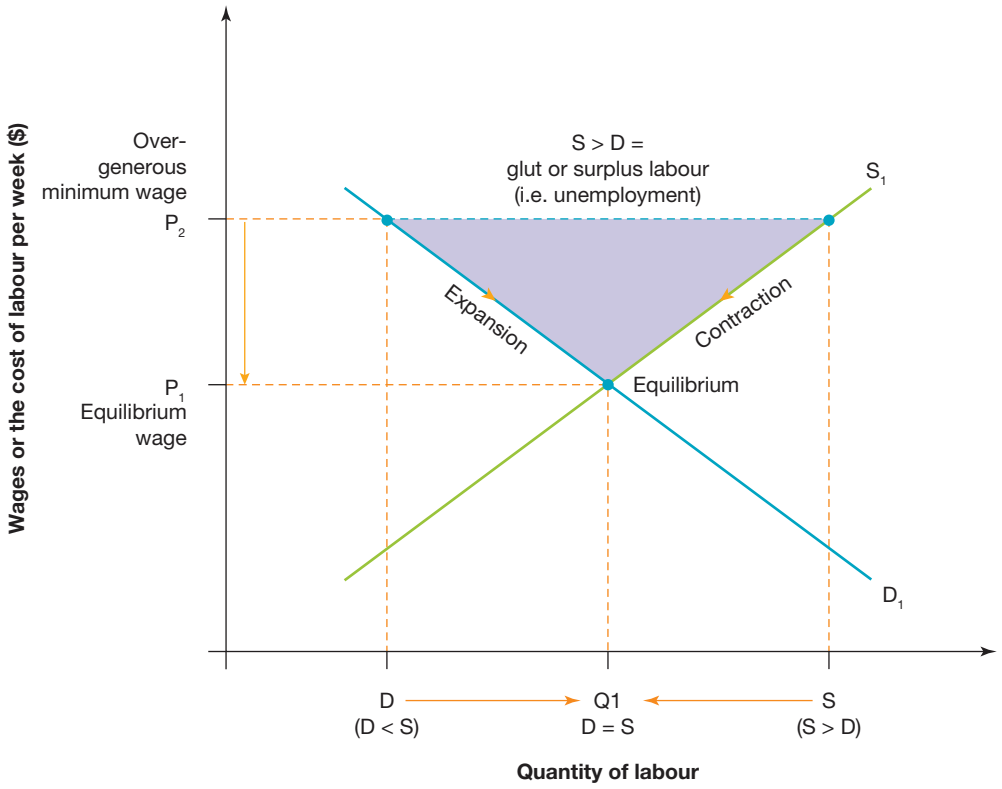
- provide a safety net wage for low-paid workers and reduce poverty
- avoid exploitation of employees by profit-seeking business owners keen to minimise their costs
- increase the reward or incentive for employment and participation in work, boosting efficiency in the use of resources
- improve equity or fairness in society by protecting and lifting the consumption levels or purchasing power of workers, and increasing the extent to which society's wants are satisfied
- reduce income inequality and poverty
- allow individuals to have frugal comfort and enjoy socially acceptable living standards.

On the other hand, despite good intentions, some economics commentators note that government wage regulation has unintentionally reduced *allocative efficiency* in resource allocation. They argue that there can be a *trade-off* between promoting greater *equity* on the one hand through an artificially high minimum wage and encouraging *efficiency* on the other. More specifically, some critics raise the following problems associated with setting an artificially high minimum wage:

- ***Slow the growth in labour productivity***: Setting artificially high minimum wages disconnects pay levels from the value of people's work, as set by market forces. This may act as a disincentive for improving labour productivity and discourages an efficient use of resources. In turn, this is likely to slow the growth in a nation's productive capacity and reduce the sustainable rate of economic growth.
- ***Increase our trade deficit***: Artificially high wages and low productivity make local firms uncompetitive against their overseas rivals and thereby add to an international trade deficit.
- ***Increase business closures and structural unemployment***: Setting artificially high wages can cause some local businesses to closure because they are less competitive. Some may relocate overseas. Locally, this causes higher levels of structural unemployment.
- ***Increase inequality in income distribution***: By increasing structural unemployment, the setting of artificially high minimum wages can in some ways, undermine equity in income distribution (especially in the long-term), hurting vulnerable members of society. In addition, inequality is worsened because excessively high minimum wages discourage employment, cause firms to reduce the number of hours that staff work and hence depress incomes and purchasing power. Furthermore, by increasing unemployment, they add to the number of people dependent on inadequate government welfare payments of perhaps $300–$350 per week (as opposed to around $1750 per week on average full-time weekly earnings). Clearly, lower incomes and purchasing power significantly reduce efficiency and society's general wellbeing.

Some of the unwanted outcomes of setting Australia's **minimum wage** can be illustrated in figure 1.29. Referring to this diagram, notice that normally the free market equilibrium wage or price would be at P_1 where the demand (D_1) and supply (S_1) of labour would be equal. However, when the minimum wage is set too high at P_2, well above the clearing wage or equilibrium, a market glut occurs where the supply of labour exceeds the demand for labour (see the shaded triangle). In other words, theoretically, the minimum wage causes structural unemployment as artificially high costs and hence lower profits cause business closures. With rising unemployment comes lower incomes, along with reduced living standards and general wellbeing.

FIGURE 1.29 Demand–supply diagram representing the labour market showing how Australia's minimum wage may contribute to unemployment, business closures, reduced competitiveness, and other unwanted outcomes.



What do recent international studies reveal about these *unintended effects* of governments raising minimum wages? Although the answer is not a simple one, there is some agreement that as long as the minimum wage is 'moderate' (as a percentage of average weekly wages), the adverse effects are likely to be relatively small in the short-term. However, if wages are set too high, experience from some countries shows that job losses are likely to be significant due to our reduced international competitiveness. Given that Australia has one of the highest minimum wages in the world, perhaps there is cause for real concern.

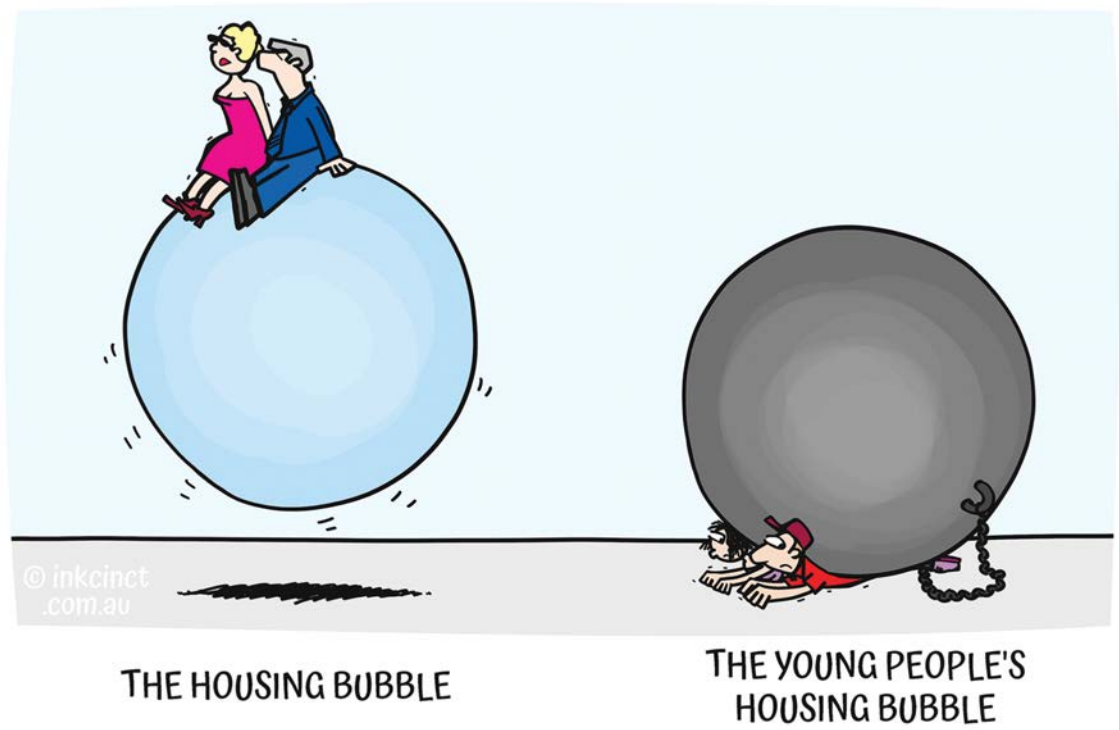
Additionally, in the long-term and for inexperienced unskilled workers in younger age groups where the demand for labour is fairly elastic or responsive, wage rises do appear to cause unemployment, reduce hours of employment and be generally detrimental. For example, some European studies showed that a 10 per cent rise in the government minimum wage unfortunately led to a decrease in youth employment by up to 4 per cent, along with a reduction in allocative efficiency in the use of resources.

1.10.2 Unintended consequences of the government's attempts to encourage home ownership and affordability as a possible failure

Part of the 'Australian dream' is to own a house. There are good reasons why many people aspire to home ownership. It is partly about financial, physical, and emotional security. It is also driven by having greater personal control over one's life. It sets foundations for social stability; helps to improve family, educational and health outcomes; grows the quality of Australia's human capital resources; and strengthens its economic performance. However, after very high levels of home ownership, the dream has become unattainable, especially for many young people:

- In 1968, 71 per cent of people owned their own home compared with just 66 per cent by January 2022. Today, Ireland's percentage is 77, Belgium's is 74 and the UK's is 70.
- Younger age groups have seen the biggest decline. In 1981, 60 per cent of 25–34-year-olds owned their home but nowadays, this has plummeted to less than 28 per cent.

While not the only cause of declining home ownership in Australia, certainly the main issue has been the rise in median house price, especially in capital cities. This has reduced affordability and priced many young, first-home buyers out of the property market. For example, in the space of just ten years to early 2022, average capital city house prices rose by around 85 per cent to an overall median price of $920 100 — with an increase of 122 per cent in Sydney to $1 207 200, and 86 per cent in Melbourne to $956 100. With slow rises in wages, this has made home ownership less affordable for most. For instance, it has been estimated that rapidly rising property prices mean that to save the normal 20 per cent deposit to qualify for a home loan, it now takes about 12 years, compared with just 7 years in the early 1990s. Prices are going up faster than people can save, forcing many to become renters rather than buyers, and abandoning the dream of home ownership.



The property price boom, especially in capital cities, has been driven by a range of non-price demand and supply factors:

- The strong demand side has been fuelled by several things:
  - A generally rapid population growth, typically around 1.5 per cent per year, reflects the natural population increase, but especially high levels of immigration — around 160 000 people per year — has also increased demand for property.
  - Better jobs and employment opportunities are to be found in the big cities where poor public transport systems have increased the demand for land closer to the city.
  - Record low interest rates on home loans or mortgages of 2–3 per cent have tempted borrowers.
  - Speculators have gained great advantage from the government's policy that allows negative gearing and a 50 per cent capital gains tax discount applying to the sale of property at a higher price than that paid at purchase.
  - Some other government home buying policies have driven up the demand for property relative to its supply (see shortly).



- On the other side of the market, supply has been limited by a range of factors:
  - There is a limited availability of new land close to cities where most people are employed.
  - Poor public transport to the city from outer urban areas limits the supply of suitable property for workers.
  - There are geographic restrictions to the supply of suitable land. Most capital cities have the ocean on one side and in some cases, mountains on the other.

Despite growing the wealth of a few people, strong demand combined with a limited supply in the property market, have driven up property prices and dramatically cut housing affordability.

In response to this problem, various Australian governments (as well as some state governments) have attempted to help make home ownership more affordable through various types of intervention in the property market. These have included low interest or subsidised home loans, home deposit grants and enabling the use of superannuation to help generate the required home deposit. Even so, despite good intentions, many believe that these types of government intervention in the property market represents an example of *market failure*, that hurts those people the policy is intended to help.

Recently till 2022, several schemes were used by the Coalition government that intended to help buyers into the property market:

- ***First Home Loan Deposit Scheme (FHLDS)*:** The **First Home Loan Deposit Scheme** commenced in January 2020. It was extended in the 2021 budget and expanded in the 2022 budget. These are the main features:
  - First home Australian buyers (must be owner occupiers not investors) can access the property market with as little as a 5 per cent deposit as they would not have to pay the hefty Lenders Mortgage Insurance. This would be guaranteed by the government to make up the total 20 per cent deposit requirement.
  - In 2022–23, the scheme was expanded with a higher limit of 35 000 buyers (up from 10 000 places previously). However, this represents less than about 15 per cent of those who would be considered eligible.
  - The scheme is means-tested. This is designed to exclude those buyers on relatively high incomes above $125 000 per year in the case of a single, or $200 000 combined income for a couple.

At the time of the policy release by the Coalition government, the then Labor opposition endorsed this measure to make home ownership more affordable.

- ***Family Home Guarantee scheme*:** In addition to the deposit guarantee scheme, in 2021 the Australian government commenced the *Family Home Guarantee*. It targeted single parents with dependent children so they could purchase an existing house or build a new home, having just saved a 2 per cent deposit (not the normal 20 per cent). The 2022 budget doubled the number of deposit guarantees to 5000 per year through to 2025.
- ***Regional Home Guarantee*:** In addition to the two previous guarantee schemes, the 2022 budget announced *Regional Home Guarantee*. This makes up to 10 000 places per year available for eligible first home buyers in regional areas of Australia.
- ***First Home Super Saver Scheme*:** From July 2022, this scheme makes it easier for allowed eligible home buyers to meet deposit requirements by allowing individuals to gain tax advantages by voluntarily saving up to $50 000 within their superannuation fund. Homebuyers are able to meet their home deposit requirements almost 30 per cent faster than using standard bank savings accounts.

One thing that these government policies had in common is that they all drive up the demand for housing, more than its supply. An *unintended consequence* of them is that they push up prices for aspiring home buyers and fuel the property boom, rather than bringing prices down so that housing is more affordable. This represents an instance of *government failure*.

Most recently in May 2022, the newly elected federal Labor Government announced some policy changes designed to make home ownership more affordable. While details are still limited, here are a few of the proposed features:

- ***Help to Buy scheme:*** The centrepiece of Labor's new 2022 housing policy to be introduced is the **Help to Buy** (i.e. shared equity) scheme. It will allow eligible low- and middle-income home buyers (singles with an income up to $90,000 and couples up to $120,000) who have managed to save a deposit of at least 2 per cent to qualify for a home loan in *partnership* with the Australian government that will have *equity* (i.e. part-ownership) in the property of up to 40 per cent of the purchase price for a new build, or 30 per cent for an existing home. It means that these buyers would have much smaller loans and mortgages with lower interest repayments. In addition, no rent or mortgage insurance will need to be paid, making further savings for buyers of around $30 000. When the house is eventually sold, the government would benefit from the likely capital gains by claiming back its equity share of the final selling price. Over time, this would generate extra income for the government.
- ***First Home Loan Deposit Scheme:*** There would be a continuation of the previous Coalition government's *First Home Loan Deposit Schemes* (see earlier).



This latest government proposal for intervention in the property market also looks quite appealing and well intentioned. Like many previous policies, it may help in a limited way to get some people into their own home. While time will tell whether this and other recent measures will stop the ongoing decline in property ownership, not everyone appears convinced of the policies' merits.

Many critics believe that these measures represent an example of *government failure*. That is, policy intervention in the operation of the market designed to lift home ownership and increase allocative efficiency, has reduced housing affordability, and not properly addressed the underlying causes.

The main problem of most recent housing policies is that they have largely failed, simply because they have driven up the demand for property more than they have increased its supply, by making it easier for buyers to meet the deposit requirements for a bank loan. Unintentionally, this has put even more upward pressure on house prices forcing first home buyers to take out larger mortgages than they otherwise would have to. This has reduced housing affordability. Furthermore, some commentators have pointed out that helping marginal borrowers to meet the initial deposit requirement is dangerous if interest rates rise (as seen recently in 2022). They also note that the policy is potentially risky in a market where high prices suddenly fall. Property owners with loans (including those as part of the new government's *Help to Buy* equity scheme) could find they have an asset that is worth less than what they paid. They could end up with negative equity and be unable to sell. In this case, they might be saddled with a heavy burden of debt.

Because of the uncertain impacts of recent policies, some have suggested that there are more effective ways to improve housing affordability and ownership. Most agree that there needs to be a greater focus on *growing the supply* of affordable property, rather than mainly boosting demand. This would help to *keep prices lower* and reduce the extent of *government failure* in the property market. Here, measures might include the following:

- *Tax reform* is needed to scale back negative gearing and the size of the capital gains tax discount that is offered. This would greatly slow the demand created by property speculators.
- Another possibility to increase allocative efficiency and reduce government failure, would be for the *public sector* to again start building more affordable *public housing* for those who can never save the required deposit. This would increase the supply of affordable housing relative to its demand and keep rental prices lower.
- One economist, Cameron Murray, came up with an idea called *HouseMate*. He suggested that the governments should become property developers at the cheaper end of the market. It could supply the land and organise the building of homes. Buyers could then purchase houses using cheap mortgages equal to the RBA's low interest rate plus 1 per cent. A similar scheme in Singapore now houses 4 out of 5 residents. It has increased home ownership among 25–34-year-olds from 60 to 90 per cent over the last four decades.
- Given that *immigration* usually accounts for around 60 per cent of all population growth, cutting the high intake target (currently around 160 000 per year) would significantly slow the demand for property and mean more affordable prices.
- Tightening *property ownership rules for overseas non-residents* (who recently accounted for nearly 4 per cent of all new home sales) as in some other countries, could also help to slow the demand for housing and improve affordability.

1.10.3 Unintended problems of allocating resources into subsidies for the coal and fossil fuel industry

A *subsidy* exists when the government provides producers of goods with a cash payment or other type of financial assistance like a tax concession. It is usually designed to increase production levels, encourage new industries to start up and old ones to restructure their operations more efficiently, generate jobs and overcome market failure associated with the underproduction of goods with social benefit.



In Australia, governments subsidise the coal and fossil fuel industry. While estimates of subsidies are contentious, The Australia Institute for instance, calculated that in 2021–22, fossil fuel mining companies received subsidies of over $11.6 billion incorporating a fuel tax credit scheme (worth over $8 billion per year), funding of R&D projects and the provision of infrastructure like water, power, roads and railways. This was an increase of $1.3 billion or over 12 per cent on the previous year — 56 times that spent in the budget for the National Recovery and Resilience Agency dealing with the effects of climate change.

The IMF's calculations put the figure much higher at around US$29 billion by including estimations of the social and environmental costs.

An older study released in September 2015 (*Assessing Thermal Coal Production Subsidies*, see http://www.carbontracker.org/report/coal-subsidies/) revealed the extent of the Australian government's assistance to the coal industry:

- Large domestic and multinational companies received government subsidies equal to around $1.8 billion each year.
- The coal subsidy amounted to about $5.20 for every tonne produced.

- Subsidies to the coal industry also come in the form of an excise tax exemption on the diesel fuel used to run mining equipment. This is estimated to be worth perhaps $2–3 billion each year.
- State and federal governments have partly funded the cost of building rail, port, water and other infrastructure, for some coal projects.
- There are accelerated depreciation costs for mining equipment used to offset the taxable profits of companies.
- Miners can instantly write off the costs of exploration and prospecting against their tax liabilities.
- There are apparently accumulated and unfunded rehabilitation costs to restore the mining site at the end of mining operations that could total a whopping $18 billion (according to independent analysis by Lachlan Barker in May 2015), far in excess of the upfront bonds paid by companies.

Whatever the true value of subsidies, this financial assistance makes the coal and fossil fuel industry far more profitable for both locally owned and transnational foreign companies. More specifically, in the case of the now operational Adani Carmichael project, a 2019 report by the Institute for Energy Economics and Financial Analysis states that over a 30-year period, the total cost of capital and operating subsidies will amount to around $4.419 billion to cover the seven-year royalty holiday, a road, fuel tax exemption and other areas (IEEFA see htt ps://ieefa.org/ieefa-australia-australian-taxpayers-funding-subsidies-worth-billions-for-adanis-carmichael-thermal-coal-mine). From a company's point of view, paying subsidies to coal miners makes aggregate supply conditions in the industry even more favourable and profitable. This helps to create more jobs, adds to Australia's GDP, grows exports and expands incomes and material living standards. Additionally, some politicians have argued that growing the coal industry is not only good for Australia, it is good for the world's poor by allowing them as consumers to have improved access to cheap energy and power to fuel economic and employment growth.

Despite some good intentions and possible benefits of government intervention in the coal market, it can be argued that the policy is a strong example of *government failure* where there is an unintentional net loss of wellbeing, causing overall living standards to be lower both now and into the future. In particular, *two* key points can be made:

- *Increased negative externalities:* Government coal subsidies effectively mean that taxpayer money is being used to encourage the production of dirty, high carbon-intensive fossil fuels, the burning of which leads to severe *negative externalities*. These problems include increased CO_2 (where 46 per cent of global emissions are generated by coal), global warming, severe weather events and climate change affecting the wellbeing of Australians and other members of the international community. Especially in the absence of an effective price on carbon pollution, subsidies to this industry further weaken and distort the price signals in the coal market by encouraging the overproduction and consumption of coal. This not only undermines allocative efficiency, however: it also reduces intertemporal efficiency by changing the balance between satisfying immediate wants, as opposed to those of future generations.
- *Massive opportunity costs:* There are also massive *opportunity costs* of paying coal subsidies out of government budgets. Indeed, the reduction of coal subsidies would release billions of dollars in extra resources that could be used to help the needy here and abroad, improve welfare, and strengthen our health and education systems that are starved for funds. These resources could even be reallocated into expanding our renewable energy sector. How much more might these latter types of outlays improve society's general wellbeing, than subsidies paid to coal mining companies? In a study of budget subsidies for the mining industry (not just for coal but also other mining operations) by state governments over a six-year period that totalled $18 billion, the Australian Institute calculated some of the possible opportunity costs for taxpayers. These are shown in figure 1.30. Here, government intervention using coal subsidies, reduces allocative efficiency. It diverts resources away from other uses that potentially could have increased satisfaction and social wellbeing.

FIGURE 1.30 Some potential opportunity costs of government subsidies to Australia's mining industry.



Source: © The Australian Institute.

Resources

Weblinks Reasons against government intervention
Market failure and government intervention

1.10 Activities

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1.10 Quick quiz | **1.10 Exercise**

1.10 Exercise

1. **Define** what is meant by *government failure*. Give one example. **(2 marks)**
2. **Case Study 1 — The government's payment of coal subsidies:**
   a. **Outline** the nature of the Australian government's payment of subsidies to the coal industry. **(2 marks)**
   b. Illustrate these effects on a fully labelled demand–supply diagram representing the market for coal. Referring to this diagram, **describe** the intended effects of the coal subsidies. **(4 marks)**
   c. Referring to the demand–supply diagram used in the previous question, **explain** how coal subsidies appear to represent an instance of government failure. **(4 marks)**
3. **Case Study 2 — Government schemes to make housing more affordable**
   a. **Describe** the main features of recent schemes used by the Australian government that were intended to make the purchase of a house more affordable. **(4 marks)**
   b. **Explain** the unintended effects of government schemes to make home buying more affordable and how this may be regarded as an example of government failure. **(4 marks)**
4. **Case study 3 — The government's setting of the minimum wage**
   a. **Outline** the intended effects of the government setting the minimum wage in Australia's labour market. **(2 marks)**
   b. Using a fully labelled demand–supply diagram to represent the labour market, **explain** why some economists believe that setting *minimum wages* and conditions in Australia's labour market represents an instance of government failure. **(4 marks)**

Solutions and sample responses are available online.

1.11 Review

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1.11.1 Summary

What is economics?

- *Economics* is the study of how to use limited resources efficiently to maximise the general satisfaction of society's material needs and wants, and their overall living standards.
- Economic problems can be studied from both a *microeconomic* (a single market or firm) and a *macroeconomic* (spending, GDP, employment, and inflation rate for the whole economy) perspective.

Relative scarcity

- *Relative scarcity* is called the basic economic problem. It means that the quantity and quality of natural, labour and capital resources is insufficient to produce all the goods and services needed to satisfy the unlimited collective wants of households, businesses and governments.
- Relative scarcity means that our resources should be used efficiently and that choices will have to be made as to which wants are satisfied.

Opportunity costs

- Given the problem of scarcity, society is forced to make *choices* or *decisions* about how to use or allocate resources in ways that best satisfy society's needs and wants. However, all choices involve *opportunity costs* as production is forgone in one area to release resources for the next best alternative use.
- Economists use a *production possibility diagram (PPD)* to help illustrate the concept of opportunity costs associated with various decisions and developments.
- On this diagram, the *production possibility frontier (PPF)* shows the physical limits to a nation's production of goods and services when all resources are fully and most efficiently used. For a nation on its PPF, a decision to increase production of, say, goods means foregoing production of some services.
- Any point chosen on the PPF could potentially, represent allocative efficiency where society's general satisfaction of wants is maximised. In addition, there are other types of efficiency like dynamic, productive, technical and intertemporal efficiency, that can help to increase allocative efficiency over time.
- The PPD can also be used to illustrate the effects of changes in the availability of resources on a nation's productive capacity or potential output.

Scarcity necessitates answering three economic questions

- Nations rely on an *economic system* for making three key *economic* choices about how limited resources should be used or allocated. This involves deciding:
  - 'what and how much to produce'
  - 'how to produce'
  - 'for whom to produce'.
- Most countries including Australia make these key economic decisions about allocating limited resources between competing uses, through the operation of the *market system.* Understanding how the market works to allocate scarce resources involves the study of *microeconomics.*

The role of markets and relative prices in allocating resources

- The *market system* (also called the *price system* or *market mechanism*) is a *decision-making institution* at the centre of most economies found around the world.

- The market involves buyers (demanders) and sellers (suppliers) who negotiate relative prices for goods and services.
- Not all markets have the same features, characteristics or structure. While *market structures* vary and might include perfectly competitive, monopolistic competition, oligopoly and perfect monopoly type markets, this course mainly focuses on perfectly competitive markets
- *Perfectly competitive markets*: Typically these markets can only exist if they meet certain *pre-conditions* such as the following:
  - strong price competition between many rival sellers
  - the absence of market power to set prices by an individual seller (price takers)
  - ease of entry (low barriers to entry) and exit from the market — resource mobility
  - perfect knowledge of the market by buyers and sellers (allows for rational decisions to be made)
  - the absence of product differentiation (a homogeneous or identical product that is an exact substitute for another)
  - the existence of consumer sovereignty.
- The *competitive market system* involves interaction between two sets of forces in each market: the forces of *demand* (by buyers or consumers) on the one hand, and the forces of *supply* (by sellers or producers) on the other. Together, these groups negotiate the *relative price* (the price level of one good or service against that for another) or each good or service. Over time, the relative price of one good or service changes against that for another, thereby affecting the *relative profitability* of each good or service. Profit-seeking owners of resources carefully watch these price signals and use them to make decisions about how scarce resources should be allocated between competing uses, usually without the need for significant government regulation.
- In a perfectly competitive market, a *rise* in the final price for a particular good or service (relative to the prices of other goods and services) may signal that there has been underproduction, where firms need to allocate more resources and lift output volumes of that given good or service to maximise profits. By contrast, a *fall* in the relative price of a good or service indicates that there has been overproduction where owners of resources need to cut output and move resources into other more wanted uses in order to maximise profits.
- *Demand–supply diagrams* illustrate a market and the operation of the forces of demand and supply in setting an equilibrium market price and quantity traded.
  - *The law of demand* states that the quantity of a good purchased or demanded varies inversely with a change in price, giving the demand curve or line a negative slope. So a rise in price causes demand to contract, while a fall in price causes demand to expand. Here we refer to *movements along* the demand line. Economists have proposed theories to explain the law of demand, including the income and substitution effects. In addition, changes in *non-price demand conditions* (e.g. changes in disposable income, the price of substitutes, fashions) can cause buyers to be prepared to purchase a greater or smaller quantity of a good at a given price, thereby shifting the position of the whole demand line horizontally to the right or left of the original line, altering the market equilibrium price and quantity traded, profitability and the allocation of resources.
  - *The law of supply* states that the quantity of a good produced or supplied varies directly with a change in price. So a rise in price causes supply to expand, while a fall in price causes supply to contract. Again, economists have proposed theories to explain the law of supply, focusing on the profit motive. Here we refer to *movements along* the supply line. In addition, changes in *non-price supply conditions* (e.g. changes in production costs, climatic conditions) can cause sellers to be prepared to produce a greater or smaller quantity of a good at a given price, thereby shifting the position of the whole supply line to the right or left of the original line, altering the market equilibrium price and quantity, profitability and the allocation of resources.
- *Elasticity* is a concept that describes the relative *responsiveness* or sensitivity (whether there is a large or small contraction or expansion) of demand and supply following price changes.
  - Where the quantity demanded or supplied expands or contracts greatly (i.e. responsive), following a change in price, it is said to be relatively *elastic*.

- Where the quantity demanded or supplied expands or contracts little (i.e. unresponsive), following a change in price, it is said to be relatively *inelastic*.
- The *elasticity of demand* is affected by factors such as the availability of substitutes and degree of necessity.
- The *elasticity of supply* can be affected by factors like storability and level of spare capacity.

Market failure

- The market fails when resources are allocated inefficiently to produce particular types of goods and services that fail to maximise or best satisfy society's wants, general wellbeing and overall living standards.
- There are at least *five* situations where *market failure* can occur:
  - positive and negative *externalities*, arising out of the production and consumption of goods and services
  - the provision by the private sector of socially desirable *public goods* like fire protection, defence and police that are non-excludable and non-rivalrous
  - problems in the use of *common access resources* that are non-excludable and rivalrous
  - *asymmetric information*
  - the *abuse of market power* or weak competition.
- Market failure lowers efficiency in resource allocation and general living standards.
- Governments try to *reduce* market failure and raise society's general living standards and wellbeing by intervention and regulation of the price or market system using, for example:
  - using various types of *indirect tax* that is levied on specific goods to make them dearer and less attractive
  - changing the types of budget outlays including *subsidies* and industry assistance to incentivise production or consumption
  - undertaking the *direct production* of goods and services by the public sector because it is unprofitable for the private sector to sell the good or service cheaply so all can have access
  - improving society's knowledge through informative or *educational advertising* campaigns, and enhancing communication systems
  - making new *laws* and passing legislation to specify illegal behaviour.

Government failure

Government failure occurs when intervention or regulation of a market results in unintentional and unwanted outcomes that diminish efficiency in resource allocation and society's general wellbeing. Some possible examples of government failure might include:

- Setting *artificially high minimum wages* and working conditions to help low-income workers enjoy better purchasing power and living standards, may unintentionally reduce allocative efficiency, make local firms less internationally competitive, and could lead to business closures, structural unemployment, welfare dependence and higher taxes to support welfare.
- The Australian government has attempted to use a number of schemes designed to reverse the downward trend in home ownership and housing affordability. In the last few years, these policies have included the *First Home Loan Deposit Scheme* and other measures where the government goes guarantor for those unable to save the normal 20 per cent deposit for a home loan. There has also been the *First Home Super Saver Scheme* that allows individuals to gain tax advantages by saving within their superannuation fund. The incoming Labor government in May 2022 announced its new *Help to Buy* scheme involving the government taking on shared equity where they are a co-owner. For critics, these measures to increase home ownership drive up demand relative to supply, causing prices to rise. This makes home ownership less affordable. Instead, measures need to focus more on growing supply.
- The payment of huge *government subsidies to the coal mining industry* are designed to lift production, create jobs, improve competitiveness, and grow our export income. However, unintentionally, this has encouraged an industry that has massive environmental external costs that contribute to climate change and undermine society's general wellbeing. Here, both allocative and intertemporal efficiency may be reduced. Subsidies also involve significant opportunity costs where the same value of resources going into social programs, could have added far more to efficiency, satisfaction and society's overall wellbeing.

1.11.2 Key terms

Allocative efficiency is where resources are used in ways that maximise society's satisfaction of needs and wants and general wellbeing. Resources are diverted to where they are most wanted. Referring to the PPD, this will be a point chosen by society located somewhere on the PPF.
Asymmetric information exists in a market where buyers lack complete and accurate information required to make rational decisions about how to use their resources. There is an imbalance in knowledge where sellers often have more information than buyers. There is an imbalance in knowledge where sellers often have more information than buyers.
Budget A document that sets out the government's planned income and expenses for the next financial year. Spending on public goods and services in the budget mostly comes out of government taxes.
Capital resources are physical plant and equipment used by firms to help make other goods and services.
Common access resources include the environmental natural resources such as air, minerals, oil, forests that we all depend on for survival. They are typically seen as free and *non-excludable* but yet are *rivalrous,* so over time, their quality tends to deteriorate, reducing society's wellbeing.
Conditions of demand 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. They shift the position of the whole demand curve horizontally to the left or right of the original curve. Examples of these factors include changes in fashions and tastes, disposable income and the price of substitutes.
Conditions of supply 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. They shift the position of the whole supply curve horizontally to the left or right of the original curve. Examples of these factors include changes in growing conditions for farmers, production costs and government tax rates.
Consumer sovereignty exists when consumers of goods and services, not governments, dictate how resources will be used through their purchases.
Demand refers to the quantity of a good or service that consumers are willing to purchase at any given price. This can be shown by a demand curve or line.
Demand–supply diagrams illustrate the behaviour of buyers and sellers of a particular good or service in a market, and how prices are determined at equilibrium.
Economic agents are the decision makers in the economy and include consumers or households, businesses or producers, governments, pressure groups including unions and the media.
Economic efficiency exists when there is maximum output gained from a given volume of productive inputs, thereby affecting productive capacity and helping to maximise society's general wellbeing and material living standards. It can mean allocative, dynamic, productive and intertemporal efficiency.
Economic system or an economy is an institution designed to help organise the production and distribution of the nation's goods, services and incomes.
Economics examines choices or decisions whereby limited resources are used to produce goods and services to help satisfy needs and wants, and improve living standards.
Elasticity measures the responsiveness or sensitivity of the quantity of a good or service demanded or supplied when there is a change in its price.
Equilibrium is the natural situation or point 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 neither a market glut nor market shortage.
Externalities represent a market failure and are the costs (called negative externalities) or benefits (called positive externalities) that arise from the economic activities of firms (producers) and households (consumers) that are passed on to third parties not directly involved in the original activity. Positive externalities result in the under-production of socially beneficial goods, while negative externalities result in the over-production of socially undesirable goods, in both cases, reducing society's general wellbeing.
First Home Loan Deposit Scheme is designed to help increase home ownership. Here, the government goes guarantor for home buyers who managed to save as little as 5 per cent of the purchase price of a house (rather than the normal 20 per cent required for a bank loan).
Free rider problem occurs when a service is provided but payment is difficult or almost impossible to extract from the users who benefit from it (e.g. national defence, police and street lighting). Users are non-excludable, normally making the production of such things unprofitable for the private sector.
Government failure occurs when the government intervenes in a market using various policies that are intended to improve efficiency in resource allocation and living standards, but which unintentionally, lowers efficiency, and the general satisfaction of society's wants and wellbeing. Possible examples could include subsidising the coal

industry, setting the minimum wage and perhaps government schemes to increase housing affordability and ownership.

Help to Buy scheme announced in 2022 by the new federal Labor government is designed to help increase home ownership by the government having 30 or 40 per cent ownership or equity in homes for low and middle income earners, making it cheaper for eligible first home buyers.

Labour resources used in production are physical power and mental talents provided by employees.

Law of demand states that the quantity of a good or service demanded varies inversely to its price. As the price rises, demand will *contract along* the demand curve or line, while a fall in price will cause demand to *expand along* the demand curve or line.

Law of supply states that the quantity of a good or service supplied varies directly with price. As the price rises, supply will *expand along* the supply curve or line, while a fall in price will cause supply to *contract along* the supply curve or line.

Macroeconomics is a branch of economics that examines the workings and problems of the economy as a whole (i.e. consisting of the sum of all markets and industries). It focuses on aggregate demand, GDP, inflation and unemployment nationally.

Market a decision-making institution where buyers (demanders) and sellers (suppliers) negotiate the relative price for each good or service.

Market capitalist economy an economic system that relies mostly on the market or price system to make key decisions about what to produce, how to produce and for whom to produce. Resources are generally privately owned.

Market failure occurs when the price system allocates resources inefficiently, reducing the overall satisfaction of society's wants, wellbeing and living standards. This can occur when there is weak competition, externalities, public goods, common access resources and asymmetric information. Governments may attempt to reduce market failure perhaps by imposing indirect taxes on socially undesirable goods, paying subsidies to promote socially beneficial goods, using informative advertising to educate economic agents, directly providing beneficial goods and services, and passing laws that force or prohibit certain behaviour.

Market glut occurs where the quantity of a good or service supplied at a given price exceeds the quantity demanded at that price, causing the equilibrium market price to fall.

Market shortage occurs where the quantity of a good or service demanded at a given price exceeds the quantity supplied at that price, causing the equilibrium market price to rise.

Market structure refers to the type and level of competition that exists in various markets, such as perfect monopoly or perfect competition.

Microeconomics is a branch of economics that examines individual decision making by firms and households, and how this impacts on a particular market for a single good or service.

Minimum wage set by the Fair Work Commission at a level above the equilibrium wage, and is the lowest wage that an employee can be legally paid. Some critics see this as an example of government failure because it makes local firms less internationally competitive, and leads to business closure and higher structural unemployment.

Monopolistic competition exists when there are quite a few rival producers of a good or service, selling a partly differentiated product that gives them some market power.

Natural resources are the factors of production found in nature, such as minerals, rainfall and the environment.

Oligopoly exists where a few large firms control the output of an industry or product for which there is no close substitute.

Opportunity cost is equal to the benefit forgone by a decision not to direct resources into the next best alternative use.

Perfect or pure competition exists when there are many buyers and rival sellers producing an identical product and competing strongly in a market. Perfect competition implies that firms are price takers, potential competitors can easily enter and exit the market, there is perfect knowledge of relevant conditions in the market allowing buyers and sellers to make rational decisions, and so on.

Perfect or pure monopoly exists when a single firm controls the output of a particular market. That firm is a price maker selling a unique product for which there is no close substitute, and competition is weak.

Price is the purchase cost or amount paid in exchange for a good or service.

Price elasticity of demand measures the responsiveness or sensitivity of the quantity of a product demanded given a change in its price.

Price elasticity of supply measures the responsiveness or sensitivity of the quantity of a product supplied given a change in its price.

Production possibility diagrams are used to illustrate the production choices available to society in the ways that resources may be used or allocated. They also help illustrate the concepts of opportunity cost and productive capacity.
Productive capacity represents the physical limit to a nation's production level, when all resources are used as efficiently as possible to gain the highest output. It is represented by the production possibility frontier on a production possibility diagram.
Public goods such as street lighting, national defence, the police force, national parks, flood and fire mitigation works, along with free online education and knowledge are seen as socially beneficial, merit-type goods and services that are non-excludable and non-rivalrous in nature. They are often associated with the *free rider* problem. Given that individuals who use these goods and do not pay for them are non-excludable, this means lower profits and hence, if left to the private sector to provide, they would normally be under-produced, reducing efficiency in resource allocation and society's general wellbeing.
Relative prices describe the price level of one good (such as wheat) or service (such as health) compared with the price level of another good (such as wool) or service (such as education). Changes in relative prices (price signals) normally affect the relative profitability of different types of goods and services, and hence help dictate how scarce resources are used or allocated.
Relative profits describe the level or rate of profit gained from producing one type of good or service, compared with the profit gained from producing an alternative good or service. Relative profits closely dictate how resources are allocated. Changes in the relative profit of producing a good or service reflects changes in relative prices.
Relative scarcity is the basic economic problem. It exists because society's wants are virtually unlimited yet the productive resources available to satisfy them are limited. This necessitates choices about which wants will be satisfied first, resulting in opportunity costs.
Resource allocation relates to decisions about which types of goods and services will be produced and which wants will be satisfied. This may be decided by either the market system or by government economic planning.
Resources are productive inputs and include natural, labour and physical capital used by businesses to make other goods and services.
Subsidies for the coal industry are government cash payments or tax concessions designed to make supply conditions more favourable for producers. However, despite some positive economic effects, unintentionally they add to CO_2 emissions and global warming. This undermines the general wellbeing of current and future generations and is an example of government failure.
Supply refers to the quantity of a particular good or service that sellers are willing to make available at any given price. This can be shown by a supply curve or line.
Theories of the law of demand seek to explain why buyer demand expands or contracts as the price changes. Two theories explaining the behaviour of consumers are the income and substitution effects.
Theories of the law of supply seek to explain why supply expands or contracts as the price changes. The profit motive is one of these theories.

on Resources

Digital documents
Topic summary (doc-34673)
Key terms glossary (doc-34511)
Crossword (doc-31489)
Word search (doc-31490)
Match-up definitions (doc-31491)

1.11.3 Practice school-assessed coursework

OUTCOME 1

Analyse how markets operate to allocate resources and evaluate the role of markets and government intervention in achieving efficient outcomes

TASK — A FOLIO OF APPLIED ECONOMICS EXERCISES

Time allowed: 60 minutes

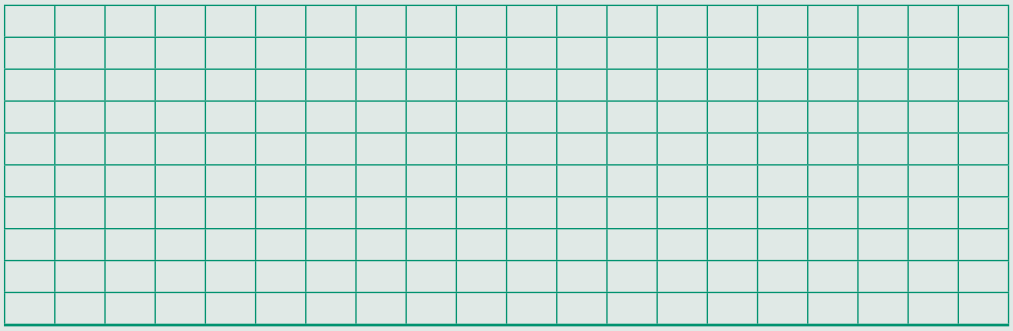
Marks allocated: 44 marks (The marks for each question are indicated at the end of each question.)

Conditions: Closed book (no notes or textbooks may be used when completing this task.)

1. **a. Explain** what is meant by an efficient allocation of Australia's resources, outlining *two* important effects of increased levels of economic *efficiency.* **(3 marks)**
   b. Distinguish between the terms, allocative efficiency and technical efficiency. **(2 marks)**
2. **Identify** and **outline** *three* important *differences* between a *perfectly competitive* market structure and a *monopolistic competitive* market structure. **(3 marks)**
3. 'Australia has a *market* or *price system* that helps to allocate most resources between competing uses. In 2021–22, the prices for coal, oil and property went up faster than some other prices like that for iron ore'. Referring to these examples, clearly **explain** how the change in *relative prices* in these *markets* is likely, in theory, to alter the allocation of our resources between competing uses. **(6 marks)**
4. Study the following demand and supply schedule for avocados shown in the table below.

Price per avocado ($)	Demand curve 1 — D_1 (quantity of avocados, thousands)	Supply curve 1 — S_1 (quantity of avocados, thousands)	Supply curve 2 — S_2 (quantity of avocados, thousands)
2	200	40	20
4	160	80	40
6	120	120	60
8	80	160	80
10	40	200	100

a. Use the graph grid below and the hypothetical data about the avocado market to **construct** a fully labelled and accurate demand and supply diagram. **(4 marks)**



b. On the diagram you have drawn, **identify** and **label** the following:
   i. the initial or original market equilibrium price (P_1) and equilibrium quantity (Q_1) traded for avocados **(1 mark)**
   ii. the new market equilibrium price (P_2) and quantity traded Q_2) for avocados. **(1 mark)**

c. Describe the change in the supply of avocados (a move from S_1 to S_2), outlining *two* non-price microeconomic factors that might have led to the change in the *supply* of avocados. **(2 marks)**

d. **Explain** the *process* or steps whereby the market for avocados will move from the *initial equilibrium* (E_1) to the *new equilibrium* (E_2) following the change in supply (from S_1 to S_2). **(3 marks)**

e. If the supply of avocados was *price inelastic*, **explain** what this means. **Identify** and **outline** *two* possible reasons for this. **(2 marks)**

5. a. Carefully **define** what is meant by the term *market failure.* **(1 mark)**

b. Select *two* situations from those listed below and then **identify** and **outline** the most likely type of *market failure* involved. Please ensure you select two *different* types of market failure. **(3 marks)**

- **i.** A person with contagious whooping cough pays $80 to see a doctor and have a vaccination.
- **ii.** Toxic waste is emptied down the sink.
- **iii.** A mining company extracts and sells brown coal.
- **iv.** You get driven to school rather than walking, even though it's only 900 metres away.
- **v.** Your neighbours throw a wild party that rages for days.
- **vi.** A director of a tech company, knowing that the company is about to fail, sells her shares before the announcement is made to the public.

c. As areas of market failure, **distinguish** between merit type or *public goods* and *common access resources*. **(4 marks)**

d. **Suggest** *three* important *methods* the government could use to help reduce *market failure* involving *negative externalities* associated with *pollution*. **(3 marks)**

e. **Define** the term, *government failure.* **(1 mark)**

f. Select *one* contemporary example of government failure and **discuss** the intended and unintended impacts of the Australian government's intervention in the market on efficiency in the allocation of resources. **(5 marks)**

- **i.** Subsidies paid to the coal industry
- **ii.** Setting minimum wages
- **iii.** Introducing the carbon tax on emissions.

on Resources

Digital document Topic 1 Practice school-assessed coursework (doc-38082)

1.11 Exam questions

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Section A — Multiple choice questions

All correct answers are worth 1 mark each; an incorrect answer is worth 0.

Question 1

Source: VCE 2021 Economics Exam, Section A, Q2 © VCAA

Which of the following would most likely be the effect on the fruit market of a shortage of fruit pickers during a harvesting period?

A. a decrease in supply to the market and higher prices
B. a decrease in demand in the market and lower prices
C. an increase in supply to the market and lower prices
D. an increase in demand in the market and higher prices.

Question 2

Source: VCE 2021 Economics Exam, Section A, Q3 © VCAA

Which one of the following is not likely to contribute to a rise in house prices?

A. lowering of interest rates
B. easing restrictions on lending
C. government spending on new public housing
D. removal of border restrictions, allowing more immigration.

Question 3

Source: VCE 2021 Economics Exam, Section A, Q5 © VCAA

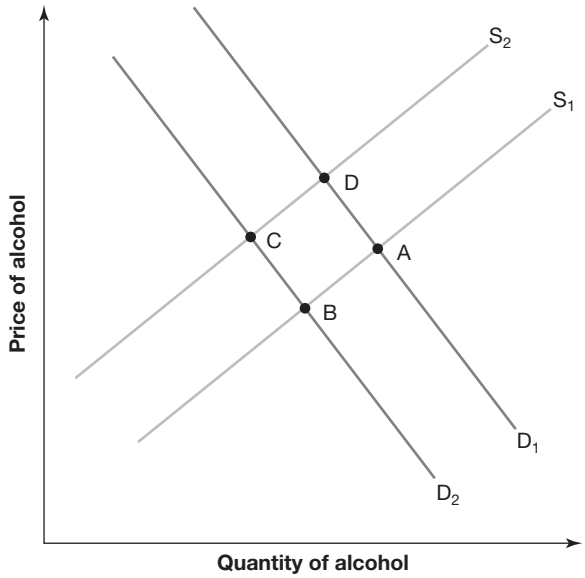
The opportunity cost of building a new road network could be

A. increased noise pollution.
B. a reduction in public transport usage.
C. the inability to adequately fund education.
D. the road levy charged to all users of the road.

Question 4

Source: VCE 2021 Economics Exam, Section A, Q14 © VCAA

The diagram below shows the market for alcohol.



A successful advertising campaign designed to inform the public of the dangers of excessive alcohol consumption would result in a change in the equilibrium position from

A. C to B.
B. A to D.
C. C to D.
D. A to B.

Question 5

Source: VCE 2021 Economics Exam, Section A, Q15 © VCAA

Which one of the following products would have a vertical supply curve?

A. apples
B. haircuts
C. streaming services
D. paintings by an artist who is now dead.

Question 6

Source: VCE 2020 Economics Exam, Section A, Q3 © VCAA

Which one of the following best describes the characteristics of a public good?

A. excludable and rivalrous
B. excludable and non-rivalrous
C. non-excludable and rivalrous
D. non-excludable and non-rivalrous.

Question 7

Source: VCE 2020 Economics Exam, Section A, Q10 © VCAA

A fall in the equilibrium price but no change in equilibrium quantity could only occur from which one of the following combinations?

A. a decrease in demand and an increase in supply
B. an increase in demand and a decrease in supply
C. a decrease in both demand and supply
D. an increase in both demand and supply.

Question 8

Source: VCE 2019 Economics Exam, Section A, Q2 © VCAA

Daphne can make either three dresses or nine shirts per hour. For Daphne, the opportunity cost of making an extra dress is

A. one-third of a shirt.
B. one-third of a dress.
C. three shirts.
D. nine dresses.

Question 9

Source: VCE 2019 Economics Exam, Section A, Q9 © VCAA

If a severe drought affected this year's wheat harvest, what would be the effect on the equilibrium price and equilibrium quantity of wheat?

A. The equilibrium price and equilibrium quantity both decrease.
B. The equilibrium price and equilibrium quantity both increase.
C. The equilibrium price decreases and the equilibrium quantity increases.
D. The equilibrium price increases and the equilibrium quantity decreases.

Question 10

Source: VCE 2018 Economics Exam, Section A, Q11 © VCAA

Which one of the following is not a feature of a perfectly competitive market?

A. Firms have ease of entry into and exit from the market.
B. Products sold in the market are homogenous.
C. Consumer sovereignty exists.
D. Resources are not mobile.

Question 11

Source: VCE 2017 Economics Exam, Section A, Q4 © VCAA

What would be the effect on the market for Good X if there were a rise in the price of a substitute good?

A. The demand curve would shift left and the equilibrium price of Good X would decrease.
B. The supply curve would shift left and the equilibrium price of Good X would increase.
C. The demand curve would shift right and the equilibrium price of Good X would increase.
D. The supply curve would shift right and the equilibrium price of Good X would decrease.

Question 12

Source: VCE 2017 Economics Exam, Section A, Q10 © VCAA

The quantity demanded for a product increases by a higher percentage than the decrease in the price of that product. What is this known as?

A. demand elasticity
B. demand inelasticity
C. supply elasticity
D. supply inelasticity.

Question 13

Source: VCE 2017 Economics Exam, Section A, Q11 © VCAA

What name is given to the type of efficiency where resources are reallocated to increase choice and meet the changing tastes and needs of consumers?

A. dynamic efficiency
B. allocative efficiency
C. productive efficiency
D. intertemporal efficiency.

Question 14

At a particular point in time, the quantity of resources available for national production is

A. fixed.
B. infinite.
C. sufficient to meet the wants of society.
D. mostly made available free of charge.

Question 15

You are considering three possible ways of using two hours of leisure time

- going surfing, which you value at $12
- watching a movie, which you value at $2
- minding the neighbour's children, which is valued at $20.

You decide to mind the neighbour's children. The opportunity cost is therefore

A. $2.
B. $12.
C. $14.
D. $20.

Question 16

In competitive market economies, businesses wish to sell their products at high prices, while consumers wish to purchase goods at low prices. This conflict of interest is generally

A. solved by governments imposing regulations.
B. solved by reaching a compromise price through the competitive operation of market forces.
C. left unresolved.
D. solved by businesses indulging in collusive pricing and by government rationing.

Question 17

If a competitive market existed for vegetables, the price may fall as a result of

A. a poor growing season adversely affecting producers.
B. the development and use of new higher yielding types of seed.
C. a switch by consumers from meat to a vegetarian diet.
D. lower labour productivity by vegetable growers.

Question 18

In Australia, the government modifies the allocation of resources that otherwise would occur in a market economy to help correct market failures. Which of the following policies could actually operate to reallocate resources?

i. spending by government departments in providing public goods including community services and social infrastructure
ii. legislation that limits the production or consumption of various goods and services and forces the consumption of others
iii. a system where different indirect tax rates apply on different goods and services
iv. the fixing of minimum wages
v. the payment of subsidies and the provision of tax concessions.

A. Policies (ii) and (iii) only
B. Policies (ii) and (iv) only
C. Policies (i), (ii), (iii) and (v) only
D. All of the possible policies listed above.

Question 19

Butter and margarine are regarded by many consumers as very close substitutes. Given this, a rise in the price of butter in a free or competitive market is likely to result in

A. an increase in the demand for margarine.
B. a decrease in the supply of margarine.
C. a fall in the price of margarine.
D. no change in the demand or price of margarine since the two markets are unrelated.

Question 20

The Australian government sets a floor price on labour by imposing minimum wages. If this minimum wage is fixed above the equilibrium that would otherwise occur in a competitive or deregulated labour market

A. there will be equilibrium in the market.
B. there will be a shortage of labour.
C. there will be a glut or unemployment, perhaps leading to poverty.
D. all workers will be better off financially.

Question 21

Capital or investment goods can best be described as

A. plant and equipment used by producers to help make other goods and services and to improve the efficiency of labour and natural resources.
B. money that is available for capital formation.
C. the purchase of shares on the stock market.
D. equipment provided only by the government to help make collective services available to the public.

Question 22

Technical efficiency would probably not be improved if

A. winemakers used new equipment for grape picking.
B. government funding of training along with R&D by the CSIRO and other agencies was slowed.
C. there was a reduction in water used in rice growing through the use of new drought-resistant strains of seed.
D. the rollout of the National Broadband Network (NBN) was accelerated.

Question 23

Concerning the features of public and private goods, which of the following is most correct?

A. Private goods are non-rival in nature.
B. Public goods are normally non-excludable.
C. Public goods are normally both non-rival and non-excludable.
D. Private goods are normally provided through the federal budget.

on Resources

Digital documents Multiple choice answer grid (doc-38459)
Multiple choice answers (doc-38460)

Section B — Extended response questions

Question 1 (13 marks)

Source: VCE 2021 Economics, Section B, Q3 © VCAA

1. In the period 1961–2017, the average annual growth rate of total food fish consumption increased at 3.1 per cent, outpacing annual population growth rate (1.6 per cent).
2. The [percentage] of fish stocks that are within biologically sustainable levels decreased from 90 percent in 1974 to 65.8 percent in 2017.

Source: Food and Agriculture Organization of the United Nations (FAO), *The State of World Fisheries and Aquaculture: Sustainability in Action*. Rome, 2020, pp. 13 (quote 2) and 15 (quote 1).

a. **Outline** one demand factor **or** one supply factor that might explain the increase in total fish consumption over the stated period. **(2 marks)**

b. With reference to the (above) quotes provided and to the characteristics of common access resources, **explain** why there may be an inefficient allocation of resources in the fish market. **(3 marks)**

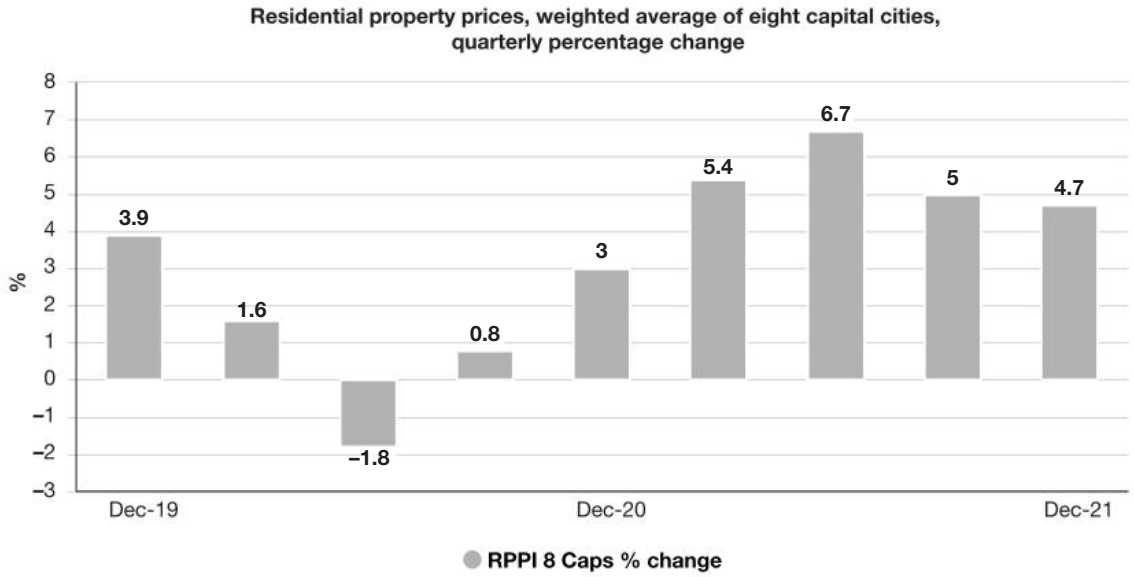
c. **Explain** one example of government intervention that could be utilised to reduce the degree of market failure associated with common access resources. **(3 marks)**

d. With reference to **one** example, **explain** how the consumption of a good or service may be associated with positive externalities. **(2 marks)**

e. **Explain** one factor that would affect the price elasticity of supply of fish. **(3 marks)**

Question 2 (8 marks)

Source: Adapted from VCE 2020 Economics, Section B, Q1 © VCAA



Source: Australian Bureau of Statistics, Residential Property Price Indexes: Eight Capital Cities December 2021

a. Referring to the graph above, **describe** the trend in the growth of Australia's housing prices during the period between the June quarter 2020 and the June quarter 2021. **(2 marks)**

b. **Describe** one likely effect of the trend in the growth of housing prices during the period between the June quarter 2020 and the June quarter 2021 described in part (a) on Australian living standards. **(3 marks)**

c. **Explain** whether the demand for buying a house is likely to be price elastic or price inelastic. **(3 marks)**

Question 3 (18 marks)

Source: VCE 2020 Economics, Section B, Q4 © VCAA

a. **Explain** the nature of, and conditions for, a perfectly competitive market. **(3 marks)**

b. In a competitive market, **explain** how an increase in demand for a product might result in a change in relative prices, and **explain** how this would influence resource allocation and living standards. **(5 marks)**

c. **Describe** one strength and one weakness associated with the use of the market to allocate resources. **(4 marks)**

d. Using a fully labelled demand and supply diagram, **explain** how the Australian Government could correct a market failure. **(6 marks)**

Question 4 (17 marks)

Source: VCE 2018 Economics, Section B, Q1 © VCAA

a. **Distinguish** between allocative efficiency and dynamic efficiency. **(3 marks)**

b. **Explain** how a decrease in the price of a complement can affect the demand for a good. **Construct** fully labelled demand and supply curves to illustrate your explanation. **(4 marks)**

c. **Describe** the difference between a movement along the supply curve and a shift of the supply curve. **Construct** fully labelled demand and supply curves to illustrate your description. **(4 marks)**

d. **Explain** how either externalities OR asymmetric information would result in market failure. **(3 marks)**

e. **Explain** one government action that might be taken to address the market failure explained in part d. **(3 marks)**

Question 5 (8 marks)

Source: VCE 2017 Economics, Section B, Q1 © VCAA

a. **Explain** one effect of competitive markets on the efficiency of resource allocation. **(2 marks)**

b. **Distinguish** between public goods and common access resources. **(3 marks)**

c. **Identify** one recent example of government intervention in markets and **explain** how it unintentionally led to a decrease in the efficiency of resource allocation. **(3 marks)**

Question 6 (9 marks)

Source: Adapted from VCE 2017 Economics, Section B, Q2 © VCAA

a. Below is a schedule of demand and supply for strawberries during one week in the summer of 2022.

Price (per punnet)	Quantity demanded (no. of punnets)	Quantity supplied (no. of punnets)
$5	140 000	30 000
$8	120 000	50 000
$10	80 000	80 000
$12	60 000	90 000
$14	30 000	110 000

Construct a demand and supply curve diagram using the data in the table. Ensure all aspects of the graph are labelled appropriately. **(3 marks)**



b. Assuming the market for strawberries is a perfectly competitive market, identify the equilibrium price and quantity traded, and **explain** what is meant by 'equilibrium'. **(2 marks)**

c. Assume that during the summer there was a period of unseasonably cold weather, and the output of strawberries was negatively affected. **Draw** this scenario on the graph in part (a) above, clearly showing the adjustment to the market conditions. **(2 marks)**

d. **Explain** the adjustment to the equilibrium price and quantity. **(2 marks)**

Question 7 (14 marks)

Source: VCE 2016 Economics, Section B, Q2 © VCAA

a. **Outline** two characteristics of a perfectly competitive market. **(2 marks)**

b. **Explain** why a perfectly competitive market is more likely to achieve an efficient allocation of resources than an oligopolistic market. **(4 marks)**

c. **Outline** one reason for government intervention in the market in order to stabilise the level of economic activity. **(2 marks)**

d. Referring to a specific example of a market in Australia (such as an agricultural market, a commodity market, a retail market), **describe** one economic factor influencing the operation of this market and discuss the extent to which this market operates freely in Australia. **(6 marks)**

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TOPIC

2 Domestic macroeconomic goals

UNIT 3 AREA OF STUDY 2

Domestic macroeconomic goals

OUTCOME 2

On completion of this unit the student should be able to analyse key contemporary factors that may have affected domestic macroeconomic goals over the past two years, evaluate the extent to which the goals have been achieved and discuss the effects on living standards.

LEARNING SEQUENCE

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2.3 **BACKGROUND KNOWLEDGE** Nature, effects and measurement of economic activity 110
2.4 The business cycle and its causes 113
2.5 The five-sector circular flow model to understand the macro influences on domestic economic activity 119
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2.8 Using a diagram to show how changes in aggregate demand and supply factors can affect domestic macroeconomic conditions 143
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2.1 Overview

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2.1.1 Introduction

Pick up almost any newspaper or go online, and you will find it littered with headlines about the prevailing economic conditions in Australia and abroad, and the multitude of drivers affecting our circumstances. Topic 2 focuses our attention on the *three key domestic macroeconomic goals* that are pursued by the Australian government and the Reserve Bank of Australia (RBA) — the goals of strong and sustainable rates of economic growth, low inflation and full employment. Indeed, achieving these goals helps to create economic conditions optimal for people to enjoy better material and non-material wellbeing. Apart from understanding the nature of these important goals and how they are measured, we will also investigate the main aggregate demand and supply factors affecting the achievement of these goals over the last two years and see the connections with changes in the level of economic activity.

FIGURE 2.1 What comes into your mind when you think of the term 'living standards'? For some, having a good living standard might mean residing on a tropical island such as this one. For others, it might mean travelling the world. And for some, it might just involve having a roof over your head and not going hungry.



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 purpose of economic activity	
◯ The difference between material and non-material living standards and factors that may affect living standards, including access to goods and services, environmental quality, physical and mental health, crime rates and literacy rates	**2.2**
◯ The five-sector circular flow model of income, including the role of households, businesses, government, financial institutions and the external sector in an open contemporary macroeconomy	**2.5**
◯ The business cycle and its causes	**2.4**
◯ The meaning and importance of aggregate demand and the factors that may affect the level of aggregate demand in the economy, including disposable income, interest rates, consumer confidence, business confidence, the exchange rate and rates of economic growth overseas	**2.6, 2.8**
◯ The meaning and importance of aggregate supply and the factors that may affect the level of aggregate supply in the economy, including quantity and quality of the factors of production, costs of production, technological change, productivity growth, exchange rates and climatic conditions, and other events including government regulations and disruptions to international supply chains	**2.7, 2.8**
The domestic macroeconomic goals	
◯ The meaning of the goal of strong and sustainable economic growth	**2.10**
◯ Measurement of the rate of economic growth using growth in real Gross Domestic Product (GDP)	**2.10**
◯ Consequences of not achieving the goal of strong and sustainable economic growth and its effect on living standards, including environmental degradation, external pressures, high inflation if growth is too high, and high unemployment if growth is too low	**2.10**
◯ The meaning of the goal of full employment, including the NAIRU (natural rate of unemployment)	**2.11**
◯ Classifications within the labour force, including employed, unemployed, hidden unemployed, long-term unemployed, underemployed and frictional unemployment	**2.11**
◯ Measurement of the labour force, including the participation rate, the unemployment rate and the labour force under-utilisation rate	**2.11**
◯ The difference between cyclical and structural unemployment	**2.11**
◯ The consequences of not achieving the goal of full employment and its effect on living standards, including the impact on GDP and tax revenue if unemployment is too high and the effects on inflation if unemployment is too low	**2.11**
◯ The meaning of the goal of low and stable inflation (price stability)	**2.9**
◯ The distinction between inflation, disinflation and deflation	**2.9**
◯ Measurement of the inflation rate using the Consumer Price Index (CPI), including the difference between the headline and underlying (core) rate of inflation	**2.9**
◯ Causes of inflation, including demand inflation and cost inflation	**2.9**

◯	Consequences of not achieving the goal of low and stable inflation (price stability) and its effect on living standards, including erosion of purchasing power, development of a wage-price spiral, distortion of spending and investment decisions, lower returns on investment, loss of international competitiveness if it is too high, and delayed consumption and unemployment if it is too low	**2.9**
◯	Aggregate demand and aggregate supply factors that have affected the level of achievement or non-achievement of the goals of strong and sustainable economic growth, full employment and low and stable inflation over the past two years	**2.8, 2.12**

Key skills

These are the skills you need to demonstrate.

Key skills	
◯	Define key economic concepts and terms and use them appropriately
◯	Calculate relevant economic indicators using real or hypothetical data
◯	Construct, interpret and apply economic models including the five-sector circular flow model of income and the business cycle
◯	Explain and interpret trends and patterns in economic data and other information
◯	Gather, synthesise and use economic data and information from a wide range of sources to analyse economics issues
◯	Apply economic concepts to analyse economic relationships and make predictions
◯	Evaluate the extent to which the economy has achieved the domestic macroeconomic goals over the past two years and discuss the effect of this on living standards

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on Resources

Digital document Key terms glossary (doc-34512)

2.2 The difference between material and non-material living standards and factors that may affect each

KEY KNOWLEDGE

The purpose of economic activity

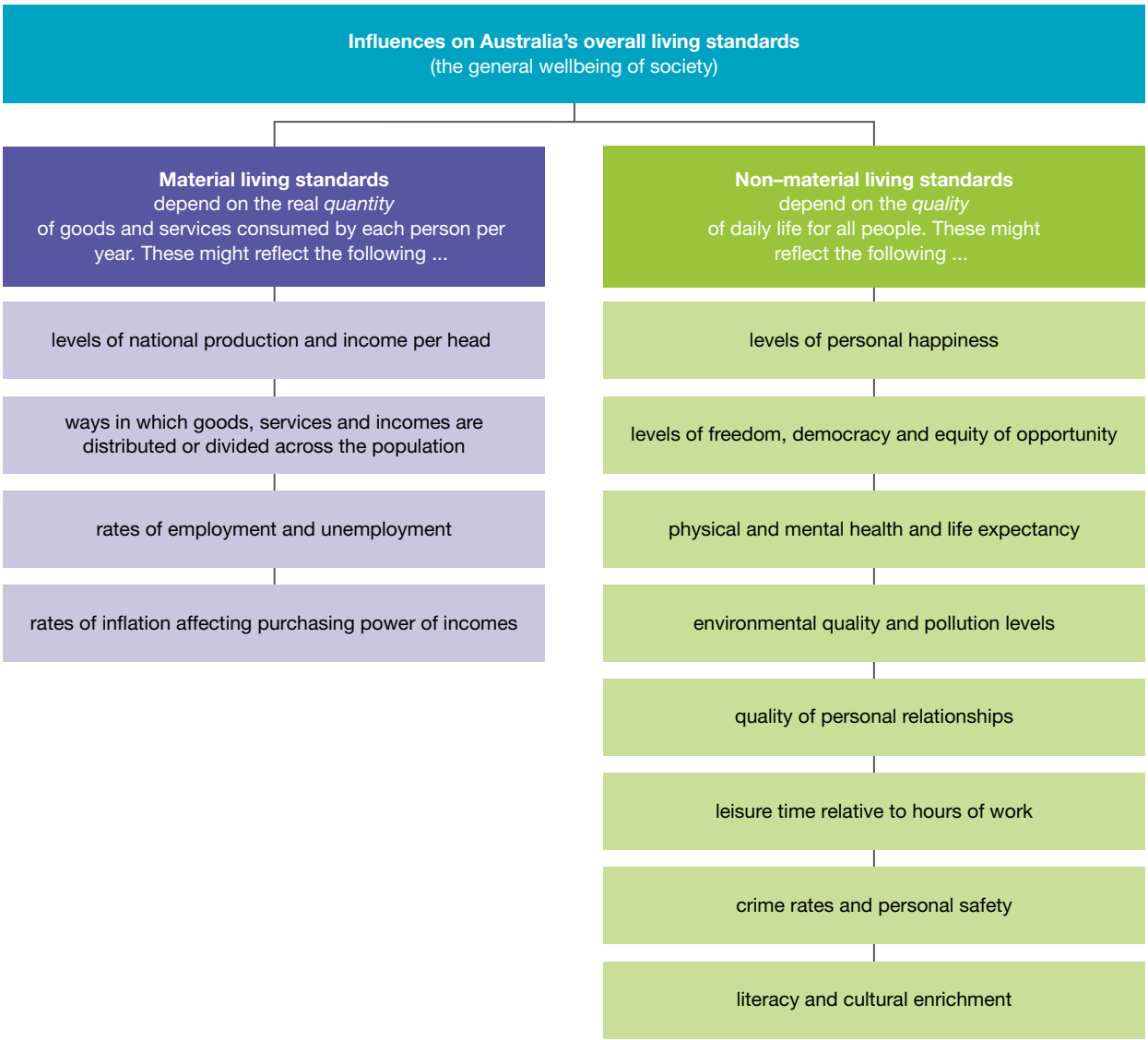
- The difference between material and non-material living standards and factors that may affect living standards, including access to goods and services, environmental quality, physical and mental health, crime rates and literacy rates

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Many people seek an improvement in their overall living standards or general level of wellbeing.

There are *two* main elements that affect our general or overall **living standards**:

- the level of *material* living standards
- the level of *non-material* living standards (i.e. wellbeing).



2.2.1 Material living standards and the factors affecting them

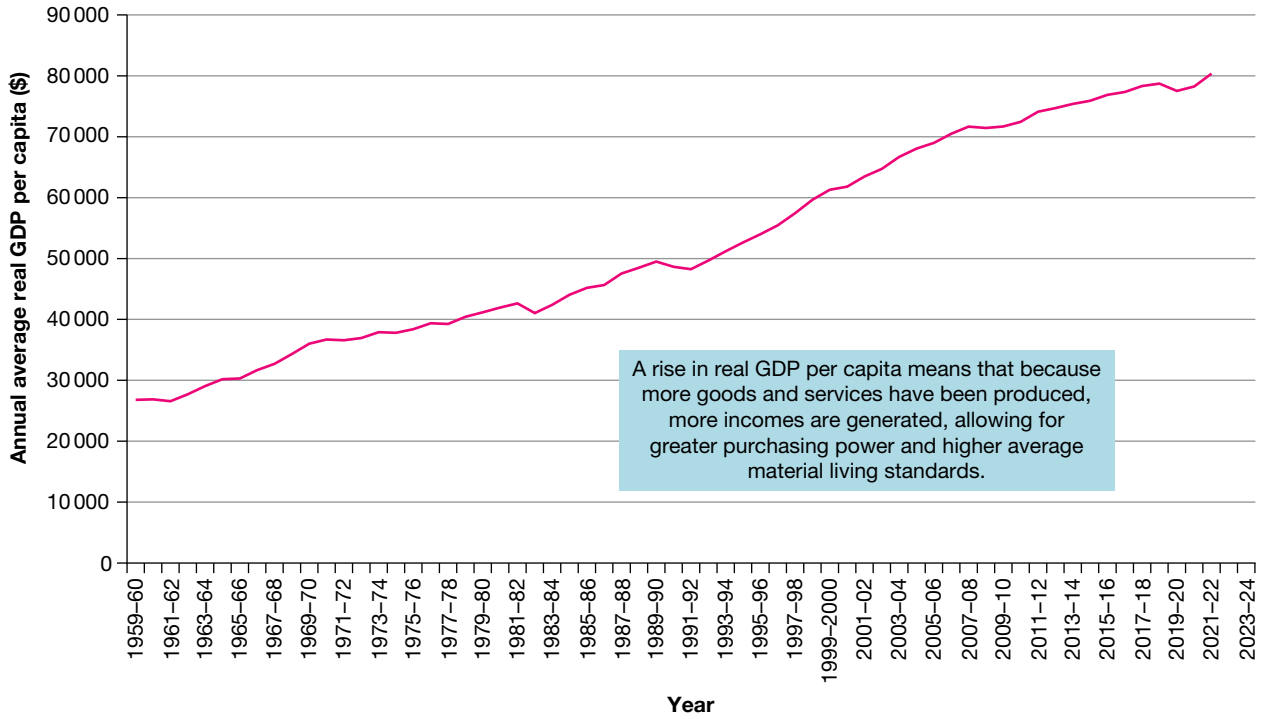


Material living standards involve the level of economic wellbeing of individuals, real per capita incomes and the *'quantity' of physical goods and services available for each person to consume*. Being able to access or consume more goods and services each year is generally seen as beneficial.

Average material living standards are commonly measured by the *annual real value of gross domestic product (GDP) per person*. Here, real GDP per capita measures the total market value of all goods and services produced in Australia over the year, *after* making *statistical adjustments* that remove the effects of changes in the prices between one year and the next. When real GDP per capita rises in value over a period of time, average incomes and purchasing power rise, increasing material living standards. Figure 2.2 shows the remarkable rise in average real GDP per capita between 1959–60 and 2021–22, from around $26 000 to over $80 000 a year.

In addition to the value of real *average output and incomes*, there are also other things influencing *actual* material living standards. For example, if the goods, services and incomes are distributed *unevenly* and if unemployment rates are high, then the *average* value of real GDP or incomes per capita means very little and may give a misleading impression about actual living standards.

FIGURE 2.2 The change in Australia's average material living standards indicated by the value of real GDP per capita per year ($).



2.2.2 Non-material living standards and the factors affecting them

Non-material living standards *refer to 'quality' aspects of a person's daily life*. In some ways, non-material living standards are hard to define because they are subjective or depend partly upon personal values. Even so, for many people, having higher *non-material* living standards especially involve the following:

Happiness:

While happiness can be increased by having access to higher income and more material things, it is far more complex than this. Studies actually show that only up to a point, does higher income bring more happiness. This is because it is also affected by non-material aspects like the quality of relationships, having freedom and security, the absence of violence and war, and having opportunities.

Physical and mental health:

The quality of life partly depends on our physical health, and being able to have a long life expectancy, without suffering caused by disease and pain. Clearly too, physical health can also affect material living standards by influencing our ability to work and earn income. In addition, during COVID-19 lockdowns and high unemployment, we saw that the number of people with mental health issues rose dramatically. This was due to restrictions, social isolation from family and friends, and financial stress. In addition, it put great strain on our support resources, requiring extra government funding. Because of the importance of health, in Australia we have Medicare and the NDIS. These help to provide the opportunity for free treatment of physical and mental health issues through the public or government health system.

Crime rates:

Crimes involving assault, deaths, fraud, on-line scams, and theft not only affect our material living standards by reducing income or increasing the cost of replacing property. They also impact our non-material wellbeing, especially anxiety levels in the community and feelings of insecurity at home and when socialising.

Environmental quality:

A healthy environment affects our material and non-material living standards, both now and into the future. Unfortunately, over time, the quality of the environment has suffered. One issue is the rise in greenhouse gas emissions into the atmosphere due to our economic activities. Pollution can be seen as a *negative externality* where costs are paid by third parties not directly responsible. This has diminished the quality of *common access resources* on which we all depend, and, as we shall see later in Topic 5, has led to *global warming* and a greater frequency of severe weather events. These have caused the loss of life, the destruction of businesses, and the displacement of communities. Another environmental issue is that *non-renewable natural resources* are being devoured at an alarming rate and will leave future generations with reduced opportunities and wellbeing.

Leisure versus work times:

Work is usually necessary to earn income and hence impacts material living standards. However, the work–life balance is also important for our non-material wellbeing. For example, it affects the time we have to socialise, to get into healthy recreational activities, and enjoy holidays that can culturally enrich our experience and make life more satisfying, exciting and enjoyable.



Literacy rates:

Generally, better literacy rates (i.e. the proportion of the population aged 15 and over who can read and write) are associated

with higher incomes and material wellbeing. Increased literacy opens up more **employment** opportunities for individuals in better paid jobs. It is also the key to gaining new knowledge and more satisfying employment. Moreover, having these basic skills also allows for improved social interaction, participation in the community, feelings of self-worth and increased control over one's life.

2.2.3 Relationships between material and non-material living standards

Two types of relationships can exist between material and non-material living standards:

- *Conflicting relationships* occur where there is a trade-off, and progress in one area of wellbeing undermines the other.
- *Compatible relationships* exist where progress in one area of wellbeing helps to promote the other area.

Conflicting relationships between material and non-material living standards



Our material and non-material living standards cannot be looked at in isolation, since one *interacts* with and impacts on the other. Consider what happens to material living standards when Australia's levels of national production and income per head are rising between one year and the next (perhaps measured by the annual growth in GDP per person or per capita). This may impact negatively on the ability of future generations to lift their output and *material* living standards because we have used up too many resources. It may also adversely affect our long-term *non-material* living standards since there are various types of trade-offs or costs of growing the size of Australia's economy:

- ***Environmental trade-off.*** Our materialism and greed for natural resources to make even more goods and services — which have raised material wellbeing to levels never before seen in human history — have also had grave consequences for the environment. Think of the serious pollution of rivers, land and oceans; climate change, greenhouse gases and extreme weather events; rising sea levels and the destruction of island communities and our coastal cities; mass migrations, tensions and war between countries over ownership of natural resources; and the almost daily reports of toxic residues and chemicals in the air we breathe and the food we eat.
- ***Health and social trade-off.*** As our material living standards have grown, aspects of non-material wellbeing have suffered. Leisure time has been eroded for many as work hours have increased. Family stresses have been aggravated by tension and less time to devote to home life. Rising incomes, a sedentary work style, the proliferation of digital devices and easy access to a wide variety of fast foods have contributed to serious obesity to such a degree that the average life expectancy of today's children may, for the first time, be lower than that of their parents.
- ***Material trade-off.*** If the government were to introduce policies specifically designed to promote non-material living standards — perhaps by tightening government environmental controls (such as introducing a carbon tax or a carbon emissions trading scheme to make pollution costly and less attractive), or by limiting working hours to raise leisure time and increase available family time — potentially, these measures could undermine national production and incomes, and hence lower our material living standards.

Compatible relationships between material and non-material living standards

While there is often a conflicting relationship, material and non-material living standards can also enjoy a degree of *compatibility* where promoting material living standards and higher incomes, perhaps by growing the size of the economy, can also increase non-material living standards in various ways:

- ***Cultural enrichment*** — Higher incomes can allow for more international travel and cultural enrichment.
- ***Longer life expectancy*** — Higher incomes can be used to extend life expectancy and reduce daily suffering from pain and curable ailments.
- ***Possibility of reduced environmental damage*** — Higher incomes can be directed to combating environmental damage and reducing pollution.
- ***More leisure time*** — Higher incomes enable individuals to reduce their working hours and stress, and increase their leisure time.

In addition, government policies (such as a carbon tax or an emissions trading scheme) could be used to reduce the production of those types of goods involving high carbon emissions that add to pollution, while simultaneously, encouraging the growth of new green industries (such as renewable energy), jobs and incomes. This way, material living standards can still advance without sacrificing the non-material living standards for future generations.

2.2 Activities

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2.2 Quick quiz on

2.2 Exercise

2.2 Exercise

1. **Define** the term, *standard of living*. **(2 marks)**
2. **Explain** the main difference between material and non-material living standards. **(2 marks)**
3. Apart from judging a nation's material living standards by looking at the level of real GDP or income per head, **identify** and **explain** the other factors that need to be considered before drawing conclusions. **(4 marks)**
4. Giving examples, **explain** the various *types of relationships* that can exist between material and non-material living standards. **(4 marks)**
5. Each day we make decisions about what to buy and produce that impact well or poorly on our living standards, or on those of others. For the following hypothetical events, **analyse** the likely impacts on living standards.
   a. You get a new part-time weekend job at Subway.
   b. You buy a new surfboard from Rip Curl and drive to Bells Beach for a test run.
   c. A new uranium mine is given government approval to operate in the Northern Territory.
   d. In June 2022 the Fair Work Commission increased the adult minimum wage to $812.60 per week.
   e. Your parents install solar power panels on the roof, encouraged by a government subsidy or payment to offset part of the cost.
   f. Your mother's working hours per week were increased from 10 to 40. **(6 marks)**
6. **Select** a news article that you believe reports an event that impacts positively or negatively on your living standards, or those of the wider society. After highlighting the key ideas, make annotated notes that **explain** the likely effects, stating whether they are good or bad. **(4 marks)**

Solutions and sample responses are available online.

2.3 BACKGROUND KNOWLEDGE Nature, effects and measurement of economic activity

BACKGROUND INFORMATION

- The nature, effects and measurement of economic activity and how these influence material and non-material living standards

One of the most important influences on Australian *material* living standards (i.e. related to income and the annual *quantity* of goods and services consumed per person) and *non-material* living standards (i.e. related to the *quality* of a person's daily life), is the pace or **level of economic activity**.

2.3.1 The nature of economic activity

Economic activity refers to the actions of individuals, firms and governments (these groups are called economic agents) that help to generate the production of goods and services, employment and incomes. It is mainly the process of converting scarce resources into goods and services, and its main purpose is to help satisfy society's seemingly endless needs and wants, and thereby improve living standards.

From a *microeconomic* viewpoint, the level of economic activity in each individual industry is determined largely by changes in relative prices and profits in specific markets, both here in Australia and overseas. We covered some of these *microeconomic* aspects in Topic 1. However, we now need to take a much wider or *macroeconomic* view and study the general factors affecting the overall or national level of domestic (within Australia) economic activity that results from the combined outcome of all the production and consumption decisions that occur 24 hours a day in thousands of markets around Australia.

Because the levels of national production (often measured by the rate of change in gross domestic product or GDP), income and employment change from one year to the next, Australia's level of economic activity is said to be unstable. Economists use the concept of the *level of economic activity* to describe the general *pace* or *speed* at which productive activity is occurring nationally.

2.3.2 The effects of economic activity on living standards

As mentioned at the outset, Australia's economic activity has far-reaching impacts on both our material and non-material living standards, now and into the future.

The level of economic activity directly affects current material living standards

The level of economic activity directly affects *current material* living standards in at least *three* important ways:

1. It affects the quantity and quality of goods and services produced and available to the population in order to help satisfy its needs and wants.
2. It influences employment opportunities, the number of jobs and the unemployment rate.
3. It determines our average incomes, consumer prices, purchasing power and consumption levels per person.

Indeed, later we will later see that the federal government uses policies to influence economic activity in order to actively pursue its three key domestic macroeconomic aims — the **goal of a strong and sustainable rate of economic growth**, the *goal of full employment* and the *goal of low inflation*. Achieving these three goals is especially important for improving society's material living standards.

The level of economic activity directly affects future material and non-material living standards

The current level of economic activity also affects levels of *non-material* living standards now and in the *future*. Although higher levels of economic activity can allow our current generation to enjoy better material prosperity, increasingly, there is the worrying realisation that extra production has been extracted by degrading the *quality* of *common access resources* like the air we breathe, and depleting scarce non-renewable natural resources such as minerals, water, clean air, forests and oceans. This deprives their access by future generations, limiting not just their material wellbeing, but also non-material living standards. We have already seen how *negative externalities* like climate change, urban congestion, reduced leisure time and family tensions can result from our economic activities. These matters raise the question of *ecological sustainability*: what types and levels of economic activity should we pursue now for sustainable prosperity, wellbeing and living standards in the future?

on Resources

Weblink Sustainability easily explained

2.3.3 Measuring the level of economic activity

Naturally, economists are interested in regularly measuring changes in Australia's economic activity. This helps us to assess how the economy is performing and provides guidance for government policy. The main measure of the *level* of economic activity is the change in the value of *our gross domestic product*.

Measuring gross domestic product



When **gross domestic product (GDP)** is measured at *current prices*, it represents the total market value ($) of finished goods and services that have been produced by a country over a period of time. However, the prices paid for goods and services change between one year and the next. This affects the *market* or *current* value of national production and makes it inaccurate to compare one year's production with another where the prices paid were different. Hence, the most common measure is one that statistically removes the effect of rising or falling prices. This is called *real GDP* or **chain volume GDP**. The Australian Bureau of Statistics (ABS) measures GDP both on a quarterly basis (the total value of production over 3 months), and on an annual basis (the total value of production over 4 quarters). While this is a fairly good estimate of the value of national output, it is worth noting that chain volume GDP is only an *estimate*. For instance, the value of some economic activities is *excluded*, often because the activities are too hard to measure or their value is not known. In addition, the value of some other production must be *imputed* or guesstimated and the process of statistically removing the effects of **inflation** or **deflation** may be subject to error.

Some other aspects of indicators associated with economic activity

In addition to GDP, there are many other indicators of changing economic activity and performance, each with certain characteristics:

- ***Lagging indicators of economic activity.*** **Lagging indicators** of economic activity tell the reader only at what level activity was occurring some time ago. These statistics do not tell us what the economy is doing right now. GDP falls 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. Other lagging indicators of changing levels of economic activity might include the unemployment rate and the inflation rate (the general rise in the prices paid for a basket of consumer goods and services).
- ***Coincident indicators of economic activity.*** Coincident indicators move very closely with actual changes in the level of economic activity. They are published regularly at shorter intervals and thus more or less tell us what is happening right now.
- ***Leading indicators of economic activity.*** **Leading indicators** seek to predict where the economy may be heading in the near future. While not completely reliable, they often forecast a general change in activity before it actually occurs. Indicators in this category could include the new housing approvals and monthly indexes of consumer and business confidence or sentiment.

Looking for patterns in indicators

When examining statistical indicators, economists are on the lookout for patterns in the data. These could involve:

- *long-term* or general *trends* over perhaps 10 or 20 years
- short- to medium-term cycles, perhaps over 1–3 years
- *seasonal patterns* that occur at the same time each year.

As students, when examiners ask you to describe a graph or table, you might look for whether the overall *long-term trend* is up, down. or perhaps unchanged. You might also check out whether there are any *cyclical patterns* with ups or downs lasting just a year or so, and often it is a good idea to include *statistics* to support your claims.

on Resources

Weblinks Economic growth
Measuring economic performance — growth, inflation and unemployment
Real GDP and the GDP deflator
The Economic Lowdown Video Series
Measuring economic activity
GDP — measuring economic growth
Measuring the economy

2.3 Activities

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2.3 Quick quiz on | 2.3 Exercise

2.3 Exercise

1. **Define** what is meant by the *level of economic activity*. **(2 marks)**
2. When the level of economic activity speeds up or slows down, **identify** three important ways this might affect a nation's *material* living standards. **(3 marks)**
3. **Outline** the likely effects of economic activity on *non-material* living standards. **(2 marks)**
4. **Define** chain volume GDP. **(2 marks)**
5. **Explain** how the level of economic activity in an economy is normally measured. **(2 marks)**
6. Giving examples, **outline** the difference between leading and lagging indicators of economic activity. **(2 marks)**
7. **Explain** how a rise in the level of activity would be likely to affect Australia's *material* living standards. **(2 marks)**

Solutions and sample responses are available online.

2.4 The business cycle and its causes

KEY KNOWLEDGE

The purpose of economic activity

- The business cycle and its causes

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Reading the news headlines, it is clear that Australia's level of economic activity or production (measured by chain volume GDP) is not steady. It moves up and down in a wave-like or *cyclical* pattern. Sometimes the real value of GDP grows faster, while at other times it is slower or actually falls against the level for the previous year. This pattern of activity is called the **business cycle.**

2.4.1 The business cycle diagram showing changes in the level of economic activity

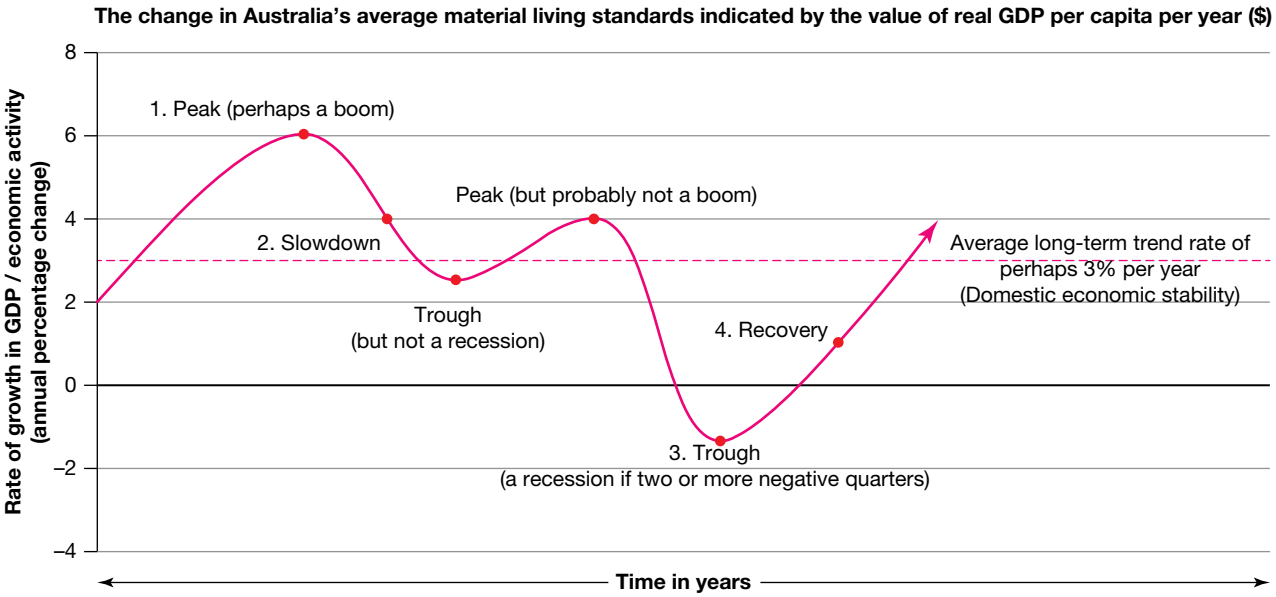
Economists illustrate the ups and downs in the level or pace of economic activity using the *business cycle diagram*. This is shown in figure 2.3. Notice that the level of economic activity passes through various cycle *phases* — a peak, contraction, trough, expansion, etc. Peaks and troughs represent upper and lower turning points in the business cycle. It can also be seen that the strength, severity and duration of the 'contractions' and 'expansions' may vary considerably. Sometimes the contraction is severe, leading to a deep trough in production and hence cuts in employment, while at other times the trough is more shallow. Sometimes the expansion is strong, leading to high peaks in production and rapid inflation, while at other times the peak is lower.

You should notice that this business cycle diagram (illustrating the typical path of economic activity over a period of years) has *two* especially important features:

1. There are *short*- to medium-term *cyclical sw*ings in the level of economic activity or GDP.
2. There is the sustainable *long*-term trend in the level of economic activity or GDP. For Australia, this hovers around an annual *average* rate of growth in GDP of perhaps 3 per cent (give or take a bit).

We will now take a closer look at the business cycle diagram (figure 2.3).

FIGURE 2.3 The business cycle diagram illustrates the typical pattern or changing speed or level of economic activity in an economy over a period of time.



2.4.2 The four phases of the business cycle and the effects on domestic macroeconomic conditions

Typically, there are *four* main phases making up a *complete business cycle*, each corresponding with a different *level of economic activity* — the *recovery*, the *peak*, the *contraction* and the *trough*. However, while the cycle can be fairly regular and can be repeated over a number of years, as shown in figure 2.3, this is not always the case and cycles can be of different lengths and severity.

With this in mind, let us now take a closer look at the *four* main phases of the business cycle. We will note that as the level of economic activity changes, so too will domestic macroeconomic conditions indicated by changes in the rate of growth in GDP, the unemployment rate, and the inflation rate.

1. Expansion or recovery phase

Starting at a leisurely rate of GDP growth on the business cycle diagram, there is an expansion in economic activity, and the economy gains speed. After a time lag, typically employment grows, cyclical unemployment falls and inflation gradually starts to accelerate.

Macroeconomic indicator	Direction in a recovery
GDP →	The rate is accelerating
Unemployment →	The rate is falling
Inflation →	The rate is slowly increasing

2. Peak (sometimes boom) phase

Eventually, after a period of expansion, economic activity reaches a cyclical *peak* or upper turning point. Here, the rate of growth in GDP is at its fastest. With output expanding strongly, unemployment rates fall to their lowest levels as firms hire extra staff. On the other hand, inflation is often high. If there is little unused productive capacity and a nation is located outside its production possibility frontier (PPF), a dangerous

inflationary **boom** may result where consumer prices rise quickly. This reflects widespread shortages of goods and services and the economy can overheat.

Macroeconomic indicator	Direction in a boom
GDP →	The rate has reached its maximum
Unemployment →	The rate is relatively low
Inflation →	The rate accelerates due to shortages

3. Slowdown or contraction phase

Slowdowns or *contractions* in the level of economic activity normally follow a peak or possible boom. The growth rate in GDP slows to below the long-term trend, or, if severe, national production may even start to fall. Usually after a time lag, cyclical unemployment rates rise and inflation eases (a slowing inflation rate is called **disinflation**) as businesses discount their prices to clear their unsold or excess stocks of goods sitting on shelves and in warehouses.

Macroeconomic indicator	Direction in a slowdown
GDP →	The rate of increase is slowing
Unemployment →	The rate is rising
Inflation →	The rate is slowing

4. Trough (sometimes recession) phase

The *trough* represents the lowest point on the business cycle of economic activity. Sometimes this trough is simply a minor slowdown where there is little or no growth in the size of the economy. This causes unemployment to be higher than normal. But, if the value of national output actually falls (indicated by a drop in the value of GDP during at least two consecutive quarters or a six-month period), this is technically called a **recession**. Inflation rates slow or can even become negative (called *deflation*). Longer and even more severe troughs are termed **depressions**.



Macroeconomic indicator	Direction in a recession
GDP →	The rate is very slow or negative
Unemployment →	The rate is relatively high as firms cut output
Inflation →	The rate is at its lowest or even negative

The ideal level of economic activity is called domestic economic stability



Although not actually seen as one of the four phases of the business cycle, sometimes an economy can experience *ideal* macroeconomic conditions called **domestic economic stability**. Here strong and sustainable rates of economic growth of around 3 per cent per year, low unemployment of 4.0–4.5 per cent, and a low annual inflation rate of between 2 and 3 per cent, are achieved simultaneously. On the business cycle diagram, this state ecstasy or economic bliss is located between the peaks (possibly booms) and the troughs (possibly recessions). Here, the level of economic activity is neither too strong causing an inflationary boom, nor too weak causing recession with high unemployment. Indeed, promoting domestic economic activity is seen as an important domestic macroeconomic goal for the Australian government. As we will see in Unit 4, the Australian government uses its aggregate demand or macroeconomic policies to help steer Australia's level of economic activity towards this prized situation.

Macroeconomic indicator	Ideal situation of domestic economic stability
GDP →	The rate is rising by an average of about 3% per year
Unemployment →	The rate is relatively low at around 4.0 and 4.5% of the labour force
Inflation →	The rate is relatively slow averaging 2–3% rise per year

A special situation called stagflation

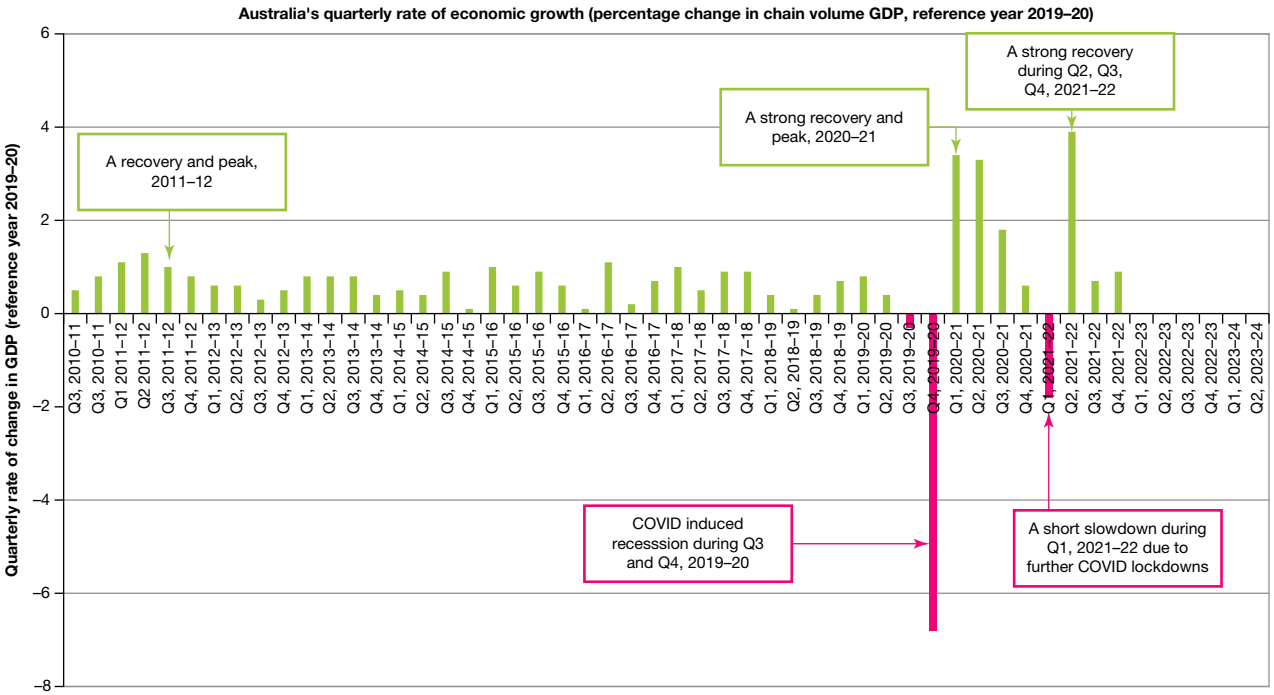
In addition to the four phases of the business cycle noted previously, the economy might occasionally experience the awful problem of **stagflation**. Here, the economy simultaneously experiences a fairly stagnant level of production, combined with both high (cost) inflation and (structural) unemployment. This occurred during 1970–77 when, although there was a very slow rate of GDP growth and a high unemployment rate of 6 per cent, there was also high inflation averaging 15 per cent a year. This special situation of stagflation cannot be illustrated on the business cycle diagram because the diagram assumes that the problems of high inflation and unemployment are opposite situations that cannot coexist.

Macroeconomic indicator	Direction in stagflation
GDP →	The rate is rising slowly or is even negative
Unemployment →	The rate is high
Inflation →	The rate is high

2.4.3 Australia's recent business cycle

Australia has experienced a *business cycle* involving faster and slower rates of economic activity. This is illustrated in figure 2.4, which plots *quarterly* (every three months, four quarters per financial year) percentage changes in chain volume GDP.

FIGURE 2.4 Trends in Australia's quarterly percentage change in GDP.



Can you see the wave-like pattern where GDP growth rates are much faster in some quarters than in others? Here quarterly rates range from a high of 3.9 per cent down to a low of −6.8 per cent. In particular:

- Notice the peaks in the level of economic activity during this period, especially in 2020–21 and 2021–22.
- Over the 30 years until the COVID-induced recession of 2019–20, Australia managed to escape a technical recession (defined as at least two consecutive quarters of negative GDP growth).
- Overall, the level of economic activity has been more unstable in recent years.

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Weblink The business cycle

2.4 Activities

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2.4 Quick quiz on | 2.4 Exercise

2.4 Exercise

1. **Define** the term *business cycle*. **(2 marks)**
2. **Describe** the main phases of the business cycle and **illustrate** these diagrammatically. **(5 marks)**
3. **List** and **explain** *three* main domestic macroeconomic differences between a period of boom and a period of recession. **(3 marks)**
4. **Define** the term *domestic economic stability*. **(2 marks)**
5. a. **Draw** up a table similar to that below. In your table, **summarise** the *five* main differences between a period of boom, a period of recession and the ideal situation of domestic economic stability. Try to support your answer by quoting statistics. **(4 marks)**

Different features in the economic cycle	Domestic economic stability	Recession	Boom
i. Level of AD			
ii. Level of GDP			
iii. Level of inflation			
iv. Level of unemployment			
v. Material living standards			

   b. **Explain** what is meant by the term *stagflation*. **Explain** why this cannot be shown on the business cycle diagram. **(2 marks)**
   c. **Describe** the type(s) of economic situation, shown on the business cycle diagram, that you feel Australia has experienced over the past two years. **Justify** your answer. **(2 marks)**

Solutions and sample responses are available online.

2.5 The five-sector circular flow model to understand the macro influences on domestic economic activity

KEY KNOWLEDGE

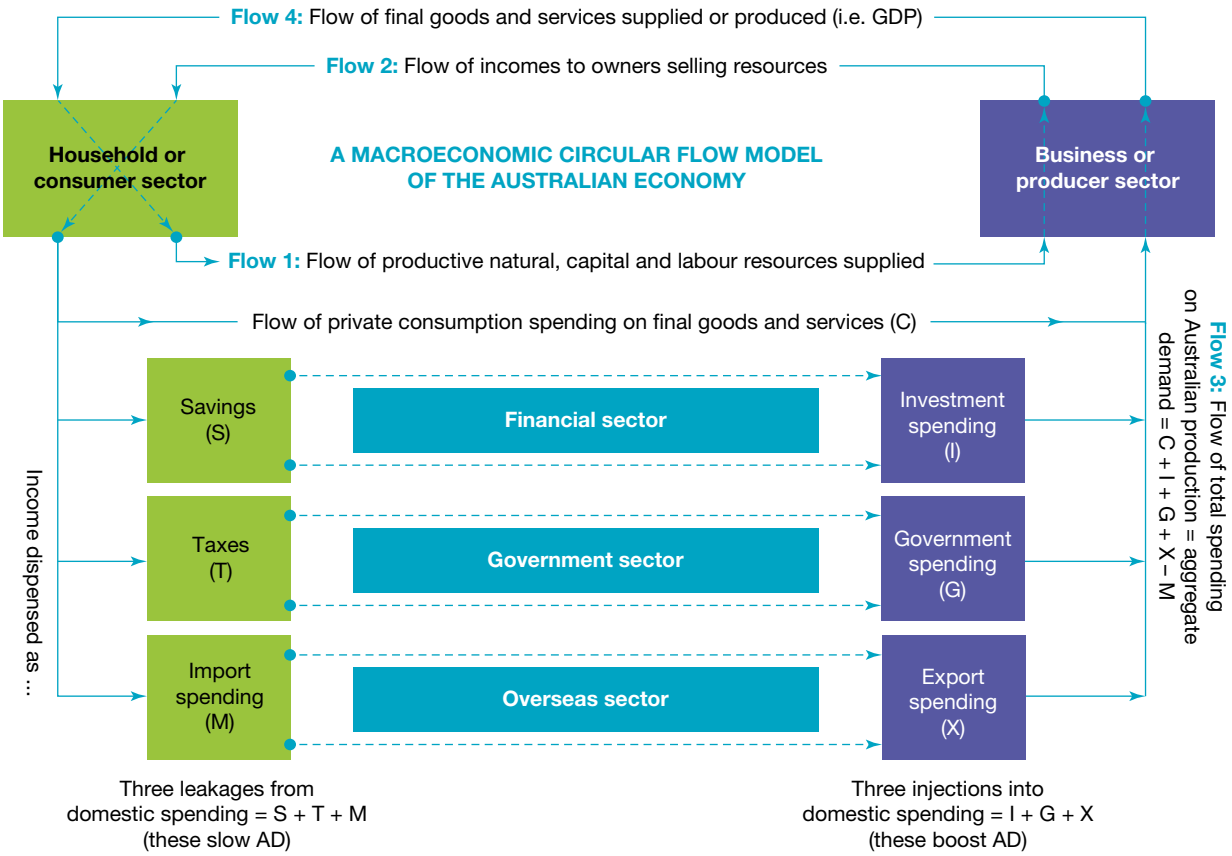
The purpose of economic activity

- The five-sector circular flow model of income, including the role of households, businesses, government, financial institutions and the external sector in an open contemporary macroeconomy

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One way to better grasp the nature, causes and effects of changes in economic activity is to use a **five-sector circular flow model** (see figure 2.5). This model helps to simplify what the Australian economy looks like and how its various parts interact to influence the macroeconomic levels of GDP, unemployment, incomes and material living standards.

FIGURE 2.5 The five-sector circular flow model representing the Australian economy.



Let us now take a closer look at the model's main *features* and how the diagram can be used to help explain the *causes* and *effects* of changes in Australia's level of economic activity.

2.5.1 The model's five sectors and the roles of each sector

As can be seen in figure 2.5, the five-sector circular flow model of our economy has *two* main parts to it. These are the *household sector* and the *business sector*.

1. Household or consumer sector



The household or consumer sector comprises all 26 million plus members making up Australia's population. Some members *supply* or sell their resources (natural, labour and capital resources) to firms and then use the money or income received from this to *demand* or buy finished goods and services from businesses, thereby helping to satisfy their needs and wants.

2. Business or producer sector

Surprisingly, Australia's business or producer sector is made up of over 2 million actively trading firms. These businesses *demand* or purchase inputs or resources from households which they then convert into finished goods and services. In turn, businesses *supply* or sell these goods and services to the household sector and receive money in exchange.

So far we have seen that Australian households and businesses both operate as buyers (demanders) and sellers (suppliers) of goods and services. Essentially, firms buy resources and sell finished goods, while households sell resources and buy finished goods and services. However, in addition to these two main parts of the economy, there are also three sub-sectors — *the financial, government* and *overseas* sectors.

3. Financial sector

This is made up of the many types of financial institutions including banks, building societies, the stock exchange, credit unions and finance companies. All these organisations borrow the savings (S) of households and then re-lend these to creditworthy customers who use the money to finance their investment spending (I) and the expansion of businesses. Depending on variable economic conditions, there is no reason why the values of S and I in a single financial sector will necessarily be of equal value, especially in the short-term. For example, when there is uncertainty or pessimism, often households attempt to save more of their income, while businesses are reluctant to borrow and undertake I spending. This would mean that S would be higher in value than I, slowing AD.

4. Government sector

Governments collect revenue from taxation (T) and other sources, and use this money to pay for government spending (G) and other budget outlays that, among other things, help to provide collective or public goods and services (including hospitals, roads, defence and schools). Especially in the short-term, T and G as part of the government sector will not necessarily be equal in value, since they largely depend on changing economic conditions. For instance, in a recession when unemployment is higher and household and business incomes and spending are lower, governments may cut taxes and lift government spending to stimulate economic activity.

5. Overseas sector

Each year Australians import goods and services from abroad to help satisfy our wants (M) and we also sell exports to people living overseas (X) to meet their wants. These transactions are conducted in the external or overseas sector. Again, there is no reason why they will necessarily be of equal value, especially in the short-term. If there was a recession among our trading partners for instance, their spending on our exports may fall relative to our spending on imports — so the two sides would not necessarily be equal in value.

2.5.2 The model's four flows

Connecting the main household and business sectors are *four* main flows or streams. These flows are *interdependent* (i.e. one flow affects the other) and also *equal* when measured in money terms ($) over a period of time. Notice that two of these flows (numbers 2 and 3) relate to the *demand side* of the economy, and there are also two flows (numbers 1 and 4) associated with the *supply side*.

Flow 1 — available supply of resources

Let's start with flow 1. Here, the household sector *supplies* or makes available natural, labour and capital resources for use by the business sector, which later converts them into finished goods and services. Over the long-term, the quantity and quality of resources available is one important aggregate supply factor that limits the potential level of national output or GDP that can be produced. If more resources were available, theoretically, the country could produce more goods and services, while if there were fewer resources, the potential level of output would be restricted.

Flow 2 — total incomes or the demand for resources

Flow 2 represents the *demand* for or purchases of resources by the business sector through the payment of incomes to the household sector. For instance, those individuals selling labour are paid wages and salaries, those lending money capital are rewarded with interest, and those allowing firms to use property gain income in the form of rent. Logically, the money value of all incomes paid to households (flow 2) will equal the money value of all the resources actually sold or purchased by firms (flow 1). That is, flows 1 and 2 are equal in value.

Flow 3 — total expenditure or aggregate demand (AD)

Flow 3 represents the total value of all types of demand or spending on Australian-made goods and services measured over a period. It is called aggregate demand (AD). The model shows us that upon receiving income, the household and other sectors will then dispose of it in different ways. As illustrated, some of the nation's income ends up as leakages (i.e. S, T or M) that slow AD, while some income results in injections (i.e. I, G or X) that increase total spending:



Households

Most household income is spent on private consumption of goods and services such as food and entertainment (C). As shown on the model, income spent as C re-enters the circular flow as part of AD.

Financial sector

Some income is directed into household savings that affect the financial sector. In themselves, savings (S) are a leakage because they lower the level of C spending. However, the financial sector may inject some S back into the model by lending them to business firms wanting finance to expand their operations through private investment spending (I). This involves the purchase of plant and equipment. Being an injection of spending, I helps to lift the level of AD.

Government sector

Another part of household income is devoted to paying government taxes. These, too, are classed as a leakage from the model because they lower the level of C. But again, some or all of the money taken out through taxation may re-enter the circular flow if it is used to pay for government consumption and investment spending (G). G is, therefore, an injection into AD designed to help provide the community with collective goods and services, such as public schools, hospitals, roads or defence.

Overseas sector

Some household income leaks out of the Australian economy as spending on imports of goods and services (M). Sometimes this leakage is partially or fully offset by overseas spending on our nation's exports (X). Here, X is regarded as an injection or addition to the level of AD.

In summary, flow 3 represents the total value of spending on Australian-made goods and services measured over a period of time. This is called AD and it consists of C + I + G + X – M. The reason for subtracting M at this point, is to exclude spending on imported goods and services, so that what remains is only the *value of expenditure on Australian-made items*. So far we have seen that the level of AD is influenced by the total value of leakages (made up of S + T + M) relative to the total value of injections (made up of I + G + X). If there was a rise in leakages relative to injections, AD would fall. Conversely, if there was a fall in leakages against a rise in injections, there would be an increase in AD or spending on Australian-made goods and services.



Flow 4 — flow of final goods and services supplied (GDP)

Flow 4 is the total value ($) of goods and services actually produced or supplied by the business sector measured over a period of time. This represents aggregate supply. It reflects the overall level of Australian economic activity (commonly measured by the value of gross domestic product or GDP). Especially in the short- to medium-term, the actual level of economic activity or GDP is dictated by the value of AD (flow 3). In the longer term, the supply of resources available (flow 1) is also important since it has a critical effect on the economy's productive capacity or potential level of GDP. In other words, the overall level of economic activity is determined by both *aggregate demand* and *aggregate supply* factors.

2.5.3 Using the model to explain changes domestic economic activity

When examining the circular flow model in figure 2.5, it is important to remember that there are *two* main influences on the size of GDP (our key macroeconomic indicator of activity):

1. the level of **aggregate demand**
2. the level of **aggregate supply**.

Let us now take a closer look at these two influences.

1. Aggregate demand determines the actual short-term cyclical level of economic activity

Applying the circular flow model, we can see that the short-term cyclical ups and downs in the *actual* level of GDP (flow 4) are largely caused by increases or decreases in the level of AD (flow 3, or, the total value of expenditure on Australian-made goods and services, made up of C + I + G + X – M). Additionally, the model also shows that changes in AD can be caused by changes in the total value of leakages (S + T + M) relative to the total value of injections (I + G + X).

Notice how in the short-term, cyclical changes in AD cause the *actual* level of economic activity to either rise or fall:

- ***Rising economic activity.*** A *period of expansion* in GDP is generally caused by a stronger growth in AD. This reflects lower leakages and/or higher injections. When businesses see AD or sales rise and levels of unsold stocks in warehouses fall leading to widespread shortages of goods and services and perhaps rising prices or inflation, they lift their output (as long as there is some unused or spare productive capacity available). This causes the actual value of GDP to rise, increasing the demand for resources, creating more jobs and growing national incomes.

- ***Slowing economic activity.*** A *period of slowdown* in GDP is largely the result of a weaker growth in AD. This reflects higher leakages and/or lower injections. When businesses see a drop in spending and sales leading to unplanned rises in unsold stocks, they often discount their prices and cut their output, causing GDP to slow. In turn, the demand for resources falls, unemployment rises and national income declines — typical characteristic of a slowdown or recession.

Remember, especially in the short-term:

The value in AD (made up of C + I + G + X – M) → affects the *actual* value of GDP and national income

2. Aggregate supply can also influence the potential level of economic activity in the longer term

As important as aggregate demand is in determining economic activity, the circular flow model also refers to the available *supply* of resources by households (flow 1) and the total or *aggregate supply* of finished goods and services by businesses called GDP (flow 4). While aggregate supply can respond to changes in aggregate demand in the short-term, in the long-term the *potential* level of output supplied is largely governed by the *quantity* and *efficiency* of resources available for use by businesses. When *aggregate supply* is at its *potential* or maximum level, it can be thought of as being similar to a point located on a nation's production possibility frontier (PPF). This means that:

- Aggregate supply or the total output of an economy or potential GDP can keep *growing*, only if businesses have access to a greater volume of resources or if they use existing resources more efficiently.
- Aggregate supply will be *lower* if there is reduced access to resources or if businesses close down rather than expand.

Remember, especially in the longer term:

Aggregate supply (determined partly by the resources available) → affects the *potential* level of GDP

In the remaining sections of this topic, we will take a detailed look at the various *factors* affecting *aggregate demand* and *aggregate supply*, since these are also the macroeconomic determinants of Australia's level of economic activity.

on Resources

Weblinks The circular flow of income
Measuring GDP using the income approach and the expenditure approach
The circular flow model of a market economy
Circular flow of income — how the different components of an economy interact

2.5 Activities

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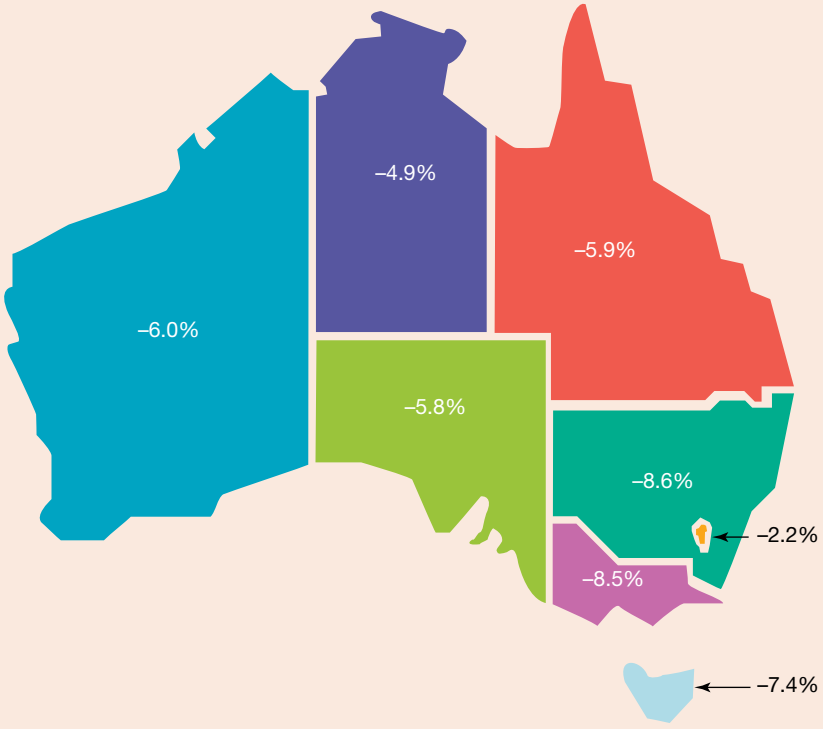
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2.5 Exercise

1. **Test** your memory by drawing and fully labelling the five-sector circular flow model of the economy. **(4 marks)**
2. **Describe** the key functions of each of the five sectors shown on the circular flow model. **(5 marks)**
3. Accurately **define** each of the key flows shown on the circular model (including AD, GDP and total incomes). **(3 marks)**
4. According to the model, **identify** and **explain** the factors that can cause Australia's level of economic activity to rise or fall. **(3 marks)**
5. According to the model, **identify** and **outline** the main factors that ultimately determine the rate of growth in a nation's productive capacity and *potential* GDP. **(2 marks)**
6. **a.** Use the model to **explain** how generally *weaker* macroeconomic or *aggregate demand factors* would be likely to affect the level of economic activity in the short- to medium-term. **(2 marks)**
   b. Use the circular flow model to logically step through and **explain** the macroeconomic *effects* of the following events on the Australian economy. **(9 × 1 mark)**
   i. A rise in the level of savings
   ii. A drop in imports
   iii. Increased private consumption
   iv. Lower investment spending
   v. Cuts in personal income tax rates.
   vi. A fall in leakages relative to injections
   vii. Rises in GDP
   viii. A drop in total household incomes
   ix. A reduction in the availability and efficiency of resources
7. Before answering the questions that follow, examine the figure below. This shows changes in AD by state for quarter four of 2019–20. This quarter recorded part of the COVID-induced recession.

The annual percentage change in demand or spending on GDP by state in the quarter ending June 2020 (covering part of the COVID-induced recession).



Source: Australian Bureau of Statistics. See https://www.abs.gov.au/statistics/economy/national-accounts/australian-national-accounts-national-income-expenditure-and-product/jun-2020.

a. During this part of the COVID-induced recession, **identify** the two states that suffered least and the two states that suffered most, as judged by changes in their spending on goods and services. **(2 marks)**

b. **Suggest** why some states recorded larger falls in spending then others. **(2 marks)**

c. **Predict** the likely macroeconomic *effects* of the change in spending or demand in NSW and Victoria. **(2 marks)**

Solutions and sample responses are available online.

2.6 Meaning and importance of aggregate demand, and the factors that may affect aggregate demand and domestic economic conditions

KEY KNOWLEDGE

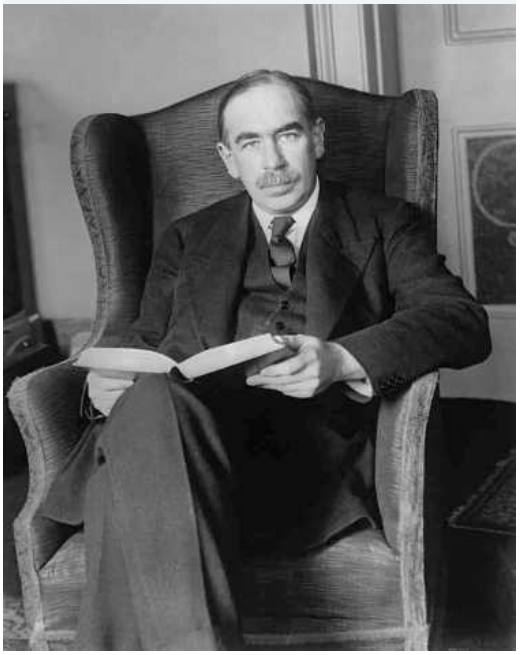
The purpose of economic activity

- The meaning and importance of aggregate demand and the factors that may affect the level of aggregate demand in the economy, including disposable income, interest rates, consumer confidence, business confidence, the exchange rate and rates of economic growth overseas

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

In subtopic 2.5, we established the central importance of *aggregate demand* (AD, consisting of C + I + G + X – M) in determining Australia's shorter term or cyclical level of economic activity. Before the 1930s, little significance was attached to the role of total spending. However, this soon changed. In his best-known book, *The General Theory of Employment, Interest and Money*, published in 1936, well-known British economist John Maynard Keynes (pictured in figure 2.6) pointed out that short-term instability in AD and its components was mainly responsible for the cyclical ups and downs in the level of economic activity. This period marked the start of macroeconomics as an area of study.

FIGURE 2.6 John Maynard Keynes (1883–1946) was a British economist whose ideas had a significant impact on modern macroeconomic or aggregate demand theory and practice.



Following his premature death in 1946, Keynesian demand-side economics reached its pinnacle in popularity throughout market capitalist economies, including Australia, during the 1950s and 1960s. However, confidence in this theory was undermined when it was unable to deal with the problem of *stagflation* (stagnant production, high unemployment and rapid inflation) experienced in the 1970s. Despite its tarnished reputation from the 1970s, Keynesian theory is still seen as highly relevant today for understanding and regulating economic activity. For instance, in the recent COVID-induced recession during 2019–20–21, the Australian government dramatically increased budget outlays to help support spending or AD and soften the contraction of economic activity. Nowadays, emphasis is also placed on the factors affecting aggregate supply (AS) and the nation's longer term productive capacity.

'Capitalism is the astounding belief that the most wickedest of men will do the most wickedest of things for the greatest good of everyone.'

'The difficulty lies, not in the new ideas, but in escaping from the old ones . . .'

'But this *long run* is a misleading guide to current affairs. *In the long run* we are all dead.'

John Maynard Keynes

2.6.1 The meaning and nature of aggregate demand

Recall that aggregate demand (AD) refers to the combined or total annual value of spending by households, businesses, governments and net overseas transactions on Australian-made goods and services. As a macroeconomic variable, it consists of the sum of the following types of expenditure or components making up AD:

- *private consumption spending* by households (C)
- *private investment spending* by businesses on plant and equipment (I)
- *public consumption spending* by governments (G_1)
- *public investment spending* by governments (G_2)
- *net overseas expenditure* made up of spending on our exports (X) from abroad minus spending on imports (M) by local residents.

Aggregate demand can be expressed as follows:

$$\text{Aggregate demand } (AD) = \underbrace{(C + I)}_{\text{Private spending}} \quad \underbrace{+ (G_1 + G_2)}_{\text{Public spending}} \quad \underbrace{+ (X - M)}_{\text{Net overseas spending}}$$

Components of aggregate demand

Let us take a closer look at these important components making up Australia's level of aggregate demand.

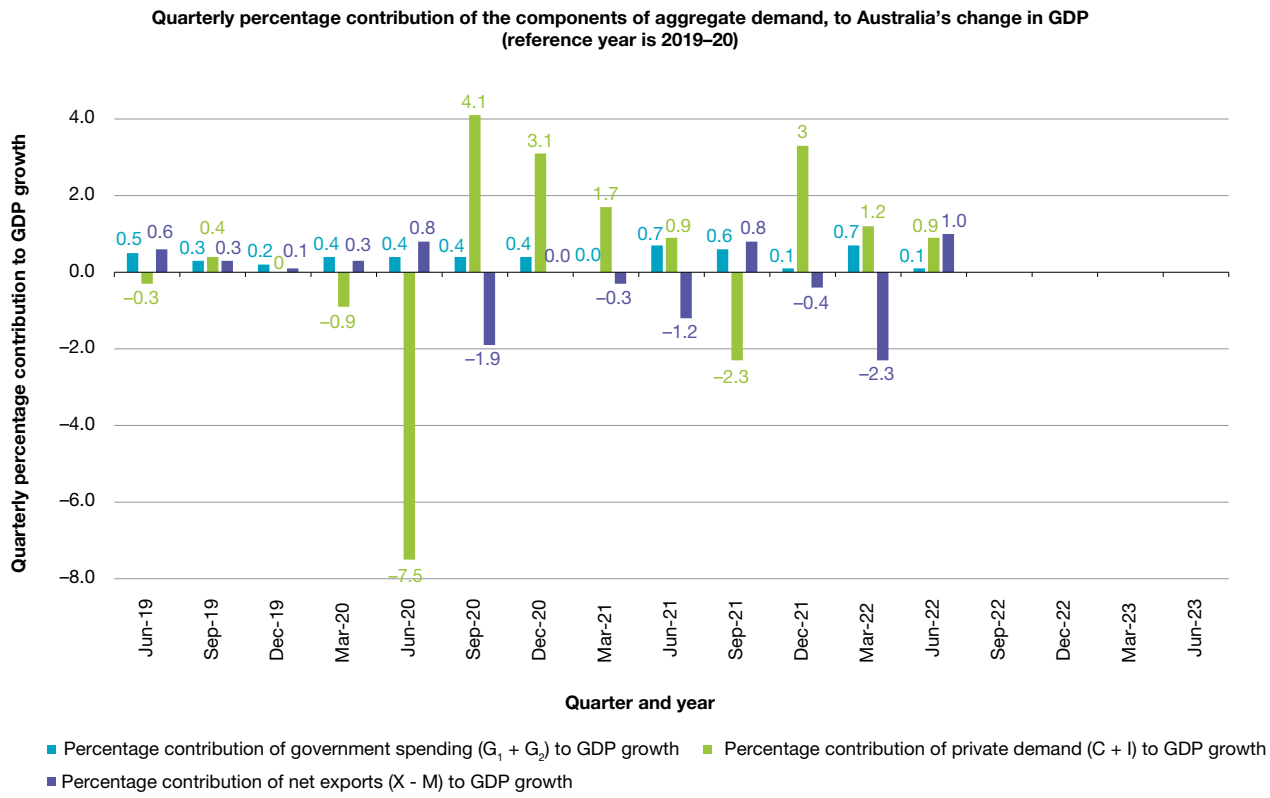
- **Private consumption (C):** Private consumption (C) includes household expenditure designed to help satisfy our immediate needs and wants for durable and single-use goods such as food and clothing, as well as services like rent (but not investment in houses), transport, power, entertainment and childcare. While this component is normally relatively stable, its rate of growth can vary, contributing to economic instability. It represents almost 60 per cent of AD.
- **Private investment (I):** Private investment (I) involves capital spending by firms on products used to make other goods and services, and often designed to grow businesses. These include physical plant, manufactured materials and equipment including machinery, buildings including dwellings, aircraft, dams, fertiliser, computers and farm vehicles. While this type of spending adds to AD, it also helps to raise our nation's productive capacity and make possible the production of other goods and services, as well as to improve the efficiency of labour and natural resources. Although this component represents less than 22 per cent of AD, unfortunately its level is very unstable.
- **Government consumption (G_1):** Government consumption (G_1) is public expenditure on the goods and services used to help satisfy the community's immediate needs and wants. It incorporates spending on staff wages for government departments, including politicians, defence spending and day-to-day running costs such as stationery and telephone calls. Government spending does not include welfare outlays because these are *not* actually *spent* by the government, but rather by welfare benefit recipients. In recent years, G_1 has averaged around 17 per cent of AD.
- **Government investment (G_2):** Government investment spending (G_2) incorporates government capital or investment expenditure on equipment needed for the provision of public social and economic infrastructure. It includes spending such as the building of schools, hospitals, roads, railways, telecommunications networks and water supply. It is also used to help expand Australia's productive capacity and improve the efficiency of other resources. This spending represents only about 3 per cent of AD.

- **Net exports (X – M):** Net exports (X – M) represent the balance or difference between foreign spending on Australia's exports of goods and services such as primary produce, manufactured items, tourism and education, *minus* our spending on imports of goods and services, including electronic equipment, capital goods, travel abroad, shipping, insurance, cars and oil. X and M each represents about 18 to 24 per cent of AD. The net impact of the external sector on AD is usually plus or minus about 4 per cent. However, this net figure behaves erratically.
- **Net increase in unsold business stocks:** Net increase in unsold business stocks are a relatively minor item in AD. They represent money that has been spent by firms to make items that have not yet been sold in the current period of time.

Reasons for the volatility of aggregate demand

Even over quite short periods of time between one year and the next, these *components* or parts of spending making up Australia's AD are quite unstable and prone to fluctuation. This instability is shown in figure 2.7. It is therefore hardly surprising that the level of economic activity (GDP) also shows volatility where it speeds up and slows down.

FIGURE 2.7 The changeable nature of the components of spending making up Australia's aggregate demand and GDP.



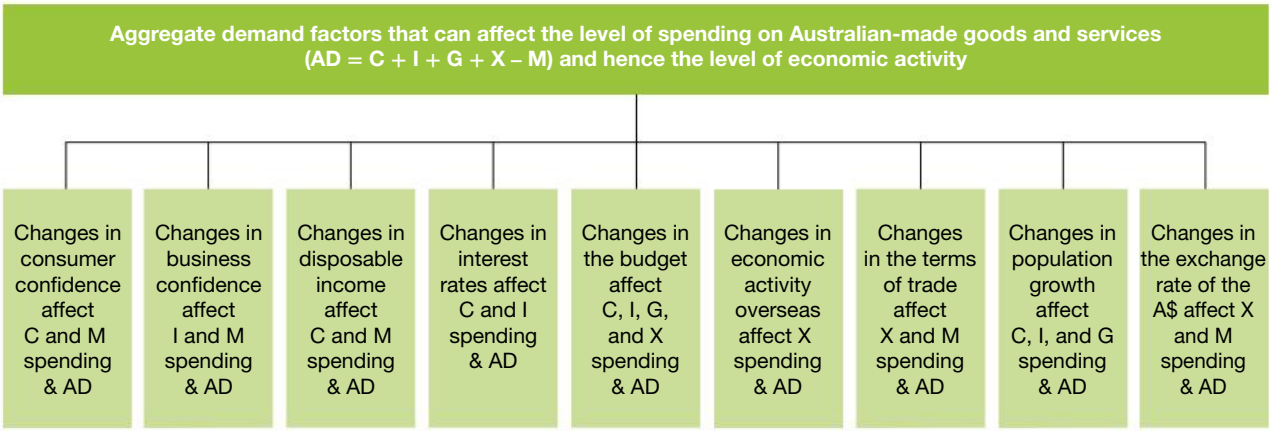
Source: Data derived from ABS 'Australian national accounts: National income, expenditure and product', June 2022.

We now turn to consider the macroeconomic reasons for this volatility in the components making up the level of AD.

2.6.2 The factors that may affect the level of aggregate demand in the economy

In Topic 1 we examined the *microeconomic demand conditions* affecting the quantity of a single good or service that buyers were prepared to purchase at different price levels. Now, however, we are interested in the **aggregate demand factors** that can cause rises or falls in spending (AD made up of C + I + G + X – M) at various prices, across the whole Australian economy. These are summarised in figure 2.8.

FIGURE 2.8 Factors that can affect aggregate demand in the economy.



Household or consumer confidence can affect aggregate demand

Consumer confidence or sentiment refers to general household expectations about their future income, employment prospects and inflation. **Consumer confidence** affects the future decisions of households about whether to spend on local or foreign-made goods and services, or save their income. Hence it is clearly an aggregate demand factor. After a time lag, weaker confidence (greater pessimism) lifts household savings and depresses C. This tends to slow AD and economic activity. However, stronger confidence has the reverse effect.

Household disposable income can affect aggregate demand

Household **disposable income** is the money available for spending by individuals after receiving government welfare transfers and following the payment of personal tax. This is an aggregate demand factor because it especially affects the level of household C of local and foreign-made goods and services. A more rapid rise in disposable income usually causes an acceleration in C. However, a softer growth in disposable income weakens AD, and slows GDP and economic activity.



The rate of population growth can affect aggregate demand

A country's population growth rate is influenced by both the net natural increase in population (births minus deaths) and by net migration (immigration minus emigration). This is an aggregate demand factor since it will especially alter expenditure on C and G. Overall, a faster rate of population growth rate tends to lift AD, while a slower rate tends to weaken AD and economic activity.

Business confidence can affect aggregate demand

Business confidence or expectations has to do with whether firms are generally feeling optimistic or pessimistic about their level of future sales and profits. **Business confidence** is an aggregate demand factor because it affects the level of business investment spending (I) on new plant and equipment. If firms are optimistic and expect higher future sales and profits, after a time lag they lift I in order to help expand their productive capacity. Here, their spending tends to accelerate AD and economic activity. By contrast, the reverse occurs if business pessimism sets in.

Interest rates can affect aggregate demand

Interest rates are the cost of borrowing money (credit). Along with other factors, they are influenced by the Reserve Bank of Australia (RBA) and are part of its monetary policy. This policy is designed to affect the growth in credit-sensitive C (on consumer durables) and I spending (on the purchase of new equipment and the expansion of businesses). As a consequence, interest rates are seen as an aggregate demand factor affecting GDP, employment and income levels. After a time lag, a rise in interest rates tends to slow C and I, thus weakening AD and domestic economic activity, while a reduction in interest rates tends to eventually accelerate AD and GDP growth.

Budgetary policy can affect aggregate demand

Budgetary policy relates to changes in expected government receipts from taxes and outlays on goods and services for the upcoming year. Clearly, tax rates, outlays on welfare, industry assistance for exporters and spending on public goods like education, health or defence, can affect AD by influencing levels of C, I, G_1, G_2, X and even M. We will see that whether the government runs a budget surplus (where the value of tax and other receipts exceeds outlays) or a budget deficit (where the value of its outlays exceeds its receipts) depends on many things, especially domestic macroeconomic conditions (i.e. whether the level of economic activity is weak or strong). A surplus tends to slow AD, while a deficit provides stimulus to spending.

Economic activity overseas can affect aggregate demand

Economic activity overseas among our trading partners involves the general pace of production in countries including Japan, the United States, New Zealand and China, and whether these nations are experiencing a period of boom or recession. This is an aggregate demand factor that alters the level of overseas spending on our X (exports of locally made commodities, services and manufactured goods), and may possibly influence levels of foreign I. After a time lag, a downturn in activity overseas usually means weaker X sales (lower injections) and AD in Australia, thereby slowing domestic economic activity. However, the reverse applies if activity abroad rises.



The terms of trade can affect aggregate demand

The **terms of trade** measures the ratio of the average prices the world is prepared to pay us for our exports against the average price we pay the world for our imports. It is regarded as an aggregate demand factor because the *prices* we receive or pay in international transactions affect the *value* of our exports or injections against the value of imports or leakages. It is measured by means of an index that uses a base year as the basis of comparisons for following years. The terms of trade index = export price index ÷ import price index × 100. For instance, a rise in the terms of trade index (i.e. a rise in the ratio of export prices to import prices) tends to increase the value of our X (injections) relative to M (leakages). This tends to boost AD and economic activity, while a fall has the reverse effect.

The exchange rate for the Australian dollar can affect aggregate demand

Each year there are millions of international transactions between countries. For this to occur, currencies need to be swapped or exchanged. The **exchange rate** is the price at which the Australian dollar is swapped for other currencies. Changes in the dollar's *average* value can be gauged using the **trade weighted index (TWI)** consisting of a basket of key currencies or, alternatively, any of the individual exchange rates for around 200 foreign currencies. The exchange rate affects the price and hence the attractiveness of exports relative to imports. In turn, this affects the value of Australia's export sales, against the value of imports that we purchase. For example, a depreciation (fall in value) of the Australian dollar tends to boost the value of our X (injections) and reduce M (leakages), thereby increasing our levels of AD and economic activity. However, when the Australian dollar appreciates (rises in value), this slows net exports (X – M) and hence economic activity.

Table 2.1 summarises some of Australia's most important macroeconomic or aggregate demand drivers of spending and economic activity, especially in the short-term.

TABLE 2.1 Macroeconomic factors driving AD and short-term levels of economic activity in Australia.

Component of aggregate demand (AD)	Important macroeconomic or aggregate demand-side factors or conditions affecting the level of spending
Household consumption spending (C)	• Consumer confidence • Disposable income • Interest rates on credit • Household savings and listing debt
Business investment spending (I)	• Business confidence • Interest rates on credit • Changes in company tax rates
Government consumption and investment spending (G_1 & G_2)	• Domestic economic conditions • Election promises and political conditions • Budgetary policy settings and public sector debt
Net overseas or external spending (X – M)	• Value of the Australian dollar or exchange rate • Overseas and domestic economic conditions and confidence • Terms of trade and global commodity prices

2.6.3 Reviewing how changes in aggregate demand factors can affect the economy

Before closing this section about aggregate demand, it's worth reviewing the significance of changes in aggregate demand factors on the level of economic activity and prevailing domestic macroeconomic conditions. By affecting the components making up AD, changing macroeconomic aggregate demand factors can cause total spending to either rise or fall. In so doing, this alters the short-term cyclical level of GDP, economic activity, inflation, unemployment, incomes and material living standards. Figures 2.9 and 2.10 draw on the circular flow model and summarise the main steps or sequence in our explanation of changing economic conditions.

FIGURE 2.9 The significance of generally *stronger* aggregate demand-side factors.

Stronger macroeconomic demand-side factors that increase AD and domestic economic activity	
Step 1 ↓	**Stronger aggregate demand conditions:** Generally *stronger aggregate demand factors* (e.g. robust levels of consumer and business confidence, overseas activity) will boost levels of C, I, G and net Xs. This increases total sales of goods and services and lifts AD.
Step 2 ↓	**Impact on inflation:** *Stronger* aggregate demand conditions, rising sales, lengthening orders and unplanned falls in warehouse stock levels, generally mean that businesses will try to increase their production, providing there is some unused productive capacity available. If this spare capacity is not available, falling stocks may lead to widespread shortages of goods and services, causing demand inflation and rising prices.
Step 3 ↓	**Impact on production:** *Stronger* aggregate demand conditions, mean that firms try to increase production, the rate of GDP growth will accelerate, and the pace of economic activity will quicken. There is an upswing in the business cycle.
Step 4 ↓	**Impact on unemployment:** *Stronger* aggregate demand conditions and increasing production normally requires that firms purchase more resources, including labour. This tends to create more jobs and reduce cyclical unemployment.
Step 5 →	**Impact on incomes and living standards:** *Stronger* aggregate demand conditions, higher output, lower unemployment and rising average incomes normally tend to increase material living standards as long as inflation remains low. In addition, lower unemployment may help to strengthen aspects of non-material living standards (e.g. improved mental and physical health, relationships).

FIGURE 2.10 The significance of generally *weaker* aggregate demand-side factors.

Weaker macroeconomic demand-side factors that decrease AD and domestic economic activity	
Step 1 ↓	**Weaker aggregate demand conditions:** Generally *weaker aggregate demand factors* (e.g. drops in disposable income and terms of trade, and higher interest rates) will tend to slow levels of C, I, G and net Xs. This reduces total sales of goods and service and slows AD.
Step 2 ↓	**Impact on inflation:** *Weaker* aggregate demand conditions, falling sales, shortening orders and unplanned rises in warehouse stock levels, will normally cause businesses to cut their output to avoid further overproduction. Because of unplanned rises in stocks, there is likely to be widespread price discounting by firms to clear excess stocks. This causes demand inflation pressures to disappear.
Step 3 ↓	**Impact on production:** *Weaker* aggregate demand conditions will cause firms try to cut production, the growth rate in GDP will slow and the pace of economic activity will lessen. There is a slowdown or possibly a recession in the business cycle.
Step 4 ↓	**Impact on unemployment:** *Weaker* aggregate demand conditions and slower rates of GDP growth cause firms to purchase fewer resources, including labour. Other things remaining equal, this tends to reduce the number of jobs and increase unemployment.
Step 5 →	**Impact on incomes and living standards:** *Weaker* aggregate demand conditions where most firms are cutting production and employing fewer resources, often mean that average incomes and purchasing power are likely to fall. Economic prosperity and material living standards usually deteriorate. This is also likely to undermine many aspects of non-material living standards (i.e. greater social isolation, poorer mental health, feelings of worthlessness, stress).

on Resources

Weblinks Aggregate demand practice
Keynesian economics and the Great Depression

2.6 Activities

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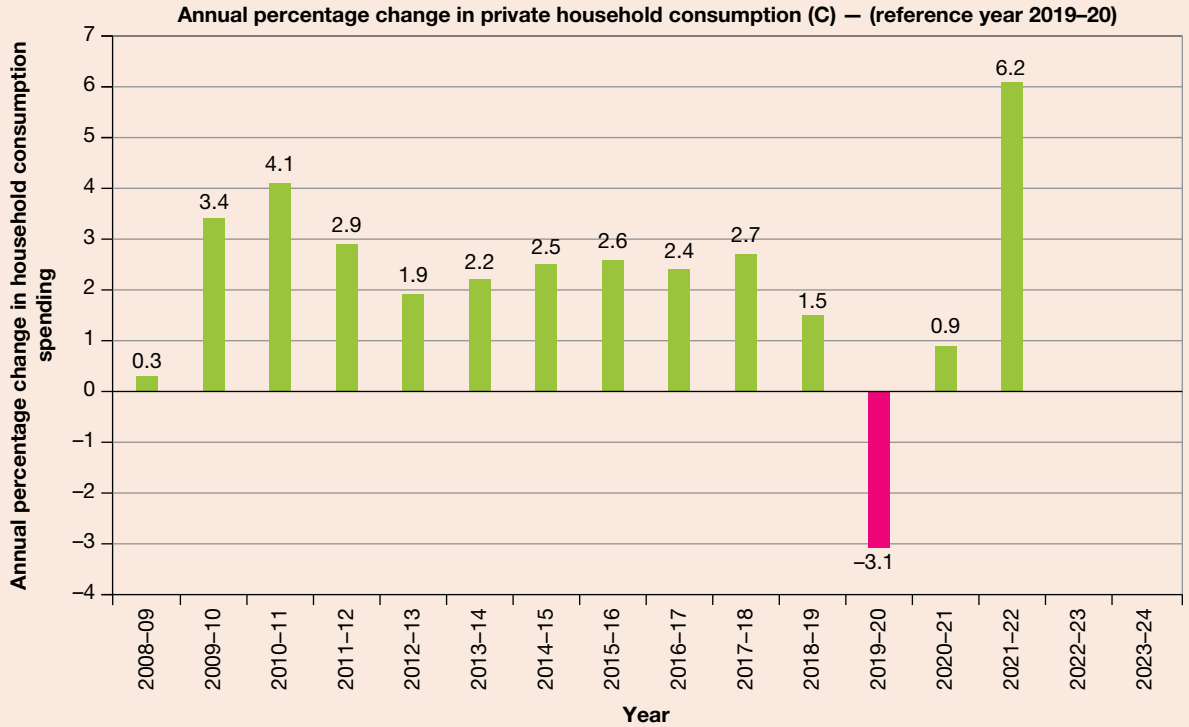
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2.6 Quick quiz on | **2.6 Exercise**

2.6 Exercise

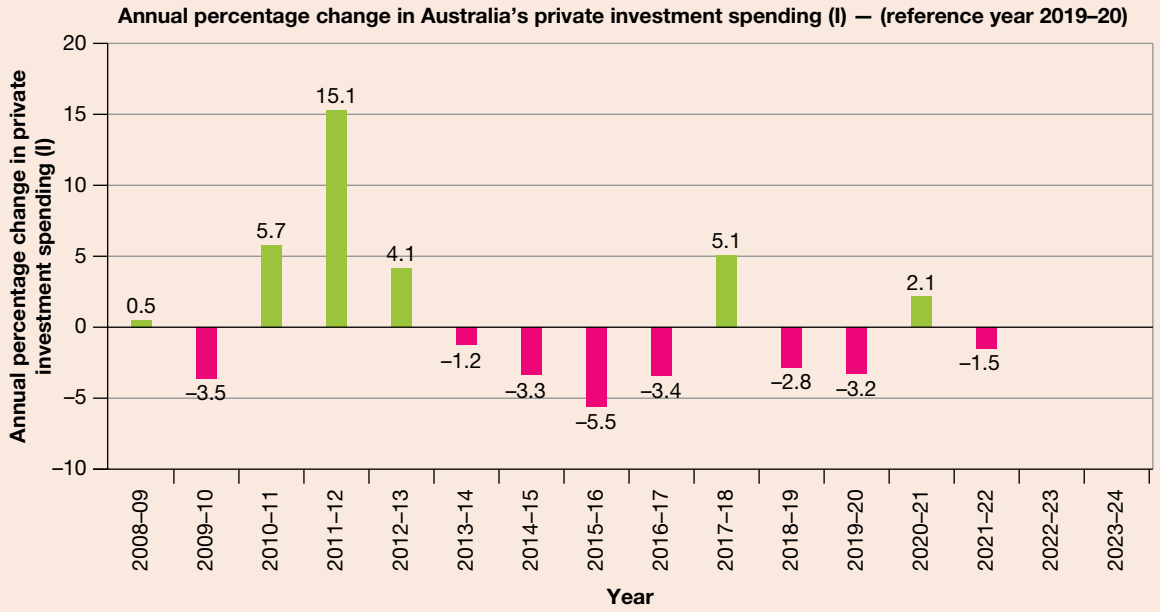
1. **Define** the term *aggregate demand*. **(1 mark)**
2. Keynesian economics traces changing levels of economic activity to changes in AD, which in turn reflect aggregate demand factors. **Identify** and **explain** *two* important aggregate demand factors that may affect the levels of each of the components of spending that make up AD (i.e. C, I, G, X and M). **(5 marks)**
3. **Explain**, step-by-step, the macroeconomic effects of a *rise* in the level of AD. **(4 marks)**
4. **Explain**, step-by-step, the macroeconomic effects of a *fall* in the level of AD. **(4 marks)**
5. a. **Identify** and **outline** three important aggregate demand factors that potentially could increase the level of economic activity in Australia. **(3 marks)**
   b. **Identify** and **outline** *three* important *aggregate demand factors* that potentially could *slow* the level of economic activity in Australia, other than those selected for your answer in part (a). **(3 marks)**
6. a. Briefly **define** private consumption spending (C). **(2 marks)**
   b. Using the figure below, **describe** the recent changes in Australian household consumption spending. **(1 mark)**
   c. **Identify, define** and **explain** *two* important aggregate demand factors that could account for the instability in Australia's private consumption to 2020–21–22. Try to support your answer with statistical data drawn from the figure below. **(4 marks)**



Source: Data derived from ABS, revised data June 2022, see https://www.abs.gov.au/statistics/economy/national-accounts/australian-system-national-accounts/latest-release#key-statistics.

7. **a.** **Describe** the nature of *private investment spending* (I) and **explain** how its level can affect economic activity. **(2 marks)**

   b. Examine the figure below showing changes in private investment spending. **Identify**, **define** and **explain** *two* important *aggregate demand factors* that could account for the instability in private investment spending to 2021–22. Try to support your answer with statistical data drawn from the figure. **(4 marks)**



Source: Data derived from ABS, National Accounts, June 2022, see https://www.abs.gov.au/statistics/ economy/national-accounts/australian-system-national-accounts/latest-release#key-statistics.

Solutions and sample responses are available online.

2.7 Meaning and importance of aggregate supply, and the factors that may affect aggregate supply and domestic economic conditions

KEY KNOWLEDGE

The purpose of economic activity

- The meaning and importance of aggregate supply and the factors that may affect the level of aggregate supply in the economy, including quantity and quality of the factors of production, costs of production, technological change, productivity growth, exchange rates and climatic conditions, and other events including government regulations and disruptions to international supply chains

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

Ultimately or in the long-term, the size and growth of Australia's GDP are limited by the levels of aggregate supply (AS) and a country's productive capacity. Remember that *aggregate supply refers to the combined production level of all the nation's businesses measured over a period of time*. Previously we noted that in the end, the nation's potential supply or production level (economic activity) is especially limited by the quantity (volume) and quality (i.e. efficiency or productivity) of its available resources.

This is not at all a new idea. Indeed, classical economists such as Adam Smith (1723–1790), John Stuart Mill (1806–1873) and Jean Batiste Say (1767–1832) all emphasised the importance of the aggregate supply side of the economy as the main determinant of economic activity. Perhaps the clearest statement was contained in Say's Law. Roughly summarised, this claims that *'supply creates its own demand'*. Thus, the more goods and services produced or supplied, the more income is created and the greater the level of demand or spending. According to this theory, there could never be severe underproduction (boom) or overproduction (recession), since spending should exactly match incomes and the level of production supplied. Furthermore, given competition and self-interest, a nation's output level would be close to the economy's productive capacity so that all resources would be fully employed. Ultimately, the level of economic activity would be limited only by the availability of a nation's resources.

Emphasis on aggregate supply as a key determinant of economic activity has moved in and out of fashion. The Great Depression (1929–33) for instance, vividly demonstrated that supply did *not* always create its own demand and that there could be overproduction and 30 per cent unemployment! Indeed, it was John Maynard Keynes' General Theory that turned Say's Law on its head! He in fact claimed that 'demand dictates supply'. However, in the 1970s — after 40 years in retirement — a variation on traditional supply-side theory was pushed by an American economist, Arthur Laffer (shown in figure 2.11), along with others. Since the 1970s, these new ideas have been further refined, giving rise to a range of government aggregate supply-side policies that sought to create incentives for firms and individuals to improve efficiency and lift their level of output. This approach was clearly evident in the policies of the Reagan ('Reaganomics') and Thatcher ('Thatcherism') administrations in the United States and the Unites Kingdom respectively, as well as in those of the Hawke, Keating, Howard and subsequent Coalition governments in Australia to 2023. Even so, it is now realised that both the aggregate supply and aggregate demand sides of the economy have important complementary roles to play in influencing economic activity at the macroeconomic level.

FIGURE 2.11 Arthur Laffer's ideas have helped to popularise supply-side economics.



'Government spending is taxation. When you look at this, I've never heard of a poor person spending himself into prosperity; let alone I've never heard of a poor person taxing himself into prosperity.'

'And you can't have a prosperous economy when the government is way over spending, raising taxes, printing too much money, overregulating and restricting free trade. It just can't be done.'

Arthur Laffer

2.7.1 The meaning and nature of aggregate supply

Another way of defining *aggregate supply* (AS) is as the overall level of production of all types of goods and services (including consumer, capital and public goods) that are collectively produced or supplied at given general levels of prices, by the nation's businesses, measured over a period of time.

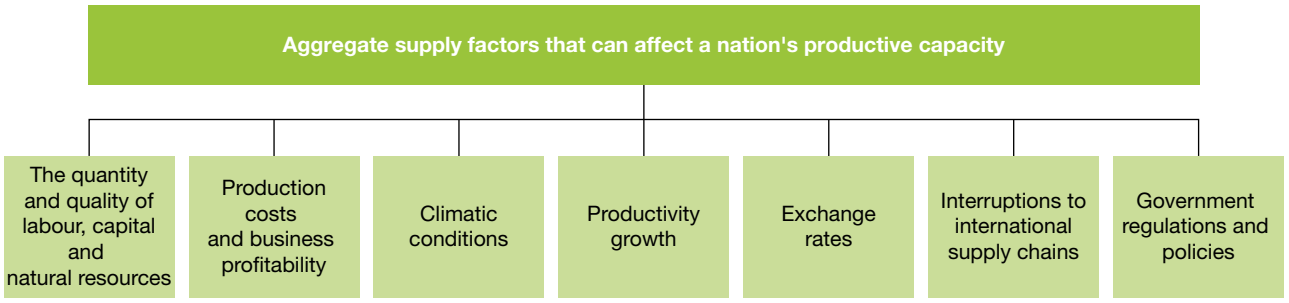
Up to a point, firms are generally more *willing* and *able* to *expand* their collective supply or national production in response to a general rise in prices or an increase in total spending, provided there is some spare capacity or available resources in the economy. Beyond this point, where no unused capacity exists (there are no unemployed resources) and a nation is on its production possibility frontier (PPF), aggregate supply cannot grow further unless there are changes involving better aggregate *supply conditions* that make businesses even more willing and able to lift their production levels.

2.7.2 The factors that may affect the level of aggregate supply in the economy

There are many **aggregate supply factors** affecting a nation's productive capacity, and its potential level of GDP and income. These factors are summarised in figure 2.12.



FIGURE 2.12 Factors that can affect aggregate supply in the economy.



The quantity and quality of resources can affect aggregate supply

The quantity (i.e. volume) and quality (i.e. productivity or efficiency) of natural, labour and capital resources available are the main determinants of a nation's productive capacity and aggregate supply, and hence also its potential level of GDP and income. Countries with access to a greater quantity of resources, and/or that use these inputs more efficiently, can potentially supply or produce higher levels of national output. In contrast, having fewer resources, and/or using these inefficiently, acts as a barrier to supply and limits productive capacity.

The *quantity and/or quality of labour resources* available affecting aggregate supply may be influenced by:

- the levels of *education*, skills and training of the **labour force**
- *demographics* and the rate of growth in the population size, as dictated by immigration levels and the rate of natural increase (the excess of births over deaths)
- the proportion of the population that is available to work which *participates* in the labour force.

The *quantity and/or quality of capital resources* available may be influenced by:

- the level of *interest rates on bank loans* to business borrowing credit to invest in new equipment or expand operations
- levels of local and foreign *investment by business* on new plant and equipment used to make goods and services
- the *rate of company tax* that affects the after-tax profits of businesses and hence the levels of start-ups and closures
- the extent to which a nation's physical capital incorporates the latest *technology* (including the use of robotics and automation).

The *quantity and/or quality of natural resources* available may be influenced by:

- the rate of *new discoveries*, relative to the depletion rate of known mineral and other resources
- the use of sustainable *land management practices* in farming and other industries
- the application of *technology* in farming (e.g. the use of genetically modified crops) and other industries (e.g. perhaps involving resource substitution)
- measures that increase resilience of the environment in response to the impacts of *climate change* and severe weather events.

Production costs that affect business profitability can affect aggregate supply

Aggregate supply is affected by the ability and willingness of businesses to produce goods and services. The bottom line or incentive here is that to thrive and expand, businesses must be able to make reasonable *profits*. However, they can only do this if their *production costs* are relatively low against those of local or overseas rivals. If businesses have relatively low costs and strong profits, they will expand their operations and productive capacity. This will increase the level of aggregate supply and grow the potential level of GDP and income. However, if costs are too high and firms are unprofitable, they will close down. Productive capacity will be lost, and aggregate supply reduced.

There are many factors affecting business costs, profits and aggregate supply. For example:

- the level of *labour costs*, including wages and on-costs (e.g. sickness and other types of leave, and compulsory superannuation charges paid by employers)
- changes in *labour productivity* or the value of GDP produced per hour worked
- the level of *interest rates on bank loans* to businesses that need to borrow credit to finance or expand their operations and purchase new equipment or technology

- the adequacy and efficiency of *national infrastructure* (e.g. transport, electricity, water, gas and telecommunications) used by firms to produce other types of goods and services
- the *costs of buying raw materials* (such as steel or oil) that firms use to make other goods and services
- *rate of company tax* here, relative to that overseas, affects after-tax profits and hence whether businesses expand or close
- the size of business operations and whether firms can gain *economies of large-scale production* (i.e. affecting a firm's average unit costs and profits).

Climatic conditions can affect aggregate supply

Changes in climatic conditions affect a nation's productive capacity and hence aggregate supply. On the one hand, favourable conditions can mean higher agricultural and other types of output from the resources available. Here, aggregate supply expands. In contrast, unfavourable climatic conditions — including drought, bushfires, floods and cyclones — have a devastating impact. Apart from the loss of life, these events can destroy crops, cattle, mines, tourism, forest plantations, ecosystems and **economic infrastructure** (especially power and transport networks). Productivity falls and production costs rise. As a result, some businesses close, workers lose their jobs, and aggregate supply and the potential level of GDP and income are reduced.

Productivity driven by technological change can affect aggregate supply

Productivity or efficiency affects aggregate supply. There are two types: *labour productivity* relates to the value of GDP produced per hour worked, while *multifactor productivity* relates to the value of GDP produced per unit of all types of resources or inputs used, not just labour. When productivity is growing strongly, this is seen as a favourable factor because more output can be gained from the same resources or inputs. This grows the economy's productive capacity and its potential level of GDP and incomes. However, a slower growth or fall in productivity accelerates production costs for firms, restricting aggregate supply and the potential level of output.

Technological change can affect aggregate supply

Technological change is often driven by research and development (R&D) and might include firms changing the way things are produced or sold, and/or the development of new types of goods and services. It is an important driver of productivity and could include the automation of production processes that replace manual labour, the use of robotics and artificial intelligence, more powerful computers, and faster internet and communication speeds. Often the application of new technology can help to speed up production, lower costs, develop new markets, improve competitiveness, and have a favourable effect on a country's productive capacity, hence growing the potential level of GDP and income. However, failure to apply new technology will see the economy become less efficient and uncompetitive. This would restrict aggregate supply.

Exchange rates can affect aggregate supply

The *exchange rate* of a country relates to the number of units of another currency that can be swapped for one unit of its own. This can affect a nation's aggregate supply in various ways. However, one of the main impacts of a change in the exchange rate is on the production costs and, hence, the profitability of firms. This is because many local businesses have to purchase imports of raw materials (e.g. oil), equipment (e.g. aircraft, trucks or robots) and services (e.g. financial, transport) needed for production.

For these firms, a *lower* exchange rate tends to raise these production costs. Assuming other things remain constant, more expensive imports caused by a lower exchange rate can reduce a firm's profitability (although this added production cost, caused by the weaker A$, might be partly offset by an improvement in the international price competitiveness of local businesses).

In contrast, a *rise* in the exchange rate, as an aggregate supply factor, can help reduce the cost of imports used in production and lift the profits for some local firms (although this benefit, caused by the higher A$, might be partly offset by its weakened international competitiveness).

Interruptions to international supply chains can affect aggregate supply

All businesses depend on *supply chains* — that is, they rely on other suppliers both here and overseas, so that they can produce or sell their good or service. For example, makers of aluminium depend on the supply of bauxite ore, the supply of cheap electricity, the supply of transport, the supply of labour and the supply of special machinery. Farmers also rely on supply chains for equipment, fuel, seed, fertiliser and labour, while businesses selling and repairing cars depend on supplies of new vehicles and parts.

Without smooth and reliable supply chains, production is interrupted, limiting productive capacity and the potential levels of GDP, employment and incomes. During pandemics (e.g. COVID-19 lockdowns, including those in China) and war (e.g. Russia's invasion of Ukraine), international supply chains are greatly disrupted and supplies of many goods and services are limited. As recent factors, this has greatly curbed our productive capacity, aggregate supply and the potential level of GDP and income.

Government regulations and policies can affect aggregate supply

Governments sometimes use *regulations* and various policies to help increase efficiency in resource allocation and improve outcomes. These can affect the nation's productive capacity, aggregate supply, and the potential level of GDP, employment and income. Examples of regulations and policies here might include the following:

- *Environmental policies* that are designed to limit greenhouse gas emissions and climate change (e.g. using a carbon emissions trading scheme) can encourage the growth of low-emissions industries, while, at the same time, discouraging the production of goods and services involving high emissions. In turn, this affects the rate of expansion of the nation's productive capacity and the level of aggregate supply, for both current and future generations.
- *Pandemic-related lockdowns*, involving government regulations that force businesses to close, greatly reduce aggregate supply and the productive capacity of the economy.
- Policies related to the quality and funding of *education and training* can boost the skills, innovativeness and capacities of the labour force. They can lift productivity, expand productive capacity and increase aggregate supply.
- *Immigration policy* helps to determine the number and skills of permanent migrants entering the country. This affects the availability of skilled labour, wage costs and participation rates, thereby impacting a nation's productive capacity and aggregate supply.
- The adequacy of government *investment in national infrastructure* (e.g. transport, water and energy) used by firms to produce other goods and services can affect production costs, profits, the rate of business expansion, productive capacity and aggregate supply.
- Changes in *policies related to the protection of local industry* from import competition (e.g. using tariffs on imports or government subsidies) can affect business expansion or closure, thereby impacting productive capacity and aggregate supply.
- Changes in the regulations related to *access to welfare and childcare assistance* affect the proportion of people who participate in the labour force and, hence, alter a nation's productive capacity, aggregate supply and the potential levels of GDP, employment and incomes.

2.7.3 Reviewing how changes in aggregate supply factors can affect the economy

In the *short-term* where there is unused capacity available in the economy and higher unemployment, a nation's level of economic activity (and therefore its material living standards) largely reflects the level of *aggregate demand*. In other words, aggregate demand decides the extent to which the economy's available capacity is actually used. However, in the *longer term*, it is impossible to keep on expanding the level of economic activity and production simply by spending more and boosting AD. The economy soon hits its capacity limits with very low unemployment. When this point is reached, further increases in national production depend on new, more favourable *aggregate supply conditions* that grow productive capacity.

Figures 2.13 and 2.14 summarise the effects on the potential level of economic activity and domestic economic conditions, of generally *more favourable* or *less favourable* aggregate supply conditions.

FIGURE 2.13 How more favourable aggregate supply factors can increase economic activity.

Generally more favourable aggregate supply conditions	
Step 1 ↓	**More favourable aggregate supply conditions:** Generally ***more favourable*** aggregate supply conditions for Australian businesses — including greater access to resources and better profitability (e.g. due to lower wage costs, fewer government restrictions on business, lower rates of company tax, higher labour productivity, new mineral discoveries, increased immigration, lower oil prices, cheaper electricity, access to improved technology) — help to make firms more willing and able to produce goods and services and expand their operations.
Step 2 →	**Impact on inflation:** ***More favourable*** aggregate supply conditions that involve lower production costs mean that firms can profitably sell their goods and services at lower prices. This slows cost inflation and strengthens our competitiveness in international trade.
Step 3 →	**The impact on production:** ***More favourable*** aggregate supply conditions that involve lower production costs, mean that firms can make better profits leading to expansion rather than business closures. Other things remaining equal, this causes a faster rise in the nation's productive capacity, the PPF, and the potential, sustainable, or non-inflationary rate of growth in national production or GDP.
Step 4 →	**The impact on unemployment:** ***More favourable*** aggregate supply conditions that involve lower production costs, mean that other things remaining equal, firms can make better profits leading to expansion rather than business closures. Over time, this helps to reduce structural unemployment.
Step 5 →	**The impact on incomes and living standards:** ***More favourable*** aggregate supply conditions that lead to slower cost inflation, better international competitiveness, business expansion and lower structural unemployment, all help to increase the purchasing power of incomes and improve material living standards. In addition, some aspects of non-material living standards can benefit from lower unemployment, including improved happiness, health outcomes and relationships.

FIGURE 2.14 How less favourable aggregate supply conditions can slow economic activity.

Generally less favourable aggregate supply conditions	
Step 1 ↓	**Less favourable aggregate supply conditions:** Generally ***less favourable*** aggregate supply conditions for Australian businesses — including reduced access to resources and poorer profitability (e.g. due to an ageing population, severe weather events including drought and cyclones, disruptions to supply chains, government restrictions, negative labour productivity combined with higher wages, higher taxes on business, dearer electricity, infrastructure bottlenecks) — make firms less willing and able to produce goods and services.
Step 2 →	**Impact on inflation:** ***Less favourable*** aggregate supply conditions that involve higher production costs mean that firms need to raise their prices to cover costs and protect profits. This puts upward pressure on cost inflation and weakens our competitiveness in international trade.
Step 3 →	**The impact on production:** ***Less favourable*** aggregate supply conditions that involve higher production costs, may undermine business profits leading to less expansion and more business closures. Other things remaining equal, this slows the non-inflationary rise in the nation's productive capacity, the PPF, and potential sustainable rate of GDP growth.
Step 4 →	**The impact on unemployment:** ***Less favourable*** aggregate supply conditions that involve higher production costs, mean that other things remaining equal, firms may have weaker profits, leading to less expansion and more business closures. This would tend to increase structural unemployment.
Step 5 →	**The impact on incomes and living standards:** ***Less favourable*** aggregate supply conditions that tend to accelerate inflation, undermine international competitiveness, slow business expansion, add to closures, and raise structural unemployment, all help to reduce the purchasing power of incomes and material living standards. In addition, some aspects of non-material living standards may suffer from rising structural unemployment, which often undermines happiness, mental and physical health outcomes, and relationships.

on Resources

Weblink Aggregate supply practice

2.7 Activities

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2.7 Exercise

1. **Define** the term *aggregate supply*. **(2 marks)**
2. **List** and **outline** the operation of two important determinants of the level of aggregate supply. **(2 marks)**
3. **Explain** how each of the following aggregate supply factors would be likely to affect a nation's productive capacity: **(6 x 1 mark)**
   - **a.** a rise in costs of production for firms or falling profits
   - **b.** an increase in the labour force participation rate
   - **c.** weaker labour productivity
   - **d.** a reduction in tax rates on individuals and companies
   - **e.** the end of drought conditions
   - **f.** a reduction in bankruptcy rates among businesses.
4. **Explain** how generally more favourable aggregate supply conditions would be likely to affect the rates of cost inflation, GDP and unemployment. **(6 marks)**
5. **a. Explain** the meaning of *productive capacity* and identify the general influences on its level. **(2 marks)**
   - **b.** Giving reasons, outline how any *two* of the following aggregate supply factors might tend to affect Australia's productive capacity, long-term sustainable level of economic activity and material living standards. **(4 marks)**
     - i. An increased labour force participation rate from 65 to over 70 per cent, as occurs in some Scandinavian countries.
     - ii. A slowdown in the adoption of ICT and other new technology.
     - iii. A $100 billion boost to government investment spending on nation-building infrastructure projects like water, transport and power generation.
     - iv. A general fall in business profitability.
     - v. Worsening drought, floods and climate change.
     - vi. Shortages of skilled labour due to an ageing population.
6. **Examine** the figure below showing the recent annual change in worker productivity for Australia and answer the questions that follow.

Annual percentage change in Australia's labour productivity (measured by GDP per hour worked).



Source: Revised data derived from ABS, reference year 2019–20, see https://www.abs.gov.au/statistics/economy/national-accounts/australian-system-national-accounts/latest-release.

a. **Explain** how *labour productivity* is measured. **(2 marks)**

b. **Identify** and **outline** *one* important factor that could explain the recent trend in labour productivity between 2013–14 and 2018–19. **(2 marks)**

c. Assuming other factors are constant, **explain** how you would you expect the overall growth in labour productivity between 2019–20 and 2021–22, to affect an economy's *productive capacity* and the PPF. Try to quote statistical data. **(2 marks)**

d. **Explain** how you would expect the overall change in labour productivity between 2019–20 and 2021–22, to affect the average level of *incomes* and *material living standards* of Australians. **(2 marks)**

7. a. As an aggregate supply factor, **explain** what interest rates charged on bank loans to business represent. **(2 marks)**

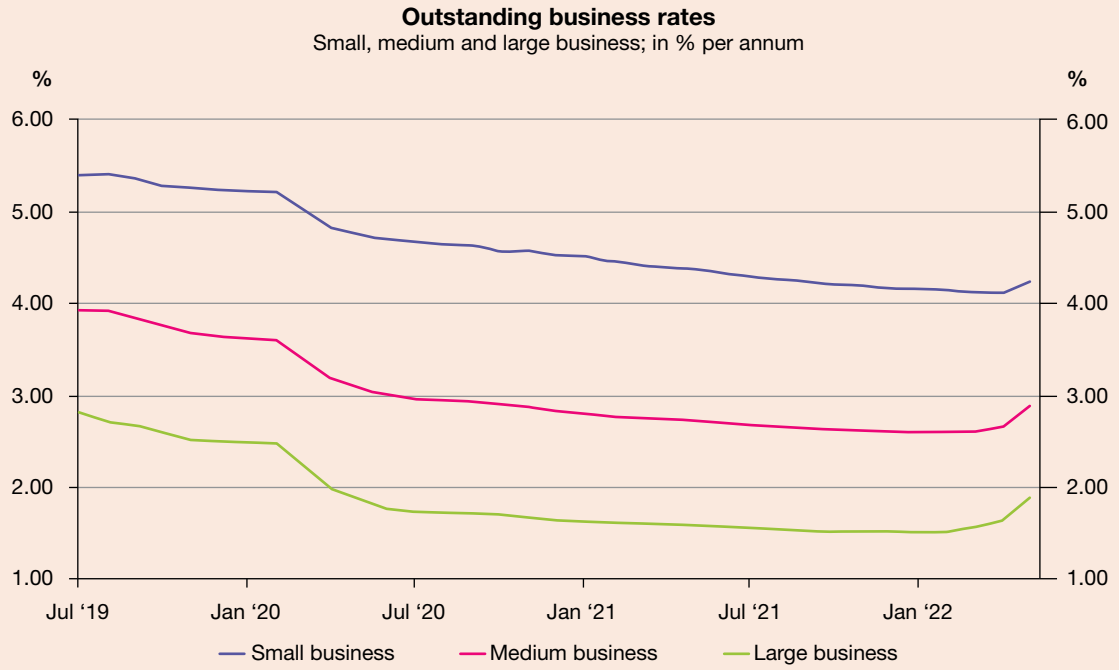
b. **Examine** the figure below showing changes in interest rates charged on outstanding loans to Australian businesses. **Explain** how you would expect the recent trend in Australian *interest rates* on *business loans* to affect each of the following:

i. aggregate demand and hence the short-term cyclical level of economic activity

ii. aggregate supply and hence the long-term sustainable level of economic activity.

Note: In your answer, try to draw and refer to a labelled AD–AS diagram to show the before and after situations of the change in overdraft interest rates. **(2 x 2 marks)**

Changes in Australian interest rates that banks charge businesses (annual percentage at January and June).



Sources: RBA, see https://www.rba.gov.au/statistics/interest-rates/.

Solutions and sample responses are available online.

2.8 Using a diagram to show how changes in aggregate demand and supply factors can affect domestic macroeconomic conditions

KEY KNOWLEDGE

The purpose of economic activity

- The importance of aggregate demand and aggregate demand factors as an influence on economic activity
- The importance of aggregate supply and aggregate supply factors as an influence on economic activity

The domestic macroeconomic goals

- Aggregate demand and aggregate supply factors that have affected the achievement or non-achievement of the goals of strong and sustainable economic growth, full employment and low and stable inflation over the past two years

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

We have looked at aggregate demand and aggregate supply separately, and examined how changes in a large number of macroeconomic factors or conditions can affect the level of economic activity and living standards, both in the short- and long-term. A handy tool often used by economists, called an **aggregate demand–supply diagram** (illustrated in figures 2.20 to 2.25), allows us to study the interaction between these two forces at the same time, and to see the effects they have on a country's general economic conditions. Unlike the microeconomic demand–supply diagram used in Topic 1 to show how the equilibrium price and quantity of a single good or service is determined in a particular market, the aggregate demand–supply diagram looks at how a *general equilibrium* is reached *nationally* across all markets, thereby affecting our key domestic macroeconomic conditions including:

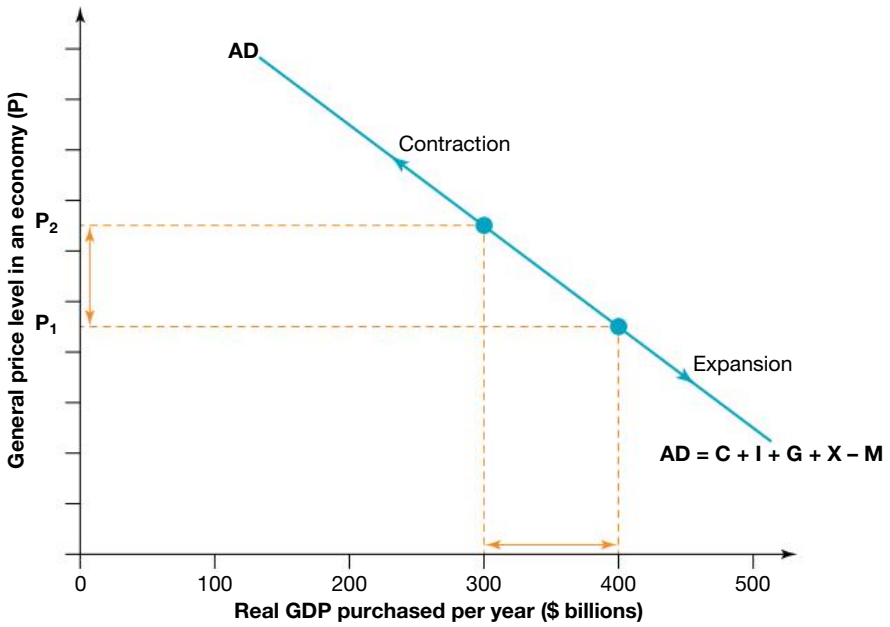
- the level of real GDP
- the levels of employment and unemployment
- the average level of prices or the inflation rate.

The downward sloping AD line in figure 2.15 shows that the value of real domestic production purchased contracts from, say, $400 billion to $300 billion as inflation or general prices rise from P_1 to P_2. By contrast, national output purchased expands as prices fall from P_2 to P_1.

These three domestic economic aspects will shortly be our focus. But for now, let us start to build the AD–AS diagram. When complete, the diagram will have several features, including the following:

- two axes: the vertical axis (representing the nation's average level of prices or the inflation rate) and the horizontal axis (showing the overall level of economic activity, measured by real GDP)
- an aggregate demand curve (drawn here as a straight line)
- an aggregate supply curve (drawn here with a kink or elbow)
- an equilibrium at the point of intersection for the AD–AS curves, which establishes the general price, output and employment levels for the whole economy.

FIGURE 2.15 The aggregate demand curve for the whole Australian economy.



2.8.1 The aggregate demand curve

Aggregate demand (AD) is the total annual value of spending on Australian-made goods and services. It consists of C + I + G_1 + G_2 + X – M. When graphed, as in figure 2.15, the AD curve or line (sometimes drawn as a concave curve) for the whole economy has a negative slope. This line looks much like the demand line we drew for a single market except that here it represents the total level of all spending. This means that the overall quantity of goods and services demanded (the amount of national output purchased each year, shown on the horizontal axis) *contracts* when there is a *rise* in the general price level (the national price level, shown on the vertical axis). Alternatively, *lower* prices cause an expansion in the quantity of national production demanded.

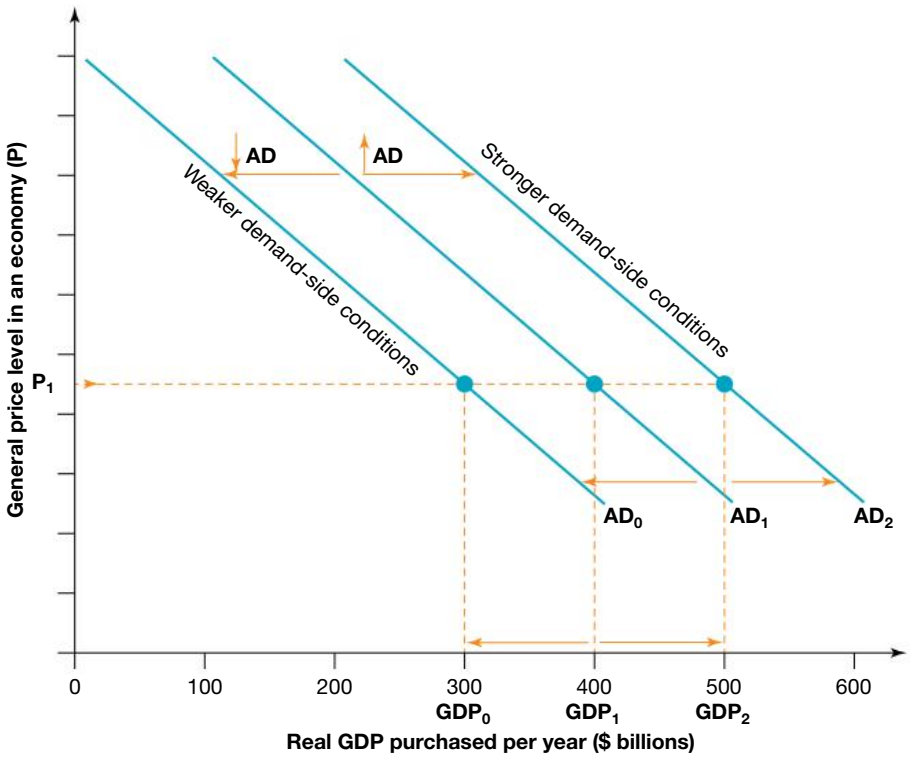
There are at least *three* reasons for this negative sloping aggregate demand line:

- *Purchasing power effect.* Generally higher prices throughout the economy eat into the purchasing power of people's nominal level of incomes, contracting how much they can afford to buy.
- *Import substitution effect.* Domestic inflation encourages Australians to buy cheaper or more competitive imports of goods and services, contracting spending on domestically produced goods and services.
- *Interest rate effect.* When average prices or inflation are higher, interest rates also rise. This makes borrowing money from banks more expensive, contracting spending levels.

It was John Maynard Keynes who recognised the *instability* of AD, especially the volatile nature of savings (S), private investment and (I) net exports (X – M). Over a period of time, people buying Australian-produced goods and services may increase or decrease their level of expenditure at a given price to reflect *new conditions of aggregate demand* (see subtopic 2.6). In figure 2.16, it can be seen that the national response to generally *stronger* demand-side conditions (such as greater business confidence and lower interest rates on credit) is that buyers are prepared to purchase larger quantities of local products at all price levels. This means that the whole AD line shifts horizontally outwards and to the right (called an increase in total expenditure from AD_1 to AD_2).

Conversely, generally *weaker* aggregate demand conditions (e.g. a recession overseas or lower disposable incomes) move the whole AD line horizontally inwards and to the left (called a decrease in total expenditure at any given price level from AD_1 to AD_0).

FIGURE 2.16 How changes in aggregate demand conditions cause shifts in the position of the AD line.



As discussed in subtopic 2.6, changing *aggregate demand factors* (such as changes in consumer confidence, household disposable income, rate of population growth, business confidence, interest rates, government budgetary policy, economic activity overseas, the terms of trade and the exchange rate for the Australian dollar) can all alter the level of AD in an economy.

Having examined the aggregate demand line, it's now time to take a look at the economy's aggregate supply line.

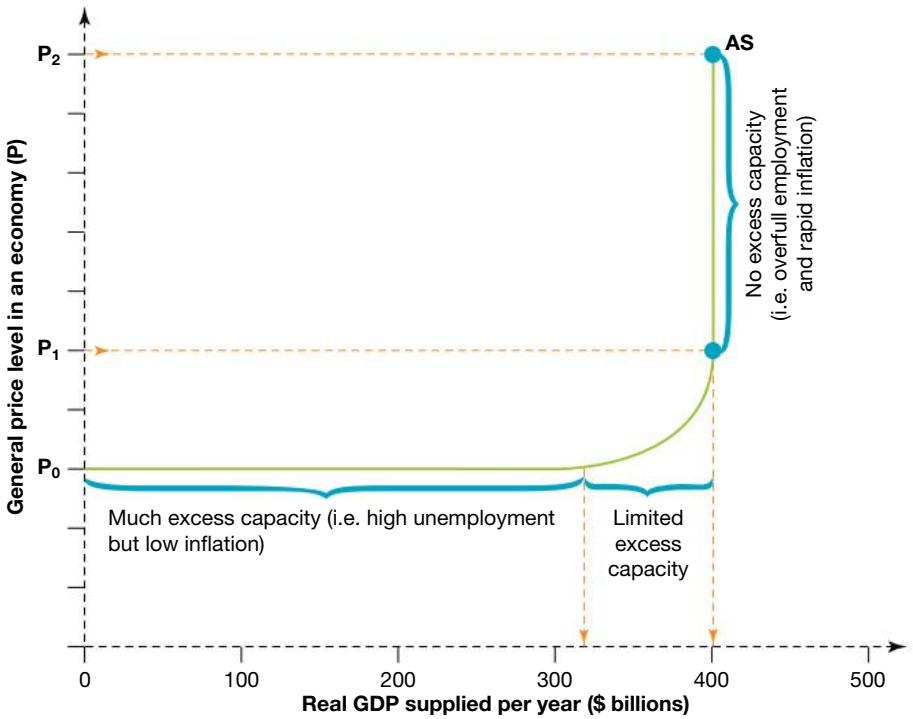
2.8.2 The aggregate supply curve

Aggregate supply is the total annual volume of Australia's output that firms are willing and able to supply or produce. When graphed, Australia's aggregate supply line or curve (AS) traces the relationship between the quantity of final national production that would potentially be made available by suppliers at different general price levels. As expected, the overall slope of the aggregate supply line is positive sloping up and to the right. As shown in figure 2.17, the line has three sections to it:

- ***Horizontal section.*** The almost horizontal section of the AS line exists at low levels of national output or supply, where there is plenty of unused productive capacity available. At this level of national production, firms would find it very easy to increase their production levels in response to little or no rise in the general level of prices.
- ***Vertical section.*** At the opposite extreme is the upper or almost vertical zone of the AS line, where there is generally no unused productive capacity. Here, real national production is at its physical limit because all resources are fully employed. Even large rises in the general price level and the offer of huge profits are not enough for an actual increase in the overall volume of national production. This is simply because, collectively, firms cannot all get hold of the extra resources that they would require to further lift GDP unless more favourable aggregate supply conditions develop.

- ***Intermediate section or the elbow.*** Between these extremes is the intermediate zone on the AS line, located at the 'elbow' where the line starts to bend upwards. This corner section indicates the gradual onset of full employment of labour and other resources, where the little excess capacity remaining. This soon gives way to no unused capacity at all. Moving upwards into this zone, bigger and bigger rises in average prices are needed to make extra production profitable and possible.

FIGURE 2.17 The aggregate supply line for the whole Australian economy.

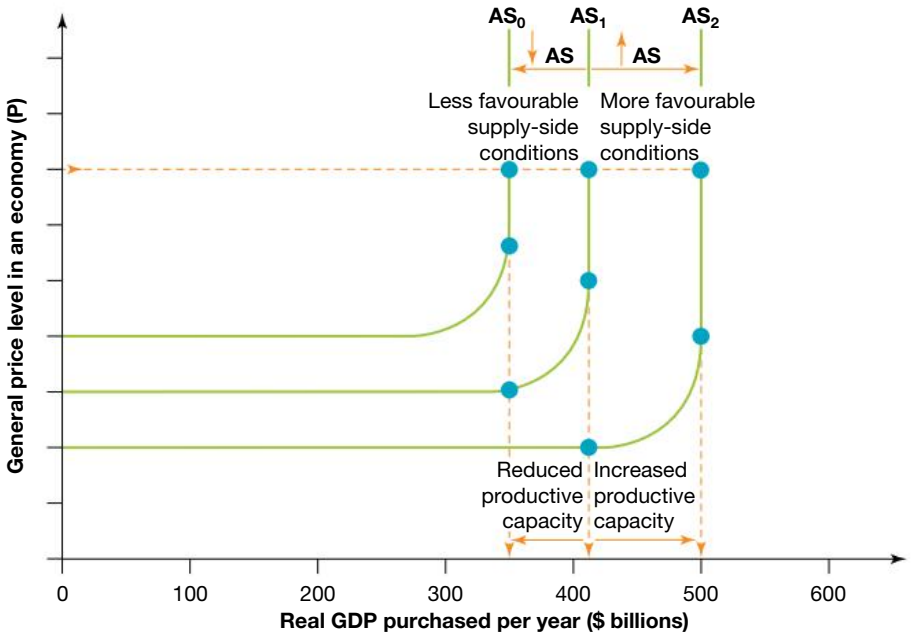


The AS line in figure 2.17 shows that the value of real domestic output produced is initially able to increase exceedingly quickly from $0 to, say, $310 billion following little or no increase in prices, because there is much excess capacity in the economy. However, from this zone onwards, larger and larger increases in price, from P_0 to P_1, are required to induce increased production to, say, $400 billion as excess capacity is absorbed. Beyond this point hyper-inflation may exist but further increases in production are impossible, because no more unused capacity exists: production remains at the capacity level of $400 billion.

As you should now appreciate, the aggregate supply response of Australia's producers to rising prices depends on the level of unused capacity and whether there is access to extra resources. While firms would generally like to supply more as prices rise, their efforts are sometimes frustrated by production bottlenecks or constraints that limit the potential level of national output.

Over a period of time, the *productive capacity* of the Australian economy changes, and with it, the size and position of the AS line that reflects new *aggregate supply factors* or conditions. We are already familiar with these factors (see section 2.7). They include changes in business production costs (such as changes in RULCs, tax rates, the impacts of pandemics and lockdowns, power charges and the price of raw materials) and profitability (influencing whether firms expand or close down altogether), along with changes in the quantity and efficiency of natural, labour and capital resources that are available (perhaps affected by labour force participation rates, labour productivity, industrial action, immigration, local and foreign investment levels, severe weather events and government aggregate supply policies).

FIGURE 2.18 How changes in aggregate supply conditions can shift the position of the AS curve.



As shown in figure 2.18, the onset of generally *more favourable aggregate supply conditions* that improve national productive capacity cause the whole AS curve to increase or shift outwards from AS_1 to AS_2. Here, most firms become *more willing and able* to lift supply, increasing the potential level of GDP. By contrast, nationally *less favourable supply-side conditions* result in a decrease in the AS line that shifts inwards from AS_1 to AS_0. Producers are *less willing and able* to produce at the general level of prices prevailing, and capacity is cut.

2.8.3 The effects of changes in the equilibrium level of domestic economic activity

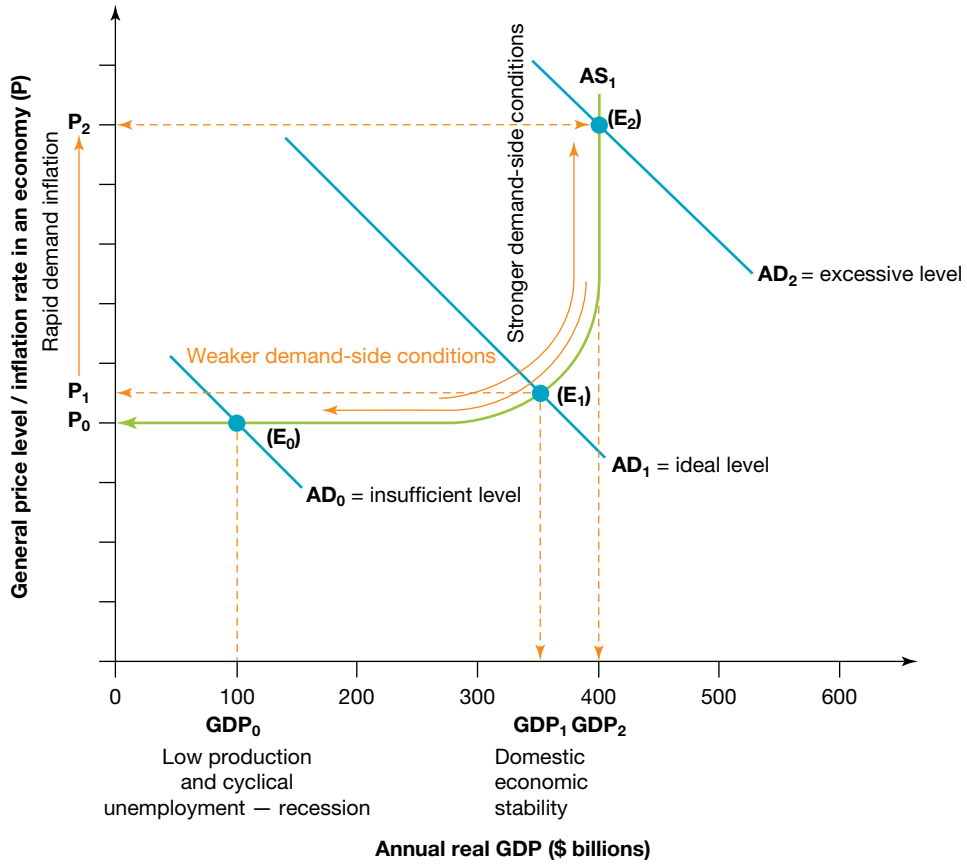
National economic conditions are volatile and change to reflect the levels of AD and AS. Sometimes these conditions show a cyclical pattern with periods of recovery, boom, contraction and recession. At other times there may be stagflation (low production, high unemployment and cost inflation). The cause of changes in domestic macroeconomic conditions can now be illustrated on our complete AD–AS diagram.

Equilibrium can be changed by new conditions that shift the AD curve

Let us start by looking at the effects on the economy brought about by changing levels of AD or spending. Whether economic activity is relatively high (perhaps leading to a boom), low (possibly causing recession) or ideal (leading to domestic economic stability) can depend on where the AD line actually crosses the AS line. Referring to figure 2.19 we can see that the actual position of the AD line reflects the changeable macro conditions of demand affecting expenditure on Australian-made production.

Notice how in figure 2.19 the AD line can shift to intersect the AS line, creating different equilibria (E_0, E_1, E_2) levels of economic activity. An excessive level of AD (AD_2) causes an equilibrium (E_2) which produces serious inflation (P_2) or boom (where GDP_2 = about $400 billion), while an insufficient level of AD (AD_0) causes an equilibrium (E_0) which produces extremely low levels of GDP (GDP_0 = approximately $100 billion) with severe cyclical unemployment and recession. It is a matter of trying for the ideal level of AD (AD_1) and GDP (GDP_1 = about $350 billion) where activity is neither too hot nor too cold — a situation of domestic macroeconomic stability. This situation exists only when AD is at AD_1 and equilibrium at E_1.

FIGURE 2.19 How changes in the level of aggregate demand can alter macroeconomic conditions.



Deficient AD and recession

If generally *weaker aggregate demand conditions* prevail for Australia (as happened between 2018–19 and 2019–20) and total expenditure is deficient at only AD_0, this has *three* important macroeconomic effects:

- *Slower GDP growth.* The actual equilibrium level of economic activity (measured on the horizontal axis by real GDP) will decrease to just GDP_0, perhaps causing a recession.
- *Higher cyclical unemployment.* Low or falling production means there is less demand for resources including labour, causing the level of cyclical unemployment to rise.
- *Lower demand inflation.* Weaker spending and hence higher levels of unsold stocks, lead to price discounting by sellers (to help clear these stocks) and hence a slower inflation rate of only P_0.



Excessive AD and boom

At the opposite extreme, if *stronger aggregate demand conditions* caused expenditure to rise excessively to AD_2 (as happened during the boom in 2007–08), the new equilibrium located high up on the AS line, will cause our domestic macroeconomic conditions to again change in *three* important ways:

- *Maximum GDP growth.* Excessively strong spending growth would ensure that national production rises to its highest point at GDP_2.
- *Very low cyclical unemployment.* Excessive spending that stretched national production beyond its limit (GDP_2), would increase the demand for resources including labour. As a result, cyclical unemployment would fall to very low levels and cause labour shortages.
- *Rapid demand inflation.* While high levels of production and low unemployment are often seen as good, the problem with this particular equilibrium is that there would be an inflationary *boom*. Because of excessive and unsustainable levels of spending, production would not be able to keep up and so the economy would overheat. Widespread shortages of goods and services would develop, causing rising prices and demand inflation. This is seen on the diagram by the hike in the price level to P_2. Living standards would suffer due to the reduced purchasing power of incomes.

Ideal AD and domestic economic stability

Between the two extremes of deficient (AD_0) and excessive levels of spending (AD_2) shown in figure 2.19, there is an *ideal* pace of domestic economic activity. If aggregate demand conditions cause expenditure to be at AD_1, *domestic economic stability* or bliss should exist. This level of spending has *three* main domestic impacts:

- *A strong and sustainable rate of economic growth.* With spending at AD_1, equilibrium would occur at near maximum production (GDP_1). Here, economic activity is neither too hot leading to inflation, nor too cold causing recession.
- *Full employment.* When there is a strong and sustainable rate of economic growth (GDP_1), there would be a rise in the demand for resources including labour, leading to relatively low unemployment rates (called full employment).
- *Low inflation and prices.* When the pace of economic activity is neither too strong nor too weak, there would be no widespread shortages or surplus of goods and services, so it is likely that inflation or general prices would be quite low and stable (P_1). This helps to improve the purchasing power of incomes.

Given that *domestic economic stability* involves conditions *optimal* for economic prosperity and improved living standards, the federal government and central bank (the Reserve Bank of Australia or RBA) use *macroeconomic policies* to steer the economy by manipulating the level of AD in a counter-cyclical way, to help flatten or soften the business cycle. (These macroeconomic aggregate demand instruments will be covered in Topic 4.)

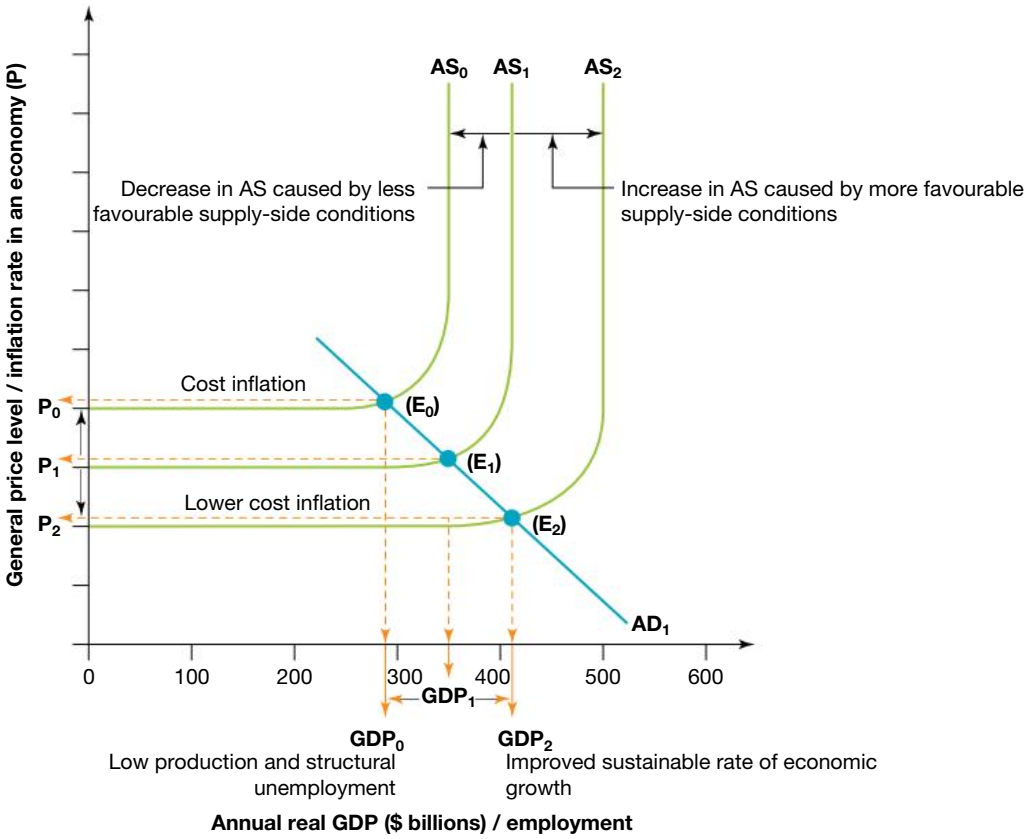
So much for the role of changes in domestic macro demand-side conditions and AD in helping to decide the national level of economic activity. However, this Keynesian aggregate demand-side explanation cannot

account for the unique situation of *stagflation*. Nor can changes in AD shed much light on the determinants of Australia's long-term changes in economic activity. It is thus time to turn to aggregate supply-side explanations of Australia's domestic macroeconomic conditions.

Equilibrium can be changed by new conditions that shift the AS curve

When using the aggregate demand–supply diagram, we have thus far assumed that factors or conditions affecting the position of the AS curve have remained *fixed*. In the real world, however, this is not the case and the position of the AS curve shifts outwards or inwards. The question is, what happens on our diagram (as seen in figure 2.20) if *aggregate supply conditions* change, causing most Australian businesses to either supply more or less at a given price level?

FIGURE 2.20 How changes in the level of aggregate supply cause macroeconomic conditions to change.



The AS line or curve seen in figure 2.20 can change as a result of increases and decreases in productivity, production costs, profits, the quantity and quality of resources available, and other factors including government aggregate supply policies.

In turn, more or less favourable aggregate supply conditions cause the equilibrium (E) level of economic activity to change. For example, at E_2 better supply conditions have led to a higher sustainable, or non-inflationary level of GDP (GDP_2 = $420 billion) where inflation or prices (P_2) are actually lower than when equilibrium occurs at E_1. At E_1, there is stagnation, due to less favourable supply-side conditions — real GDP is lower (GDP_2 = $290 billion) and prices are higher (P_1) than when equilibrium occurs at E_0. For any economy, it is much better to bring about an increase in AS than a decrease in AS. This can be done by supply-promoting measures including cutting production costs or boosting the availability of resources and profit levels.

More favourable aggregate supply conditions

Let us first assume that aggregate supply conditions improved and changed *favourably*, making producers keener and more able to increase their production, lifting the economy's productive capacity from AS_1 to AS_2. Notice that there is a rise in the total quantity of goods and services supplied at all prices and the whole AS curve shifts outwards and to the right of the original line. There are three benefits of this:

- *Stronger and more sustainable rate of economic growth.* The new equilibrium (E_2) created as a result of generally more favourable conditions and an increase in AS (the shift from AS_1 to AS_2), means a rise in national output (the shift from GDP_1 to GDP_2). Although real GDP is higher, this is economically sustainable because the level of prices or the inflation rate is actually lower.
- *Slower cost inflation.* As mentioned, more favourable aggregate supply conditions are often associated with lower production costs or better profits for businesses. If production costs are lower, firms can profitably sell their products at lower, more competitive prices. This causes the general level of prices in the economy to fall (the shift from P_1 to P_2), lowering cost inflation pressures.
- *Lower structural unemployment and more jobs.* More favourable aggregate supply conditions often lower costs and prices, thus making local businesses more competitive and profitable. This can mean that fewer firms close down and others expand more rapidly, in the long-term reducing **structural unemployment** and creating more jobs.

All up, more *favourable conditions* that increase AS mean an improvement in *domestic macroeconomic stability*, prosperity and material living standards.

Less favourable aggregate supply conditions

What if aggregate supply conditions became *less favourable* and producers were not as willing or able to increase capacity or the total supply goods and services at various price levels? Supply would decrease from AS_1 to AS_0, causing the problem of *stagflation* and a general deterioration in macroeconomic economic conditions in *three* ways:

- *Lower or stagnant levels of GDP.* The fall in aggregate supply would cause real production levels to stagnate or decrease (the shift from GDP_1 to GDP_0).
- *Rising cost inflation.* A typical cause of the decrease in aggregate supply is less favourable conditions for businesses such as rising production costs and/or falling business profits. These conditions usually force most firms to lift their prices, accelerating cost inflation (the shift from P_1 to P_0).
- *Rising structural unemployment.* With weak or negative economic growth, rising production costs and falling profits, some firms will cut staff or close down, and workers will lose their jobs. Structural unemployment will then rise.

The solution to the worrying problem of *stagflation* is to implement government aggregate supply policies designed to improve supply conditions. We will investigate these measures later in Topic 5.

2.8.4 Applying the AS–AD diagram to government policy

In Unit 4 of this course (Topics 4 and 5), our attention will focus on how the Australian government may deliberately manage the level of economic activity. Here, its aim is to improve economic stability (i.e. simultaneously promote strong and sustainable economic growth, low inflation and full employment) and, ultimately, make society better off. There are *two* approaches used by the federal government as part of its policy mix to grow economic activity over time at an optimum and sustainable rate:

1. *Aggregate demand or macroeconomic policies* (including tax and outlay measures in the federal budget and the actions of the Reserve Bank of Australia or RBA to influence interest rates) are used to try and steer the level of national spending and economic activity to help maximise living standards. This is not an easy task, but AD needs to be controlled so that it is neither too strong (causing inflationary booms) nor too weak (causing recessions and unemployment).

2. *Aggregate supply policies* often seek to improve aggregate supply conditions. They focus on growing our resources, increasing efficiency, cutting costs, strengthening profits and growing productive capacity. They seek to boost AS. As a result, economic growth becomes more economically and potentially environmentally sustainable over the long-term.

The effects of using these policies to deliberately *manipulate* the level of *aggregate demand* or to *grow aggregate supply* could also be shown on the AD–AS diagram. You might like to contemplate what would happen to the positions of the aggregate demand and/or supply lines if the government adopted the following policies:

- a reduction in personal and company tax rates
- an increase in government outlays on welfare and infrastructure
- the encouragement of skilled immigration
- the introduction of environmental policies designed to reduce emissions and accelerate the transition to a greener economy.

on Resources

Digital document Aggregate demand–supply diagrams template

Weblink What are aggregate demand and aggregate supply

2.8 Activities

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Students, these questions are even better in jacPLUS

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2.8 Quick quiz on

2.8 Exercise

2.8 Exercise

1. **Describe** the AD–AS diagram and **explain** what it shows. **(2 marks)**
2. **Define** the following terms related to the AD–AS diagram: **(5 x 1 mark)**
   a. Aggregate demand
   b. Aggregate supply
   c. Equilibrium level of economic activity
   d. An increase and decrease in aggregate demand
   e. An increase and decrease in aggregate supply
3. **Explain** the shape of the AS line. **(2 marks)**
4. a. **Draw** and **label** an AD–AS diagram where the economy is experiencing *domestic economic stability*. **(1 mark)**
   b. **Draw** and **label** an AD–AS diagram where the economy is experiencing an inflationary *boom*. **(1 mark)**
   c. **Draw** and **label** an AD–AS diagram where the economy is experiencing a severe *recession*. **(1 mark)**
   d. **Draw** and **label** an AD–AS diagram where the Australian economy is originally experiencing *domestic economic stability*. Next, on this same diagram, **show** and **label** the effects of a serious *recession* overseas in China and the United States, and a drop in our terms of trade. **(2 marks)**

e. **Draw** and **label** an AD–AS diagram where the Australian economy is originally experiencing *domestic economic stability*. Next, on this same diagram, **show** and **label** the effects of a *rise* in Australia's level of *business confidence* from a net balance of 5 to 25 points. **(2 marks)**

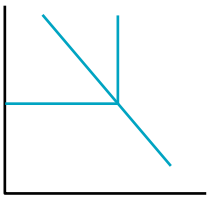
f. **Explain** the situation called *stagflation*. **Illustrate** the onset of this situation on an AD–AS diagram. **(2 marks)**

g. **Explain** why it is important for AD to rise at a rate that is matched equally by the rise in AS. **(2 marks)**

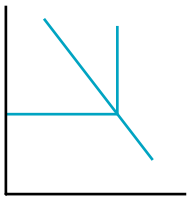
5. **Download** a copy of the figure below from the Resources tab. **Complete** and fully **label** each of the AD–AS diagrams representing the Australian economy to show the hypothetical effects of an event that alters the macroeconomic conditions of either aggregate demand or aggregate supply, and hence the economy's equilibrium level of prices and GDP. In most cases, you will need to add a second AD line (AD_2) and/or a second AS line (AS_2), along with a new equilibrium price (P_2) and real GDP (GDP_2). **(9 marks)**

Aggregate demand–supply diagrams.

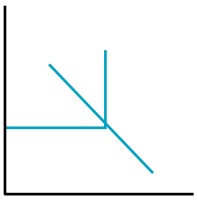
a. The consumer confidence index falls from 100 to 86 points



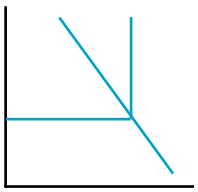
b. Labour productivity grows by 3.2 per cent on the previous year



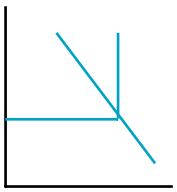
c. Interest rates on personal loans and overdrafts fall



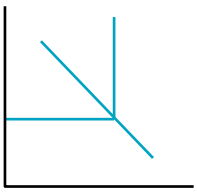
d. Australia's terms of trade index finally starts to rise



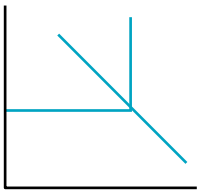
e. The rate of company tax is reduced



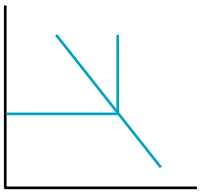
f. The drought affecting Northern Australia finally ends



g. RULCs fall by 1.8 per cent on the previous year



h. The exchange rate for the Australian dollar falls 15 per cent



i. The federal government switches from a budget deficit to a budget surplus



Solutions and sample responses are available online.

2.9 The goal of low and stable inflation (price stability)

KEY KNOWLEDGE

The domestic macroeconomic goals

- The meaning of the goal of low and stable inflation (price stability)
- The distinction between inflation, disinflation and deflation
- Measurement of the inflation rate using the Consumer Price Index (CPI), including the difference between the headline and underlying (core) rate of inflation
- Causes of inflation, including demand inflation and cost inflation
- Consequences of not achieving the goal of low and stable inflation (price stability) and its effect on living standards, including erosion of purchasing power, development of a wage-price spiral, distortion of spending and investment decisions, lower returns on investment, loss of international competitiveness if it is too high, and delayed consumption and unemployment if it is too low

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

Earlier in this topic we studied the macro aggregate demand and supply determinants of a nation's level of economic activity. We also saw that changes in the pace of economic activity affects *three* important domestic macroeconomic outcomes:

- the rate of economic growth
- the employment and *unemployment* rates
- the rate of *inflation*.

Indeed, these key indicators of our economy's performance, give rise to the Australian government's *three core domestic macroeconomic goals* that will be studied in the remaining pages of this topic. In reviewing each of these areas, we should also consider their recent impacts on our overall wellbeing or living standards.

One of Australia's central macroeconomic priorities is the *goal of low inflation* (sometimes also called *price stability*).

When the levels of spending and economic activity are too strong, boom conditions can occur, leading to increased inflation. In turn, inflation poses risks. It undermines the purchasing power of wages and erodes the living standards of ordinary families.



2.9.1 The meaning of the goal of low and stable inflation (price stability)

Inflation occurs when the prices of most consumer goods and services are rising. During times of inflation, most things become dearer to buy and money gradually loses some of its **purchasing power**. Most people see inflation as something to be avoided.

The government's, or more precisely, the Reserve Bank of Australia's (RBA), **goal of low and stable inflation (price stability)** *is achieved when general consumer prices for goods and services are increasing fairly slowly within the current target range of between 2 and 3 per cent a year on average, over time. It means that in some years, the inflation rate may be a bit above the target, while in others it might be a bit below. It is the 'average' that counts. The other thing to understand about this target zone, is that it is set at a rate that is consistent with achieving other government goals, that ultimately help to improve Australian living standards. Having either a higher or lower RBA target would not allow this to happen, eroding our wellbeing.*



Hence, the goal of low inflation does *not* mean that inflation should be zero. The reason is simple. Zero inflation would be inconsistent with the achievement of Australia's other domestic economic goals. For example, very low inflation would require a really slow level of economic activity, resulting in weak economic growth and high cyclical unemployment that would undermine living standards. At the other end of the scale, setting an inflation target above 2–3 per cent a year would also undermine the achievement of other government economic goals including equity in the distribution of incomes, international competitiveness, economic growth and full employment. Perhaps you can now see why many economists regard *low inflation* as the most important domestic economic goal where conditions are more likely to be optimal for better living standards.

2.9.2 The distinction between inflation, disinflation and deflation

Economists sometimes use *three* terms to describe changes in the inflation rate:

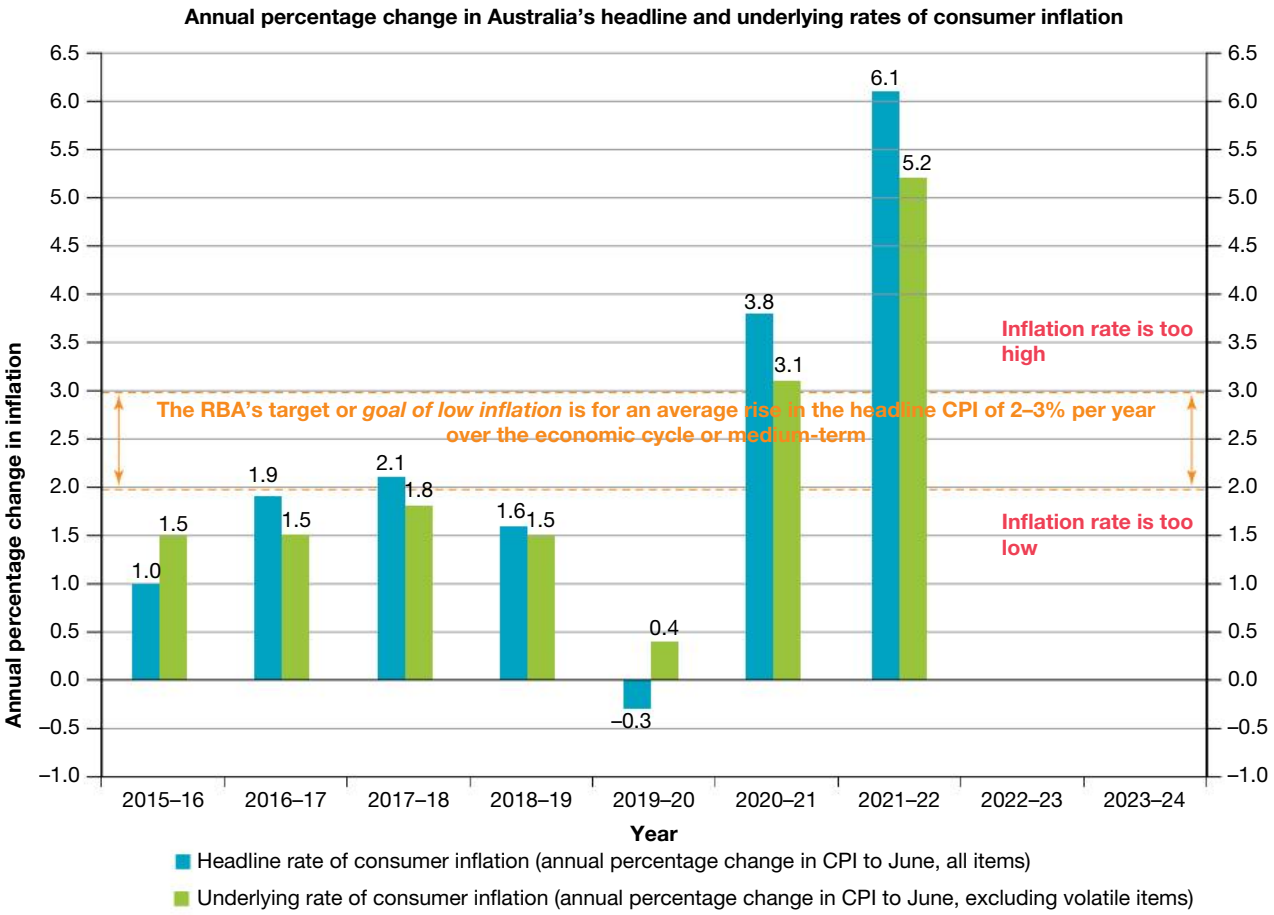
- **Inflation:** Inflation occurs when the prices of most consumer goods and services are going up over a period of time — perhaps over a quarter (i.e. three months) or a year. So, for example, in 2021–22, Australia's annual inflation rate was 6.1 per cent.
- **Disinflation:** Disinflation occurs when the rate of inflation between one period and the next is still positive, but is slowing. For instance, there was disinflation between 2017–18 and 2018–19 when the inflation rate slowed from 2.1 per cent to 1.6 per cent.
- **Deflation:** Deflation exists when the inflation rate is negative — that is, overall, consumer prices have actually fallen. For example, there was deflation in 2019–20 when the inflation rate was −0.3 per cent, reflecting the effects of the COVID-induced recession.

2.9.3 Measurement of the inflation rate

There are a number of measures of consumer inflation compiled by the Australian Bureau of Statistics (ABS) and the RBA. The *two* we will focus on are the *headline* consumer price index (CPI) and the *underlying* or core measures of inflation. Trends in these measures are shown in figure 2.21. Notice:

- Until 2020–21, the average rate of inflation was relatively slow.
- More recently, over 2020–21 and 2021–22, Australia's inflation rate accelerated to well above the RBA's 2–3 per cent target. This was largely due to the ongoing impacts of COVID-19, severe national and international supply chain issues, and higher oil and energy prices.
- In four of the last six years, the headline rate of inflation has been faster than the underlying rate due to the impact of one-off, volatile factors.

FIGURE 2.21 Trends in Australia's headline and underlying consumer inflation rates (annual percentage).



Sources: Data derived from ABS, https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/consumer-price-index-australia/latest-release#data-download, Table 2; RBA Statistics, Table G1.

The headline consumer price index (CPI)

The headline **consumer price index (CPI)** measures quarterly changes in the retail prices of both locally and foreign-made goods and services that typically represent a high proportion of the expenditure of metropolitan households (including employees, pensioners, the unemployed, employers) living in the capital cities. The CPI has the following important features.



Regimen

The **regimen** refers to the range of goods and services included in the basket whose prices are to be measured. The CPI measures the price changes of around 100 000 individual items that are subdivided into 11 categories, including food, clothing and footwear, housing, household contents and services, transportation, tobacco and alcohol, health, recreation, education, communication, and financial and insurance services. From time to time, the ABS reviews the composition of the regimen and the weighting of items. For instance, the revised regimen recently excluded previously included items like home mortgage costs, but the basket of items was modified to also include house prices (but not land), bank fees, home computers and software, and tertiary education fees.

Prices surveyed

The quarterly consumer price survey is carried out in a representative range of metropolitan retail outlets spanning both the private sector (e.g. Coles, Myer, Kmart) and public sector (such as local council property rates).

Weighting of items

Each item in the regimen is weighted according to its relative importance in overall household expenditure. Things that are expensive or frequently purchased have a greater bearing on index trends (e.g. food, housing and transport) than items of less significance (such as education, alcohol and tobacco). Weights are usually reviewed every five years.

Base year

Price changes over a period of time are compared against the price or cost of the regimen in a representative starting period or *base year*. Currently, the base year for our CPI is 2011–12 and this has been given a value equal to 100 index points. For instance, in 2021–22 the CPI for Australia's eight capital cities was measured at 126.1 points, as against 118.8 in 2020–21. On this basis, there was a 6.1 per cent inflation rate (figure rounded) between 2020–21 and 2021–22. This annual rate of inflation was calculated as follows:

$$\text{Annual percentage rise in the CPI for 2021–22} = \frac{\text{Number of points increase in CPI over the year} \times 100}{\text{Value of the CPI in the first year}}$$
$$= \frac{(126.1 - 118.8) \times 100}{118.3}$$
$$= \frac{7.3 \times 100}{118.8}$$
$$= 6.1\%$$

The underlying inflation rate (the core inflation rate)

The inflation rate can be affected by many factors, making the headline CPI *not* well suited for some uses. It is so volatile that some feel it does not clearly expose the *persistent* or generalised sources of inflationary pressures in an economy. For this reason, the ABS also measures the **underlying inflation rate** (also called the *core inflation rate*).

The ABS prepares the *headline CPI excluding volatile items* to measure the *underlying inflation rate*. This is an index that simply reduces the size of the headline CPI regimen by excluding the prices of fresh vegetables, fruit, fuel, energy and perhaps other items. These items are excluded because their prices are affected by temporary, one-off or volatile events such as cyclones (e.g. Yasi, Marcia and most recently Debbie in 2017), droughts (e.g. 1996–2010, 2014–20), floods (e.g. Townsville in early 2019 and 2021), fires (e.g. January 2020) and changes in some government policies (e.g. the rises in the rates of excise tax on tobacco, alcohol and fuel in some recent budgets, and the imposition of the carbon tax during 2012–14).

The differences between the measures of headline and underlying measures of inflation

There are several key *differences* between the headline and underlying CPIs:

- *Different sized regimens or baskets of goods and services* — these indicators measure the prices of different baskets of goods and services. The headline CPI has a bigger regimen or basket of goods and services that includes the prices of over 100 000 items. However, the underlying CPI has a smaller regimen of around 80 000 items that removes volatile items like food and energy whose prices are affected by one-off events.
- *Different statistical results* — often, the statistics generated from the headline and underlying CPIs reveal different inflation rates. For instance, if the prices of volatile items are rising *faster* than other items due to one-off events, then the headline figure normally shows a *higher* rate than the underlying rate. However, in reverse, if the prices of volatile items are *falling*, then the headline rate will tend to be *lower* than the underlying rate.

- *Different uses* — the RBA often finds that the underlying CPI provides the best guide when making its decisions about whether to increase official interest rates to help slow persistent or core inflationary pressures. This is because raising official interest rates to slow AD will usually have no useful impact in curbing underlying inflationary pressures that are caused by one-off events that are outside of those attributed to the economy (e.g. a cyclone or a rise in government excise tax that makes goods dearer). Some people are also tempted to use the CPI to provide a guide to changes in the cost of living for households. On this count, while neither the headline nor the underlying CPIs are accurate indicators, the headline CPI provides a broader view of changes in living costs.

Some limitations of using the CPI as a measure of inflation

The CPI data provide a guide to general retail price trends in the Australian economy. However, the accuracy of the published inflation rate depends on several factors.

Prices are only those paid by metropolitan households

Only around 100 000 selected consumer goods and services that are typical of the items purchased by metropolitan households are included in the CPI basket. Figures for the inflation rate may therefore be misleading indicators for people who do not live in capital cities. In addition, the inflation rate only represents the average of the eight capital cities.

Inappropriate weighting of items in the regimen for some households

For some categories of households, the weighting of items in the regimen may be inappropriate and unreflective of the actual pattern of household expenditure. For them, this makes the figures less useful. For instance, if meat prices went up and caused the CPI to rise faster, the inflation figure would be misleading for vegetarian households.

2.9.4 Causes of inflation

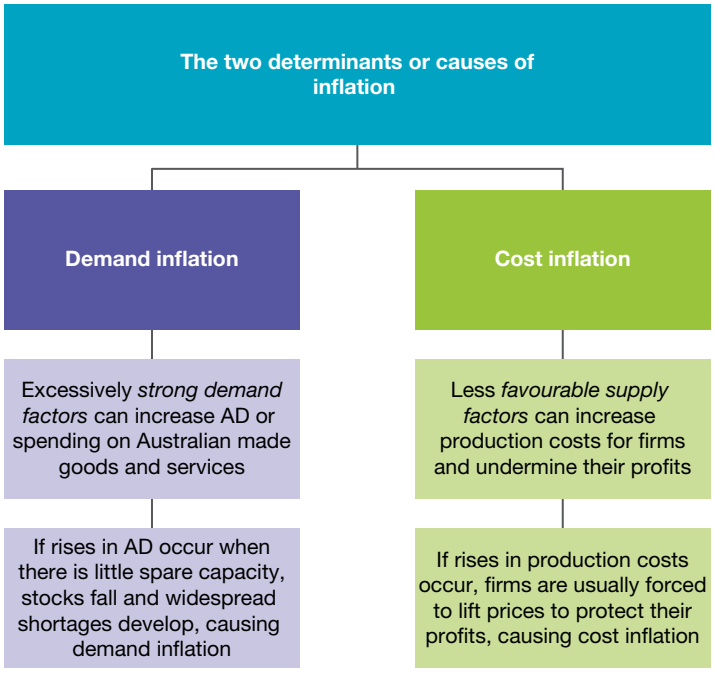
There are *two* main types of inflation, each *caused* by different factors:

1. *Demand inflation* is caused by excessively strong spending or AD in an economy, leading to widespread shortages or boom conditions. Here, strong *aggregate demand factors* are pushing up spending in the economy when there is little spare productive capacity available, preventing firms from collectively lifting output.
2. *Cost inflation* is caused by less favourable *aggregate supply factors* for businesses that push up production costs. These are then passed on to consumers in the form of higher prices so firms can protect their profits.

These two causes of inflation are summarised in figure 2.22.

Let's take a closer look at these causes of inflation.

FIGURE 2.22 The two causes of inflation.



Causes of demand inflation

Australia's rate of **demand inflation** accelerates and slows to reflect changes in the cyclical level of AD and economic activity. It moves up, especially in booms when AD (remember that AD = C + I + G + X − M) is excessive due to *strong*

aggregate demand conditions when there is little or no unused productive capacity available. These aggregate demand factors that drive up spending might include:

- rises in consumer confidence
- strong levels of business optimism
- rises in disposable income per capita
- rapid population growth
- government policies involving lower interest rates and/or bigger expansionary budget deficits
- stronger global economic growth among our major trading partners
- higher terms of trade and/or a weaker exchange rate for the Australian dollar.

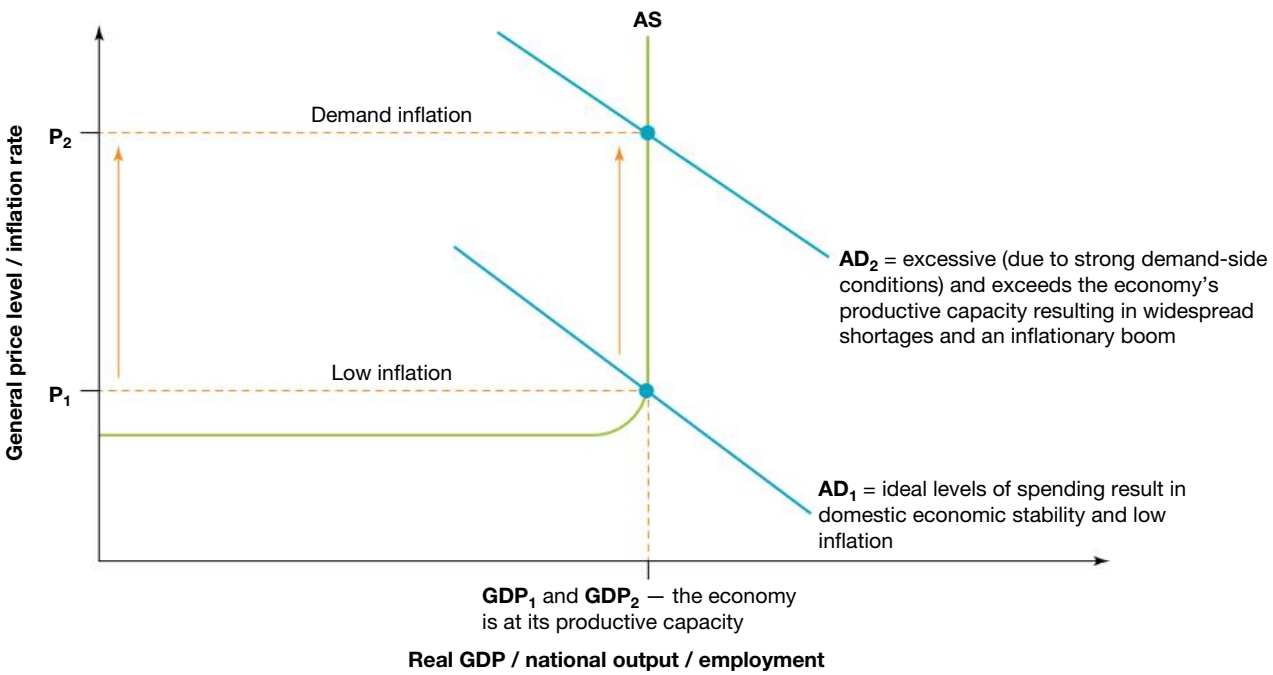
In a situation where spending (AD) is running ahead of national production (AS) in an economy near its productive capacity, demand inflation pressures are caused by falling stock levels, *widespread shortages* of goods and services, and the general inability of firms to significantly lift output. This erodes the purchasing power of incomes and hence undermines living standards.

In reverse, demand inflation disappears when spending and economic activity slow. This can cause *disinflation* or even *deflation* if there is a recession or depression. Here, generally *weaker aggregate demand conditions* cause unplanned rises in stocks of goods in warehouses due to falling sales. In turn, this leads to widespread *price-discounting* by sellers, slowing demand inflation. Lower prices usually improve our purchasing power and material living standards.

Using the AD–AS diagram to show the effects of changing aggregate demand conditions on inflation

The development of boom or demand inflation pressures can be illustrated on an AD–AS diagram. Figure 2.23 shows that persistently *strong* aggregate demand conditions eventually cause the level of expenditure on Australian-made goods and services to become excessive (i.e. an increase from AD_1 to AD_2) and rise beyond the economy's productive capacity (at GDP_2), causing increased inflation (a rise from P_1 to P_2).

FIGURE 2.23 How excessively strong aggregate demand conditions cause excess levels of AD and widespread shortages, leading to demand inflation.



By contrast, the onset of generally *weaker* aggregate demand conditions will slow expenditure (from AD_2 to AD_1), thereby easing general shortages of goods and services, promoting price-discounting to clear excess stocks of goods and services, and thus curbing demand inflation pressures (P_2 to P_1).

Causes of cost inflation

At various times, Australia experiences **cost inflation**. Put simply, cost inflation occurs when it costs firms more to produce or sell their goods or services. Rising production costs might include:

- higher wages and salaries for staff or lower labour productivity
- rises in the on-costs of labour like the superannuation guarantee levy and various types of leave entitlements
- elevated charges for electricity, gas, water and other utilities
- higher costs of transport (e.g. due to rises in oil prices or congestion) and telecommunications
- disruptions in supply chains can raise costs
- the prices paid for commodities and raw materials used in production like those for wool, oil and steel.

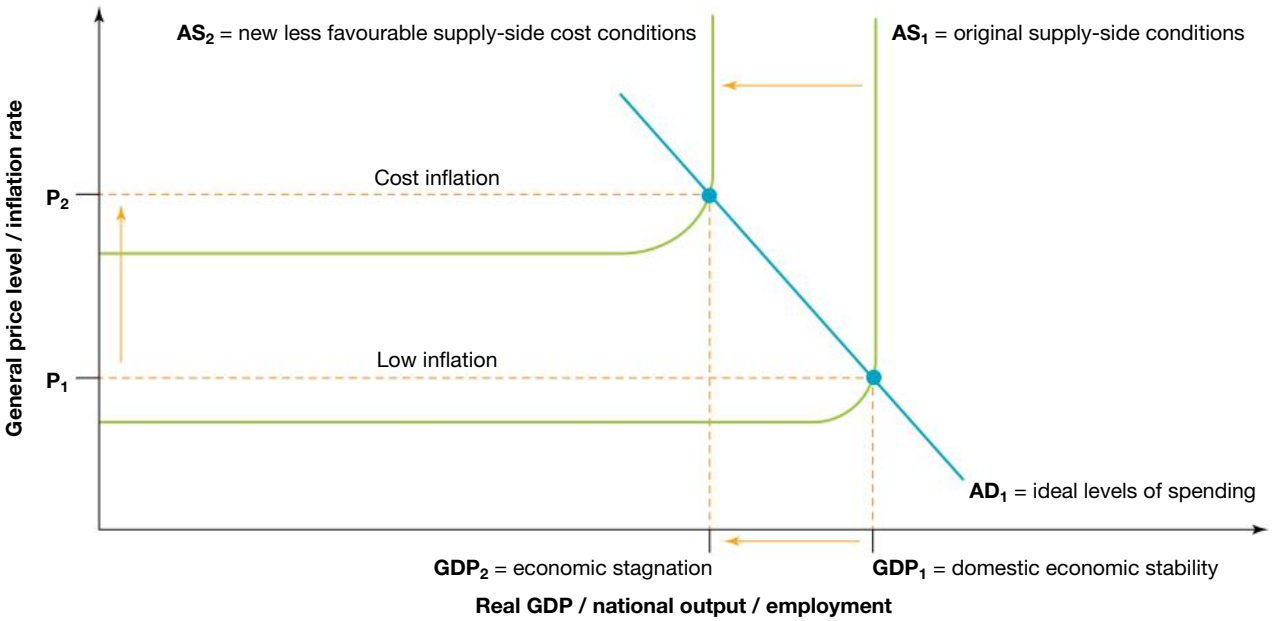
Here, the *rising costs* of purchasing resources are seen by firms as *less favourable aggregate supply conditions*. They eventually force businesses to pass these on to consumers in the form of higher prices at the counter. Failure to raise prices in response to higher costs would otherwise mean lower profits, losses or even business closures.

In reverse, *lower production costs*, perhaps due to more favourable aggregate supply conditions, allow firms to reduce their prices to compete and still make good profits, thereby easing cost inflation pressures.

Using the AD–AS diagram to show the effects of changing aggregate supply conditions on inflation

The amazing AD–AS diagram can also be used to illustrate the onset of *cost inflation*. Figure 2.24 shows that the development of less favourable aggregate supply conditions (perhaps involving increases in production costs or other factors like higher taxes on businesses that shrink their profits), make businesses less willing or able to produce. This decreases the level of aggregate supply. There is an inward move of the AS line from AS_1 to AS_2. The consequence of rising production costs and the inward shift of the aggregate supply line is higher cost inflation (shown by price rises from P_1 to P_2), along with reduced national output (production falls from GDP_1 to GDP_2).

FIGURE 2.24 How generally less favourable aggregate supply conditions can cause higher production costs for firms leading to cost inflation pressures.



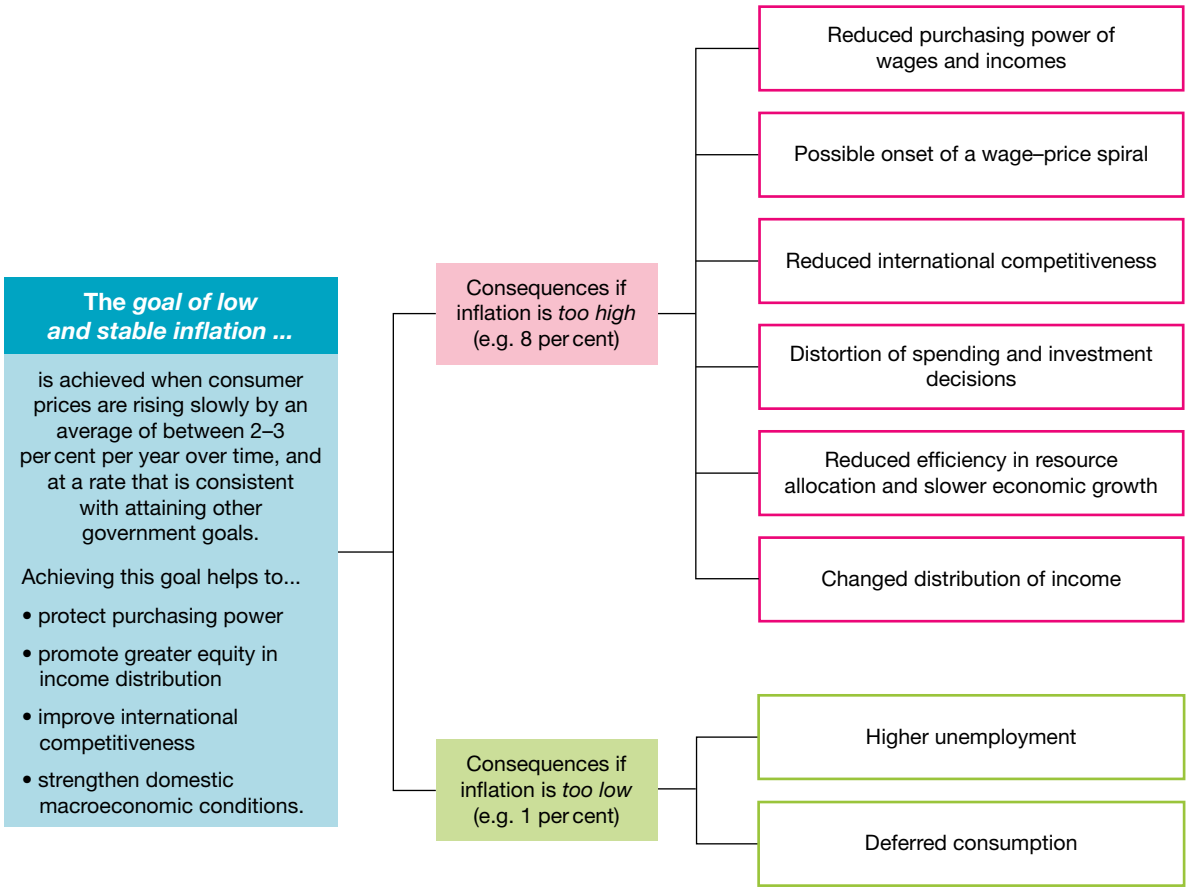
2.9.5 The consequences of not achieving the goal of low inflation

The *goal of low and stable inflation* means that consumer prices are rising slowly, averaging between 2 and 3 per cent a year over time — a rate that is consistent with achieving other government economic and social objectives. Achieving this goal brings many *benefits* that help to improve *living standards*. For instance, low inflation:

- protects the purchasing power of incomes
- promotes a more equitable distribution of income
- improves international competitiveness and promotes a more favourable trade balance
- creates a stronger domestic macroeconomic environment.

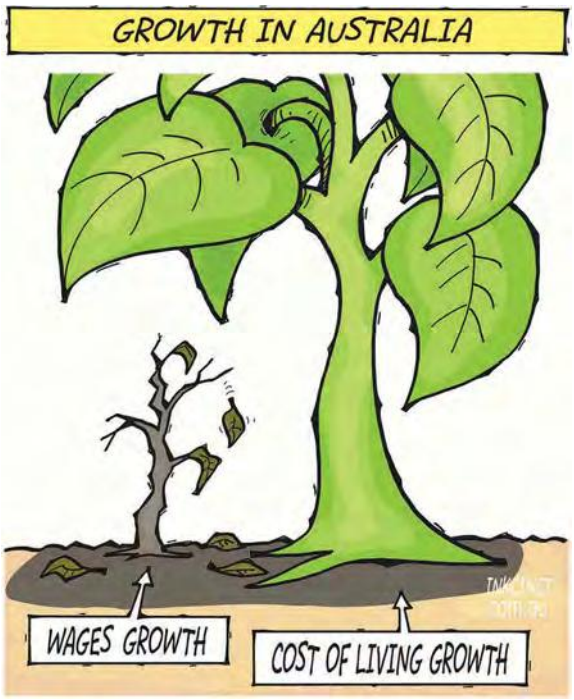
In contrast, *failure to achieve this goal* because inflation rates are persistently *higher* or *lower* than the target zone, have mostly *negative* consequences. As summarised in figure 2.25, both situations can erode Australian *living standards.*

FIGURE 2.25 The consequences of not achieving the goal of low and stable inflation.



The consequences of high inflation

Let's start by examining what happens when the *goal of low and stable inflation* is *not* achieved because the inflation rate is *too high* and exceeds the 2–3 per cent RBA target zone. These consequences of high inflation are also summarised in figure 2.26.



Reduced purchasing power

Rapid inflation causes the *real value* or *purchasing power* of each dollar of money, wages, or income, to be reduced. It means that the goods and services we purchase become *less affordable unless* our *nominal income* (i.e. the number of dollars received before considering inflation or its purchasing power) rises at a *faster* rate than general prices or inflation. So, for example (and assuming no change in taxes), if consumer prices were increasing quickly by say 10 per cent a year and average *nominal incomes* rose by just 6 per cent for the period, on average there would be a *reduction* in purchasing power or *real* income of 4 per cent (i.e. 6 per cent rise in nominal income MINUS the 10 per cent rise in inflation = a fall of 4 per cent in real income). Here, *real* incomes and hence consumption levels and living standards, would fall. Of course in reverse, if inflation was rising quite slowly by just 2 per cent, but *nominal incomes* rose by 3 per cent, then *real* incomes or the purchasing power of each dollar would increase by 1 per cent (i.e. 3 per cent rise in nominal income MINUS the 2 per cent rise in prices = a rise in real incomes of 1 per cent).

Another impact of rapid inflation is that it can *depress* the value of our currency when exchanged or swapped for another. Here, one A$ will buy less of another currency, making imports of goods and services more expensive for us to purchase. This also reduces our purchasing power and living standards.

Because rapid inflation usually has negative effects on purchasing power, it is something that the RBA tries to avoid.

Possible development of a wage-price spiral

When consumer prices go up quickly, especially when unemployment rates are low, this erodes the purchasing power of real wages and incomes, and undermines living standards. It can also create expectations among workers that inflation will continue to rise. This could prompt action by workers to push hard for bigger wage rises to protect their purchasing power or real incomes, perhaps through union action or in negotiations for new enterprise wage agreements. In addition, to retain staff, employers have to offer higher wages. Given that wages typically represent around 70 per cent of the cost of making goods and services, rising wages at a rate that is faster than the increase in labour productivity may force firms to lift their prices to protect profits. In turn, higher prices then lead to further wage demands and so the *wage-price spiral* is repeated, as shown in figure 2.26. While in theory inflation could get out of control, this is probably less likely nowadays, given the dramatic decline in unionisation of the labour force and the rise in our reliance on decentralised enterprise bargaining where wages are negotiated on a firm-by-firm basis, rather than being set centrally.

Reduced international competitiveness and higher structural unemployment

Higher inflation rates in Australia *relative* to those overseas, tend to damage the *international competitiveness* of locally made goods and services, in comparison to cheaper imported substitutes sourced from countries where inflation is slower. This has two effects. First, it causes local consumers to buy more attractively priced imports. Second, it encourages overseas consumers to source their goods and services from exporters other than Australia. In undermining our international competitiveness, high inflation weakens Australia's trade balance

FIGURE 2.26 High inflation can cause a wage-price spiral



(the difference in value between exports and imports) and even causes the exchange rate to depreciate or fall in value against other currencies. In turn, a lower exchange rate can further reduce our purchasing power and hence material living standards. In addition, high inflation and weaker international competitiveness can also lead to structural unemployment as local firms close.

Distortion of spending and investment decisions

Interest rates are closely tied to the inflation rate. As inflation rises, so do interest rates. One reason for this is that the RBA uses higher interest rates as part of its monetary policy to slow household and business spending, lessen economic activity, and control demand inflation. We will look at this policy further in Topic 4.

Another reason is that when faced with rapid inflation, lenders of credit *expect* to receive higher interest rates to protect their real income. In turn, higher interest rates distort spending, change investment decisions and alter people's behaviour. For example, higher inflation and interest rates add to the cost of borrowing credit and servicing debt. For some, this may encourage and incentivise saving, thereby slowing spending and economic activity.

At the same time, higher interest rates can also discourage credit-based consumption and investment spending. For investors who need to borrow credit to finance the purchase of equipment or other assets, it is more costly or expensive to repay a loan, lowering the potential returns and diverting resources to other uses.

Finally, high inflation (combined with expectations that this will continue) and the erosion of purchasing power can also change spending behaviour in other ways. For example, rapid rises in prices sometimes cause consumers to buy more goods and services now to beat the price rise, rather than waiting till later. For some businesses, too, investments might be brought forward temporarily, for similar reasons.

Reduced efficiency in resource allocation and long-term economic growth

Resource owners often allocate their resources to try and maximise their incomes and returns while minimising their losses. When there is rapid inflation the prices of shares, property and some other assets tend to rise faster than the general inflation rate. This can provide investors with good opportunities to make quick capital gains, buying assets cheaply and selling them after prices rise further. Although this boosts their incomes and living standards, inflation has caused resources to be sucked out of more productive *long-term* uses such as the expansion of business investment in plant and equipment that directly grows the economy's productive capacity, instead redirecting resources into more speculative *shorter term* investments in assets that often rise faster in value. This undermines efficiency in resource allocation, eventually slowing the long-term sustainable rate of economic growth and depressing future living standards.

Changed distribution of income

As mentioned, rapid inflation reduces the purchasing power of every dollar of income. Even so, it does *not* affect all groups of individuals equally. As a result, it alters the way the nation's income cake is shared or distributed, tending to make it *less equitable*.

On the one hand, *most* people are worse off simply because their wages and income rise more slowly than prices generally. They experience lower living standards due to reduced purchasing power. On the other hand, there are the *few* who find that their incomes rise at a *faster* rate than inflation, allowing them to increase their relative shares of income. Consider for instance the effects of rapid inflation on these groups of individuals:

- Higher inflation can sooner or later cause a rise in *unemployment rates*. For instance, to control inflation, central banks typically lift official interest rates. This slows the level of borrowing and spending by households and businesses, weakens economic activity, and depresses employment. In addition, high inflation makes local firms relatively less internationally competitive. Some local firms are forced to close, adding to unemployment. In both cases, the unemployed experience a cut in their incomes when they move onto miserable government welfare payments. This causes their share of the nation's income cake to fall, undermining living standards.
- *Fixed income earners* such as self-funded retirees (who sponsor their retirement themselves instead of receiving a government aged pension), whose income comes from *fixed* interest rate investments, often find that their returns and share of the nation's income cake do not keep up with rising prices. They are relatively worse off. In contrast, those whose incomes are upwardly *flexible* can often increase their share of the income cake, like property and share speculators who depend on buying cheap and then after inflation, selling at higher prices to make capital gains. In addition, workers who are in a strong wage-bargaining position can also end up with income that rises faster than inflation. They too can enjoy a relatively larger share of the income cake and better living standards.
- *Exporters* become less internationally competitive when there is rapid inflation, so their sales, income and living standards may tend to fall. In contrast, importers can gain because of their relatively cheaper and more attractive prices for similar goods made overseas. As a result of better sales, importers may receive a relatively bigger share of the nation's income cake.
- *Ordinary families* who have borrowed credit for home loans at variable rates find that their housing affordability declines as rising interest payments take up a higher proportion of their family income. They are then forced to reduce their consumption of other goods and services to meet rising interest repayments, undermining their living standards. However, lenders of money at rising variable or market interest rates may find that, relatively, their incomes increase.

The consequences if inflation is too low

It's not just rapid inflation that damages our wellbeing. Consistently *low* inflation, especially if there is deflation, also has negative effects.

Higher unemployment and weaker economic growth

History often shows that when inflation rates are very low and below the RBA's 2–3 per cent target range, unemployment is relatively higher. There can be a trade-off or inverse relationship. So, in slowing the inflation rate perhaps by increasing interest rates to curb borrowing and spending, the rate of economic growth will weaken, causing unemployment to rise. In other words, very low inflation is a sign of a feeble economy with high unemployment that is operating well below its productive capacity.

Another possible connection with unemployment is that when inflation is slow — or worse, there is deflation — there is uncertainty about opportunities and the future, and often returns are depressed. In this climate, there is a reduced incentive to invest, causing unemployment to rise. In other words, some inflation is seen as good for investment and growing employment opportunities. So, when inflation is too low, the RBA may choose to lower interest rates to push inflation back to within its target 2–3 per cent zone.

Deferred consumption

As mentioned, when inflation is too low and unemployment is rising in a shaky economy, confidence is weak and there is pessimism about the future. This can cause discretionary consumer spending on luxuries (that are not essential right now) to be delayed. Besides, if prices are falling (or not rising), there is no reason to rush into purchases to beat any expected rise in prices. Consumption spending is deferred, slowing spending and making it harder to currently achieve other government goals.

Another possible reason for deferred consumption is that those who have taken out a home loan at *fixed interest rates* prior to the drop in inflation or the onset of deflation (where wages may fall), find that debt repayments become more burdensome, causing consumption of luxuries to be deferred. Unlike during periods of rapid inflation, deflation means that the face value of debt to be repaid does not decrease. Individuals with fixed rate home loans gain no relief from any subsequent reductions in interest rates and hence, have no increase in their cash flow available to increase consumption spending on other goods and services.

Furthermore, deflation can cause the market value of assets like property to fall so their owners do not feel as wealthy. This too can cause some people to defer their consumption spending on non-necessities to a later date, slowing AD and economic activity.

on Resources

Weblinks Inflation
Nominal vs real, unemployment and inflation
Inflation: 'Why play leap frog?'

2.9 Activities

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2.9 Quick quiz on | **2.9 Exercise**

2.9 Exercise

1. **Define** what is meant by the government's *goal of low inflation* (also called price stability). **(2 marks)**
2. **Identify** and **explain** *two* key economic *effects* of high rates of inflation. **(4 marks)**
3. **Explain** the nature of demand inflation and **outline** the factors that might cause it to occur. **Illustrate** this on a fully labelled AD–AS diagram. **(3 marks)**
4. **Explain** the nature of *cost inflation* and **outline** the factors that might cause it to occur. Illustrate this on a fully labelled AD–AS diagram. **(3 marks)**
5. **Examine** the CPI data in the table below showing trends in Australia's inflation rate, before answering the questions that follow.

Measure	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
CPI at June (base year, 2011–12 = 100)	108.6	110.2	113.0	114.8	114.4	118.8	126.1	

Source: Data derived from ABS 6410.0 (Table 1).

   a. **Describe** the consumer price index (CPI). **Outline** how the ABS goes about constructing it. **(3 marks)**
   b. **Identify** and briefly **outline** *two* important weaknesses of using the CPI as a measure of Australia's inflation rate. **(2 marks)**
   c. Using the table above, **calculate** the CPI inflation rates for all years from 2016–17 onwards. Use the inflation rates you have just calculated to **draw** a graph showing changes in Australia's inflation rate. Using your graph, **describe** the change in Australia's inflation rate over the years shown, noting the extent to which the RBA has actually achieved its goal of low inflation (price stability). **(4 marks)**
   d. **Distinguish** the *headline* inflation rate from the *underlying* rate. **(2 marks)**
6. a. **Explain** *two* important differences between *demand inflation* and *cost inflation*. **(2 marks)**
   b. **Identify** *four* factors (*two* aggregate demand and *two* aggregate supply factors) that could influence Australia's inflation rate, and then **explain** clearly their effects. In addition, try to **illustrate** and **explain** the impacts of these factors using two fully labelled AD–AS diagrams (each showing the *before* and *after* effects of the factor). **(8 marks)**
7. **Explain** how you would expect a *very high* inflation rate to affect *each* of the following: **(4 x 2 marks)**
   a. The purchasing power of wages and incomes
   b. International competitiveness and the values of exports and imports
   c. Efficiency in the allocation of resources between competing uses
   d. The returns on investment
8. **Explain** how any *two* of the following factors would be likely to affect the *achievement* of *the goal of low inflation* in Australia. **(4 marks)**
   a. The 4 per cent depreciation of the Australian dollar
   b. A general rise in the average price paid for crude oil
   c. The impact of cyclones, fires and drought
   d. A fall in RULCs
   e. A slower rate of growth in labour productivity
   f. The progressive reduction in the company tax rate from 30 per cent to 25 per cent
   g. Mostly higher commodity export prices.

Solutions and sample responses are available online.

2.10 The goal of strong and sustainable economic growth

KEY KNOWLEDGE

The domestic macroeconomic goals

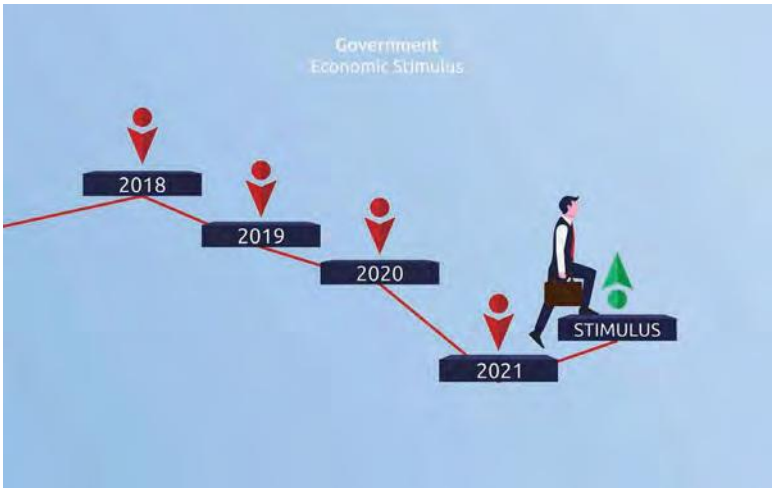
- The meaning of the goal of strong and sustainable economic growth
- Measurement of the rate of economic growth using growth in real Gross Domestic Product (GDP)
- Consequences of not achieving the goal of strong and sustainable economic growth and its effect on living standards, including environmental degradation, external pressures, high inflation if growth is too high, and high unemployment if growth is too low

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

Strong and sustainable economic growth is a second domestic macroeconomic goal for the Australian government.

2.10.1 The meaning of the goal of strong and sustainable economic growth

Economic growth occurs when there is an increase in the level of national production of goods and services between one year and the next. The rate of economic growth is measured by the annual percentage change in real gross domestic product (measured using changes in the value of chain volume GDP).



The goal of strong and sustainable economic growth is defined as the fastest rate of growth in national production that is consistent with achieving a low inflation rate and other government goals.

While there is no exact government target rate or number, most commentators believe that an annual rise averaging around 3 per cent over time, give or take a bit, is at least 'economically sustainable'. With this rate, rises in aggregate demand can normally be matched by increases in productive capacity or aggregate supply, without accelerating inflationary pressures. In addition, faster rates would lead to over-full employment where there would be labour shortages, leading to wage-cost pressures and reduced international competitiveness. It is also likely that excessively fast rates of economic growth would further damage the environment, weaken external stability and undermine the value of the A$, again eroding living standards.

However, what we might consider to be an appropriate and sustainable rate of economic growth can change over time, reflecting new circumstances and developments. For example, a *faster sustainable rate of economic growth* may be possible if *aggregate supply conditions* became generally *more favourable* (e.g. perhaps there was a stronger growth in labour productivity, favourable climatic conditions, new resources, or some important technological breakthroughs that lowered production costs), so a *higher* rate of economic growth, perhaps equal to 4 or 5 per cent per year, may become *economically sustainable*.

Increasingly, however, the concept of *environmental sustainability* is also being taken into consideration. Perhaps, especially in the short-term, this may mean that we might have to accept a *slower sustainable rate of economic growth*. This is because we now realise that growing output quickly (especially some types of output) can cause the depletion of non-renewable natural resources and increased CO_2 emissions that accelerate global warming and lead to severe weather events. These and other developments are undermining material and non-material living standards for current and future generations. Again, these concerns may mean that to achieve zero net CO_2 emissions by 2050 (as the Australian government agreed in late 2021), may require a change in what we accept is a *sustainable* rate of economic growth.

2.10.2 Measurement of the rate of economic growth

The main measure of Australia's *rate of economic growth* is the annual *percentage change* in the value of *Gross Domestic Product (GDP)* or Australia's national output of final goods and services, measured over a period of time.

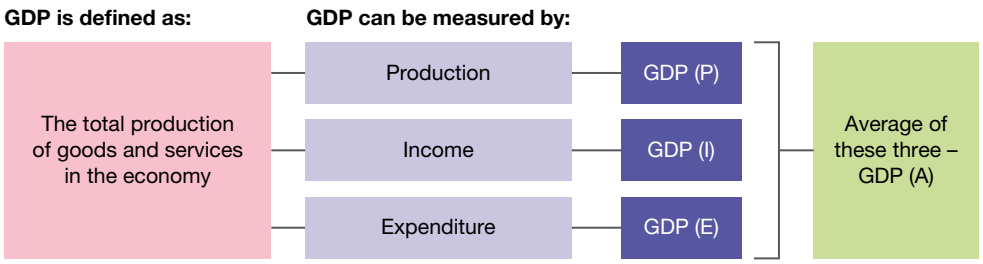
Calculating gross domestic product (GDP)

One of the tasks for the Australian Bureau of Statistics (ABS) is to add up the value of the many transactions and economic activities that take place in our economy, thereby calculating a measure called GDP. Here, GDP is an estimation of the total value of goods and services produced within Australia measured over a period of time — both *quarterly* (i.e. three monthly intervals) and *annually* (i.e. made up of four quarters). Initially, the value of GDP (i.e. in nominal dollar terms) is calculated using *current* or *market prices*. To do this (thinking back to the circular flow model), you may recall that all flows are equal in value. As illustrated in figure 2.27, this means that the ABS can calculate the value of production or GDP in *three* ways:

- by summing up the total value added in *production* by all our producers — called GDP(P)
- by adding up the total value of all *income* generated and received by individuals and businesses — called GDP(I)
- by adding up the total value of *spending* or expenditure by consumers, businesses and governments, on Australian-made goods and services — called GDP(E).

Although these three approaches measure the same thing, results can differ slightly due to data error or other limitations. The ABS also calculates a fourth measure called GDP(A), or an *average* of the three we have mentioned.

FIGURE 2.27 The three ways the ABS can calculate Australia's GDP.



The *current value* of GDP depends on both the unit *prices* of all the goods and services produced, and on the *volume* of all the goods produced (that is, the *value* related to *price* and *quantity*). However, GDP measured at *current prices* can be *misleading* when comparing one period of time with another. This is because the *prices* paid for all these goods and services change. When there is *inflation* (i.e. generally rising prices), this tends to *exaggerate* the *market value* of goods and services produced, while if there is *deflation* during a period, this *underestimates* the actual value of national output.

The ABS corrects this problem by *statistically removing* the effects of *price variations* on the value of national output using a more reliable measure for economic growth called *chain volume GDP* (also called *real GDP*). This makes adjustments using special *chain price indexes* (that are a bit like the CPI) to *deflate* the figures (if there has been inflation) or *inflate* them (if there has been price deflation), so that variations in GDP reflect *volume* or *quantity* changes in output, *not* price changes.

These *chain price indexes*, produced by the ABS, measure the average change in the prices of goods and services relevant to expenditure on GDP for the most *recent year*, against the prices that existed in the *previous year* (called the *reference year*), where the price index is equal to 100 index points. This reference year advances by *one year*, every year. Hence, in calculating *chain volume GDP* for 2019–20, the reference year for prices was 2018–19, while for GDP in 2020–21, the prices used were those that existed in 2019–20, and so on. One consequence of this approach is that previous GDP figures need constantly to be *revised* every year.

While this seems a bit complicated, all the ABS is attempting to do is to expose how the *real value* (or put another way, the *quantity* or *volume*) of goods and services produced in Australia, has changed between one year and the next. Figure 2.28 provides a simplified example of how this statistical adjustment process is applied to convert GDP at market or *current prices*, to *chain volume GDP* (also c2alled *real GDP*).

FIGURE 2.28 Using the chain price index to adjust GDP at current prices to chain volume GDP (real GDP).

Data for example	Year 1	Year 2
GDP at current or market pieces	$100 million	$120 million
Chain price index (year 1 is the reference year for chain volume GDP in year 2)	100 points	110 points
Calculate the value of chain volume GDP for year 2 (i.e. real GDP)	$100 million	$??? million
Procedure for adjustment to remove the effects of inflation on the value of GDP:		

$$\text{Chain volume GDP for year 2} = \frac{\text{Price index in the base of reference year}}{\text{Price index in the year to be adjusted}} \times \frac{\text{GDP at market prices in the year to be adjusted}}{1}$$

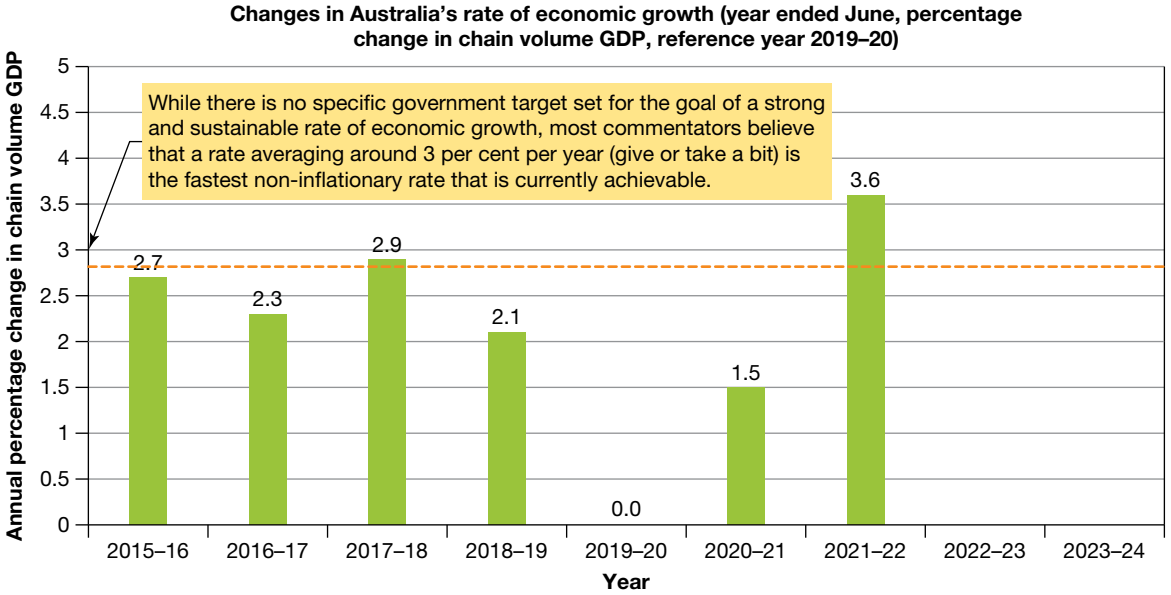
$$= \frac{100}{110} \times \frac{\$120 \text{ million}}{1}$$

$$= \$109.09 \text{ million}$$

Notice here that *after* the adjustment process to remove the effects of a 10 per cent inflation rate (seen by the 10-point rise in the chain price index from 100 points to 110) on the value of GDP at market prices, the final result for chain volume GDP (real GDP or GDP at constant prices) was much lower. Instead of GDP *appearing* to rise by $20 million (or 20 per cent) before the adjustment, it grew by only $9.09 million, making the actual rate of economic growth 9.09 per cent for the year. By contrast, had the chain price index *fallen* from 100 to say 90 points, after being statistically adjusted upwards due to deflation, the final growth in chain volume GDP would have been far more impressive (i.e. a rise from $120 million to $133.3 million).

Finally, figure 2.29 shows Australia's actual *rate of economic growth* using the annual *percentage change* in the value of *chain volume GDP*.

FIGURE 2.29 Changes in Australia's annual rate of economic growth (chain volume GDP).



Source: Data derived from ABS, National accounts, revised data October 2022.

Referring to this graph, notice that for recent years:

- The rate of economic growth has been *unstable*, varying widely between 0.0 and 3.6 per cent a year.
- The *average* annual rate of increase in GDP for the period shown was just 2.1 per cent — well below the current potential rate of somewhere around 3 per cent.

Some limitations of using GDP as a measure of economic growth

Data relating to GDP are only estimations or 'guestimations' of the annual value of a nation's output. While the statistics can provide a general indication of changes in economic growth, they are by no means totally accurate. There are several reasons for this:

GDP is an underestimation caused by the exclusion of non-market production

The value of some types of non-market production is normally *excluded* from the GDP figures simply because their value is too difficult to calculate. Examples include illegal production as part of the *black economy*, production involved with the *cash economy*, along with household and individual or **non-market activity** such as home repairs, gardening, housekeeping, volunteer work and do-it-yourself activities around the home.

Some items included in GDP are imputed and subject to error

The value of some production that needs to be included in GDP must be estimated or *imputed* because it is not actually marketed or sold in the normal way, potentially reducing the accuracy of GDP as a measure of economic growth. For instance, this process applies to estimates of the value of farm output that is consumed on the farm, the net rental value of accommodation provided by houses to their owners, and the cost of providing government or public services that are subsidised or provided free of charge to the community.

Quality changes may not be reflected in the value of GDP

Quality changes in the goods and services produced between one year and the next are not always fully reflected in the changes in the value of chain volume GDP. In some cases, quality can increase while the price paid affecting the value of production might actually come down (e.g. some cars, air travel tickets and computers), making the rate of economic growth appear less impressive than it is in reality.

Removing the effects of price changes from the value of GDP can involve error

GDP measured at market or current prices needs to be statistically adjusted to remove the *exaggerations* to the market value of national production caused by *inflation*, or the *under-estimation* caused by *deflation*. This process of converting GDP at *current prices* to GDP at *constant prices* in terms of a reference year requires the construction of an accurate chain price index. However, it is difficult to calculate such indexes so that they accurately and fully reflect changes in the prices of all goods and services entering GDP.

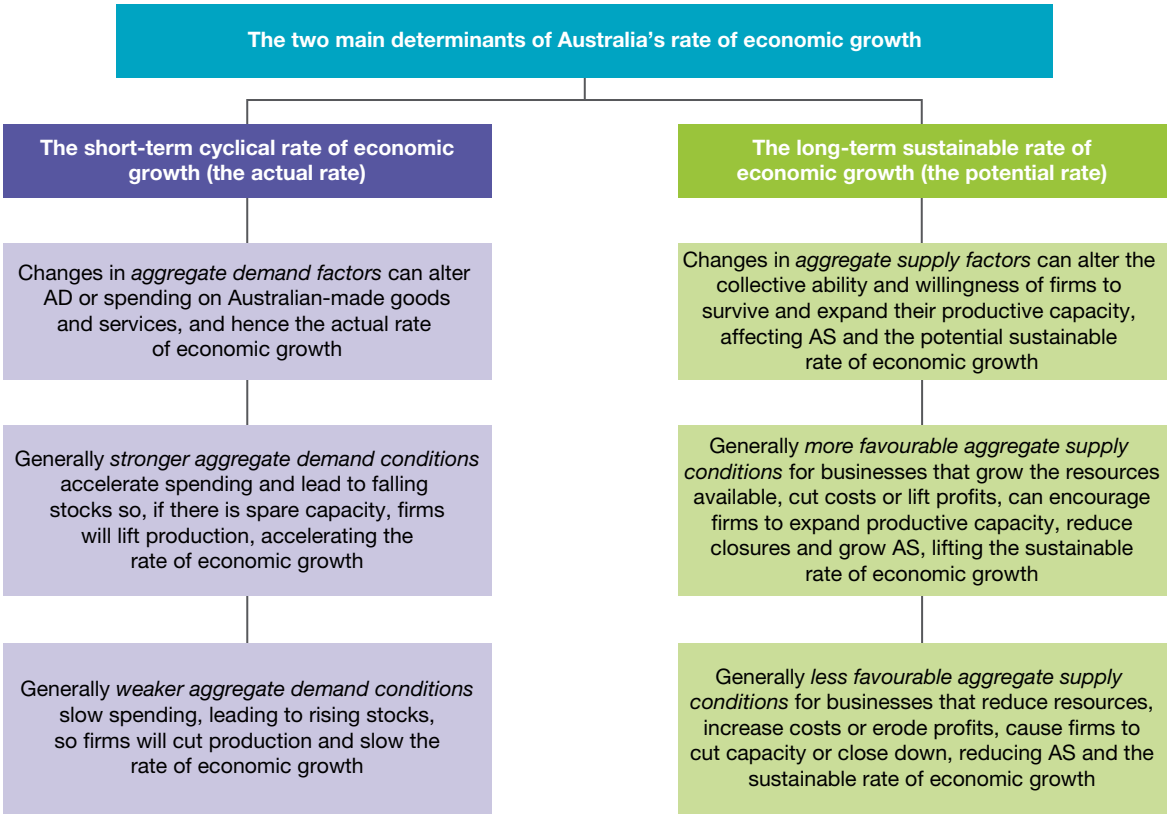
2.10.3 Causes of economic growth

Earlier in this topic we saw that there are *two* main macroeconomic determinants of a country's rate of economic growth:

- In the short-term the *cyclical rate of economic growth* reflects changes in the strength or weakness of *aggregate demand factors*. These largely determine the *extent* to which the economy's available productive capacity is actually used.
- In the longer term, the *potential* sustainable *rate of economic growth* is determined by whether *aggregate supply factors* become generally more favourable or less favourable. These ultimately govern the economy's productive capacity that is made available.

These two determinants of the rate of economic growth are summarised in figure 2.30.

FIGURE 2.30 The two main determinants of the rate of economic growth.



The influence of aggregate demand conditions

As noted, Australia's rate of economic growth varies *cyclically* in response to volatile changes in aggregate demand-side conditions that affect the level of expenditure or AD (C + I + G + X – M). These conditions might include the following:

- variations in consumer confidence
- changes in business confidence
- a change in disposable income

- the rate of population growth
- changes in interest rates and monetary policy set by the RBA
- a change in the budget outcome (i.e. the size of the budget deficit or surplus)
- instability overseas in the rate of economic growth, especially among our trading partners such as China
- changes in the terms of trade (i.e. the ratio of export to import prices) and exchange rate.

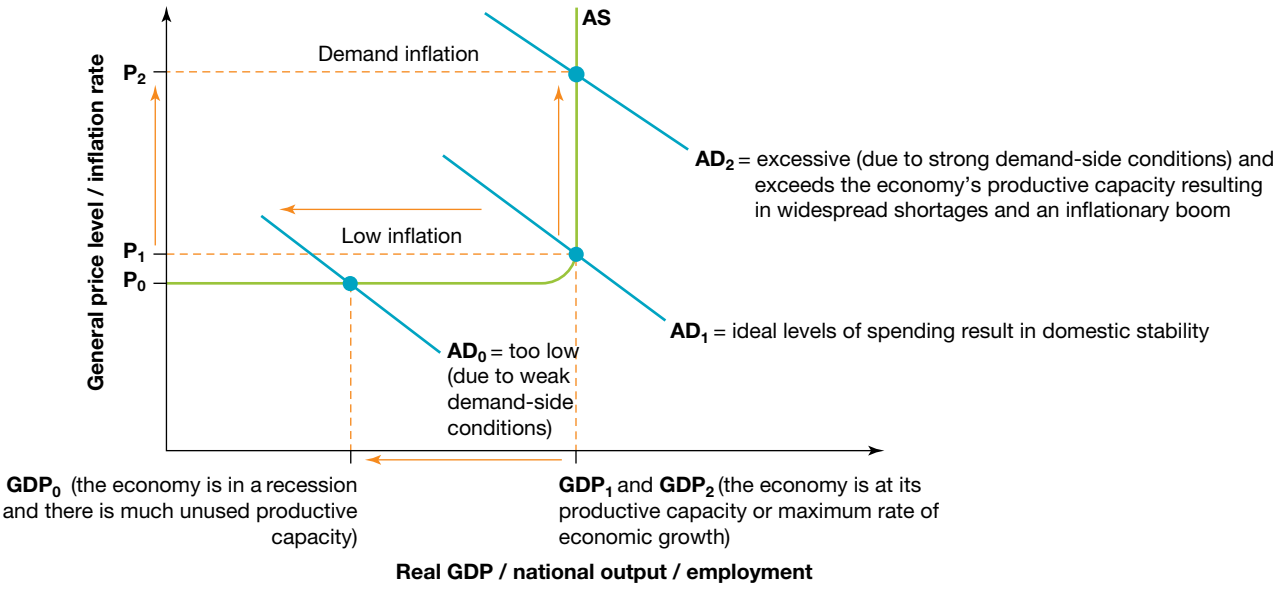
When these aggregate demand conditions are generally *stronger* and cause spending to grow faster, business stocks fall. To replenish these stocks and meet stronger sales and orders, firms will lift output (provided they have access to some unused productive capacity), thereby accelerating the rate of economic growth.

In reverse, mostly *weaker* aggregate demand conditions slow expenditure. The level of unsold stocks would then rise and new orders disappear. In this case, firms cut production and defer new investment spending, slowing Australia's rate of economic growth.

Using the AD–AS diagram to show the effects of changing aggregate demand factors on economic growth

We can again use the AD–AS diagram to illustrate the impact of changes in aggregate demand conditions and the level of AD on Australia's actual rate of economic growth. Referring to figure 2.31, the optimum rate of economic growth occurs when AD is sufficient to cross the AS line at the elbow. This level of expenditure corresponds with AD_1. Notice that GDP_1 is economically sustainable and close to the economy's maximum or potential. However, if demand-side conditions are *too weak*, falling expenditure to AD_0 causes firms to cut output to GDP_0, slowing the rate of economic growth, perhaps resulting in a recession.

FIGURE 2.31 How changing aggregate demand conditions can affect the level of AD and thus Australia's cyclical rate of economic growth.



By contrast, if expenditure grows too *quickly* at an unsustainable rate and reaches AD_2, *excessively strong* aggregate demand conditions cause the economy to be stretched beyond its capacity or ability to supply. Here, extra spending is not translated into increased economic growth. Instead, excessive expenditure only causes depleted stocks and widespread shortages, leading to demand inflation. This is seen by the rise in the general price level from P_1 to P_2.

The influence of aggregate supply conditions

Changing aggregate supply conditions can also affect Australia's potential and sustainable rate of economic growth. They do this by altering the availability of resources, production costs, profits, the level of business

expansion or closures, and the ability and willingness of firms to produce goods and services. There are a number of important aggregate supply conditions that can change and shift the position of the AS line:

- the level of staff wages and salaries, including changes in the minimum wage
- labour on-costs like the superannuation guarantee charge and various type of leave entitlements
- labour productivity (GDP per hour worked)
- R&D and the adoption of new technology in production
- the rate of business bankruptcy and closures, versus that for new start-ups
- disruptions to supply chains due to pandemics, war, climate change and weather events
- the age distribution of the population (affected by the birth and death rates, and the rate of net migration)
- the labour force participation rate and the number of hours worked per week
- the cost of electricity, gas, water and other utilities
- changes in the adequacy of infrastructure and the costs of transport, electricity and communications
- changes in the exchange rate may affect the costs of imported resources and equipment used by local firms to produce goods and services
- variations in the cost of borrowing credit from banks by local businesses.

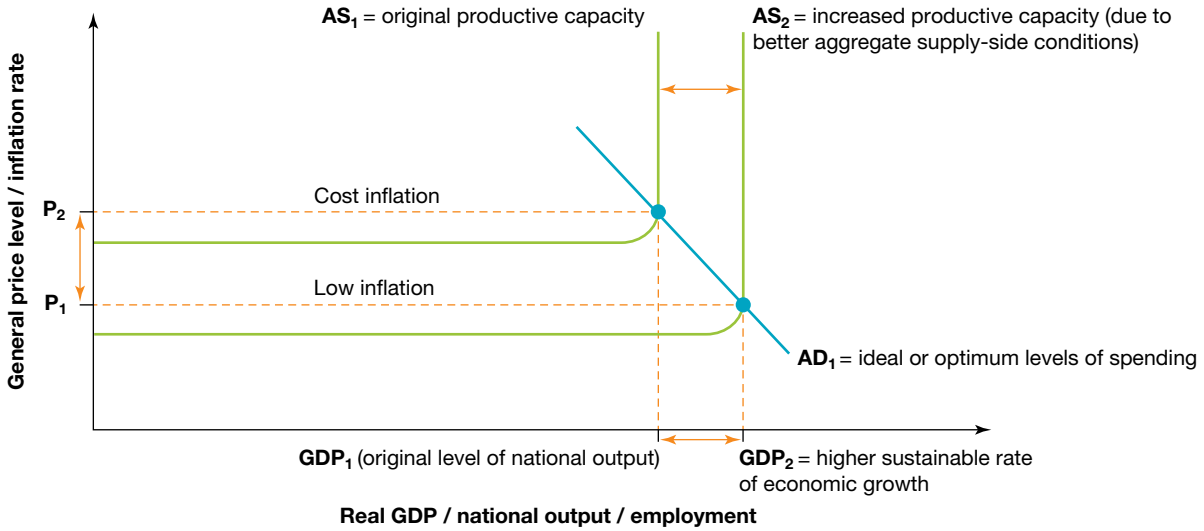
These aggregate supply factors can alter the economy's productive capacity or the sustainable speed limit at which AS or national output can grow:

- When there are mostly better or *more favourable* aggregate supply conditions for business, firms become more willing and/or able to produce and expand.
- By contrast, generally *less favourable* supply conditions might slow the sustainable rate of economic growth as firms close and capacity is lost.

Using the AD–AS diagram to show the effects of changing aggregate supply conditions on the sustainable rate of economic growth

The AD–AS diagram (see figure 2.32) can again be used to illustrate the effects of changing aggregate supply conditions on the long-term sustainable rate of economic growth. Notice that as a result of generally *more favourable* supply conditions, the aggregate supply line (AS) for the economy grows and moves outwards and to the right from AS_1 to AS_2. Notice, too, that the new equilibrium level for economic activity is now higher (GDP_2 not GDP_1), indicating increased non-inflationary levels of economic growth. By contrast, generally *less favourable* aggregate supply conditions — such as higher production costs, lower profits, increases in bankruptcy rates and reduced efficiency — limit the economy's productive capacity (a shift from AS_2 to AS_1) in the long-term, retard the sustainable rate of economic growth (GDP_2 to GDP_1) and accelerate cost inflation (P_1 to P_2).

FIGURE 2.32 The effect of generally more favourable aggregate supply conditions that boost productive capacity, grow AS and increase Australia's sustainable rate of economic growth.



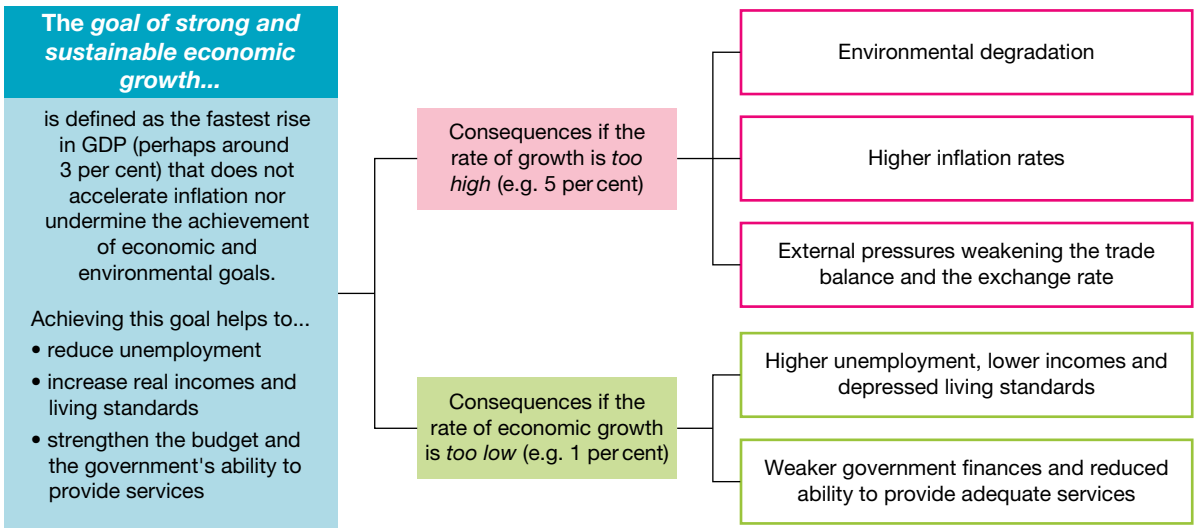
2.10.4 The consequences of not achieving the goal of strong and sustainable economic growth

There are sound reasons why the Australian government pursues the *goal of strong and sustainable economic growth* — that is, the fastest rise in GDP, perhaps averaging around 3 per cent a year, that doesn't accelerate inflation or undermine the achievement of other government goals and living standards. For example, strong and sustainable economic growth is generally seen as *beneficial* because:

- it lowers the unemployment rate, improving economic and non-economic wellbeing
- it raises average real incomes and purchasing power, strengthening material and some aspects of non-material living standards
- it bolsters the government's financial position, reduces budget deficits and debt, and allows the government to more adequately provide important community services on which we all depend.

In contrast to this, a *failure* to achieve an appropriate rate of economic growth can involve a situation where the increase in GDP is either *too high* or *too low*. In both cases, this can have *negative* effects that *undermine* Australia's material and non-material *wellbeing*. Some of the consequences of unsustainably *fast*, or alternatively, *deficient* rates of economic growth, are summarised in figure 2.33.

FIGURE 2.33 The consequences of not achieving the goal of strong and sustainable economic growth.



The consequences if economic growth is too high

Let's start by examining what happens when the *goal of strong and sustainable economic growth* is *not* achieved because production is rising far *too quickly* at rates that are unsustainable.

Higher inflation rates

When economic growth is running too strongly (e.g. at 5–6 per cent annually) over several years when there is little or no unused productive capacity available, inflationary pressures build. The economy becomes stretched and starts to overheat.

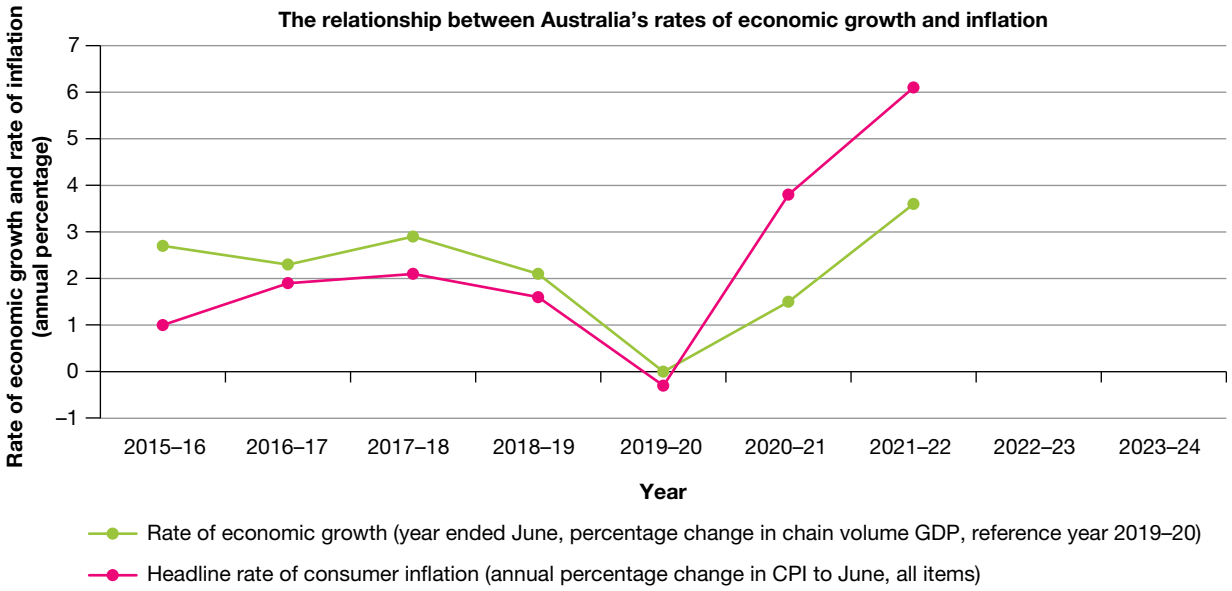
This is usually because spending or AD is rising faster than productive capacity or AS. It causes consumer prices to rise, *undermining* the achievement of the RBA's goal of low inflation. The problem here is that with little unused capacity left and falling stocks, collectively, firms are unable to lift national output. Widespread *shortages* start to push up prices and *demand inflation* accelerates.

Another problem is that as firms try to lift production to meet stronger sales and falling stocks of goods, they need to employ more resources, including labour. Then, as unemployment begins to fall and labour market conditions strengthen, wages start to accelerate and sometimes, worker productivity falls. In turn, this causes production costs to rise, so firms are forced to protect their profits by lifting prices. *Cost inflation* accelerates.

As pointed out previously, high rates of inflation have a negative effect for most individuals. Perhaps the main issue is that inflation typically undermines the *purchasing power* of wages and incomes, partly offsetting any gains of higher incomes that might result from faster rates of economic growth. Moreover, rapid inflation typically reduces the *international competitiveness* of local firms, eroding their profits, causing business closures and higher structural unemployment.

Figure 2.34 shows how when Australia's rate of economic growth is stronger, as in 2021–22, inflation picks up, but when growth slows, inflation eases. However, because economic growth was quite subdued over most of this period, until 2020–21, *average* inflation rates were *too low* and below the RBA's target range.

FIGURE 2.34 How Australia's rate of economic growth and inflation are linked.



Source: Data derived from ABS, CPI and national accounts

External pressures that weaken the trade balance and currency

Excessively strong and *unsustainable rapid* rates of economic growth can create *external pressures* involving a weaker *trade balance* (i.e. the value of a nation's imports rises relative to its exports) and falling *exchange rate* for the A$ (i.e. fewer units of another currency are received when swapping A$1). There are several ways this can happen.

For example, excessively fast economic growth is often driven by rapid rises in nominal incomes, leading to vigorous spending on goods and services by households and businesses. Because the economy is being stretched beyond its capacity, shortages of goods and services appear, adding to domestic inflation. In this environment, local consumers look to overseas for *cheaper* and more readily available imports. Their excess spending *spills over* onto imports. This increases the value of trade *debits*. At the same time, overseas consumers see our exports as relatively *dearer* and less attractive, causing our sales, or *credits*, to decline. With a rise in the value of import debits relative to our export credits, the *trade balance weakens*, perhaps resulting in a *trade deficit* (i.e. the value of our imports exceeds the value of our exports).

In turn, a *bigger trade deficit* can cause our *exchange rate* to fall or *depreciate* (i.e. its value or purchasing power abroad goes down). This is because a larger trade deficit involves increased sales or supply of the A$ in the foreign exchange market, relative to a reduced demand for our dollar from abroad (for a further explanation, see Topic 3). A knock-on effect of a falling exchange rate is that it can add further to existing inflationary pressures in an economy operating beyond its capacity, reducing the *purchasing power* of wages and incomes, and eroding living standards.

In contrast, when the rate of economic growth is *slower* and more economically sustainable, *external pressures* are reduced. Typically, the trade deficit is smaller, and there is less downward pressure on the exchange rate. This makes it is easier to achieve the goal of low inflation.

Environmental degradation

There is much evidence of the direct link between the rate of economic growth and *environmental problems*. Faster growth is even more *environmentally unsustainable* than slower growth, and ultimately reduces our wellbeing. For example, current environmental issues driven by rapid GDP growth include:

- *escalation of negative externalities* (i.e. costs associated with economic activities that are passed onto third parties, including increased emissions of CO_2 and other greenhouse gases) that accelerate global warming, cause a greater frequency of severe weather events (including cyclones, floods, drought, and wildfires), reduce the *quality* of common access resources, and undermine our material and non-material wellbeing (for more details, see Topic 5)
- the *destruction of ecosystems* and native habitats, resulting in the loss of species
- the unsustainable *depletion of non-renewable natural resources* (e.g. minerals) that adversely impact living standards, especially those of future generations
- the growing *problems of waste disposal* (given that in the long-term, this waste is equal to everything that has ever been produced).

As things currently stand, there is a *trade off* between rapid economic growth and environmental quality. Most commentators agree that it is unsustainable to continue with business as usual. As we shall see in Topic 5 (when we investigate government *environmental policies*), a much sharper focus is needed to ensure that in increasing Australia's GDP, we switch to growing a greener-type economy involving the production and consumption of reusable and recyclable goods and services, with their manufacture involving the lowest possible emissions (perhaps *zero net emissions* by 2050). This would help to improve *intertemporal efficiency* in resource allocation by striking a more appropriate balance between the use of resources for current, as opposed to future, consumption.

Interestingly, during the COVID-19 pandemic, there was a global recession. Rates of economic growth were negative. More people worked from home, used their cars less, did not jet away on overseas holidays, and shopped less so fewer resources were consumed. As a result, there was a significant improvement in many environmental indicators. For instance, various studies show:

- Global CO_2 emissions were down 17 per cent and nitric dioxide reduced by between 20–40 per cent in the US, China and Western Europe.
- Global emissions from shipping, road transport, industry and energy generation fell by up to 50 per cent, with international aviation emissions down by 80 per cent.

These data provide us with a small glimpse of what might be, if economic growth was running at more sustainable rates.

The consequences if economic growth is too low

In reverse, if the goal of strong and sustainable economic growth is *not* achieved because national output is rising *too slowly*, this can also have *negative* effects on Australian living standards:

Higher unemployment rates, lower average incomes and depressed living standards

When GDP grows *too slowly*, or falls due to a contraction in the business cycle or recession, the unemployment rate (i.e. the proportion of the population aged over 15 who are able and willing to work) soon rises — that is, there is an inverse relationship. Higher unemployment then causes a drop in average incomes, as more workers move onto meagre government welfare benefits. For instance, in 2022, persons on full-time average earnings received around $1750 per week, whereas those on welfare benefits collected as little as $300 per week. This, in turn, greatly undermined consumer and business confidence and led to even lower spending, production and living standards. Material wellbeing was depressed because lower incomes reduced consumption, while non-material living standards suffered due to reduced mental and physical health outcomes, stressed relationships, unhappiness, and feelings of failure and poor self-worth.

Recent Australian experience illustrates the consequences of the recession induced by COVID-19 on the unemployment rate. Following two *negative* quarters of GDP growth equal to a fall of 7.1 per cent in the first half of 2020, monthly unemployment rose from just over 5.1 per cent to peak at 11.5 per cent (the unemployment rate in the *absence* of the government's temporary JobKeeper wage subsidy payments that artificially lowered the monthly unemployment rate in June 2020 to 7.4 per cent, by keeping staff employed). Not surprisingly, this caused a 7.4 per cent drop in real disposable income per head in June 2020, and greatly reduced consumption and material wellbeing. Sadly, at the same time, there was also a dramatic rise in mental health issues, unhappiness, stress and family violence, undermining society's non-material wellbeing.

There is another way to see the important connection between economic growth and unemployment. Each year, Australia's population usually grows by over 1 per cent. Despite retirements as people age, there is a rise in the number of people seeking jobs (even assuming no change in the participation rate), and additionally, labour productivity typically rises around 1 per cent a year (i.e. GDP per hour worked rises and fewer people are needed to produce each unit of output). Under these conditions, *unless* GDP grows fast enough, perhaps by at least 1–2 per cent a year (or people are forced to accept working fewer hours), the unemployment rate will tend to become unacceptably high, lowering living standards. Again, to avoid this problem, it is essential for Australia to *achieve* the goal of a sustainably strong rate of economic growth.

Weaker government financial position and reduced ability to provide adequate community services

Feeble rates of economic growth (perhaps less than 1 per cent a year) greatly *weaken* the government's *financial position*, typically causing bigger *budget deficits* (where the value of tax collected is less than total outlays on welfare and other essential services), and higher levels of *debt* or borrowing.

For example, when GDP is *falling* or rising *slowly*, automatically the government collects *less revenue* from personal, company, and sales taxes. This is partly because higher unemployment reduces incomes and confidence, and people are buying fewer goods and services. With less money coming into the budget, the government then finds it *more difficult* to adequately finance its *outlays* on welfare and essential community services (e.g. transport, power, health, housing, telecommunications, and education) without further increasing the size of the budget deficit (i.e. where the annual value of budget receipts is less than its outlays). Higher deficits then mean that governments must increase their borrowing, adding to the burden of debt and interest repayments, both now and into the future. This undermines society's material and non-material living standards. Avoiding this problem again means that it is important to achieve the goal of sustainably strong rates of economic growth.

We have just looked at how weak or negative economic growth can savage government finances and *limit* its ability to provide services. Again, referring to Australian experience, because of a slowdown and recession in 2019–20 with ongoing uncertainty due to COVID-19, the government's finances have been greatly weakened. By 2020–21, the annual budget deficit peaked at over $134 billion, and by 2022, gross debt exceeded $1000 billion! Again, this would not have occurred to the same extent, had economic growth been stronger and the government's goal well achieved. In addition, with stronger growth and thus government finances, perhaps there would be fewer serious bottlenecks and shortages that we currently see in almost all service areas and infrastructure (e.g. transport, power, housing, education, health, water, telecommunications). Living standards would be higher.

on Resources

Weblinks GDP — measuring economic growth
Goal of strong and sustainable economic growth
Nominal vs real, unemployment and inflation

2.10 Activities

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2.10 Quick quiz on | **2.10 Exercise**

2.10 Exercise

1. **Define** what is meant by the government's goal of a strong and sustainable rate of economic growth. **(2 marks)**
2. a. **Identity** and **explain** two important problems associated with unsustainably high rates of economic growth. **(4 marks)**
   b. **Explain** the effects of slow or negative growth rates in GDP on unemployment and living standards. **(2 marks)**
3. **Define** GDP and **explain** how is it measured. **(2 marks)**
4. a. **Explain** why economists prefer to quote chain volume GDP, rather than GDP measured at current prices, when comparing the rate of economic growth between one year and the next. **(2 marks)**
   b. Given the hypothetical information for a country contained in the table below, **calculate** the chain volume GDP for Year 2, showing your basic working. **(1 mark)**

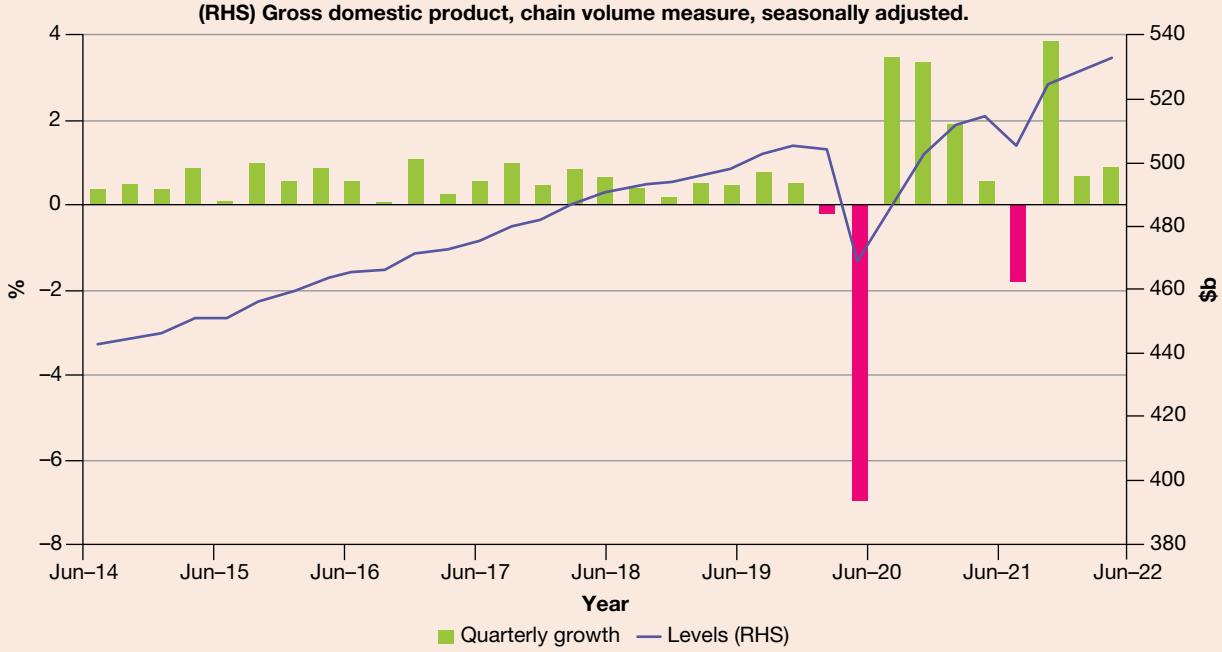
Data	Year 1	Year 2
GDP at current or market prices	$100 million	$110 million
Chain price index (year 1 is the reference year for chain volume GDP in year 2)	100 points	105 points

   c. Showing your working, **calculate** the value of GDP(E) if C = $100 million, I = $20 million, G = $10 million, X = $10 million and M = $5 million. **(2 marks)**
5. Australia's rate of economic growth depends on the interplay between two sets of factors. 'In the *long-term*, strong and sustainable rates of economic growth require an increase in our productive capacity. Additionally, in the *short-term*, economic growth requires a steady increase in the level of aggregate demand.'
   Explain theoretically, how any *two* of the following factors would be likely to affect Australia's rate of economic growth (identifying whether the factors chosen are primarily aggregate demand or aggregate supply factors): **(4 marks)**
   a. The general drop in oil prices
   b. A rise in consumer and business confidence
   c. A low rate of growth in labour productivity
   d. A drop in real net national disposable income per capita
   e. Infrastructure bottlenecks or labour shortages and a lower labour force participation rate
   f. Higher rates of business bankruptcies.

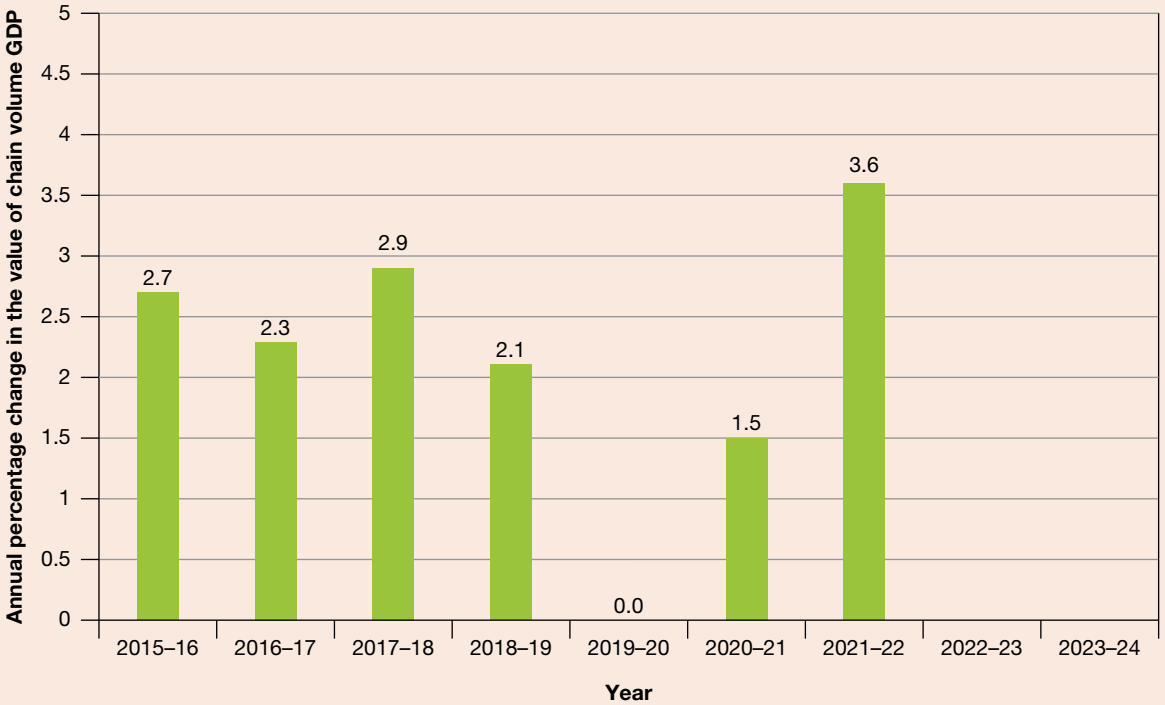
6. Examine the graph below and answer the questions that follow.

Changes in Australia's quarterly and annual rate of economic growth (chain volume GDP, reference year 2019–20).

Part 1 — Changes in Australia's chain volume GDP measured as a quarterly rate (LHS) and in dollar terms (RHS) Gross domestic product, chain volume measure, seasonally adjusted.



Part 2 — Changes in Australia's annual real rate of chain volume GDP growth (reference year 2019–20).



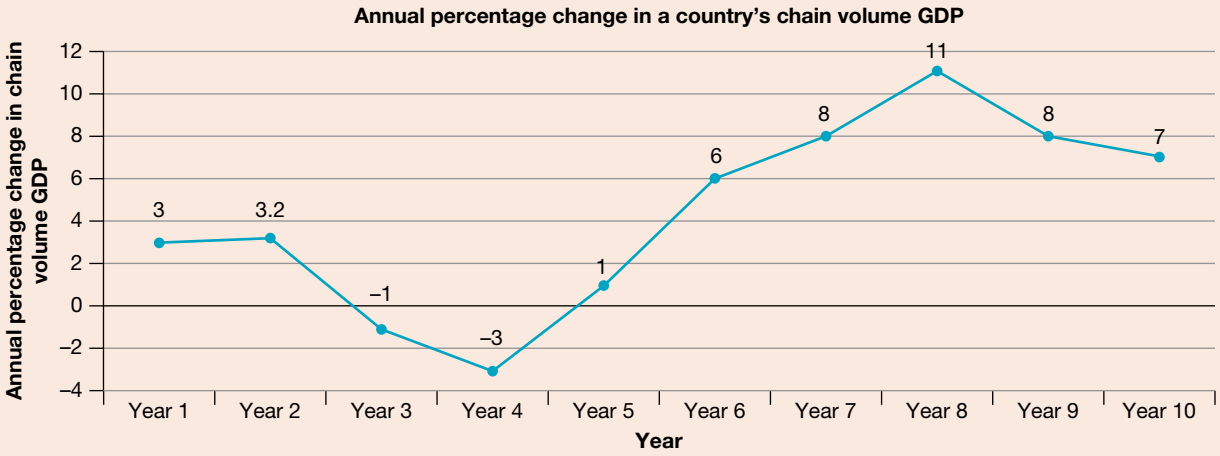
Sources: Graph part 1 from ABS, National Accounts, see https://www.abs.gov.au/statistics/economy/national-accounts/australian-national-accounts-national-income-expenditure-and-product/latest-release#key-statistics.
Graph part 2— data derived from ABS, National Accounts, Revised October 2021, see https://www.abs.gov.au/articles/improved-estimates-annual-national-accounts-results-2021-historical-revisions.

a. Referring to data in part 1 of the graph, **describe** the changes in the quarterly rate of economic growth over the period covered, focusing especially on the last two years. **(2 marks)**

b. Referring to part 2 of the graph, **evaluate** the extent to which the government's goal of strong and sustainable economic growth been achieved in the last few years. **(2 marks)**

c. Referring to data from part 2 of the graph, **explain** how would you expect trends in economic growth to affect our rates of unemployment and inflation. **(5 marks)**

7. Examine the following graph for a hypothetical country with an economy identical to Australia's, before answering the questions that follow:



a. **To what extent** has the government achieved its goal of strong and sustainable economic growth over this 10–year period? **Explain** your reasoning. **(2 marks)**

b. Look at the rate of economic growth in year 4. **Explain** how you would expect this to affect the rate of unemployment. **(2 marks)**

c. Look at the rate of economic growth in years 6, 7, 8, 9, 10. **Explain** how this would be likely to affect the rate of inflation. **(2 marks)**

d. Look at the rate of economic growth in years 6, 7, 8, 9, 10. **Explain** how this would be likely to affect the environment, assuming it is business as usual and no new environmental policies are adopted. **(2 marks)**

Solutions and sample responses are available online.

2.11 The goal of full employment

KEY KNOWLEDGE

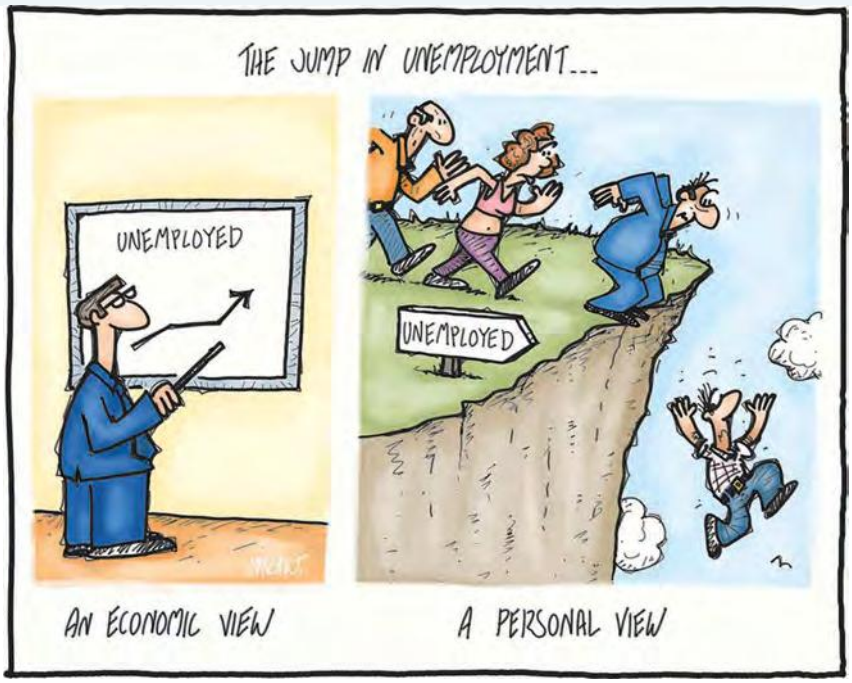
The domestic macroeconomic goals

- The meaning of the goal of full employment including the NAIRU (natural rate of unemployment)
- classifications within the labour force including employed, unemployed, hidden unemployed, long-term unemployed, underemployed, and frictional unemployment
- Measurement of the labour force, including the participation rate, the unemployment rate and the labour force under-utilisation rate
- The difference between cyclical and structural unemployment
- The consequences of not achieving the goal of full employment and its effect on living standards, including the impact on GDP and tax revenue if unemployment is too high and the effects on inflation if unemployment is too low

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Full employment is a third Australian government domestic macroeconomic goal and implies that most people who are actively seeking jobs, have them.

FIGURE 2.35 One of the Australian government's key domestic macroeconomic objectives is to achieve the *goal of full employment*, since this helps to improve people's material and non-material living standards.



However, when the level of aggregate demand or spending is too weak, firms cut production, reducing the demand for resources including labour. This can lead to a recession and cause a rise in cyclical unemployment. Unemployment not only reduces the average income and consumption levels of individuals, it also has adverse effects on the quality of life as affected by stress levels, feelings of self-worth, family and other relationships, health and happiness.

2.11.1 The meaning of the goal of full employment

Employment means that a person 15 years or over, who is able and willing to work, has a paid job. This is seen as beneficial since it means that labour resources are being used productively to lift national output. It also allows individuals to gain income and enjoy better material living standards. However, **unemployment** occurs when people aged 15 years or over, who are 'actively looking for work', cannot find it. These people are prevented from contributing to national production. In addition, the resulting increase in welfare payments is considered a burden on taxpayers, and unemployment usually causes national income to be distributed far less evenly than before. For these reasons, the Australian government seeks to achieve its **goal of full employment**.

The government's 'goal of full employment' means having the lowest rate of unemployment, perhaps currently around 4.0–4.5 per cent of the labour force, that is consistent with achieving low inflation and other government economic goals. Achieving this goal implies that there should be no **cyclical unemployment** *caused by weak spending (AD), slow economic growth or recession. However, it accepts that even in a healthy and stable economy, there will always be some* **natural unemployment** *(i.e. unemployment caused by structural, frictional, seasonal, and hard-core factors related to the way that the economy is organised and structured, and how goods and services are produced).*

This definition of full employment needs a bit more explanation, since you might be wondering why the goal is defined as *accepting* that there will be some unemployment, rather than aiming for a zero rate where everyone has a job. Perhaps the main reason for avoiding even *lower* rates of unemployment *below* 4.0–4.5 per cent of the labour force, is that it would *accelerate inflation* and thus prevent the achievement of the *goal of price stability*. This is because very low unemployment rates (less than 4 per cent) are a sign of labour shortages. In the labour market, this puts upward pressure on wages, causing firms to raise their prices to protect profits, leading to cost inflation. This concept is called the **non–accelerating inflation rate of unemployment (abbreviated NAIRU)** — that is, the lowest possible rate of unemployment that will not significantly accelerate inflation. For example, if unemployment remained at around 3 per cent for long, cost inflation would certainly accelerate due to upward pressure on wages (the price of labour) and hence the prices paid for goods and services. In fact, recent research by the Reserve Bank of Australia (RBA) confirmed this current but changeable target, whereas just a few years ago, NAIRU was higher and thought to be somewhere around 5 or 6 per cent.

In addition, shortly we will see that it's not only very low unemployment rates (i.e. rates below the NAIRU) that can have negative effects on the achievement of other government goals and better living standards. High rates may also be even more damaging to society's non-material wellbeing.

2.11.2 Classifications within, and measurement of, the labour force

Let us now look at how we measure unemployment and conditions in the labour market.

The ABS labour force survey

According to the Australian Bureau of Statistics (ABS), Australia's *labour force* consists of all individuals aged 15 or over who are able and willing to work. The labour force therefore includes people who are classified as *employed* as well as those who are classified as *unemployed*.

The extent to which the goal of full employment of the labour force is achieved is measured using various *labour market indicators* calculated by the ABS in its monthly *labour force survey*. Among other things, the survey collects data on the following:

- size and growth of the labour force
- 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 under-utilisation 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 labour market conditions and the changes in the *demand* for labour relative to its *supply*. But what exactly do all these terms mean?

Employed persons



Agreed definitions are an essential starting point for all surveys. In compiling these statistics, the ABS defines *employed persons* as meeting the following criteria:

- working either full-time (35 or more hours per week) or part-time for more than one hour per week for pay (or more than 15 hours a week in a family business when not being paid)
- aged over 15 years.

It also 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:

- 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
- aged over 15 years.

It also includes those waiting to resume work after being laid off or stood down without pay.

Calculating employment and unemployment rates

Employment and unemployment can be expressed in *two* ways:

1. Figures can be given as an actual *number*; for example, in June 2022, 13 599 300 persons were employed and 493 900 persons were unemployed out of a total labour force of 14 093 200 persons.
2. Figures can be expressed as a *rate* or percentage of the total labour force; for example, in June 2022, around 96.5 per cent of the labour force was *employed* while 3.5 per cent was *unemployed.* The following formula can be used for this calculation:

$$\textbf{The unemployment rate}\,(\%) = \frac{\textbf{Number of people unemployed} \times 100}{\textbf{Total number of people in the labour force}}$$

Growth rates in employment and unemployment can also be calculated from these data.

Other classifications and calculations related to the labour force

There are also several other important definitions that need to be understood about ABS labour market indicators.

Participation rate

The **participation rate** is the proportion of all people aged 15 years and over who are in the labour force according to the previous definitions. The participation rate affects the *supply of labour* resources available. Other things remaining equal, a *rise* in the participation rate tends to increase the unemployment rate, 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 that is not captured in the unemployment statistics. For instance, in June 2022, Australia's participation rate was 66.8 per cent. This rate can be calculated as follows:

$$\text{The participation rate}\,(\%) = \frac{\text{Total number of people in the labour force} \times 100}{\text{Total number of people 15 or over in the population}}$$

Job vacancies

Job vacancies refer to the number of job offers or positions advertised by employers that are unfilled. 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, in a way, are partly unemployed since 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 weak labour market conditions where the demand for labour is limited. It is typical of a period of recession.

Under-utilisation rate

The **under-utilisation 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 under-utilisation rate is an important indicator of labour market conditions. For instance, when there is a downturn or recession, the under-utilisation rate rises because more people are unemployed and they are working fewer hours, whereas in a recovery, the under-utilisation rate falls.

$$\text{Under-utilisation rate}\,(\%) = \text{Unemployment rate}\,(\%) + \text{Underemployment rate}\,(\%)$$

Hidden unemployment

Hidden unemployment includes people who would like to work, but are discouraged from seeking jobs for various reasons — such as a repeated failure to find work — and who 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

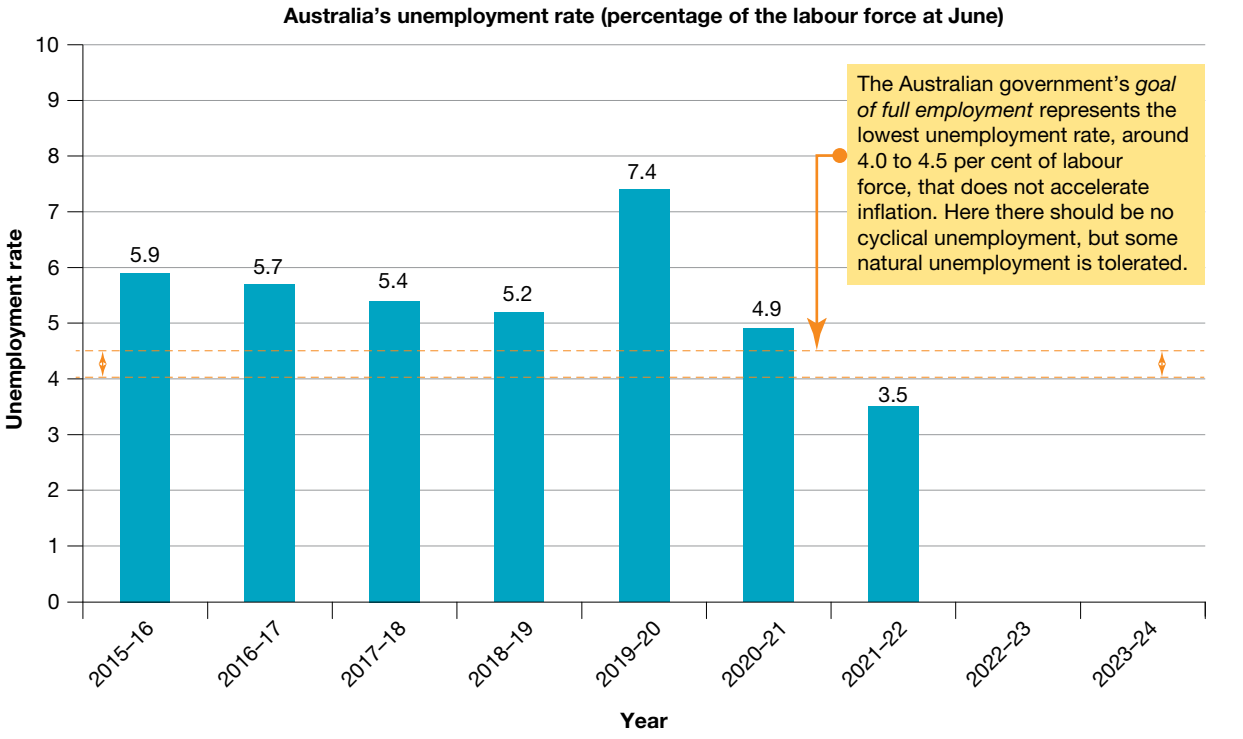
Long-term unemployment is where individuals have been unable to get a job for 52 weeks or more. This measure also tells us about the state of the labour market. When conditions weaken during a recession, there is a rise in long-term unemployment, whereas in a recovery, numbers slowly fall.

Aggregate hours worked

The change in aggregate hours worked also provides a useful guide to labour market conditions. It relates to the total paid hours worked by all those employed measured over a period of time. 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 is a sign that output is slowing and firms need less labour.

Despite the great range of labour market indicators shown in figure 2.36, the most commonly quoted one is the unemployment rate.

FIGURE 2.36 Trends in Australia's labour market indicators.



Year	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
1. Rate of unemployment (percentage of labour force, at June)	5.4	5.2	7.4	4.9	3.5	
2. Annual percentage change in the number of unemployed	–1.7	–1.6	39.3	–30.9	–28.6	
3. Annual percentage points change in the unemployment rate	0	0	0.4	–0.2	–1.4	
4. Underemployment rate (at June)	8.2	8.3	11.7	7.9	6.1	
5. Under-utilisation rate of labour (percentage at June)	13.6	13.5	19.1	12.8	9.6	
6. Participation rate (percentage at June)	65.7	66	64	66.2	66.8	
7. Annual percentage change in monthly hours worked	2.6	2	–5.7	6.8	3.8	
8. Annual percentage change in the number of private and public sector job vacancies	21	4	–43	184	29.7	

Source: Data derived from ABS Labour Force, Australia, see https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/latest-release.

Limitations of the unemployment statistics

Australia's measures of unemployment can be misleading and inaccurate, for several reasons.

- ***Definitions of employment and unemployment are somewhat arbitrary and affect the result.*** The definitions used to classify a person as employed or unemployed are somewhat arbitrary or random. For instance, why should the cut-off point for employment be those who work more than one hour a week? Although this is common internationally, why should it not be, say, four or six hours of work a week?
- ***The statistics fail to account for the hidden unemployed.*** This category includes those who are discouraged from seeking jobs because of their feelings of hopelessness, lack of success in gaining work in the past, the unsuitability of their training, and because of personal and family reasons. Because they are not 'actively looking for work', they are not regarded as members of the labour force, nor are they classified as unemployed during normal surveys. The inclusion of these people would cause a much higher level of unemployment than is currently reported. For instance, the ABS has conducted a survey of hidden unemployment and found that their inclusion would have more than doubled the official unemployment rate. In addition, the ABS also publishes statistics on the *underemployed* (disguised unemployment) where employees have jobs but are not working to their full capacity.
- ***Changes in the participation rates and other factors can affect the results.*** A change in the *participation* rate, the *duration* of unemployment or the proportion of those in full-time work, could have caused the unemployment rate to either look better or worse. For example, other things remaining equal, a fall in the participation rate tends to put downward pressure on the unemployment rate making it look better.
- ***Survey error.*** With only around 0.7 per cent of Australia's population being surveyed across different regions, industries and occupations, the likelihood of error in the results is higher than would be the case with a survey of all workers.

2.11.3 Causes and types of unemployment

Australia's measures of unemployment rate and labour market conditions as shown in figure 2.36 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* (consisting mostly of *structural* unemployment) is caused by changing *aggregate supply conditions* that alter the way goods and services are produced and/or whether firms close down.



The causes of cyclical unemployment

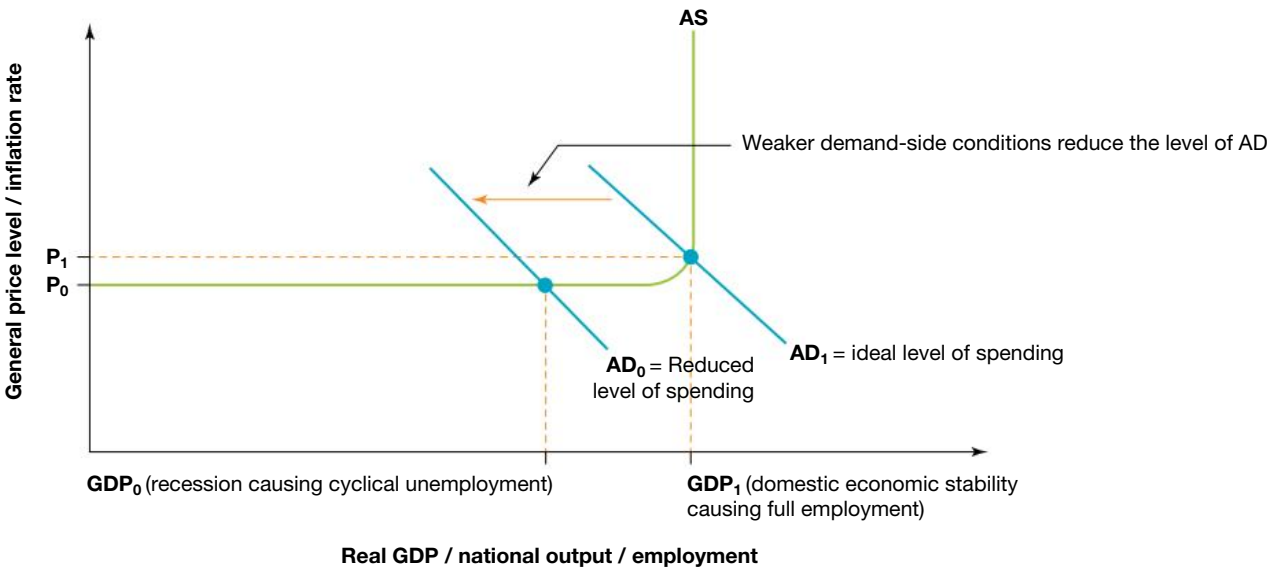
The general rule is that Australia's level of cyclical unemployment rises and falls with the overall strength of *aggregate demand conditions* that affect the pace of economic activity. These conditions include factors like consumer confidence, business confidence, disposable income, population growth, the effects of taxes and outlays in the budget, interest rates and the RBA's monetary policy, the exchange rate for the Australian dollar, overseas economic activity and the terms of trade.

- When domestic and international *demand conditions are generally weaker*, they cause the level of spending, production and economic activity to collapse, possibly leading to recession and higher cyclical unemployment. This is because falling levels of AD (C + I + G + net X) mean that firms will notice rising stocks and fewer orders. Sooner or later they have little choice but to cut production, which weakens the demand for resources including labour and raises the level of cyclical unemployment.
- When *aggregate demand conditions are generally stronger* and accelerate AD, firms notice rising sales, falling stocks and greater orders for goods and services. In response, businesses try to lift their output by employing more resources, including labour. If extra staff can be recruited from the ranks of the unemployed, then the level of cyclical unemployment will fall. Once the pool of cyclical unemployment is eliminated, further falls in unemployment would not easily be possible. They would only cause shortages and a red-hot labour market, driving up wages and causing cost inflation.

Using the AD–AS diagram to show the effects of changing demand conditions on the labour market

The effects of changing aggregate demand conditions on the level of economic activity and the rate of cyclical unemployment can be illustrated on an AD–AS diagram. Figure 2.37 shows that if mostly *weaker aggregate demand conditions* cause expenditure on Australian-made production to fall below the economy's productive capacity (from AD_1 to AD_0), then national production and employment will fall (from GDP_1 to GDP_0) causing *cyclical unemployment* to rise. In reverse, generally stronger aggregate demand conditions stimulate spending (from AD_0 to AD_1) and economic activity (seen in the rise from GDP_0 to GDP_1), creating full employment. Only if spending grows too fast (beyond AD_1) and exceeds the economy's capacity will the onset of overfull employment in the labour market cause inflation to accelerate.

FIGURE 2.37 How weaker aggregate demand conditions that slow AD and GDP can cause higher levels of cyclical unemployment.



The causes of natural unemployment

Despite periods of cyclical unemployment recently, the main cause or type of unemployment facing Australia is *natural unemployment*. Recall that natural unemployment consists of *four* types:

1. structural unemployment (the most important cause)
2. frictional unemployment
3. seasonal unemployment
4. hard-core unemployment.

Currently, these four types of natural unemployment make up around 4.0–4.5 per cent of the labour force. This range represents the government's goal of full employment or the *non-accelerating inflation rate of unemployment or NAIRU* — that is, the lowest unemployment rate that will *not* result in increased inflation. Often 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 most important cause of natural unemployment and often accounts for most of Australia's unemployment rate. It occurs not because of weak AD that causes cyclical unemployment, but because of *structural change* that alters the type of products made and the way goods and services are produced. 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. 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. Unfortunately, in June 2022 for instance, many of our 493 900 unemployed lacked the wanted skills to fill the 423 500 job vacancies on offer, and so remained unemployed. Sometimes too, long travel distances (possibly involving a move interstate) to where there are jobs, can also cause structural unemployment to be higher.
- ***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 down or move to overseas countries with cheap wages, such as India, China and the Philippines. This causes structural unemployment to rise locally. Recent examples of local business closures 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, auto parts maker CMI, Toys R Us and Foot Locker. There are many aggregate supply developments that

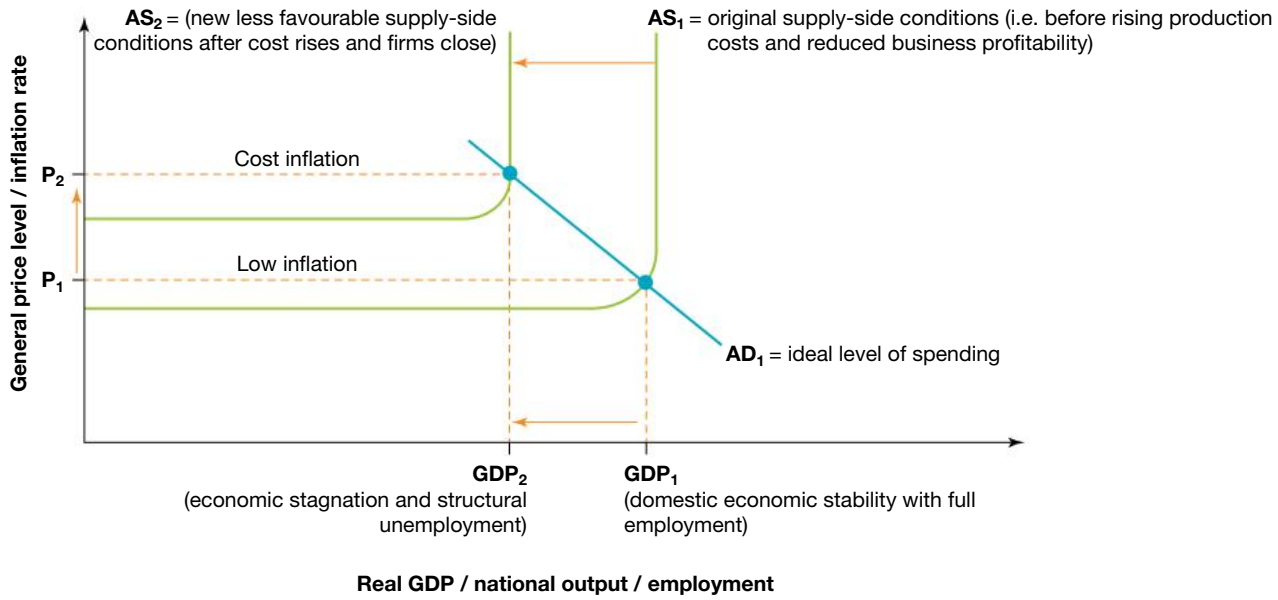
may push up business costs, erode profits, reduce our international competitiveness, and possibly lead to business closures and hence *structural* unemployment. These include the following:

- higher wage and labour on-costs
- poor labour productivity
- expensive borrowing costs or interest rates on loans to businesses
- the switch to online shopping by many consumers
- forced closure of some firms in 2020 and 2021 by the government's COVID-19 lockdowns (e.g. in hospitality, education, aviation and tourism) or issues caused by the disruption of supply chains providing inputs for local businesses
- climate change and severe weather events.

- ***Some recent government aggregate supply policies have added to structural unemployment.*** 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. With this in mind, consider the following policy measures:
  - changes to the operation of the labour market involving some deregulation of the labour market
  - government trade liberalisation that involves gradually reducing the level of tariff protection of local firms from imports.

The AD–AS diagram shown in figure 2.38 can be used to illustrate the effects of higher production costs on the level of *structural unemployment*. These *less favourable supply conditions* shift the AS line inwards and to the left (the decrease from AS_1 to AS_2). Rising costs of production can force firms to increase their prices, resulting in cost inflation (prices rise from P_1 to P_2). Cost pressures can also reduce the competitiveness and profitability of local firms. As a result, some businesses will close down and staff may lose their jobs as national output falls (the shift from GDP_1 to GDP_2). In reverse, *better aggregate supply conditions* that increase profits or capacity may cause an outward shift to the right in the AS line (the rise from AS_2 to AS_1) because firms are more willing and able to expand production (the shift from GDP_2 to GDP_1). Instead of closing down, firms expand, jobs are retained and structural unemployment falls.

FIGURE 2.38 How aggregate supply changes involving rising production costs, lower profits and business closures can cause higher structural unemployment.



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. Hard-core unemployment

Hard-core 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.

2.11.4 Consequences of not achieving the goal of full employment

There are compelling reasons why the Australian government pursues the *goal of full employment* — that is, the lowest rate of unemployment, perhaps averaging around 4.0–4.5 per cent a year of the labour force, that doesn't accelerate inflation (i.e. NAIRU) or undermine the achievement of other government goals and living standards. For example, full employment is seen as *beneficial* because:

- it means that the economy is operating close to its productive capacity (i.e. near the PPF), enhancing output (GDP) and incomes
- it strengthens both material and non-material living standards
- it helps to promote a higher and more equitable distribution of income, strengthening material living standards
- it strengthens the government's financial position, by increasing tax revenue collected in the budget relative to outlays on welfare, allowing the government to more adequately provide important community services that improve our wellbeing.

In contrast to this, a *failure* to achieve the unemployment target (NAIRU) can involve a situation where the unemployment rate is either *too high* or *too low*. In both cases, this can have *negative* effects that *undermine* Australia's material and non-material *wellbeing*. Some of the consequences of *very high* or *very low* unemployment rates are summarised in figure 2.39.

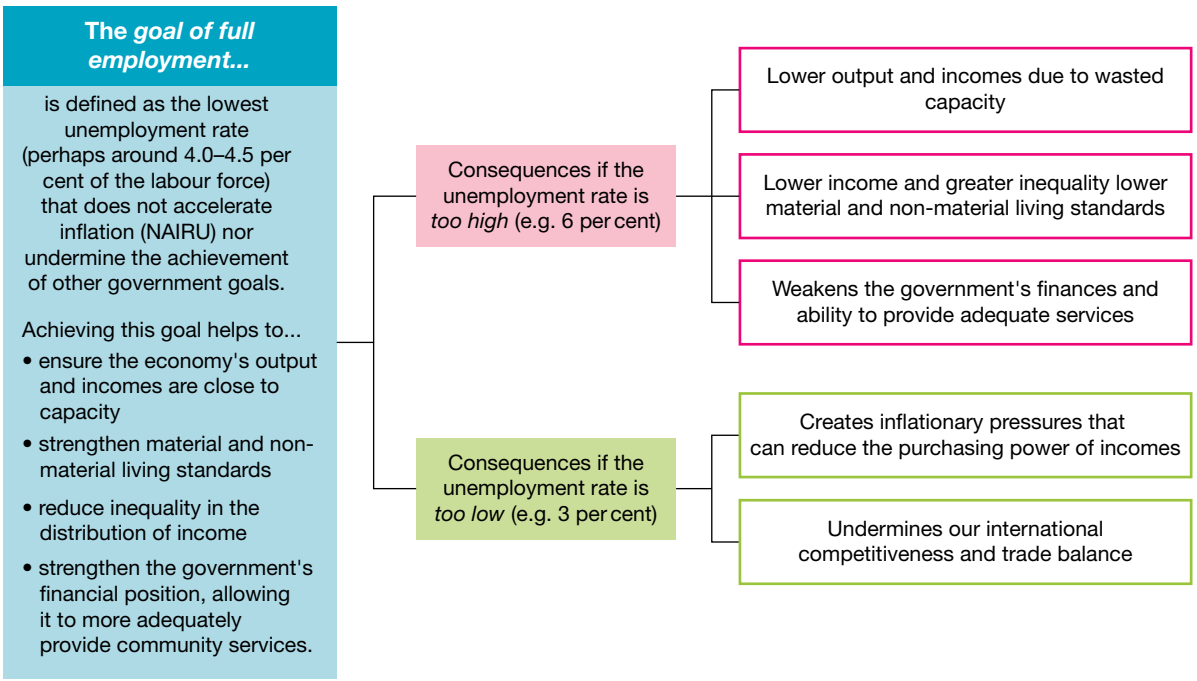
The consequences if unemployment is too high

When the *goal of full employment* is *not* achieved because the unemployment rate is *too high* (above the NAIRU, perhaps at 6 per cent), this adversely affects living standards.

Lower output and incomes due to wasted capacity

Only when there is full employment will economic growth and material living standards be maximised. In this situation, the economy would be located almost on its production possibility frontier and thus operating near its productive capacity or physical limit. By contrast, higher unemployment means that some labour resources are idle and therefore not contributing to national production or the generation of incomes. Here, average incomes, purchasing power and material living standards would suffer.

FIGURE 2.39 The consequences of not achieving the goal of full employment.



Lower income and greater inequality lead to lower material and non-material living standards



When people are unemployed, they suffer a huge drop in income and wealth, limiting their consumption and material living standards. For instance, in 2022, those adults with full-time jobs on average weekly earnings were paid over $1750 a week (or even $812.60 for those on the minimum wage). By contrast, people on government welfare benefits received just $300–$350 per week. Similarly, changing from full-time employment to part-time or casual work, brings a corresponding reduction in disposable income. In addition, the *long-term unemployed* (those unemployed for more than 52 weeks) find that their wealth (value of personal assets) is quickly run down to meet daily expenses. Furthermore, the gap in income between high- and low-income earners, widens. This greatly increases inequality in the distribution of incomes.

There is also a *social cost* of unemployment. Typically, the unemployed are less happy, more financially stressed, enjoy poorer physical and mental health outcomes (e.g. higher rates of diabetes, social isolation and depression), experience stressed relationships, and many have feelings of poor self-worth. These factors adversely affect the quality of daily life and reduce society's overall non-material wellbeing.

The government's finances and ability to provide adequate support weakens



It is important that we provide financial support for the unemployed through the payment of government welfare and income support. However, this becomes very expensive and less affordable when unemployment is high. This is because high unemployment means there are fewer people paying income taxes and spending on goods and services, reducing budget receipts. In addition, more people qualify for welfare, which means increased budget outlays. Together, these weaken the government's finances. For example, during the height of the COVID-19 recession and lockdowns of July 2020, there were more than 1 008 000 unemployed people requiring welfare benefits. These conditions put a huge strain on the government's budget and finances. With rising unemployment there is less tax revenue collected by the government, yet budget outlays on welfare and some services are higher. With less money coming in and more going out, the budget typically moves into deficit (outlays exceeded receipts by an estimated $86 billion in 2019–20, and by $134 171 in 2020–21). Here, the government is forced to increase its borrowing, or debt that then needs to be repaid down the track. It may also mean that the government may be forced to cut other areas of spending such as education or health, or even raise tax rates on those with jobs to repair the deficit. Overall, weakened government finances reduce society's general wellbeing.

The consequences if unemployment is too low

At the other extreme, when unemployment rates are *too low* (e.g. perhaps at 3 per cent of the labour force), this also undermines society's general wellbeing.

Creates inflationary pressures

If Australia's unemployment rate was *very low* (e.g. mid 2022), this would signal labour shortages. Here, the demand for labour by businesses would exceed the supply of labour. As expected, labour shortages would lead to increased *wage costs*, putting pressure on firms to pass on these costs to consumers as higher prices so they can protect their profit margins. This would cause cost inflation pressures. Very low unemployment could also add to demand inflation because it causes wages and income to rise more quickly, initially strengthening confidence and consumption spending. If there is little unused capacity, higher spending could lead to widespread shortages of goods and hence demand inflation.

The problem with high inflation is that it erodes the purchasing power of wages and incomes (especially of those on relatively fixed incomes). When wages don't keep up with rising prices, living standards fall.

Undermines our international competitiveness and trade balance

As just mentioned, low unemployment rates cause inflation to accelerate. When our inflation rates exceed that of our overseas rivals, local firms are at a cost-price disadvantage. This is reflected in a weaker *trade balance* where our spending on cheaper imports rises (i.e. higher debits) relative to overseas spending and sales of Australian exports (lower credits). It might also weaken the exchange rate for the A$, since higher imports increase sales or the supply of the dollar in the foreign exchange market, and decrease the purchase or demand for the dollar. A lower dollar also reduces the purchasing power of our incomes abroad, again undermining living standards.

on Resources

Weblinks Nominal vs real, unemployment and inflation
Unemployment and labour force

2.11 Activities

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2.11 Quick quiz on | 2.11 Exercise

2.11 Exercise

1. **Define** the government's goal of full employment, **explaining** the concept of NAIRU (the non-accelerating inflation rate of unemployment). **(4 marks)**
2. **Define** the following terms related to ABS classifications within the labour force:
   a. labour force
   b. unemployment rate
   c. participation rate
   d. underemployment rate. **(4 marks)**
3. **Distinguish** disguised unemployment from hidden unemployment. **(2 marks)**
4. a. The ABS collects a range of data relating to Australia's *labour market conditions* including the labour force, unemployment rate, participation rate, underemployment rate, average hours worked and more. **Examine** the table below and **calculate** the following (showing your formulae and basic working):
      i. size of the labour force
      ii. unemployment rate
      iii. employment rate
      iv. participation rate in the labour force. **(4 marks)**

Australia's population and labour force estimates, June 2021

Indicator	Persons
Total population of Australia	25 710 000
Total number of persons aged over 15 years	20 896 200
Number of people employed	13 154 200
Number of people unemployed	679 100

Source: Data rounded and derived from ABS 3101.0, 6202.0, 6291.0.55.003. See also Australia's population clock, http://www.abs.gov.au/ausstats/abs@.nsf/0/1647509ef7e25faaca2568a900154b63?OpenDocument.

b. **Examine** the data in the table below relating to Australia's *labour market conditions* before answering the questions that follow.

Changes in selected indicators of Australian labour market conditions

Selected labour market indicators	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
1. Rate of unemployment (percentage of labour force, at June)	5.4	5.2	7.4	4.9	3.5	
2. Annual percentage change in the number of unemployed	–1.7	–1.6	39.3	–30.9	–28.6	
3. Annual percentage points change in the unemployment rate	0	0	0.4	–0.2	–1.4	
4. Underemployment rate (at June)	8.2	8.3	11.7	7.9	6.1	

Selected labour market indicators	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
5. Under-utilisation rate of labour (percentage at June)	13.6	13.5	19.1	12.8	9.6	
6. Participation rate (percentage at June)	65.7	66	64	66.2	66.8	
7. Annual percentage change in monthly hours worked	2.6	2	–5.7	6.8	3.8	
8. Annual percentage change in the number of private and public sector job vacancies (year to May)	21	4	–43	184	29.7	

Source: ABS, Labour Force, Australia, see https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/latest-release

i. **Explain** the term *labour market conditions*. **(2 marks)**

ii. Using supportive statistics drawn from the table, or from the most recent data found on the ABS website, **describe** the general trends in the strength of Australia's overall labour market conditions over the past two years. **(3 marks)**

iii. Quoting statistical evidence from the table, **evaluate** the extent to which the federal government has actually achieved its goal of full employment during the last two years. **(2 marks)**

5. **Identify** and **outline** two important differences between *cyclical unemployment* and *structural unemployment*. **(2 marks)**

6. a. **Identify** and **outline** *two* important aggregate demand factors that could help to explain Australia's labour market conditions during the last two years. Use a fully labelled AD–AS diagram to help explain their likely impact on the unemployment rate. **(4 marks)**

   b. **Identify** and **outline** *two* important aggregate supply factors that may have affected Australia's unemployment rate during the last two years. Use a fully labelled AD–AS diagram to help explain their likely impact. **(4 marks)**

   c. From the following list, select *one* important aggregate demand factor and *one* important aggregate supply factor, and **explain** how *each* is likely to affect Australia's unemployment rate.

   i. A fall overall in RULCs

   ii. A decline in China's rate of economic activity

   iii. Stronger consumer confidence

   iv. A fall in our exchange rate

   v. The end of the COVID-19 pandemic lockdowns **(4 marks)**

7. During 2021–22, Australia's *under-utilisation rate* fell quickly.

   a. **Explain** what is meant by the *labour force under-utilisation rate*. **(1 mark)**

   b. Showing your working, **calculate** the under-utilisation rate for a country using the hypothetical data contained in the table below. **(1 mark)**

Indicator	Percentage
Employment rate (percentage of the labour force)	95.5
Unemployment rate (percentage of the labour force)	4.5
Underemployment rate (percentage)	4.8
Population aged over 15 (percentage of total population)	78.0
Participation rate (percentage)	70.0

8. Assume a country's unemployment rate rose to 10 per cent of the labour force and there was a failure to achieve the goal of full employment. **Explain** how this would be likely to affect each of the following:

   a. The distribution of income

   b. Overall living standards

   c. The government's finances and budget situation. **(6 marks)**

Solutions and sample responses are available online.

2.12 Aggregate demand and aggregate supply factors that have affected the achievement or non-achievement of domestic macroeconomic goals over the past two years

KEY KNOWLEDGE

The domestic macroeconomic goals

- Aggregate demand and aggregate supply factors that have affected the level of achievement or non-achievement of the Australian government's goals of strong and sustainable economic growth, full employment and low and stable inflation over the past two years

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

By now you should understand that aggregate demand factors, combined with aggregate supply factors, interact to determine Australia's domestic *macroeconomic economic conditions*. They shape the extent to which our three main domestic macroeconomic goals are achieved, in turn influencing our living standards.

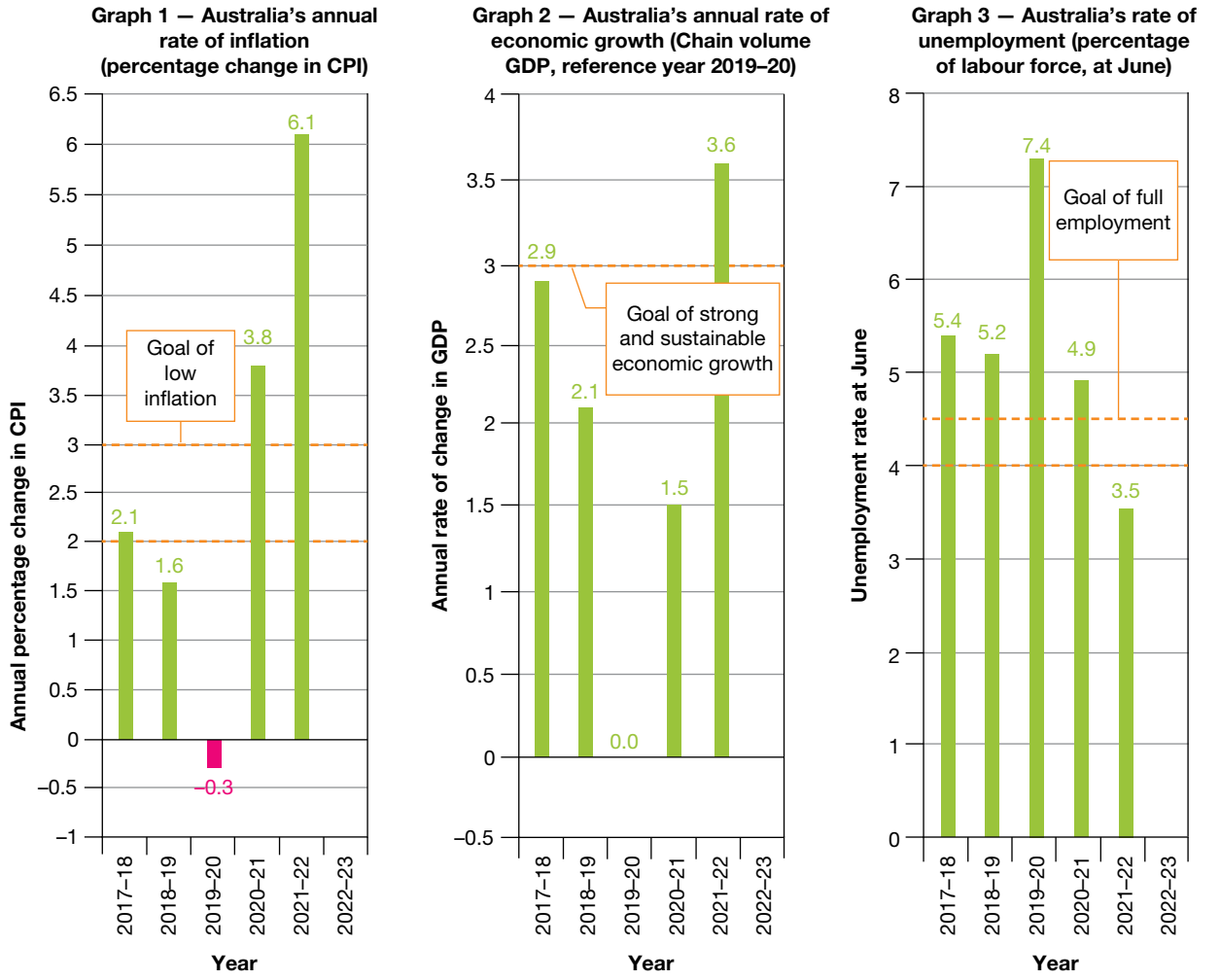
Over the last few years to mid 2022, some quite *volatile aggregate demand factors* and often *unpredictable aggregate supply shocks* have dramatically changed Australia's economic conditions. These factors help to explain why recently the Australian government has been *unable* to fully attain *domestic economic stability*, by *simultaneously* achieving the goals of low inflation, strong and sustainable economic growth and full employment.

The overall impact of these events on the achievement of the Australian government's goals is reflected in the three graphs making up figure 2.40. These graphs reveal the following trends:

- *The goal of low inflation:* The RBA tries to keep the annual average inflation rate within the 2–3 per cent range. Figure 2.40 (graph 1) shows that over the last two years following deflation in 2019–20, the inflation rate accelerated first to 3.8 per cent and then to a peak of 6.1 per cent in 2021–22 — the highest rate in 32 years. If sustained, this rate is clearly above the RBA target.
  Higher inflation recently can be traced to the impacts of aggregate demand and supply factors. Stronger aggregate demand factors have certainly played a role. However, inflation also reflects the impacts of lingering constraints to productive capacity and aggregate supply caused by supply chain issues, severe weather events and other cost factors.
- *The goal of strong and sustainable economic growth:* The goal of strong and sustainable economic growth is the fastest annual rise in real GDP (perhaps averaging around 3 per cent) that does not accelerate inflation or undermine the achievement of other goals. Figure 2.40 (graph 2) shows that Australia's recent level of economic activity has been highly unstable. After zero GDP growth in 2019–20, activity strengthened, first to 1.5 per cent in 2020–21 and then further to reach 3.6 per cent in 2021–22 — a rate that would be unsustainable over the long-term.
  Overall, the goal of strong and sustainable economic growth has not been well achieved. There were good reasons for this. Initially, mostly weak aggregate demand factors played an important role in explaining the recession in the first part of 2020. These factors then strengthened over the last two years to help explain the strong recovery. However, some aggregate supply factors also played a role. For example, less favourable supply conditions involving lockdowns in the pandemic, disruptions to supply chains, low productivity and rising oil prices have at times limited the growth in productive capacity and the non-inflationary rate of GDP growth.
- *The goal of full employment:* The goal of full employment is the lowest rate of unemployment (perhaps around 4.0 to 4.5 per cent) that does not accelerate inflation. Figure 2.40 (graph 3) shows that over the last two years to mid 2022, the unemployment rate continued to fall quickly to reach a 44-year low of 3.5 per cent in June 2022—just below the bottom end of the target range.

Labour shortages appeared, potentially threatening the proper achievement of the government's goal. Over the last two years, these trends reflect the operation of generally stronger aggregate demand conditions. In addition, some changing aggregate supply factors have also affected the unemployment rate.

FIGURE 2.40 Recent changes in Australia's three key domestic macroeconomic indicators.

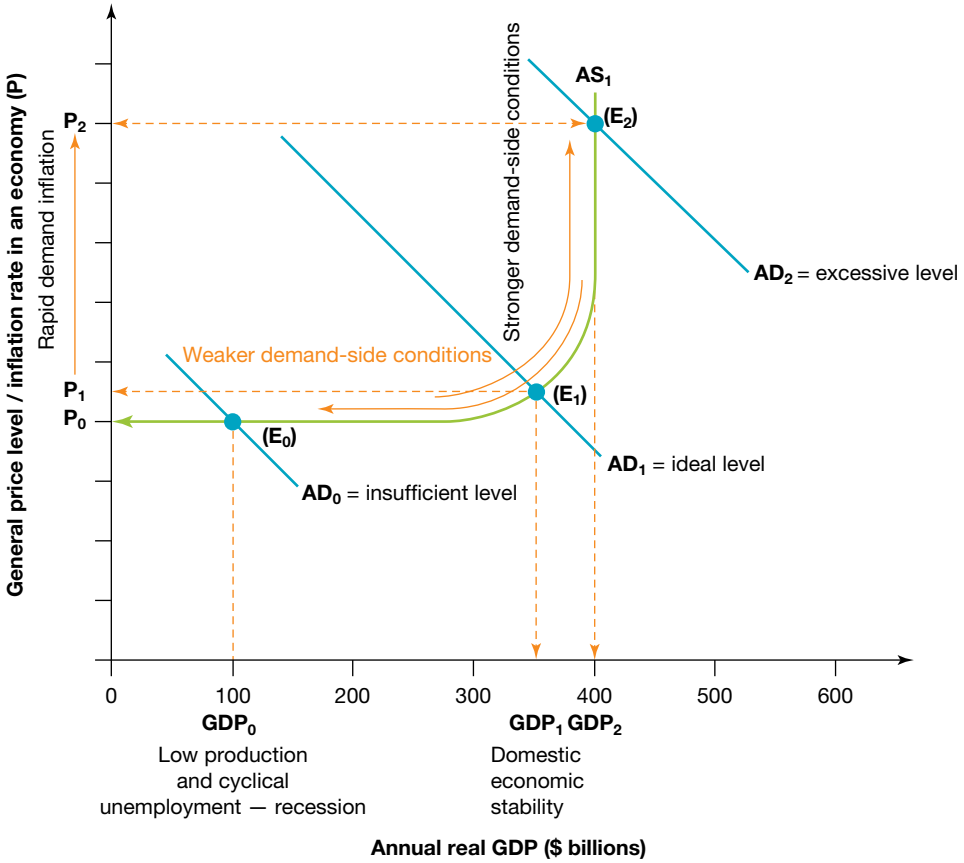


In the current VCE course, students are required to have an understanding of the various aggregate demand and aggregate supply factors that have shaped Australia's macroeconomic conditions over the last two years. Some of these factors are discussed in the next two sections of this text, but bear in mind that these influences are continually changing and hence this section will need to be regularly updated to include the latest data.

2.12.1 Aggregate demand factors that have recently affected Australia's economic conditions and living standards

Aggregate demand factors are the influences on the total value of spending on Australian made goods and services, or AD (made up of household C spending, business I spending, G spending and net X spending). As illustrated in figure 2.41, these factors affect the value of AD. On the one hand, *weaker* aggregate demand conditions slow AD (i.e. AD_1 to AD_0) and tend to soften the rate of GDP growth, reduce inflation and cause a rise in cyclical unemployment. In reverse, *stronger* aggregate demand conditions can cause AD to increase (i.e. from AD_1 towards AD_2). This can cause inflation to rise, economic growth to accelerate, and cyclical unemployment to fall.

FIGURE 2.41 How changing aggregate demand conditions can affect the extent to which the Australian government's domestic macroeconomic goals are achieved.



Over recent years, aggregate demand factors have been quite volatile, causing highly unstable domestic economic conditions.

- During 2019–20, many aggregate demand conditions were weak, causing a severe recession. They acted to slow AD (C + I + G + X − M), economic growth, inflation and employment.
- However, during the two years to mid 2022, many aggregate demand factors became much stronger. They worked to stimulate AD and the cyclical rate of economic growth. This drove down the rate of cyclical unemployment and put upward pressure on prices, leading to demand inflation, especially by mid 2022.

So with this general background in mind, our attention now turns to a closer look at some of the specific aggregate demand factors affecting the economy's performance and the success or otherwise in achieving our key domestic macroeconomic goals.

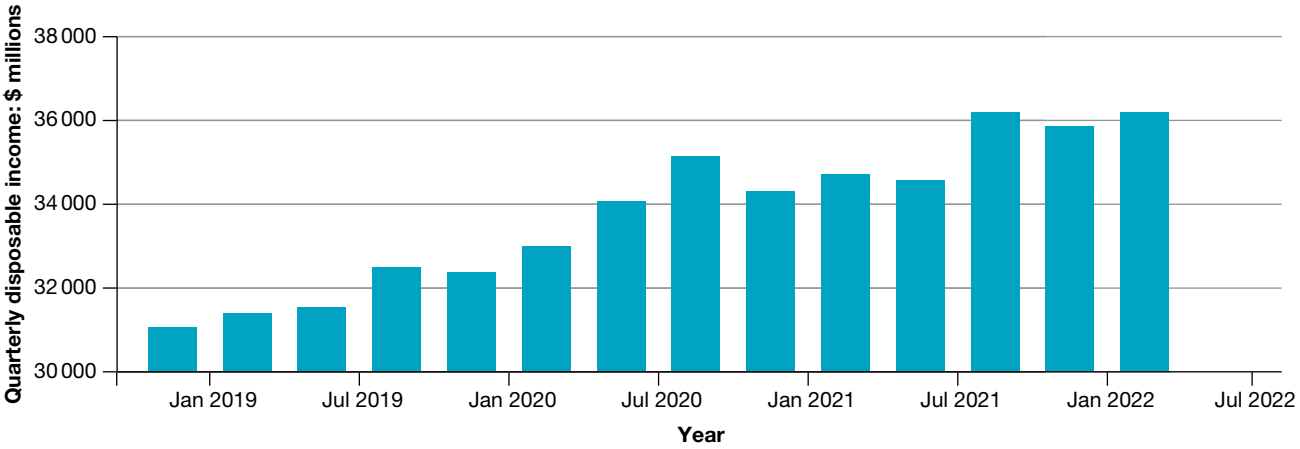
Changes in disposable income

Disposable income is the money received by individuals after receiving wages and paying tax. As an aggregate demand factor, this greatly affects the level of consumption spending (C) that accounts for over 60 per cent of all spending making up AD.

Figure 2.42 shows changes in the dollar value of Australia's annual disposable income measured at quarterly intervals. Between late 2020 and early 2021, disposable income actually fell during several quarters. In itself, this slowed household C, AD and economic activity, and hence undermined the achievement of all three domestic macroeconomic goals.

However, the pickup in disposable income in the September quarter of 2021 and June quarter of 2022 helped to strengthen economic and employment growth, although with diminished spare capacity; it also contributed to inflationary pressures.

FIGURE 2.42 Changes in Australia's disposable income ($million, measured at quarterly intervals) as an aggregate demand factor.



Source: Tradingeconomics.com | Australian Bureau of Statistics.

Changes in consumer confidence

Consumer confidence relates to how optimistic or pessimistic households are about their *future* employment, income and financial position. In this sense, it's a *leading indicator* of economic activity. Here, households spend when they feel optimistic, and save when they feel pessimistic, thereby affecting both savings leakages (S), as well as private consumption (C) in the circular flow model. In turn, this affects AD, production, employment and inflation. It is measured using an *index* with a base score equal to 100 points. Here, the number of optimists exactly equals the number of pessimists.

Figure 2.43 shows the ups and downs in Australia's consumer confidence. Notice that during the COVID-19 lockdowns in 2020 consumer confidence plummeted to levels as low as 75 points. It also fell to 84 points by July 2022, following rises in inflation and interest rates. This caused households to save more (i.e. increased leakages) and cut their C spending, slowing AD and causing unsold stocks of goods to rise. Firms responded to this by discounting prices, leading to deflation. They also cut production, slowing economic growth, contributing to the recession and a peak in unemployment at over 11 per cent (in the absence of the government's JobKeeper wage subsidy). Clearly, the three macroeconomic goals were poorly achieved.

FIGURE 2.43 Recent changes in Australia's index of consumer confidence as an aggregate demand factor.



Source: Tradingeconomics.com | Westpac Banking Corporation, Melbourne Institute.

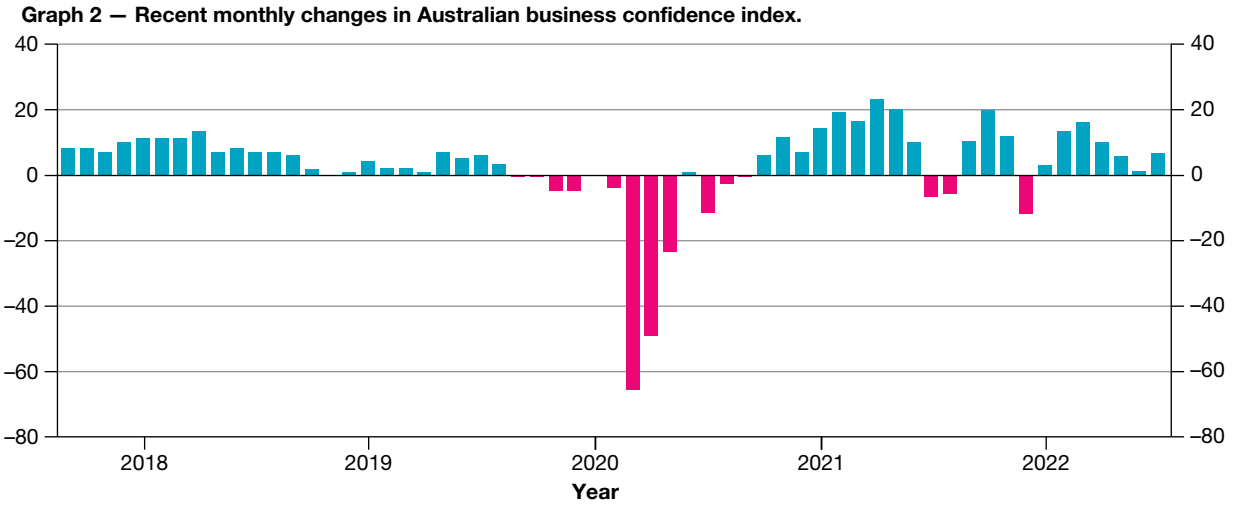
In reverse, when confidence reached 118 points during 2020–21, households increased their C spending and ran down their savings, causing AD and GDP growth to again rise. Given an initially weak economy with unused capacity at the time, this helped to better achieve the government's key goals.

Changes in business confidence

Business confidence relates to how optimistic or pessimistic firms are about their future sales and profits. On the circular flow model, this affects private investment spending (I) and is another *leading* indicator of likely upcoming changes in AD and economic activity. Figure 2.44 shows that during 2019–20 and again in the latter part of 2021, most businesses were very *pessimistic* and so were reluctant to borrow credit to finance investment spending and business expansion. This slowed AD, economic growth, employment and inflation, making it more difficult to achieve the government's three domestic macroeconomic goals. Pessimism during 2019–20 contributed to the recession, the rise in cyclical unemployment and price deflation.

However, greater *optimism* during most of 2021–22 helped to strengthen I spending in response to rising sales and profits. Other things remaining unchanged, this tended to boost AD, GDP and employment. It may also have contributed to higher demand inflation pressures experienced during 2021–22 when economic activity became a bit too strong.

FIGURE 2.44 Changes in business confidence or expectations as an aggregate demand factor — Australia.



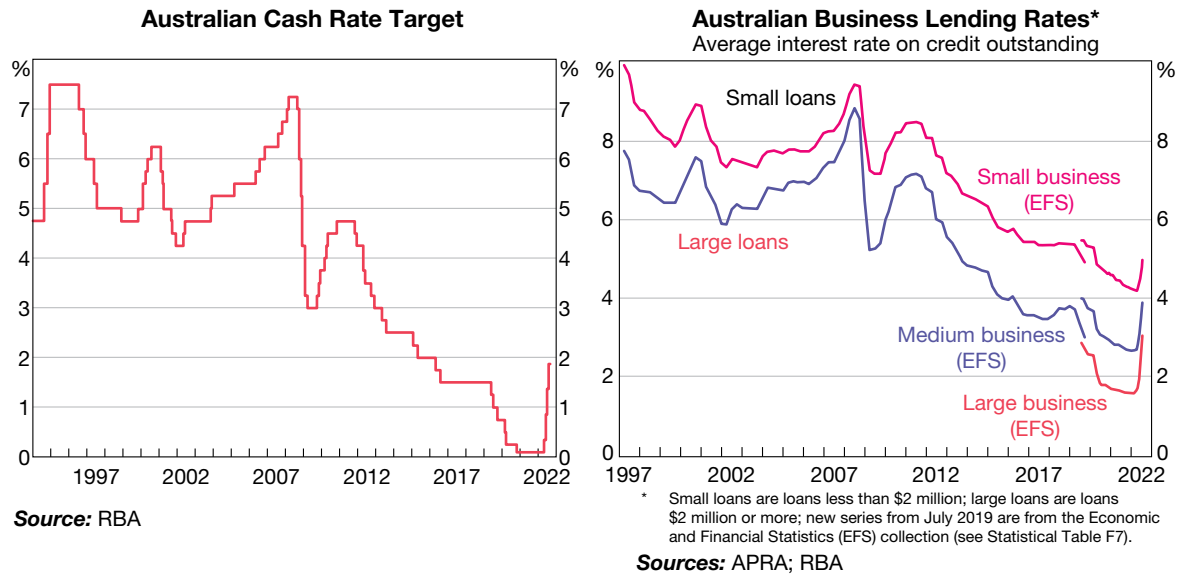
Source: Trading Economics, Business confidence, see https://tradingeconomics.com/australia/business-confidence.



Interest rates

Interest rates represent the cost or price of borrowing credit to finance investment spending (I) and the reward for saving (S) on the circular flow model. Figure 2.45 shows the changes in the RBA's official interest rates. Notice that over the last few years until early 2022, there were cuts in interest rates as the RBA tried to stimulate spending. However, more recently in 2022, interest rates have been increased to slow spending to sustainable levels and curb rising inflation. Figure 2.45 also shows that interest rates on bank loans to small, medium and large Australian businesses followed the same pattern, starting with reductions before small rises most recently in 2022. During the period when rates were coming down, they acted as a stronger aggregate demand factor. This made it more attractive for households to save (S), and cheaper for businesses to borrow credit and undertake investment (I) spending, in turn helping to stimulate AD, GDP and employment. However, because of supply constraints, limited unused capacity and rapidly rising inflation in 2021–22, several increases in interest rates were needed to slow spending and inflation pressures.

FIGURE 2.45 Trends in the RBA's official cash rate of interest and interest rates charged on bank loans to various sized businesses, as factors affecting AD and economic activity.



Source: RBA

* Small loans are loans less than $2 million; large loans are loans $2 million or more; new series from July 2019 are from the Economic and Financial Statistics (EFS) collection (see Statistical Table F7).

Sources: APRA; RBA

Source: RBA Chart Pack, September 2022, see https://www.rba.gov.au/chart-pack/interest-rates.html.

Growth in population

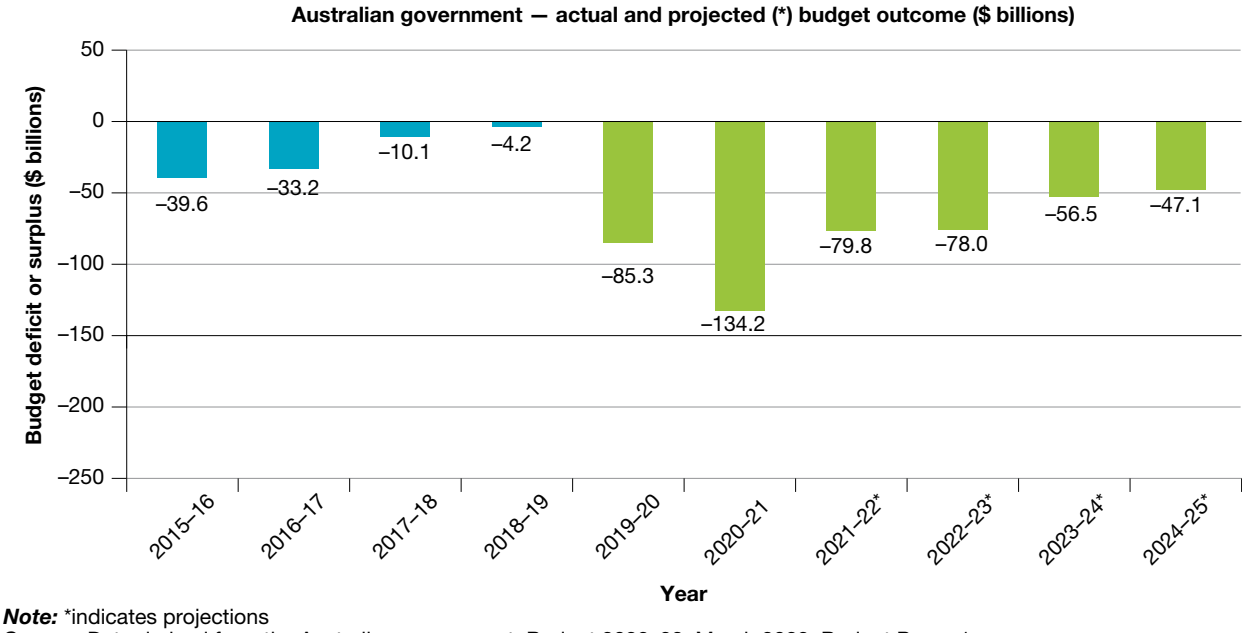


Population growth comes about from natural increase and immigration. This especially affects the levels of household consumption spending (C) and hence AD. Recently, the COVID-19 pandemic in 2020 and 2021, and the locking of borders to immigration (that previously accounted for around 60 per cent of population growth), dramatically slowed Australia's population growth rate from 1.6 per cent a year, to just 0.1 per cent in the year to March 2021. As a weaker aggregate demand factor, this depressed household C expenditure and AD, slowing inflation. It also caused some firms to cut production, curbing economic growth and leading to higher cyclical unemployment. More recently in 2022, greater immigration and population growth are again working to strengthen AD and economic activity.

The budget outcome

The Australian government's budget is a policy that relates to the level of receipts (mostly from taxes that are regarded as a leakage on the circular flow), and outlays (including welfare and injections of spending on services). Figure 2.46 shows that in response to the COVID-19 recession starting in March 2020, there were huge budget deficits (e.g. where there is a decrease in the value of receipts relative to rises in welfare and other outlays). By contributing to higher household and business spending (C + I) and increased government spending (G), budget deficits are a stronger aggregate demand factor. They help to stimulate spending and economic growth, and lower cyclical unemployment, thereby helping to promote domestic economic stability when the economy is too weak.

FIGURE 2.46 Actual and projected change in the budget outcome: a return to large budget deficits changes in the size of the Australian government's budget deficit or surplus.



Note: *indicates projections
Source: Data derived from the Australian government, Budget 2022–23, March 2022, Budget Paper 1, see https://budget.gov.au/2022-23/content/bp1/download/bp1_2022-23.pdf.

Changes to company tax rates

Over recent years, the Australian government has reduced the rate of tax on the profits of small and medium-sized enterprises (SMEs) from 30 per cent prior to 2016 to just 25 per cent since July 2021.

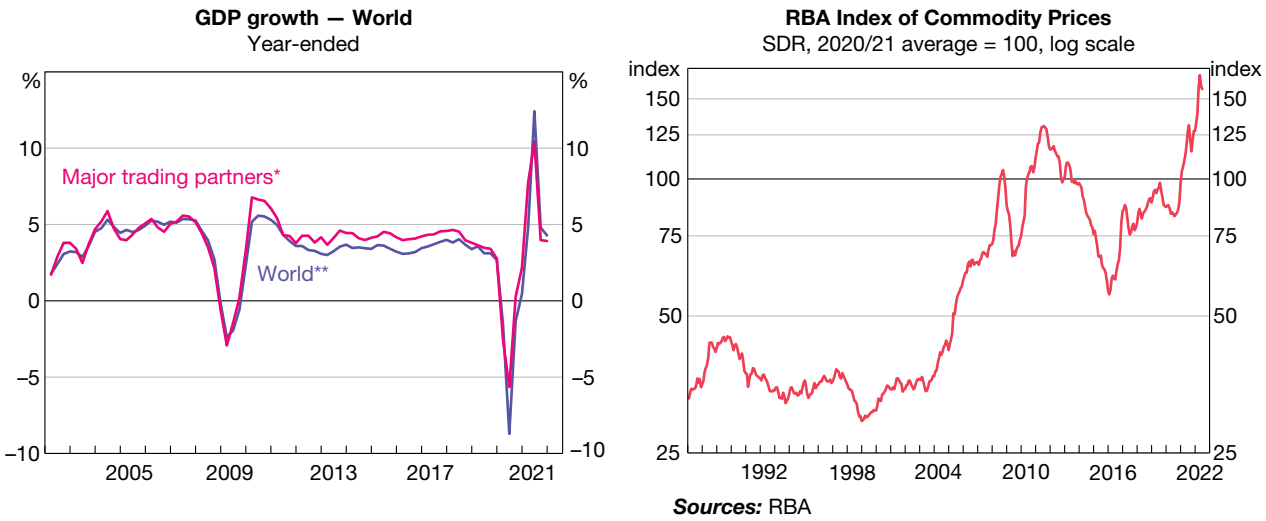
This represents a stronger aggregate demand because it is likely these tax cuts helped to boost business confidence and stimulate higher levels of private investment spending (I) than otherwise, lifting AD, economic activity and employment. At the time of the reduction in 2021, higher investment spending posed no threat to inflation because, initially (until early 2022) there was unused productive capacity available.

Overseas economic activity and terms of trade

The level of *overseas economic activity*, especially among our trading partners (China, Japan, South Korea and the USA), affects the value of Australia's exports (X) and hence helps to determine AD. Figure 2.47 (graph 1) shows that the rate of economic growth abroad was quite strong between 2009 and 2020, rising by around 4–5 per cent a year until the onset of the COVID-19 pandemic and global recession in 2020, when world output contracted. Following this, in 2020–21–22, there was a recovery abroad. This helped to boost our export sales and strengthened aggregate demand, in turn stimulating economic activity.

Rising economic activity abroad also brought about an improvement in Australia's *terms of trade* (i.e. the world paid us higher prices per unit for our commodity exports relative to the prices we paid for imports) because there was an increasing demand for our exports relative to their supply. Receiving better commodity prices helped to increase the value of exports or injections, relative to imports or leakages. This stimulated AD, reinforced the recovery and led to stronger domestic economic conditions. Nevertheless, by early 2022, generally stronger overseas economic activity and high terms of trade helped to cause AD to rise too quickly, contributing to inflationary pressures in an economy with limited spare capacity.

FIGURE 2.47 Changes in global economic activity (including Australia's major trading partners) and our terms of trade index.



* Weighted using Australian export shares.

** PPP-weighted; accounts for 85 per cent of world GDP.

Sources: ABS; CEIC Data; IMF; RBA; Refinitiv.

Review of the recent effects of aggregate demand factors on Australia's domestic macroeconomic conditions

Our review of Australia's recent *aggregate demand factors* showed unstable aggregate demand conditions. During the outbreak of COVID-19 in 2020, there were many *weaker* aggregate demand factors that operated to *slow* AD and economic activity. They operated to undermine the achievement of the government's three domestic macroeconomic goals and, in so doing, eroded both material and non-material living standards.

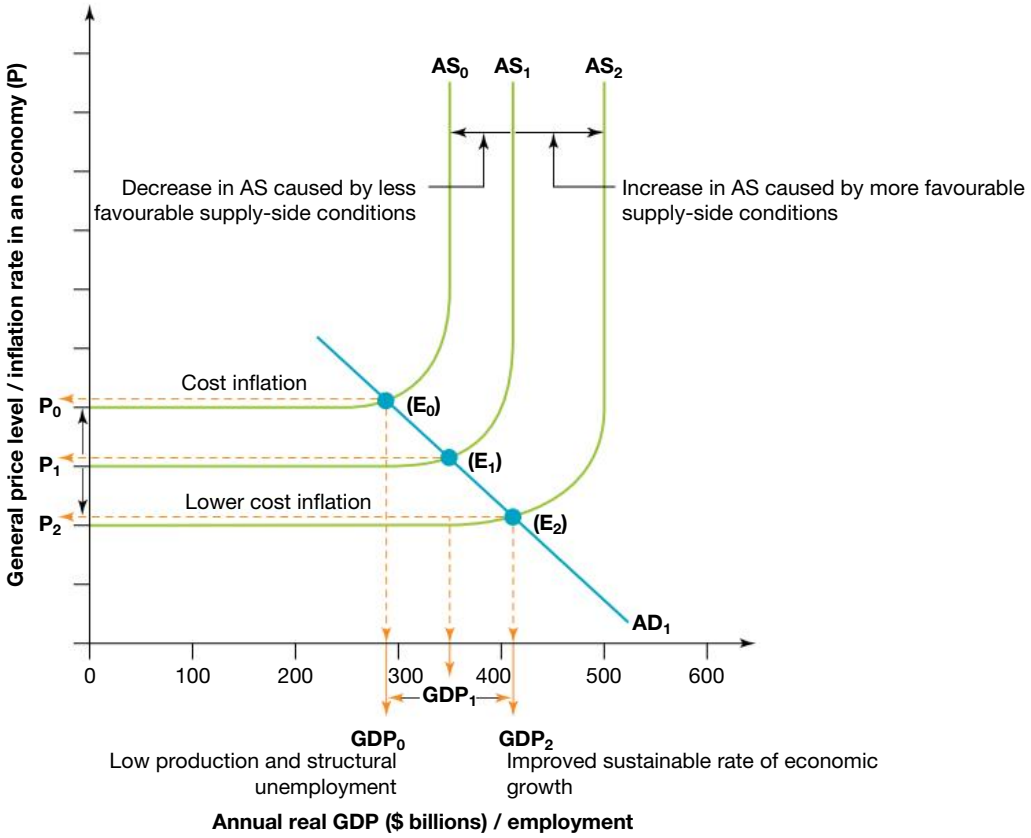
In contrast, during 2020–21–22, there were mostly *stronger* aggregate demand factors that boosted AD and economic activity. Initially, these factors helped to better achieve the government's economic goals and restore living standards. However, by mid 2022, there were signs that AD was outstripping AS or productive capacity. Some aggregate demand factors were contributing to unsustainably high rates of economic activity and inflationary pressures.

2.12.2 Aggregate supply factors that have recently affected Australia's economic conditions and living standards

Over the last two years to mid 2022, some *aggregate supply factors* operated to *strengthen* Australia's potential rate of growth in productive capacity and make conditions more favourable for businesses. These included relatively low interest rates, reductions in company tax rates, negative RULCs and higher participation rates that helped to increase the supply of labour.

Using the AD–AS diagram shown in figure 2.48 and assuming no change in AD, these *favourable aggregate supply factors* tended to shift the AS line outwards and to the right of the original line (i.e. the rise from AS_1 to AS_2). This caused the equilibrium level of GDP to rise (from GDP_1 to GDP_2), while at the same time, the level of prices or the rate of cost inflation slowed (from P_1 to P_2). In other words, favourable aggregate supply conditions can help improve the extent to which Australia's key domestic macroeconomic goals are achieved and, in so doing, affect living standards.

FIGURE 2.48 Changes in Australia's index of labour productivity measured quarterly intervals.



However, unfortunately, there were also some negative and unexpected aggregate supply factors over recent years to 2022 that slowed Australia's productive capacity. Here we might think of infrastructure bottlenecks, government COVID-related lockdowns and massive disruptions to supply chains, our ageing population, skills shortages, and climate change resulting in more regular and severe weather events including bushfires, drought and floods.

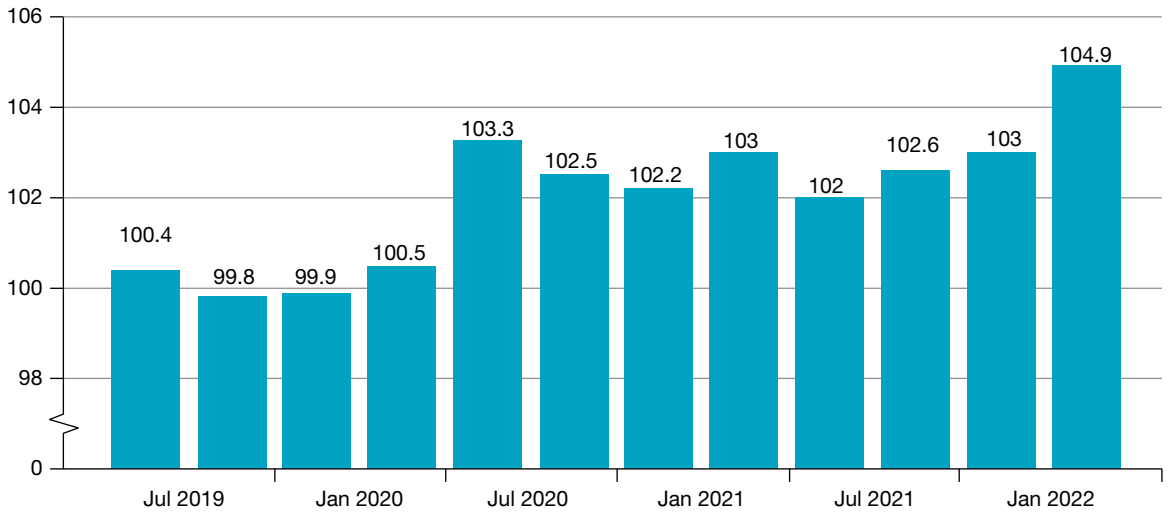
Referring again to figure 2.48, *less favourable aggregate supply conditions* tended to shift the AS line inwards and to the left (from AS_1 to AS_0), leading to lower GDP and employment (the drop from GDP_1 to GDP_0), and a rise in cost inflation (from P_1 to P_0). Over the last two years to mid 2022, it is these events that have added to cost inflation, limited the sustainable rate of economic growth, and caused structural unemployment.

Again, with this background in mind, it is now time to review some of the main *aggregate supply factors* that have recently helped to shape the extent to which the Australian government has been able to achieve its domestic macroeconomic goals and improve living standards.

Labour productivity growth

Labour productivity or efficiency relates to the quality of our *human capital* resources. It is usually measured using the change in GDP per hour worked. Figure 2.49 shows recent changes in labour productivity measured at quarterly intervals using an index where the base is equal to 100 points. Notice that in the period to late 2019, labour productivity changed little and was often below 100 points. More recently, after a jump in early 2020 (that the ABS warns should be taken cautiously), it increased very little until the rise in early 2022. Overall, weak growth in labour productivity should be seen as a less favourable aggregate supply factor. It means that there has been little change in the output gained from the input of a given quantity of labour resources. The problem with lower productivity is that production costs rise more quickly, accelerating cost pressures, undermining international competitiveness and eroding business profits. Firms become less willing and able to produce, slowing economic and employment growth. Weak productivity growth makes it more difficult to achieve domestic macroeconomic stability and improve Australian living standards.

FIGURE 2.49 Changes in Australia's index of labour productivity measured at quarterly intervals.



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

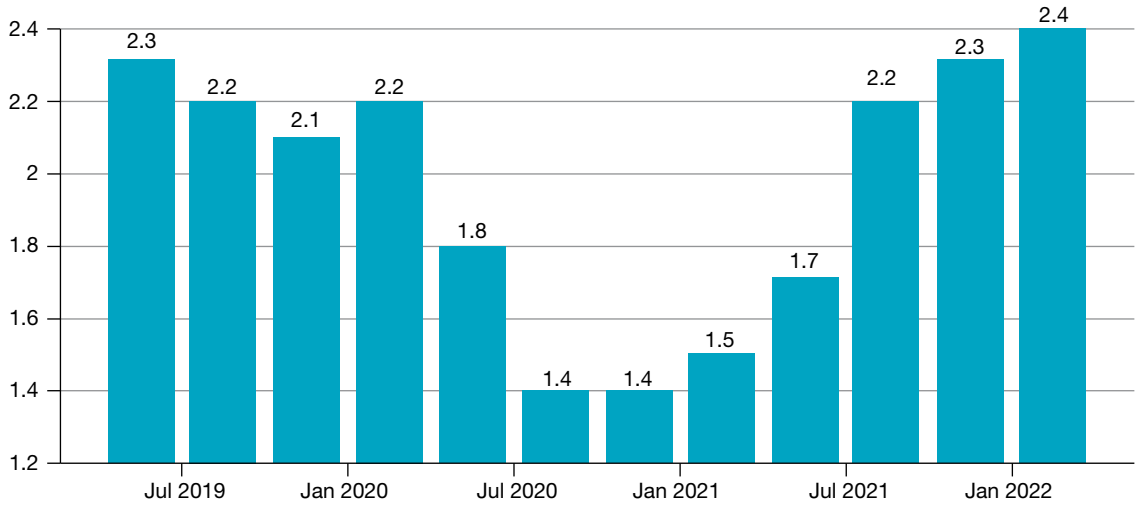
In contrast, when productivity rises more strongly, it becomes a favourable aggregate supply factor that helps to slow business costs and improve Australia's international competitiveness. It encourages firms to expand their capacity, boosting AS. If sustained over time, this can enhance the achievement of the government's domestic macroeconomic conditions and improve living standards.

Wages and the cost of labour

Wages and on-costs (e.g. various types of paid leave, compulsory superannuation, bonuses) are an aggregate supply-side factor and typically make up around 70 per cent of the cost of producing goods and services. Their level has a huge impact on business profits and survival. Unfortunately, Australia is regarded as a relatively high-wage country with one of the topmost minimum wages in the world (at $21.38 per hour for adults, 2022–23). This would not be a problem if productivity were rising relatively quickly, since it would help to offset high wage costs.

Figure 2.50 shows the recent percentage change in Australia's nominal annual hourly rate of wages measured at quarterly intervals. Typically, over the last six years, this rate rises by a bit over 2 per cent a year. After allowing for inflation that had been running at 1–2 per cent a year until 2021–22, this meant that *real wage costs* have risen awfully slowly or fallen (e.g. as in 2020–21 and in the March quarter of 2022). This should be seen as a *favourable aggregate supply factor* from a business perspective. The slow rise in real wage costs means firms can sell profitably at lower prices than otherwise, improving international competitiveness and encouraging the expansion of business, rather than closure. In turn, it is likely that this would help to lift the sustainable non-inflationary rate of economic growth, helping to better achieve the government's goals.

FIGURE 2.50 Percentage change in Australia's hourly rate of pay measured at quarterly intervals.



The cost of oil

Oil is an important production cost in making many goods and services including food, minerals, chemicals, synthetics, plastics and transport. Hence changes in oil prices affect business profits and the collective willingness of firms to expand their operations, rather than close. This makes oil prices an aggregate supply factor.

Referring to figure 2.51, notice that oil prices have been highly unstable. When they were very low (as low as $20 per barrel in 2020), they acted as a *favourable aggregate supply factor*. Low costs strengthened profits and incentivised business and employment expansion, helping to promote the government's three domestic macroeconomic goals.

However, higher prices recently, especially during late 2021 and into 2022 due to renewed demand and reduced global supply, made aggregate supply conditions far *less favourable* for firms using oil. This added to their production costs, eroded profits, forced some firms to raise prices, pushed up cost inflation, slowed the sustainable rate of economic growth and undermined living standards.

FIGURE 2.51 Changes in the cost of crude oil per barrel (US$).



Source: Trading Economics, Retrieved from: https://tradingeconomics.com/commodity/crude-oil.

Ageing population and labour shortages

Australia has an ageing population — there is a rising proportion of people in older age groups (65 and over), than in younger age groups. In the last two decades, the median age rose from 33 to over 37 years, and is projected by the ABS to rise to 40 years by 2040. The proportion of Australia's population aged over 65 (most of whom are no longer working) is projected to rise from around 16 per cent in 2020, to almost 23 per cent by 2060!

This is a *less favourable supply-side factor* because it reduces the labour participation rate (the proportion of those aged 15 and over who are economically active as members of the labour force) and the supply of labour resources. The macroeconomic effects of this problem are many. If not addressed, ageing and a reduced participation rate are likely to:

- generate *labour shortages* or bottlenecks that put upward pressure on wages and add to cost inflation pressures
- slow *productive capacity*, limiting the sustainable rate of economic growth
- weaken *government finances* by slowing tax receipts and raising outlays on the aged, leaving less money for the government to spend on the economic and social infrastructure needed to grow Australia's productive capacity and maintain living standards.

The COVID-19 pandemic and disruptions to supply chains

Between 2020 and 2022, the COVID-19 pandemic acted as a *less favourable aggregate supply condition*. It led to government lockdowns, forced closures of firms, industries, schools and universities, and almost zero immigration, adding to the shortage of skilled labour. Labour shortages meant that it was difficult for some industries to continue their operations due to massive *disruptions* to domestic and international *supply* chains. Some materials and equipment were unavailable or in short supply. This acted as a supply-side barrier, limited productive capacity, and made it even harder for the government to achieve strong, non-inflationary economic growth.

Material living standards suffered during 2020–21 due to higher unemployment and lower incomes, and over 2021–22, were depressed by rising inflation and reduced purchasing power.

Many aspects of non-material wellbeing were also undermined. Initially, high structural unemployment led to devastating social costs associated with isolation and reduced mental health, along with strained relationships and elevated stress levels. More recently during 2022, rapid inflation, higher interest rates and relatively slow wage growth created financial stress, tensions in relationships and worry for many families associated with paying household bills and meeting mortgage commitments.

Climate change and severe weather events

In recent years, there has been a lot of publicity about *climate change* caused partly by the release of carbon dioxide emissions into the atmosphere. This has resulted in global warming, that for Australia, has meant an increase in the occurrence and intensity of severe weather events including bushfires, floods, cyclones, hailstorms, tidal surges, heatwaves and droughts. For instance:

- 2022 — severe flooding destroyed a 300-km section of the rail line to WA, along with flooding in parts of SA and NT, and devastated families and businesses in eastern NSW and Queensland.
- 2021 — severe flooding down the eastern coast of Australia damaged infrastructure and destroyed businesses.
- 2020 — the persistence of drought in many regions that reduced rural output and $100 billion in damages, with many lives lost, due to bushfires in January–February 2020, slowed GDP by 1 per cent.
- 2019 — the three years of drought in eastern Australia to 2019 depressed the growth in GDP by 0.75 per cent or around $12.5 billion.
- 2019 — the tropical storm and floods around Townsville, Queensland, in January to February led to farming and other losses of almost $1 billion.
- The *Garnaut Review* on climate change put the annual cost of unmitigated climate change on Australia's infrastructure at around $9.0 billion per year (equal to 0.5 per cent of GDP) by 2020, rising to $40 billion by 2050.

As can be seen, these *less favourable aggregate supply conditions* have recently limited the growth of Australia's productive capacity by destroying public infrastructure like roads, power and rail systems, along with farms, mines and other industries such as tourism, in the affected regions.

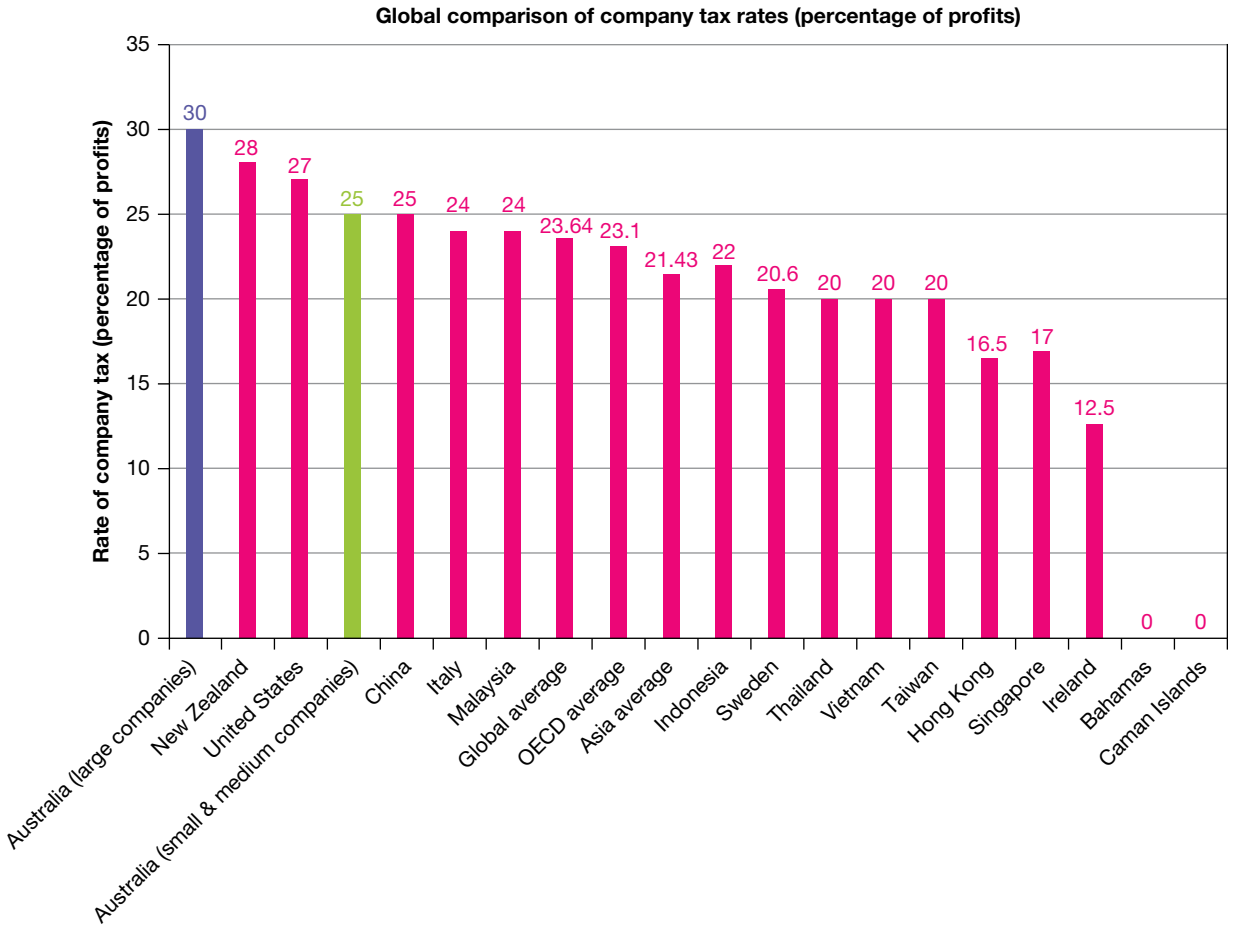
These events have negatively impacted the government's budget or financial position due to lost revenue and a need for higher outlays on support and repairs. In addition, they have reduced profits and productive capacity, the sustainable rate of economic and employment growth, and hence have undermined both material and non-material living standards.

Company tax rates

Corporate tax rates represent the number of cents in each dollar of profit that must be paid to the government. High tax rates represent a *less favourable aggregate supply factor* because they reduce after-tax profits and hence make businesses less willing and able to invest. This negatively impacts the economy's productive capacity. Figure 2.52 shows that, despite the recent cuts in company tax for SMEs, Australian businesses are at a competitive disadvantage and still pay higher rates on their profits compared with many of their rivals from similar countries abroad. It means that some firms are forced to close or relocate abroad because they can't make adequate profits, and still keep their prices low.

By making local firms less internationally competitive and profitable, high tax rates have *undermined* the achievement of the government's domestic macroeconomic goals. They act as a disincentive to investment, restricting the growth of productive capacity and Australia's potential GDP. Additionally, by encouraging business closure and/or relocation overseas, they add to the level of structural unemployment.

FIGURE 2.52 International comparisons of company tax rates (percentage of profits) showing the disadvantage for many Australian businesses.



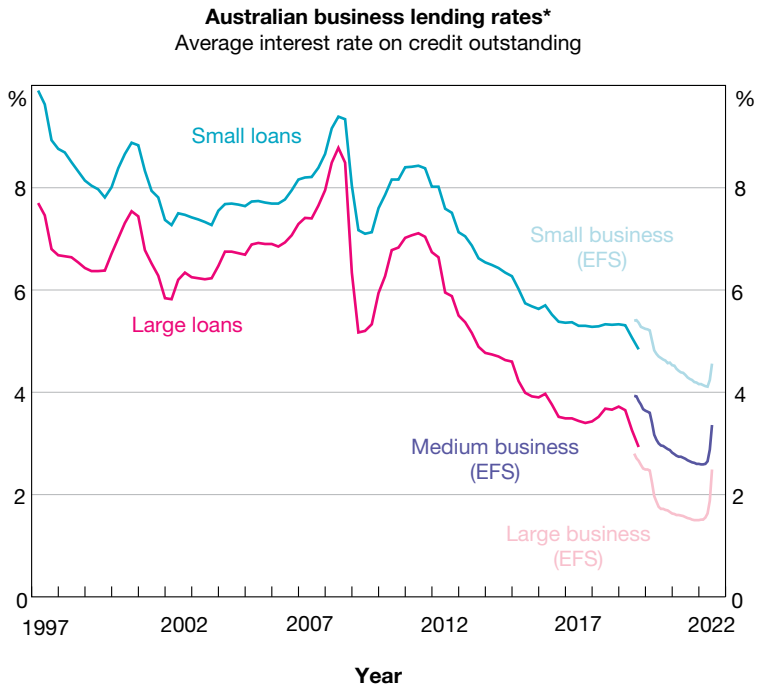
Source: Data derived from a table prepared by KPMG, https://home.kpmg.com/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-taxrates-table.html; Australian Tax Office (ATO).

The cost of credit or interest rates

Interest rates can be seen as an aggregate supply factor because they can affect the cost to businesses of borrowing bank credit used to expand operations (and of course are also an aggregate demand factor because they can affect spending). Figure 2.53 shows that despite some rises in 2022, recently Australian interest rates were at historic lows of between 1.5 (for large businesses) and 4 per cent (for small businesses).

In turn, relatively low borrowing costs for businesses have strengthened profits. In so doing, cheap credit should help to reduce business closures and structural unemployment, and encourage the expansion of productive capacity and the creation of new jobs. Recent low interest rates in Australia relative to those overseas in say the United States, have also kept our exchange rate lower than otherwise, making our local firms more internationally competitive. By fostering economic growth and jobs and reducing cost pressures, low interest rates have helped to promote the government's goals.

FIGURE 2.53 Recent trends in Australian interest rates charged to businesses borrowing from banks.



*Small loans are loans less than $2 million; large loans are loans $2 million or more; new series from July 2019 are from the Economic and Financial Statistics (EFS) collection (see Statistical Table F7)

Source: © Reserve Bank of Australia, 2001–2022, see https://www.rba.gov.au/chart-pack/interest-rates.html. All rights reserved. Chart Pack.

Infrastructure bottlenecks or shortages

Infrastructure is a *capital resource* that is used by businesses to produce other goods and services. Australia has a large stock of ageing economic infrastructure that has not kept up with our rapid population growth. Bottlenecks or shortages exist in some key areas such as water supply, electricity, gas, road and rail transport, shipping and airport facilities, and telecommunications. By reducing efficiency, these infrastructure shortages added to business costs and made local firms less competitive internationally, leading to closures. They also limited our productive capacity and the sustainable rate of economic growth in mining, agriculture, manufacturing and trade, and have in part been caused by a lack of adequate government funding. Recently, however, the federal government has been in catch up mode and has tried to reduce some of these bottlenecks.



The 2022–23 budget, for instance, revealed that $120 billion would be spent on national infrastructure building projects in the next 10 years, as part of a rolling infrastructure plan. Recent projects have included the upgrade of the NBN, the new airport for Western Sydney, and the pumped hydro scheme in the Snowy Mountains. While the provision of infrastructure is still inadequate, recent government measures should help to lift efficiency, slow the rise in production costs, grow productive capacity, and boost AS and the potential non-inflationary rate of the economy.

Review of the recent effects of aggregate supply factors on Australia's domestic macroeconomic conditions

In looking at the influence of aggregate supply factors, we saw that some had an *unfavourable* impact, limiting productive capacity (AS), adding to cost inflation pressures, slowing the potential sustainable rate of economic growth and adding to structural unemployment. Here we might particularly recall the damaging effects of the COVID-19 lockdowns and disrupted supply chains, severe weather events, our ageing population, inadequate infrastructure and relatively high rates of company tax. All of these factors limited the extent to which the Australian government's goals could be achieved, and unfortunately, all undermined our living standards.

However, there were also a few *more favourable* aggregate supply factors incentivising business like lower interest rates and the slow rise in real wages that helped to partly offset some of the negative conditions that damaged living standards.

2.12 Activities

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2.12 Quick quiz on

2.12 Exercise

2.12 Exercise

1. **Identify** and **define** each of the *three* key domestic macroeconomic goals pursued by the Australian government. **(3 marks)**
2. **Outline** recent trends and the extent to which each of Australia's three key domestic macroeconomic goals were achieved during the last two years. **(3 marks)**
3. **Distinguish** aggregate demand factors affecting the level of domestic economic stability, from aggregate supply factors. **(4 marks)**
4. **Identify** and **outline** one important *aggregate demand* and one key *aggregate supply* factor that has affected the achievement of each of the following government macroeconomic goals during the last two years:
   a. rate of inflation
   b. rate of economic growth
   c. rate of unemployment. **(6 marks)**
5. **Explain** how you would expect the recent changes in Australia's domestic macroeconomic conditions to affect Australian living standards over the last two years. **(4 marks)**

Solutions and sample responses are available online.

2.13 Review

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2.13.1 Summary

The concept of living standards

- Living standards relate to how well off we are, and are affected by both material wellbeing and non-material wellbeing.
- *Material* living standards relate to our economic wellbeing and reflect our levels of income and consumption per person per year.
- They are commonly measured by the real value of income or national production (GDP) per head per year.
- *Non-material* living standards affect the *quality* of our daily lives and may be affected by:
  - freedom
  - equality of opportunity
  - amount of leisure time relative to work hours
  - job satisfaction and security
  - life expectancy and physical and mental health
  - happiness and stress levels
  - clean natural environment and lack of pollution and congestion
  - low crime rates.
- Attempts to improve material living standards by increasing national production (GDP) or income per head may sometimes lower non-material living standards through reduced leisure time or environmental degradation (there is a trade-off). In addition, attempts to protect the environment and non-material living standards may undermine material living standards, at least in the short-term. Trade-offs may be involved in pursuing these two aspects of our wellbeing.

What is economic activity?

- 'Market' or economic activity involves production by firms and individuals that is sold for profit and included in GDP.
- GDP ignores the huge contribution to real production that is undertaken in households engaged *in non-market activity*, such as home duties and do-it-yourself household repairs, so for this reason, its value is an underestimation.
- The *level of domestic economic activity* describes the general pace or *speed* at which an economy is producing goods and services.
- The level of economic activity not only influences the rate of economic growth, but also affects Australia's levels of inflation and unemployment.
- Economic activity today impacts on our current and future living standards (both material and non-material).

The five-sector circular flow model of an economy

- The macroeconomic *five-sector circular flow model* of the Australian economy can illustrate how economic activity takes place and how the different sectors (household, business, financial, government and external sectors) of the economy interact with each other.
- Using this model, short- to medium-term changes in the level of domestic economic activity at the macroeconomic level respond to changes in *aggregate demand*, which reflects the value of leakages (i.e. S + T + M) relative to injections (I + G + X). However, *aggregate supply* factors such as the availability

and efficiency of resources also have an impact on the potential level of economic activity and a nation's productive capacity.

The business cycle

- Over a period of years, the level of domestic economic activity typically goes through *four main phases* which together make up what is called the *business cycle*.
- The phases of the business cycle diagram include: recovery (expansion), peak (sometimes a boom), contraction (slowdown) and trough (sometimes a recession).
- As the economy moves through the business cycle, economic conditions, such as the rates of economic growth, unemployment and inflation, also change.
- The *ideal* situation, where living standards are likely to be maximised, occurs in a state of *domestic economic stability* in which there is simultaneously, strong and sustainable economic growth (the fastest rate of increase in GDP that doesn't accelerate inflation or damage the achievement of other goals — perhaps a rate of around 3 per cent per year), low inflation (an average rise in consumer prices of between 2–3 per cent per year) and full employment (the lowest unemployment rate of around 4.0–4.5 per cent of the labour force that doesn't accelerate inflation — called the NAIRU).
- It is also possible for the economy to experience the adverse situation of *stagflation*, which involves a slow or no rise in GDP, rapid cost inflation and high structural unemployment. It is due to adverse aggregate supply factors.

Measurement of the level of economic activity

- The main aggregate measure of the level of domestic economic activity is the quarterly or annual percentage change in chain volume GDP (also called real GDP). It can be measured in three ways: add up the sum of spending on Australian-made goods and services over a period (or AD); the total incomes paid to owners of resources; or the value added to production by all firms.
- Chain volume GDP as a measure of economic activity has weaknesses. For example:
  - The value of some items that are included must be imputed or guesstimated.
  - It excludes most *non-market activity* and so underestimates the actual quantity or volume of goods and services available for consumption.
  - It excludes considerations of *negative externalities* or costs for third parties often associated with production and consumption of goods and services.
- Indicators of economic activity are classified into *leading, coincident* and *lagging* indicators.

Factors affecting the level of economic activity

- Recent experience in Australia shows us that *the level of domestic economic activity is unstable*. This is the result of the impact of changes in both *aggregate demand factors* and *aggregate supply factors* or conditions affecting levels of aggregate demand, aggregate supply and, ultimately, material and non-material living standards.
- *Aggregate demand factors* (emphasised first by John Maynard Keynes) alter expenditure levels on GDP or aggregate demand (C + I + G + X − M) and account for instability.
- Aggregate demand factors include consumer confidence, business confidence, disposable income, terms of trade, interest rates, budgetary policy, the exchange rate and overseas economic conditions.
- Aggregate demand factors can cause cyclical changes in production, unemployment, inflation and the trade balance, sometimes for the better, other times for the worse.
- *Aggregate supply factors* affect a nation's productive capacity or potential GDP, and the longer term speed limit for economic activity, by altering the ability (capacity) and willingness (motivation) for firms and individuals to produce goods and services. These can change to become more or less favourable for producers.
- Aggregate supply factors include the quantity/volume and quality/efficiency of resources (e.g. including skilled labour, capital equipment and technology, climatic conditions and labour productivity), production costs (e.g. wages, interest rates, raw materials, transport, power and water), company tax rates, the COVID-19 pandemic and disruptions to supply chains, government environmental policy, and business profitability or closure.

- Domestic economic activity may *rise* partly in response to generally *stronger aggregate demand conditions* (at least up to the point where full productive capacity is reached) or following the onset of more *favourable aggregate supply conditions* for producers. In contrast, activity slows if aggregate demand weakens or aggregate supply conditions become less favourable for producers.

Recent trends in Australia's level of economic activity

- Due to the sometimes volatile nature of aggregate demand factors and aggregate supply factors, the Australian economy has experienced great economic instability with both downs (e.g. 2019–20) and ups (e.g. 2020–21–22) in the *level of domestic economic activity*.
- In the recent recession, when economic activity in 2019–20 was weak, there was zero GDP growth, deflation and high unemployment of over 7 per cent.
- During the recovery of 2020–21–22, GDP growth reached 3.6 per cent for 2021–22, unemployment fell quickly to around 3.5 per cent in June 2022, and inflation rose sharply reaching over 6 per cent in 2021–22.

Using the AD–AS diagram to show how the level of economic activity may change

- The impact of changing aggregate demand conditions (such as consumer confidence, overseas economic conditions and interest rates) and aggregate supply conditions (e.g. COVID-19 lockdowns, severe supply chain issues, labour productivity, RULCs, tax rates, the participation rate, drought and floods, immigration, quality of infrastructure, oil prices and business profitability) can be illustrated on an *aggregate demand–supply diagram*.
- When these aggregate demand and aggregate supply conditions change, they shift the location of the AD and/or AS lines. This causes the equilibrium level of national production (economic activity or GDP), employment and prices that exist in an economy to be altered.

The Australian government's key domestic macroeconomic goals and living standards

- The Australian government actively pursues *three core domestic economic goals* in an effort to ultimately increase economic stability and improve our living standards (material and non-material). These domestic macroeconomic goals include:
  - low and stable inflation (price stability)
  - strong and sustainable economic growth
  - full employment.

The goal of low and stable inflation (price stability)

- The *goal of low and stable inflation* (also called *price stability*) means achieving a slow annual rise in consumer prices averaging between 2 and 3 per cent over time. *Deflation* occurs when general prices are actually falling while *disinflation* means that the rate of increase in prices is slowing.
- Unfortunately, inflation sometimes exceeds this target due to *two* causes:
  - *Demand inflation* can be caused by excessively strong demand-side conditions or aggregate demand, causing widespread shortages of goods and services in a fully employed economy.
  - *Cost inflation* is caused by rising production costs and less favourable supply conditions for businesses that flow on to higher consumer prices as firms try to protect their profits.
- Sometimes, the goal of low inflation is not achieved because the inflation rate is too *slow*, indicating a weak economy. At other times the goal may not be achieved because the inflation rate is too *high*.
- The inflation rate is measured by the *consumer price index* or CPI, which looks at the average weighted price change in a basket of goods and services typically purchased by metropolitan households. However, there are limitations to the accuracy of this measure relating to the regimen, its weighting and base year.
- While Australia's inflation rate was very low with deflation into 2019–20, it picked up in 2020–21 and accelerated further in 2021–22 to well above the RBA's inflation target range of 2–3 per cent.
- Both aggregate demand factors (such as consumer and business confidence, terms of trade and overseas activity) and aggregate supply factors (such as labour productivity, tax rates, severe weather events, the pandemic, supply chain issues, oil prices and the exchange rate) have affected recent trends in Australia's inflation rates.

- There are serious consequences if the government (RBA) *fails* to achieve the goal of low inflation.
  - Very *high* rates of inflation above the RBA target have mostly negative effects on living standards, causing resources to be allocated less efficiently and slowing economic growth and employment. They also weaken our competitiveness and trade balance and cause greater inequality in the distribution of income.
  - Very *slow* inflation or deflation can also undermine living standards since it will be caused by recession, leading to higher unemployment rates, lower incomes and deferred consumption.

The goal of a strong and sustainable rate of economic growth

- The *goal of strong and sustainable economic growth* means the fastest rate of growth in national production — possibly averaging around 3 per cent a year — that is consistent with achieving low inflation and other government economic goals and environmental goals (that take into account the impact on future generations).
- Economic growth is measured by the change in the value of *chain volume gross domestic product*, where the effects of price changes on the value of national production have been statistically removed, thereby facilitating comparisons between different years. Here, GDP at *current prices* has been converted to *real GDP*, which is more reliable when looking at economic growth between one year and the next.
- Chain volume GDP as a measure of economic growth has a number of important limitations:
  - It *excludes* the value of household *non-market acti*vity and the cash economy.
  - The value for the production of some important items that are included in GDP must be *imputed*, leading to error.
  - There is potential error associated with making statistical adjustments to exclude the impact of *price changes* on the value of production.
  - It fails to take account of *negative externalities* or costs to third parties, changes in product quality or hours worked to generate a given level of output.
- Two sets of factors determine the rate of economic growth.
  - *Aggregate demand factors* (e.g. consumer confidence, the household savings ratio, business confidence, the Australian dollar, terms of trade, disposable income and overseas economic activity) can determine the timing of cyclical booms and recessions, and the extent to which the economy's productive capacity is actually used, thus affecting the rate of economic growth, cyclical unemployment and demand inflation.
  - *Aggregate supply factors* (e.g. the age distribution of the population, drought, tax rates, interest rates, productivity, profitability and wage costs, the pandemic, supply chain issues, oil prices and other costs) can alter the sustainable speed limit and long-term productive capacity of the economy, and the willingness of firms to expand and increase production or supply. More favourable aggregate supply-side efficiency means that more output can be produced from the same inputs or resources, improving material living standards.
- During the past two years Australia initially experienced a recession in the first part of 2020, but then there was a strong recovery with positive economic growth. However, the rate of economic growth has been unsteady and, by mid 2022, was becoming unsustainably strong, adding to inflationary pressures.
- Failing to achieve the goal of strong and sustainable rates of economic growth has mostly negative effects on living standards. For instance:
  - Very *weak* rates of economic growth are economically unsustainable and might lead to generally higher unemployment, falling incomes, lower material living standards, weaker budget outcomes and a reduced ability of the government to provide welfare and public goods and services.
  - Excessively *strong* and *economically* unsustainable rates of GDP growth might weaken the trade balance, add to inflation, reduce purchasing power for individuals and lead to lower material living standards. In addition, excessively strong rates of growth are *environmentally* unsustainable and can lead to negative externalities and lower non-material living standards of future generations.

The goal of full employment

- The *goal of full employment* currently involves achieving 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 (NAIRU) or undermine the achievement of other government goals.
  - This target rate means having no cyclical unemployment caused by weak aggregate demand conditions, deficient levels of AD or recession.
  - The government's current target of an acceptable unemployment rate of about 4.0–4.5 per cent recognises the partially unavoidable existence of a low level of *natural unemployment* (NAIRU) caused by structural (the main cause), frictional, seasonal and hard-core factors, and changing aggregate supply-side conditions.
- The unemployment rate, along with other labour market indicators (such as the under-utilisation rate, participation rate, job vacancies, long-term unemployment and change in average hours worked), is measured by means of the ABS labour force survey. Labour market conditions may be too strong (D>S), too weak (S>D) or ideal (D=S).
- The ABS unemployment statistics have limitations because:
  - *hidden unemployment* is not measured causing the real rate of unemployment to be an underestimation
  - the *definitions* of employment and unemployment are somewhat arbitrary (e.g. it counts as employed those who work for more than one hour per week for pay)
  - there may be a change in participation rates, along with part-time or casual work that affect the unemployment rate.
- Over recent years, aggregate demand factors and aggregate supply factors have changed, thereby affecting the trends in Australia's overall unemployment rate. Over the last two years, mostly stronger aggregate demand factors have helped to reduce the unemployment rate to a low of 3.5 per cent in June 2022. This suggests that now there is over-full employment (the unemployment rate is too low). In addition, aggregate supply conditions including the COVID-19 lockdowns, labour shortages and domestic and international supply chain issues, have also recently impacted the unemployment rate.
- Failure to achieve the goal of full employment when unemployment is too high or too low, negatively impacts on most other government economic goals:
  - Very *high* rates of unemployment mean productive capacity is wasted, income inequality increases, and the government's financial position deteriorates. This undermines both material living standards (reduced incomes and consumption) and non-material wellbeing (the social costs of reduced mental and physical health outcomes, social isolation, stressed relationships, possible rise in crime rates, and feelings of personal failure).
  - Very *low* unemployment rates are also undesirable because they are likely to accelerate wage rises, cause cost inflation, and erode the purchasing power of incomes due to prices rising faster than wages.

2.13.2 Key terms

Aggregate demand (AD) represents the sum of spending on goods and services produced by a nation over a year. It is made up of C + I + G + X – M.
Aggregate demand factors are the macroeconomic influences that determine the level of spending or AD at various price levels, in turn affecting the cyclical level of economic activity. These factors might include consumer confidence, business confidence, the terms of trade, interest rates, the budget outcome, the exchange rate for the Australian dollar and overseas economic conditions.
Aggregate demand–supply diagrams are used to illustrate the key sets of influences or factors affecting national spending and productive capacity and their impact on an economy's equilibrium level of GDP, employment and inflation.
Aggregate hours worked relates to the total paid hours worked by all those employed in the labour force measured over a period of time.
Aggregate supply (AS) is the total or combined output of all types of goods and services produced at different price levels measured over a period by the nation's businesses. It is especially affected by the availability of a nation's resources and the efficiency with which these resources are used.
Aggregate supply factors are the main determinants of a nation's productive capacity or potential level of GDP (e.g. quantity and productivity of resources), especially over the long-term. They involve changes in the volume and/or efficiency of resources and might include the effects of changes in productivity, severe weather events, relative tax rates and wage costs.
Boom A period of strong spending and above-average levels of economic activity, usually associated with rapid demand inflation and very low cyclical unemployment.
Business confidence or expectation is an aggregate demand factor. It relates to the level of optimism or pessimism by firms about their future sales and profits. It affects the level of business investment spending.
Business cycle refers to the wave-like ups (recovery and boom) and downs (slowdown or recession) in a nation's level of production or economic activity. There are *four* main phases or situations — the expansion, the peak (perhaps a boom), the contraction and the trough (perhaps a recession).
Chain volume GDP refers to the market value of goods and services produced by Australia, adjusted to remove the effect on the value of national production caused by changes in prices against a reference year. It measures volume changes in production or real GDP.
Consumer confidence or expectation describes the level of household optimism or pessimism about consumers' future employment prospects and income. This especially affects the levels of saving and consumption spending.
Consumer price index (CPI) is a measure of inflation or the average level of prices of a basket of goods and services measured over a period of time, purchased by typical metropolitan households.
Cost inflation exists when rises in production costs are passed on by firms as higher prices to protect their profit margins. Cost rises can be caused by less favourable aggregate supply conditions (e.g. rises in wages).
Current account deficit (CAD) refers to the total value of current payments (debits) for goods, services, primary incomes and secondary incomes exceeding the total value of equivalent credits.
Cyclical unemployment is the loss of jobs due to weak aggregate demand conditions, a lack of spending and a downturn in economic activity or recession.
Deflation is a term describing generally falling prices over a period of time. It can happen in recessions.
Demand inflation typically occurs in a boom when spending (demand) outstrips production (supply) and there are widespread shortages of goods and services.
Depression refers to a large economic downturn in production or GDP associated with very high cyclical unemployment, and is caused by a significant fall in aggregate demand.
Disguised unemployment is when an individual has a job but is underemployed and not working to capacity. They would like to work more hours.
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 spendable household income after receiving government welfare and paying personal income tax.
Domestic economic stability is a desirable or ideal level of economic activity where, *simultaneously*, there is low inflation, a strong and sustainable rate of GDP growth and low unemployment.
Economic activity refers to the actions of individuals, firms and governments that help to generate the production of goods and services, employment and incomes.

Economic infrastructure represents capital goods such as roads, railways, power, gas, telecommunications, water and ports needed by firms to produce other goods and services. It can be provided through government investment, by the private sector or by public-private partnerships. In addition, there is social infrastructure involving the provision of schools and health systems for the community.
Employment is when people aged 15 and over have a paid job and work for more than one hour per week.
Exchange rate is the price or value of our currency when swapped for other currencies. It can be measured against individual currencies for each country or against a basket of key currencies, each weighted by its relative importance to Australia in trade (called the trade weighted index or TWI).
Five-sector circular flow model illustrates how the Australian economy works and how its different parts interact and are interrelated. Additionally, it identifies some of the macroeconomic variables affecting our country's domestic economic conditions.
Goal of full employment means the lowest rate of unemployment, perhaps around 4.0–4.5 per cent that will not cause inflation to accelerate (NAIRU). Here, there would be no cyclical unemployment due to weak AD or recession. However, at least 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.
Goal of low and stable inflation (price stability) is achieved when the general level of prices for consumer goods and services are increasing fairly slowly, within the current RBA target range of between 2–3 per cent a year on average, over time, consistent with achieving other government goals.
Goal of a strong and sustainable rate of economic growth refers to the fastest rise in real GDP, possibly around 3 per cent a year, that does not accelerate inflation or undermine the achievement of other government economic and environmental goals.
Gross domestic product (GDP) is an estimate of the value of economic activity. It represents the total annual value ($) of final goods and services produced by a nation measured over a period of time such as three months or a year.
Hidden unemployment refers to the number of individuals who would like a job but have been discouraged by a lack of success and have given up looking for work. Because these individuals are not 'actively looking for work', they are therefore not recorded by the ABS in the official unemployment statistics.
Inflation occurs when the prices paid for a wide range of goods and services are generally rising.
Interest rates are an aggregate demand factor. They represent the cost or price of borrowing credit or incentive to save, expressed as a percentage.
Job vacancies are job offers advertised by firms looking for staff to fill them. They reflect the demand for labour.
Labour force is people aged over 15 years old who are able and willing to work and are either employed or unemployed.
Lagging indicators show changes in economic activity some time after the event has occurred because the statistical data take time to collect and process and/or respond to changes in economic activity (e.g. GDP).
Leading indicators allow economic forecasts or predictions to be made about the likely future level of economic activity (e.g. consumer confidence).
Level of economic activity simply describes the general *pace* or *speed* at which the production of goods and services is occurring nationally. Typically, activity levels change from a peak through a contraction to a trough and then a recovery.
Living standards refer to how well off a nation is overall. Living standards are affected by both material aspects (related to incomes and the quantity of goods and services consumed per person) and non-material aspects (e.g. quality aspects of daily life including happiness, mental health, pollution, relationships).
Long-term unemployment is where individuals have been unable to get a job for 52 weeks or more.
Material living standards refer to the economic wellbeing of individuals as affected by incomes and the quantity of goods and services consumed per person per year. Clearly this is largely determined by the level of income per person per year.
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 (NAIRU). Some natural unemployment is unavoidable, even in a healthy economy. It occurs due to the existence of structural, frictional, hard-core and seasonal factors, and is associated with aggregate supply factors.
Non–accelerating inflation rate of unemployment (NAIRU) is the lowest rate of unemployment, perhaps around 4.0–4.5 per cent, that does not cause inflation to accelerate.
Non-market activity consists of production that is not actually sold and occurs mostly within individual households, such as personal housework and gardening. Another example is the black market. The value of non-market activity is not included in GDP making GDP an underestimation of the overall value of economic activity.

Non-material living standards are subjective but refer to the *quality* of daily life. They could be affected by the amount of leisure time, happiness, life expectancy and health, crime rates, freedom and quality of the natural environment.
Participation rate represents the proportion of those people aged 15 and over who are members of the labour force; that is, employed and unemployed.
Purchasing power is the actual quantity of goods and services that incomes will buy, after statistically allowing for the effects of changing prices. For example, an inflation rate of 4 per cent and a nominal rise in wages of 3 per cent would mean a drop in real wages or purchasing power of 1 per cent.
Real unit labour costs (RULCs) represent the average level of wages and on-costs per unit of output produced compared with trends in average prices received by businesses for output sold.
Recession a period of two or more negative quarters (6 or more months) of GDP growth caused by lower AD and is associated with high levels of cyclical unemployment and low inflation.
Regimen used to compile the CPI, and refers to the basket containing various types of goods and services through the measurement of their price changes. The CPI contains over 100 000 items broken into 11 groups (including food, housing, health).
Stagflation is a period of slow GDP growth (stagnation) along with high structural unemployment and rapid cost inflation. It usually reflects less favourable aggregate supply conditions.
Structural unemployment is unemployment caused by changes in the way goods and services are produced and sold. It reflects changes in aggregate supply factors affecting business costs, profitability, the use of new technology, the mismatch of skills possessed by the unemployed with the job vacancies sought by business, business rationalisation or cost cutting, business relocation and some government aggregate supply policies.
Terms of trade (TOT) is an aggregate demand factor. It represents the ratio of the average prices we receive for our exports relative to the average prices we pay for imports of goods. A rise in Australia's terms of trade is said to be favourable because the world is prepared to pay us higher unit prices for our exports relative to the prices we pay for imports. This tends to increase the value of exports relative to imports, thereby increasing net injections and AD. Put another way, a rise in our terms of trade means that a given unit of exports will pay for a greater quantity of imports.
Trade weighted index (TWI) is an overall guide to the value of the Australian dollar measured against a basket of other currencies, each weighted according to their relative importance in Australia's trade.
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 inflation rate can be measured by removing from the headline CPI regimen, volatile items affected by one-off events; for example, the effect on food prices of floods. This measure is used in order to obtain an inflation rate that is more truly reflective of ongoing or core changes in the level of prices.
Under-utilisation 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. It provides some indication of the level of an economy's unused productive capacity.
Unemployment is when those aged 15 and over who are actively looking for work cannot find a job.

on Resources

Digital documents
Topic summary (doc-34674)
Key terms glossary (doc-34512)
Crossword (doc-31497)
Wordsearch (doc-31498)
Match-up definitions (doc-31499)

2.13.3 Practice school-assessed coursework

OUTCOME 2

Analyse key contemporary factors that may have affected domestic macroeconomic goals over the past two years, evaluate the extent to which the goals have been achieved and discuss the effects on living standards.

TASK: FOLIO OF APPLIED ECONOMICS EXERCISES

Time allowed: 60 minutes

Marks allocated: 44 marks (The marks for each question are indicated at the end of each question.)

Conditions: Closed book (No notes or textbooks may be used when completing this task.)

1. **Define** the term *domestic economic stability.* Referring to Australian statistical indicators relating to the last two years, describe the *extent* to which this situation been recently achieved. **(3 marks)**
2. **Distinguish** material living standards from non-material living standards **(3 marks)**
3. **Distinguish** the *headline CPI* and the *underlying CPI*. **(2 marks)**
4. During 2019-20, Australia's *inflation rate* was very *slow* and there was deflation. **Discuss** how you would expect our *low inflation* rate to affect our international competitiveness and the distribution of income. **(4 marks)**
5. Giving reasons, **explain** how the generally lower value of the A$ (measured by the TWI) as an aggregate demand factor would be likely to affect Australia's *inflation rate* in an economy initially experiencing domestic economic stability. **(2 marks)**
6. **Distinguish** *cyclical unemployment* from *structural unemployment*. **(2 marks)**
7. **Explain** how you would expect the general change in Australia's *terms of trade* in the last two years to affect Australia's *domestic macroeconomic conditions*. **(4 marks)**
8. Clearly **explain** how you would expect the recent trend in Australia's unemployment rate to affect our *general living standards*. **(3 marks)**
9. Calculations (*no* calculators are to be used):
   a. Use the hypothetical data in the table below to **calculate** the Terms of Trade Index (TOT) for 2022–23 and 2023–24. **(1 mark)**

Changes in a country's export and import price indexes.

Year	Export price index	Import price index	Calculations for the TOT Index
2022–23	110	100	TOT Index = … … … points
2023–24	120	100	TOT Index = … … … points

   b. Use the hypothetical data in the table below to **calculate** the *real GDP* for both 2022–23 and 2023–24. Show your basic formula and working. **(1 mark)**

Calculating a nation's real GDP.

Year	GDP at market prices	Price deflator index	Calculations for real value of GDP in 2022–23 and 2023–24
2022–23	200	100	Answer = $ … … …
2023–24	220	110	Answer = $ … … …

10. **Analyse** the *relationships* that can exist between Australia's rate of *economic growth* and the *unemployment* rate. **(2 marks)**
11. Recently, Australia has experienced significant *infrastructure bottlenecks* in several key areas of the economy such as power and transport. As an aggregate supply factor, **explain** how you would expect these to affect the *achievement* of the Australian government's three key *domestic macroeconomic goals* and *material living standards*. **(6 marks)**

12. **Examine** the figure below and answer the questions below.

a. For the last two quarters to March 2022, **identify** the *two* main factors or components accelerating AD, along with the main factor slowing AD and GDP growth. Quote some approximate statistical evidence from the chart (see graph 1). On this graph, private demand = C + I, public demand = $G_1 + G_2$, and net export demand = X – M. **(2 marks)**

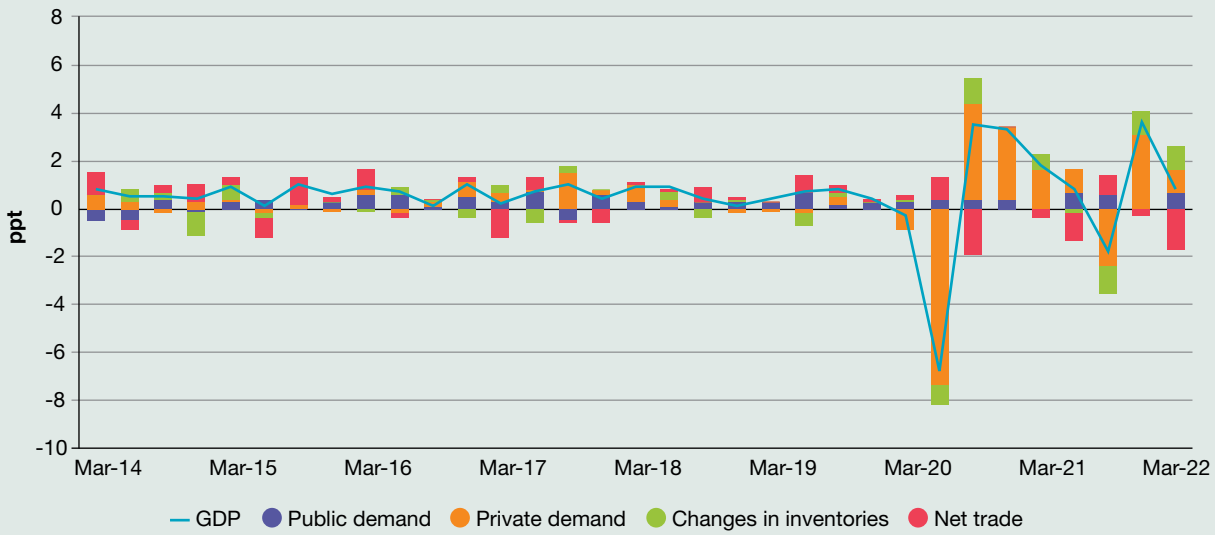
b. During 2020–21 and the three quarters of 2021–22, **evaluate** the extent to which the government's *goal of strong and sustainable economic growth* was achieved. **Justify** your answer. **(2 marks)**

c. During 2020–21–22, economic activity picked up. **Explain** how you would normally expect this to affect the *achievement* of the goals of low and stable inflation, full employment, and living standards. **(4 marks)**

d. Quoting data from graph 2, **contrast** the general level of business confidence in 2020 with that in early to mid-2021. **(3 marks)**

Graphs showing the spending contributors to Australia's GDP and changes in business confidence.

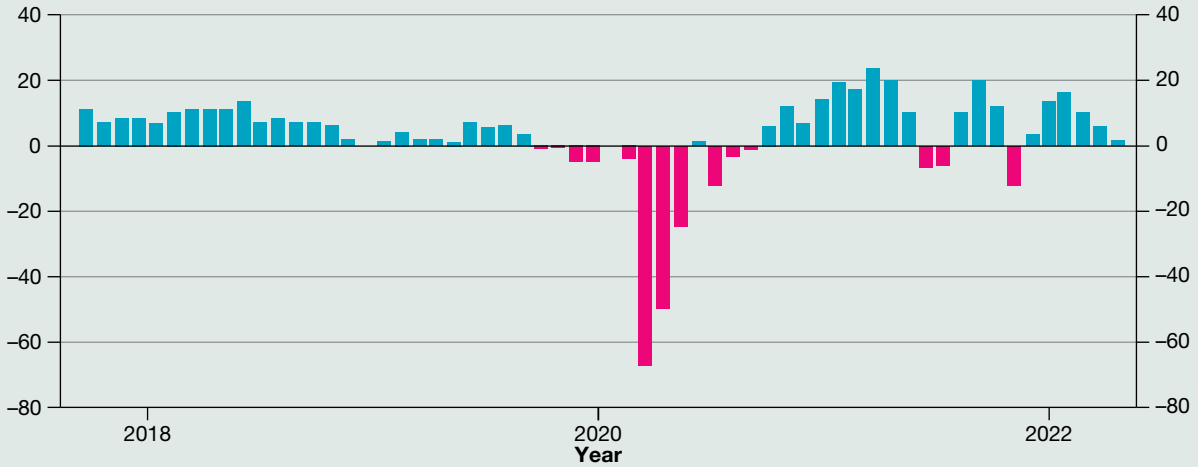
Graph 1 — Contributions to quarterly growth in GDP, chain volume measures, seasonally adjusted (a).



a. Contributions may not be additive due to rounding.

Source: Australian Bureau of Statistics, Australian National Accounts: National Income, Expenditure and Product June 2022
Note: Private demand = C + I, Public demand = $G_1 + G_2$, Net export demand = X – M.

Graph 2 — Recent monthly changes in Australian business confidence index.



Source: Trading Economics, Business confidence, see https://tradingeconomics.com/australia/business-confidence.

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Digital document Topic 2 Practice school-assessed coursework (doc-38083)

2.13 Exam questions

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Section A — Multiple choice questions

Question 1

Source: VCE 2021 Economics Exam, Section A, Q4 © VCAA

Consider the following data showing the Consumer Price Index (CPI) for a number of quarters in a hypothetical economy.

Quarter	CPI
June 2020	110.0
Sept. 2020	110.7
Dec. 2020	111.1
Mar. 2021	111.6
June 2021	112.0

The inflation rate for the year ended June 2021 is

A. 2%.
B. 1.8%.
C. 1%.
D. 0.8%.

Question 2

Source: VCE 2021 Economics Exam, Section A, Q12 © VCAA

Consider the following data for a hypothetical economy.

Employed persons	11 million
Unemployed persons	1 million
Persons not in the labour force but of working age (over 15 years of age)	8 million

Using this data, the labour force participation rate is

A. 50%.
B. 55%.
C. 60%.
D. 65%.

Question 3

Source: VCE 2020 Economics Exam, Section A, Q1 © VCAA

Which one of the following actions are economists most likely to consider as investment expenditure?

A. An individual buying shares.
B. A supermarket installing self-serve checkouts.
C. A company paying its workers higher wages.
D. A household purchasing a home entertainment unit.

Question 4

Source: VCE 2020 Economics Exam, Section A, Q2 © VCAA

Which one of the following is a leakage from the circular flow model of income?

A. An increase in consumption spending.
B. Transfer payments made by the government.
C. An increase in imports.
D. An increase in investment spending.

Question 5

Source: VCE 2020 Economics Exam, Section A, Q12 © VCAA

The labour force under-utilisation rate measures the

A. unemployed as a percentage of the labour force.
B. unemployed and underemployed as a percentage of the labour force.
C. underemployed as a percentage of the population aged 15 years and over.
D. unemployed and underemployed as a percentage of the population aged 15 years and over.

Question 6

Source: VCE 2020 Economics Exam, Section A, Q15 © VCAA

Which one of the following is the most likely to cause cost inflation?

A. Excess demand for goods and services
B. The government reducing company tax rates
C. Expectations by employers that interest rates will fall
D. An increase in superannuation contributions paid by employers.

Question 7

Source: VCE 2019 Economics Exam, Section A, Q4 © VCAA

An increase in the labour force participation rate is most likely to

A. increase productivity.
B. increase productive capacity.
C. decrease government revenue.
D. increase government expenses.

Question 8

Source: VCE 2019 Economics Exam, Section A, Q7 © VCAA

As the world economy slows, the Australian Government's budget outcome may

A. deteriorate as demand for Australian exports decreases.
B. improve as employment in Australia increases.
C. deteriorate as domestic output increases.
D. improve as company profits increase.

Question 9

Source: VCE 2019 Economics Exam, Section A, Q13 © VCAA

Consider the following information for a hypothetical economy.

total population	100 million
employed persons	70 million
unemployed	10 million
underemployed persons	2 million

Based on the data shown above, the unemployment rate of this hypothetical economy is

A. 10.0%.
B. 12.0%.
C. 12.5%.
D. 15.0%.

Question 10

Source: VCE 2018 Economics Exam, Section A, Q1 © VCAA

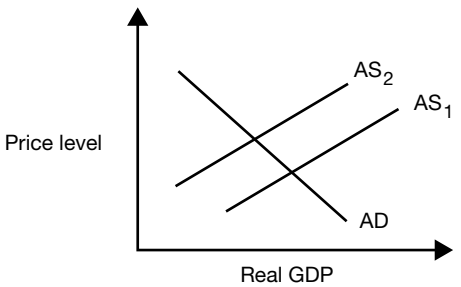
The type of unemployment caused by technological change is known as

A. cyclical unemployment.
B. frictional unemployment.
C. structural unemployment.
D. hard-core unemployment.

Question 11

Source: VCE 2018 Economics Exam, Section A, Q7 © VCAA

Refer to the following aggregate demand (AD) and aggregate supply (AS) diagram.



Which one of the following is likely to cause a shift in the aggregate supply curve from AS1 to AS2?

A. A decrease in interest rates
B. An increase in production costs
C. An increase in government spending
D. An increase in profitability of businesses.

Question 12

Source: VCE 2017 Economics Exam, Section A, Q8 © VCAA

According to the five-sector circular flow model of the economy, a rise in the total value of injections relative to the total value of leakages is most likely to result in

A. a decrease in consumption and a decrease in levels of aggregate demand.
B. a decrease in total incomes and a rise in the unemployment rate.
C. neither a decrease in consumption, levels of aggregate demand and total incomes, nor a rise in the unemployment rate.
D. a decrease in consumption, levels of aggregate demand and total incomes, and a rise in the unemployment rate.

Question 13

Source: VCE 2016 Economics Exam, Section A, Q1 © VCAA

Which one of the following components of aggregate demand is the most unstable?

A. Private investment expenditure
B. Private consumption expenditure
C. Government investment expenditure
D. Government consumption expenditure.

Question 14

Source: VCE 2016 Economics Exam, Section A, Q4 © VCAA

Which one of the following terms describes the 'potential output of an economy'?

A. Production
B. Productivity
C. Productive capacity
D. Gross Domestic Product (GDP).

Question 15

Source: VCE 2016 Economics Exam, Section A, Q9 © VCAA

Consider the following information related to the labour market of a hypothetical economy

Year	Population who are of working age (millions)	Employed persons (millions)	Unemployed persons (millions)
1	20	14	2
2	25	17	2

In comparing Year 2 to Year 1, which one of the following statements is true?

A. Year 2 has a lower participation rate and a lower unemployment rate.
B. Year 2 has a lower participation rate and a higher unemployment rate.
C. Year 2 has a higher participation rate and a lower unemployment rate.
D. Year 2 has a higher participation rate and a higher unemployment rate.

Question 16

Source: VCE 2016 Economics Exam, Section A, Q15 © VCAA

Australia's unemployment rate decreased from 6.4% in January 2015 to 5.8% in February 2016. The impact of this change on government tax receipts, government outlays and the size of the budget deficit is likely to be that

A. tax receipts increase, outlays increase, the budget deficit is reduced.
B. tax receipts increase, outlays decrease, the budget deficit is reduced.
C. tax receipts increase, outlays decrease, the budget deficit is increased.
D. tax receipts decrease, outlays increase, the budget deficit is increased.

Question 17

Which of the following *best* explains the aggregate supply effects of a *fall* in domestic interest rates?

A. Increased levels of saving and/or lower C and I spending financed by credit
B. Increased production costs for some firms with overdrafts
C. Increased business profitability growing productive capacity
D. Lower production by firms, moving the AS line inwards.

Question 18

Study the hypothetical data for an economy similar to Australia.

Indicator	2019–20	2020–21	2021–22	2022–23	2023–24
Annual CPI (percentage)	5.7	7.8	8.1	12.7	15.5
Annual rate of economic growth (percentage)	3.9	4.1	3.0	0.1	–2.0
Unemployment rate (percentage)	3.0	1.9	6.4	8.9	10.6

Based on this data, in 2019–20 and 2020–21 this economy *probably* experienced:

A. stability or economic bliss.
B. a boom.
C. a slowdown in economic activity.
D. stagflation.

Question 19

Weak aggregate demand conditions during the COVID-19 pandemic such as 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 20

If aggregate demand rises faster than aggregate supply in the long-term, it is *likely* there will be:

A. higher inflation.
B. higher real incomes.
C. a more economically sustainable rate of GDP growth.
D. higher cyclical unemployment.

Question 21

If nominal wages rise by 6 per cent in a given year and inflation rises by 4 per cent, then *real* wages will:

A. not change.
B. fall by 2 per cent.
C. rise by 2 per cent.
D. fall by 9 per cent.

Question 22

A reduction in domestic interest rates on personal loans and business overdrafts will *tend* to:

A. stimulate AD but reduce AS.
B. stimulate AD and increase AS.
C. increase business bankruptcy rates and thus raise structural unemployment.
D. increase savings and increase C.

Question 23

Stronger rates of global economic growth are *likely* to cause which of the following for Australia, given some unused productive capacity?

A. Lower rates of cost inflation and higher incomes
B. Higher rates of unemployment and economic growth
C. Stronger labour market conditions and no immediate or serious demand inflation pressures
D. A higher value of net exports, weaker terms of trade and rising GDP.

Question 24

Which of the following would *most likely* cause a *rise* in Australia's level of structural unemployment?

A. More workers becoming unemployed between jobs
B. A greater degree of skills mismatch among the unemployed due to a lack of appropriate training
C. A slower growth in real disposable incomes per head and weaker AD
D. A rise in the level of hidden unemployment.

on Resources

Digital documents Multiple choice answer grid (doc-34787)
Multiple choice answers (doc-34788)

Section B — Extended response questions

Question 1 (2 marks)

Source: VCE 2021 Economics, Section B, Q1a © VCAA

> ... the economy is expected to operate with considerable spare capacity for some time to come
> ... the central scenario is for unemployment to be around 6 per cent at the end of this year ...
> Source: statement by Philip Lowe, Governor of the Reserve Bank of Australia, 'Monetary Policy Decision', media release, 2 February 2021 <www.rba.gov.au>.

Explain what is meant by the goal of full employment.

Question 2 (3 marks)

Source: Adapted from VCE 2020 Economics, Section B, Q1c © VCAA

Explain how downward pressure on Australia's exchange rate might influence Australia's material and non-material living standards.

Question 3 (9 marks)

Source: VCE 2019 Economics, Section B, Q2 © VCAA

a. **Explain** the meaning of the term 'business cycle'. **(2 marks)**

b. **Explain** how one aggregate demand factor may cause a business cycle contraction. **(3 marks)**

c. **Explain** the likely effect of a business cycle expansion on the rate of economic growth and on the rate of inflation. **(4 marks)**

Question 4 (4 marks)

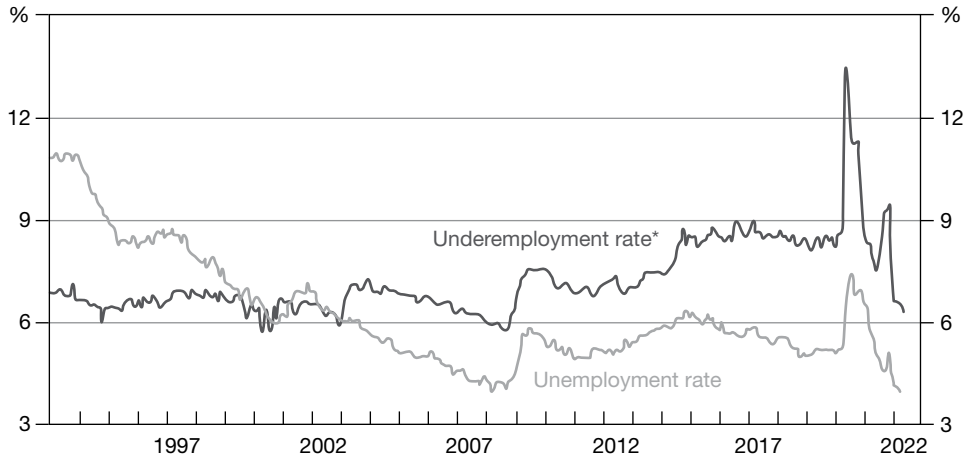
Source: VCE 2019 Economics, Section B, Q4c © VCAA

Assume Australia experiences an unfavourable movement in the terms of trade across a two-year period. **Explain** how this scenario might affect Australia's domestic macroeconomic goal of strong and sustainable economic growth, and Australia's living standards.

Question 5 (6 marks)

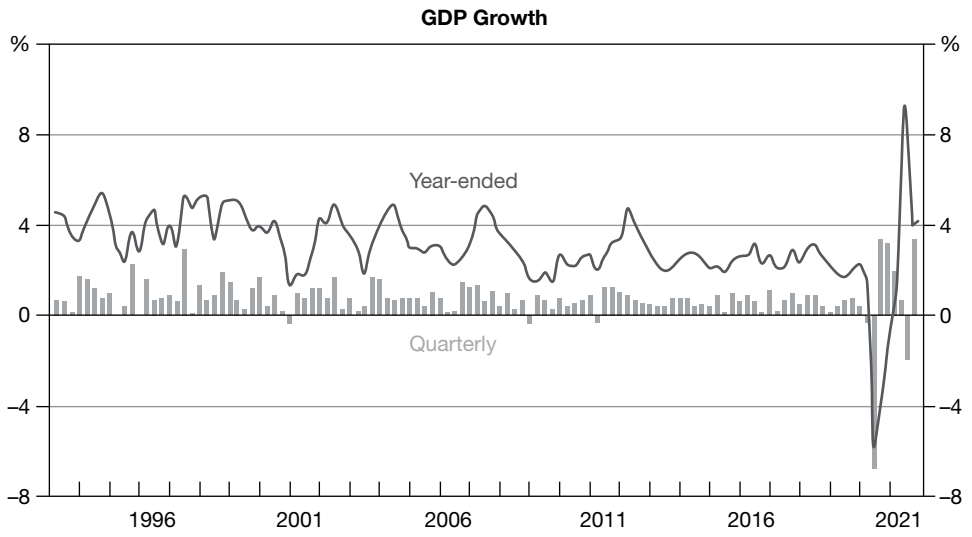
Source: Adapted from VCE 2018 Economics, Section B, Q4a © VCAA

Labour under-utilisation rates
Heads-based



* Full-time workers on reduced hours for economic reasons and part-time workers who would like, and are available, to work more hours.

Source: ABS.

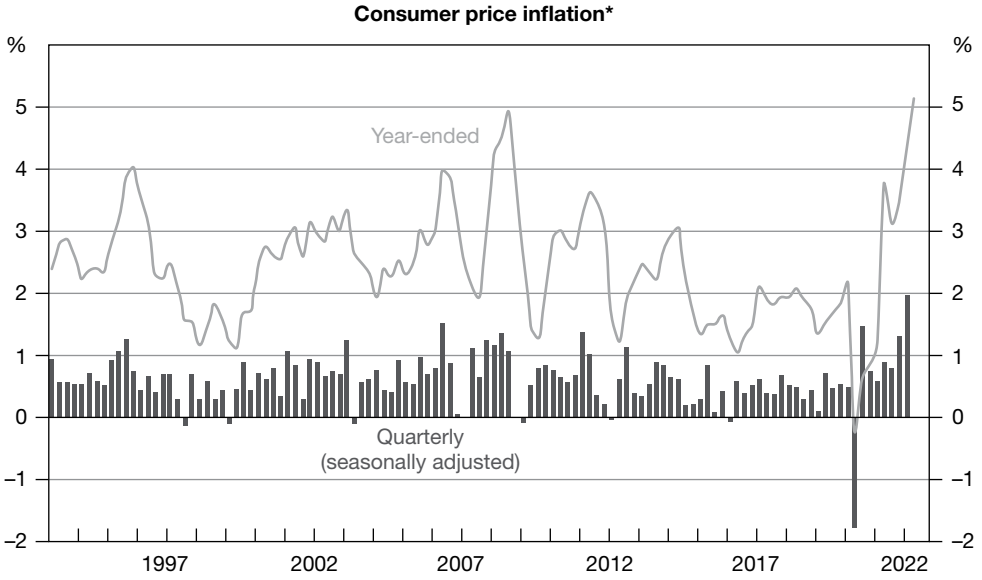


Source: ABS.

With reference to the two graphs for Australia's labour market and GDP growth, **assess the extent** to which the Australian Government has achieved its domestic economic goals of full employment and strong and sustainable economic growth during both 2020 and 2022.

Question 6 (5 marks)

Source: Adapted from VCE 2017 Economics, Section B, Q4 © VCAA



*Excludes interest charges prior to the September quarter 1998; adjusted for the tax changes of 1999–2000.

Source: ABS; RBA.

a. Referring to the graph above, **assess the extent** to which Australia has been able to achieve its goal of low and stable inflation (price stability) between 2020 and 2022. **(3 marks)**

b. **Explain** one economic factor that might have influenced the goal of low inflation (price stability) in 2022. **(2 marks)**

Question 7 (3 marks)

Distinguish *material* living standards from *non-material* living standards.

Question 8 (10 marks)

a. **Describe** how Australia's recent *level* of *economic activity* has changed over the last 2 years. **(2 marks)**

b. **Identify** and **explain** the impact of this change on the achievement of the Australian government's three key *domestic macroeconomic goals*. **(6 marks)**

c. **Explain** how a recovery in the level of economic activity would be likely to affect the government's budget and financial position. **(2 marks)**

Question 9 (14 marks)

a. **Define** the government's *goal of strong and sustainable economic growth*. **(2 marks)**

b. **Identify** *two* specific *aggregate demand factors* and **explain** how these two factors have tended to affect the achievement of the Australian government's goal of *strong and sustainable economic growth* in recent years. **(4 marks)**

c. **Select** *two* important aggregate supply factors that have recently affected Australia's level of economic activity. **Explain** how these factors are likely to have *affected* the achievement of the government's *goal of full employment*. **(4 marks)**

d. **Explain** how a sustained increase in the rate of economic growth to 4.9 per cent a year would be likely to affect each of the following:

i. The unemployment rate

ii. The inflation rate

iii. Our trade balance. **(4 marks)**

Question 10 (22 marks)

a. **Distinguish** between the three terms — *inflation, deflation*, and *disinflation*. **(3 marks)**

b. **Outline** the main *differences* between the *headline* inflation rate and the *underlying* inflation rate (also called core inflation). **(2 marks)**

c. **Distinguish** between demand inflation and cost inflation. **(4 marks)**

d. **Examine** the following table showing Australia's CPI.

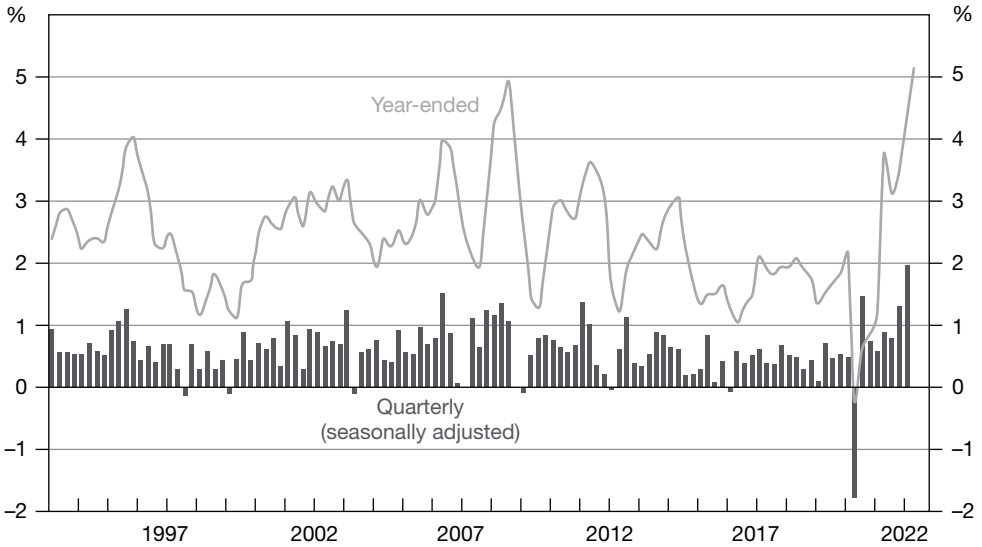
Year	2018–19	2019–20	2020–21	2021–22	2022–23
CPI at June (base year = 2011–12 = 100)	114.8	114.4	118.8	126.1	
Inflation rate (calculate annual %)	NA	..... %	..... %	..... %	..... %

Using data from the table and showing your working, **calculate** the *rate* of consumer inflation for the last two years for which data is available. **(2 marks)**

e. Drawing data from the figure below, **describe** the main changes in the rate of consumer inflation between 2019–20 and March 2022. **Evaluate** the extent to which the RBA's goal of low inflation been achieved over these 2 recent years.

(3 marks)

Consumer price inflation*



*Excludes interest charges prior to the September quarter 1998; adjusted for the tax changes of 1999–2000.

Source: ABS; RBA

f. **Identify** and **outline** one important factor that helped to explain the very low inflation rate recorded in 2019–20. **(2 marks)**

g. **Explain** how you would expect *each* of the following factors to affect Australia's rate of inflation, if the economy was initially located at domestic economic stability:

- A fall in consumer confidence
- A rise in labour productivity.

(2 marks)

h. **Identify** and **outline** one effect of a very high inflation rate and one effect of deflation. **(4 marks)**

Question 11 (23 marks)

a. **Explain** what is meant by the Australian government's *goal of full employment*. **(2 marks)**

b. **Examine** the table of hypothetical data relating to a country's population and labour force and then, showing your basic working, **calculate** the 4 labour force indicators.

Total population	12 000 000
Total number of persons aged over 15	10 000 000
Number of people employed	5 000 000
Number of people unemployed	1 000 000

(4 marks)

1. Labour force size =	..... m
2. The unemployment rate =	..... %
3. The employment rate =	..... %
4. The participation rate =	..... %

Source: © Australian Bureau of Statistics.

c. **Distinguish** *cyclical unemployment* from *structural* unemployment. **(2 marks)**

d. Other things remaining unchanged, **explain** how you would normally expect a rise in Australia's labour force participation rate to affect unemployment rate. **(1 mark)**

e. If the unemployment rate was 5.4 per cent and the underemployment rate was 7.4 per cent:
- **calculate** the under-utilisation rate showing your basic working. **(1 mark)**
- **explain** whether or not there would be a threat of a wage-price spiral. **(2 marks)**

f. During 20–21–22, Australia's unemployment rate fell faster than expected to quite low levels. **Identify** one important aggregate demand factor and one important aggregate supply factor and **explain** how each may have caused this trend. **(4 marks)**

g. Recently till early 2022, Australia's unemployment rate fell to around 4 per cent of the labour force. **Outline** the likely effects of a further decline in the unemployment rate, on the following:
- The rate of inflation
- the government's financial situation. **(4 marks)**

h. **Examine** the data in the table below relating to Australia's recent *labour market conditions*. Referring to the statistics, **describe** the recent changes in Australia's *labour market conditions* over the last two years. **(3 marks)**

Labour market indicator		2019–20	2020–21	2021–22	2022–23
1.	Rate of unemployment (percentage of labour force, at June)	7.4	4.9	3.5	
2.	Annual percentage change in the number of unemployed	39.3	–30.9	–28.6	
3.	Annual percentage points change in the unemployment rate	0.4	–0.2	–1.4	
4.	Underemployment rate (at June)	11.7	7.9	6.1	
5.	Under-utilisation rate of labour (percentage at June)	19.1	12.8	9.6	
6.	Participation rate (percentage at June)	64	66.2	66.8	
7.	Annual change in monthly hours worked	–5.7	6.8	3.8	
8.	Annual percentage change in the number of private and public sector job vacancies (year to June)	–43	184	29.7	

Source: ABS, Labour Force Australia, see https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/latest-release; Labour Force, Australia, Detailed, June 2022 | Australian Bureau of Statistics (abs.gov.au).

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TOPIC

3 Australia and the international economy

UNIT 3 AREA OF STUDY 3

OUTCOME 3

On completion of this unit the student should be able to analyse the factors that may affect the exchange rate, terms of trade and Australia's international competitiveness, and discuss their impact on Australia's international transactions and the achievement of the domestic macroeconomic goals and living standards.

LEARNING SEQUENCE

3.1 Overview 234
3.2 The gains from international trade 237
3.3 The balance of payments account used to record international transactions 245
3.4 The net foreign debt (NFD) 257
3.5 The terms of trade 262
3.6 The exchange rate 269
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3.8 Review 288



3.1 Overview

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3.1.1 Introduction

Every day, Australians conduct *international transactions* with people from other countries through trade and capital flows. International *trade* involves exporting (selling) and importing (buying) goods and services, while international *capital flows* entail the movement of money capital or investments between countries.

There has been a spectacular growth in global trade, from around 2 per cent of the world's GDP in the year 1500 CE to almost 53 per cent in 2020. Each year international trade in goods and services generates over 18 trillion (US$) worth of production globally. This creates jobs, generates incomes, provides access to cheaper goods and improves material living standards for billions of people. However, a downside of this may be the potential for greater economic instability, accelerated environmental damage and climate change.

FIGURE 3.1 International trade continues to grow every year, improving material living standards for billions of people, however it is impacting environmental damage and climate change.



Figure 3.2 (part a) shows Australia's top 10 countries with which we trade, ranked by the total annual value of exports plus imports of goods and services. These nations include China, Japan, United States, South Korea, Singapore, India, New Zealand, United Kingdom, Thailand and Malaysia. The figure also shows the type or composition of Australia's exports (part b) and imports (part c) of goods and services, ranked by value and in percentage terms.

FIGURE 3.2 Australia's top 10 two-way trading partners (part a), and the composition of our exports (part b) and imports (part c).

(a) Australia's top 10 countries for two-way trade in goods and services.

China
Japan
United States
Republic of Korea
Singapore
India
New Zealand
United Kingdom
Thailand
Malaysia

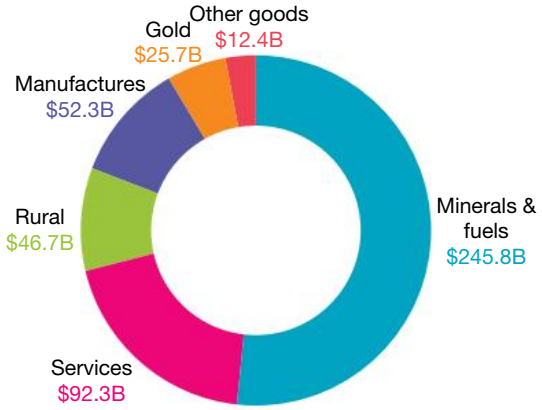


(b) The composition of Australia's exports of goods and services.

Australia's top 10 exports of goods and services by value, 2019–20

Rank	Commodity	$ million	% share	% change
1	Iron ores & concentrates	102,864	21.6	32.7
2	Coal	54,620	11.5	–21.5
3	Natural gas	47,525	10.0	–4.4
4	Education-related travel services	39,661	8.3	4.9
5	Gold	24,394	5.1	29.3
6	Personal travel (excl education) services	16,368	3.4	–27.1
7	Beef	11,258	2.4	18.8
8	Aluminium ores & concentrates (incl alumina)	8,875	1.9	–21.9
9	Crude petroleum	8,568	1.8	0.9
10	Copper ores & concentrates	6,854	1.4	14.8

Australia's exports by sector[a] 2019–20



(a) Balance of payments basis.
Based on ABS catalogues 5302.0.& 5368.0.

(c) The composition of Australia's imports of goods and services.

Australia's top 10 imports of goods and services by value, 2019–20

Rank	Commodity	$ million	% share	% change
1	Personal travel (excl education) services	33,288	8.4	–28.1
2	Refined petroleum	21,721	5.5	–13.4
3	Passenger motor vehicles	19,093	4.8	–11.5
4	Telecom equipment & parts	15,230	3.8	4.4
5	Computers	10,398	2.6	6.5
6	Freight services	10,363	2.6	2.5
7	Crude petroleum	9,474	2.4	–29.4
8	Gold	8,812	2.2	59.7
9	Professional services	8,291	2.1	7.4
10	Medicaments (incl veterinary)	8,124	2.0	8.6

Australia's imports by sector[a] 2019–20



(a) Balance of payments basis.
Based on ABS catalogues 5302.0.& 5368.0.

Source: DFAT, Australia's Trade at a Glance, 2021, pp. 21, 40, 42. Licensed under CC BY 4.0.

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
◯ The gains from international trade, including lower prices, greater choice, access to resources, economies of scale, and increased competition and efficiency	**3.2**
◯ The balance of payments and its components	**3.3**
◯ Cyclical and structural influences on Australia's current account balance	**3.3**
◯ The composition and cause of net foreign debt and net foreign equities	**3.4**
◯ The exchange rate, its meaning and measurement and the factors affecting its value, including relative interest rates, commodity prices and the terms of trade, demand for exports and imports, foreign investment, relative rates of inflation, credit ratings and speculation	**3.6**
◯ The terms of trade, its meaning and measurement and the factors that may affect the terms of trade, including commodity prices and production costs in trading partners	**3.5**
◯ International competitiveness and the factors that may affect international competitiveness, including productivity, production costs, availability of natural resources, exchange rates and relative rates of inflation	**3.7**
◯ The effect of movements in the terms of trade and the exchange rate, and changes in international competitiveness on the domestic macroeconomic goals and living standards	**3.5, 3.6, 3.7**

Key skills

These are the skills you need to demonstrate.

Key skills
◯ Define key economic concepts and terms and use them appropriately
◯ Explain key international economic relationships
◯ Explain and interpret trends and patterns in economic data and other information
◯ Apply economic concepts to analyse economic relationships and make predictions
◯ Calculate relevant international economic indicators using real or hypothetical data
◯ Gather, synthesise and use economic data and information from a wide range of sources to analyse and discuss economic issues

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

on Resources

Digital document Key terms glossary (doc-34513)

3.2 The gains from international trade

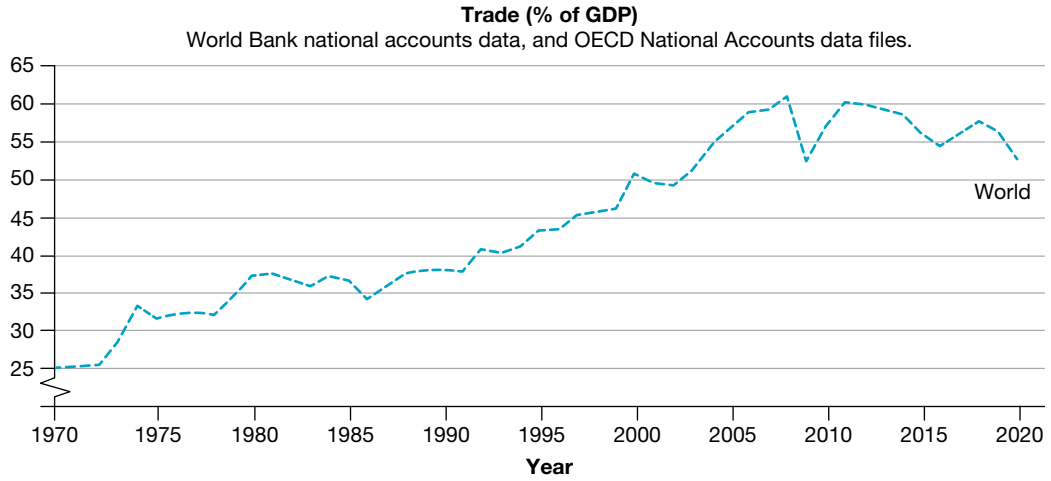
KEY KNOWLEDGE

- The gains from international trade, including lower prices, greater choice, access to resources, economies of scale, and increased competition and efficiency

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Historically, people traded, swapped, and exchanged goods and services locally and internationally, simply because it is *beneficial*. It helps us to better satisfy our needs and wants, than would otherwise be the case if we were forced to be self-sufficient and had to produce everything we consumed. In other words, trade helps us to increase production, income, and consumption, and to specialise in what we are most efficient at producing, selling the surplus of these things, and using the money gained to buy those goods and services that we could not otherwise have, given the skills and resources available. Figure 3.3 shows that despite some decline over the last few years due to COVID-19 and the disruptions to supply chains, the value of global trade expressed as a proportion of GDP has more than doubled. This is because nations generally see it as beneficial.

FIGURE 3.3 Overall, there has been a spectacular growth in the value of world trade expressed as a proportion of global GDP.



Source: Tariff rate, applied, weighted mean, all products (%). World Bank. Licensed under CC BY 4.0.

So overall, nations can *gain* from international trade in at least six important ways:

- Given that countries have *different natural, labour and capital resources*, international trade allows countries to access resources that they would not otherwise have, enabling them to lift their output and incomes, and enjoy better living standards.
- With each country having different resources, international trade allows a nation to *specialise in the production* of particular types of goods and services where it is most efficient or has a *comparative cost advantage*. Specialisation increases efficiency and ensures that more output can be gained from the resources available, leading to greater satisfaction of our wants and wellbeing.
- International trade allows local businesses to sell their goods and services in bigger-sized international markets, lowering their average unit costs and gaining *greater economies of large-scale production*, than if they only sold in relatively small local and national markets. This helps to increase our living standards.

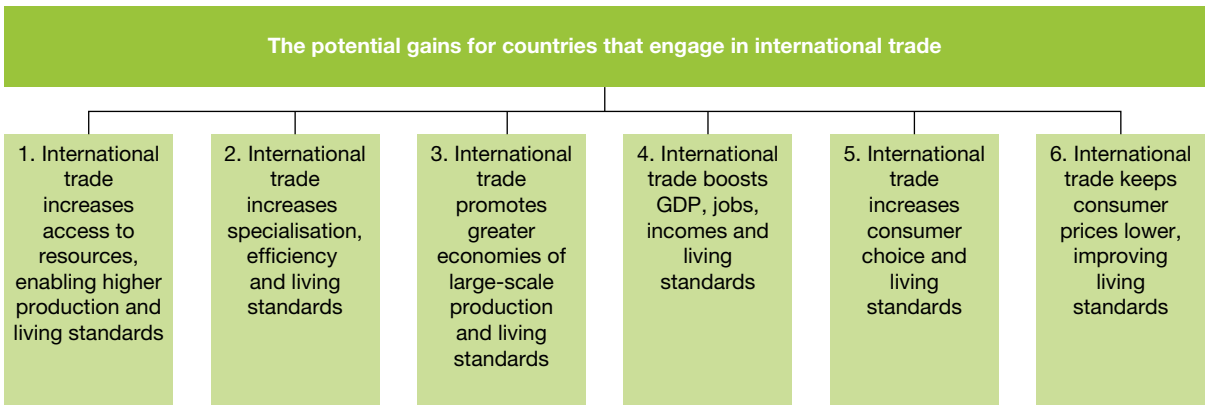
- By increasing efficiency, international trade can help *increase* exports, economic growth, jobs, incomes and living standards.
- International trade *increases consumer choice* and variety, leading to a greater satisfaction of wants than would otherwise be the case.
- Through exposing local firms to greater competition from imports in domestic markets, international trade allows us to consume *cheaper and more affordable goods and services*, increasing the purchasing power of our incomes and living standards.

It is also important to point out that these *gains* are most likely to be maximised, only if international trade occurs in *open economies* without trade barriers like government tariffs (i.e. taxes) imposed on the imports from other countries that seek to protect local firms from foreign competition. One reason why global trade has exploded in recent decades is the worldwide shift towards *freer trade* and the reduction in levels of trade protectionism. While most countries have reduced protection and have liberalised trade, some countries have gone further than others. Nowadays, Australia has a very open economy where the government has enthusiastically adopted **trade liberalisation** policies and largely dismantled **trade protectionism** by:

- cutting the level of **tariffs** and thereby making foreign goods cheaper
- reducing government cash **subsidies** paid to local firms and so allowing imports to compete on the same basis as locally manufactured products
- abolishing **import quotas** that restrict the volume of foreign goods entering the country
- signing up to more bilateral (usually between two nations) and multilateral (between many nations) **free trade agreements (FTAs)** with other countries.

It is now time to take a closer look at the six main ways that nations can enjoy higher living standards and generally gain from international trade, as shown in figure 3.4.

FIGURE 3.4 The encouragement and expansion of international trade can bring important gains or benefits for nations.



3.2.1 International trade increases access to resources and living standards

As mentioned already, nations have *different resources* — natural, labour and capital. As a result, they often tend to *specialise* in producing distinctive types of goods and services and are unable to produce others. For instance, some countries (including Australia) have vast natural resources that allow them to competitively produce more food and minerals than are needed locally. They can export the rest and use the income gained to purchase imports. For instance, nations such as China, India and Indonesia have plenty of cheap labour available for supporting manufacturing industries, while others (including Japan, Switzerland, and Singapore) have good access to inexpensive finance that makes their purchase of capital equipment more affordable.



It is only through international trade or exchange that a country can access the resources, goods, and services that it lacks, or cannot cheaply produce itself. So, what international trade does, is to help grow the quantity and/or quality of resources available to local businesses. In turn, this allows firms to grow the economy faster, expanding national production, employment, and incomes, thereby improving general *living standards*.

3.2.2 International trade increases specialisation, efficiency, and living standards

Because countries have *different* combinations of *resources*, they are more efficient at producing some types of goods or services, than others. This is reflected in their relative level of costs and prices.

Especially in recent decades with reduced government protection of local industry from imports and the growth of *freer trade*, there has been a dramatic increase in **international specialisation**. Here, countries will produce a more limited range of goods and services, focusing on those areas where they have the greatest *cost advantage* over their foreign rivals. These goods and services in which they are relatively more efficient, can then be exported, and the income gained, used to pay for imports that are too expensive to produce locally. By putting its resources to work in the most productive or efficient way, a nation can generate more output (GDP) from the same inputs, and in so doing, raise average income and living standards.

Just by looking at the origin of the goods and services consumed, we can readily see that many countries do in fact *specialise* in production. For instance, you might wear a watch made in Switzerland, eat lamb grown in Australia, be entertained with movies from the United States or India, drink coffee from Brazil, holiday in Indonesia, wear shoes made in the Philippines or T-shirts sourced from Bangladesh, drive cars made in Germany or South Korea, and use mobile phones manufactured in China.

International specialisation in production can be based on *two* types of advantage: absolute cost advantage and comparative cost advantage:

- **Absolute cost advantage**. An *absolute cost advantage* occurs if a nation is the *cheapest* or most efficient producer of a single good or service in the world. For example, if Korea is the cheapest or most efficient producer of cars, 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 from us. Clearly, both countries would benefit from international trade since each has an absolute cost advantage in different areas of production. However, as we shall see, international trade is still beneficial, even if a country has no absolute cost advantage.

- **Comparative cost advantage**. A nation has a *comparative cost advantage* if it specialises in a few key areas of production where its cost advantages are greatest, or its disadvantages are lowest. This means that *opportunity costs* (the value of production forgone or given up, which was illustrated in section 1.4.3 using a production possibility diagram) would be minimised and output maximised. Here, resources would be allocated most efficiently, and hence production, incomes and material living standards should be most favourable.

The famous English economist, David Ricardo (1772–1823), outlined the principle of comparative cost advantage and supported the idea of **free trade**. He claimed that specialisation in international trade in areas of comparative cost advantage made countries better off economically, generating benefits for all. This idea probably makes good sense since, in many ways, nations are like individuals who have greater talent or efficiency in some areas than in others. Logically, we too should specialise in the few things we do best of all and give up other pursuits!

To illustrate this concept, Ricardo used the example of two countries, England and Portugal. Each could produce *two* products, cloth, and wine, with the resources available. Table 3.1 summarises the comparative cost advantage of each country producing these products, measured in terms of the *number of labour-hours* that must be worked, *per unit of output produced*.

English economist, David Ricardo (1772–1823)



TABLE 3.1 Ricardo's example of comparative cost advantage: the number of labour-hours that must be worked per unit of output produced in England and Portugal.

Country	Cloth (hours per unit produced)	Wine (hours per unit produced)
Portugal	90	80
England	100	120

In this case, Portugal has lower expenses or an *absolute cost advantage* in producing *both* these products. The cost of producing cloth in Portugal is 90 per cent (90 hours/100 hours) of the cost of making it in England. By contrast, the cost of producing wine in Portugal is very much lower at only 66.6 per cent (80 hours/120 hours or 2/3) of the cost in England. Some might conclude from this that England could not export to Portugal since it is uncompetitive (and to survive, its industries would need government protection). From Portugal's point of view too, it perhaps *seems* that it would not pay to import goods from England.

However, let's re-examine the situation. Logically, *both* countries can benefit from trade, provided that each *specialises* in its area of relative or *comparative cost advantage.* What this means is that *relatively*, Portugal is an even more efficient producer of wine than it is of cloth. Because it has a greater comparative advantage in producing wine, it should specialise in wine rather than in cloth if it wants to minimise opportunity costs and maximise its output and living standards. By contrast, England has a relative or comparative cost advantage in cloth (this is where its disadvantage is least) and should allocate its resources accordingly to minimise its opportunity cost and maximise efficiency, production, employment, and incomes. Despite the simplistic assumptions in this example (such as the absence of transport costs involved in international trade), Ricardo powerfully argues that stronger competition from imports, free trade and specialisation in areas of comparative cost advantage, would be highly beneficial for the countries involved. It has allowed them to increase the total volume of output, employment, incomes, purchasing power and average living standards.

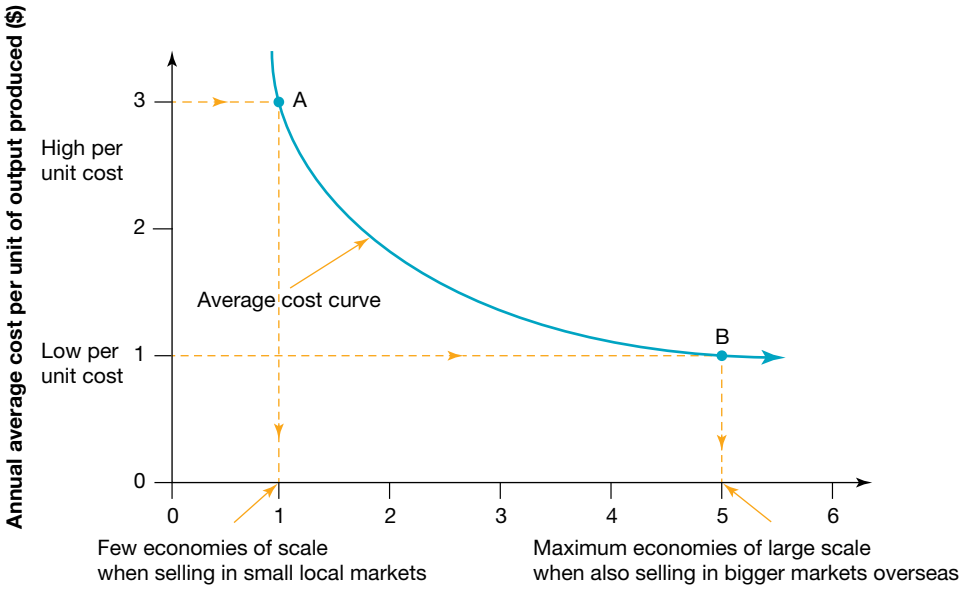
3.2.3 International trade promotes economies of large-scale production and living standards



Economies of large-scale production are reductions in a firm's *average costs per unit*, associated with an increase in its annual production level. Costs such as expensive high-tech equipment including robots, product design, purchases of raw materials, the borrowing of credit from banks, research and development, marketing and advertising, and (up to a point) management, can all be spread more *thinly*, when a business has a larger production run. What international trade can do is encourage specialisation and help businesses grow their sales volumes by allowing them to produce on a much bigger scale for a potential global market of up to 7.9 billion people, instead of the relatively small local market (e.g. potentially up to 26 million Australians).

In turn this would lower average unit costs, strengthen our international competitiveness, grow average incomes and purchasing power, and boost material living standards. This spreading of a firm's *average unit costs* over higher annual levels of output to gain economies of large-scale production, is illustrated hypothetically in figure 3.5.

FIGURE 3.5 International trade and the growth of exports can increase economies of large-scale production for a business by reducing its average costs of production per unit of output.



Notice that as a firm's annual level of production rises from 1000 to 5000 units per year (perhaps enabled by growing the size of its global export market), the average cost of making each unit falls from $3 (at point A) to just $1 (at point B). Clearly, international trade can boost production and efficiency, lower prices, strengthen competitiveness and sales, and thereby improve real incomes, purchasing power, consumption and material living standards.

3.2.4 International trade boosts GDP, jobs, incomes, and living standards

Especially in the longer term, nations with *open economies* who have adopted the principles of trade liberalisation, are far more likely to have *higher levels of efficiency*, national output, and employment — hence average per capita incomes — than those with trade barriers that protect local industry from competition. This can occur for the following reasons:

- *Greater efficiency boosts the potential GDP.* Competition from imports forces countries to *specialise* in the production of commodities where they are most efficient (or least inefficient) and have a *comparative cost advantage* (where opportunity costs are relatively lowest). Greater efficiency in resource allocation, grows productive capacity and the size of the production possibility frontier. This causes employment, real average incomes, consumption, and *material* living standards to be higher.
- *Economies of large-scale production boost efficiency and grow GDP.* Through international trade, nations will gain greater economies of large-scale production, lowering their average unit costs in design, production, marketing, finance, and transport. Over the long-term, this advances efficiency, profitability, and the expansion of businesses, leading to higher output, employment, incomes, consumption, and hence *material* living standards.
- *Greater innovation boosts GDP.* Because of stiffer international competition from imports, local firms are more likely to innovate and use new technology to lower their costs and grow technical efficiency. Again, this helps to boost the nation's productive capacity, real GDP, incomes, and *material* living standards over time.
- *Imports of capital equipment boost GDP.* International trade allows for cheaper import of machinery, resources, technology, and know-how. This helps to grow a nation's productive capacity, competitiveness, GDP, employment, real incomes and living standards.



3.2.5 International trade increases consumer choice and general living standards

International trade has created a shopper's paradise that should increase the extent to which wants can be satisfied.

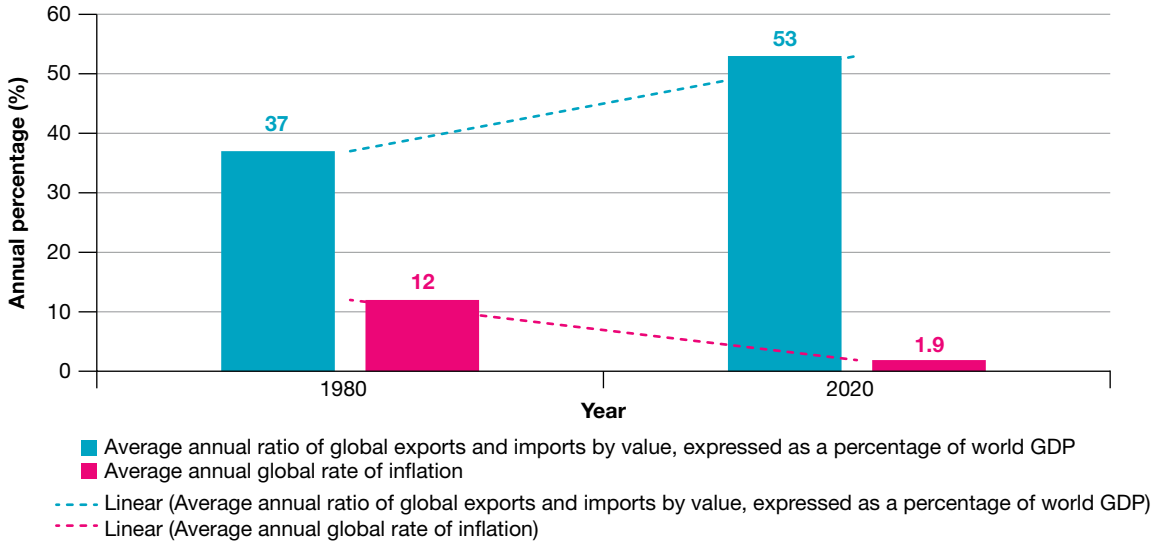
Consumers now have an exciting smorgasbord of offerings from which to choose when buying clothes, cars, cosmetics, computers, holidays, or foods. The range of goods and services is so wide that it would be impossible for any single country's producers to cater efficiently for all tastes. Having freer access to imports solves this problem and helps to raise living standards.



3.2.6 International trade keeps consumer prices lower, improving living standards

As a rule, the rapid growth of international trade (spurred on by more open economies) appears to have dramatically *slowed inflation*. Certainly, this has been the experience of most countries, including Australia. For example, studies (such as those by Melitz, Schwerhoff and Sy) showed that when tariffs came down and the volume of international trade grew as a proportion of global GDP, inflation slowed. Looking at the data in figure 3.6, notice that when the ratio of world exports and imports to global GDP rose from an average of 38 per cent in 1990, to 54 per cent recently, the average annual inflation rate came down from 26 per cent to just 4 per cent (based on over 120 countries). Indeed, trade expansion has enhanced the purchasing power of people's incomes.

FIGURE 3.6 The apparent relationship between the annual growth in the value of international trade as a proportion to global GDP and the average global rate of inflation.



Sources: Data derived from World Bank, see https://data.worldbank.org/indicator/TM.TAX.MRCH.WM.AR.ZS; https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS; https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG; also see EconoMonitor.com, *How Globalization Helped Decreasing Inflation*, 6 August 2013.

Despite supply chain issues due to COVID-19 and the war in Ukraine that added to inflationary pressures in 2020–21–22, there are several reasons why the growth in international trade over recent decades has generally been associated with *lower inflation* rates:

- ***Access to the cheapest suppliers lowers inflation***. Freer trade allows domestic households and firms to purchase goods (mobile phones, cars, appliances, clothes, machinery, steel, coal, meat) and services (education, health, travel, finance, entertainment) from the cheapest suppliers around the world. This has been boosted by the explosion of online shopping and trading, and much cheaper and faster transportation.
- ***International trade has increased efficiency in resource allocation***. As previously mentioned, with reduced protectionism and more open economies, countries have increasingly specialised in producing goods and services where they are most efficient and have a comparative cost-price advantage, and importing products more cheaply in cases where they have a cost-price disadvantage.
- ***Reduced domestic market power lowers inflation***. The growth of international trade has helped to reduce the degree of market power that exists in some domestic industries, simply because firms now face fiercer competition from imports. In their fight for survival, local businesses must now cut their costs, innovate, restructure production, and use the latest technology to help keep their prices down and quality up. In short, they are forced to become more internationally competitive.

- ***Increased wage competition lowers inflation***. In domestic labour markets, the growth of international trade in more open economies has increased the level of competition from low-wage countries. This has helped to slow the growth of wage costs around the world, enabling firms to sell their product more cheaply and competitively.
- ***Economies of large-scale production lower inflation***. The growth in international trade allows competitive firms to produce and sell on a much bigger scale so that their fixed production costs per unit (including advertising, product design, tools, and equipment) can be spread more thinly and the product sold at a lower price, both at home and abroad. Ultimately, what lower inflation means is that the real *purchasing power* of average incomes is usually higher (other things being equal or 'ceteris paribus'). This enables per capita consumption to rise, thereby bolstering *material* living standards.

3.2.7 Review of the gains and other impacts of international trade

In this section, we have touched on a few of the *gains* or benefits that international trade brings to people around the world. For instance, the expansion of trade in more open economies has:

- provided access to a greater quantity and quality of resources
- increased competition in domestic markets, encouraging specialisation and a more efficient use or allocation of resources
- helped local firms to gain greater economies of large-scale production by selling in a bigger global market
- slowed inflation and hence raised the purchasing power of incomes
- increased consumer choice and variety.

Even so, all this is not to deny that international trade can also bring *costs* because:

- the benefits have not been shared equally between nations and individuals
- there has been a rise in structural unemployment associated with foreign competition leading to local business closures, as less efficient firms have been unable to cut their costs sufficiently and remain profitable
- while trade and specialisation have increased our global inter-dependence, it has also made countries more vulnerable to disruptions to international supply chains caused by global shocks, caused by wars or pandemics
- there are significant environmental costs of increased global trade associated with increased emissions from the transportation of goods, as well as costs from the over exploitation of common access and non-renewable resources due to the rise in global GDP caused by international trade.

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Weblink The big ideas of trade
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Foreign trade — an introduction
Better understanding global trade flows
How beneficial is world trade?
Comparative advantage and terms of trade
The gains from trade
International trade: absolute and comparative advantage
Comparative advantage and the tragedy of Tasmania
Specialisation and trade
Another look at comparative advantage
Comparative advantage

3.2 Activities

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3.2 Quick quiz on

3.2 Exercise

3.2 Exercise

1. **Explain** how the growth of global trade can positively affects society's living standards. **(4 marks)**
2. a. **Outline** the main reasons why world trade has grown so quickly over the last 50 years or so. **(2 marks)**
   b. **Explain** how each of the following points associated with the growth of international trade might be beneficial and help improve living standards.
      i. Increased international specialisation efficiency in resource allocation **(2 marks)**
      ii. Greater economies of large-scale production **(2 marks)**
      iii. Better access to resources **(1 mark)**
      iv. Lower inflation **(2 marks)**
      v. More consumer choice and lower prices **(2 marks)**
      vi. Higher GDP, employment, and average incomes. **(2 marks)**

Solutions and sample responses are available online.

3.3 The balance of payments account used to record international transactions

KEY KNOWLEDGE

- The balance of payments and its components
- Cyclical and structural influences on Australia's current account balance

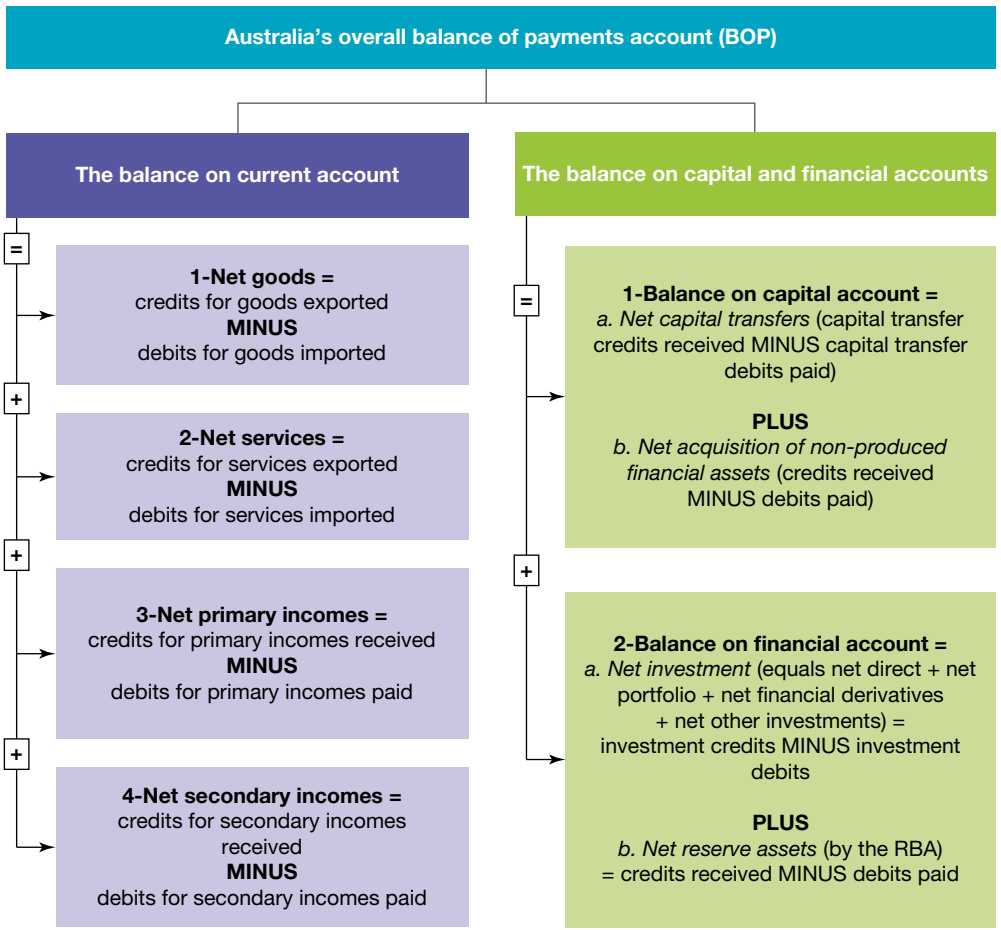
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Given the importance of international transactions involving the movement of goods, services and money capital between countries, it is vital that statistical records of these are kept using the *balance of payments account*. This information can be used to help monitor our economic performance.

3.3.1 The balance of payments account and its components

The **balance of payments account (BOP)** is a quarterly or annual statistical record of the money value of different types of financial transactions between Australia and the rest of the world. For accounting purposes, money received by Australian residents is regarded as a *credit*, while money paid by us to overseas is classified as a *debit*. Because this is a zero balance account, the overall balance of payments account always balances and the total value of credits is equal to the total value of debits. The items recorded on the BOP are grouped into either *current account* transactions or *capital and financial account* transactions, before being further subdivided. These transactions are illustrated in figure 3.7.

FIGURE 3.7 Structure of Australia's balance of payments account.



Balance of payments on current account

The **balance on current account** is broken down into *four* sub-accounts.

1. **Net goods**. This is the difference in total value between export credits for goods or merchandise sold overseas (e.g. wool, minerals and manufactured items) *minus* import debits for goods purchased from abroad (e.g. oil, electronic equipment and machinery).
2. **Net services**. This is the difference between the value of service credits received by Australia (e.g. from tourism, education, transportation, construction, financial, royalties and licence fees) *minus* service debits paid abroad (e.g. for transportation, tourism, education, royalties and licence fees, and insurance).
3. **Net primary incomes**. This is the difference in value between income credits received from overseas (e.g. wages, salaries, interest, dividends and profits) *minus* income debits paid out abroad (e.g. for wages, salaries, interest, rent, dividends and profit remittances).
4. **Net secondary incomes**. This is the difference between the value of secondary income credits received by our residents (e.g. non-life insurance transfers such as pensions) *minus* the value of secondary income debits paid abroad (such as gifts, taxes and some foreign food aid donated by our residents). Secondary incomes are different from other transactions in that they are a one-way transaction with nothing exchanged in return.



To calculate the overall balance on current account, remember the following:

Overall balance on current account = Net goods + Net services + Net primary incomes + Net secondary incomes

In Australia's case, the overall balance sometimes turns out to be a **current account deficit (CAD)**, where the total value of debits exceeds the total value of credits measured over a period of time such as a year. As we shall see, the existence of the CAD means that there will need to be a rise in the nation's net external liabilities, which are made up of debt (borrowed money) and equity (ownership). However, during 2019–20, 2020–21 and 2021–22, we ran a **current account surplus (CAS)** where the total value of credits is greater than the total value of debits measured over a period of time.

The balance of payments on capital and financial account

The *balance on capital and financial accounts* is broken down into *two* main sub-accounts: the balance on capital account and the balance on financial account.

1. **Balance on capital account**. The balance on capital account records capital transactions including net capital transfers and the net acquisition of non-produced, non-financial assets.
   - *Capital transfers* generally involve the net inflow of funds into Australia by permanent migrants.
   - The *net acquisition/disposal of non-produced, non-financial assets* covers the excess of credits over debits for the sale of copyright, patents, overseas franchises (such as KFC and McDonald's) and trademarks of a tangible nature.

   Of these two items, capital transfers are by far the largest item.
2. **Balance on financial account**. The balance on financial account records the total value of credits for investments and borrowing received by Australia from abroad (the inflow of funds) *minus* total value of debits for investments and lending by Australians abroad (the outflow of funds). It records the following transactions involving foreign financial *assets* and *liabilities*.
   - Net **direct investment** involves the purchase, setting up or expansion of companies and assets in Australia by foreigners classified as credits (the inflow of funds or assets) *minus* similar investments overseas by Australian residents classified as debits (the outflow of funds or liabilities).
   - Net **portfolio investment** is the difference in the value of transactions by foreign individuals purchasing Australian shares, debt and securities *minus* the value of similar assets purchased by our residents.

Portfolio investment flowing in from overseas is recorded as a credit (the inflow of funds or assets), while this sort of investment abroad by Australian residents is recorded as a debit (the outflow of funds or liabilities) on our financial account.



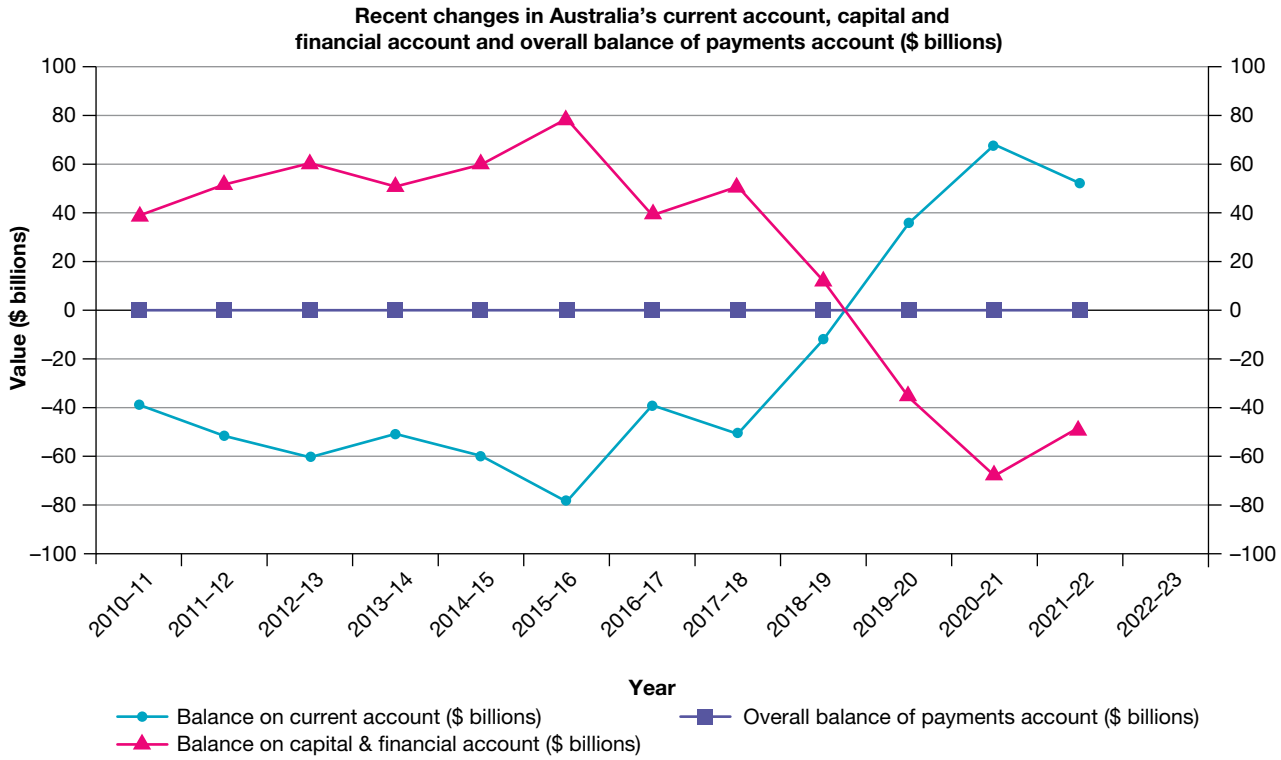
- Net financial derivatives and other investments are the difference in the value of credits (the inflow of funds or assets) *minus* debits (the outflow of funds or liabilities) for financial contracts between two parties where the value is derived from another financial instrument, such as a bond or share.
- **Net reserve assets** contains both the Reserve Bank of Australia (RBA) and government transactions involving dealings in reserves of foreign currencies, gold, special drawing rights and required contributions to the International Monetary Fund (IMF). Moneys received from overseas are categorised as credits (the inflow of funds or assets), while payments overseas are categorised as debits (the outflow of funds or liabilities) on Australia's financial account.
- **Net errors and omissions** reflects inaccuracies in the above calculations and estimations. When this category is taken into account, if there is a positive balance on Australia's capital and financial account, this will be exactly offset by a negative balance on current account (i.e. a CAD). In reverse, when there is a negative balance on the capital and financial accounts, this will be offset by a positive balance on the current account (i.e. a CAS).

To calculate the overall balance on capital and financial account, remember the following:

Overall balance on capital account = Net capital account + Net financial account

Over many decades, Australia has generally experienced CADs and so our *balance on capital and financial accounts* has been mostly *positive*. This means there has often been a net financial inflow seen as a rise in the nation's *liabilities* overseas (consisting of either foreign debt or foreign equity in the case of ownership of Australian assets such as property or shares). In this case, it will *exactly offset* a *deficit* recorded on our current account, allowing the overall BOP account to be in balance. However, because of the current account surplus during the three years to 2021–22, there was a capital and financial account deficit, so that overall, the BOP balances (i.e. it equals zero). This is shown in figure 3.8.

FIGURE 3.8 Trends in Australia's on current account, capital and financial account, and overall balance of payments account.



Source: Data derived from ABS, https://www.abs.gov.au/statistics/economy/international-trade/balance-payments-and-international-investment-position-australia/latest-release.

3.3.2 Influences on Australia's current account balance

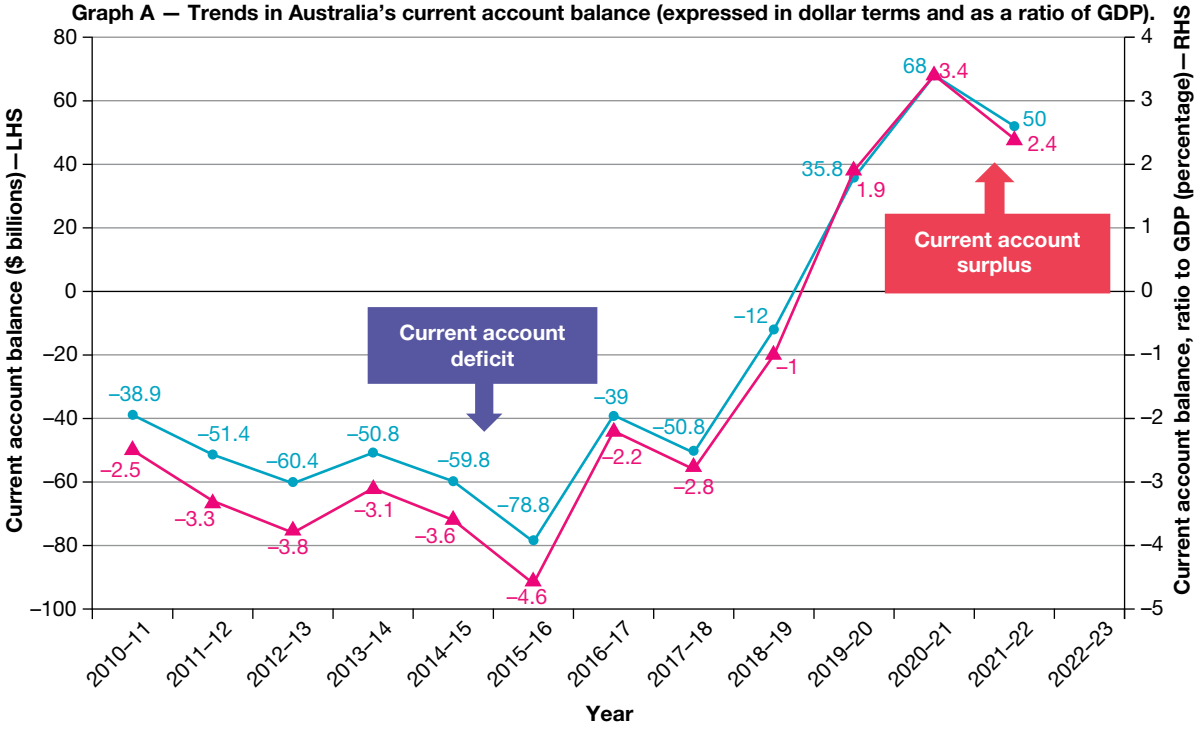
Figure 3.9 (Graph A) shows changes in Australia's current account balance over time. Traditionally, we have often recorded a CAD where the total annual value of *debits* for goods, services, primary incomes, and secondary incomes, is *greater* than the total value of equivalent *credits*. However, during 2019–20, 2020–21 and 2021–22, there was a *CAS*. Here, the total annual value of *debits* for goods, services, primary incomes, and secondary incomes was *less* than the total value of equivalent *credits*.

In addition to simply graphing changes in the current account balance over time, by measuring the absolute size of the surplus or deficit in dollar terms, to get a clearer picture, economists often express this balance as a ratio or percentage of the overall size or value of Australia's economy measured by real GDP. Hypothetically, for instance, if an economy's real GDP was equal to $100 billion and there was a CAD of $5 billion, this could be expressed as a current account balance equal to a ratio of −5.0 per cent. Alternatively, if an economy's real GDP was equal to $100 billion and the current account balance was equal to $5 billion, the current account balance could be expressed as a ratio of 5.0 per cent of GDP.

Figure 3.9 (Graph B) breaks down Australia's *current account* further into its *four* sub-accounts: net goods, net services, net primary incomes and net secondary incomes. As can be seen from the lower part of the graph, overall there is usually a CAD because most of the components are often negative. However, this mostly reflects the large deficit on net primary incomes that shows Australia's heavy dependence on overseas *borrowing* and *capital inflow*, which in turn, creates high levels of primary income debits. However, in the three years to 2021–22, there was a CAS.

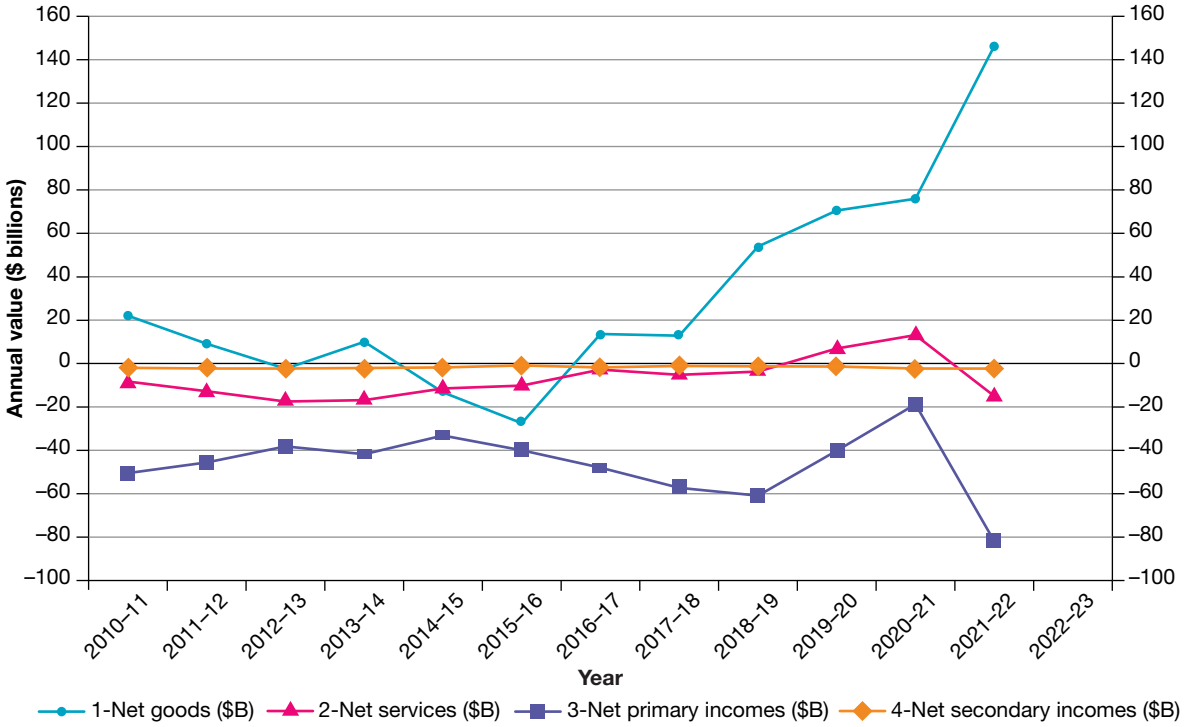
FIGURE 3.9 Recent changes in Australia's current account balance.

Graph A — Trends in Australia's current account balance (expressed in dollar terms and as a ratio of GDP).



Source: Data derived from ABS Balance of Payments and International Investment Position, https://www.abs.gov.au/statistics/economy/international-trade/balance-payments-and-international-investment-position-australia/latest-release#data-download; ABS National Accounts, https://www.abs.gov.au/statistics/economy/national-accounts/australian-national-accounts-national-income-expenditure-and-product/latest-release.

Graph B — Changes in the value of the components affecting Australia's current account balance ($ billions).



Source: Data derived from ABS, Balance of Payments and International Investment Position, Australia, Analysis & comment https://www.abs.gov.au/statistics/economy/international-trade/balance-paymentsandinternational-investment-position-australia/latest-release#key-statistics.

Having examined how the current account balance changes over time, it is now time to investigate the *two* main influences that determine whether this account is in *surplus* or *deficit*.

1. There are **cyclical influences**. These are the often short-term volatile *aggregate demand side factors* or conditions that cause the the value of spending to rise or fall, generating the typical business cycles, that in turn alter the value of net exports (i.e. X–M) and hence the balance on current account.
2. There are also **structural influences**. These are the *aggregate supply side factors* or conditions that can affect the current account balance, especially over the longer term, often by influencing our costs and international competitiveness.

Cyclical influences on Australia's current account balance

Over time, variations in the strength or weakness of our current account balance can usually be traced to changes in the *business cycle of economic activity*, that in turn reflects relatively stronger or weaker *aggregate demand side factors* or conditions both here in Australia and overseas. For example, recent cyclical influences affecting our current account balance might include the following:

- ***Changing cyclical conditions within Australia affect the current account balance:*** The general rule is this. *Stronger cyclical* levels of domestic spending and economic activity here in Australia, tend to *weaken* our *current account balance.* For instance, if there is little spare capacity in the economy, strong spending locally, perhaps due to consumer and business optimism, can lead to falling stocks, general shortages of goods and services and hence rising prices. Here, strong spending spills over onto imports, *adding* to the value of debits relative to credits on our current account. The current account balance weakens. In contrast, *weaker cyclical* levels of domestic spending and economic activity, tend to *strengthen* our *current account balance*. For example, when residents reduce their spending perhaps due to consumer or business pessimism, they buy fewer imports of goods and services from abroad, *reducing* the value of debits relative to credits on our current account. The current account balance strengthens.
- ***Changing cyclical conditions overseas affect the current account balance:*** This is the general rule. When the pace of economic activity — especially among our major trading partners abroad — is *rising*, this tends to *strengthen* our *current account balance*. Our overseas trading partners tend to buy more Australian exports and pay higher prices (i.e. an increase in the terms of trade) for them, adding to the value of credits relative to debits on our current account. The current account balance strengthens. In reverse, *weaker cyclical* levels of overseas spending and activity tend to make our *current account balance less favourable*. For example, when overseas spending is depressed and there is a slowdown in economic activity perhaps due to consumer or business pessimism abroad, they spend less on Australian goods and services, reducing the value of credits relative to debits on our current account. The current account balance weakens.

More specifically in recent years, a mixture of *cyclical factors* has affected Australia's current account balance in both positive and negative ways. For example, the recent CAS seen over the two years to 2020–21 has especially been supported by the following cyclical developments:

- ***The cyclical pickup in economic activity during 2020–21 in China and the USA*** as two of our most important trading customers, has helped to boost our exports of goods and raise the prices we have received (i.e. the terms of trade). In itself, this has helped to *strengthen* the cyclical aspect of our current account balance.
- ***The locking of our borders due to COVID-19 has prevented Australians from escaping overseas***, reducing spending on imports of services from other countries and thereby helping to make the cyclical component of our current account balance stronger. However, a downside here is that this event has also restricted foreign tourists coming in, cutting our exports of services to other countries.
- ***Mostly lower consumer and business optimism and reduced disposable incomes*** have slowed our spending on imports of goods and services, and encouraged higher levels of domestic savings. This helped to curb our spending on imports of goods and services and strengthen the current account balance.
- ***A lower exchange rate for the Australian dollar*** has made our exports relatively cheaper compared to our imports. As a result, this has helped to strengthen foreign spending on our exports, in comparison to our spending on imports, thereby *strengthening* the cyclical side of the current account balance.

Structural influences on Australia's current account balance

Changes in *structural* or *aggregate supply-side conditions* in the economy, can also influence the strength or weakness of Australia's *current account balance*, especially over the longer term. By structural influences, we are often referring to the way goods and services are produced, relative production costs for local firms (e.g. wage costs, labour productivity, the cost of utilities, interest rates on borrowed credit, company tax rates), business profitability, and our inflation rate and international competitiveness, relative to overseas. Over time, these structural conditions can either become generally *less favourable* or generally *more favourable*:

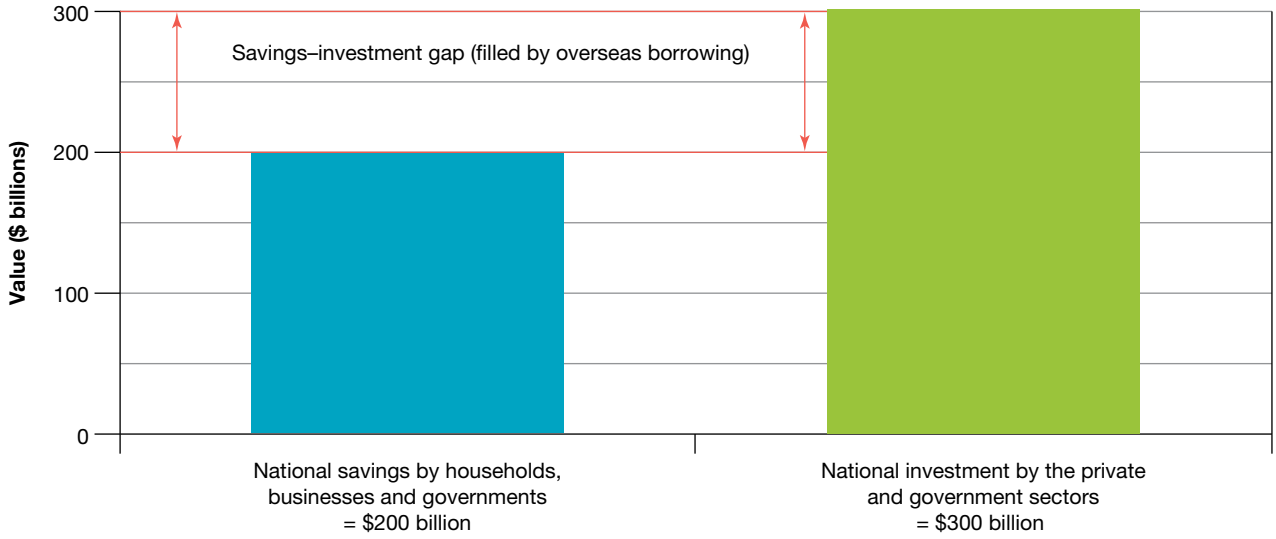
- ***Generally less favourable structural or aggregate supply conditions:*** Assume that Australia's level of economic activity was ideal and was neither too strong nor too weak. In this situation, if there was still a CAD, it would be caused by *less favourable structural influences* such as rising production costs (e.g. rises in wages, an increase in the cost of borrowing credit, high rates of company tax, and the effects of drought and floods), and reduced international competitiveness. These developments would tend to slow sales of locally made goods and services abroad, and *weaken the current account balance*. Another especially important structural cause of a weaker current account balance, is Australia's national saving-investment gap. Here, national savings by households, firms and governments are not sufficient to finance high levels of investment, so the gap is filled by borrowing credit from overseas, structurally weakening the current account balance.
- ***Generally more favourable structural or aggregate supply conditions:*** In contrast to the above situation, if there was a large *CAS*, even when our level of economic activity was ideal this would probably be attributable to generally *more favourable aggregate supply side conditions* that in turn, would strengthen the current account balance by boosting the value of credits relative to debits.

In recent years, there has been a mixture of both *more favourable structural or aggregate supply factors* helping to strengthen the current account balance, but at the same time, there have also been some other *less favourable structural developments* that have tended to weaken Australia's current account balance. For example:

- ***Slow rises in real unit labour costs*** have helped to keep production costs and prices lower, in turn *strengthening* our international competitiveness and hence the value of exports against imports.
- ***Mostly cheaper oil prices till late 2021 and COVID-19 related lockdowns***, have helped to slow the rise in the value of debits for imports, *strengthening* our current account balance. However, huge rises in oil prices especially in 2022, weakened our current account balance by increasing the value of debits for goods.
- ***High levels of overseas debt due to the national savings-investment gap***, has weakened the structural component of our current account balance. Figure 3.10 hypothetically illustrates this problem.



FIGURE 3.10 How Australia's national savings–investment gap hypothetically structurally weakens our current account balance.



Here, for example, a national savings balance of say $200 billion a year, is insufficient to finance $300 billion of investment and so the difference must be filled by borrowing abroad. In turn, this increases our foreign debt on which interest must be paid. This is recorded as a debit on the net primary incomes section of the current account, weakening the current account balance. Recent huge expansionary budget deficits due to COVID-19 have added to this structural problem for Australia.

- ***Australia has experienced a number of severe climatic events* over the last few years.** Here we might recall the bushfires of early 2019 and 2020, damaging floods in 2019–20–21–22, and the prolonged drought in eastern Australia till 2020. These events damaged infrastructure, destroyed businesses, and reduced export capacity, all of which *weakened* the structural component of our current account balance.



- ***A weak growth in labour productivity (i.e. GDP per hour worked) averaging –0.1 per cent a year over the two years to 2020–21***, has tended to undermine Australia's international competitiveness. Other things being equal, poor productivity causes our production costs to be relatively higher. Firms are forced to put up their prices to cover costs. This makes our goods and services less attractive overseas, in turn slowing export credits relative to import debits, hence *weakening* the *structural* side of our current account balance.
- ***Our poor international competitiveness*** and higher priced locally made goods and services relative to some countries, has structurally weakened our current account balance. This is because domestic consumers prefer to purchase imports and it is also more difficult to sell our exports.

on Resources

Weblink The relationship between the current account balance and exchange rates

3.3 Activities

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3.3 Quick quiz on | **3.3 Exercise**

3.3 Exercise

1. **Describe** the main features of Australia's BOP account. **(4 marks)**
2. **Distinguish** a CAD from a CAS. **(2 marks)**
3. Giving examples, **distinguish** cyclical and structural influences that affect the current account balance. **(4 marks)**
4. a. **Explain** what is meant by the BOP. Distinguish the balance of payments current account from the balance of payments capital account. **(2 marks)**
   b. Copy the table below, then classify each transaction and indicate where and how each would initially be recorded on Australia's BOP account. **(12 marks)**

Classifying Australia's international transactions for recording on the BOP account.

Transaction	Major section of Australia's BOP account (i.e. current account, or capital and financial accounts)	Minor sub-account making up Australia's current account, or capital and financial accounts	Recorded as a credit (+) or debit (–) on Australia's BOP
i. You purchase a laptop computer made in Korea for $2800			
ii. Australia sells lamb to the USA and Indonesia worth $750 million			
iii. You donate $50 in food aid to Ethiopia			
iv. BHP pays $15 million in dividends to overseas shareholders			
v. The government pays $12 billion in interest on its overseas debt			
vi. You make a $10 phone call using an overseas phone company			
vii. A permanent immigrant transfers $45 000 to an Australian bank account			
viii. Qantas sells an old aircraft to Indonesia's Garuda Airlines for $7 million			

Classifying Australia's international transactions for recording on the BOP account. *(continued)*

Transaction	Major section of Australia's BOP account (i.e. current account, or capital and financial accounts)	Minor sub-account making up Australia's current account, or capital and financial accounts	Recorded as a credit (+) or debit (–) on Australia's BOP
ix. Grand Prix tickets worth $4.5 million are sold to overseas visitors			
x. Chinese investors purchase residential and rural properties worth $25 billion			
xi. James Packer buys shares in an overseas media company worth $9 million			
xii. Overseas students from India, China and Thailand purchase $5 billion of education from Australian secondary schools and universities			

c. Use the table below to **calculate** the following balance of payments items for Australia, 2020–21. Show your working.

i. Net goods
ii. Net services
iii. Net primary incomes
iv. Net secondary incomes
v. The overall current account balance
vi. The overall capital and financial account balance. **(6 marks)**

Australia's balance of payments for 2020–21.

Item	Value ($ billions)	Item	Value ($ billions)
Goods credits	395	Primary income credits	66
Goods debits	319	Primary income debits	84
Services credits	61	Secondary income credits	9
Services debits	48	Secondary income debits	12

Source: © Australian Bureau of Statistics.

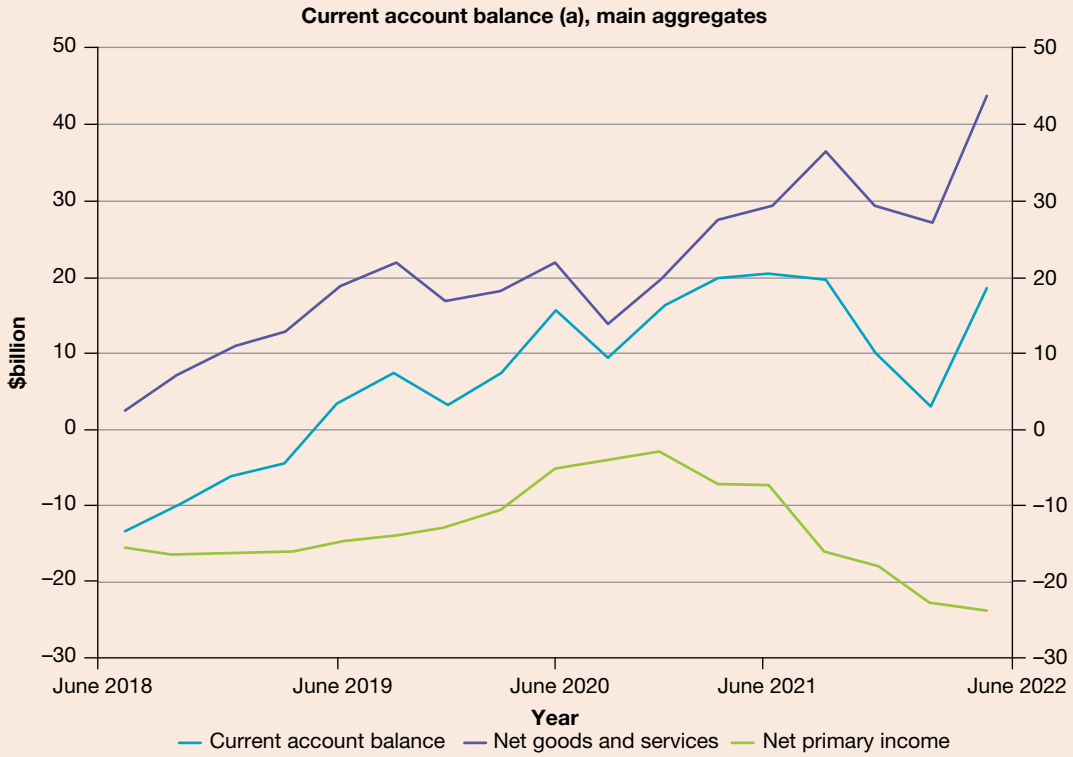
d. **Explain** the *type of relationship* that exists between Australia's balance of payments on current account and the balance of payments on the capital and financial account. **(2 marks)**

5. a. Examine the figure below relating to some of the key aggregates making up Australia's current account balance.

i. **Describe** the trend in the current account balance over the period. **(1 mark)**

ii. **Identify** and **outline** *two* likely reasons for the quarterly *surpluses* recorded on net goods and services over the four years to 2021–22. **(2 marks)**

Changes in the components of Australia's current account.



(a) Seasonally adjusted estimates at current prices.

Source: ABS, Balance of Payments and International Investment Position, Australia, 2022, https://www.abs.gov.au/statistics/economy/international-trade/balance-payments-and-international-investment-position-australia/latest-release.

b. **Explain** what is meant by Australia's *savings–investment gap* and why it exists. **(3 marks)**

c. From the following list, **select** *two cyclical or aggregate demand factors* and *two structural aggregate supply factors* and **explain** how they are likely to have affected the size of Australia's current account balance: **(4 x 2 marks)**

i. A drought in the northern and some eastern parts of Australia
ii. Generally slower rates of economic growth in China, Japan and Europe
iii. Cumulative budget deficits totalling over $370 billion between 2018–19 and 2022–23, which the Australian government partly financed by overseas borrowing
iv. The 20+ per cent fall in the exchange rate for the Australian dollar against the US dollar between 2013 and 2021
v. The onset of the COVID-19 pandemic and the locking of international borders
vi. A sustained slowdown in labour productivity
vii. A rise in Australia's terms of trade index
viii. Higher oil prices peaking at over $120 per barrel in 2022
ix. A fall in the annual level of the household savings ratio in Australia
x. An overall decline in consumer and business confidence in Japan and China.

Solutions and sample responses are available online.

3.4 The net foreign debt (NFD)

KEY KNOWLEDGE

- The composition and cause of net foreign debt and net foreign equities

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

Foreign debt is often associated with a country not *living within its means* or *paying its way* in international financial transactions. Here we might think of the problems experienced by countries such as Greece, Spain and Italy, where there has been periods of poor financial management. Hence, debt levels often tell us something about the country's external situation.

3.4.1 Definition of NFD and NFE

Net foreign debt (NFD) *is the difference in value between what Australia has borrowed from and owes overseas (our liabilities) minus what Australia has lent or invested abroad (our assets).* It is sometimes used as an indicator of Australia's external position and includes borrowing through the issue of bonds, loans, advances and overdrafts.

$$\text{Net foreign debt (NFD)} = \begin{array}{c}\text{Australia's liabilities}\\ \text{(what Australia has borrowed}\\ \text{from and owes overseas)}\end{array} - \begin{array}{c}\text{Australia's assets}\\ \text{(what Australia has lent}\\ \text{or invested overseas)}\end{array}$$

The NFD differs from foreign *equity* (the ownership of assets such as shares and property) because debt implies that there is an obligation to pay interest (that is recorded as a debit transaction under our net primary incomes) and, at some time in the future, to repay the original capital borrowed. As previously mentioned, the NFD is largely the consequence of a deficiency of national savings by the private sector (households and firms) and the public sector (various governments), to finance our high levels of national investment. As mentioned already, this is called the savings–investment gap.

Foreign borrowing through the creation of debt is one type of overseas capital inflow. The other (and much less significant) type of capital inflow is *foreign equity*. **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. Unlike NFD, NFE does not necessarily imply that it will be repaid, although foreign equity and assets owned here in Australia may result in debit transactions involving the repayment of profits and dividends that are recorded as part of the net primary incomes account.

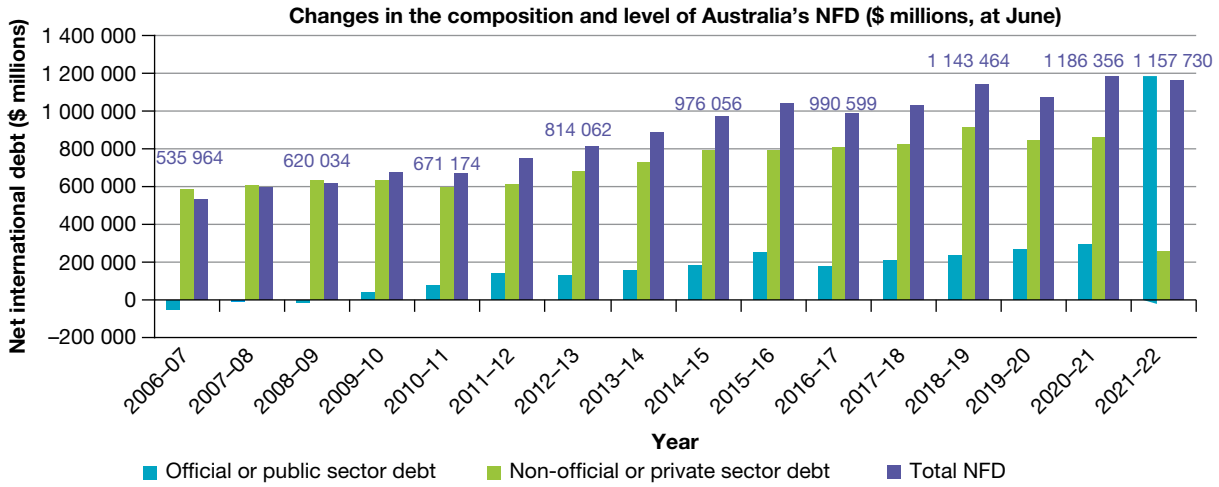
$$\text{Net foreign equity (NFE)} = \begin{array}{c}\text{Value of foreign – owned}\\ \text{Australian assets}\end{array} - \begin{array}{c}\text{Value of foreign assets}\\ \text{owned by Australians}\end{array}$$

3.4.2 The composition of and trends in Australia's NFD

Australia's NFD has grown quite rapidly over the last decade (see figure 3.12). It is now over $1 trillion, or equal to nearly 60 per cent of GDP (using GDP as a measure of the overall size of the economy). For Australia, there are *two* main types of overseas borrowers:

- official (public or government sector) borrowers, who generate **official debt**
- non-official (private sector) borrowers, who generate **non-official debt**.

FIGURE 3.12 The composition of Australia's net foreign liabilities ($ millions at June).



Source: © Reserve Bank of Australia, 2001–2021. All rights reserved.

Public sector or official government borrowing

Governments (the public sector) sometimes borrow credit overseas to help finance their *budget deficits* where the value of tax and other receipts is not enough to pay for government spending and other budget outlays. Following the global financial crisis (2008–09) and the COVID-19 pandemic, federal, state and local governments increasingly relied on this option to help finance their often large budget deficits. Indeed, the Australian government ran up over $660 billion in debt as a result of running at least 15 budget deficits (between 2008–09 and 2022–23). To the extent to which the government sourced credit from overseas, this added to our NFD, so that by 2022–23, the official or public sector's share of Australia's NFD had climbed to around 30 per cent.

Private sector or non-official borrowing

Despite the importance of official or government overseas debt, it is the *private sector* that accounts for the remaining 70 odd per cent of all overseas borrowing. The main private sector or non-official borrowers in Australia are large companies that need to raise capital for financing business expansion and takeovers. Part of this represents *net foreign equities* that arise from the excess value of foreign-owned Australian assets (such as companies, shares and property) over overseas assets owned by Australian residents. Additionally, our banks now source from overseas, a large proportion of the money they use for lending to households and firms. Indeed, Australia's relatively high domestic interest rates and lack of national savings have exacerbated this problem.

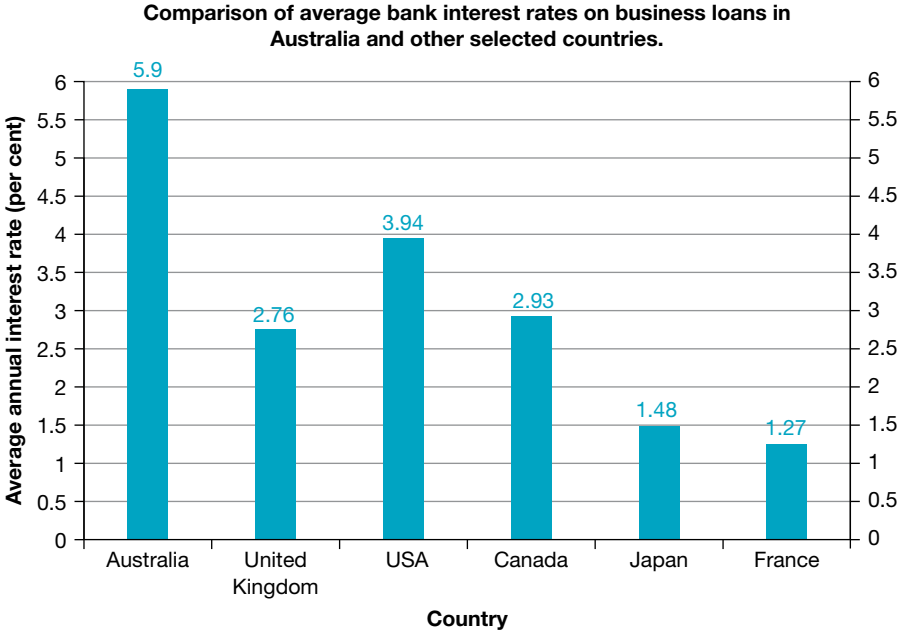
Contrary to popular opinion, debt is *not* always bad. It can be good — provided it is used wisely for sound investment projects that deliver ongoing returns and future benefits. Our overseas debt can also make up for the deficiency in local savings and make access to credit more affordable when domestic interest rates are high. However, as with all debt, the main problem is affording the ongoing interest payments. When the Australian dollar depreciates, the debt burden (if denominated in a stronger currency such as the US dollar) may become very heavy indeed. Interest and other repayments then require more Australian dollars to be converted into other currencies. Additionally, if our foreign debt rises too quickly and exceeds our capacity to sustain repayments, our credit rating as a nation may be downgraded from our current AAA rating by rating agencies (Standard & Poors, or Moody's) to reflect a higher risk. This downgrading would translate into even higher domestic interest rates (as found in countries with high levels of sovereign or government debt such as Greece).

3.4.3 The causes of Australia's NFD

There are many reasons for the rise in Australia's NFD, some of which have already been mentioned:

- ***Lack of domestic savings.*** As explained earlier, Australia has a *national savings–investment gap*, where current savings by Australian households, businesses and governments are not sufficient to finance our high levels of investment spending. This lack of savings has contributed to our high interest rates relative to those in some countries overseas. Figure 3.13 illustrates this problem. In turn, relatively high domestic interest rates encourage our banks, businesses and governments to borrow or source credit from overseas, thereby adding to our NFD. Indeed, Australia's NFD (both private and government sector borrowing overseas) has increased from 46 per cent of GDP in 2002–03 to a record high over 60 per cent in 2020–21.

FIGURE 3.13 Australia's relatively high interest rates encourage foreign borrowing and add to our NFD.



Source: Data mostly for April–May 2022, The Global Economy.com, see https://www.theglobaleconomy.com/rankings/business_credit_interest_rate/.

- ***Many budget deficits.*** The general slowdown in Australia's economic activity since the GFC led to 13 expansionary government budget deficits (where the value of the government's budget outlays is greater than the value of budget receipts) between 2008–09 and 2022–23. These were designed to provide some ongoing stimulus to spending. In part, these deficits were financed by borrowing abroad, usually by selling government bonds, adding to our NFD and CAD.



- ***Opportunities for foreign investors.*** Because of Australia's vast natural resources, there are many opportunities for foreign investors to make high returns. Although this inflow of investment capital helps grow our economy's productive capacity, it also adds to our external liabilities.
- ***Sound economic, political and social climate.*** Australia offers foreign investors a relatively stable economic and political environment, with sound infrastructure, efficient institutions (including the legal and financial systems), and an educated and skilled labour force. In addition, Australia is regarded as a good place to live and hence there has been massive foreign investment in residential property. In addition, countries such as China are using rural investment here to enhance their food and resource security at home. This adds to our external liabilities.
- ***A lower value for the Australian dollar.*** A lower Australian dollar, as seen generally between 2014–22, makes the purchase of our assets (businesses, shares, property) by non-residents relatively cheaper and hence more attractive. This adds to Australia's external liabilities.
- ***Financial sector deregulation and globalisation.*** In recent decades, there has been considerable financial sector deregulation. Combined with trade liberalisation, deregulation has increased overseas capital inflow and foreign ownership of assets such as businesses, shares and property, despite supervision of large projects by the Foreign Investment Review Board (FIRB).

3.4.4 The effects of Australia's NFD

Foreign debt can have both positive and negative effects for a country.

Positive effects of foreign debt	Negative effects of foreign debt
• Can help to finance future expansion and grow productive capacity and potential GDP • Provides access to cheaper credit than if this was borrowed locally, creating more favourable aggregate supply conditions for firms.	• May cause economic hardship as a result of rises in taxes or reduced budget outlays, in order to repay debt • There is the burden of debt repayment for future generations • Australia may lose its AAA credit rating resulting in higher borrowing costs • Interest repayments abroad weaken our current account balance.

Benefits of foreign debt

Sustainable levels of debt can be a good thing, providing that borrowed credit has been used wisely to finance investment expenditure rather than consumption spending (to satisfy our immediate wants). *Foreign debt* can provide a number of *benefits*:

- ***Finance for future expansion.*** Foreign debt can make up for a deficiency in local savings. This borrowing can help finance private and public sector investment spending that is needed to grow the nation's future productive capacity, GDP, jobs and employment opportunities.
- ***Provides access to cheaper credit.*** As Australian interest rates are often higher than some rates overseas, foreign debt can provide access to cheaper credit. This lowers production costs for businesses and acts as a favourable aggregate supply factor that can lead to improved competitiveness and business expansion.

Costs of foreign debt

There are some *downsides* to foreign debt:

- ***May cause economic hardship.*** As with all debt, the main problem is repaying interest and the principal. Excessive levels of government or sovereign debt can create great hardship for future generations, eventually forcing governments to lift taxes and cut spending, contracting economic activity. As seen in some European countries such as Greece, this causes economic activity to shrink and unemployment to rise.
- ***There is the burden of debt repayment.*** The burden of debt repayment is especially heavy if the debt is expressed in another currency and the value of the Australian dollar falls against that currency.
- ***May lose our AAA credit rating:*** If debt rises faster than the capacity of the economy to repay it, it can mean a reduction in our credit rating and, ultimately, higher domestic interest rates.
- ***Interest repayments abroad weaken the current account balance.*** The NFD is the major reason for Australia's large deficit in net primary incomes, thereby weakening our current account balance. This is largely because foreign debt requires the payment of interest by Australian residents to overseas lenders, meaning that more Australian dollars usually need to be sold in the foreign exchange market. This increases the supply of Australian dollars relative to demand and ultimately, weakens the currency and diminishes its purchasing power.

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Weblink Foreign debt

3.4 Activities

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3.4 Quick quiz on | **3.4 Exercise**

3.4 Exercise

1. **Define** the term NFD. **(1 mark)**
2. **Identify** and **explain** the main causes of Australia's NFD. **(2 marks)**
3. **Discuss** the costs and benefits of the recent rise in Australia's NFD. **(4 marks)**
4. a. **Explain** what is meant by the *national savings–investment gap* and how has this affected Australia's NFD. **(2 marks)**
   b. **Distinguish** Australia's NFD from NFE. **(2 marks)**
   c. **Distinguish** *official debt* from *non-official debt*, noting which of the two is higher in value. **(2 marks)**
   d. **Identify** and **explain** *two* factors that have led to the rise in *official* foreign debt in recent times. **(2 marks)**
   e. **Identify** and **explain** *two* factors that have led to the rise in *non-official* foreign debt in recent times. **(2 marks)**

Solutions and sample responses are available online.

3.5 The terms of trade

KEY KNOWLEDGE

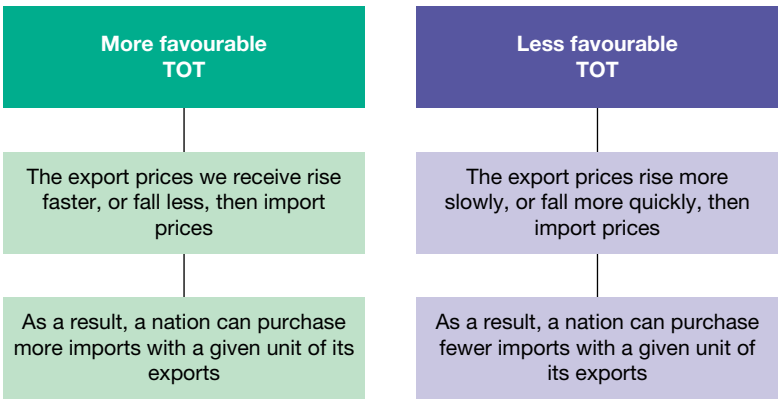
- The terms of trade, its meaning and measurement and the factors that may affect the terms of trade, including commodity prices and production costs in trading partners
- The effect of movements in the terms of trade and the exchange rate, and changes in international competitiveness on the domestic macroeconomic goals and living standards

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Changes in the *terms of trade* are one of the most important influences on Australia's BOP current account, AD, domestic macroeconomic conditions and our overall living standards.

3.5.1 Definition of the terms of trade

The **terms of trade (TOT)** measures the ratio for the average price the world is prepared to pay Australia for our exports against the average price we pay the world for our imports. Put another way, it is the amount of imports that can be purchased with a unit of exports.



3.5.2 Measurement of the terms of trade

The TOT is measured by means of an *index* that uses a base year (where the index equals 100 points) to compare following years.

$$\text{The terms of trade index (TOT)} = \frac{\text{Export price index}}{\text{Import price index}} \times 100$$

Here the *export price index* is constructed by measuring changes in the *average prices* of a basket of Australian exports, with items weighted according to their relative importance in trade. Similarly, the *import price index* measures changes in the average prices of our imports, with items weighted according to their relative importance.

The TOT is primarily regarded as a cyclical or *aggregate demand factor* affecting spending levels and the pace of economic activity. This is because the *prices* we receive or pay in international transactions affect the total *value* of our exports and the value of our imports. When, for example, the world chooses to pay us *lower prices* for our exports (as happened with our commodities during 2013–16 and 2019–20) because of *weaker global demand*, this normally causes a *drop* in the *value of exports* sold (lower injections), relative to the value of imports purchased (higher leakages). In turn, this tends to *slow* AD and economic activity.

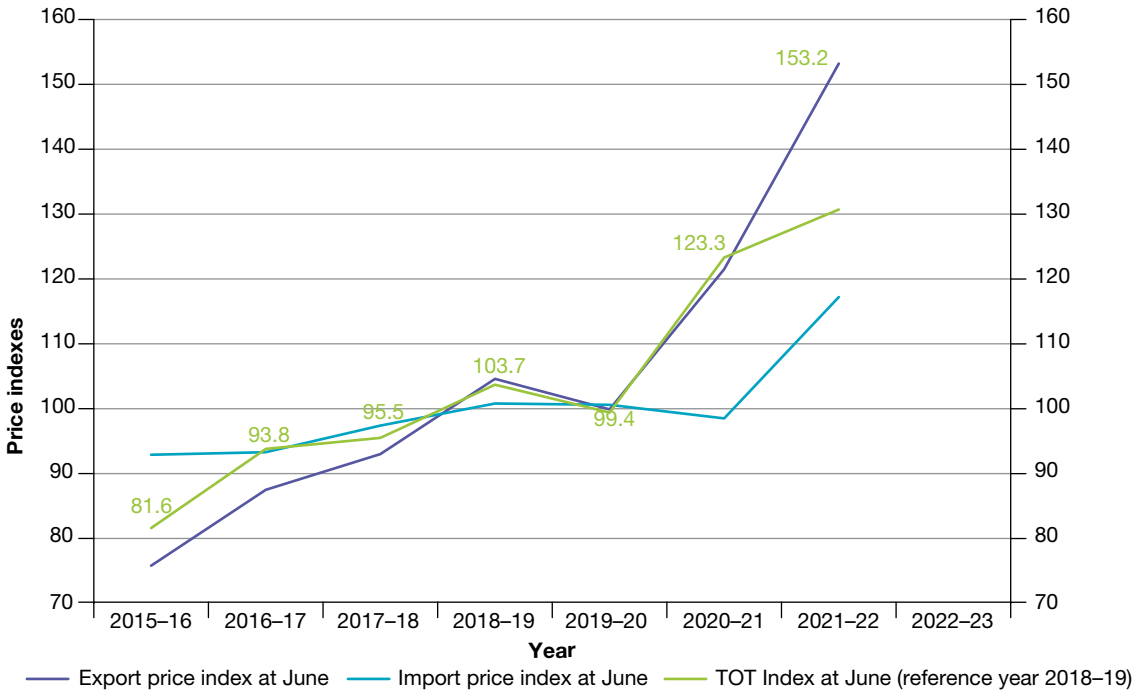


In reverse, if the world pays generally *higher prices* for our exports relative to imports because there is a greater shortage where *global demand is relatively stronger* (as in 2020–21–22), this normally *boosts the total value of exports* (higher injections) relative to imports (lower leakages). This strengthens our level of AD and economic activity.

3.5.3 Trends in Australia's terms of trade

Figure 3.14 shows that during 2019–20, Australia's TOT weakened as export prices fell relative to import prices. More recently in 2020–21–22, mostly higher export prices relative to lower import prices, saw an impressive rise in our terms of trade.

FIGURE 3.14 How changes in export and import prices affect Australia's terms of trade index.



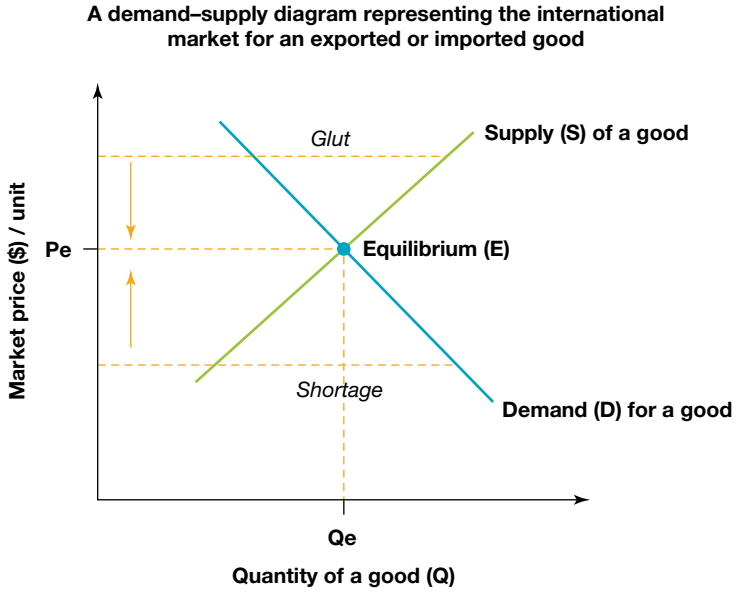
Source: Data derived from ABS, Balance of Payments, analysis & comment data https://www.abs.gov.au/statistics/economy/international-trade/balance-payments-and-international-investment-positionaustralia/ latest-release.

3.5.4 Factors that may affect Australia's terms of trade

Australia's TOT display the *prices* received for the basket of our *exports* relative to those paid for a basket of *imports* in world markets. In turn, these reflect the various *global conditions of demand* for our exports and imports, and the *global conditions of supply* of exports and imports. Assuming that global competition

is reasonable and countries are *price takers* (and not price makers), the price of each good (P_e) is largely determined by its level of global demand (D) and global supply (S) at market equilibrium (E). This situation is shown hypothetically in figure 3.15.

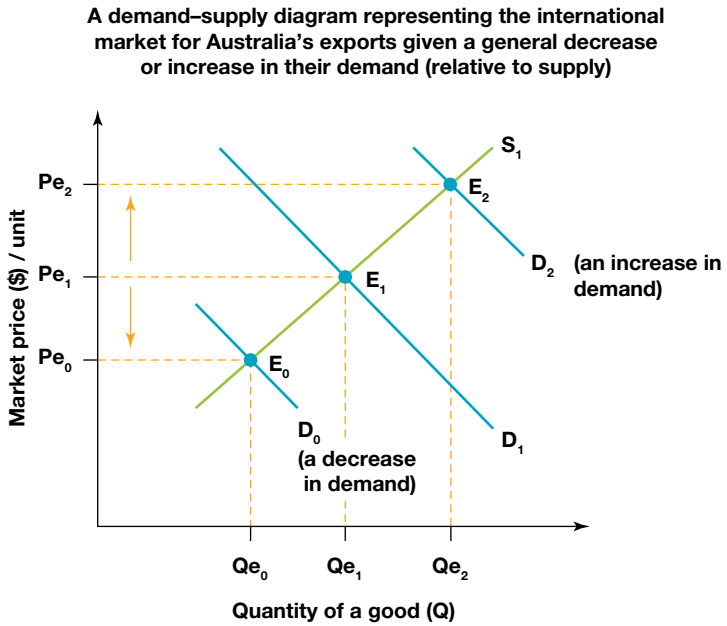
FIGURE 3.15 How global demand and supply of each good traded can determine its market price and thus influence Australia's terms of trade.



Changes in global conditions of demand

The level of *world demand* for Australia's exports has a tremendous influence on the prices we are paid and hence our TOT. This is shown in figure 3.16.

FIGURE 3.16 How a general increase or decrease in the global demand for our exported goods might help to cause their price to rise or fall, thus affecting Australia's terms of trade.



Hence, when there is an overall *decrease in the global demand* for Australian exports of commodities (such as wheat, beef, wool, coal and iron ore) and manufactured items at a given price (from D_1 to D_0), relative to their global supply, the *prices* we receive for exports are *lower* (moving from P_1 to P_0), depressing the TOT. *Global demand* for our exports may *decrease* as a result of several factors:

- weaker rates of economic growth among our major trading partners such as China, Japan or the United States (as initially occurred during the COVID-19 pandemic of 2020)
- depressed levels of consumer and business confidence abroad reducing the demand for exports of our goods
- reduced growth rates in global disposable income or population
- faster domestic rates of inflation and a fall in our international competitiveness.

In reverse, when there is an *increase in the global demand* for our exports (D_1 to D_2) at a given price (relative to their global supply), this tends to cause a *rise* in export *prices* (P_1 to P_2), perhaps *increasing* our terms of trade.

Global demand for our exports may *increase* as a result of several factors:

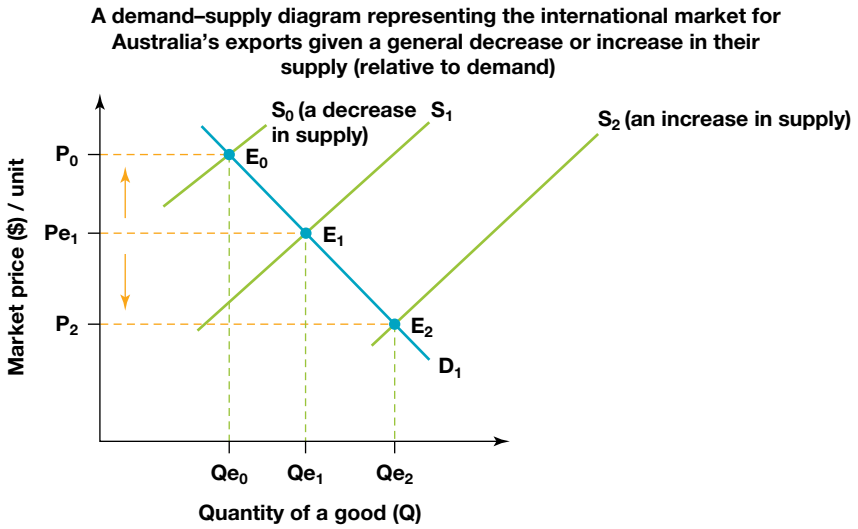
- stronger rates of economic activity among our major trading partners
- greater levels of consumer and business optimism overseas
- faster growth rates in global disposable income or population
- slower domestic rates of inflation and an increase in our international competitiveness.

We have now investigated how a general increase or decrease in world *demand* for Australian exports affects our *export prices* and hence the TOT. Let us turn now to consider how the global conditions of *supply* can also affect our terms of trade.

Changes in global conditions of supply

Changes in the *global supply* of commodities that Australia exports also have a significant influence on the prices we are paid and hence our TOT. This is illustrated in figure 3.17.

FIGURE 3.17 How a general increase or decrease in the global supply of traded goods can help to cause a rise or fall in our export prices, thus affecting Australia's terms of trade.



Hence, when there is an *increase in the global supply* (from S_1 to S_2) of the commodities Australia exports (such as wheat, beef, wool, coal and iron ore) and manufactured items (relative to their global demand) at a given price, the general prices we receive for exports are *lower* (falling from P_1 to P_2). This tends to make our TOT *less favourable*.

The *global supply* of the things we export may *increase* due to the following:

- new discoveries of minerals or the opening of new mines
- the effect of new technology on productivity and hence production
- ideal domestic and international growing conditions for crops
- relatively lower production costs and higher overall profitability in production, globally.

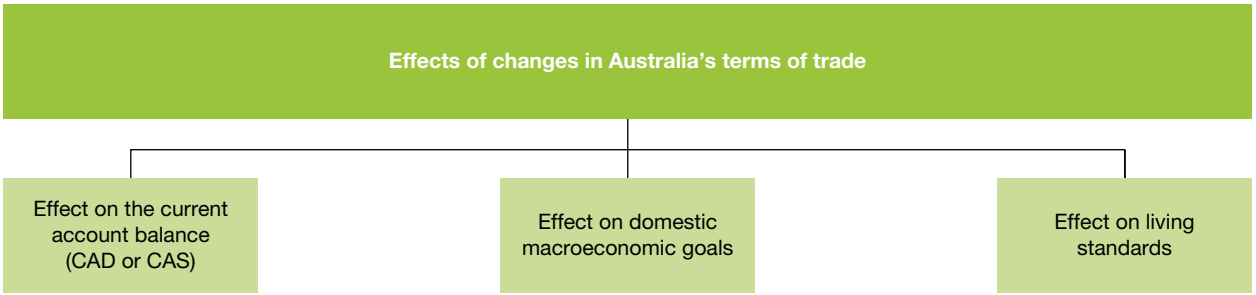
By contrast, when there is a *decrease in the global supply* of the commodities and goods that Australia exports at a given price (S_1 to S_0), the prices received tend to *rise* (from P_1 to P_0), and with them, possibly our terms of trade. Supply might *fall* due to the following:

- resource depletion and exhaustion
- declining productivity
- severe climatic conditions here or overseas or the impact of pandemics and supply chain issues on global production
- higher production costs and lower general profitability in production, globally.



3.5.5 Effects of movements in Australia's terms of trade

Australia's TOT has very significant effects, not just on the current account balance and exchange rate, but also on AD and the level of domestic macroeconomic goals and living standards.



Effects of a change in the terms of trade on Australia's current account balance

When the *terms of trade* rise or fall (due to changes in our export *prices* relative to import *prices*), this will affect the *values* of both exports and imports and hence Australia's current account balance (i.e. the size of the CAD or CAS).

- *A fall in the TOT* tends to weaken the current account balance (i.e. cause the size of the CAD to get bigger or the CAS to get smaller). This is because when we receive relatively lower prices for our exports, for example, it often means that there is a relatively weaker demand internationally for our goods. In turn, the value of credits for our exports usually decreases, while dearer global prices paid by us for imports tend to increase the value of import debits, either adding to the CAD or reducing the CAS.
- *A rise in the TOT* usually tends to *strengthen* the current account balance (i.e. cause the CAD to get smaller or the CAS to get bigger). This is due to higher prices causing a rise in the value of credits for exports relative to debits for imports.

Effects of a change in the terms of trade on domestic macroeconomic goals

The TOT is an important *aggregate demand factor* that can affect the level of spending and hence influence the achievement of otherwise of Australia's domestic macroeconomic goals.

- A *decline* in the TOT tends to *weaken* the value of our export sales (referring to the circular flow, lower injections perhaps) relative to import spending (higher leakages), and hence in itself, tends to slow the value of net exports (i.e. X–M) and hence AD. This is because relatively lower export prices against those for imports, typically reflect weaker global demand relative to global supply. In turn, this impacts on the achievement of the government's *three* key domestic macroeconomic goals:
  - the cyclical rate of *economic growth* will tend to *slow,* perhaps below the 3 per cent target, as sales and new orders decline, and firms cut their production to avoid further unplanned rises in their stocks of goods
  - the rate of cyclical *unemployment* is likely to *rise* because firms cut production and hence reduce their demand for resources including labour
  - demand *inflation* may *slow,* perhaps below the 2–3 per cent target range, because with reduced sales and rising unsold stocks of goods, many sellers are likely to discount their prices.



- A *rise* in the TOT (e.g. 2020–21) typically means we are enjoying strong sales and hence receiving better prices for our exports relative to those paid for imports. This tends to boost the value of net exports (higher injections relative to leakages) strengthening AD. If the economy was previously *weak*, this extra stimulus to AD gained from *stronger terms of trade* should help to enhance the achievement of the government's *three* key domestic macroeconomic goals:
  - The cyclical rate of *economic growth* will tend to *strengthen* towards the 3 per cent target, without initially adding to inflationary pressures, because firms have spare capacity to lift production in response to rising orders.
  - The rate of cyclical *unemployment* will tend to *fall* towards the NAIRU (i.e. the non-accelerating inflation rate of unemployment), because as firms try to lift their production, they increase their demand for resources including labour.
  - Demand *inflation* may start to *rise* but only slowly, while there is still unused productive capacity, since widespread shortages are avoidable.

Effects of changes in the terms of trade on living standards

There are several ways whereby a change in the terms of trade can affect both material and non-material living standards.

- A *decline in the TOT* usually tends to *lower our living standards*. This is because if we receive lower prices for our exports relative to those paid for imports, the value of our export sales falls (lower injections) relative to the value of imports (higher leakages) thereby slowing AD. As mentioned, this tends to weaken economic growth and cause a rise in cyclical unemployment. This usually means lower average incomes, and hence reduced purchasing power, consumption and material living standards. In addition, because of higher unemployment, this especially erodes some aspects of non-material living standards relating to the quality of daily life by increasing unhappiness, stress levels, feelings of social isolation and failure, and reducing physical and mental health outcomes.
- In reverse, a *rise in the TOT* usually *improves our living standards*. This is because if we receive better prices for our exports relative to those paid for imports, the value of our export sales rise relative to the value of imports, accelerating AD. As mentioned, this tends to lift economic growth and cause a drop in cyclical unemployment. This usually means higher average incomes, and hence improved purchasing power, consumption and material living standards. In addition, because of lower unemployment, this especially strengthens our non-material living standards by tending to improve happiness along with physical and mental health outcomes, and reduce stress levels and feelings of social isolation.

Resources

Weblink Comparative advantage and terms of trade

3.5 Activities

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3.5 Quick quiz | **3.5 Exercise**

3.5 Exercise

1. **Define** what is meant by Australia's TOT. **(1 mark)**
2. **Explain** what is meant by the phrase *less favourable TOT* for Australia. **(1 mark)**
3. **Identify** and **explain** how both aggregate demand and aggregate supply factors can affect Australia's TOT. **(4 marks)**
4. **Explain** how changes in the TOT affect each of the following variables:
   a. the current account balance **(2 marks)**
   b. the exchange rate. **(2 marks)**
5. a. **Explain** how Australia *measures* the terms of trade. **(2 marks)**
   b. Examine the table below showing the hypothetical data relating to a country's export price index and import price index.
      i. Showing the formula, **calculate** the TOT index for the four years 2019–20 to 2022–23. **(2 marks)**
      ii. **Describe** the overall trend in this country's TOT index over the period, referring to the data. **(1 mark)**

Year	Export price index	Import price index	TOT index
2018–19	100	100	100
2019–20	130	120	
2020–21	110	110	
2021–22	90	100	
2022–23	80	90	

   c. **Outline** the general determinants or *causes* of changes in Australia's TOT index. **(2 marks)**
   d. **Identify** and **explain** the key factors that caused Australia's TOT index to fall in 2019–20 and then rise in 2020–21. As part of your answer, illustrate the impacts of these factors hypothetically on D–S diagrams representing global markets for our exports and imports. **(4 marks)**
   e. **Explain** how you would expect a rise in Australia's TOT index to affect each of the following variables.
      i. The achievement of our key domestic macroeconomic goals **(4 marks)**
      ii. Living standards. **(4 marks)**

Solutions and sample responses are available online.

3.6 The exchange rate

KEY KNOWLEDGE

- The exchange rate, its meaning and measurement and the factors affecting its value, including relative interest rates, commodity prices and the terms of trade, demand for exports and imports, foreign investment, relative rates of inflation, credit ratings and speculation
- The effect of movements in the terms of trade and the exchange rate, and changes in international competitiveness on the domestic macroeconomic goals and living standards

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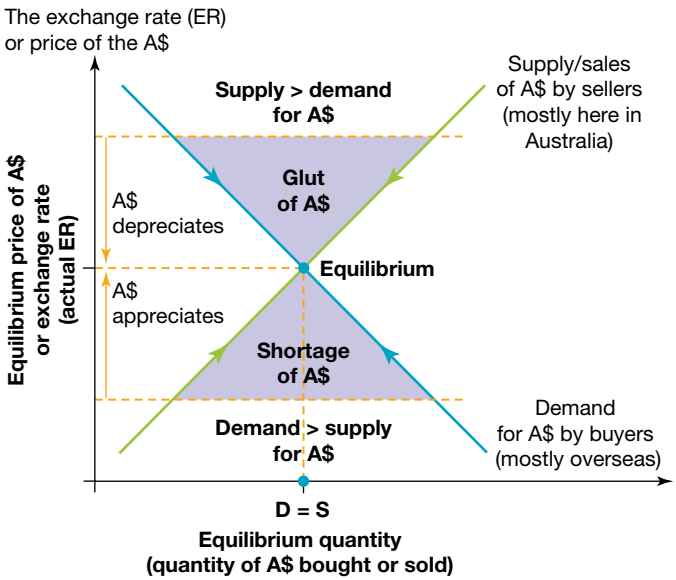
Because different countries use different currencies, it is necessary to swap or *exchange currencies* when conducting international trade and other financial transactions. For this to occur, it is essential that we have a system to swap or exchange the currency of one country (such as the Japanese yen, the euro or the US dollar) into that of another (such as the Australian dollar or the British pound). Currencies are swapped at different exchange rates, and these rates are generally determined by the number of buyers and sellers of each currency in the foreign exchange market. Over time, exchange rates move up and down due to changes in the demand relative to the supply of the currency. Among other things, these changes affect the prices we pay for imports of foreign goods such as electronics and oil and services like travel, and education, relative to the prices people overseas pay for Australian goods such as iron ore and services including holidays, and thus, changes in the exchange rate also affect our levels of AD, GDP and employment.

3.6.1 The meaning and measurement of the exchange rate

The *exchange rate measures the price or value of the Australian dollar when it is swapped for other currencies*. Exchanging currencies is necessary because a nation's residents normally want to be paid in the currency unit appropriate for their country.

Australia has a *floating exchange rate*, where the value or the equilibrium price for the Australian dollar is decided in the **foreign exchange market** by currency buyers (demanders) and currency sellers (suppliers). This is shown in figure 3.18.

FIGURE 3.18 How the exchange rate is determined in the foreign exchange market for the Australian dollar (A$).

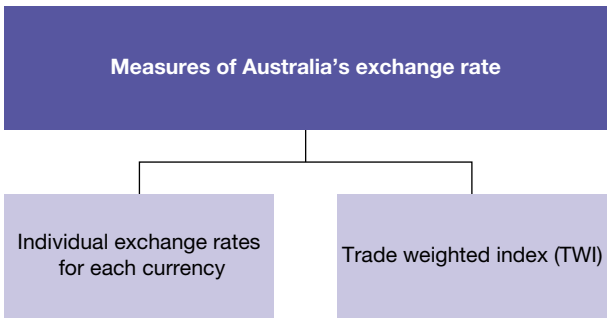




The exchange rate for the Australian dollar will *appreciate* (rise in value) in the foreign exchange market when there is less selling (a decrease in supply) or more buying (an increase in demand) of our currency. This may follow stronger than expected trade figures, improvements in the terms of trade, strong overseas economic activity, rises in domestic interest rates relative to overseas rates, speculation of a rising dollar, and improved price competitiveness of our economy against prices in economies overseas. However, the exchange rate will *depreciate* (fall in value) when there is more selling and less buying of our dollar. This may reflect rapid domestic economic growth, strong consumer and business confidence locally, cuts in local interest rates, global recession, depressed commodity prices, and the release of worse than expected trade figures. One consequence of a floating exchange rate like this is that market forces (i.e. changing demand and supply conditions for the Australian dollar) sometimes create instability and unpredictability in the exchange rate for the Australian dollar.

The *two* main measures of Australia's exchange rate are:

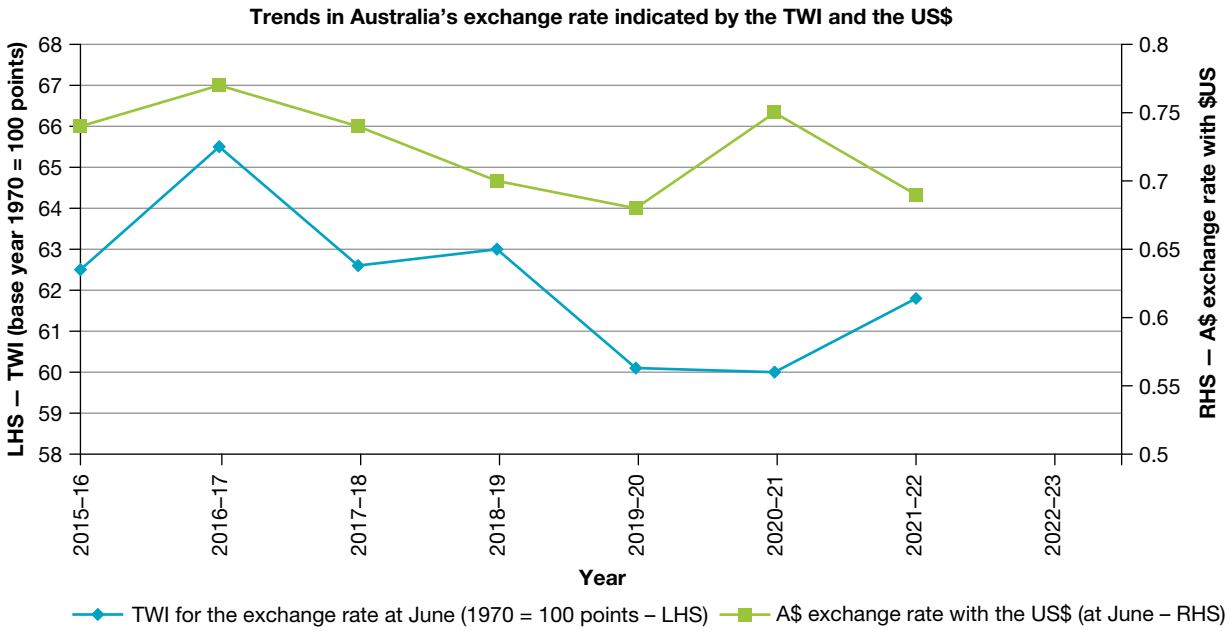
1. *Individual exchange rates.* The Australian dollar has a separate exchange rate for every currency in the world, including the rate for US dollars, the euro, British pounds sterling, Japanese yen, Chinese renminbi and the Indonesian rupiah. These rates express how many currency units for each country can be purchased with one Australian dollar.
2. *Trade weighted index (TWI).* The **trade weighted index (TWI)** represents the average exchange rate for a basket of foreign currencies each weighted according to its relative importance for Australia's trade (e.g. the US dollar is weighted more heavily than the Indonesian rupiah). Because the TWI is an index, a base year (equal to 100 points as at May 1970) is used to compare changes in the currency's value in subsequent years. A rise in the TWI between one year and the next means that the Australian dollar has appreciated against most of the other currencies in the basket, while a fall in the TWI means there has been a general depreciation.



3.6.2 Recent trends in Australia's exchange rate

Figure 3.19 shows that over the past decade, the exchange rate for the Australian dollar has moved cyclically. A peak in the TWI for 2016–17, was followed by a general decline in the years to 2020–21.

FIGURE 3.19 Trends in Australia's exchange rate indicated by the TWI and US dollar.



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3.6.3 Factors affecting the value of Australia's exchange rate

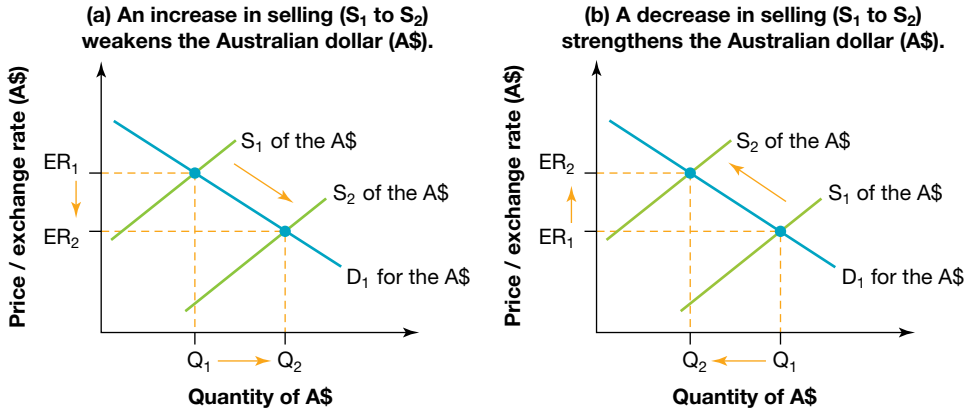
Rises and falls in the exchange rate come down to changing aggregate demand- and supply-side conditions here and abroad. These influence the value of purchases (D) and sales (S) of the Australian dollar in the foreign exchange market.

Factors affecting the sale or supply (S) of the Australian dollar

When *Australian* residents purchase imports of goods or services, make income payments or invest overseas, they must *sell* their Australian dollars (A$) to buy another currency. Figure 3.20 shows what happens in the foreign exchange market when sales (i.e. the supplies) of the A$ rise or fall.

- If sales of the A$ *rise* (S_1 to S_2 in part a) and exceed the demand for the currency at the original price or exchange rate (ER_1), there will be a **depreciation** of the exchange rate (to ER_2).
- However, in reverse, when sales of the A$ *fall* (S_1 to S_2 in part b) relative to the demand for the A$ at the original price or exchange rate (ER_1), there will be an **appreciation** of the currency (to ER_2).

FIGURE 3.20 Changes in sales of the Australian dollar affect the exchange rate in the foreign exchange market.



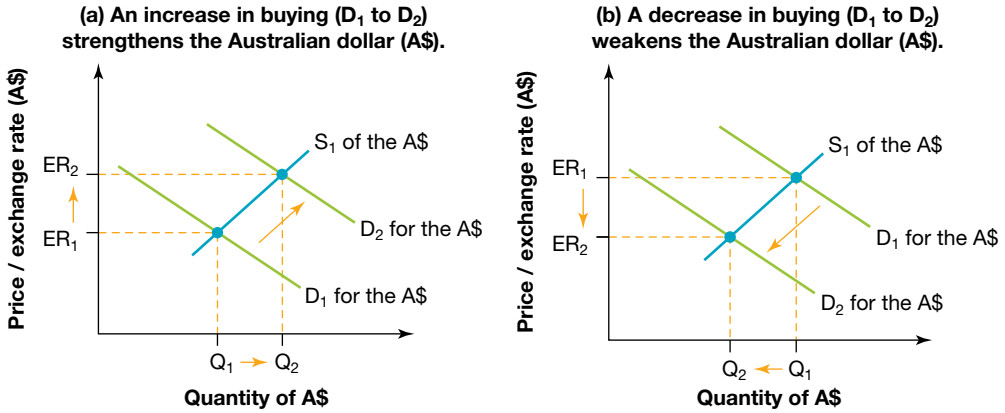
The number of dollars sold or *supplied* (S) in the foreign exchange market (e.g. to pay for imports of goods and services, and incomes abroad) and hence the exchange rate for the A$, can be affected by the following factors:

- Changes in local consumer and business confidence can alter our spending on imports and thus sales of the A$.
- Changes in our tax rates and disposable income can alter our spending on imports and thus sales of the A$.
- movements in the terms of trade and the prices of imports can affect the value of spending on imports and thus sales of the A$
- Changes in levels of inflation, production costs and competitiveness, relative to those overseas, can affect our spending on imports and thus sales of the A$.
- Changes in levels of interest rates on loans and overdrafts, relative to those overseas, can affect decisions about the level of lending and investment by locals overseas and hence sales of the A$.
- Changes in budget tax receipts, outlays and the overall outcome (equal to budget receipts minus outlays) can affect our spending on imports and thus sales of the A$.
- Changes in the rate of population growth can affect our spending on imports and thus sales of the A$.
- Changes in household savings ratio (the percentage of income not spent) may be affected by pandemics and disruptions of supply chains, that can affect our spending on imports and thus sales of the A$.
- Speculation about future changes up or down in the exchange rate can affect our decisions to sell the A$.
- Sudden changes in our credit rating relative to that for other countries, can affect our decision to sell the A$.

Factors affecting the purchase or demand (D) for the Australian dollar

When people overseas want to purchase our exports, make income payments or invest in our assets, they must first *sell* their currency and then *buy* Australian dollars in the foreign exchange market. Figure 3.21 shows what happens in the foreign exchange market when the demand for or *purchases* of the A$ rise or fall.

FIGURE 3.21 Changes in purchases of the Australian dollar affect the exchange rate in the foreign exchange market.



- If the *demand* for our currency *rises* relative to its supply of the A$ (the shift from D_1 to D_2 shown in part a), the price of the dollar or exchange rate will *appreciate* (from ER_1 to ER_2).
- If *fewer* A$ are bought relative to the supply in the foreign exchange market (the shift from D_1 to D_2 shown in part b), the A$ will *depreciate* (from ER_1 to ER_2).

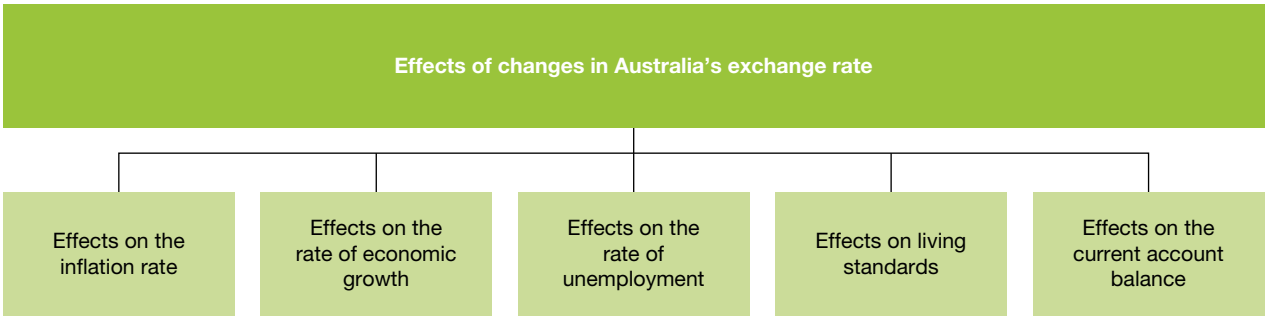
The number of dollars *bought* (D) in the foreign exchange market (e.g. when those overseas pay us for our exports and incomes) and hence also the exchange rate, can be affected by the following factors:

- Changes in the level of economic activity overseas in our major trading partners (e.g. China, Japan and the United States) and globally can alter sales of our exports and hence the demand for the A$.
- Changes in consumer and business confidence in our major trading partners and globally can affect our export sales and hence the demand for the A$.

- Movements in the terms of trade and changes in our export commodity prices can alter the demand for the A$.
- Changes in our productivity, production costs, international competitiveness and relative inflation rates, can affect the demand for our goods and services and hence the demand for the A$.
- Speculation about future changes in the exchange rate can affect decisions by those overseas, whether to buy the A$.
- Changes in the interest rate differential (gap) between Australia and other nations can alter the demand for the A$.
- Changes in the level of foreign investment coming into Australia affects the demand for the A$.
- Changes in our credit rating relative to other countries can affect the buying or demand for the A$.

3.6.4 Effects of movements in Australia's exchange rate

Changes in the price of the A$ in the foreign exchange market have powerful *effects* on our key domestic macroeconomic goals (low inflation, strong and sustainable economic growth, and full employment), and hence living standards. In addition, the exchange rate can cause the size of the CAD to rise or fall. This is largely because the exchange rate can act as an *aggregate demand factor* affecting levels of net export spending (X–M) and economic activity, as well as an *aggregate supply factor* affecting our international competitiveness. Now let us look more closely at the effects of a changing exchange rate on Australia's three key domestic macroeconomic goals and living standards.



Effects of a change in the exchange rate on the rate of inflation

The RBA and the government try to pursue *the goal of low inflation* (i.e. price stability) — a slow average rise in general consumer prices of 2–3 per cent annually over the cycle. Rises and falls in the exchange rate for the A$ can affect the rate of demand inflation, as well as the rate of cost inflation.

Demand inflation

- *Demand inflation* can occur when there is excessive and strongly rising spending in an economy that has little or no unused productive capacity. Here, there will be boom conditions with widespread shortages of goods and services. As an *aggregate demand factor, a falling A$* can further stimulate the value of exports or injections (because they are cheaper and more attractive abroad) while depressing imports or leakages (because they appear dearer and less attractive to us). When the value of net exports (X–M) rises, following a fall in the exchange rate for the A$, and there is already low unemployment or little unused productive capacity available, stocks fall and firms cannot readily replace them. This can lead to widespread shortages of goods and services, and hence *demand* inflation. In reverse, when the *A$ appreciates*, demand inflation slows. The higher dollar tends to reduce net exports, slow AD. This then leads to unplanned rises in stocks and thus widespread price discounting, curbing *demand* inflation pressures.

Cost inflation



- *Cost inflation* occurs when the resources needed for production (such as wages for labour, equipment and materials) are more expensive for businesses to purchase. This tends to erode business profits. As a result, firms are typically forced to pass on higher costs to consumers, so prices rise. As an *aggregate supply factor*, a *falling A$* can add to *cost* inflation because many local firms now need to purchase more expensive imported equipment and materials. In reverse, when the *A$ appreciates*, costs for some local producers using imports become cheaper, allowing firms to cut prices to compete, easing *cost* inflation.

Effects of a change in the exchange rate on the rate of economic growth

The government generally seeks to promote the macro *goal of a strong and sustainable rate of economic growth* — the fastest rise in real GDP, perhaps averaging around 3 per cent a year, that does not accelerate inflation nor undermine the achievement of other economic and environmental goals, either now or into the future. Rises and falls in the exchange rate for the A$ can influence economic growth by affecting the level of aggregate demand and/or aggregate supply conditions.

- As an *aggregate demand factor*, changes in A$ can affect the value of net export spending (X–M), and hence AD and the cyclical level of economic activity. A mostly *weaker A$* (as occurred in 2019–20–21) will tend to *boost* overseas spending on our exports (increasing injections), while slowing our spending on imports (slowing leakages). As AD strengthens and stocks fall, local firms will lift production, accelerating the rate of economic growth (assuming there is some unused capacity available). In reverse, a *stronger A$* will tend to *slow* net exports and weaken AD, causing stocks to rise and output to be cut, slowing the rate of economic growth.
- As an *aggregate supply factor*, changes in the A$ can make conditions for local businesses either more or less favourable, thereby affecting productive capacity and the potential rate of economic growth. For instance, a *lower A$* will be less favourable for those firms importing materials and equipment since they face higher production costs and lower profits, possibly leading to business closures. Capacity could be reduced and the sustainable rate of growth slowed. However, these negatives might be partly offset, since a weaker exchange rate also makes some businesses more competitive at home and abroad leading to business expansion. In reverse, a *stronger A$* has mixed effects too. While this is good for firms importing materials and equipment because it reduces their costs and stimulates growth, it also makes other local businesses that do not have to import materials and equipment less internationally competitive, possibly leading to closures and a lower potential or sustainable rate of economic growth.

Effects of a change in the exchange rate on employment and unemployment

A third domestic government macroeconomic objective is to promote the *goal of full employment* or the lowest unemployment rate, perhaps averaging around 4.0–4.5 per cent, that doesn't add to inflation. Changes in the exchange rate can affect rates of both cyclical and structural unemployment because the A$ can act as an aggregate demand or an aggregate supply factor.

- As an *aggregate demand factor*, the exchange rate can affect the value of net exports (X–M) or injections, AD, production, the demand for resources and hence unemployment. By boosting exports and slowing imports, a *weaker A$* helps to accelerate AD (as happened during 2020–21–22), causes firms to lift production and employ more labour, thereby decreasing *cyclical* unemployment. In reverse, a *rising A$* slows net exports and aggregate demand, and leads to firms cutting their output, adding to *cyclical* unemployment.

- As an *aggregate supply factor*, the A$ can alter production costs and our international competitiveness. On the one hand, a *lower A$* means dearer imports and higher production costs for some (but not all) firms, reducing their profits and possibly leading to closures and hence *structural* unemployment. Even so, this problem may be partly offset by improved international competitiveness for other local businesses due to a weaker dollar, leading to fewer closures and less *structural* unemployment.

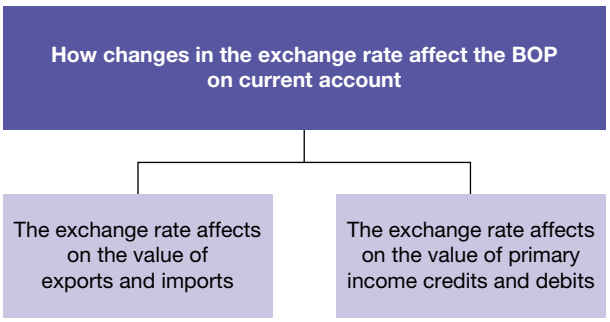
Effects of a change in the exchange rate on the standard of living

The Australian government's *ultimate* goal is to improve society's overall wellbeing and *living standards*. In general, this is easier when there is improved economic stability and all three domestic macroeconomic goals are achieved simultaneously.

- In some ways, a *lower exchange rate* can *help* to improve macroeconomic conditions and hence living standards. For instance, when there is much unused productive capacity (e.g. 2018–19–20–21), a lower exchange can help boost the value of overseas spending on our exports (more injections) relative to our spending on imports (lower leakages). Under these conditions, a rise in net exports lifts AD, causes local firms to expand production, thereby generating higher employment, incomes and purchasing power. This can help to increase material living standards (providing that incomes grow fast enough to offset higher inflation that is caused by the weaker dollar). A lower dollar can also help improve non-material living standards since with stronger net exports and AD, higher GDP and lower unemployment, overall, more people should enjoy a better quality of life. Even so, a *lower A$* can also have a negative effect on our living standards. For example, a *lower exchange rate* in an economy operating near its capacity, can cause a rise in both demand and cost inflation, reducing the real purchasing power of incomes and consumption. This erodes material living standards.
- In reverse, a *higher exchange rate* can sometimes *benefit* living standards. For example, a rising exchange rate means that the A$ will buy a bigger quantity of imports than previously, making us better off. However, a higher A$ in a booming economy that has no unused capacity, also tends to slow overseas spending on our exports (lower injections) relative to our spending on imports (higher leakages). By curbing net exports and AD, this slows economic activity and demand inflation. It improves the purchasing power of incomes and hence may strengthen material living standards. However, a *higher exchange rate* in an economy with weak AD will cause slower economic growth, higher unemployment, lower average incomes and reduced purchasing power. This harms both material and non-material living standards.

Effects of a change in the exchange rate on the current account balance

Australia's current account records transactions between Australia and the rest of the world. These transactions involve the value of credits minus debits for goods and services, along with primary and secondary incomes. Although Australia often runs a current account deficit (CAD), recently there have been several current account surpluses (CAS). A rise or fall in the exchange rate for the A$ can affect the size of our current account balance in *two* main ways: through affecting the value of exports and imports, and through the value of primary income credits and debits.



Value of exports and imports of goods and services

Changes in the exchange rate for the A$ especially affect the cost, attractiveness and value of Australia's exports and imports of goods and services, thereby making the current account balance either stronger (i.e. a smaller CAD or a bigger CAS) or weaker (i.e. a bigger CAD or a smaller CAS).

- A *fall in the A$* tends to *strengthen* the balance on goods and services. This is because Australia's exports of goods (minerals such as coal and iron ore, rural commodities such as wheat and beef) and services (tourism, education) become relatively *cheaper* to overseas buyers in terms of their currency. As a result, the value of our export sales and credits typically *rise*, strengthening the current account balance.

In addition, a lower exchange rate often makes imports of goods (oil, cars, electrical appliances) and services (overseas travel) *dearer* in terms of our currency. This tends to *slow* our purchases of imports, again strengthening the current account balance.

- A *stronger A$* tends to *weaken* our balance on goods and services. This is because a higher exchange rate causes our exports of goods and services become *more expensive*, reducing the value of sales or credits, while imports become cheaper, increasing purchases or debits on the current account.

Value of primary income credits and debits

Changes in the exchange rate for the A$ alter the cost or attractiveness of overseas *capital inflow* and *outflow* associated with buying and selling assets internationally. As a consequence, this can indirectly impact on *net primary incomes* and thus the balance on current account.

- A *fall in the A$* can sometimes weaken net incomes in the long-term. This may be because the purchase of shares and property denominated in Australian dollars, becomes *cheaper* and more attractive for non-residents. By increasing net capital inflow and foreign liabilities, this could ultimately *add* to *primary income debits* involving the payment of dividends, rent and profits abroad, thereby weakening the current account balance. Additionally, the weaker dollar could make it *dearer* and less attractive for Australian investors to purchase foreign assets, at least those denominated in foreign currencies. In the longer term, this may also indirectly *slow* our *primary income credits*, again weakening the current account balance.
- By contrast, in the long-term, a *stronger A$* may help to strengthen net incomes. A higher dollar can sometimes *encourage* capital outflow associated with the purchase of overseas assets by our residents. These assets become relatively *cheaper* and more attractive if denominated in foreign currencies. Ultimately, this could lead to *higher primary income credits* while discouraging foreign capital inflow and primary income debits.

on Resources

Weblink The relationship between the current account balance and exchange rates
Foreign exchange (FOREX)
Foreign exchange practice
Exchange rate policy (devaluation)

3.6 Activities

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3.6 Quick quiz on | **3.6 Exercise**

3.6 Exercise

1. **Define** the exchange rate for the A$ and **explain** how is it determined. **(3 marks)**
2. **Identify** and **explain** the main factors that can affect a nation's exchange rate. **(2 marks)**
3. **Outline** the main effects of a change in the exchange rate for the A$. **(4 marks)**

4. **a.** Use a hypothetical diagram representing the *foreign exchange market* to **explain** why there may be a depreciation of the Australian dollar (A$). **(2 marks)**
   b. Using D–S diagrams to show the *before* and *after* situations in the foreign exchange market, **explain** what would happen to the exchange rate for the A$ in each of the following:
      i. there was increased buying of the A$ **(1 mark)**
      ii. there was increased selling of the A$. **(1 mark)**
   c. **Explain** what the trade weighted index or TWI measures. **(2 marks)**
   d. Giving clear reasons, **explain** how each of the following events would be likely to affect the exchange rate for the A$:
      i. overall slower economic activity overseas including China and Japan **(2 marks)**
      ii. a fall in business and especially consumer optimism in Australia **(2 marks)**
      iii. speculation of a future rise in the Australian dollar next week **(2 marks)**
      iv. a rise in our terms of trade index **(2 marks)**
      v. a rise in interest rates in the United States relative to those in Australia **(2 marks)**
      vi. a fall in RULCs in Australia. **(2 marks)**
   e. **Explain** how a *fall* in the exchange rate for the Australian dollar would be likely to affect each of the following variables:
      i. size of the CAD **(2 marks)**
      ii. rate of inflation **(2 marks)**
      iii. rate of economic growth **(2 marks)**
      iv. rate of unemployment **(2 marks)**
      v. material living standards. **(2 marks)**

Solutions and sample responses are available online.

3.7 Australia's international competitiveness

KEY KNOWLEDGE

- International competitiveness and the factors that may affect international competitiveness, including productivity, production costs, availability of natural resources, exchange rates and relative rates of inflation
- The effect of movements in the terms of trade and the exchange rate, and changes in international competitiveness on the domestic macroeconomic goals and living standards

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

International trade helps to raise Australian living standards by encouraging a more efficient use of resources, gaining economies of large scale, growing jobs and incomes, and keeping prices lower. However, to maximise these potential benefits, local firms need to become more *internationally competitive*, particularly given the government's policy decision over recent decades, to reduce tariffs, sign many free trade agreements and expose our businesses to stronger competition from imports (i.e. the policy of *trade liberalisation*).

3.7.1 Definition of international competitiveness

As mentioned, the Australian government wants local businesses to be more internationally competitive. **International competitiveness** *is often taken to mean that Australian businesses can profitably produce and sell their goods and services at a price equal to or lower than that charged by foreign rivals.* This enables them to expand their global sales and incomes, and improve our overall living standards.

More specifically, there are *two* considerations for local firms seeking to become internationally competitive against their foreign counterparts:

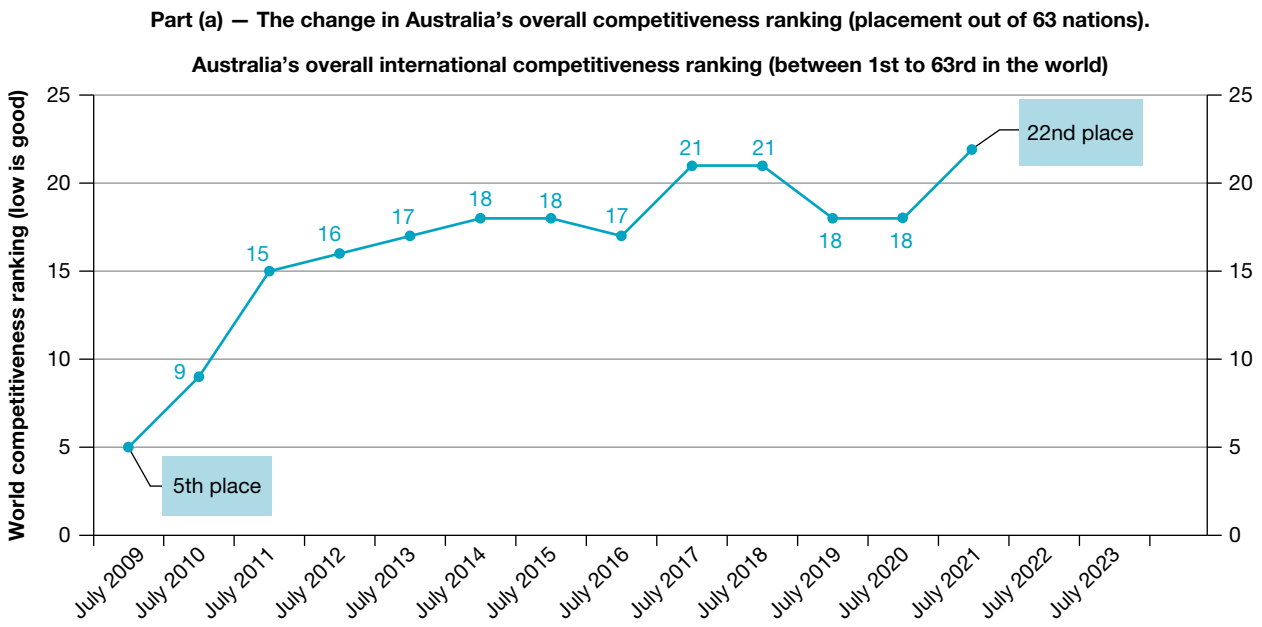
- *A competitive selling price.* The *final selling price* that buyers pay for goods and services is perhaps the main consideration. In making decisions, most consumers compare the local price against that for similar items made abroad. This means that firms need to focus on maximising efficiency in their use of resources so they can keep their production costs and prices down.
- *Attractive non-price factors.* International competitiveness and consumer decisions are also influenced by *non-price factors*. These might include:
  - offering *better quality* goods or services that match or exceed those available abroad
  - catering for and satisfying the changing *needs of consumers* better than rival suppliers overseas
  - being innovative and coming up with new ideas and products to better satisfy people's wants
  - providing superior *customer service*, including prompt and courteous delivery.



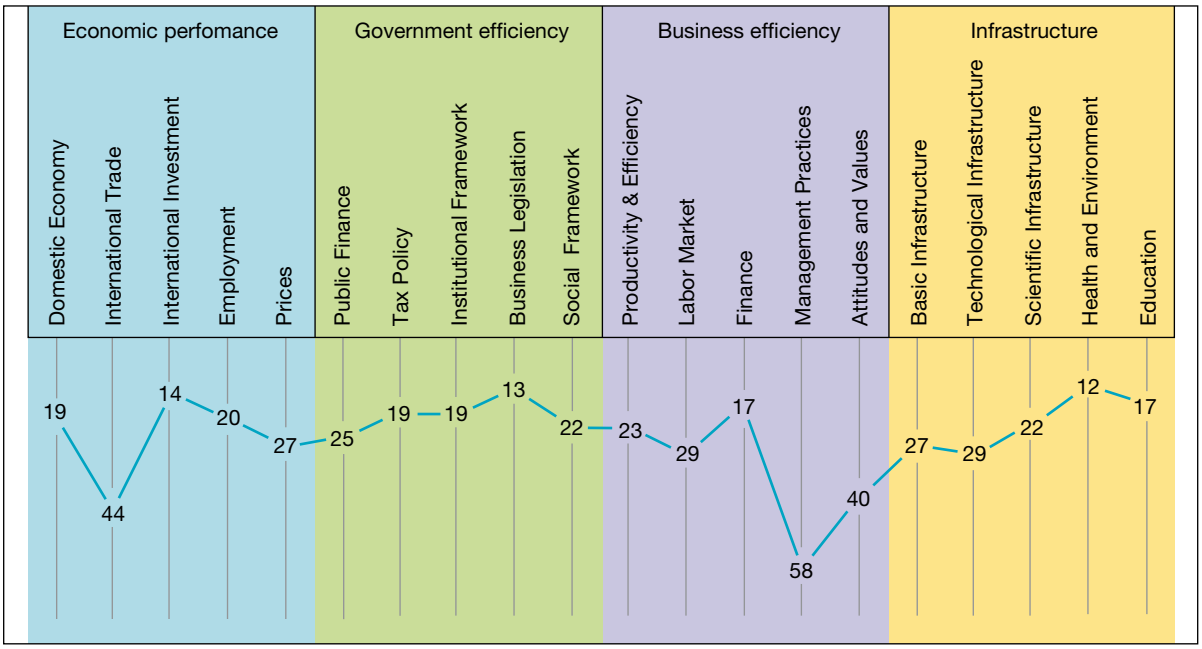
3.7.2 Recent trends in Australia's international competitiveness

There are a number of measures of a nation's international competitiveness. The Committee for Economic Development of Australia (CEDA) uses twenty (20) indicators grouped into the four (4) areas of economic performance, government efficiency, business efficiency and infrastructure, to rank Australia against 63 countries. The results of this survey are shown in figure 3.22.

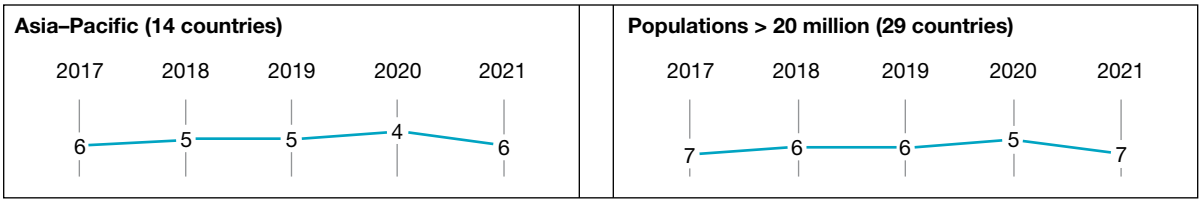
FIGURE 3.22 Trends in Australia's international competitiveness rankings.



Part (b) — Australia's competitiveness ranking for specific areas of the economy and among our peers.



Peer groups rankings



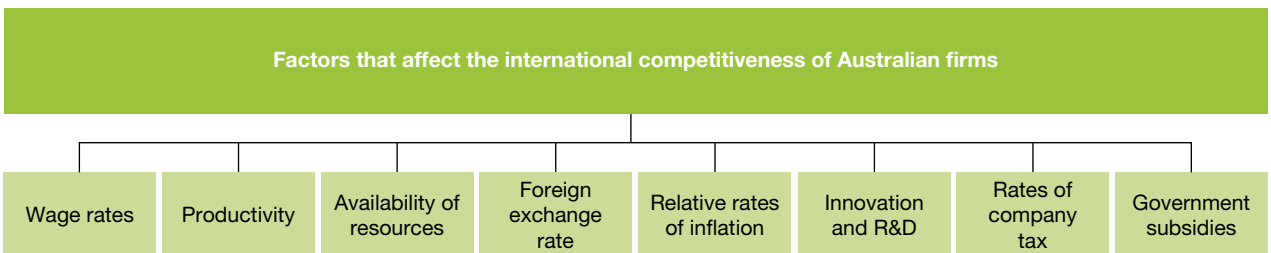
Source: Data for graph Part A derived from CEDA — Committee for Economic Development of Australia, various IMD World Competitiveness Yearbooks, 2021. Graph Part B derived from © 1995–2022, IMD International, Switzerland, World Competitiveness Center, www.imd.org/centers/world-competitiveness-center/.

Part (a) of figure 3.22 shows that Australia's position has slipped significantly from being the fifth most internationally competitive nation in 2009, to twenty-second place out of 63 nations by 2021. Countries ahead of us include USA, Singapore, Denmark, Sweden, South Korea, Canada and the UK.

Part (b) of figure 3.22 focuses more on the underlying factors affecting Australia's overall competitiveness ranking. While Australia performed moderately well in health and environment, business legislation, and international investment, our performance in most other indicators was mediocre, especially in areas like management practices, international trade, prices, attitudes and values, technological infrastructure, business productivity, the labour market, and tax policy.

3.7.3 Factors that may affect Australia's international competitiveness

Many factors can affect the international competitiveness of Australian firms, relative to that of our foreign rivals.



Wage rates and other business costs affect competitiveness

The prices charged and international competitiveness of local firms are especially affected by how our *production costs* compare with those abroad. These costs might include:

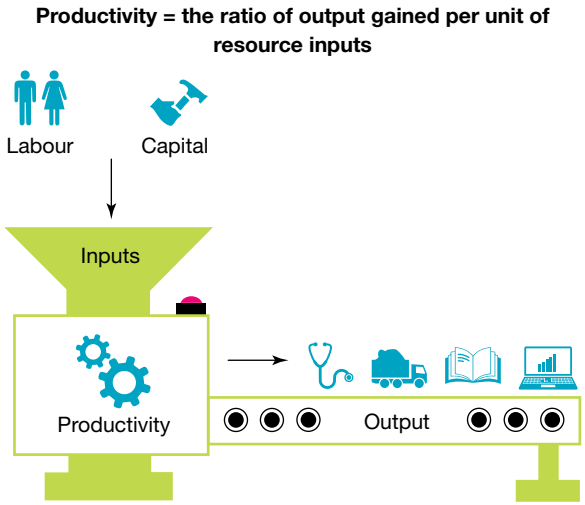
- *wages* and *labour on-costs* such as compulsory superannuation, leave entitlements and workers compensation
- the costs of *utilities* such as electricity, gas and water, as well as the costs of telecommunications and transport (road, rail, air)
- *interest rates* charged on firms borrowing bank credit to finance their expansion (the rate of interest on business overdrafts)
- the costs of purchasing *raw materials* and equipment.

If these costs overall are higher relative to those overseas, it is likely that local firms will not be internationally competitive. Businesses will have to sell their products at a higher and therefore less attractive price in local and foreign markets, leading to lower exports, higher imports and a weaker structural current account balance.

Productivity affects our competitiveness

Productivity relates to efficiency or the *level of output gained from a given quantity of inputs or resources* used in production. This is illustrated in the following image. More specifically, **labour productivity** is commonly measured by the level of GDP per hour worked, while **multifactor productivity** measures the efficiency with which the combined inputs of labour, capital and natural resources are converted into production.

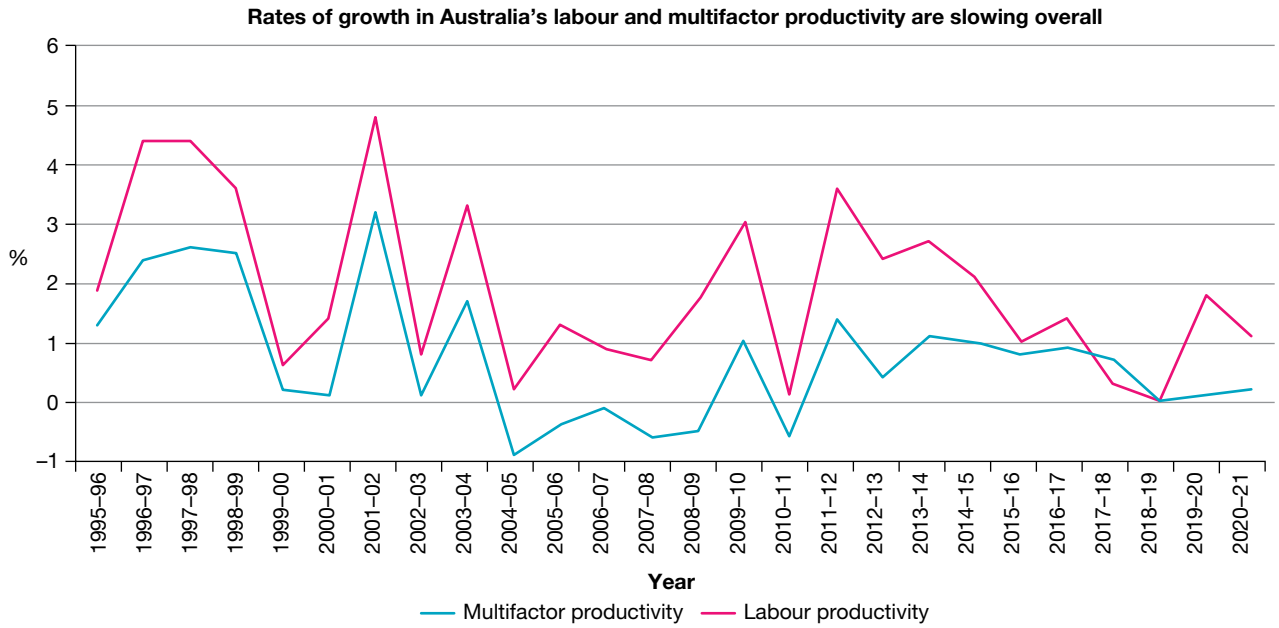
Low productivity translates into higher production costs, and hence acts as a *less favourable aggregate supply factor*. It makes locally produced exports of goods and services less attractive to overseas buyers. This weakens our international competitiveness, weakening the structural current account balance.



Source: RBA, Education, Resource, Productivity, 2022.
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Figure 3.23 shows how Australia's labour and multifactor productivity have changed over the last twenty-five years to 2020–21. Because of slowing productivity growth in Australia relative to better performances in some of our trading competitors, this has put upward pressure on business costs and hence, reduced Australia's international competitiveness.

FIGURE 3.23 Trends in Australia's labour and multifactor productivity.



Source: Graph data derived from ABS, Estimates of industry multifactor productivity, see https://www.abs.gov.au/statistics/industry/industry-overview/estimates-industry-multifactor-productivity/2020–21.

There are a number of possible explanations for Australia's weak productivity growth that has undermined our international competitiveness:

- Productivity often moves in *cycles* and is difficult to measure, (especially recently during COVID-19 lockdowns), as it is hard to determine the exact origin of the change.
- Changes in productivity over time occur at irregular intervals across different areas. Industries where technological change and business restructuring have been rapid, record faster improvements in productivity and competitiveness.
- In the case of agriculture, recent *severe weather events* and climate change have not helped productivity, along with the use of more marginal land. They mean that more inputs of resources are needed to gain the same output.
- During the *minerals boom*, there was heavy investment in capital resources, but the full production returns were being realised, some years later and this benefit has now passed. In addition, the remaining natural resources are often becoming more costly to extract since the easier ones have already been exploited (the low fruit has already been picked).
- In years past, rises in labour productivity may have been helped by the general increase in *unpaid overtime*. However, there are increasing limits to which this is a possible source of productivity.

FIGURE 3.24 Damage and destruction caused by a cyclone on a banana plantation in Western Australia.

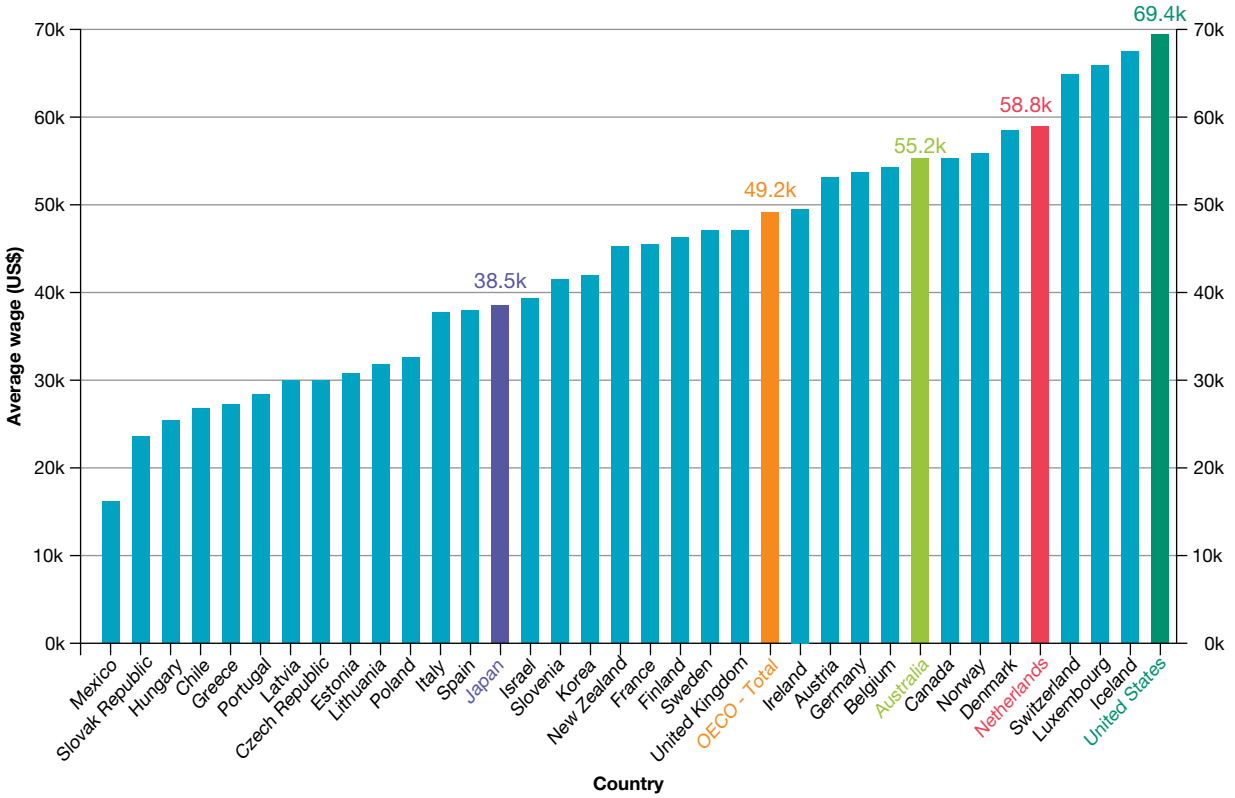


Wage and on-costs of labour affect our competitiveness

In many industries, *wages* represent 50–70 per cent of total production costs for firms. Being a high-wage country by international standards (especially after adding on hefty on-costs like the 10.5 per cent Superannuation Guarantee Levy), Australia is at a competitive disadvantage. Figure 3.25 compares our average annual wage with that in selected countries. Unfortunately, elevated wages cause local firms to charge higher prices for similar goods and services, than those from foreign rivals.

High wages would not be such a hindrance to competitiveness if Australian workers had better productivity, matching that of most other higher-wage countries (see countries shown on the right-hand side of figure 3.25).

FIGURE 3.25 Comparison of wages in selected countries (measured in US$).



Source: OECD (2022), Average wages (indicator). doi: 10.1787/cc3e1387-en (Accessed in April, 2022).

Availability of natural resources affects our competitiveness

Australia is relatively rich in natural resources (coal, bauxite, iron ore, alumina) that are wanted by many nations, and we also have a relatively large area of productive land for grazing and agriculture. This means that mineral and rural commodities can often be produced at lower prices, often making us more internationally competitive in these areas.



The exchange rate affects our competitiveness

As we know, the exchange rate for the A$ can greatly affect the price of exports and imports of goods and services.

- A generally *lower A$* (as occurred in 2019–22) allowed Australian-made goods and services to be sold relatively cheaply. This helped to strengthen our international competitiveness, making it easier to sell locally made goods and services both at home and abroad.
- In reverse, a *higher A$* (as occurred using the TWI as a guide in 2016–17) makes our exports relatively dearer against imports, undermining our international competitiveness.

Relative inflation rates affect our competitiveness

Australia's inflation rate relative to those abroad affects the international attractiveness of locally-made goods and services.

- Other things being equal, a relatively lower inflation rate here makes the price of our goods and services more attractive to buyers at home and abroad, making us more internationally competitive.
- In reverse, a relatively higher inflation rate here erodes our international competitiveness and sales.

Provision of efficient economic and social infrastructure affects our competitiveness

Having efficient *economic infrastructure* (e.g. roads, rail, airports electricity, gas, telecommunications and water) and social infrastructure (e.g. health, education and legal system) is a key to international competitiveness.



Regrettably, Australia has recently faced increasing *bottlenecks* or restrictions to their supply. These shortages have led to rapidly rising costs of transport, gas, electricity and water, causing local businesses to raise their prices and protect profits, even though this reduces their international competitiveness. Some firms have been forced to close down or relocate overseas where costs are lower.

In addition, the problem of *skills shortages* has also been an obstacle for local firms, slowing their productivity and forcing some businesses to look overseas for suitably qualified staff (the entry of workers under the Temporary Skill Shortage visas).

Rates of company tax affect our competitiveness

Company *tax rates* affect the *after-tax profits* of firms and hence the price they must charge to make reasonable returns. Over recent years, the Australian government has cut the rate of tax on business profits and in 2022, large firms pay 30 per cent, while small to medium-sized firms pay 25 per cent. Even so as shown in figure 3.26, our company tax rates are still generally higher than those among our trading competitors in Asia (China, Vietnam, India and Indonesia, where in 2021 the average tax rate was around 20 per cent).



FIGURE 3.26 International comparison of corporate tax rates (2021).



Source: Based on data from OECD (2022), Table II.1. Statutory corporate income tax rate, OECD.Stat, accessed on 4 July 2022.

High tax rates also means that local firms cannot afford to purchase better, more efficient technology and equipment needed to improve their productivity. In these ways, higher corporate tax rates help to explain why local businesses often need to charge higher prices than some businesses overseas, making them less internationally competitive.

Government subsidies can affect our competitiveness

The Australian government pays *cash subsidies* and provides tax incentives to local producers to help encourage structural change and cover some production costs. This allows businesses to sell their product at a lower more attractive price in both local and international markets. Sometimes the decision to pay subsidies is designed to correct market failure, but at other times, it could be to help support the growth of infant industries and win greater political popularity. Whatever the case, subsidies can make local firms more internationally competitive.

Levels of innovation and education affect our competitiveness



Spending on *R&D and innovation* (the development of new products and different ways of making things, and adapting to the changing wants of consumers) can help give a nation a competitive edge and allow it to sell more strongly in both local and international markets. In contrast to some countries, Australian businesses spend less than 1.2 per cent of GDP on R&D (down from around 1.4 per cent over the last five years). Increased government *spending on education* is also needed to grow our creativity and innovation, but this too has risen more slowly in recent years. Australia is being overtaken by other countries in these areas, and this helps to explain our poor level of international competitiveness.

on Resources

Weblinks What is competitiveness?
Global Competitiveness Report 2017–18

3.7.4 The effects of international competitiveness

Being more internationally competitive is highly beneficial for a nation. However, Australia's relatively *poor* level of *international competitiveness* against that for some other nations, represents a *less favourable aggregate supply factor* that adversely impacts the achievement of Australia's key domestic macroeconomic goals and undermines living standards.

The effects of competitiveness on the achievement of Australia's domestic macroeconomic goals

The Australian government tries to pursue *three* key *domestic macroeconomic goals* — a strong and sustainable rate of economic growth, low inflation (price stability) and full employment. Australia's relatively *weak international competitiveness* ranking against some of our trading competitors, has made these objectives harder to achieve.

i. ***The effect of international competitiveness on prices and inflation.*** Our lower levels of efficiency and competitiveness cause our production costs and prices to be higher than in some other countries. Firms pass on these extra costs as higher prices for the goods and services we purchase. This reduces the purchasing power of our incomes.

ii. ***The effect of international competitiveness on the rate of economic growth.*** Being less competitive than some nations makes it harder for local firms to sell their goods and services at home or in export markets overseas. With lower sales and profits, many firms are less willing and able to expand their operations, in turn limiting the growth in Australia's productive capacity, potential GDP and incomes. Over recent decades, we have been unable to achieve our long-term average annual growth rate of 3 per cent. In addition, international investors and businesses are less likely to be attracted by our weaker competitive environment, again slowing business expansion and economic growth.

iii. ***The effect of international competitiveness on unemployment.*** Because many Australian businesses have higher production costs and are not strongly competitive, they have lower profits than their counterparts abroad. This means that some firms will close down or relocate overseas where aggregate supply conditions are more favourable. This tends to raise the level of structural unemployment.

The effects of competitiveness on Australia's living standards

Understanding that Australia's relatively *weak* international competitiveness has tended to undermine the achievement of Australia's three domestic macroeconomic goals, means we can now better appreciate that it may also have *diminished* our living standards in *two* ways.

i. ***The effect on material living standards.*** Because Australia is less competitive than some nations, this has tended to slow the growth of business capacity, GDP and incomes. In turn, we would expect this to reduce the average 'quantity' of goods and services consumed per person, and hence material living standards. Also, by adding to structural unemployment, this lowers average incomes and erodes our purchasing power.

ii. ***The effect on non-material living standards.*** Australia's environmental outcomes may benefit from our relatively poor competitiveness. This is because a slower pace of economic growth should tend to reduce carbon emissions, pollution, resource depletion and negative externalities paid by third parties that impact on 'quality' of life. In addition, our current lack of competitiveness has caused some firms to close or relocate abroad, causing the loss of jobs and higher structural unemployment. Unemployment usually has very negative effects on non-material living standards by contributing to reduced mental and physical health outcomes, increased financial and other stress, feelings of social isolation and failure, unhappiness, and according to some research, possibly even higher crime rates.

3.7 Activities

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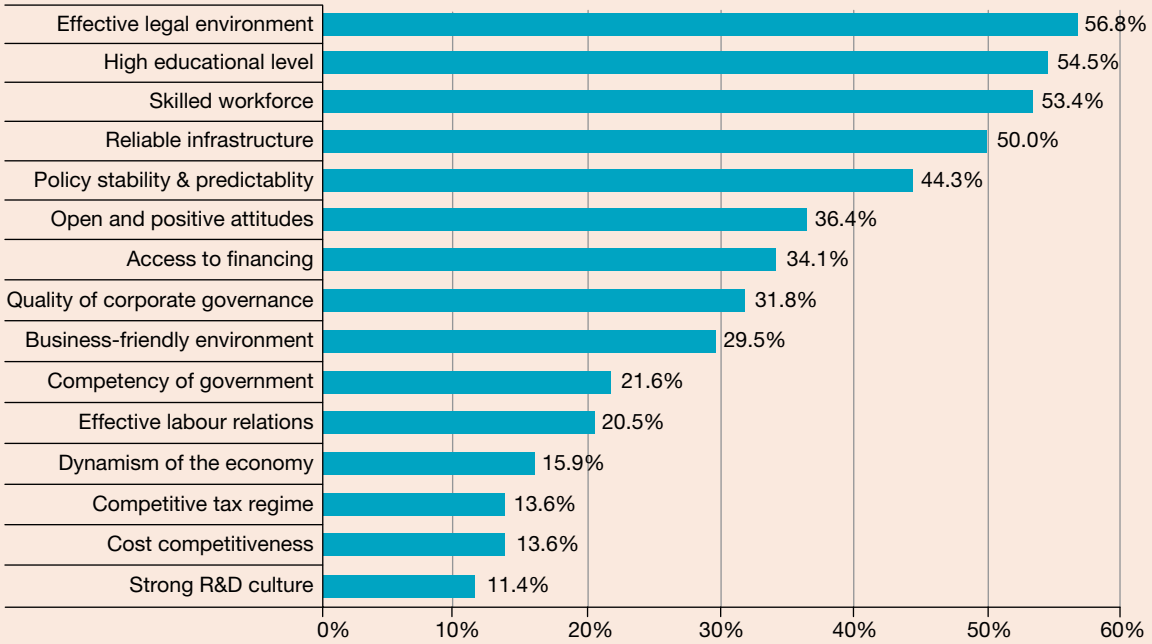


3.7 Quick quiz on | **3.7 Exercise**

3.7 Exercise

1. **Explain** what is meant by the term international competitiveness. **(2 marks)**
2. **List** and **outline two important** factors that might affect a nation's international competitiveness. **(2 marks)**
3. **Explain** how Australia's current poor level of international competitiveness might impact Australia's living standards. **(4 marks)**
4. a. Other than the two factors mentioned in question 2 above, *identify* and **outline** *two* other factors that help to explain Australia's relatively low ranking for international competitiveness. **(2 marks)**
   b. **Examine** the figure below showing the main areas of attractiveness (and weakness) of doing business in Australia, according to a survey of business executives.
      i. According to the graph, **list** the four main areas of international competitiveness that were seen as presenting the greatest *problem* for Australia. **(1 mark)**
      ii. According to the graph, **list** the four areas of least concern. **(1 mark)**

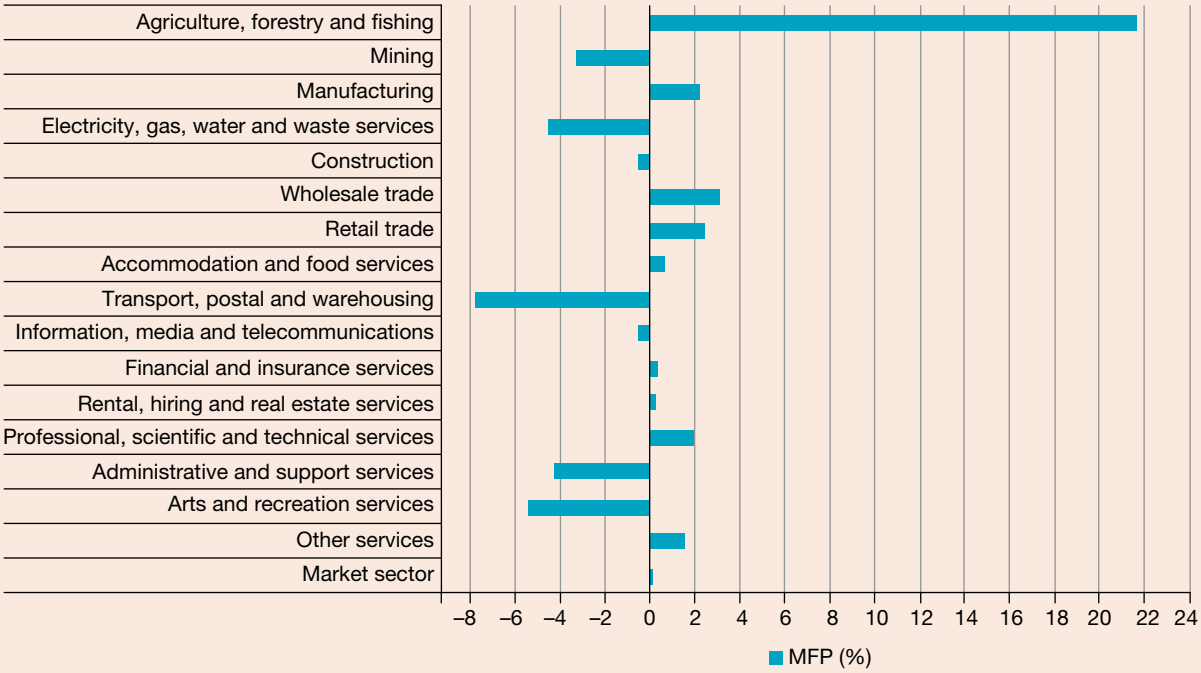
Key attractiveness indicators for Australian business.



Source: Data for graph Part A derived from CEDA (Committee for Economic Development of Australia), IMD World Competitiveness Yearbook 2021, Country profile, Australia, see https://cedakenticomedia.blob.core.windows.net/cedamediacontainer/kentico/media/researchcataloguedocuments/pdfs/wcy-2021-australia-summary.

c. Examine the figure below showing annual percentage changes in Australia's multifactor productivity by industry.

Annual percentage change in multifactor productivity (MFP) by industry, Australia.



Source: ABS, 5260.0.55.002, Estimates of Industry Multifactor Productivity. Licensed under CC BY 4.0.

i. **Distinguish** multifactor productivity and labour productivity. **(2 marks)**

ii. According to figure 3.28, **identify** Australian industries have been the least successful in raising multifactor productivity. **(2 marks)**

iii. **Explain** how *weak* productivity in some industries is likely to impact on Australia's rate of inflation and rate of unemployment. **(4 marks)**

d. **Explain** how successful measures that increase Australia's international competitiveness might be likely to affect our general living standards. **(4 marks)**

Solutions and sample responses are available online.

3.8 Review

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3.8.1 Summary

The relationship between international trade and living standards

- Australia's *international relationships* include international trade (involving the flow of exports and imports of goods and services), and capital flows (movements of money capital and investments between countries).
- Overall, trade volumes have generally grown rapidly in recent decades due to trade liberalisation (reduced protection of local industry by cutting tariffs, subsidies, import quotas and signing FTAs).
- International trade generally *improves* a nation's material and non-material living standards by:
  - increasing access to resources needed to grow productive capacity
  - encouraging greater efficiency in the use of resources and faster economic growth, through increased specialisation in areas of comparative cost advantage
  - allowing local firms to gain greater economies of large-scale production
  - promoting greater competition in local markets, thereby helping to lower consumer prices paid for goods and services
  - accelerating GDP, employment and income growth
  - growing consumer choice.
- However, international trade can bring some *problems* too:
  - possibly increased economic instability domestically, imported from overseas
  - cultural tensions
  - increased income inequality
  - prevention of the growth of local infant industries.

Recording international transactions on the BOP account

- *Definition of the BOP account:* The BOP account records the value of various types of financial transactions between a country and the rest of the world measured over a period of time.
- *Structure of the BOP account:* The overall BOP account is made up of *two* main types of transactions, each with sub sections.
  - The balance of payments on *current account* records the value of credits and debits for goods, services, primary incomes and secondary incomes.
  - The balance of payments on the *capital and financial account* records the value of credits and debits for capital transactions, especially investments or the movements of money capital.
- The BOP is a *zero balance* account where overall, the total value of credits *equals* the total value of debits. For Australia, theoretically, a CAD is exactly offset by a capital and financial account surplus involving a rise in our liabilities (debt and equity) abroad. In addition, a CAS is exactly offset by a capital and financial account deficit.

Australia's current account balance and the factors influencing it

- *Definition of the current account balance:* The current account balance represents the difference in value measured over a period of time, between total debits and total credits on the BOP current account made up of net goods, net services, net primary income and net secondary income. Australia often runs a CAD but there was a CAS in 2019–20, 2020–21 and 2021–22, where the total value of current account credits were greater than the total value of current account debits.

- *Influences on the current account balance:* The size of Australia's CAD or CAS is determined by changes in *cyclical factors* reflecting volatile aggregate demand conditions and the pace of economic activity, and by changes in longer term *structural factors* reflecting new aggregate supply conditions:
  - A *stronger cyclical* rate of economic activity (perhaps due to locally stronger consumer and business confidence and rising disposable incomes), and weaker spending from abroad (due to a slowdown in economic activity or a drop in the TOT), usually lead to increased imports relative to decreased exports, and hence, cause a *weaker* current account balance. In reverse, *weaker* economic activity at home and *faster* activity abroad, tend to strengthen our current account balance.
  - Ongoing less favourable *structural* or aggregate supply conditions like a large savings–investment gap, rising oil prices, drought, high production costs and poor international competitiveness, can *weaken* the current account balance. In contrast, *more favourable* structural conditions that improve our efficiency and international competitiveness, tend to *strengthen* the current account balance.

The NFD and NFE

- *Definitions of the NFD and NFE:* The NFD represents the cumulative excess of what Australia owes the rest of the world against what the world owes us. It implies there will be interest payments as well as the repayment of the borrowed capital. Net foreign equity (NFE) is associated with foreign ownership of Australian assets (such as shares and property) minus our ownership of foreign assets.
- *Composition of the NFD:* There is both *official* (government sector) and *non-official* debt (private sector).
- *Causes of the NFD:* Various factors account for our large NFD. These include the rise in official debt (due to a large number of large governments budget deficits in recent years), the national savings–investment gap and relatively high domestic interest rates, plentiful natural resources and opportunities for investors, a skilled labour force and relatively good economic infrastructure.
- *Effects of the NFD:* The NFD brings benefits (more finance for expanding productive capacity, cheaper costs of borrowing) and costs (the burden of incomes repayments, and a bigger CAD).

The terms of trade

- *Definition and meaning of the terms of trade:* The TOT relates to the ratio of export prices Australia receives from overseas (we are mostly price takers), relative to the prices we pay for imports. A *fall* in the TOT means that Australia is trading under relatively less favourable conditions because we are receiving relatively lower prices against those we pay for imports. Here, a given quantity of exports will purchase a smaller quantity of imports, so we are not as well off.
- *Measurement of the terms of trade:* The TOT is measured by means of an index where the base year equals 100 points.

$$\textbf{The terms of trade index (TOT)} = \frac{\textbf{Export price index}}{\textbf{Import price index}} \times 100$$

- *Determinants of the terms of trade:* For Australia, our TOT is greatly affected by international commodity prices that in turn reflect the *global* conditions of demand (such as global economic activity) and *global* conditions of supply (such as climatic conditions and new discoveries) for the things we trade.
- *Effects of changes in the terms of trade:* Changes in the TOT affect the balance on current account and the exchange rate. For instance:
  - *The effect on the current account balance:* A fall in the TOT involving the world paying lower export prices tends to cause a drop in the value of exports and/or a rise in the value of imports, leading to a weaker current account balance. In reverse, a rise in the TOT tends to strengthen the current account balance.
  - *The A$:* A fall in the TOT tends to reduce the demand for the A$ because of the likely decline in the price and hence value of exports, and/or an increase the supply of the A$ because of the rise in the price and hence value of imports (less demand for the A$ and/or more supply of the A$ tends to weaken the exchange rate). In reverse, a rise in the TOT tends to strengthen the A$.

The exchange rate

- *Definition of the exchange rate:* The exchange rate is the price of an A$ when swapped into other currencies in the foreign exchange market.
- *Measures of the exchange rate.* The TWI measures the *average* exchange rate, but there are also separate rates for every currency in the world. As the exchange rate *appreciates* or *depreciates*, it can have both good and bad effects on individual companies and the overall economy.
- *Determinants of the exchange rate.* Being a *floating* exchange rate, the price of the A$ is determined by the forces of demand for the A$ (as affected by international commodity prices and the terms of trade, overseas economic activity, our inflation rate) and the supply of the A$ (as affected by our levels of imports, local confidence and economic activity, interest repayments on foreign debt) in the foreign exchange market at equilibrium.
- *Effects of changes in our exchange rate.* Changes in the A$ have both good and bad effects for particular groups in our economy. The exchange rate can affect the cost/price and value of exports, the cost/price and value of imports, and the current account balance, whether this is a CAS or CAD. It also affects the achievement of the Australian government's key domestic macroeconomic goals by affecting the levels of AD (via changes in X and M), the inflation rate, the rate of economic growth (GDP), and employment and unemployment rates.
  - An *appreciation* of the A$ tends to reduce the value of exports/credits relative to imports/debits and weaken the current account balance. It also slows the growth in AD by reducing the value of net injections. This tends to weaken economic activity, reducing inflation and economic growth, and causing a rise in unemployment.
  - A *depreciation* of the A$ tends to increase the value of exports/credits relative to imports/debits, and strengthen the current account balance. It also stimulates AD and economic activity by increasing net injections, and so tends to accelerate inflation (if there is little unused productive capacity available) and economic growth while reducing unemployment.

Australia's international competitiveness

- *International competitiveness* mostly refers to the ability of a nation's businesses to successfully sell goods and services at a relatively more attractive price both here at home and also abroad against foreign rivals.
- *Trends in Australia's international competitiveness:* Over the last 12 years to 2021, Australia's overall international competitiveness ranking has decreased relative to some other countries.
- *Determinants of international competitiveness:* A nation's international competitiveness can be affected by many factors including:
  - the relative production costs (including wages, transport and energy) for businesses
  - productivity growth
  - the availability of natural resources
  - the exchange rate
  - relative rates of inflation
  - innovation and R&D
  - the relative rate of company tax
  - government subsidies to local producers.
- Some recent causes of Australia's poor international competitiveness:
  - relatively slower rises in productivity
  - high wage and on-costs
  - infrastructure bottlenecks and skills shortages drive up costs
  - relatively high rates of company tax
  - severe weather events.

3.8.2 Key terms

Absolute cost advantage occurs if a nation is the cheapest or most efficient producer of a single good or service in the world.
Appreciation of the exchange rate occurs when the value of a nation's currency rises against another currency.
Balance of payments account (BOP) 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.
Balance on capital account (also called the capital account balance) is a subsection in the BOP capital and financial accounts. It records the total value of credits *minus* the total value of debits for capital transfers and other intangible assets.
Balance on current account (also called the capital and financial account balance) is equal to the total value of all credits *minus* the value of all debits for goods, services, primary incomes and secondary incomes, measured over a period of time. The balance can be a CAD or a CAS.
Balance on financial account is a subsection in the BOP capital and financial accounts. It mainly records international transactions involving the movement of money capital or investment, as well as the dealings of the Reserve Bank of Australia (RBA).
Comparative cost advantage occurs if a nation specialises in a few key areas of production where its cost advantages are greatest or its disadvantages and opportunity costs are lowest.
Current account deficit (CAD) is when the value of all current account debits *exceeds* the total value of all current account credits for goods, services, primary incomes and secondary incomes, measured over a period of time.
Current account surplus (CAS) is when the value of all current account credits *exceeds* the total value of all current account debits for goods, services, primary incomes and secondary incomes, measured over a period of time.
Cyclical influences can affect the nation's current account balance causing it to become stronger or weaker as AD and economic activity slow or rise. Cyclically stronger spending domestically normally tends to increase imports and slow exports, weakening the current account balance. In addition, weaker spending overseas has a similar effect. In contrast, cyclically weaker spending domestically or stronger spending overseas, tend to strengthen the current account balance.
Depreciation of the exchange rate occurs when the value of a nation's currency falls against another currency.
Direct investment involves capital movements into and out of Australia that involve the establishment, purchase or expansion of companies and other assets.
Economies of large-scale production are reductions in a firm's average costs per unit associated with an increase in its production levels, perhaps enabled by trade liberalisation (e.g. the signing of FTAs) and bigger export markets.
Exchange rate The number of units of another currency that can be purchased with or swapped for one unit of our currency.
Foreign exchange market is where international currencies are swapped or converted into other currencies.
Free trade involves governments abolishing protection of local industry by completely removing tariffs, subsidies and import quotas, thereby forcing local firms to become more internationally competitive.
Free trade agreements (FTAs) involve two or more nations agreeing to remove various forms of protection of their local industries. They are often seen as beneficial because countries will be inclined to specialise in areas of comparative cost advantage where opportunity costs are minimised and material living standards maximised.
Import quota a government restriction on the quantity of particular goods that can be imported.
International competitiveness means that Australian businesses are relatively efficient in their use of resources, and can compete or sell their goods and services both here and in markets around the world at a lower price than their overseas rivals.
International specialisation occurs when countries produce only a limited range of goods and services, focusing on those areas where they have the greatest *comparative cost advantage* (or least disadvantage), increasing allocative efficiency.
Labour productivity or efficiency is commonly measured by the value of GDP per hour worked.
Multifactor productivity measures the efficiency with which the combined inputs of labour, capital and natural resources are converted into production.
National savings–investment gap is the shortfall in value between what Australian households, firms and governments save and the level of their investment. This must be covered by overseas borrowing or debt.

Net errors and omissions is an item that reflects the inaccuracies in the recording of international transactions. Its value can be positive or negative.
Net foreign debt (NFD) is the cumulative difference in value between what Australian households, businesses and governments have borrowed from and owe overseas *minus* what Australia has lent or invested abroad. This debt entails paying interest and repaying the capital borrowed at some time in the future.
Net foreign equity (NFE) is the difference in value between foreign-owned Australian assets (such as property, shares and the retained earnings of overseas-owned companies operating here) and overseas assets owned by Australian residents.
Net goods is a subsection of the BOP current account that records the value of credits for goods exported *minus* the value of debits for goods imported from overseas, measured over a period of time.
Net primary incomes is a subsection of the BOP current account that records the value of credits for primary income received from overseas *minus* the value of debits for primary income paid to overseas, measured over a period of time.
Net reserve assets includes the value of foreign currencies, monetary gold, and required contributions to overseas governments and international agencies.
Net secondary incomes is a subsection of the BOP current account that records the value of credits for secondary income received from overseas *minus* the value of debits for secondary income paid to overseas, measured over a period of time.
Net services is a subsection of the BOP current account that records the value of credits for services exported *minus* the value of debits for services imported from overseas, measured over a period of time.
Non-official debt represents borrowing overseas by Australian businesses to finance expansion.
Official debt represents net borrowing by the government, perhaps to finance budget deficits.
Portfolio investment involves money transactions into and out of Australia involving shares, debt and securities.
Productivity measures the efficiency or output gained from a certain quantity of productive inputs. GDP per hour worked is a measure of labour productivity. There is also multifactor productivity which measures the output gained from the inputs of all resources.
Structural influences affect the current account balance. Unfavourable supply-side structural factors like high production costs, tax rates and low productivity for example, weaken a nation's current account balance.
Subsidies are a form of trade protection and involve government tax concessions or cash payments to local firms to help cover some of their production costs, allowing local products to be sold more cheaply and competitively at home and abroad.
Tariff An indirect tax added onto the price of imports to make them dearer to local consumers and protect local industries from overseas competition.
Terms of trade (TOT) is an aggregate demand factor. It represents the ratio of the average prices we receive for our exports relative to the average prices we pay for imports. A rise in Australia's terms of trade is said to be favourable because the world is prepared to pay us higher prices for our exports relative to the prices we pay for imports. Put another way, a given unit of exports will pay for a greater quantity of imports.
Trade liberalisation is a government policy that entails reducing protection of local industry by gradually cutting tariffs, subsidies and import quotas, and the signing of FTAs.
Trade protectionism is the opposite to trade liberalisation and involves governments increasing barriers to international trade and the flow of goods and services into countries (e.g. using higher tariffs, subsidies, import quotas to limit foreign competition).
Trade weighted index (TWI) is an overall guide to the value of the Australian dollar measured against a basket of other currencies, each weighted according to its relative importance in Australia's trade.

on Resources

Digital documents
Topic summary (doc-34675)
Key terms glossary (doc-34513)
Crossword (doc-31505)
Wordsearch (doc-31506)
Match-up definitions (doc-31507)

3.8.3 Practice school-assessed coursework

OUTCOME 3

Analyse the factors that may affect the exchange rate, terms of trade and Australia's international competitiveness, and discuss their impact on Australia's international transactions and the achievement of the domestic macroeconomic goals and living standards.

TASK: A FOLIO OF APPLIED ECONOMICS EXERCISES

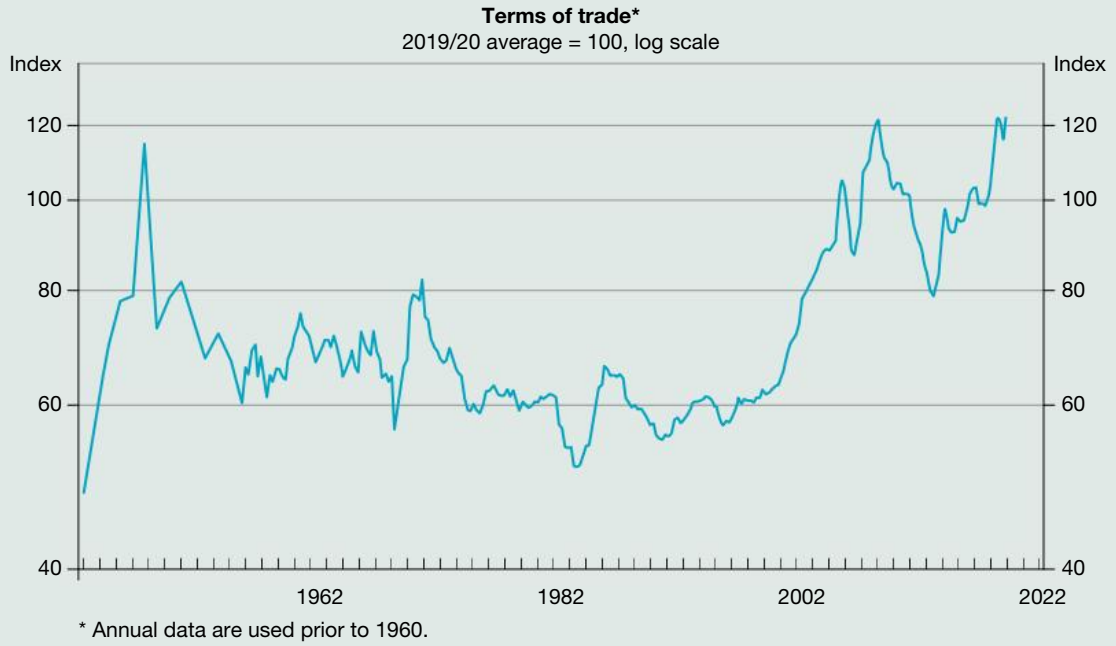
Time allowed: 60 minutes

Marks allocated: 50 marks (The marks for each question are indicated at the end of each question.)

Conditions: Closed book (No notes or textbooks may be used when completing this task.)

1. The growth of international trade has had mostly positive effects on Australian living standards. **Explain** three important ways whereby this is likely to occur. **(6 marks)**
2. Examine the figure below showing changes in Australia's terms of trade index to July 2021.

Trends in Australia's terms of trade.



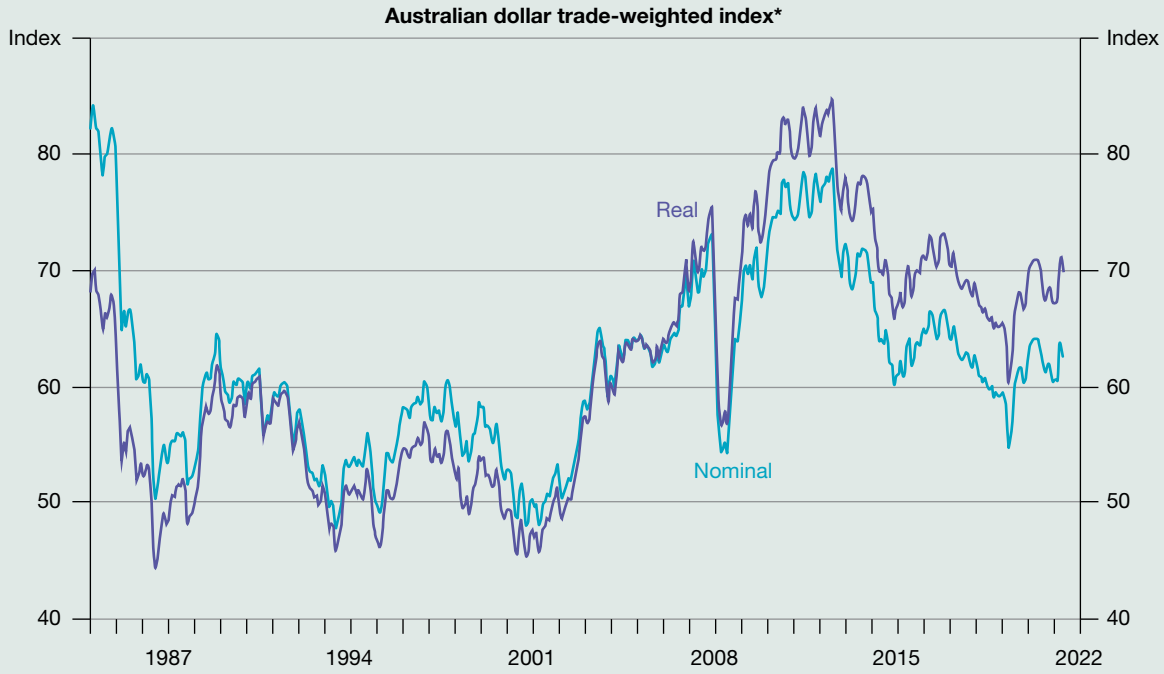
* Annual data are used prior to 1960.

Source: Reserve Bank of Australia, https://www.rba.gov.au/chart-pack/commodity-prices.html.

   a. **Define** what is meant by Australia's *terms of trade* and **explain** how it is measured. **(2 marks)**
   b. **Identify** and **explain** *one* important *factor* that could cause a rise in Australia's *terms of trade* over the past two years to early 2022. **(2 marks)**
3. **Explain** how a rise in the terms of trade would be likely to affect the following:
   a. Australia's current account balance **(2 marks)**
   b. The rate of economic growth. **(2 marks)**

4. Examine the figure below showing changes in Australia's TWI.

Trends in Australia's exchange rate (TWI).



* May 1970 = 100 for nominal; real indexed to equate post-float averages; latest observations for real TWI are estimates.

Source: ABS; RBA; Refinitv; WM/Reuters.

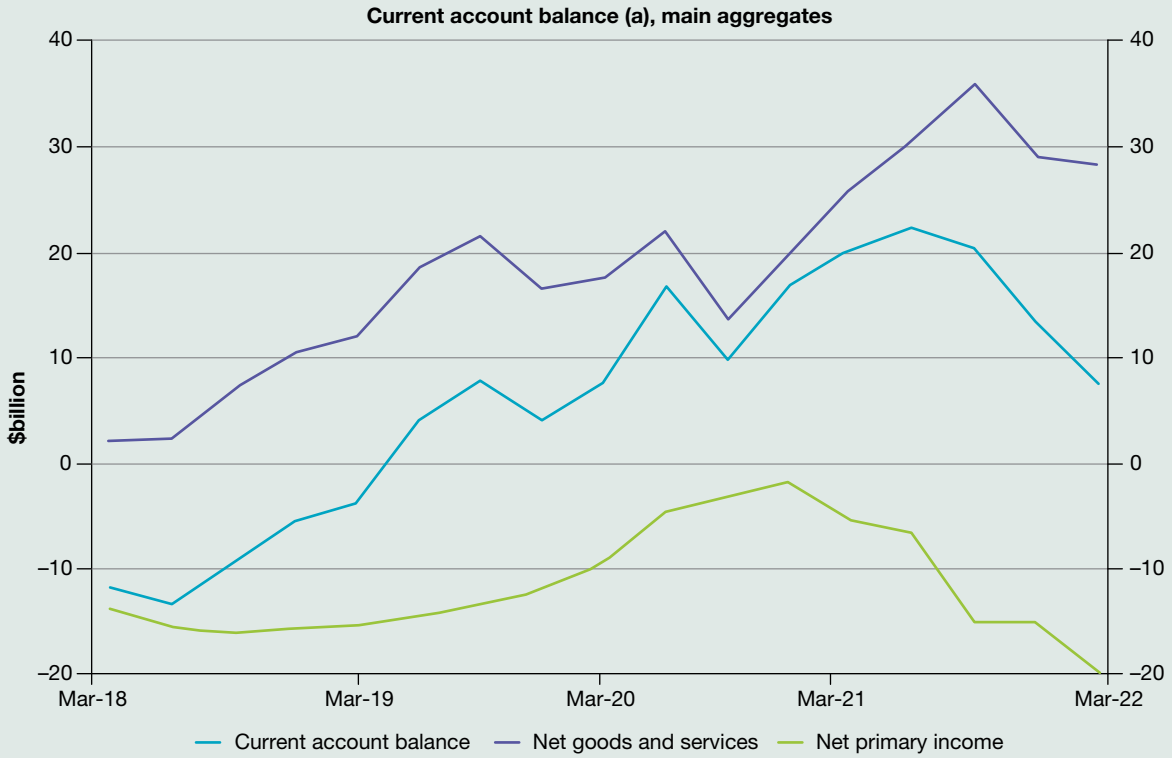
a. Overall, between 2012 and early 2022, Australia's real exchange rate (indicated by the TWI) fell. Using basic *theory*, **identify** and **explain** the main causes of this general *fall in our exchange rate*. **(2 marks)**

b. **Explain** how you would expect this general *fall* in the exchange rate to affect *Australia's inflation rate* and material living standards, other things remaining unchanged. **(4 marks)**

c. **Explain** how a fall in the A$ would be likely to affect our international competitiveness and material living standards. **(4 marks)**

5. Examine the figure below showing the main components of Australia's current account balance.

Trends in the key components of Australia's current account.



(a) Seasonally adjusted estimates at current prices.

Source: Australian Bureau of Statistics, Balance of Payments and International Investment Position, Australia March 2022.

a. **Define** the *balance of payments current account* and referring to the graph, **describe** how this balance changed between March 2018 and March 2022. **(2 marks)**
b. **Identify** and **explain** *two* factors that are likely to have *caused* the trend in Australia's current account balance during late 2021 and early 2022. **(2 marks)**
c. **Describe** the change in Australia's *net primary income balance* over the period March 2021 to March 2022. In your response, make reference to the data contained in the graph. **(1 mark)**

6. **Distinguish** between cyclical and structural factors affecting the current account balance, giving examples of each. **(2 marks)**
7. **Explain** how, in itself, *stronger* levels of *business confidence* among Australian firms would be likely to affect our *balance of payments on goods and services*. Support your answer with reasons. **(2 marks)**
8. **Explain** what is meant by the national *savings–investment gap*. **(2 marks)**
9. **Explain** how this gap has affected Australia's NFD and current account balance. **(2 marks)**
10. a. **Distinguish** between a rise in Australia's NFD and a rise in NFE. **(2 marks)**
    b. **Outline** one cost and one benefit of a rise in Australia's NFD. **(2 marks)**
11. Australia's *international competitiveness* has deteriorated overall during the last decade. **Identify** and **explain** the four most important *factors* that are likely to have caused this overall decrease in our *international competitiveness* in recent years. **(6 marks)**
12. **Explain** how you would expect poor international competitiveness to affect Australia's *unemployment rate* and living standards. **(5 marks)**

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Digital document Topic 3 Practice school-assessed coursework (doc-38084)

3.8 Exam questions

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Section A: Multiple choice questions

Question 1

Source: VCE 2020 Economics Exam, Section A, Q2 © VCAA

Which one of the following is a leakage from the circular flow model of income?

A. an increase in consumption spending
B. transfer payments made by the government
C. an increase in imports
D. an increase in investment spending.

Question 2

Source: VCE 2020 Economics Exam, Section A, Q4 © VCAA

If Australia's foreign equity assets exceed its foreign equity liabilities, this means that

A. Australia has invested less overseas than foreigners have invested in Australia.
B. Australia has invested more overseas than foreigners have invested in Australia.
C. the Australian Government has increased its borrowings from overseas to fund budget deficits.
D. the Australian Government has decreased its borrowings from overseas to fund budget deficits.

Question 3

Source: VCE 2020 Economics Exam, Section A, Q5 © VCAA

The imposition of a tariff would cause which one of the following?

A. a decrease in the price of imports and a rise in the demand for imports
B. an increase in the price of imports and a rise in the demand for imports
C. a decrease in the price of imports and a rise in the demand for import-competing domestic goods
D. an increase in the price of imports and a rise in the demand for import-competing domestic goods.

Question 4

Source: VCE 2020 Economics Exam, Section A, Q6 © VCAA

An improvement in Australia's current account balance is most likely to occur when

A. the trade balance surplus increases.
B. the terms of trade deteriorate.
C. the Australian dollar appreciates.
D. China's economic growth slows.

Question 5

Source: VCE 2019 Economics Exam, Section A, Q14 © VCAA

A hypothetical economy recorded a balance of payments on current account of –$12075 million in the September 2018 quarter and then –$3510 million in the December 2018 quarter. What could be a likely cause of this change?

A. a decline in foreign investment
B. an improvement in the terms of trade
C. a slowdown in world economic growth
D. an appreciation of the hypothetical economy's exchange rate.

Question 6

Source: VCE 2018 Economics Exam, Section A, Q5 © VCAA

The payment of dividends to overseas shareholders will appear in the balance of payments as a

A. credit in the capital and financial account.
B. debit in the capital and financial account.
C. credit in the balance of payments on current account.
D. debit in the balance of payments on current account.

Question 7

Source: VCE 2018 Economics Exam, Section A, Q6 © VCAA

An increase in productivity is likely to

A. worsen Australia's international competitiveness and increase inflation.
B. worsen Australia's international competitiveness and decrease inflation.
C. improve Australia's international competitiveness and increase inflation.
D. improve Australia's international competitiveness and decrease inflation.

Question 8

Source: VCE 2018 Economics Exam, Section A, Q8 © VCAA

Consider the following data for an economy over a two-year period. The prices given reflect the average for the relevant year.

	Year 1	Year 2
Index of export prices	100	96
Index of import prices	100	120

What conclusion can be drawn from the data above?

A. Between Year 1 and Year 2 the terms of trade improved.
B. Between Year 1 and Year 2 the terms of trade deteriorated.
C. Between Year 1 and Year 2 the terms of trade remained unchanged.
D. It cannot be determined if there has been a change between Year 1 and Year 2.

Question 9

Source: VCE 2018 Economics Exam, Section A, Q14 © VCAA

Which of the following would be the most likely impact of an increase in inflation in the United States (US)?

A. an increase in US interest rates and a depreciation of the Australian dollar
B. an increase in US interest rates and an appreciation of the Australian dollar
C. a decrease in US interest rates and a depreciation of the Australian dollar
D. a decrease in US interest rates and an appreciation of the Australian dollar.

Question 10

Source: VCE 2017 Economics Exam, Section A, Q5 © VCAA

What is the most likely effect of a decrease in the tariff on an imported good?

A. a loss of jobs for overseas suppliers
B. a fall in the price of a competing domestic good
C. a rise in the price of a competing domestic good
D. an increase in employment in the domestic sector.

Question 11

Source: VCE 2017 Economics Exam, Section A, Q9 © VCAA

The following information refers to a hypothetical country's terms of trade.

Year	Import price index	Export price index
1	100	100
2	104	117

The change in the terms of trade from Year 1 to Year 2 most likely means that, for this country

A. the exchange rate will fall.
B. the current account deficit will rise.
C. the value of imports is greater than the value of exports.
D. more imports can be bought with a given volume of exports.

Question 12

Source: VCE 2017 Economics Exam, Section A, Q12 © VCAA

Consider the following data relating to a hypothetical country's balance of payments for 2016–2017

Item	$ billion (b)
net goods	+110
net services	–50
net primary incomes	–90
net secondary incomes	+25

From this data, the balance of payments on current account would be a

A. $15b surplus.
B. $15b deficit.
C. $5b surplus.
D. $5b deficit.

Question 13

Trade liberalisation is likely to slow inflation because:

A. resources are reallocated into areas where efficiency is highest
B. local firms are exposed to stiffer competition from imports, especially of goods
C. firms can spread their fixed costs more thinly over larger production runs
D. all of the above may be applicable.

Question 14

International trade relationships exist between countries. Typically, these involve:

A. exports of goods and services.
B. imports of goods and services.
C. exports and imports of goods and services.
D. exports and imports of goods and services along with movements of money capital and investments.

Question 15

Freer international trade usually improves living standards by:

A. increasing efficiency in resource use, growing GDP and decreasing inflation.
B. allowing countries to specialise in areas of comparative cost advantage.
C. growing jobs and incomes, especially in the longer term, thereby increasing our purchasing power.
D. all of the above.

Question 16

Study the table below containing hypothetical data below for country A and country B. It shows the total number of hours that must be worked by each employee to produce a unit of wool or a unit of wheat. Each country can produce the same two products, wool and wheat.

Country	Wool (hours worked per unit produced)	Wheat (hours worked per unit produced)
A	10	50
B	20	200

Based on this data:

A. country B has an absolute cost advantage in wheat.
B. country A has a comparative cost advantage in wheat.
C. country B has no type of cost advantage in either product.
D. country B has an absolute and comparative cost advantage in both goods.

Question 17

Referring to the data from question 16, which statement is *false*?

A. Country A is more efficient at producing both wool and wheat than country B.
B. Country B is less efficient at producing both wool and wheat than country A.
C. Country B should specialise in the production of wheat because its comparative advantage is greater than that for wool.
D. Country B is relatively more efficient at producing wool than wheat.

Question 18

Examine the table below showing hypothetical data relating to a nation's balance of payments for 2022–23.

Balance of payments items	$ million (+surplus, deficit)
Net goods	+100
Net services	–50
Net primary incomes	–100
Net secondary incomes	+25

From these data, the balance of payments on *current account* would be:

A. $125 million surplus.
B. $125 million deficit.
C. $175 million deficit.
D. none of the above.

Question 19

Which of the following would have the *opposite* effect on the current account balance to the other three responses?

A. Severe climatic conditions result in drought and cyclones in Australia.
B. Australia's average inflation rate is consistently below that of our trading competitors.
C. There is a rise in domestic consumer confidence and a fall in confidence in China.
D. The exchange rate for the Australian dollar rises strongly.

Question 20

Which of the following would be likely to have the *opposite* effect on the size of Australia's CAD to the other three responses?

A. Overall stronger domestic aggregate demand-side conditions develop
B. A higher household savings ratio domestically from 3 per cent to 10 per cent
C. Generally less favourable aggregate supply conditions including weaker rises in domestic productivity, higher RULCs and rises in international oil prices to over US$100 a barrel
D. Less favourable TOT for Australia and rises in defence spending on equipment.

Question 21

Concerning Australia's NFD and liabilities, which statement is *false*?

A. The NFD is the excess of what Australia has lent overseas relative to what we have borrowed.
B. The rise in official debt is partly the result of weaker economic activity and hence larger budget deficits.
C. Non-official, private sector debt has risen due to the savings–investment gap and lower interest rates in some overseas countries.
D. In part, our abundance of natural resources and favourable economic and social institutions help to explain the rise in our external liabilities.

Question 22

The aggregate demand-side or aggregate supply-side development *most unlikely* to cause an *appreciation* of the Australian dollar is:

A. a rise in world commodity prices and the terms of trade.
B. a recession in Japan, China and the United States.
C. higher domestic interest rates and the relaxation of controls on the level of foreign investment.
D. huge new discoveries of natural resources.

Question 23

Which statement is generally *false* for Australia?

A. Very strong levels of domestic economic activity usually cause a cyclical weakening in the current account balance.
B. A weaker Australian dollar can actually help improve the balance of net goods.
C. Very rapid economic growth resulting in higher inflation can cause a fall in the TWI.
D. Foreign borrowing can tend to weaken the balance of payments current account by raising the overall value of primary income debits relative to the overall value of primary income credits.

Question 24

A lower Australian dollar is *likely* to lead to which of the following macroeconomic effects?

A. Higher cost and demand inflation, stronger economic growth and lower cyclical unemployment
B. Lower inflation and economic growth, with higher structural unemployment
C. Overall reduced competitiveness of domestic manufacturing industries that export and compete with imports
D. A smaller number of overseas tourists coming to Australia and locals tending to holiday abroad, slowing down the growth in GDP and employment.

Question 25

Australia's TOT would tend to *fall* and become *less favourable* if:

A. There was a rise in consumer and business confidence among our trading partners.
B. There was weaker global economic activity.
C. Global disposable income rose.
D. There were generally less favourable growing conditions for crops worldwide.

Question 26

Concerning Australia's international competitiveness, which statement is *false*?

A. Since 2009, Australia has generally become less internationally competitive.
B. Consistently strong labour productivity has lifted our international competitiveness.
C. The progressive cut in company tax for small and medium-sized businesses should help improve our international competitiveness.
D. The abundance of many natural resources should enhance our international competitiveness, but our relatively high labour costs undermine it.

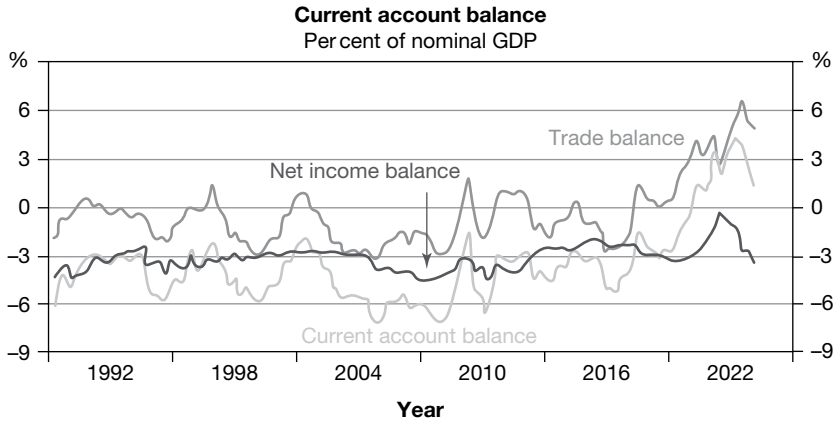
Resources

Digital documents Multiple choice answer grid (doc-34799)
Multiple choice answers (doc-34800)

Section B: Extended response questions

Question 1 (11 marks)

Source: Adapted from VCE 2021 Economics Exam, Section B, Q4 © VCAA



Source: Reserve Bank of Australia, https://www.rba.gov.au/chart-pack/balance-payments.html.

a. With reference to the graph above, **explain** the trend in the current account balance over the past two years. **(2 marks)**

b. **Explain** how the general current account balance over the two years to 2021 would have affected the balance on the capital and financial account. **(2 marks)**

c. With reference to the graph above, **explain** how the performance in the trade balance over the two years to 2021 might have affected both:
- The achievement of the goal of strong and sustainable economic growth
- Australia's living standards. **(4 marks)**

d. **Explain** how a change in **one** structural factor might result in improvement in the current account balance. **(3 marks)**

Question 2 (16 marks)

Source: VCE 2020 Economics Exam, Section B, Q1 © VCAA

a. **Describe** how a lower cash rate in Australia puts downward pressure on the value of the exchange rate and how this might support activity across a range of industries. **(4 marks)**

b. **Explain** the likely impact of each of the following scenarios, on Australia's *exchange rate*. **(6 marks)**
- There is a favourable movement in the terms of trade.
- There is a slowdown in global economic growth.

c. **Explain** how *downward* pressure on Australia's exchange rate might influence each of the following. **(6 marks)**
- Australia's balance of payments on current account
- Australia's material and non-material living standards.

Question 3 (7 marks)

Source: VCE 2019 Economics Exam, Section B, Q4b&c © VCAA

a. **Explain** one way in which a *decline* in the rate of economic growth of Australia's major trading partners may influence either Australia's balance of payments on *current account* or the value of the *Australian dollar*.

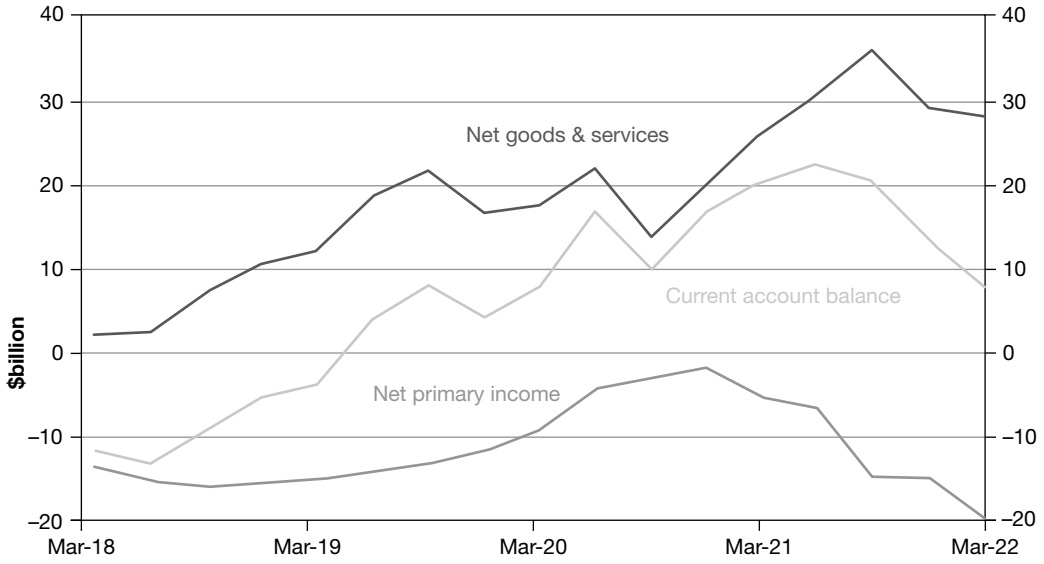
(3 marks)

b. Assume Australia experiences an *unfavourable* movement in the *terms of trade* across a two-year period. **Explain** how this scenario might affect Australia's domestic macroeconomic goal of strong and sustainable *economic growth*, and Australia's *living standards*. **(4 marks)**

Question 4 (3 marks)

Source: Adapted from VCE 2018 Economics Exam, Section B, Q3 © VCAA

Current account balance (a), main aggregates



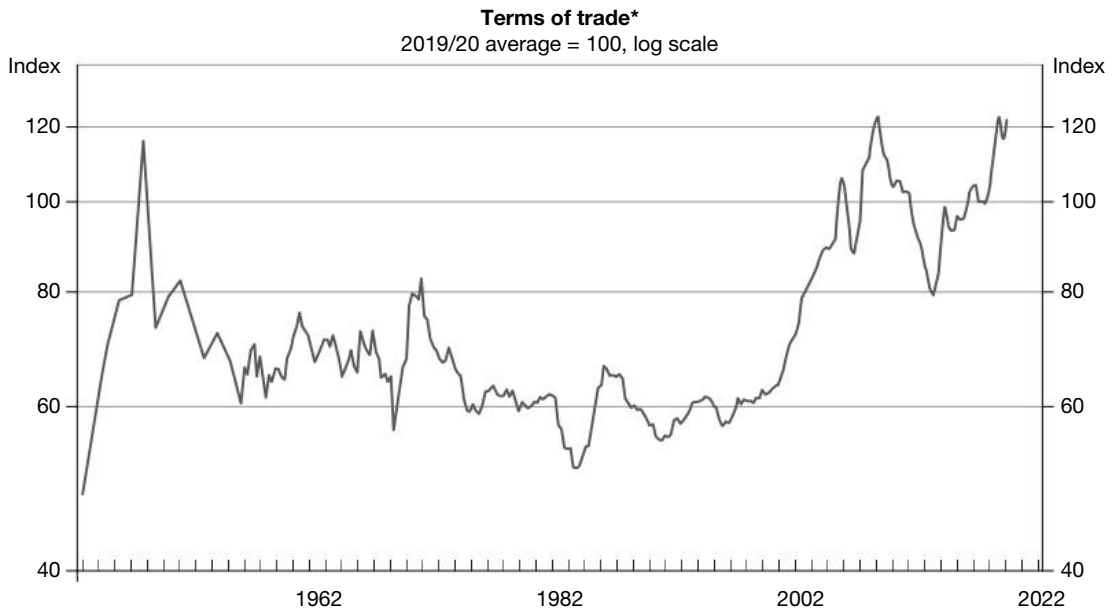
(a) Seasonally adjusted estimates at current prices.

Source: Australian Bureau of Statistics, Balance of Payments and International Investment Position, Australia March 2022.

a. Referring to the graph above, **outline** *one important factor* that might explain Australia's general *current account balance* during 2019–20–21.

Question 5 (8 marks)

Source: Adapted from VCE 2016 Economics Exam, Section B, Q1 © VCAA



* Annual data are used prior to 1960.

Source: Reserve Bank of Australia, https://www.rba.gov.au/chart-pack/commodity-prices.html.

a. Refer to the graph of the terms of trade. **Outline** *one factor* that might explain the general trend in Australia's *terms of trade* over the last few years. **(2 marks)**

b. **Analyse** how an *unfavourable* movement in the *terms of trade* in the future would be likely to affect Australia's: **(4 marks)**

- balance of payments on current account
- living standards.

c. **Describe** how a *depreciation* of the Australian dollar might affect the rate of *inflation* in Australia. **(2 marks)**

Question 6 (6 marks)

International trade is usually seen as beneficial. **Explain** how international trade can result in the following benefits:

a. Lower prices and inflation rates. **(2 marks)**

b. Greater economies of large-scale production. **(2 marks)**

c. Greater efficiency in the use or allocation of resources. **(2 marks)**

Question 7 (4 marks)

Identify and **explain** how *one* important *cyclical* or *aggregate demand* factor and how *one* important *structural* or *aggregate supply* factor is likely to have affected the size of Australia's recent current account balance.

Question 8 (6 marks)

Recently, there has been a rise in Australia's NFD.

a. **Identify** and **explain** one important advantage and one important disadvantage of the recent rise in Australia's NFD. **(2 marks)**

b. **Identify** and **explain** the *two* most important *causes* of the substantial *rise* in Australia's NFD in recent years. **(2 marks)**

c. **Distinguish** NFD and NFE. **(2 marks)**

Question 9 (14 marks)

Changes in Australia's exchange rate have important impacts on the economy.

a. **Define** the term, *trade weighted index* (TWI). **(2 marks)**

b. **Explain** how Australia's *exchange rate* is nowadays determined. **(2 marks)**

c. **Explain** how you would expect a fall in Australian interest rates relative to those in the United States, to affect the exchange rate. **(2 marks)**

d. **Explain** how you would expect a rise in Australia's TOT to affect the exchange rate. **(2 marks)**

e. **Outline** how a general *depreciation* of the A$ would be likely to affect Australia's achievement of key *domestic macroeconomic goals*. **(6 marks)**

Question 10 (11 marks)

Australia's *international competitiveness* is not as strong as it should be.

a. **Define** the term, *international competitiveness*. **(1 mark)**

b. **Identify** and **outline** the main causes of the overall *decline* in Australia's *international competitiveness*. **(4 marks)**

c. **Explain** how an *improvement* in Australia's *international competitiveness* would be likely to affect each of the following.

- The current account balance **(2 marks)**
- The rate of economic growth **(2 marks)**
- Material living standards. **(2 marks)**

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UNIT

4 Managing the economy

AREA OF STUDY 1

Aggregate demand policies and domestic economic stability

OUTCOME 1

Discuss the operation of aggregate demand policies and analyse their intended effects on the achievement of the domestic macroeconomic goals and living standards.

4 Aggregate demand policies and domestic economic stability 309

AREA OF STUDY 2

Aggregate supply policies

OUTCOME 2

Discuss the operation of aggregate supply policies and analyse the effect of these policies on the domestic macroeconomic goals and living standards.

5 Aggregate supply policies 409

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TOPIC 4

Aggregate demand policies and domestic economic stability

UNIT 4 AREA OF STUDY 1

Aggregate demand policies and domestic economic stability

OUTCOME 1

On completion of this unit the student should be able to discuss the operation of aggregate demand policies and analyse their intended effects on the achievement of the domestic macroeconomic goals and living standards.

LEARNING SEQUENCE

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4.1 Overview

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4.1.1 Introduction

Let us take a sneak preview of what lies ahead in VCE Economics Unit 4, where the focus is on the various *economic policies* used by the Australian government to help improve our living standards and prosperity.

Earlier in Topic 2, we saw that market economies are typically *unstable*. They experience cyclical booms and recessions (caused by changes in AD … C + I + G + X − M, reflecting variable aggregate demand conditions), along with structural issues (relating to the influences on productive capacity and AS). At times, these two factors can undermine the simultaneous achievement of the government's *three* key macroeconomic goals required for **domestic economic stability**:

- *the goal of low and stable inflation* (a slow average rise in general consumer prices averaging from 2–3 per cent a year over time)
- *the goal of a strong and sustainable rate of economic growth* (the fastest growth in national production — perhaps around 3 per cent per year rise in GDP or a little more — that does not accelerate inflation or jeopardise the achievement of other economic and environmental goals)
- *the goal of full employment* (the lowest unemployment rate — around 4.0–4.5 per cent of the labour force — that does not accelerate inflation).

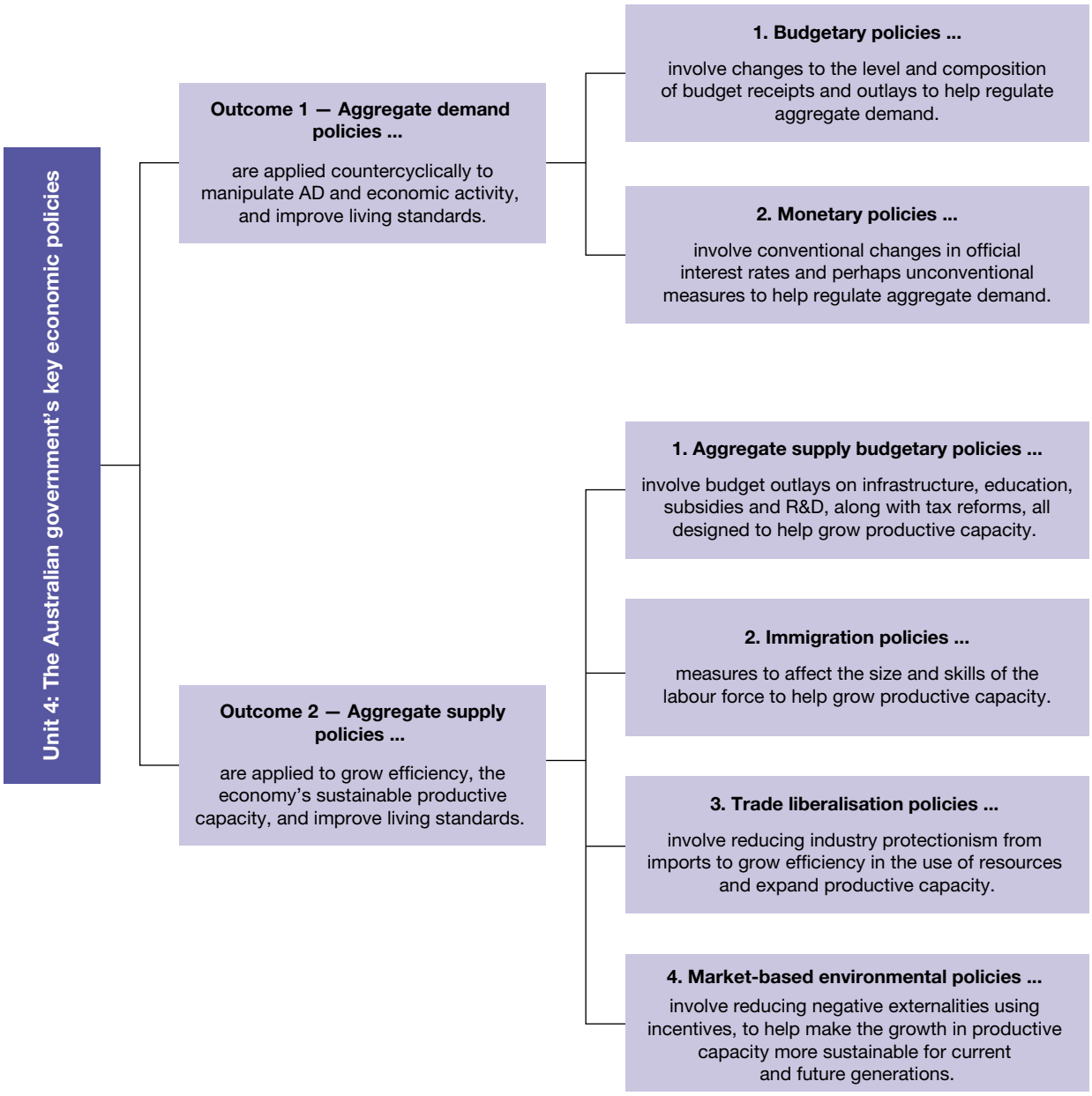
In recent years, the Australian economy has been through a recession and not fully achieved these goals. In part, this was due to the disruptive effects of lockdowns and the health crisis, brought on by several waves of the COVID-19 pandemic. As a result, living standards initially took a dive.

To help moderate the severity of instability, the Australian government has used a *policy mix* involving both *aggregate demand policies* (to be covered in Outcome 1, Topic 4) and *aggregate supply policies* (to be covered in Outcome 2, Topic 5). This mix of strategies is summarised in figure 4.1.

Referring to figure 4.1, notice the *two* branches of **aggregate demand policy** — *budgetary policy* (to do with changes in the value of government receipts and outlays), and *monetary policy* (to do with changes in **interest rates**). Following basic Keynesian theory, these policy measures have been applied recently in a **countercyclical** way by the government and Reserve Bank, to help manipulate the level of AD (C + I + G + X − M). They provided extra stimulus to spending and economic activity during the recession of 2020, and then some of the support has slowly been withdrawn as the economy was recovering during 2021 and 2022.

However, at the same time, the government also employed a range of **aggregate supply policy** measures like aspects of budgetary policy (e.g. outlays on infrastructure, education, subsidies, R&D, along with tax reforms), trade liberalisation (e.g. cutting tariff protection), and environmental policy (e.g. market-based measures to reduce CO_2 emissions and climate change). These initiatives helped to boost living standards, by growing the economy's efficiency and sustainable level of productive capacity. Over time, these policies have helped to ensure that our growing demand for goods and services has been matched by an expanding level of capacity and supply.

FIGURE 4.1 An overview of government policies to be covered in Unit 4 Economics.



But for now, it's time to find out a bit more about *aggregate demand policies*, starting with a closer look at the nature of budgetary policy and how this can work to improve stability and support living standards.

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 need for aggregate demand policies, including monetary policy and budgetary policy in terms of stabilising the business cycle	**All**
Monetary policy	
The role of the RBA with respect to monetary policy as outlined in its charter	**4.10**
Conventional monetary policy (cash rate target) and how it affects interest rates	**4.11**
One example of the operation of an unconventional monetary policy tool from the past two years	**4.14**
Transmission mechanism of monetary policy and its effect on the level of aggregate demand, including the four channels of savings and investment, cash-flow, exchange rate, and asset prices and wealth	**4.12**
The stance of monetary policy: expansionary (accommodative), contractionary (restrictive) or neutral	**4.13**
The stance of monetary policy over the past two years and its likely effect on the achievement of the domestic macroeconomic goals and living standards	**4.14**
The strengths and weaknesses of using monetary policy to affect aggregate demand and influence the achievement of the domestic macroeconomic goals and living standards	**4.15**
Budgetary policy	
Sources of government revenue, including direct and indirect taxation; progressive, regressive and proportional taxes; and revenue from government businesses and the sale of government assets	**4.3**
Types of government expenses, including government current and capital expenditure and transfer payments	**4.4**
The budget outcome: balanced, deficit or surplus	**4.5**
The underlying cash balance (budget outcome), including as a proportion of Gross Domestic Product (GDP)	**4.5**
Methods of financing a deficit or utilising a surplus	**4.5**
The relationship between the budget outcome and the level of government (public) debt	**4.5**
The role of automatic stabilisers (cyclical component of the budget) in influencing aggregate demand and stabilising the business cycle	**4.7**
The role of discretionary stabilisers (structural component of the budget) in influencing aggregate demand and stabilising the business cycle	**4.7**
The effect of automatic and discretionary changes in the budget on the budget outcome and government (public) debt	**4.7**
The stance of budgetary policy: expansionary or contractionary	**4.6**
The effect of the budgetary policy stance and budgetary initiatives over the past two years and their likely effect on the achievement of the domestic macroeconomic goals and living standards	**4.8**
The strengths and weaknesses of using budgetary policy to affect aggregate demand and influence the achievement of the domestic macroeconomic goals and living standards	**4.9**

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 economic issues and form conclusions
◯ Discuss the operation of aggregate demand policies
◯ Analyse the effect of current factors on the setting of aggregate demand policies and living standards
◯ Predict the impact of changes in aggregate demand policies on the achievement of the domestic macroeconomic goals and living standards
◯ Analyse the strengths and weaknesses of aggregate demand policies in achieving the domestic macroeconomic goals and living standards

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on Resources

Digital document Key terms glossary (doc-34514)

PART A Aggregate demand budgetary policies and the pursuit of domestic economic stability

4.2 BACKGROUND KNOWLEDGE Definition and aims of budgetary policy

BACKGROUND INFORMATION

- The federal government's *budgetary strategies* or policy is designed to help promote the Australian government's domestic macroeconomic goals and improve living standards

4.2.1 Definition of budgetary policy

Budgetary or fiscal policy *is an aggregate demand strategy that is directed by the* **treasurer** *and involves estimates of changes in the level and composition of budget receipts (revenues) and budget outlays (expenses) for the year ahead:*

- **Budget receipts** or **revenues** come from *direct taxes* such as those on personal income and company profits, and from *indirect taxes* such as excise or tariffs, along with *non-tax* revenue.
- **Budget outlays** or **expenses** arise from various types of government expenditure on public goods such as defence, health and education, involving both government *consumption* spending (G_1) and government *investment* spending (G_2), as well as **transfer payments** including welfare and industry subsidies.

The *difference* in value between the government's expected receipts and outlays is called the overall **budget outcome** which, as we shall soon see, might be a *deficit* (when the annual value of receipts is less than outlays), *surplus* (when receipts are greater than outlays) or *balance* (when the value of receipts is equal to outlays).

As mentioned, *budgetary policy* is regarded as a key macroeconomic or **aggregate demand management policy** instrument, simply because changes in the levels of government receipts and outlays can have powerful effects on total expenditure (the components of AD, especially the levels of C, I and G), national production, employment and the general level of prices or inflation. For example, changes in personal income tax rates and/or welfare benefits can affect C, changes in company tax rates can affect I, changes in spending on infrastructure can affect G_2 and export development grants can affect X. In these ways, budgetary policy can be used to influence leakages, injections and AD in the economy, as a way of managing the level of economic activity.

However, because budget receipts and outlays are only *estimated* or *projected* values based on certain *assumptions* and *forecasts*, what is announced on Budget night might not actually happen. As we have seen in recent years, the actual or closing budget numbers might be quite different to those initially forecast, reflecting *unexpected* developments that unfold during the year. These can alter the value of receipts and outlays. For instance, *actual* budget deficits have sometimes been much *bigger* than anticipated in the original forecast, due to weaker economic growth, higher unemployment, slower wage growth, depressed TOT, a global slowdown, a pandemic, severe climatic events, and greater household and business pessimism. On other occasions, the *actual* budget outcome has been *stronger* than forecast because of better than expected developments that have increased the value of budget receipts relative to outlays.

Because conditions can change so much during the year, it is now common for the treasurer to update budget forecasts during the Mid-Year Economic and Fiscal Outlook (MYEFO), delivered in December each year. Sometimes too, crises like the COVID-19 pandemic of 2020 can suddenly appear, requiring prompt emergency measures that can't wait till the next budget typically in May.

4.2.2 The priorities and aims of budgetary policy

The *ultimate aim* of all government economic policies (including fiscal policy), is to increase the *wellbeing* of Australians. So, depending on the changing conditions of the time, different budgets can target particular problems like unemployment, weak economic growth or the rising cost of living — with the hope of better achieving our key *domestic macroeconomic goals and living standards*.

Recently in 2020 and 2021, for instance, the economy was weak so *'jobs and growth'* and mapping a recovery path out of COVID-19 were among the key aims of budgetary policy decisions. In addition, the Treasurer needed to ensure that the government was living within its means with a plan to *return the budget to surplus* over time at a prudent rate, as conditions improve. Failure to do this would lead to unsustainable rises in *government debt*.

The following quotes from the Treasurer help to illustrate some of these key aims of recent budgetary policy:

Budget	Some objectives of recent budgets (with quotes from the treasurer's speeches)
Aims of the 2020–21 budget measures	This budget was a record deficit that sought to map a path out of the COVID-induced recession, by trying to stimulate AD. '… Tonight, we embark as a nation on the next phase of our journey. A journey to rebuild our economy and secure Australia's future. Our plan will grow the economy. Our plan will create jobs. Our plan will continue to guarantee the essential services Australians rely on.' (Treasurer Josh Frydenberg, Budget speech, 6 October 2020)
Aims of the 2021–22 budget measures	This budget planned to slowly reduce the budget deficit, while still providing significant stimulus to spending. '… this Budget will ensure we come back even stronger, securing Australia's recovery … A plan that continues to protect Australians from COVID … a plan that creates more jobs… a plan that guarantees essential services … and a plan that builds a more resilient and secure Australia.' (Treasurer Josh Frydenberg, Budget speech, 11 May 2021)
Aims of the 2022–23 budget measures	'…Despite the challenges, our economic recovery is leading the world. This is not a time to change course. This is a time to stick to our (budget) plan. A plan that delivers cost of living relief now. A plan that creates jobs for the long-term. A plan that guarantees the essential services.' (Treasurer Josh Frydenberg, Budget speech, 29 March 2022)

4.2 Activities

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4.2 Quick quiz on | **4.2 Exercise**

4.2 Exercise

1. **Define** the term *budgetary policy*. **(2 marks)**
2. **Outline** the main aims of recent budgetary policy. **(2 marks)**
3. **Outline** the ways budgetary policy be regarded as an aggregate demand policy. **(2 marks)**
4. **Outline** why it is important for the budget to eventually return to surplus over the medium to longer term. **(2 marks)**

Solutions and sample responses are available online.

4.3 Sources of government revenue (receipts)

KEY KNOWLEDGE

- Sources of government revenue, including direct and indirect taxation; progressive, regressive and proportional taxes; and revenue from government businesses and the sale of government assets

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Budget revenues are the federal government's incoming receipts of money from various sources. Figure 4.2 part 1 shows the split between direct taxes (levied on incomes received), indirect tax (added onto the price of goods when they are purchased), and non-tax receipts; while part 2 shows the breakdown of budget revenues in more detail. As we shall soon see, the level and composition of budget revenues greatly impacts disposable incomes, AD, economic activity, inflation, unemployment, the allocation of resources, external transactions, income distribution and living standards.

4.3.1 Direct taxation

Direct taxes, levied on those receiving incomes, make up almost 70 per cent of all budget receipts.

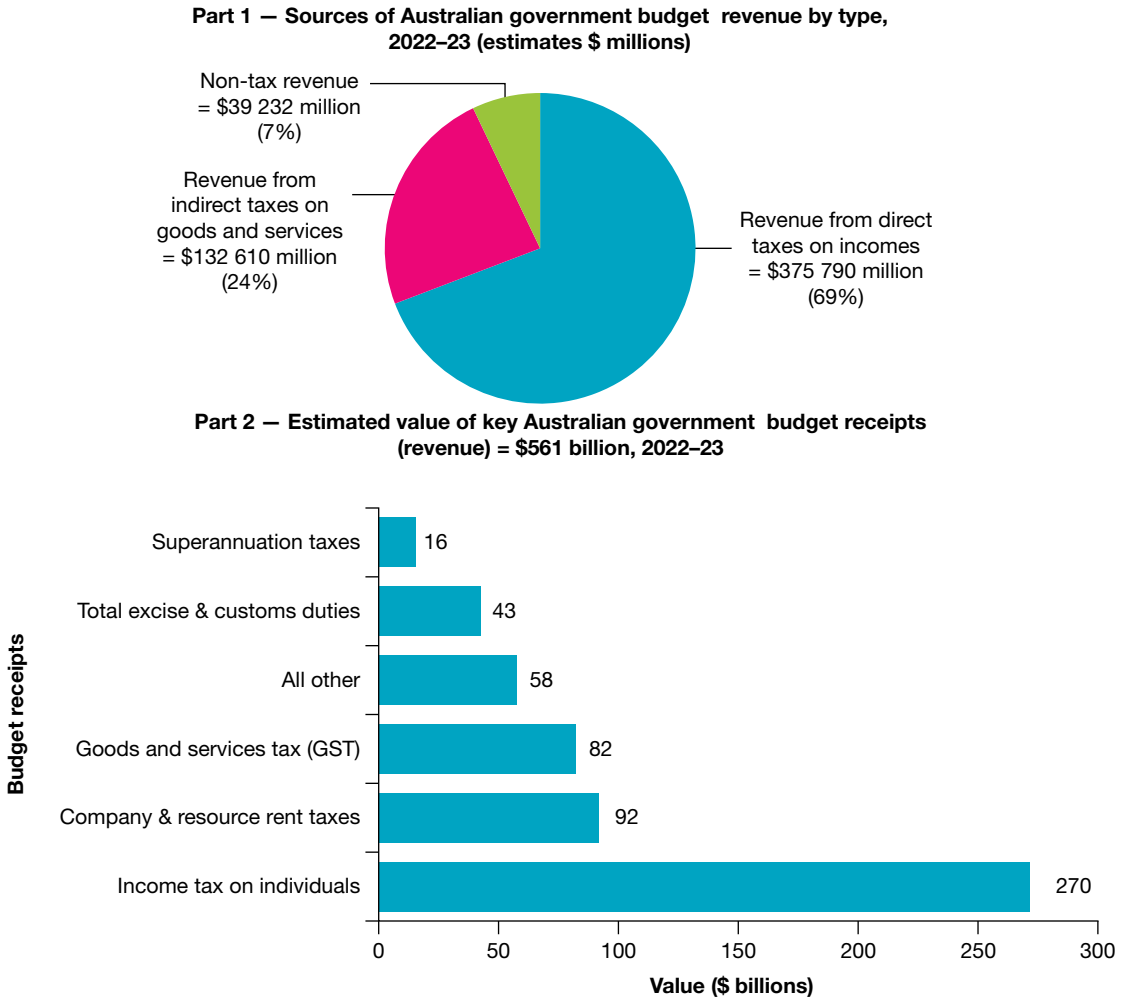


They include the following:

- *Personal income tax* is a direct tax paid by individuals who earn incomes in the form of wages, salaries, rent, interest and dividends. For most people, income tax is deducted by firms from the pay packets of employees before they are paid (**pay-as-you-go** or **PAYG**). However, for self-employed individuals, a different system exists for estimating income and the amount of tax that must be paid. In both cases, tax is levied (charged) at progressive rates where the marginal tax rate, or percentage of income taken in tax, increases as income rises. In 2022–23 personal income tax rates ranged from 0 per cent on incomes below the tax-free threshold of $18 200 per year, up to the top marginal tax rate of 45 per cent on annual taxable incomes in excess of $180 000 (47 per cent after the 2 per cent Medicare levy is added). In addition, there are further reductions in tax rates currently scheduled for middle and upper income earners in 2024–25. Overall, income tax raises around 48 per cent of all federal government receipts.

- *Medicare levy* is a direct tax designed to provide medical insurance in order to help cover the basic costs of family health care and the National Disability Insurance Scheme. For most people, this is levied at a rate of 2 per cent of personal taxable incomes.
- *Capital gains tax (CGT)* is levied on the real profits made from the sale of capital assets such as land and shares purchased after 1985. During 2022–23, the CGT applied to only 50 per cent of the capital gain, so the actual rate is only half the normal appropriate marginal income tax rate (with the Medicare levy added). Currently this means that the effective top marginal income tax rate is around 23.5 per cent.

Figure 4.2 Sources of Australian government budget receipts of $561 billion for 2022–23.



Source: Australian government, Budget papers 2022, Budget paper 1, Statement 4, revenue, P126, see https://budget.gov.au/2022-23/content/bp1/download/bp1_2022-23.pdf.

- There are two rates of corporate tax. Large companies with a turnover greater than $50 million per year pay tax at the rate of 30 per cent of each dollar of profit. In contrast, small and medium-sized enterprises (SMEs) now pay tax at 25 per cent, following stepped reductions over recent years. Company tax raises around 18 per cent of all budget revenue.
- *Fringe benefits tax (FBT)* represents a direct tax paid by firms on the value of 'perks' provided by businesses to their employees, such as a company-provided car or house. Currently, this is levied at 47 per cent of the taxable benefit.
- *Petroleum resource rent tax (PRRT)* is levied at 40 per cent of the profits made from offshore petroleum operations.
- *Superannuation fund tax* is levied at 15 per cent of most premiums, as well as on the interest from fund investments. Currently, people aged over 60 can withdraw their superannuation tax-free.

4.3.2 Indirect taxation

Indirect taxes are added onto the price of some goods at the point of sale, and make up nearly 24 per cent of all budget receipts. They include the following:

- *Excise duty* is an indirect tax imposed on selected, locally produced goods such as petrol, alcohol and tobacco. It is a flat amount of tax per physical unit (e.g. a kilogram or a litre). For example, the excise on unleaded petrol is about 30 per cent of the price of each litre sold, while that for brandy is over $50 per litre of alcohol. The precise rates applicable are adjusted twice a year and are indexed or linked to changes in the CPI. Overall, excise tax raises about 8 per cent of government revenue. The system of excise duty on alcohol has been reviewed, with steep rises in the excise on tobacco in recent years.
- *Customs duties or tariffs* are an indirect tax levied on certain imported goods to raise revenue and protect local producers from foreign competition. Since the early 1970s, the general tariff rate for manufactured goods was reduced dramatically from an average rate of nearly 40 per cent to less than 1 per cent.
- *Goods and services tax (GST)* is a broad-based indirect tax levied at the rate of 10 per cent. It is collected by the federal government on behalf of the states and territories. Consumers pay the GST when they purchase goods and services. The retailer adds GST to the price of items when they are sold, making the GST a regressive tax because the tax burden or rate (expressed as a percentage of their income level) is heavier for low-income earners than it is for high-income earners. Although the GST is levied on most things, for equity reasons there are currently some exemptions for necessities including basic unprocessed foods, residential rent, gifts to charities, secondhand goods, government charges for rates and water, car registration, export production, education and school fees, health care and insurance, women's sanitary products, prescription medicines and public health goods, nursing home charges, childcare and financial services.

4.3.3 Non-tax revenue (revenue from government businesses and the sale of government assets)

Non-tax receipts currently raise around 7 per cent of all federal government revenues. They come from three main sources:

- The profits gained from the operation of *government business enterprises* that sell goods and services (such as Australia Post).
- Receipts from *asset sales* when government business enterprises (GBEs) are *privatised* (e.g. when Medibank Private was created in 2014). However, these will only be included in the *headline* budget outcome and *not* the *underlying* outcome).
- Interest (e.g. earned by the Future Fund), petroleum royalties, the repayment of loans by state and local governments, HECS loan repayments by students, GST administration costs and property rentals.



4.3.4 The difference between progressive, regressive and proportional taxes

When it comes to considering the tax *burden* or the impact that taxes can have on how evenly or unevenly incomes are *distributed* between individuals, not all taxes are the same.

Progressive taxes

Progressive taxes are those that narrow the gap between individuals on higher as opposed to lower incomes. Here, the *tax rate* (i.e. expressed as a percentage of income) rises with the level of income.

Perhaps the best example of this is our *personal income tax system*. Currently (at least until the changes scheduled for July 2024), those on taxable incomes below $18 200 pay a *zero rate* of tax, leaving them with relatively more disposable income. However, as taxable income rises, taxpayers move into higher tax brackets. That is, at certain cut offs or thresholds, those additional dollars earned are taxed at higher *marginal* rates. Currently these rates include 19.0, 32.5, 37.0, and 45.0 per cent (the latter is the top marginal rate, for those with taxable incomes over the threshold of $180 000 per year). Redistributing incomes and purchasing power more evenly helps to create a greater degree of equity or fairness than otherwise. It also provides extra revenue, allowing the government to better finance important outlays on health, education and welfare — things that directly help to improve living standards.

Regressive taxes

Regressive taxes have the opposite effect on the degree of income inequality in Australia. Indirect taxes, like the GST or the excise tax on petrol, *increase income inequality*. This is because the tax on a good or service (measured in dollar terms) represents a greater proportion of a lower-income earner's income, than that for a high-income earner. It means that the tax burden is unfairly shifted onto those who can least afford it, widening the gap in purchasing power.

So, for example, a 10 per cent GST added on the price of some necessity initially costing $10, would meant that the item would now sell for $11. While all consumers of this good would pay exactly the same amount of tax or $1 in this case, when this $1 tax is expressed as a percentage of income, the rate would be relatively *higher* for those on *lower incomes* as opposed to those on higher incomes.

Proportional taxes

Proportional taxes have a fairly *neutral* impact on the distribution of income, because the tax rate (expressed as a percentage of income) remains constant no matter how much or how little income is earned. An example of a proportional tax is company tax where large businesses pay at the rate of 30 per cent of each dollar of profit, while small and medium enterprises (SMEs) now pay 25 per cent.

4.3 Activities

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4.3 Quick quiz on | 4.3 Exercise

4.3 Exercise

1. **Define** budget receipts. **(1 mark)**
2. **Identify** and **outline** the main sources of budget receipts. **(1 mark)**
3. **Distinguish** the following pairs of terms:
   - **a.** A direct tax and an indirect tax, giving an example of each. **(2 marks)**
   - **b.** Personal income tax and company tax. **(2 marks)**
   - **c.** A progressive tax and a regressive tax, giving an example of each. **(2 marks)**

4. Explain how each of the following changes in tax would be likely to affect the level of AD (i.e. C + I + G + X – M).

a. A reduction in the marginal rate of personal income tax. **(2 marks)**

b. An increase in the rate of capital gains tax. **(2 marks)**

Solutions and sample responses are available online.

4.4 Types of government expenses (outlays)

KEY KNOWLEDGE

- Types of government expenses, including government current and capital expenditure and transfer payments

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Budget expenses or *outlays* relate to how the government uses the revenues it collects to directly or indirectly provide households and businesses with goods, services and incomes and hence can affect AD and economic activity mainly by changing the levels of C, I and G.

These expenses or payments can be classified in two ways:

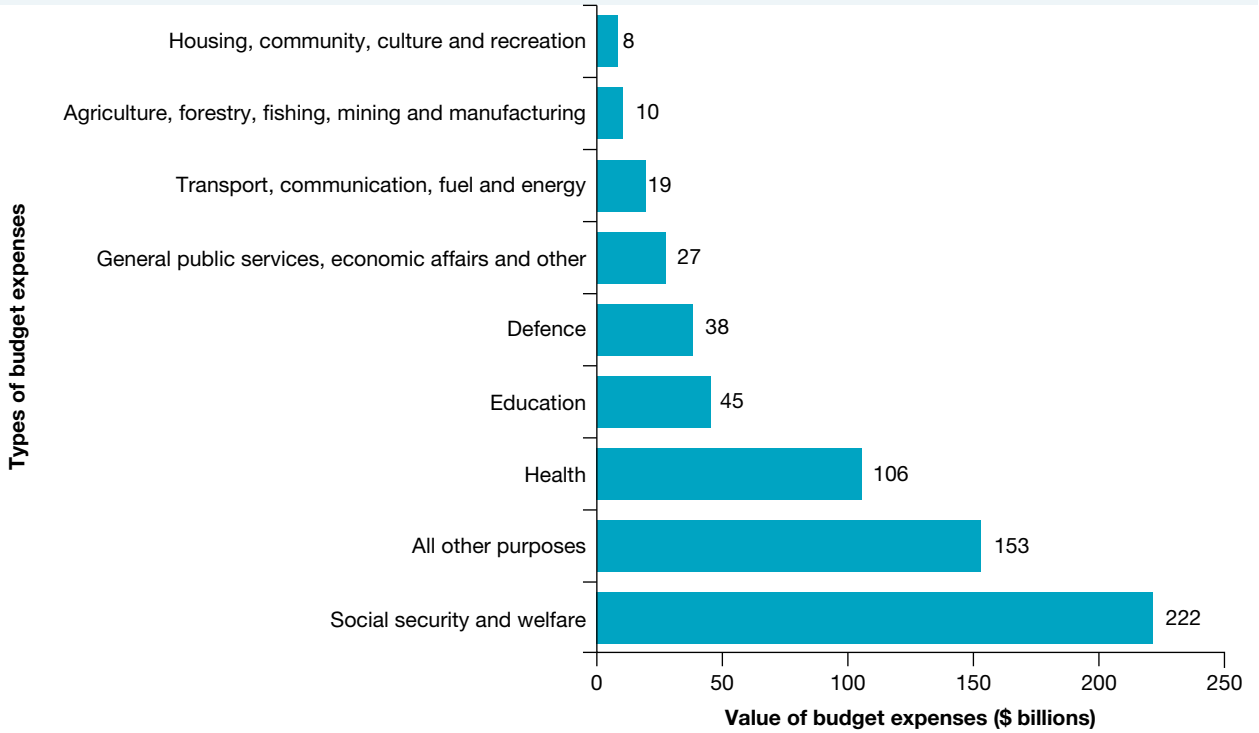
1. the specific functions they serve
2. their general economic nature or type.

4.4.1 Classifying types of budget expenses by their function

Budget expenses are outlays directed to the provision of particular goods, services and other *functions*, as shown in figure 4.3. They include the following:

- *Social security or welfare outlays* are government cash transfer payments to the neediest groups who meet the means and assets tests (i.e. those whose incomes and assets are below certain cut-off levels). These benefits represent over 35 per cent of all government outlays and include those for the aged, unemployed job seekers, supporting parents and families, carers, students, the disabled and war veterans.
- *Health spending* entails the provision of medical attention and incorporates consumption outlays on day-to-day running expenses (such as drugs and staff salaries), along with the funding of capital infrastructure (such as hospital buildings and equipment) within the public health system. In addition, health outlays cover the funding of medical subsidies paid for doctors' services, the provision of free hospital services by state governments and some prescribed pharmaceuticals. This accounts for around 17 per cent of budget outlays.
- *Defence* involves budget outlays for the payment of staff and day-to-day running expenses for the armed services. Increases in finance are provided where necessary for our defence capacity, peacekeeping activities, border protection and surveillance, and for the war on terrorism. This takes around 6 per cent of budget outlays.
- *Education spending* represents more than 7 per cent of budget outlays and is designed largely to help provide public education through the payment of staff and the provision of ordinary operating expenses, along with capital spending. These outlays also include spending on universities, support of state and non-government schools, vocational education and training (VET) and building programs.
- *Mining, manufacturing and construction* outlays involve government subsidies, grants and other types of financial assistance to help reduce production costs and encourage greater efficiency and international competitiveness.

Figure 4.3 Sources of Australian government budget expenses of $628 billion for 2022–23.



Source: Australian government, Budget papers 2022, Budget paper 1, Statement 5, Expenses, P141, Table 5.3, see https://budget.gov.au/2022–23/content/bp1/download/bp1_2022–23.pdf.



- *Transport and communications* cover current and capital spending on the provision of government infrastructure in areas like road, shipping, aviation and rail services. The roads of national importance or highways programs, and the recent nation-building infrastructure packages involving improvements to ports, railways, roads and the broadband network, are specific examples of these outlays.
- *Housing and community amenities* include outlays to provide public housing, measures to cut greenhouse gas emissions and support alternative energy sources, and water supply programs.
- *General public services* outlays include those for the payment of wages and salaries for public servants, government administration and parliament, and overseas aid and foreign affairs.
- *Public debt interest* is the annual cost to the federal government of paying interest on its accumulated debts or borrowings. Debt arises when the government borrows credit to finance a budget deficit and involves the payment of interest to holders of government bonds and securities.
- *Net payments to other governments* are federal handouts to state and local governments to enable them to provide community services including public education, health, housing and transport. Traditionally these payments were necessary because the states had few other sources of revenue from which to fund their outlays and responsibilities.

In the case of many of these outlays, the government is using the budget to correct market failure and improve the allocation of resources that would otherwise occur if there was total reliance on the market or price system and the private sector.

4.4.2 Current and capital spending and transfers as budget expenses

Apart from looking at the different *functions* of budget outlays, government expenses can also be broken down according to their economic nature and whether they represent government current expenditure, capital spending, or transfer payments:

1. **Government current spending (G_1).** Government current (or consumption) spending (abbreviated as G_1) includes the payment of wages and salaries for federal government employees (around $30 billion) in the public sector including health, education, defence, housing, transport and welfare, along with the day-to-day operating expenses of departments. In addition, sometimes these government departments need to purchase goods and services from the private sector such as prescription drugs and medications used in hospitals, educational materials for schools, food and munitions for the defence department and the cleaning and repair of public assets. In the 2022–23 budget, this is expected to represent about 91 per cent of all government spending.
2. **Government capital spending (G_2).** Government capital (or investment) spending (abbreviated as G_2) involves budget outlays on national social and economic infrastructure including the building of schools and universities, roads and highways, airports, reservoirs and water supply, the national broadband network system (NBN), pipelines and the purchase of capital equipment for hospitals, schools, universities and railways. An important reason for government capital spending is that it helps to grow the economy's productive capacity, make conditions more favourable for businesses to operate and improve the daily lives of households. In the 2022–23 budget, this is forecast to represent about 10 per cent of all government spending.
3. **Government transfer payments.** These mainly involve budget outlays on welfare benefits, along with grants and industry assistance. Social security payments are means- and assets-tested transfer payments to the neediest individuals in society (those whose incomes and assets are below certain tapered cut-off levels). These benefits include those for the aged, unemployed job seekers, supporting parents and families, carers, students, the disabled and war veterans. Their main aim is to redistribute final incomes more equitably than that for market or private incomes, so that even the poor can better access basic goods and services. This helps to reduce poverty and improve general living standards. Overall, federal welfare outlays claim around 35 per cent of total budget expenses. In the next few years, spending on this area is expected to rise, partly because of our ageing population. Note that transfer payments are not regarded as government spending (G_1 or G_2) because it is the recipient of transfer payments who actually spends the money.

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4.4 Activities

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4.4 Quick quiz on | 4.4 Exercise

4.4 Exercise

1. **Define** *budget expenses* giving examples. **(2 marks)**
2. **Outline** the two main ways that budget outlays can be classified. **(2 marks)**
3. **Identify** and **outline** the *three* most important areas of federal government budget outlays or expenses classified by their economic function. **(3 marks)**
4. Giving examples, **distinguish** between the following pairs of terms related to budget expenses:
   a. G_1 and G_2 (as part of budget outlays or expenses) **(2 marks)**
   b. Government spending and government transfer payments. **(2 marks)**

Solutions and sample responses are available online.

4.5 The budget outcome

KEY KNOWLEDGE

- The budget outcome: balanced, deficit or surplus
- The underlying cash balance (budget outcome), including as a proportion of Gross Domestic Product (GDP)
- Methods of financing a deficit or utilising a surplus
- The relationship between the budget outcome and the level of government (public) debt

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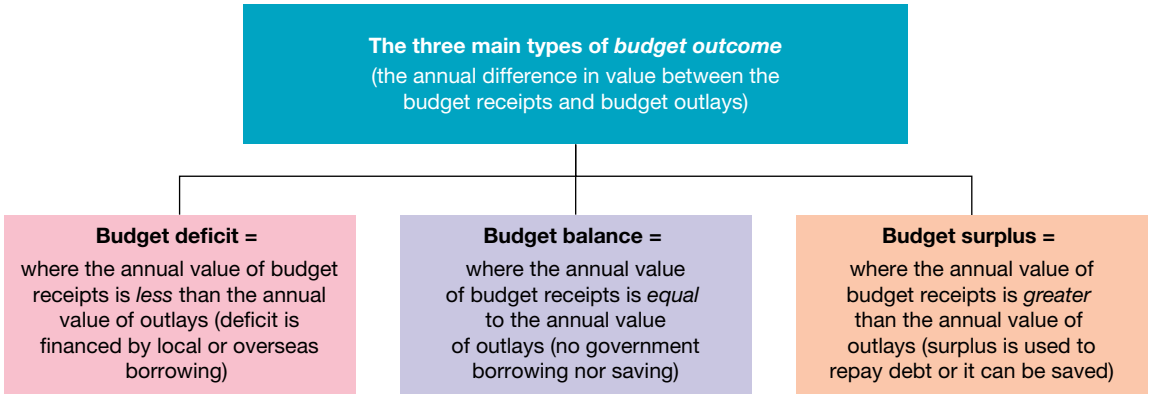
In simple terms, the budget outcome *reflects the difference in value between the government's receipts (or revenues) and outlays (or expenses) for the year.* Over time, the budget outcome changes in response to changes in the value of receipts and outlays.

Budget outcome = total value of receipts ($) – total value of outlays ($)

4.5.1 The three types of budget outcome

As shown in figure 4.4, there are *three* possible *budget outcomes* — a budget *surplus*, budget *deficit* or budget *balance*.

FIGURE 4.4 The three main types of budget outcome that reflect changes in the value of budget receipts relative to budget outlays



A budget balance

A **balanced budget** is where the total annual value of government receipts or revenues taken out of the economy, exactly *equals* the total value of outlays or expenses pumped back into the economy by the government.

Budget balance = total annual value of receipts ($) is equal to the total annual value of outlays ($)

In itself, a *balanced budget* is neither *expansionary* nor *contractionary* in its impacts on the level of AD and economic activity. It hence means that this outcome tends to have little effect on overall levels of production, employment and inflation. It is, therefore, said to involve a relatively *neutral stance*.

A budget deficit and how this might be financed

In contrast, when there is a **budget deficit**, the total annual value of government receipts is *less* than the total annual value of government outlays — that is, less is siphoned out of the economy than is injected back in.

Budget deficit = total annual value of receipts ($) is less than the total annual value of outlays ($)

This outcome occurred between 2008–09 and 2022–23, with cumulative deficits totalling around $740 billion. The federal government's COVID-19 temporary stimulus packages alone (which started in 2020) added over $300 billion to this total!

There are *two main* ways to finance a *budget deficit* — both involve borrowing credit:

1. Borrow from overseas

The government or Treasury could borrow from *overseas* by selling Australian government bonds to foreign investors. This approach was used to finance over 50 per cent of recent budget deficits between the Global Financial Crisis, or GFC (2008–09) and the COVID-19 recession (2020–21). One advantage of borrowing overseas to finance the budget deficit is that often interest rates are lower, making repayments cheaper. Another advantage of borrowing overseas rather than locally, is that it avoids the problem of **crowding out**. This can occur when the government finances its budget deficit by borrowing *locally*, raising the demand for credit relative to its supply. This then puts upward pressure on domestic interest rates at a time when they need to come down. While budget deficits can help to stimulate AD and economic activity, borrowing abroad adds to our *net foreign debt* (NFD), may erode our international credit rating, and weakens the current account balance.

2. Borrow within Australia

If the government chooses to finance the budget deficit by borrowing the funds *locally* rather than from overseas, it has two main options — source funds from the RBA, or borrow from private investors:

- ***Borrow from the RBA:*** One possible source of funds for the government is that it could use up any savings balances it might have with the RBA, accumulated during periods of budget surpluses. Alternatively, the government could sell bonds or IOUs (*'I owe you'*, where the government will repay the debt with interest at some future date) to the RBA. This has the same effect as issuing instructions to print more money.
- ***Borrow from private investors:*** The other option is that the government could borrow from Australian investors and the financial sector by selling them government bonds or treasury notes. Indeed, this was one of the methods used by the federal government to finance recent budget deficits. This approach is a sound method of financing budget deficits since the money, withdrawn from the economy's private sector by the sale of government securities, is returned when the government actually uses the money to cover its budget outlays. However, as mentioned, this could cause upward pressure on domestic interest rates because the government is also competing against the private sector for access to limited savings. In turn, higher interest rates may *crowd out* and depress private sector borrowing, investment spending, and economic activity at a time when the budget needs to boost AD and economic activity.

While *budget deficits* are necessary when economic activity is weak, they can lead to *problems*:

1. ***The loss of a nation's good credit rating:*** Budget deficits normally add to official or public-sector debt. Over time these deficits can build up and get out of hand, as has happened in Greece, Spain and Japan. In turn, rising debt could lead to a downgrading of our international AAA credit rating. As a consequence, future borrowing would become more expensive for us, with higher interest rates that reflect the increased risk for lenders.
2. ***Interest payments take money from providing community services:*** Deficits that are financed by borrowing involve the payment of interest. This involves an *opportunity cost*. Potentially, it diverts money and resources away from more productive uses like the provision of adequate education, welfare and health. For instance, in 2022–23, the interest payments on the Australian government's debt are forecast to be around $15 billion.
3. ***Less able to deal with economic crises:*** Persistent large budget deficits weaken the government's ability to deal with an economic crisis such as the COVID-triggered recession of 2020. This is because the deficits quickly run down the government's cash reserves or *fighting fund* available to throw at the next economic crisis. In addition, rising debt levels can reduce the government's capacity and increase the cost of future borrowing.
4. ***Increasing debt is unsustainable and a burden on future generations:*** Ongoing large budget deficits are unsustainable. Eventually they will need to be covered by higher taxes and/or lower government outlays on important community services that detrimentally impact the living standards of future generations.



Ultimately, the budget needs to get back to surplus to avoid problems associated with rising debt. However, this can be a slow and possibly painful process, since it involves gradually increasing the value of budget receipts relative to outlays as economic conditions improve. The process of returning to surplus is often referred to as *repairing the budget* or *fiscal consolidation*.

A budget surplus and how this might be used

A **budget surplus** is where the total annual value of government receipts *exceeds* the total annual value of its outlays. This causes leakages to rise relative to injections in the economy.

Budget surplus = total annual value of receipts ($) is greater than the total annual value of outlays ($)

Typically, a surplus budget is used by the treasurer in a *boom* to help slow excess spending and economic activity causing inflation. There were some budget surpluses in the years immediately prior to 2007–08 and again, was almost achieved during 2018–19 when the deficit was wound back to just $0.7 billion.



There are *three* main things the government can do with its *budget surplus* — reduce debt, add to savings balances with the RBA, or increase balances that are held in special savings funds:

1. ***Reduce debt:*** The government could use a budget surplus to repay or sector. In turn, repaying debt can lead to the problem of **crowding in** (the opposite problem to *crowding out*, caused by government borrowing to fund deficits). Here, with increased liquidity (liquidity in this sense means funds available for lending), the cost of credit (interest rates) may fall, stimulating spending and partly offsetting the initial contractionary effects on the economy of the government's surplus budget.
2. ***Build up savings balances with the RBA:*** The government's savings balances with the RBA could be used to build up a *fighting fund* for a rainy day (perhaps for use during a future recession, pandemic or financial crisis) when there is a need to have large deficit budgets. This option would tend to cause money to be transferred from private sector savings into government savings. It would tend to reduce the availability of bank credit and put some upward pressure on domestic interest rates.
3. ***Add to investment balances in special savings funds:*** The budget surplus may be put into special purpose, nation-building savings funds to benefit current and future generations of Australians. Essentially, money set aside in this way acts as seed capital (early-stage finance) that is invested (e.g. in Australian and international shares, cash and infrastructure projects) to generate returns, thereby hopefully growing the government's wealth (sovereign worth) and making future funding possible for important national projects. As shown in table 4.1, in June 2022 the federal government had *six* of these special savings funds managed under the umbrella of the Future Fund, worth a total of $242 billion.

TABLE 4.1 The Australian government's special purpose savings funds.

Fund	Balance ($b, 30 June 2022)
Future Fund	194.4
Emergency Response Fund	4.5
Future Drought Fund (previously called Building Australia Fund)	4.5
Medical Research Future Fund	21.6
Disability Care Australia Fund	15.3
Aboriginal and Torres Strait Islander Land and Sea Future Fund	2.1
Total	**242**

Source: Data derived from Future Fund, Portfolio Updates, see https://www.futurefund.gov.au/investment/investment-performance/portfolio-updates.

There are *advantages* in being able to run *budget surpluses*:

- ***Offset deficits and avoid debt:*** Running budget surpluses can be used to offset budget deficits without needing to increase public sector borrowing or sovereign debt. Surpluses are sustainable and do not create a burden on future generations.
- ***Create a fighting fund for bad times:*** Budget surpluses allow the government to build up its *war chest* or *fighting fund*, which allows it to better deal with a severe economic crisis or slowdown in the future.
- ***Protect Australia's credit rating:*** Budget surpluses help to protect Australia's international AAA credit rating. A strong rating like this allows credit to be borrowed more cheaply in the future, freeing financial resources for use elsewhere, perhaps to improve our national infrastructure.
- ***Generates confidence:*** Surpluses help to support international confidence among investors and strengthen Australia's external situation.

For these reasons, over the medium-term, the *operational aim* of budgetary policy is the *return to surplus* at a prudent rate, as Australia's economic conditions permit.

4.5.2 Different ways of reporting the budget outcome

Over the years, governments have used *different measures* to report the *budget outcome*. As we shall see, some of these help to better expose the *real* state of the government's financial position, more than others do. While there are many measures, we shall just look at two — the *headline* cash outcome and the *underlying* cash outcome.

The headline cash outcome versus the underlying cash outcome

Perhaps the two most common ways that the budget statistics are reported involve the distinction between the *headline cash outcome* and the *underlying cash outcome*.

- *The headline cash outcome or balance:* The **headline cash outcome** (whether it is *a deficit* or *surplus*) represents the annual difference between the total value of cash receipts collected by the government *minus* the total value of cash outlays from all sources — that is, *net* cash flows.

An example of a headline cash deficit:	
Total value of receipts =	$90b
Total value of outlays =	$100b
Headline cash deficit =	$10b

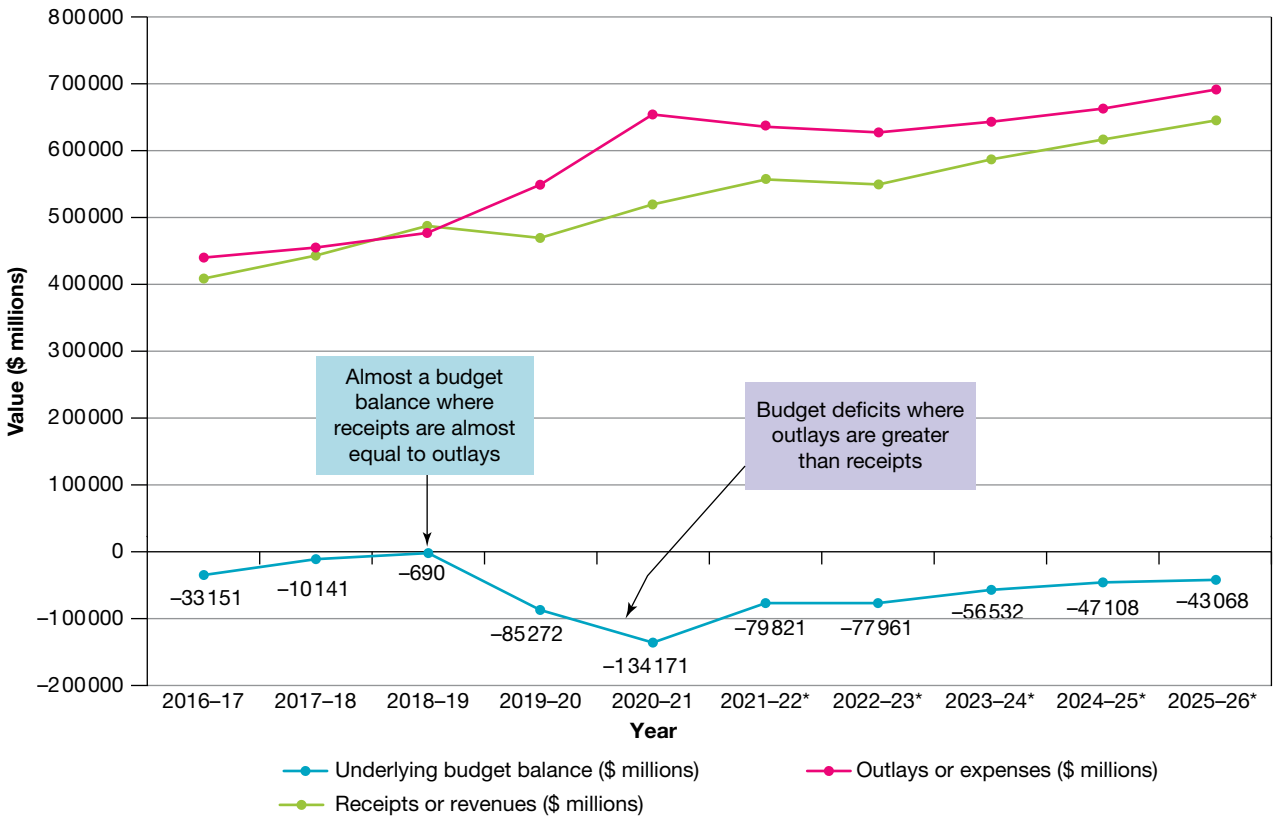
  Sometimes this figure can make the estimated budget outcome look more positive than it really is, because it *adds* the anticipated value of one-off events like asset sales (such as from the privatisation of Qantas, the Commonwealth Bank and Telstra) and debt repayments received from other governments. However, this figure can also give a misleading picture when trying to determine the budget's actual economic effects.
- *The underlying cash outcome or balance:* The budget's **underlying cash outcome** (whether it is *a deficit* or *surplus*), is perhaps the most common way of reporting the budget's result. It uses the figures for the headline balance, but then *subtracts* the value of volatile, one-off items such as earnings from the *Future Fund* (which are reinvested rather than used for government spending), and *net cash flows* gained *from investments in financial assets* (e.g. cash from the sale of government business enterprises or GBEs to private owners, or interest gained from the repayment of loans).

The same example, but for calculating the *underlying* cash deficit:	
Total value of receipts =	$90b
Total value of outlays =	$100b
Headline cash deficit =	**$10b**
MINUS the total value of *Future Fund earnings* and *net cash flows investments in financial assets*	$4b
Underlying cash deficit =	**$6b**

The *underlying cash outcome* more clearly reflects the government's real financial position, with less scope for political distortion. This is a very useful measure of the budget's stance because it tells us how much cash is currently being drained out of or pumped back into the economy. As we shall see later, this allows us to better understand the budget's impact on AD and economic activity, and whether the government is running down or adding to its levels of national savings and debt.

Figure 4.5 shows changes in the Australian government's underlying budget outcome. Notice that over the period covered, the budget outcome was always a deficit because the value of receipts was continually less than the value of outlays.

Figure 4.5 Australian government budget receipts, budget outlays and underlying budget outcome ($ millions).



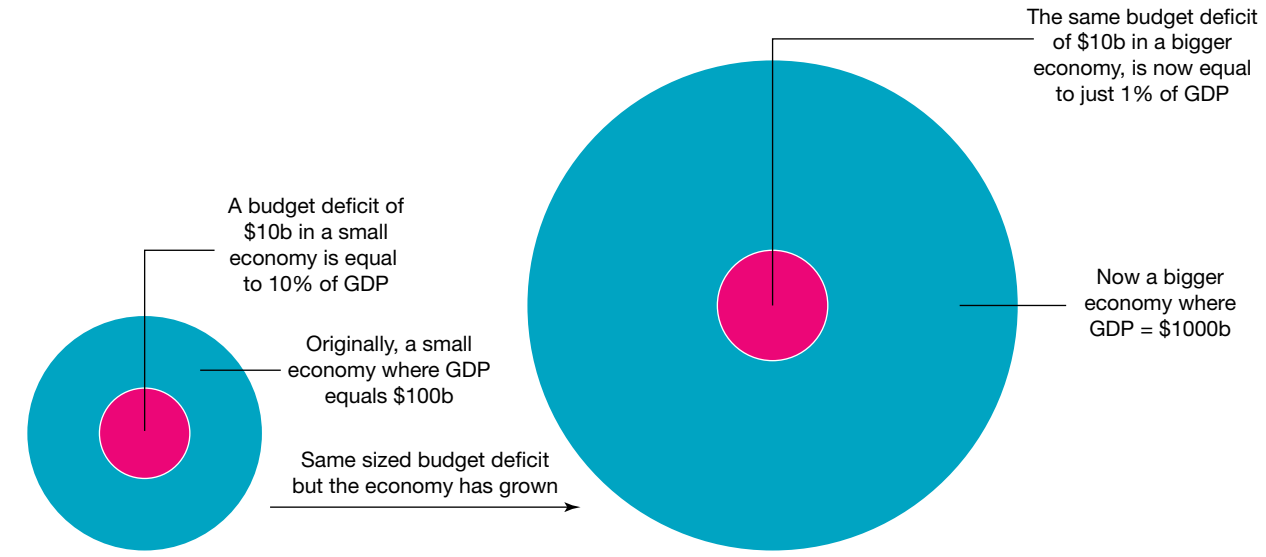
***Note:** Estimates only as of March 2022.
***Source:** Derived from the Australian government, 2022–23 Budget, Statement 10, Historical government data, P341, see https://budget.gov.au/2022-23/content/bp1/download/bp1_2022–23.pdf.

Expressing the budget outcome as a percentage of GDP

Sometimes, you might also come across the *underlying budget outcome* (measured in dollars) that is expressed as a positive (surplus) or negative (deficit) *percentage* of the value of GDP. In other words, it compares the size of the budget deficit or surplus, against the overall size of the economy (indicated by real GDP).

At this point you may be wondering how this extra data provides important information about the budget. Well, let's take *two* hypothetical examples — one when the economy is *small* and one when it has grown and was *bigger*. As shown in figure 4.6 , if there was a budget deficit of say $10 billion where outlays were greater than receipts, this would provide a huge amount of stimulus to AD (equal to 10 per cent of GDP) when the economy was *small* (e.g. it had a relatively small GDP of just $100 billion). However, as shown in the following insert, the same $10 billion deficit would do little to boost AD in percentage terms (e.g. equal to just 1 per cent), after the economy had grown *bigger* (i.e. it had a bigger GDP of $1000 billion)!

FIGURE 4.6 Comparing the amount of stimulus from a $10 billion budget deficit expressed as a percentage of a nation's GDP that has grown from $100 billion (a highly expansionary budget deficit) to $1000 billion (only a mildly expansionary budget deficit).



An example of a $10b budget deficit for the economy with a small GDP: (a highly expansionary budget outcome)		An example of a $10b budget deficit for the same economy with a bigger GDP: (a mildly expansionary budget outcome)	
Underlying cash deficit =	$10b	Underlying cash deficit =	$10b
Country's GDP =	$100b	Country's GDP =	$1000b
Deficit as a percentage of GDP =	**10%**	**Deficit as a percentage of GDP =**	**1%**

Sometimes, the values of both budget receipts and outlays are also expressed as *percentages of GDP*. Again, this allows us to better understand their likely impacts on the level of AD and economic activity.

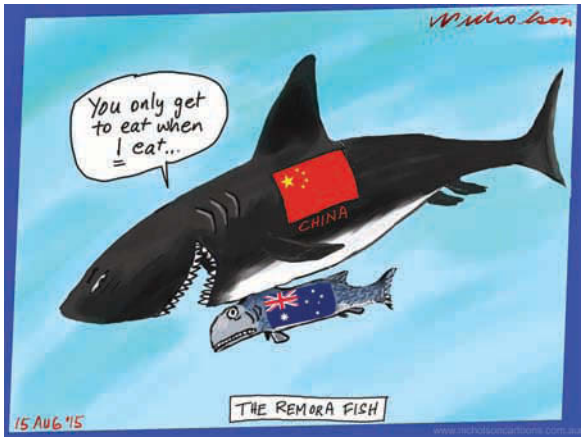
We will take another look at these measures shortly when we investigate whether a particular *budget outcome* has an *expansionary* or *contractionary* impact on the levels of AD and economic activity.

4.5.3 Factors affecting the final budget outcome

When predicting a particular *budget outcome*, the federal treasurer estimates the annual value of receipts relative to outlays based on certain domestic and international *forecasts of upcoming economic conditions*. Sometimes these have proved to be *over-optimistic* leading to a weaker *actual* outcome than the expected budget outcome (e.g. a much bigger actual budget deficit than that forecast, as in 2019–20). Occasionally, they are *over-pessimistic,* and the *actual* outcome is better than that forecast on Budget night (e.g. a smaller actual deficit, as in 2021–22).

There are several important events that can alter the value of receipts and/or outlays, making forecasting the budget outcome a tricky business. Here are just a few important events on which forecasts of the *budget outcome* are made:

- ***Australia's rate of GDP growth:*** The most important influence on the budget outcome is the rate of economic growth. If the forecast growth rate is faster than what actually eventuates, the value of tax receipts collected from households and companies will be lower due to a slower rise in incomes, spending and profits. In addition, an unexpected slowdown means that welfare outlays for the unemployed are likely to end up higher, weakening the final budget outcome.
- ***The unemployment rate:*** Unemployment rates impact revenue gained from both personal income tax, as well as budget outlays on welfare. For example, if the forecast unemployment rate is lower than the actual rate, tax revenues will be lower and welfare outlays higher, weakening the final budget outcome.
- ***Overseas rates of economic growth:*** The global rate of economic growth, especially among our trading partners such as China, greatly impacts both tax revenue and welfare outlays. This is because it affects the demand for our exports, the terms of trade, the value of Australian exports sold, unemployment and company profits — and hence the value of tax paid.



Source: Nicholson, economy | nicholsoncartoons.com.au.

- ***Commodity prices and terms of trade.*** The levels of international commodity prices and Australia's terms of trade, greatly affect tax receipts as well as welfare outlays. Weaker terms of trade than those forecast (perhaps lower export prices for iron ore, coal, wool and wheat, relative to import prices) reduce company profits and government tax collections. In addition, when the world pays us lower prices for our exports relative to what we pay for imports, this reduces the value of net exports or injections of spending. In turn, this slows GDP, causing local firms to cut their demand for resources, leading to a rise in the number of people on unemployment benefits and hence increased budget outlays.
- ***Wages and income growth:*** The growth in household wages affects the amount of income tax collected. For instance, a slower than forecast growth in wages will reduce revenue and weaken the budget outcome.
- ***Unforeseen events.*** Unexpected *natural disasters* including drought, cyclones and floods, along with global pandemics, lockdowns, wars and financial crises, can all slow Australia's growth in GDP. In turn, these events lessen tax receipts and increase government outlays on repairs to infrastructure and/or welfare support, weakening the final budget outcome.
- ***Political obstacles and numbers in the parliament.*** Recent governments have sometimes experienced *political obstacles* associated with passing aspects of the budget through the Senate. This is because they lacked the political party majority. By affecting budget receipts and/ or outlays, political constraints can alter the budget's final bottom line.

In forecasting the budget outcome for 2022–23 for example (updated in March 2022), the treasurer relied on the following assumptions about the changes in domestic and international conditions. These are shown in table 4.2.

TABLE 4.2 Forecasts and assumptions behind the Australian government's budget deficit for 2022–23 (estimates as of May 2022).

Part A — Forecasts for the domestic economy	Outcomes	Forecasts (annual percentages)		
	2020–21	2021–22	2022–23	2023–24
Rate of economic growth				
Real gross domestic product	1.5	4 1/4	3 1/2	2 1/2
Expenditure				
Household consumption (C)	1.0	3 1/2	5 3/4	3 3/4
Total business investment (I)	–1.5	5 1/2	9	1
Public final demand (G1 + G2)	5.8	7 1/4	1 1/4	1 1/2
Net exports	–1.4	–1/2	–1 1/2	–1/4
Prices and wages				
Consumer price index	3.8	4 1/4	3	2 3/4
Wage price index	1.7	2 3/4	3 1/4	3 1/4
GDP price deflator index	2.9	6 1/2	–3	1/2
Labour market				
Participation rate	66.2	66 1/2	66 1/2	66 1/2
Employment	6.5	2 3/4	1 1/2	1 1/2
Unemployment rate	5.1	4	3 3/4	3 3/4
Balance of payments				
Terms of trade	10.4	11	–21 1/4	–8 3/4
Current account balance (per cent of GDP)	3.3	3 3/4	–3 1/4	–6
Migration				
Net migration (number)	–89 900	41 000	180 000	213 000

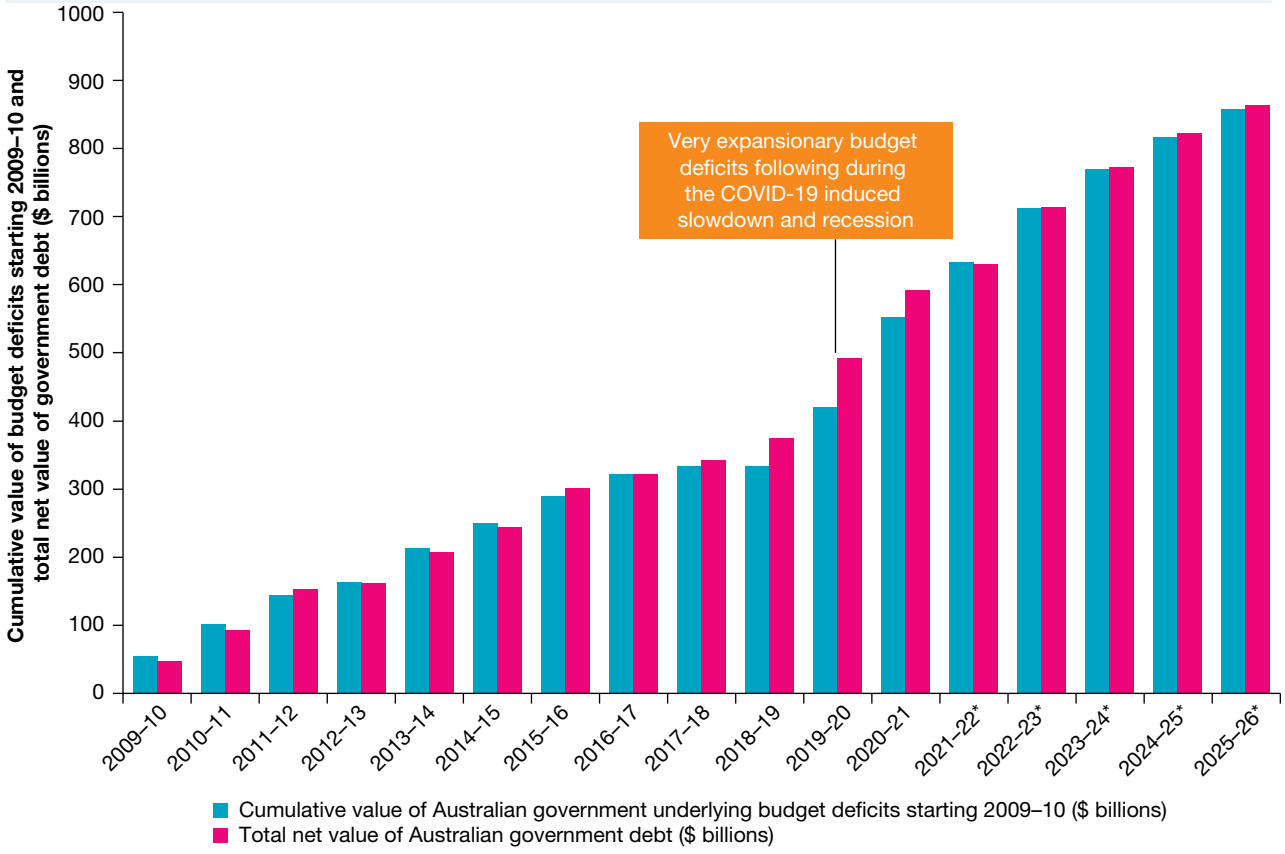
Part B — Forecasts for overseas rates of economic growth	Outcome	Forecasts (percentage, calendar years)		
	2021	2022	2023	2024
Australia	4.2	4 3/4	2	2 1/2
China	8.5	4 3/4	5 1/4	5
India	8.2	8 1/4	6 1/2	7 1/4
Japan	1.7	2 1/2	1 1/2	1/2
United States	5.7	3 1/2	2 1/2	2
Euro area	5.3	3 1/2	2 1/4	1 1/2
Major trading partners	6.1	4 1/4	4	3 3/4
World	6.0	3 3/4	3 3/4	3 1/2

Note: Budget estimates as of March 2022.
Source: Part A — Data copied from Australian Government, 2022–23 Budget, Paper No1, Statement 2, P37 (modified); Part B — Data copied from Australian Government, 2022–23 Budget, Paper No1, Statement 2, P42 (modified).

4.5.4 The relationship between the budget outcome and the level of government debt

The Australian government needs to manage its finances carefully to maintain a *sustainable* budgetary position, since there is a close connection between the *budget outcome* and the level of **government debt**. This is because *budget deficits* (i.e. when the annual value of outlays exceeds the value of budget receipts) must be financed by government borrowing (usually involving the sale of Australian government bonds). Between 2008–09 and 2022–23, the Australian government ran 15 straight budget deficits amounting to over $740 billion! This added greatly to the level of government debt. Despite its limitations, figure 4.7 illustrates the close connection between the total or *cumulative* value of Australian government budget deficits, and the value of net government debt over a 16-year period.

FIGURE 4.7 The relationship between the cumulative value of the Australian government's budget deficits and the net value of government debt ($ billions).



***Note:** Estimates.
***Source:** Data derived from Australian Government, 2022–23 Budget, Historical Australian government data, Statement 10, Table 10.1, PP340-341, see https://budget.gov.au/2022-23/content/bp1/download/bp1_2022-23.pdf.

Figure 4.7 shows that when there are budget deficits, these add to the total value of government or official debt. This was the case in all the years shown. Debt levels continued to grow because ongoing deficits had to be financed. Even when the size of the budget deficit was greatly reduced in 2018–19 following **fiscal consolidation** (i.e. measures designed to reduce the size of the budget deficit by increasing receipts relative to outlays), this still added to the cumulative level of government debt (although at a slower rate). By contrast, had there been budget surpluses (of which there were none over the period covered), funds could have been used to pay down some of the debt.

For Australia, a *return to budget surplus* will take time in our current situation where economic activity has been uneven and not *consistently* strong. It means that to avoid hurting the economy, *fiscal consolidation* will need to happen at a prudent rate, as economic conditions strengthen. In addition, **structural budget deficits** (i.e. those caused by discretionary policy decisions to raise outlays or cut tax receipts) won't always go away naturally, even when the economy recovers (as opposed to *cyclical deficits* that normally disappear as economic activity strengthens, due to the operation of automatic stabilisers). In cases of uneven and inconsistent economic activity, returning to surplus might require a *rebalancing* of the budget using deliberate, but often unpopular, discretionary rises in receipts and/or cuts in outlays.



Of course, budget deficits certainly have their place over the shorter term, especially when the economy is weak and in need of stimulus. However, if not carefully managed, government debt can get out of hand. The economic woes experienced by some European countries (Greece, Italy, Spain, Cyprus) are all examples of what might happen if there are far too many budget deficits. In particular, the country may lose its strong AAA credit rating (which allows it to borrow at lower interest rates), because of the increased risk of default on repayments. The government would also be in a weakened financial position to deal with an economic crisis, if it already had high levels of debt and no *fighting fund* accumulated from previous budget surpluses. In addition, debt run up now adds to the burden on future generations who are left to pay it back through higher taxes and /or lower budget outlays on important services. Either way, continued budget deficits would lower their living standards.

on Resources

Weblinks Ways that governments reduce federal debt
Deficits & debts

4.5 Activities

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4.5 Quick quiz on | **4.5 Exercise**

4.5 Exercise

1. **Define** the term *budget outcome*. **(2 marks)**
2. **Describe** the three *types* of budget outcome. **(3 marks)**
3. **Explain** how a budget deficit might be financed. **(2 marks)**
4. **Explain** how money from a budget surplus might be used. **(2 marks)**

5. a. **Distinguish** the following pairs of terms:
   i. A budget deficit and a budget surplus **(2 marks)**
   ii. A headline budget deficit and an underlying budget deficit. **(2 marks)**
   b. Assume the government runs a budget deficit of $215 billion. **Identify** and **outline** the various *options* available to the government for financing this deficit. **(3 marks)**
   c. **Identify** *two* important economic problems associated with running budget *deficits* in the long-term. **(2 marks)**
   d. **Identify** *two* important advantages of reducing the deficit and returning to budget surplus as soon as possible. **(2 marks)**
   e. **Explain** the *medium-term operational goal* of budgetary policy. **(2 marks)**
6. The Australian government would like to reduce the size of its budget deficit. **Outline** *two* key options available that could be used to reduce the size of the budget deficit, assuming this was the main priority. **(4 marks)**
7. Other things being equal, **outline** how any *four* of the following events would be likely to affect budget receipts, budget outlays and the *actual outcome* of the Australian government's budget. **(4 marks)**
   i. A rise in domestic consumer and business confidence
   ii. The slower rate of economic growth in China
   iii. A rise in the unemployment rate from 5.0 per cent to 6.4 per cent
   iv. An acceleration of wages growth
   v. An ageing population with a declining proportion of people of working age
   vi. A serious flu or COVID-19 epidemic spreading.

Solutions and sample responses are available online.

4.6 The stance of budgetary policy — is it expansionary or contractionary?

KEY KNOWLEDGE

- The stance of budgetary policy: expansionary or contractionary

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The term, **budget stance***, relates to whether the change in the budget outcome (i.e. a deficit, balance or surplus) is intended to have an expansionary (accelerating), neutral, or contractionary (slowing) impact on the level of AD (AD = C + I + G + X − M) and economic activity.*

Figure 4.8 shows that there are *three* main *types* of budget stance — an *expansionary* stance, *neutral* stance and *contractionary* stance.

One guide to the *type of budget stance* being adopted, is the *budget outcome* (i.e. the difference in total value between budget receipts and budget outlays) where receipts tend to slow AD (while outlays tend to lift AD).

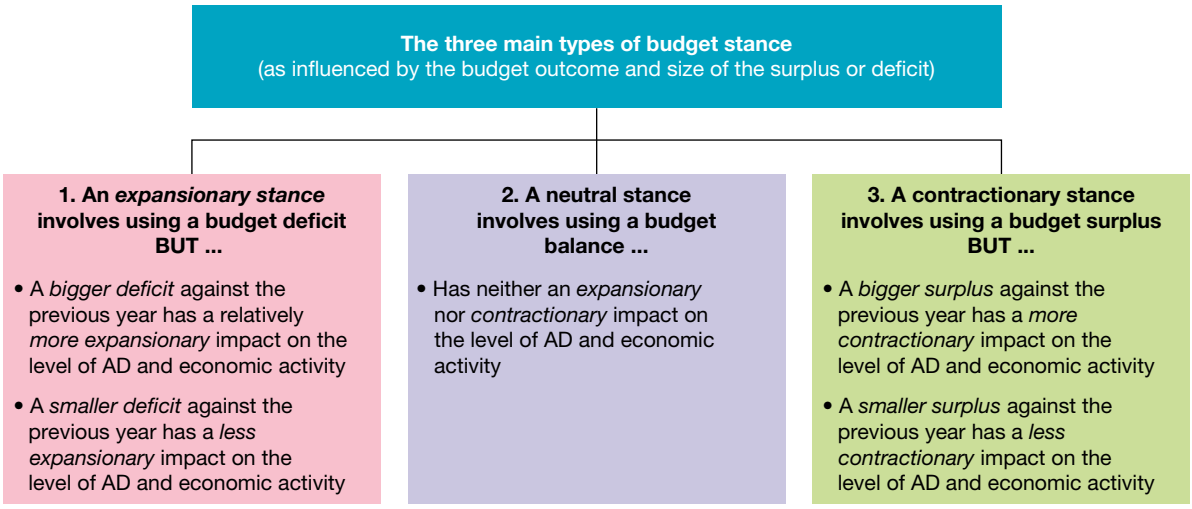
4.6.1 Using the size of the deficit or surplus to help decide the budget's stance

You may recall from earlier reading, that there are *two ways* of representing data related to the *budget outcome*:

- The outcome can simply be expressed in *absolute terms* as a certain number of *dollars*.
- Alternatively, the outcome can be compared with the size of the economy and expressed as a *percentage of GDP*.

While both can be used, the latter is *preferred* because given that the size of the economy changes over time, it tells us more clearly whether the deficit or surplus is relatively bigger or smaller in terms of its impact on AD and the size of the economy (measured by the value of GDP).

FIGURE 4.8 The three types of budget stance and their impacts on the level of AD and economic activity.



A relatively expansionary budget stance

Normally, *budget deficits* are seen as *expansionary* because less is taken out in tax and other receipts, than is returned through government spending and other outlays. Thinking of the five-sector circular flow model, budget deficits tend to *boost* AD and economic activity. As we shall soon see, this means they can be used as a government policy to lift the economy in a slowdown or recession, thereby helping to promote the achievement of Australia's macro gaols and better living standards.

However, in evaluating the impact of *expansionary budgets*, it is especially important to look at the *change in the size of the deficit*, over a period of time, to determine whether the *stance* is becoming more expansionary or less expansionary:

- Hypothetically, for example, the *budget stance* would become *more expansionary* if the *size* of the budget deficit increased from say 5 per cent of GDP (or perhaps a $10 billion deficit in absolute dollar terms), to 10 per cent of GDP (possibly a $20 billion deficit).
- In reverse, the *budget stance* would be described as *less expansionary* if the deficit was cut from 10 per cent of GDP to 5 per cent of GDP.

A relatively contractionary budget stance

Normally, budget *surpluses* are seen as *contractionary* because more is taken out in tax and other receipts, than is returned through government spending and other outlays. Again thinking of the circular flow model, budget surpluses tend to *slow* AD and economic activity, making them a potentially useful policy in controlling booms or periods of inflation. Even so, it's the *change in the size of the surplus* that decides the budget's relative impact and whether the stance is becoming more contractionary or less contractionary:

- So, the *budget stance* would be described as *more contractionary* if the size of the budget surplus increased from 5 per cent of GDP (or in dollar terms, perhaps $10 billion) to 10 per cent of GDP (possibly a $20 billion deficit).
- In reverse, we would say that the *budget stance* had become *less contractionary* if the surplus was reduced from 10 per cent of GDP to 5 per cent of GDP.

on Resources

Weblinks Expansionary fiscal policy
How government uses fiscal policy to influence the economy

4.6 Activities

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4.6 Quick quiz on | **4.6 Exercise**

4.6 Exercise

1. **Define** a contractionary budget stance and **explain** when this may be used. **(2 marks)**
2. **Define** an expansionary budget stance and **explain** when this may be used. **(2 marks)**
3. **Explain** how you would determine whether the budget stance is expansionary or contractionary. **(2 marks)**
4. a. **Distinguish** between an expansionary budget stance and contractionary stance. **(2 marks)**
   b. Examine the table below showing changes in the Australian government's underlying budget outcome.

The Australian government's actual and estimated underlying budget outcome.

	Actual outcome					Estimates of budget outcome				
Year	2016–17	2017–18	2018–19	2019–20	2020–21	2021–22*	2022–23*	2023–24*	2024–25*	2025–26*
Federal government, underlying budget balance ($ millions)	−33 151	−10 141	−690	−85 272	−134 171	**−79 821**	−77 961	−56 532	−47 108	−43 068
Federal government, underlying budget balance (percentage of GDP)	−1.9	−0.6	0	−4.3	−6.5	**−3.5**	−3.4	−2.4	−1.9	−1.6

***Note:** Budget estimates as of March 2022.

***Source:** Data derived from Australian Government, 2022–23 Budget, Historical Australian government data, Statement 10, Table 10.1, pp. 340–1, see https://budget.gov.au/2022-23/content/bp1/download/bp1_2022-23.pdf.

Giving reasons and quoting data from the table, **describe** the *change* in the *budgetary policy stance* adopted between each of the following periods:

i. the change in 2019–20 against 2018–19 **(1 mark)**

ii. the actual and forecast changes during 2021–22 and 2022–23, against the actual outcome for 2020–21. **(1 mark)**

Solutions and sample responses are available online.

4.7 The roles of automatic and discretionary stabilisers in affecting the budget's outcome and stance, and the impact on the level of government debt

KEY KNOWLEDGE

- The role of automatic stabilisers (cyclical component of the budget) in influencing aggregate demand and stabilising the business cycle
- The role of discretionary stabilisers (structural component of the budget) in influencing aggregate demand and stabilising the business cycle
- The effect of automatic and discretionary changes in the budget on the budget outcome and government (public) debt

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Budgetary policy is a very important macroeconomic or aggregate demand policy. During an economic *slowdown* when GDP growth is below trend, unemployment is high and inflation is low, governments often use Keynesian economic theory and apply *expansionary* aggregate demand budgetary policies designed to boost spending and the level of economic activity.

One of the functions of the Australian government is to regulate or *stabilise* the level of AD and hence economic activity, thereby helping to create conditions optimal for the achievement of key domestic macroeconomic goals and living standards. As an aggregate demand strategy, budgetary policy is one way of regulating spending, so as to help reduce the severity of booms and recessions that are typical of the normal business cycle.

FIGURE 4.9 As seen in Australia, this economic stimulus typically involves budget deficits. However, a downside of deficits is that the level of government debt can rise, increasing the burden on future generations.



To moderate instability and the business cycle, a **countercyclical budgetary policy** application is required and is illustrated in figure 4.10.

- In a cyclical *slowdown* (where there is weaker growth and higher unemployment), the budget stance typically becomes progressively becomes less contractionary and then more *expansionary* to help boost AD and the level of economic activity.
- During a cyclical *upswing* in economic activity, the budget outcome typically becomes less expansionary and then more *contractionary* to slow the growth in AD to a sustainable rate.

For the budget outcome to become either *more expansionary* (with bigger deficits) or *more contractionary* (with bigger surpluses) in this way, it must rely on *two* types of stabilisers:

- *automatic stabilisers* (also called *cyclical* stabilisers)
- *discretionary stabilisers* (also called *structural* stabilisers).

These two stabilisers in the budget are summarised in figure 4.11.

By changing the value of budget receipts relative to outlays, these two stabilisers alter the budget outcome and affect the levels of household consumption spending (C), business investment spending (I), government consumption spending (G_1), government capital spending (G_2), national savings (S) and hence AD.

FIGURE 4.10 Changing the stance of budgetary policy in a countercyclical way to help soften or flatten out the severity of the business cycle.

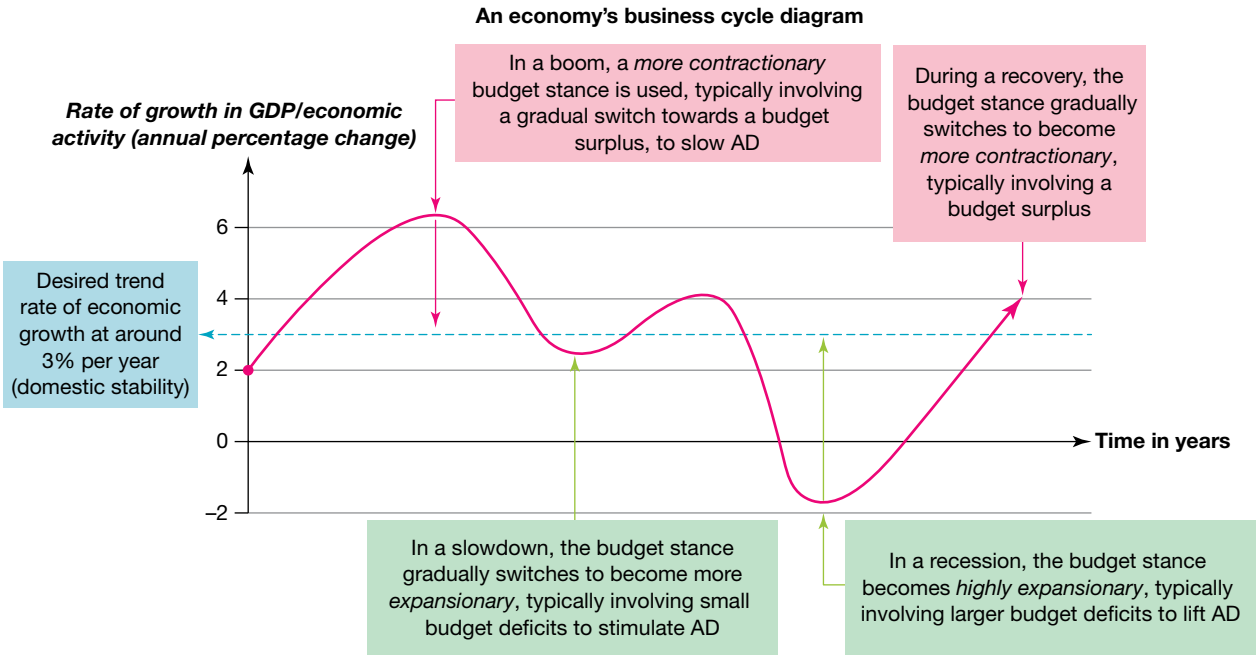
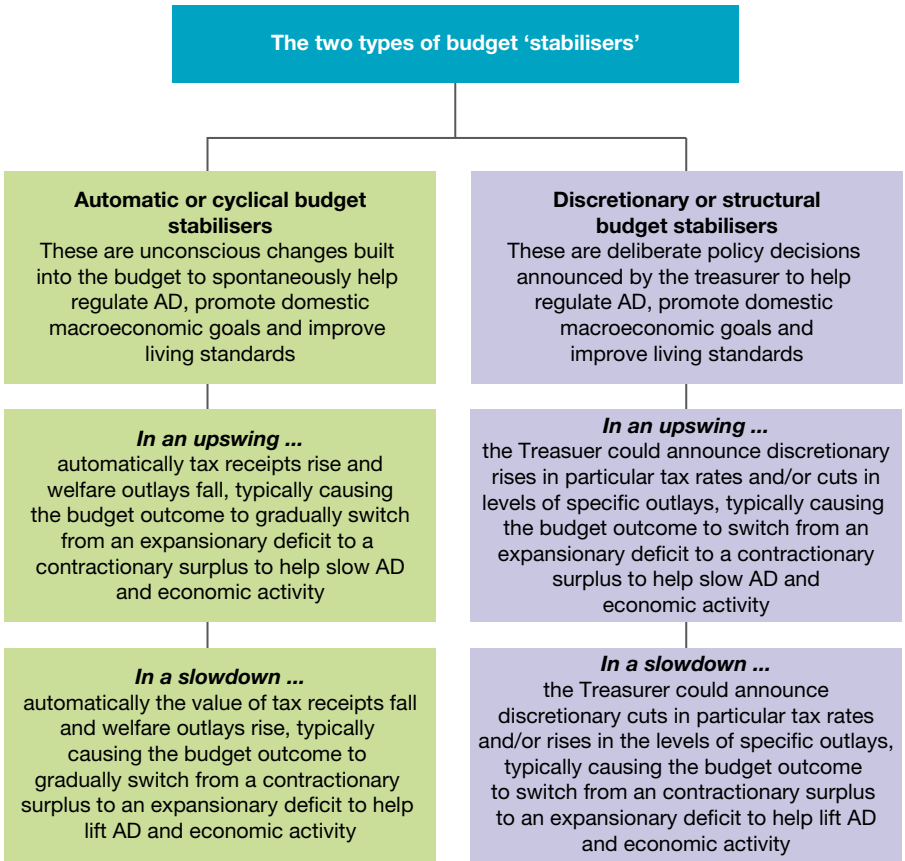


FIGURE 4.11 The two types of stabilisers used in budgetary policy as an aggregate demand policy measure.



At least in theory, fiscal or budgetary policy applied *countercyclically* should be able to help *steer the economy* along the narrow but ideal pathway between boom on the one hand and recession on the other.

So how exactly do these automatic and discretionary stabilisers work?

4.7.1 The role of automatic stabilisers in influencing aggregate demand and stabilising the business cycle

Automatic stabilisers (*also called cyclical stabilisers) involve upward and downward changes in the values of tax receipts and welfare outlays, without any deliberate, new policy decisions being made by the treasurer. They are driven solely by changes in economic activity and operate behind the scenes to countercyclically alter the budget outcome and stance, in a way that helps to steady AD and flatten the business cycle.*

So, in a *downturn*, the budget stance would *automatically* switch towards more *expansionary deficits*, because as we shall soon see, less tax revenue would be collected and there would also be higher welfare outlays for the rising number of unemployed. In a slowdown, this would stimulate AD and promote the government's macroeconomic goals and living standards.

In reverse, during a *recovery*, the budget stance would again *automatically* switch towards *contractionary surpluses*, due to increased tax receipts relative to lower welfare outlays. This would slow AD and also help to improve domestic macroeconomic conditions.

With these big ideas in mind, let's now take a closer look at how *automatic stabilisers* work in this clever way.

Using automatic stabilisers during slowing economic activity and recession

During and immediately following a *cyclical slowdown* or in a *recession* (as in 2020), *automatically*, the budget switches to become *more expansionary* (typically a deficit). This helps to stimulate AD and economic activity, in two main ways.



Firstly, the total value of tax receipts collected automatically decreases because output, employment, disposable incomes and spending are lower. For example:

- Firms pay fewer dollars in company tax because their sales and profits are down.
- Individuals (some of whom are now unemployed and on welfare payments) pay less personal income tax.
- Excise and sales tax revenues are down because with lower incomes and confidence, people spend less and purchase fewer goods and services.

Secondly, the budget automatically becomes more expansionary in a slowdown because there is an increase in the total value of government welfare outlays, simply because more people are unemployed and on lower incomes, and so a greater number of individuals qualify for benefits such as the JobSeeker allowance.

With fewer tax receipts or leakages and more welfare outlays, expansionary *automatic* stabilisers work countercyclically to boost household consumption, business investment, AD and economic activity. This helps to promote stronger but sustainable economic growth and lower cyclical unemployment as a precondition for better living standards.

Using automatic stabilisers during rising economic activity and an inflationary upswing

During and immediately following a *cyclical upswing* or in a *boom* (as in 2007–08), the budget *automatically* becomes *less expansionary* or more *contractionary* (typically a surplus) designed to slow the growth in AD and economic activity, in two main ways.

Firstly, the budget becomes more contractionary in a boom, simply because there is an automatic increase in the total value of tax receipts collected by the government. This is due to a rise in output, employment, disposable incomes and spending. For example:

- Firms pay more dollars in company tax because their sales and profits are higher.
- Individuals pay more dollars in personal income tax as rising wages push people into higher tax brackets.
- Excise and sales tax revenues are up because with higher incomes and confidence, people spend more and increase their purchases of goods and services.

Secondly, the budget automatically becomes more contractionary as the economy strengthens, because there is a decrease in government welfare outlays due to lower unemployment numbers, higher incomes, more spending and fewer individuals qualifying for benefits.

So in a boom with more tax receipts or leakages collected and fewer people on welfare, automatic stabilisers tend to countercyclically *slow* household consumption and business investment, AD and the level of economic activity to a sustainable pace. This helps to curb demand inflation, promote greater domestic economic stability and create improved living standards.

Remarkable as it seems, automatic stabilisers work fairly quickly and efficiently, without the government having to change its policy decisions. In addition, given the right fiscal settings, **cyclical budget deficits** that are run up during a slowdown, should be repaid by cyclical surpluses recorded in the recovery (at least in theory). As a result, in the medium- to long-term, the operation of automatic stabilisers should not lead to a rise in government debt.

4.7.2 The role of discretionary stabilisers in influencing aggregate demand and stabilising the business cycle

Discretionary stabilisers *(sometimes called structural stabilisers) involve deliberate policy decisions by the treasurer to either lower or raise tax rates (e.g. personal income and company tax), and/or make planned government outlays (e.g. on welfare, infrastructure, education) either more or less generous*. When applied in a countercyclical way, *discretionary stabilisers* can influence the levels of C, I, G_1 and G_2, and thus help to promote the achievement of the government's domestic macro goals and living standards.

Discretionary measures are sometimes introduced when automatic stabilisers are not sufficiently powerful on their own to deal with a prolonged and severe recession. However, unless these are removed following the crisis, they could lead to permanent structural budget deficits. Again, let's take a closer look at how *discretionary stabilisers* can be used during a period of contraction or expansion in economic activity.

Using discretionary stabilisers during slowing economic activity and recession

During a *slowdown* or *recession* (like that in 2020 and 2021), discretionary decisions could be announced by the treasurer that grow the size of the budget *deficit* and cause the stance to become more *expansionary*. Here, two deliberate types of change could be announced:

- There could be *discretionary reductions* in tax 'rates' or receipts from personal income and/or company tax, to help stimulate C and I spending, and thus AD.

- There could also be *discretionary rises* in planned *outlays*. For example, welfare payment 'rates' could be made more generous to boost C, or the planned value of outlays on infrastructure, education or subsidies could be lifted, thereby increasing C, I and G spending.

By causing the budget stance to be more expansionary (typically a bigger deficit) in a recession and supporting automatic stimulus measures, discretionary stabilisers can boost AD and cause firms to lift output, creating more jobs. Domestic economic stability and living standards should be improved.

While often popular with voters, the danger with discretionary rises in budget outlays or cuts in receipts, is that they are politically difficult for the government to remove after the economy recovers. This is especially the case in an election year. As a result, there is a risk that a *permanent structural budget deficit* will develop, remaining even when the need for the stimulus has passed. Because of this bias towards **expansionary budget** deficits, over time government finances can weaken, and debt increase. To help avoid this problem of structural deficits, most of the COVID-19 discretionary stimulus measures of 2020 and 2021 were *temporary*, introduced for a limited period of time, after which they ceased.

Using discretionary stabilisers during rising economic activity and an inflationary upswing

When the economy starts to recover and/or there is a *boom*, theoretically, the treasurer could make *discretionary* decisions that cause the budget outcome to become *less expansionary* or more *contractionary* (typically a bigger *surplus*). Again, this can happen in two main ways:

- There could be *discretionary rises in tax rates* to slow AD. A less obvious or less politically damaging way to raise more revenue is to wait a few years until people move into higher tax brackets as a result of rising incomes. This is called **bracket creep**. If there is reasonable economic growth, this can gradually return the budget to surplus.
- There could also be *discretionary cuts* or, more likely, slower rises in planned budget *outlays* to curb AD and economic activity.

By reinforcing the operation of automatic stabilisers and slowing the growth in spending, a more sustainable and non-inflationary rate of economic growth can be achieved, improving living standards.

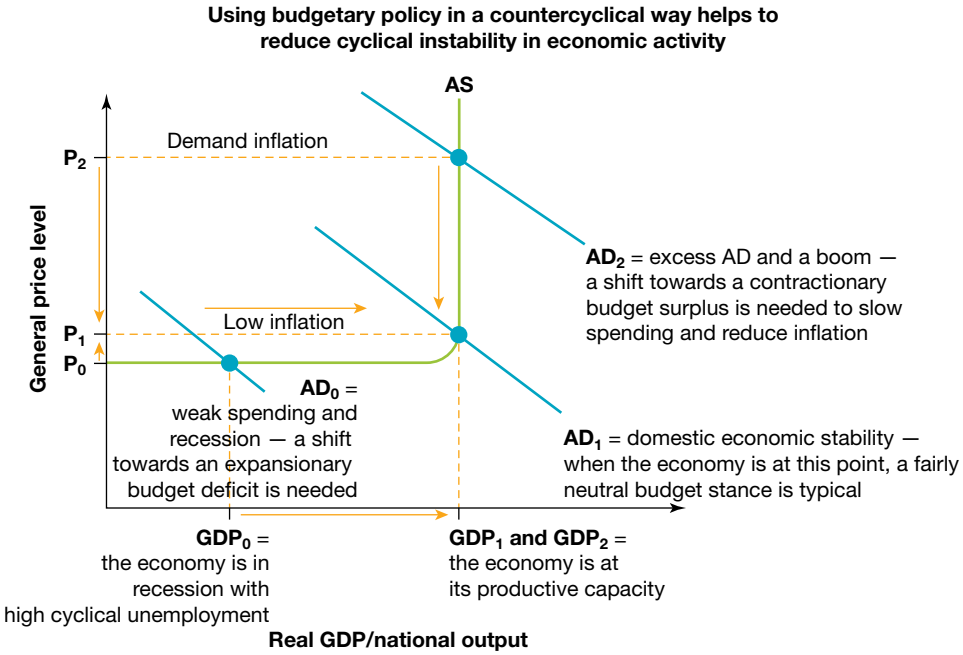
4.7.3 Reviewing how automatic and discretionary stabilisers work together to affect AD

Putting automatic and discretionary budget stabilisers *together* and using the AD–AS diagram for the economy as shown in figure 4.12, it is possible to see at least theoretically, how these measures might operate in a *countercyclical* way to flatten the business cycle and improve Australia's prosperity.

During a prolonged recession or *slowdown in activity*, when economic growth is relatively weak and cyclical unemployment is rising, the budget stance progressively becomes *more expansionary*. This typically involves an increase in the budget deficit to boost AD (the rise in spending from AD_0 to AD_1) and lift GDP (the increase from GDP_0 to GDP_1). The switch to an expansionary deficit can happen in *two* ways:

- First, there are *automatic* reductions in the value of tax receipts and rises in welfare outlays.
- Second, if required, there could also be *discretionary* reductions in tax receipts by cutting tax rates, and by increasing the generosity of particular budget outlays.

FIGURE 4.12 How countercyclical budgetary policy can be used to help regulate AD and promote domestic economic stability.



As a result of these two types of *expansionary stabilisers*, the budget typically moves into *deficit* and the economy shifts towards domestic economic stability (moves towards AD_1, GDP_1 and P_1) where, simultaneously, there is low inflation, strong and sustainable economic growth and full employment.

By contrast, as the economy *strengthens* and there is a fear of inflationary pressures, the budget stance gradually becomes *more contractionary* as the stimulus is withdrawn and the brakes are applied to slow AD (moving AD_2 to AD_1), economic activity (the shift from GDP_2 to GDP_1) and inflation (the fall from P_2 to P_1). Typically, the cyclical and possibly also the structural budget deficit will switch to a budget surplus. Again, this can happen in *two* ways:

- First, *automatically* tax receipts will rise and welfare outlays fall.
- Second, any *discretionary* stimulus measures from earlier periods could be gradually withdrawn through deliberately allowing bracket creep and/or slowing rises in budget outlays.

Again, as a result of these two **contractionary budget** stabilisers, the economy shifts towards domestic economic stability (moves towards AD_1, GDP_1 and P_1) where, simultaneously, there is low inflation, strong and sustainable economic growth and full employment — the conditions needed for better living standards.

on Resources

Weblinks Fiscal & monetary policy review
Fiscal policy
Keynesian economics
A look at fiscal and monetary policy
Economic activity, unemployment & fiscal policy

4.7 Activities

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4.7 Quick quiz on | **4.7 Exercise**

4.7 Exercise

1. **Define** *automatic stabilisers* and **explain** how they work to help promote domestic economic stability. **(3 marks)**
2. **Define** *discretionary stabilisers* and **explain** how they can be used to promote domestic stability. **(3 marks)**
3. **a.** In 2020, Australia's rate of economic growth slowed and went into a recession. **Explain** how *automatic stabilisers* would normally work in this situation to help promote domestic economic stability. **(4 marks)**
   b. Following the recession in 2020, Australia's rate of economic growth *strengthened*. **Explain** how you would normally expect *automatic stabilisers* to work in this situation, to help promote domestic economic stability. **(4 marks)**

Solutions and sample responses are available online.

4.8 The effect of budget initiatives over the past two years and their likely effect on the achievement of domestic macroeconomic goals and living standards

KEY KNOWLEDGE

- The effect of the budgetary policy stance and budgetary initiatives over the past two years and their likely effect on the achievement of the domestic macroeconomic goals and living standards

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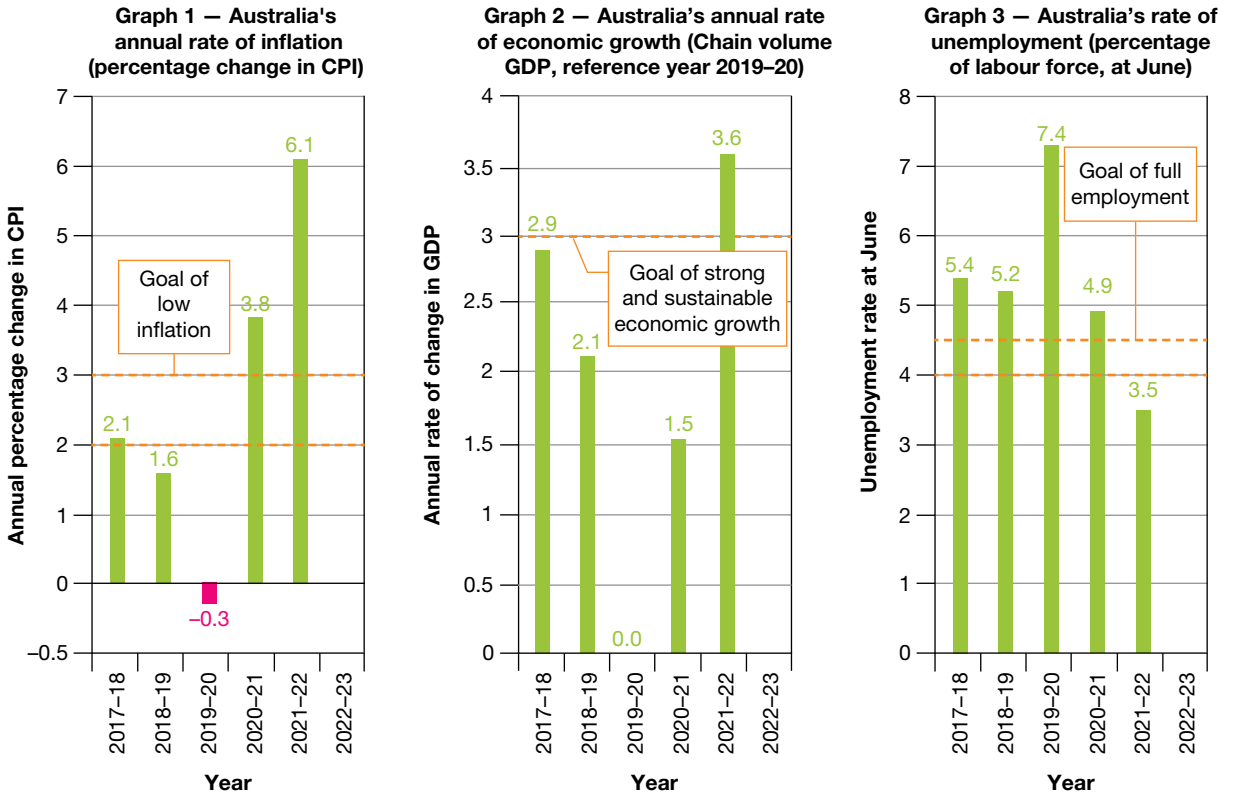
In this section, we examine how the Australian government has recently used fiscal or *budgetary policy*, as an *aggregate demand measure* to help promote the achievement of its key domestic macroeconomic goals and improve living standards. Because the VCE course especially focuses on policies adopted over the *past two years*, you will need to update this section each year. Even so, our investigations here of the temporary COVID-19 stimulus measures during 2020–21, along with those in the 2020–21 and 2021–22 budgets, should provide you with some guidance and a suitable framework.

Before looking at budgetary policy initiatives, we need to have a clearer picture of the domestic macroeconomic problems being targeted by the treasurer, along with the upcoming forecast of conditions. Figure 4.13 provides some of this background.

Notice the following changes in Australia's domestic macroeconomic conditions to which the treasurer responded:

- *The goal of low inflation:* The goal of low inflation is achieved if consumer prices are rising at between 2.0 and 3.0 per cent a year. As can be seen, recent inflation rates largely reflect changing economic conditions. During the recession in early 2020, there was deflation.

FIGURE 4.13 Recent changes in Australia's three key domestic macroeconomic indicators.



Source: All data derived from ABS, see https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/consumer-price-index-australia/latest-release; https://www.abs.gov.au/statistics/economy/national-accounts/australian-system-national-accounts/latest-release; https://www.abs.gov.au/statistics/labour/employment-and-unemployment/job-vacancies-australia/latest-release.

The CPI fell by 0.3 per cent over 2019–20. However, with the recovery that followed, inflation jumped to 3.8 per cent in 2020–21 and to 6.1 per cent in 2021–22. This reflected the impacts of the war in Ukraine on energy prices, COVID-19 and domestic and international disruptions of supply chains. Moving forward, the Treasury's original forecast at March 2022, was for inflation to peak in 2021–22 and then slowly fall back to around 2.75 per cent for 2023–24.

- *The goal of strong and sustainable economic growth:* The government's goal of strong and sustainable economic growth refers to the fastest rise in GDP (perhaps somewhere around 3 per cent a year) that does not accelerate inflation or undermine the achievement of other economic and environmental goals. In recent years, there has been great instability. The period started with a recession brought on by COVID-19 in the first half of 2020, followed by a stronger than expected recovery. GDP growth reached 1.5 per cent in 2020–21, peaking at 3.6 per cent over 2021–22. It meant that over the last two years, economic growth averaged 2.5 per cent — a little lower than we would want to see due to the ongoing effects of severe weather events, COVID-19, and severe supply chain issues. Looking forward, the Treasury forecast GDP growth of just 1.5 per cent over 2023 and 2024.
- *The goal of full employment:* The goal of full employment is defined as the lowest rate of unemployment that doesn't accelerate inflation, currently thought to be around 4.0 to 4.5 per cent of the labour force. As expected, unemployment rates have moved up and down with economic activity. During the recession in 2020, the monthly peak reached 7.4 per cent unemployment in June (although without the temporary JobKeeper wage subsidy provided in the budget stimulus measures, the real rate was around 11.5 per cent). Since then, there was a remarkable drop in the monthly unemployment rate to just 3.5 per cent in June 2022 — well below the target rate. Again, the initial Treasury forecast for 2022–23, is for mostly tighter labour market conditions with unemployment sitting around 3.75 per cent.

- *The goal of improved living standards:* Ultimately, the government uses the budget to try and improve both the material and non-material living standards of Australians. These aspects of wellbeing are greatly affected by the level of economic activity. Starting with the recession in 2020, the real average level of disposable income per person fell sharply, mostly because of the lockdowns and high unemployment. Not only did this slow our economic wellbeing but it also undermined many key elements affecting our quality of daily life. More recently, stronger economic and income growth combined with lower unemployment have helped to support living standards, although very high rates of inflation have been detrimental.

So, over the last two years, the government's budgetary policy strategy needed to adapt to changing conditions, using both automatic and discretionary stabilisers. Going back to the 2020 COVID-induced recession, budgetary strategies were *highly expansionary* with huge deficits that tried to support spending in a weak economy where there was much unused capacity. Moving forward and as the economy started to recover, unemployment fell quickly. Budgetary policy responded to this and slowly became less expansionary, although lingering uncertainty with COVID-19 and supply chain issues have meant that considerable budget stimulus will probably need to remain in place for the next few years.

This is the big picture and economic context within which recent budgetary measures have been framed. Now for the details of the fiscal initiatives.

4.8.1 The key budget initiatives and fiscal strategy from the past two years

This section about how recent budgetary policies have been used to help *stabilise* AD and economic activity, is broken into *two* areas:

- an *overview* of recent changes in the *stance* of budgetary policy
- *specific* discretionary budgetary policy initiatives used to stabilise the economy.

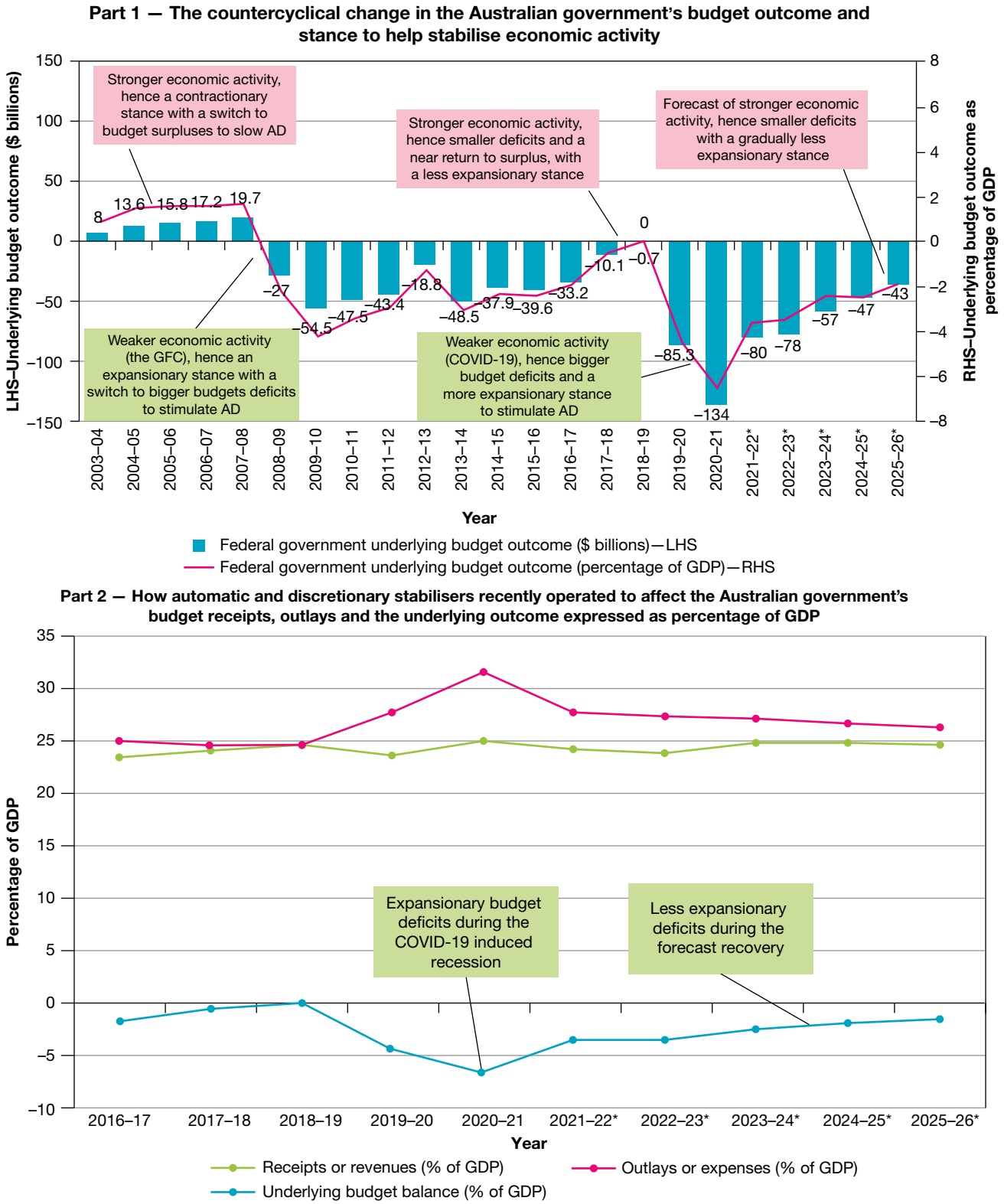
An overview of recent changes in the stance of budgetary policy

A good place to start our investigation of the government's fiscal strategy and recent budgetary initiatives over the last few years, is to take a look at how *automatic stabilisers* and *discretionary stabilisers* have worked together to *countercyclically* change the *budget outcome* and *stance*.

Indeed, figure 4.14, parts 1 and 2, show this quite well. Notice that the *budget outcome* and with it, the *budget's stance*, changed in response to the ups and downs of the business cycle, in a way that helped to stabilise AD and economic activity. For example:

- ***The period 2003–04 to 2007–08:*** During near *boom* conditions leading up to 2007–08, a contractionary stance was used with quite large budget surpluses up to 1.7 per cent of GDP. This involved automatic and discretionary rises in receipts relative to outlays.
- ***The period starting 2008–09:*** Then with the Global Financial Crisis (GFC) starting 2008–09, there was a switch to a highly expansionary stance involving large deficits up to 4.2 per cent of GDP. There were automatic and discretionary rises in outlays relative to receipts.
- ***The period to 2018–19:*** As the economy slowly *recovered*, the stimulus was gradually removed, and the budget nearly returned back to surplus in 2018–19.
- ***The period 2020–21:*** Then along came the COVID-induced *recession*, so again, there was a switch back to a highly expansionary stance involving massive budget deficits up to 6.5 per cent of GDP. These reflected the operation of automatic and discretionary reductions in receipts and especially, rises in outlays.
- ***The period 2021–22:*** A stronger than expected recovery in economic activity has allowed a gradual reduction in the budget deficit due to the operation of automatic and discretionary rises in budget receipts relative to outlays.
- ***The forecast to 2024–25:*** Finally, *if* the economy gradually *strengthens* — as forecast — towards 2025–26, a less expansionary budgetary approach can be adopted and the stimulus further reduced.

FIGURE 4.14 Using the budget to help stabilise AD and the level of economic activity.



Note: Budget estimates as of March 2022.
Source: *Data derived from Australian Government, 2022-23 Budget, Historical Australian government data, Statement 10, Table 10.1, PP340-341, see https://budget.gov.au/2022-23/content/bp1/download/bp1_2022-23.pdf https://budget.gov.au/2021-22/content/myefo/download/myefo-2021-22.pdf.*

While the focus of the VCE course is mostly on the last few years, hopefully you should now have a broad, general understanding of how *countercyclical* changes in the *budget's stance* have been used to help *stabilise* AD and moderate the business cycle, thereby helping to improve domestic macroeconomic conditions and support living standards.

With this general background in mind, it's now time to drill down into *specific budgetary policy initiatives* involving *discretionary* changes in specific receipts and outlays.

Specific discretionary budgetary initiatives used to stabilise the economy

Discretionary policy initiatives are the result of *specific* policy decisions announced by the treasurer. They involve changes in tax *rates* and/or the *generosity* or otherwise of welfare and other budget outlays. With the onset of the *COVID-19 lockdowns* and *recession* in the first half of 2020, combined with ongoing *weakness* in the economy, discretionary measures were *expansionary* to reinforce the operation of automatic stabilisers and to boost AD. They sought to soften the severity of the downturn and strengthen domestic macroeconomic conditions that were central to protecting living standards. While the *COVID-19 stimulus packages* were mostly temporary and put in place till the crisis passed, other initiatives announced during normal annual budgets were more permanent.

The COVID-19 budget stimulus packages starting from May 2020

In response to the COVID-induced recession that started early in 2020, the treasurer quickly responded (starting in May) by introducing a range of discretionary budget *stimulus measures*. Many of these provided temporary financial support, at a cost of well over $300 billion. There were *four* main types of discretionary assistance offered:

1. Help for individuals by temporary increases in welfare generosity

- There was a temporary increase in the *generosity of government welfare payments*. For example, the value of the *JobSeeker allowance* for those unemployed was temporarily doubled. Previously, the supplement was $550/fortnight but this was increased to $1100/fortnight. The aim here was to quickly lift disposable incomes, confidence, C spending, AD and economic activity.
- Those already on welfare benefits automatically received either one or two *cash bonus payments*, each of $750, to spend as they wished. The cost to the budget was $4.8 billion, and was designed to rapidly increase C spending, AD and economic activity.
- There was a temporary *relaxation of rules* to access welfare, to quickly boost C spending and AD. Normally, there is a waiting period between applying and becoming eligible for welfare.



2. Help for households through temporary early access to their superannuation savings

- Individuals and sole traders who were directly impacted by the economic consequences of COVID-19 were given *temporary early access to their superannuation*, with up to two tax-free withdrawals of $10 000 each. The aim here was again to boost spending and economic activity.

3. Help for eligible businesses severely affected by COVID-19 through the $90 billion JobKeeper wage subsidies for firms to hang onto staff

- Perhaps the most important budget initiative during COVID-19 was the introduction of the $90 billion *JobKeeper payments scheme*. This involved temporary government *wage subsidies* paid to eligible firms that suffered at least a 30 per cent drop in their turnover. Instead of closing, around 1 million businesses were able to keep paying wages to over 3.8 million employees at the rate of $1500 per fortnight. It meant that when the crisis and lockdowns were over, restarting was not delayed by having to find and train

suitable staff. The measure helped to maintain disposable incomes and confidence, and greatly boosted C spending, AD and economic activity.



4. Other help for businesses and individuals

- There was an increase in the maximum allowable value of *instant tax write-offs* from $30 000 to $150 000, for firms that purchased *capital items* or business equipment. This was designed to encourage or incentivise I spending by small and medium-sized firms, thereby helping to maintain AD and economic activity.
- Special temporary *industry support packages* were made available to some key sectors. For instance, there was assistance for Australian-owned airlines equal to $2.7 billion. In addition, support was provided to tourism ($1.2 billion), the arts ($223 million), the local film industry ($51 million), the aged care sector, childcare, and the building industry (through HomeBuilder grants).
- There were two special support packages available. First, there was the $1 billion *JobTrainer program*. This sought to provide up to about 340 000 free or subsidised training places so that the unemployed and school leavers could upgrade their skills and have a better chance of getting work. Second, there was the *JobMaker program* that provided a hiring credit of either $100 per week (for those aged 30–35 years) or $200 per week (for those aged under 29) for businesses creating and employing these staff in new jobs.
- Temporary, one-off, *COVID Disaster Payments* were also made available to individuals who lost their job or had their hours significantly reduced, due to COVID-19 hot spot lockdowns and temporary business closures.

Recent reductions in company tax rates and other assistance to businesses

As an *aggregate demand policy initiative*, recent discretionary reductions in company tax and other measures have been designed to assist firms, boost business confidence, stimulate private investment spending (I) and accelerate AD. With more spending and falling stocks of goods, lower company tax rates should have helped to lift economic growth and create more jobs and employment opportunities, without adding to inflationary pressures, given there was considerable unused capacity at the time.

- *Reductions* in the *rates of company tax* levied on the profits made by small and medium-sized enterprises (SMEs) commenced in 2015–16 and as shown in table 4.3, continued till July 2021, when they fell to 25 per cent. Reduced business tax rates should have provided a much needed boost to investment spending, AD and economic activity.

TABLE 4.3 The reductions in company tax rates, 2015–16 to 2021–22.

Year	Turnover threshold for small and/or medium-sized companies	Tax rate for small and medium-sized companies	Tax rate for large companies
2015–16	$2 million	28.5%	30%
2016–17	$10 million	27.5%	30%
2017–18	$25 million	27.5%	30%
2018–19	$50 million	27.5%	30%
2020–21	$50 million	26%	30%
2021–22	$50 million	25%	30%

Source: © Australian Taxation Office for the Commonwealth of Australia.

- *Instant tax write-offs* (tax deductions) for small and medium-sized businesses purchasing new capital items or equipment, such as a truck, computer system or new machinery, were also implemented by the treasurer, and were designed to boost business investment spending, along with AD, GDP and employment growth. These commenced in 2017–18 but were subsequently increased from $20 000 to $30 000 in the 2019–20 budget. Additionally, the 2020–21 and 2021–22 budgets introduced a temporary change to the instant tax write-off for capital assets, with no upper limit on eligible items.

Recent reductions in rates of personal income tax

- In a weak economy between 2020 and early 2022, discretionary reductions in personal income tax rates were announced in various budgets and then implemented as an expansionary aggregate demand policy initiative. Table 4.4 shows the *three-stage plan* passed by federal parliament covering the period between 2018–19 and 2024–25 (but which were later modified in the 2020–21 budget). For example, due to the COVID-19 recession and having previously implemented stage 1 changes, the stage 2 reductions were brought forward, effective from July 2020. These helped to increase the disposable income of more than 11 million lower and middle income taxpayers by almost $18 billion, by lifting the upper limit of taxable income thresholds for the 19, 32.5 and 37 per cent marginal tax rates. Further cuts are currently scheduled for upper income earners from July 2024. These changes helped to support consumer confidence, C spending and AD. They also eased the *tax burden* and reversed *bracket creep* (i.e. caused by individuals moving into higher marginal tax brackets over time as their incomes rise).



TAX OPTIONS EXPRESSED AS A ROAD

- The treasurer announced generous low- and middle-income tax offsets or reductions for 2020–21. These were continued in 2021–22, where singles would save up to $1080 in tax, with couples, up to $2160. Again, this would help boost C and AD.

TABLE 4.4 Three stages in cutting personal income tax rates passed by the parliament, after modifications to stage 2 in 2020.

Stage 1: Covering 2018–19, 2019–20		Stage 2: Covering 2020–21 and 2023–24		Stage 3: Covering 2024–25 onwards	
Taxable income	**Tax rate**	**Taxable income**	**Tax rate**	**Taxable income**	**Tax rate**
$0–$18 200	Nil	$0–$18 200	Nil	$0–$18 200	Nil
$18 201–$37 000	**19%** for amounts over $18 200	$18 201–$45 000	**19%** for amounts over $18 200	$18 201–$45 000	**19%** for amounts over $18 200
$37 001–$90 000	$3572 + **32.5%** for amounts over $37 000	$45 001–$120 000	$5092 + **32.5%** for amounts over $45 000	$45 001–$200 000	$5092 + **30%** for amounts over $45 000
$90 001–$180 000	$20 797 + **37%** for amounts over $90 000	$120 001–$180 000	$29 467 + **37%** for amounts over $120 000		
$180 001 and over	$54 097 + **45%** for amounts over $180 000	$180 001 and over	$51 666 + **45%** for amounts over $180 000	$200 001 and over	$51 592 + **45%** for amounts over $200 000

Note: Key tax changes at each stage are shown in bold.

Source: Australian Taxation Office, 'Individual income tax rates'.

Recent increased government investment spending on building national infrastructure

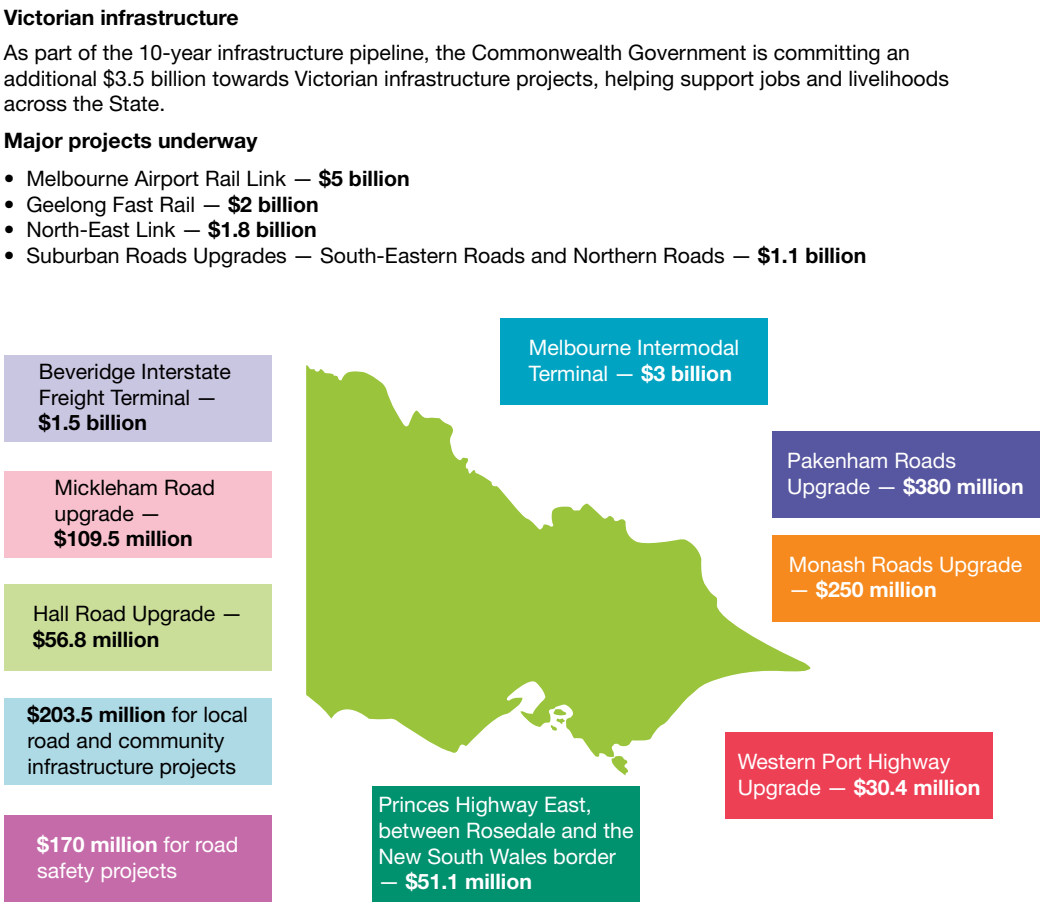


Each of the recent budgets announced huge increases in government *capital spending* to help improve and build *national infrastructure* projects. As an *aggregate demand budgetary policy initiative*, increasing government investment spending (G_2) helps to strengthen AD, and cause more orders and falling levels of unsold stocks of goods. Firms should then be encouraged to lift production, boosting economic growth and the employment of resources, helping to create more job opportunities and lowering unemployment, especially in the long-term.

- The 2020–21 budget promised a rise of $14 billion for building national infrastructure, over and above that previously committed to the rolling 10-year plan, thereby bringing the total to $110 billion. The current flow of projects include the Melbourne to Brisbane Inland Rail, the $5 billion Western Sydney International Airport and the $10 billion Bruce Highway Upgrade (Queensland). These projects represent a rise in G_2 spending to support AD, and help create an extra 40 000 jobs around Australia. There is an additional $3 billion for accelerating the start of shovel ready, small-scale projects creating a further 10 000 jobs.
- The 2021–22 budget added an extra $15.2 billion to funds available for the rolling Ten-Year Infrastructure Plan, restoring the total to $110 billion. This hopes to create up to 30 000 new jobs. For example, in Victoria, $2 billion is set aside for the Melbourne Intermodal Terminal, and the Pakenham and Monash Road Upgrades. In NSW, there is $2 billion for the Great Western Highway. In addition, there is also $3.5 billion for the National Water Grid Fund to build water infrastructure and dams designed to help prepare for future droughts and grow export capacity.
- The 2022–23 budget increased investment funds available to the Ten-Year Infrastructure Plan or pipeline from $110 billion to a record $120 billion for the period to 2031–32. Key new infrastructure announcements across various states in this budget included those for water (e.g. $5.4 billion to fund delivery of the Hells Gates Dam in North Queensland), power, road and rail transport (e.g. $1.2 billion for the Beveridge Interstate Freight Terminal in Melbourne, and $109.5 million to upgrade Mickleham Road), and telecommunications (e.g. $480 million in extra funding to improve NBN fixed wireless network).

Figure 4.15 shows some of the Australian government's major projects already underway in Victoria and new commitments in recent budgets.

FIGURE 4.15 Australian government infrastructure spending in Victoria as part of the Ten-Year Infrastructure Plan to improve transport, reduce congestion and create jobs.



Source: Commonwealth of Australia.

4.8.2 The effect of budgetary measures on the achievement of domestic macroeconomic goals and living standards

Overall, the pace of economic activity has not been optimal over the last few years for achieving Australia's domestic macroeconomic goals and improving our living standards. Nevertheless, without the operation of automatic and discretionary budgetary stabilisers, things almost certainly would have been worse. In this section, we will review how budgetary policy has attempted to improve the achievement of *each* of the three macroeconomic goals and living standards.

Budgetary measures to help strengthen economic growth

Over recent years to 2022, the economy moved from a recession to a recovery where there was quite a strong rate of economic growth. In part, automatic and discretionary stabilisers as part of budgetary policy helped to promote this recovery by stimulating AD and GDP:

- The *operation of automatic stabilisers* during the slowdown in early 2020 and 2021, resulted in reduced budget receipts relative to higher welfare outlays. These measures helped to boost C, I and G spending, AD and hence GDP. More recently, as the economy strengthened during early 2021 and 2022, the operation of automatic stabilisers caused the budget to slowly become less expansionary, cutting the deficit.

- *Discretionary budgetary stabilisers* reinforced automatic stabilisers to help flatten the business cycle. In the slowdown of 2020 and 2021, they sought to strengthen AD and economic growth. In contrast, stronger GDP growth in 2021–22 meant that some of these could be removed. When the economy was weak, the following discretionary stimulus measures were used:
  - a temporary doubling of *JobSeeker allowances* to $1100 per fortnight helped to boost C, AD and GDP
  - the $90 billion *JobKeeper* wage subsidy scheme allowed eligible firms to keep paying staff, and helped to lift C, AD and GDP
  - reductions in the rate of *company tax* and extending *instant tax write-offs* for SMEs purchasing new capital equipment encouraged I, AD and GDP
  - reductions in *personal income tax rates* and tax offsets for low- and middle-income earners boosted C, AD and GDP
  - special temporary *financial support* for hard-hit industries, such as aviation, tourism, education and home building, strengthened C, I, AD and GDP
  - allowing temporary *early access to superannuation* lifted C, AD and GDP
  - annual increases in funds available for the Ten-Year Infrastructure Plan (e.g. building the NBN, airports, rail, road, water and power) lifted G_2, I, AD and GDP
  - provision of around $6 billion to help farmers, businesses and communities recover from the floods, helped to maintain C, I, AD and GDP.

Budgetary measures to help reduce unemployment

Over recent years the economy moved from high unemployment in 2020 and 2021, to very low rates (e.g. just 3.5 per cent by June 2022). In response, the government used automatic and discretionary budget stabilisers in an attempt to achieve the goal of full employment:

- When the economy initially slowed and went into recession in 2020, the operation of *automatic stabilisers* led to reduced receipts and increased welfare outlays, helping to stimulate AD and create jobs. Then later, as the economy recovered in 2021 and 2022, automatically, some of this stimulus was wound back to help prevent unemployment falling too low.
- In addition, to support automatic budget measures when the economy was weak, *discretionary stabilisers* were also implemented to help stimulate AD and drive down unemployment. These policies included the following:
  - the temporary $90 billion *JobKeeper wage subsidy scheme* allowed eligible firms to keep paying staff who otherwise would have been dismissed, limiting unemployment to a monthly high of 7.5 per cent, rather than around 11.4 per cent had the scheme not been used
  - *reductions in the rate of company tax* and an extension of *instant tax write-offs* for SMEs purchasing capital equipment, helped to encourage higher levels of I, AD, GDP and employment
  - reductions in *personal income tax rates* and *tax offsets* for low- and middle-income earners helped to boost C, AD, GDP and jobs
  - the $1 billion *JobTrainer* scheme provided cheap or free training courses to the unemployed, making them more employable
  - annual increases in government funding of *national infrastructure* projects in the 2020, 2021 and 2022 budgets helped to boost G_2, I, AD, GDP and employment
  - temporary *financial support payments* were made available to key industries such as hospitality, tourism, education and aviation, helping to increase C, I, AD, GDP and jobs.

Budgetary measures to help reduce cost of living pressures

Following a period of deflation during the 2020 recession, inflation accelerated quickly to quite high levels during 2021 and 2022. This was due to supply chain issues and stronger demand. Automatic and discretionary stabilisers in the budget responded to help slow inflation and ease cost of living pressures:

- As the economy gained pace, *automatically*, budget receipts slowly increased relative to welfare outlays, cutting the budget deficit, reducing some of the stimulus and easing demand pressures on prices.

- In addition, as the economy recovered, some *discretionary* support measures were also withdrawn, such as the *JobKeeper* scheme, *early access to superannuation, industry support,* and more generous welfare. This helped to slow AD and inflation, In addition, there were some attempts to directly ease *cost of living pressures* including the following:
  - a temporary halving in the rate of *fuel excise tax* until September 2022
  - an extension to *income tax offsets* of between $420 and $1500 for low- and middle-income earners
  - a one-off tax-exempt special *income support payment* of $250 for eligible welfare recipients (e.g. those on the age pension, disability support and parenting payments) to help cover rising energy and other bills
  - the introduction and extension of the *First Home Loan Deposit Scheme*, for individuals with a deposit of as little as 5 per cent, helped to make home ownership more achievable
  - increased *childcare assistance* for working parents to help cover costs.

Budgetary measures to help support living standards

Living standards are affected by both material and non-material elements. All the automatic and discretionary budget initiatives already mentioned in this review section, directly or indirectly helped to improve our wellbeing. However, in addition, we might also think of the following measures that sought to promote our *quality of life*:

- The massive *COVID-19 vaccination and testing program*, annually costing around $4–6 billion in recent budgets, has helped to keep us safer. It has increased our material wellbeing by allowing the economy to reopen faster, so people could return to work and earn incomes. It has also reduced fatalities and the proportion of people suffering serious illness.
- There is an almost $2 billion *support package for promoting low-emissions technologies*, administered by the Clean Energy Finance Corporation and the Australian Renewable Energy Agency. This is designed to help slow climate change and reduce the impacts of severe weather events.
- *Increased spending on education* and training to $46 billion a year in 2022–23, should not only help to increase labour productivity and incomes, but also improve the prospects or finding satisfying jobs.

on Resources

Weblink The 2016–17, 2017–18 and 2018–19 budgets

4.8 Activities

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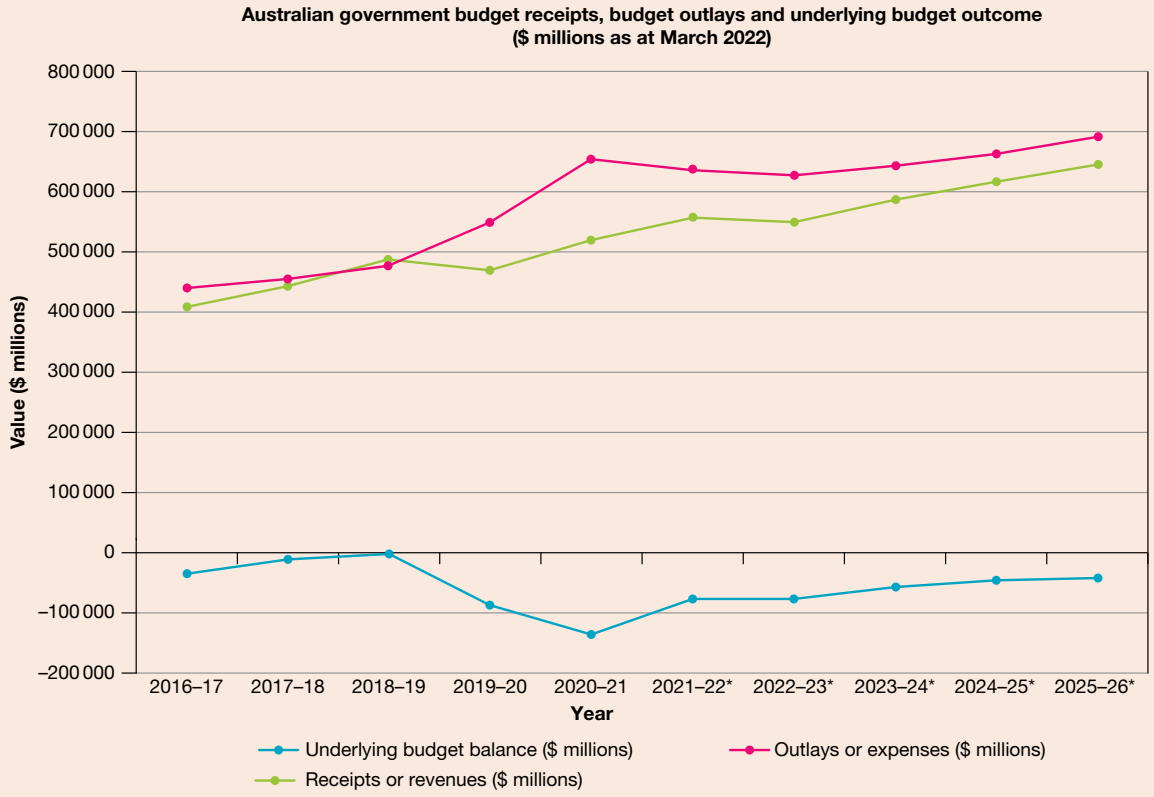


4.8 Quick quiz on | **4.8 Exercise**

4.8 Exercise

1. **Describe** the changing domestic macroeconomic conditions that have recently existed in Australia. **(3 marks)**
2. Giving reasons, **explain** whether recent budget outcomes have been expansionary or contractionary. **(2 marks)**
3. **Identify** and **explain** three important budget initiatives from the last two years that have been used to affect Australia's domestic macroeconomic goals. **(3 marks)**
4. Examine the figure that follows.

The countercyclical operation of the Australian government's budgetary policy as a stabiliser of aggregate demand and economic activity.



a. **Identify** and **explain** the likely *causes* of the ongoing budget deficits in recent years (as shown in the figure). **(4 marks)**

b. As a branch of aggregate demand policy, **explain** how recent budgets have helped to promote 'jobs and growth'. **(6 marks)**

c. **Explain** how you would expect any *two* of the following discretionary budgetary measures as part of aggregate demand policy, to affect the rate of demand inflation and the rates of economic growth and unemployment. **(4 marks)**

i. Discretionary reductions in the rates of company and PAYG taxes (as seen in recent budgets)

ii. Increased defence spending on new imported equipment and overseas peacekeeping

iii. The JobSeeker and JobKeeper measures in the COVID-19 stimulus packages commencing early in 2020

iv. An increase in the value of instant tax write-offs for the purchase of capital items by small and medium-sized businesses

v. A huge increase in government investment spending on national infrastructure projects to $120 billion over the next 10 years starting 2022–23.

d. **Outline** *two* general ways whereby a budget deficit could eventually be returned to surplus. **(2 marks)**

e. **Identify** and **explain** two important reasons why a return to a budget surplus in the medium-term could be seen as desirable. **(2 marks)**

f. Assume that you are the federal treasurer right now. You are about to deliver a budget in the next few weeks that seeks to promote *domestic economic stability* and improve living standards.

i. **Identify** and **outline** the *three* most important factors or events that would affect your budgetary policy stance at this time. **(3 marks)**

ii. In this situation, **explain** the *operation* of automatic (cyclical) stabilisers and discretionary (structural) stabilisers in your budget that would help improve domestic stability at this time. Include reference to specific discretionary policies you would use. **(4 marks)**

Solutions and sample responses are available online.

4.9 Strengths and weaknesses of using budgetary policy to affect aggregate demand and influence the achievement of domestic macroeconomic goals and living standards

KEY KNOWLEDGE

- The strengths and weaknesses of using budgetary policy to affect aggregate demand and influence the achievement of the domestic macroeconomic goals and living standards

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

To optimise the success of budgetary measures, the treasurer needs to be mindful of policy strengths and weaknesses.

4.9.1 The strengths of using budgetary policy to achieve Australia's domestic macroeconomic goals

Table 4.5 summarises some of the key *strengths* of using budgetary policy to help promote the achievement of domestic macroeconomic goals and livings standards.

TABLE 4.5 Some strengths of using budgetary policy to stabilise aggregate demand and promote the achievement of macroeconomic goals and living standards.

Possible strength	Description of strength
1. Automatic and some discretionary stabilisers can work quickly as stabilisers, because they have quite short time lags	Many government economic policies involve *three* types of **time lags** and so can take years to work making them less useful as a stabiliser. There is the *recognition lag* for identifying the problem — this is due to the existence of lagging indicators like GDP; the *implementation lag* in activating the policy; and the *impact lag* in waiting for the policy to actually boost or slow AD and economic activity. A powerful advantage of *automatic* budget stabilisers is that they work very quickly in a countercyclical way to affect AD and reduce economic instability. There is almost no time lag. For instance, the moment the economy slows, incomes fall and unemployment rises, tax receipts will automatically decline and welfare outlays rise, causing the budget stance to quickly become a more expansionary deficit, boosting AD. In contrast, we will soon see that monetary policy involving changes in interest rates can take up to three years to be fully effective. In addition, as shown by the Coronavirus Stimulus Package of early 2020, sometimes, *discretionary* budget outlays (e.g. the temporary doubling of some welfare benefits) can also be activated quite quickly to help stimulate household C spending and AD.

(continued)

TABLE 4.5 Some strengths of using budgetary policy to stabilise aggregate demand and promote the achievement of macroeconomic goals and living standards. *(continued)*

Possible strength	Description of strength
2. Discretionary policy can precisely target specific areas of greatest weakness	Budgetary policies involving changes in receipts and expenses can *precisely* and powerfully target particular economic problems in different parts or sectors of the economy that are most in need of support. For instance, the budget can surgically alter the allocation of resources to specific industries like health, education, aviation, construction and the environment, and help the aged or homeless. There is the capacity to support the unemployed and those affected by natural disasters, make up for the deficiency in investment or consumption spending and ease bottlenecks in transport. It can also discourage the consumption of particular harmful products like alcohol, as well as operate more generally on the macro level to affect national consumption, investment, government spending, net exports, AD and GDP. Potentially, this makes budgetary policy a very versatile and precise instrument. In contrast, we will soon see that monetary policy involving a change in interest rates is far more general and cannot precisely target areas of specific weakness (refer to section 4.15.2).
3. Budgetary policy works very directly and effectively to regulate AD, especially in a recession	The budget can work in a very *direct* way to affect AD and economic activity. For instance, in a recession, reduced budget receipts and increased outlays (leading to an expansionary rise in the budget deficit) can be used to inject extra cash or disposable income directly into the hands of householders and businesses, where they are likely to spend most of it. Additionally, discretionary government consumption (G_1) and investment spending (G_2) can also directly feed extra expenditure into the economy to lift economic activity (although this is likely to add to the deficit and government debt that may take years to repay). In reverse, during inflation, automatic rises in receipts and cuts in welfare outlays can directly hold down AD, slowing the economy. Shortly we will see that using monetary policy and cutting interest rates in a recession to stimulate AD do not work all that directly, especially in a slowdown, and hence, might not be very effective. This is especially likely when cuts in interest rates are very small because they are already close to zero and there is little room for further reductions. For this reason, expansionary budgetary policy has had to do much of the heavy lifting and provide the necessary stimulus during the 2020 recession and subsequent recovery.
4. Some budget measures can also grow aggregate supply, as a bonus	We know that budgetary policy can help stabilise aggregate demand. However, as we will see in Topic 5, an added bonus is that lower tax rates and outlays on infrastructure and education, can also improve aggregate supply conditions for businesses and individuals, grow productive capacity and improve both material and non-material living standards.

4.9.2 The weaknesses of using budgetary policy to achieve Australia's domestic macroeconomic goals

Table 4.6 summarises some of the key *weaknesses* of using budgetary policy to help promote the achievement of domestic macroeconomic goals and living standards.

TABLE 4.6 Some weaknesses of using budgetary policy to stabilise aggregate demand and promote the achievement of domestic macroeconomic goals and living standards.

Possible weakness	Description of weakness
1. Some discretionary budget stabilisers can become pro-cyclical due to their long time lags between recognition of a problem in economic activity and the impact of the corrective policy	There are often long time lags associated with the recognition, implementation and impact of some discretionary budgetary policies like spending on large transport, power and telecommunications infrastructure projects. Because of delays in planning, starting and completing these projects, there is a real risk that this spending can become **pro-cyclical** rather than countercyclical, possibly increasing instability in AD. This can mean that changing discretionary budget stabilisers are of limited use in correcting short-term or cyclical instability like a recession. In some cases, their full impact on the level of AD and economic activity can take 3–8 years or even longer and so they are often more suited to promoting medium- to long-term stability. In the opposite situation where there is a boom, the same sort of pro-cyclical risk applies. For example, if there were discretionary cuts in infrastructure to limit AD, the policy may do little to slow inflation in the short-term, and instead gain traction when inflation has passed and the economy is in recession. However, as noted, some discretionary budget stabilisers can work quite quickly to help stimulate AD (e.g. a rise in the payment rate for welfare or a cash bonus paid to households).
2. Financial constraints and the creation of a structural budget deficits can limit budget options during a slowdown	Governments face *financial constraints* where there is limited money available for spending without increasing unpopular taxes or adding to already high levels of government debt. For instance, during a slowdown like in 2020 and 2021, the government may want to make big discretionary cuts in tax rates, increase outlays and run expansionary budget deficits to help stimulate AD and economic activity. However, the benefits of such action would have to be balanced against the repayment burden that this action would place on future generations and potentially, the negative impacts on Australia's AAA credit rating. In other words, concern over the impact of huge deficits on the government's long-term financial position, is likely to mean that the strength of stimulus budget measures may be less than that actually needed for promoting a significant recovery. This weakens the policy's effectiveness.
3. Budgetary policy can undermine the effectiveness of monetary policy through the problems of crowding out or crowding in	Budgetary policy used as a stabiliser can sometimes undermine the effectiveness of monetary policy. For instance, when the economy is in recession and the government decides to run large budget deficits to stimulate AD financed by borrowing through the sale of government bonds domestically, this increases the demand for credit in local financial markets. As an unintended result, this puts upward pressure on local interest rates at a time when it would be better to have lower interest rates to boost spending. In turn, higher interest rates can lead to the problem of *crowding out* private sector C and I spending, unfortunately slowing the economy. In reverse, when there are budget surpluses during a boom designed to slow AD and economic activity, and the government decides to repay previous debt, this can increase the supply of credit, cause lower interest rates and lead to the problem of *crowding in* by borrowers, adding to spending, inflationary pressures and instability.
4. Constraints due to trade-offs in pursuing government economic, social and environmental goals	Some fiscal policies cannot be used to pursue one particular government economic goal because they can involve *trade-offs*. Here they can *conflict* with, or prevent the achievement of another goal. For example, although a less expansionary budget like that in 2018–19 helped to slow inflation, it also reduced economic growth and increased unemployment. In reverse, expansionary budget deficits, which are designed to boost economic growth and create jobs, can sometimes accelerate inflation if there is little spare capacity available, as in 2022. Additionally, while slowing welfare or government spending on services such as health, public transport and education may help with fiscal consolidation and return the budget to surplus, the trade-off is that this is also likely to reduce equity in the distribution of income and undermine living standards. Furthermore, expansionary budgets designed to strengthen economic growth can potentially weaken environmental outcomes and make the growth in GDP less sustainable.

(continued)

TABLE 4.6 Some weaknesses of using budgetary policy to stabilise aggregate demand and promote the achievement of domestic macroeconomic goals and living standards. *(continued)*

Possible weakness	Description of weakness
5. Adverse political constraints can limit budget options and their effectiveness, especially in a boom	As seen in recent years, there are *three* types of political constraints that can act as deterrents and reduce the effectiveness of budgetary policy as a stabiliser of economic activity, especially in a boom. • *The absence of a federal government majority in the Senate.* For some parts of the budget to become law, they first need approval in both houses of parliament. In recent years to early 2022, the Liberal Coalition government lacked a majority in the Senate, which was controlled by Labor and various minorities. This caused significant aspects of budget receipts and outlays to be rejected, altering the planned budget outcome and its intended impact on AD. • *Adverse voter reaction.* Some changes in budget receipts and outlays can have significant adverse popularity ramifications, especially in election years. For example, while few voters oppose expansionary budget measures like discretionary tax cuts, or increased outlays on health and education (that increase the structural budget deficit) to stimulate AD in a recession, when the boom is over, most voters object to higher tax rates or cuts to government services, and may take out their anger on unpopular governments at the next election. As a result, budgetary policy has an expansionary bias and structural deficits can easily develop, even if they are not entirely warranted. This undermines the financial sustainability of important budget outlays like welfare and health, and weakens the government's ability to respond to future economic crises.
6. Psychological constraints can reduce the budget's effectiveness as a stabiliser	The success and strength of any budget depends partly on the prevailing level of *confidence*. For instance, reduced consumer and business confidence (e.g. during 2020) would tend to weaken the expansionary effects of budget deficits or tax cuts where people may try to save money rather than spend it. In reverse, if confidence is strong, contractionary budgets can be made less effective than expected in slowing the level of AD, thereby reducing the effectiveness of the budget as a stabiliser.

4.9 Activities

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4.9 Quick quiz on | **4.9 Exercise**

4.9 Exercise

1. **Identify** and **outline** *two* important strengths of using budgetary policy. **(2 marks)**
2. **Identify** and **outline** *two* important weaknesses of using budgetary policy. **(2 marks)**
3. During a *recession* (e.g. perhaps in 2020 following the start of the COVID-19 pandemic), **explain** how financial constraints and psychological constraints may reduce the effectiveness of using budgetary policy as a stabiliser of domestic economic activity. **(4 marks)**
4. **Explain** how the existence of long *time lags* reduce the effectiveness of using some discretionary budgetary initiatives as a stabiliser of aggregate demand and economic activity during a recession. **(4 marks)**
5. A possible advantage of using budgetary measures is that they can target particular economic problems very precisely. **Explain**, giving possible examples of policies. **(4 marks)**

Solutions and sample responses are available online.

PART B Aggregate demand monetary policy and the pursuit of domestic economic stability

4.10 Definition and aims of monetary policy, and the role of the RBA

KEY KNOWLEDGE

- The role of the RBA with respect to monetary policy as outlined in its charter

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Have you ever wondered what the **Reserve Bank of Australia (RBA)** actually does and how it helps to manage our economy? Well, we are about to find out. In fact the RBA makes important decisions that influence levels of inflation, economic growth, unemployment and living standards. As we shall see, it does this by implementing *monetary policy* that involves changing *interest rates* as a way of influencing the level of spending and economic activity. For example, in the recession of 2020, it cut interest rates to their lowest rate ever, to help stimulate AD, whereas in the boom of 2006–08 and 2021–22, it raised interest rates in an attempt to quieten spending and economic activity to more sustainable levels, improving our wellbeing.



4.10.1 Definition of monetary policy

Monetary policy *is an aggregate demand management strategy that is implemented by the Reserve Bank of Australia (RBA). It mainly involves manipulating the actual cash rate of interest, thereby more broadly affecting other interest rates and the level of AD. By changing interest rates in a countercyclical way, the RBA can help to stabilise the level of economic activity and improve the achievement of Australia's key domestic macroeconomic goals and living standards.*

As mentioned, monetary policy is an aggregate demand strategy because as we shall soon see, changes in interest rates can affect the levels of AD, especially household (C), business (I), and even net overseas spending (X – M) by influencing the exchange rate.

4.10.2 Role of the Reserve Bank of Australia

The RBA is our country's independent central bank and is accountable to the parliament. Under its charter, it has *four* main responsibilities or roles:



- The RBA implements monetary policy involving changes in interest rates designed to influence AD and *improve domestic macroeconomic conditions*. This role was outlined in the *Reserve Bank Act* of 1959:

  > "… to ensure that the monetary and banking policy of the [Reserve] Bank is directed towards the greatest advantage of the people of Australia and that the powers of the Bank …are exercised in such a manner … as will best contribute to the stability of the currency of Australia; the maintenance of full employment in Australia; and the economic welfare and the prosperity of the people of Australia."

  Essentially this statement is saying that the RBA has the responsibility to pursue Australia's key macroeconomic goals and promote better material wellbeing. The phrase '*stability of the currency*' refers to the aim of maintaining the *purchasing power* of money by avoiding rapid inflation and promoting the goal of *price stability* (also called the *goal of low and stable inflation*).
- The RBA is responsible for *issuing coins and notes* and is custodian of Australia's reserves of foreign currencies.
- The RBA is *banker to the federal government*. For instance, here it might arrange the issue of government bonds to help finance budget deficits.
- Finally, the RBA acts as banker to our commercial banks.

4.10.3 The macroeconomic aims of monetary policy

The RBA uses monetary policy involving changes in interest rates to pursue three key *domestic macroeconomic* goals, thereby helping to create optimal conditions for better *living standards*.

The pursuit of the goal of low inflation

Foremost, the RBA sees the *goal of low inflation* as its number one priority since this is aprecondition for prosperity and better living standards. **Inflation targeting** (summed up as *'fighting inflation first'*) means achieving an *average* inflation rate of between 2–3 per cent a year over time. This is the *medium-term operational aim* of monetary policy. While the RBA uses changes in consumer prices as measured by the headline CPI to help guide policy decisions, it particularly notes trends in the core or underlying inflation rate,

because this excludes price changes caused by one-off, temporary events. The underlying CPI provides a better guide to any emerging inflationary problems than the headline CPI does.

Hence, when inflationary expectations exist and there are signs that inflation will accelerate to exceed the upper end of the 2–3 per cent target range (and especially when core inflation is up), the RBA will normally *tighten* its stance (set higher interest rates) in a countercyclical way, to help depress inflationary expectations, slow the growth of AD or spending, and curb economic activity to a sustainable rate. Additionally, by slowing AD and economic activity, rises in interest rates help to soften the demand for labour, and hence ease wage pressures that might otherwise cause cost inflation.

The pursuit of the goals of strong and sustainable economic growth and full employment

When inflation is *not* a threat and there is unused productive capacity, the RBA usually turns its attention to other aspects of domestic economic stability such as the pursuit of a strong and sustainable rate of *economic growth, full employment* and the economic welfare and prosperity of Australians. So when the level of economic activity is too weak and inflation is too low, the RBA typically adopts an expansionary, accommodative or looser monetary policy stance to help stimulate AD, strengthen economic and employment growth, promote prosperity, and boost living standards.



The priorities of monetary policy over the last two years

As previously noted, the RBA's charter requires that monetary policy is applied in ways that promote 'the stability of the currency' (i.e. low inflation), 'the maintenance of full employment', and 'the general wellbeing and economic prosperity of Australians'.

During 2020 and 2021, the macroeconomic environment was weak. Key goals were not well achieved. On average, inflation was too low and there was a recession in the first half of 2020. Following a spike in unemployment in 2020, labour market conditions showed there was much unused capacity, and wage growth remained slow. Given this, the RBA adopted and maintained record low interest rates of just 0.10 per cent, as it pursued its two key aims:

- *to strengthen the rate of economic growth*
- *to drive down the rate of unemployment* (perhaps as low as 4.0 per cent).

As reported in various RBA statements during 2019–20–21, if its expansionary policy is successful, stronger spending, faster economic growth and lower unemployment, would eventually start to exert some upward pressure on wages, and thus help return inflation to within the desired 2–3 per cent target zone.

More recently during late 2021 and into 2022, stronger GDP growth, very low unemployment and rapidly accelerating inflation led the RBA to raise interest rates five times in the five months to September 2022. This represents a less expansionary stance and a return towards a more neutral policy.

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4.10 Activities

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4.10 Quick quiz on | **4.10 Exercise**

4.10 Exercise

1. **Define** what is meant by *monetary policy*. **(1 mark)**
2. **Outline** the main *goals* or priorities of the RBA's monetary policy over the last two years. **(2 marks)**
3. a. **Explain** what is meant by *inflation targeting*. **(2 marks)**
   b. **Explain** the ways in which monetary policy is regarded as an *aggregate demand policy*. **(2 marks)**
   c. **Identify** and **outline** the main responsibilities of the RBA, according to its 1959 charter. **(1 mark)**
   d. If inflation is below the target range, **explain** the likely aims of RBA monetary policy. **(2 marks)**
   e. **Outline** the main priorities of the RBA's monetary policy during the past two years. **(2 marks)**

Solutions and sample responses are available online.

4.11 Conventional monetary policy and how the RBA can affect interest rates

KEY KNOWLEDGE

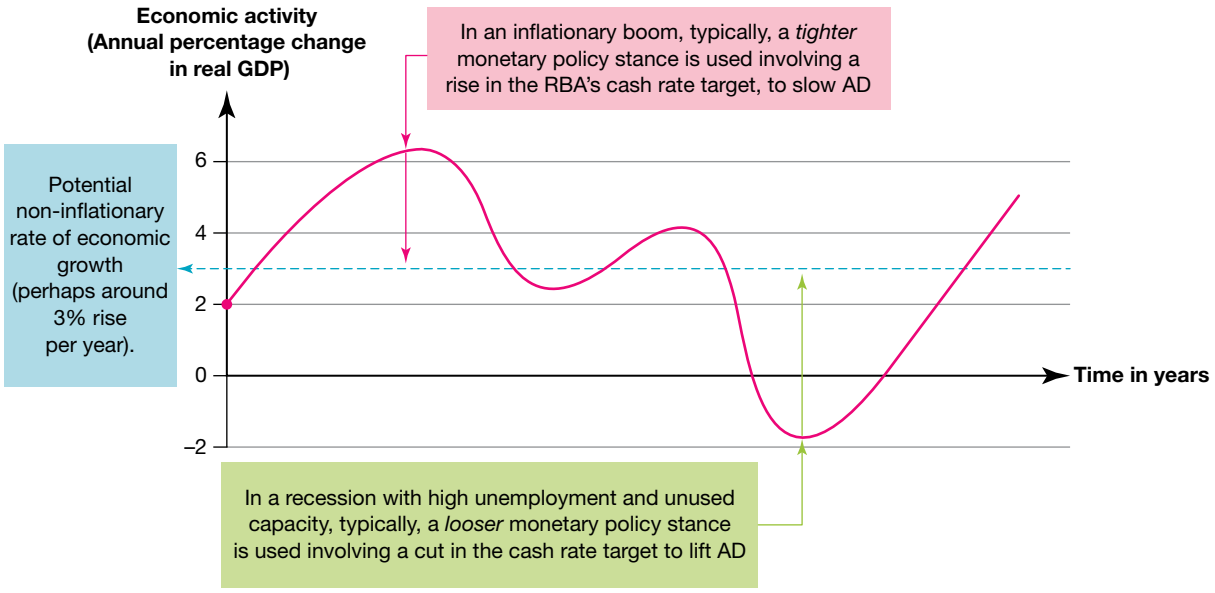
- Conventional monetary policy (cash rate target) and how it affects interest rates

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Interest rates represent the cost or price of borrowing credit and the reward or incentive to save income. They are determined in financial markets by the forces of demand and supply. Standard or **conventional monetary policy** involves the RBA's direct guidance of the *cash rate* of interest that applies in the *overnight* or short-term money market (abbreviated STMM). In turn, the cash rate acts as a reference rate that *indirectly* allows the RBA to influence longer term interest rates (e.g. interest rates on loans to business like overdrafts, interest rates on home loans or mortgages, interest rates on bankcard credit, or interest rates paid on savings accounts). This close connection between short- and longer term interest rates reflects the fact that there is competition between financial markets.

Because the level of interest rates can have a strong effect on AD (C + I + G + X – M), the RBA uses its conventional monetary policy in a *countercyclical* way to help steer the economy along the narrow path between recession on the one hand, and an inflationary boom on the other. This is illustrated hypothetically in figure 4.17. So, for example, during a *recession*, the RBA is likely to adopt a *looser* or perhaps more *expansionary monetary policy stance* to lift the economy by announcing a *cut in the cash rate target* that it *directly* influences in the short-term money market. This would then *indirectly* put downward pressure on other interest rates, making credit cheaper and encouraging households and businesses to borrow and spend more, rather than save. Through what we call *transmission mechanisms* (to be explained shortly), lower interest rates countercyclically help to stimulate AD and economic activity, strengthening domestic macroeconomic conditions.

FIGURE 4.17 Conventional monetary policy involves the RBA changing interest rates in a countercyclical way to help soften or flatten the severity of the business cycle.



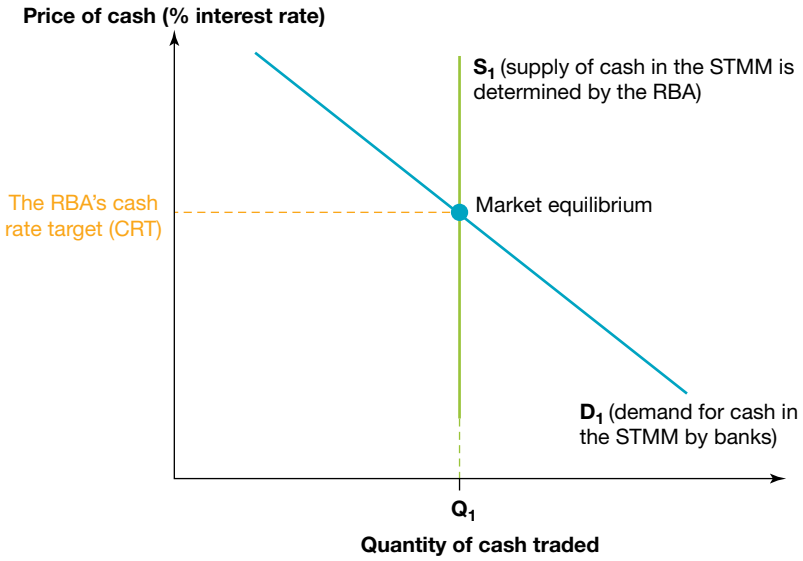
In reverse, during a *boom*, the RBA is likely to adopt a *tighter* or more *contractionary stance* by *lifting the cash rate target* in the **short-term money market**. Indirectly, this again puts upward pressure on other interest rates and makes borrowing and spending dearer, while at the same time, rewarding saving. Finally, through various *transmission mechanisms*, a higher cash rate in a boom helps to *countercyclically* slow AD and economic activity, improving domestic macroeconomic conditions.

This broad outline shows how *monetary policy* can be applied to help manage the level of aggregate demand. However, we now need to go back to fill in the details of *how* the RBA can *directly* control the *cash rate* of interest in the *short-term money market*.

4.11.1 The short-term money market and the cash rate target

Let's start by looking at the short-term money market (abbreviated STMM). Essentially, this is the market set up by the RBA, where banks borrow cash from and lend cash to each other, for very short periods of time — perhaps just overnight. This market is important to enable transactions between banks and their customers to be cleared at the end of each day's trading. To facilitate this, each of our banks is legally required to hold a *positive cash balance* in its own **exchange settlement account (ESA)** with the RBA. For instance, a NAB customer may pay a customer of the CBA $1m, so that at the end of the day, NAB will need to shift cash into the CBA's ESA. If the NAB's cash balances are insufficient or in deficit, it would need to quickly borrow or demand cash at an agreed interest rate from another bank, perhaps the CBA, that may have a cash surplus and be keen to earn extra interest to grow its profits. This means that at the end of each day, one bank could only have a cash surplus in its ESA if some other bank has a cash deficit. Overall, the *total* amount of cash circulating in the STMM is normally relatively stable or fixed (if for the time being, we exclude the impacts on this cash market, of changes in government taxation and other receipts, and variations in government welfare payments and other outlays). Figure 4.18 illustrates some of the basic features of the STMM.

FIGURE 4.18 How interest rates are determined in the cash or short-term money market.



Referring to this diagram of the STMM, notice the following:

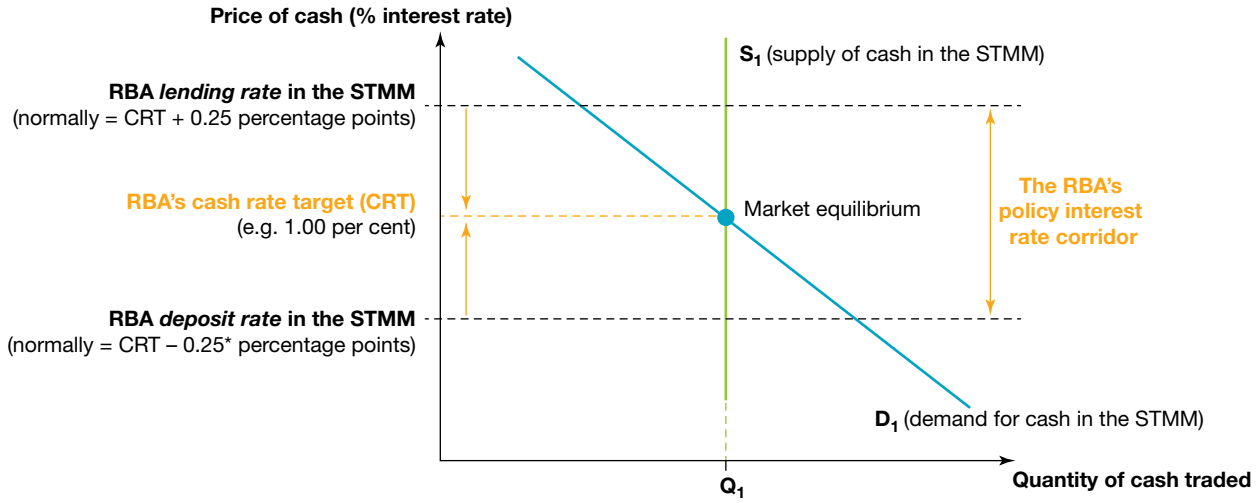
- The *demand for cash* (D_1) is determined by the needs of Australia's commercial banks (i.e. the NAB, CBA, Westpac and ANZ) when they must make cash transfers or payments into the ESAs of other banks at the end of each day. Like normal demand lines, this has a negative slope.
- In contrast, the *supply of cash* (S_1) is directly controlled by the RBA. It is shown here as a vertical line since the RBA has a monopoly in the supply of cash.
- Finally, there is the market *equilibrium* price or *cash rate* of interest for borrowing and lending in the STMM. It occurs at a point where the quantity of cash demanded and supplied are exactly *equal*. As its main instrument of monetary policy, the RBA Board sets and pursues a **cash rate target** or the ideal level for short-term interest rates that it believes will help to improve Australia's domestic macro conditions and living standards.

4.11.2 The cash rate target and the policy interest rate corridor

We have now seen that in the STMM, banks are legally required to maintain positive *cash balances* in their ESAs at the end of each day's trading. For this clearing or settlement process to happen overnight, each bank must maintain a positive balance in its ESA. This requires banks to borrow and lend cash in the STMM at a level called the *cash rate*. As the key instrument of monetary policy, the RBA sets a desirable *cash rate target* for this market, that it changes from time to time in response to new economic conditions. In turn, competitive forces and consequent ripple effects cause any change in the short-term cash rate to indirectly affect other longer term interest rates, AD, and the level of economic activity.

However, there is a bit more to understanding the STMM and how the RBA seeks to push the cash rate to a level close to the RBA Board's announced *target cash rate*. This level is possible because within the STMM, the RBA operates what is called the **policy interest rate corridor** or *band* of interest rates within which borrowing and lending by all banks and some other financial institutions must occur. It is a *guidance system* and involves the RBA setting a *ceiling rate* and a *floor rate* of interest in the STMM that sit above and below the RBA's desired *cash rate target*. This is shown in figure 4.19.

FIGURE 4.19 The RBA's operation of the policy interest rate corridor in the short-term money market.



***Note:** This diagram shows the normal RBA deposit rate in the STMM that is equal to the cash rate target minus 0.25 percentage points. However, in late 2020 when the RBA's cash rate target was cut to 0.10 per cent, this deposit rate arrangement would have created negative interest rates. To avoid this, a decision was made to temporarily change the relationship so that the deposit rate equalled the cash rate target minus 0.10 percentage points or effectively at the time, 0.00 per cent. This change narrowed the lower end of the policy interest rate corridor. Given the recent increases in the cash rate target in 2022, there has now been a return to the normal deposit arrangement (the CRT –0.25 percentage points).

- The *lending* or *ceiling rate* is a penalty rate of interest which the RBA charges when making loans to commercial banks with cash shortfalls in their ESAs, if those banks have been unable to borrow from other banks to maintain positive balances. This upper rate is currently set at 0.25 percentage points *above* the cash rate target. So, for example, if the cash rate target was set at 1.00 per cent, then the *ceiling lending rate* would be 1.00 + 0.25 percentage points = 1.25 per cent. This costly borrowing rate acts as an incentive for banks to maintain their required exchange settlement balances and, if required, borrow from other banks with a cash surplus at a slightly lower rate. This guides the actual cash rate closer to the RBA's cash rate target.
- The *deposit* or *floor rate* is the low and uninviting interest rate that the RBA pays banks with surplus cash deposited in their ESA. Normally, this is set at 0.25 percentage points *below* the cash rate target. However, between 2020 and early 2022 when the cash rate was almost zero (just 0.10 per cent), the RBA deposit rate was changed and was set at just 0.10 percentage points *below* the cash rate target (not the usual 0.25 percentage points below the cash rate: one aim was to avoid having a negative interest rate). But returning to the example shown in figure 4.19, if the cash rate target was 1.00 per cent, then the normal or *standard* floor deposit rate would be 1.00 – 0.25 percentage points = 0.75 per cent. This floor rate provides guidance and creates a financial incentive for banks with surplus cash balances to lend to other banks, rather than have them hold it as a deposit with the RBA where they would receive almost zero or no interest at all.

Effectively, the *policy interest rate corridor* acts to *guide* and encourage commercial banks to *borrow* and *lend* close to the RBA's *cash rate target* which lies *between* the ceiling and floor rates of interest. The corridor sets boundaries for the cash rate. As we shall see, there is no incentive for banks to trade far outside the RBA's target rate. With all transactions in the STMM contained *within* this policy interest rate corridor, it allows the RBA to *directly* control the short-term cash rate, and through competitive forces, *indirectly* influence other longer term interest rates essential for its monetary policy.

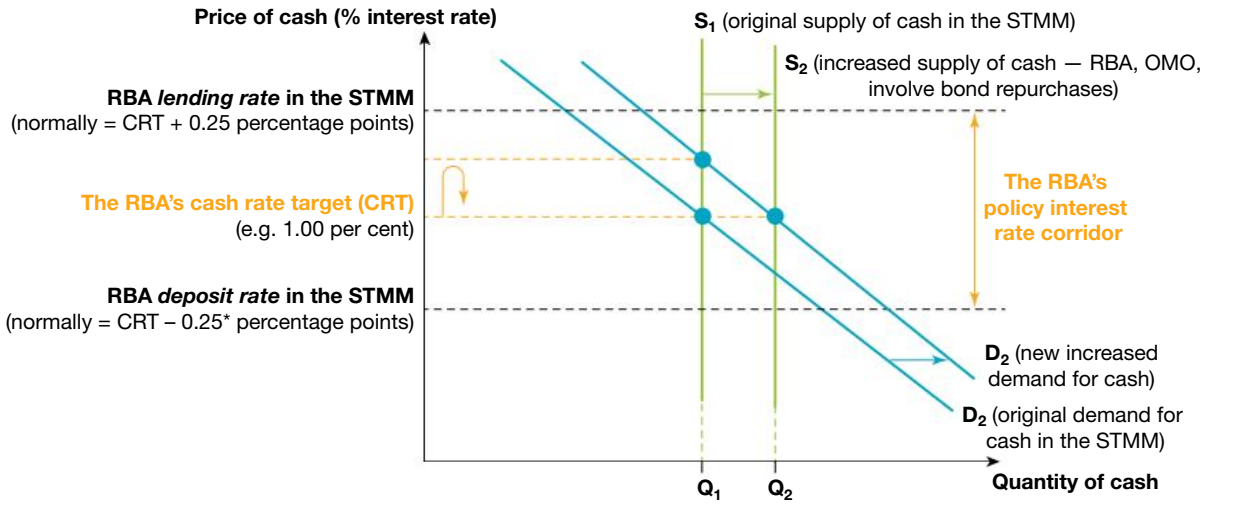
4.11.3 The use of open market operations to maintain the RBA's chosen cash rate target

We have now seen how the RBA has set up and uses the *policy interest rate corridor* to achieve an actual cash rate that closely corresponds with its announced *cash rate target* that is suitable for current economic conditions. However, given that the *demand for cash* in the STMM can *change* from day-to-day (e.g. perhaps in response to a financial crisis, the payment of tax to the government, or households receive welfare benefits), it is fair to ask the question — what is it that holds the actual cash rate close to the RBA's cash rate target?

For example, if the RBA did nothing, an *increase in the demand for cash* by banks and the private sector would tend to *push up the actual cash rate*, while a *decrease in the demand for cash* would cause it to *fall*. Hence, to keep the actual cash rate *close* to the policy target level, each day the RBA conducts **open market operations** (abbreviated OMO). As part of its *liquidity management*, these operations involve the RBA either *selling* Australian government bonds to the banks, or alternatively, *repurchasing* them (repos) from the banks, allowing the RBA to directly change the *supply of cash* and keep the cash rate on target.

For example, figure 4.20 shows that on a given day, if there was *upward* pressure on the cash rate due to an *increase in the demand for cash* in the STMM (shown by the rise from D_1 to D_2), the RBA could use its OMO to *repurchase* government bonds from the banks. This would *increase the supply of cash* (shown by the rise from S_1 to S_2) and boost bank liquidity, exactly offsetting the increase in the demand for cash. The action would drive the cash rate back down towards the RBA's previously announced monetary policy target (e.g. in this case, a CRT of 1.00 per cent).

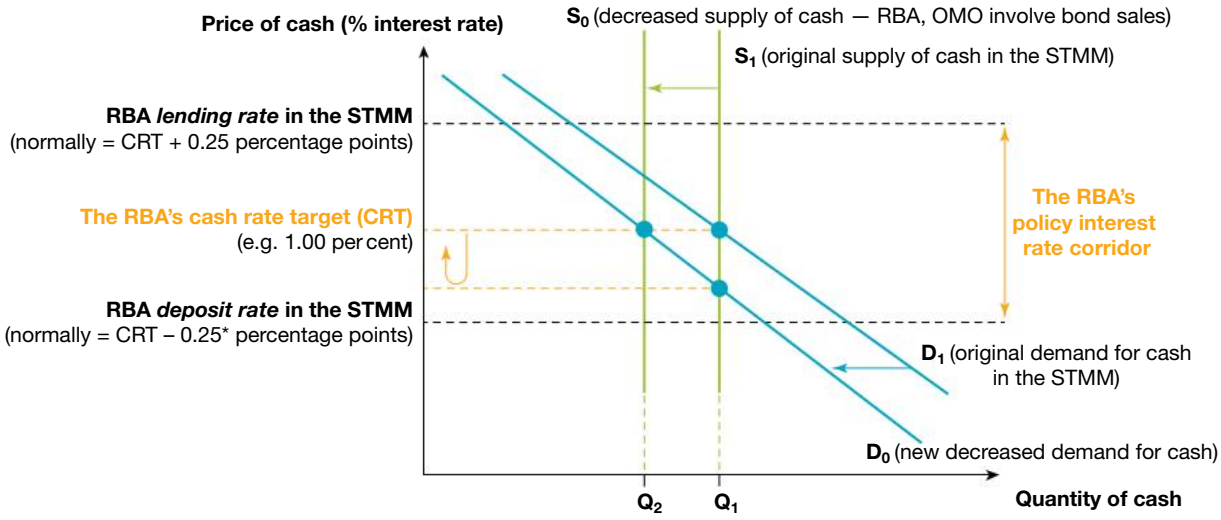
FIGURE 4.20 The effect of daily OMO involving RBA repurchasing government bonds to increase the supply of cash and drive the cash rate back towards the cash rate target, offsetting an increase in the demand for cash.



***Note:** please see the note for figure 4.19.

In reverse, and referring to figure 4.21, if there was *downward* pressure on the cash rate due to a *decrease in the demand for cash* (shown here by the drop from D_1 to D_0), the RBA could conduct OMO involving *increased sales of government bonds* to the banks, reducing their liquidity, and creating a cash shortage (shown here as the fall from S_1 to S_0). This would then put upward pressure on the actual cash rate, pushing it back towards the RBA's originally announced monetary policy target (e.g. in this case, a CRT of 1.00 per cent).

FIGURE 4.21 The effect of daily OMO involving RBA sales of government bonds to decrease the supply of cash and push the cash rate back up towards the cash rate target, offsetting a decrease in the demand for cash.



***Note:** please see the note for figure 4.19.

4.11.4 What happens when the RBA decides to change the cash rate target and its monetary policy stance due to new economic conditions?

As outlined earlier, *monetary policy* involves the RBA manipulating interest rates in a *countercyclical* way to help *stabilise* spending and economic activity. This means that typically, it will *cut* its *cash rate target* when AD is too weak (called an **accommodating** or **loose monetary policy stance**) and *increase* the *cash rate target* (called a *tighter monetary policy stance*) when spending is too strong.

Depending on recent developments and trends in key economic indicators, the RBA Board could announce a change in the *cash rate target*, signalling an *altered monetary policy stance*. But before we look at this, it is important to remember that this cash rate target sits within the *policy interest rate corridor* in the STMM, between the RBA's *ceiling* or *lending rate*, and the RBA's *floor* or *deposit rate* of interest.

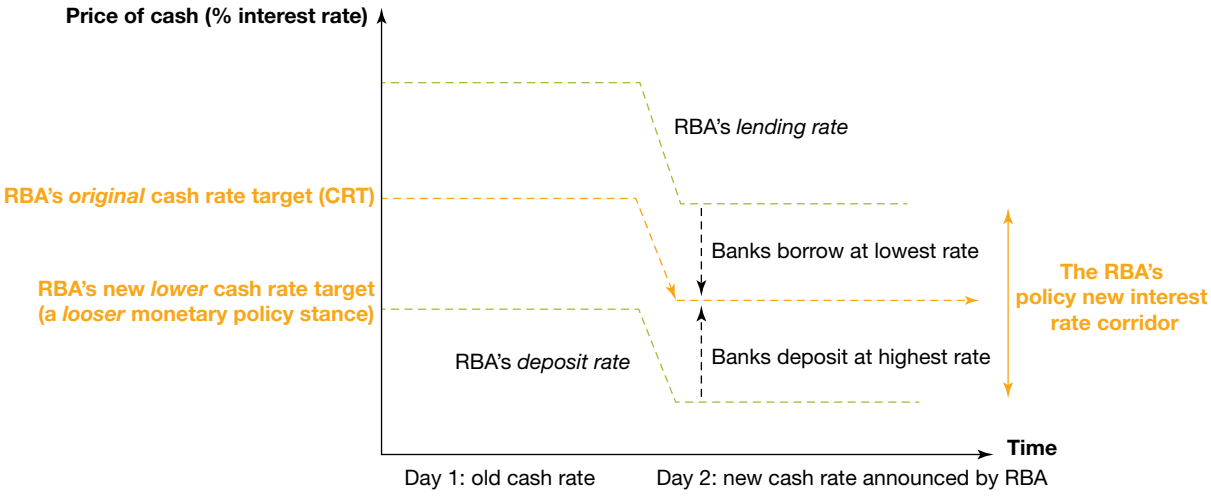
The RBA decides to cut its cash rate target to stimulate AD and economic activity:

In a *slowdown* or recession, how could the RBA adopt a *looser monetary policy stance* and directly *cut* the actual cash rate (and indirectly, lower other interest rates) to help stimulate AD and economic activity?

- Referring to figure 4.22, the first step is that following their monthly meeting, the RBA Board would simply *announce* a *reduction in the cash rate target* (for example, perhaps from 1.00 per cent to 0.75 per cent), giving reasons for its decision.
- Automatically, the *whole interest rate corridor* shifts vertically *downwards* as shown in figure 4.22. This creates guidance or *incentives* for the banks to borrow and lend at rates within this policy corridor, close to the RBA's lower cash rate target. On the one hand, few banks will want to borrow at the RBA's ceiling rate (e.g. the RBA's ceiling rate = the new cash rate target of 0.75 + 0.25 percentage points = 1.00 per cent), when they can usually borrow from other banks with surplus cash, more cheaply. On the other hand, few banks would want to deposit their surplus cash with the RBA only to receive its dismally low rate (RBA deposit rate = the new cash rate target of 0.75 per cent – 0.25 percentage points = 0.50 per cent), when they can deposit or lend to other banks with a cash shortage and gain a higher return. Again, borrowing and lending by banks in the STMM will tend to take place within the policy interest rate corridor, close to the new cash rate target.

- This *lower* cash rate has come about *automatically* following the Board's decision, without the RBA having to use its OMO. However, given daily changes in the demand for cash, only then will the RBA need to use its regular OMOs to manage the supply of cash and bank liquidity, so that the actual cash rate is close to the chosen monetary policy target.
- By bringing about a *lower cash rate* in the STMM, competitive forces mean that the RBA can indirectly put downward pressure on longer term interest rates, stimulating AD, economic activity, and employment.

FIGURE 4.22 The RBA Board announces a cut in the cash rate target to boost AD and economic activity, automatically shifting the whole policy interest rate corridor downwards in the STMM — a looser monetary policy stance.

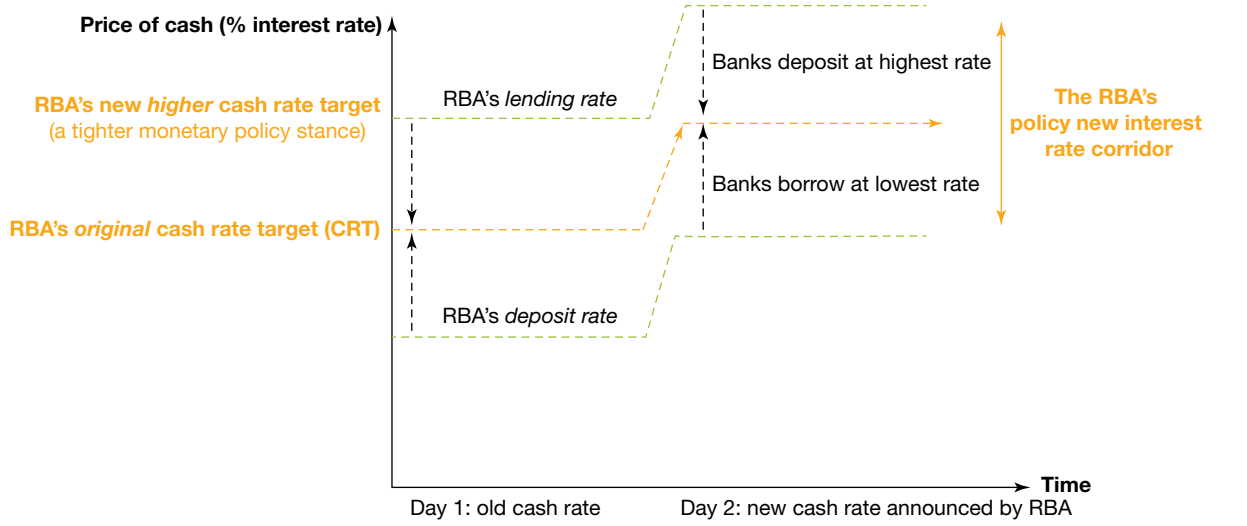


The RBA decides to lift the cash rate target to slow AD and economic activity:

If inflationary pressures started to build, as in 2021–22, and economic activity was too strong, the RBA could adopt a *tighter monetary policy stance* and *lift* the cash rate (and indirectly, put upward pressure on other interest rates) to help *slow* AD.

- Referring to figure 4.23, the first step is that the RBA Board would simply *announce* a *rise in its cash rate target* (for example, a rise from 1.00 per cent to 1.25 per cent).
- Automatically, the whole *policy interest rate corridor* shifts vertically upwards as shown.
- This again creates incentives for the banks to borrow and lend within this new corridor, at a cash rate that is close to the RBA's target. On the one hand, few banks will want to borrow at the RBA's expensive ceiling rate (e.g. the ceiling rate = the new cash rate target of 1.25 + 0.25 percentage points = 1.50 per cent) when they can usually borrow from other banks with surplus cash, more cheaply. On the other hand, few banks would want to deposit their surplus cash to receive the RBA's miserable rate (RBA deposit rate = the new cash rate target of 1.25 per cent – 0.25 percentage points = 1.00 per cent) when they can lend to other banks with a cash shortage and gain a higher return. Again, borrowing and lending by banks in the STMM will take place within the policy interest rate corridor, close to the new cash rate target.
- This higher cash rate has come about *automatically* following the Board's decision, without the RBA using its OMO. However, given regular changes in the demand for cash, the RBA will need to conduct its daily OMO to change the supply of cash to keep the cash rate close to its chosen *monetary policy target*.
- By directly bringing about an *increase* in the actual cash rate in the STMM, the RBA is able, indirectly, to put upward pressure on longer term interest rates, slowing AD, economic activity, and inflationary pressures.

FIGURE 4.23 The RBA Board announces a rise in the cash rate target to slow AD and inflation, automatically shifting the whole interest rate policy corridor upwards — a tighter monetary policy stance.



Resources

Weblink Tools of monetary policy

4.11 Activities

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4.11 Quick quiz on

4.11 Exercise

4.11 Exercises

1. In general terms, **explain** what is meant by *conventional* monetary policy. **(2 marks)**
2. **Define** each of the following terms: **(6 marks)**
   - **a.** The RBA's cash rate target
   - **b.** Short-term money market
   - **c.** Exchange settlement accounts
   - **d.** Countercyclical monetary policy
   - **f.** Policy interest rate corridor
   - **g.** RBA open market operations.
3. Over the two years till March 2022, the RBA cut the cash rate target on 2 occasions from 0.50 to 0.10 per cent.
   - **a. Outline** the economic conditions that might cause the RBA to cut the cash rate target. **(2 marks)**
   - **b. Explain** how a cut in the cash rate target would affect the policy interest rate corridor, referring to both the RBA's lending rate and the deposit rate in the short-term money market. **(2 marks)**
   - **c. Outline** how you would expect this change in the short-term cash rate would be likely to affect the level of interest rate on home loans and savings accounts, AD and economic activity. **(2 marks)**

4. Starting in May 2022, the RBA lifted the cash rate target several times.
   a. **Outline** why the RBA lifted the cash rate target. **(2 marks)**
   b. **Explain** how a rise in the cash rate target would affect the policy interest rate corridor, referring to both the RBA's lending rate and the deposit rate in the short-term money market. **(2 marks)**
   c. **Outline** how you would expect this rise in the cash rate to affect longer term interest rates and economic activity. **(2 marks)**

Solutions and sample responses are available online.

4.12 The transmission mechanisms of monetary policy and their influence on the level of aggregate demand

KEY KNOWLEDGE

- Transmission mechanism of monetary policy and its effect on the level of aggregate demand, including the four channels of savings and investment, cash-flow, exchange rate, and asset prices and wealth

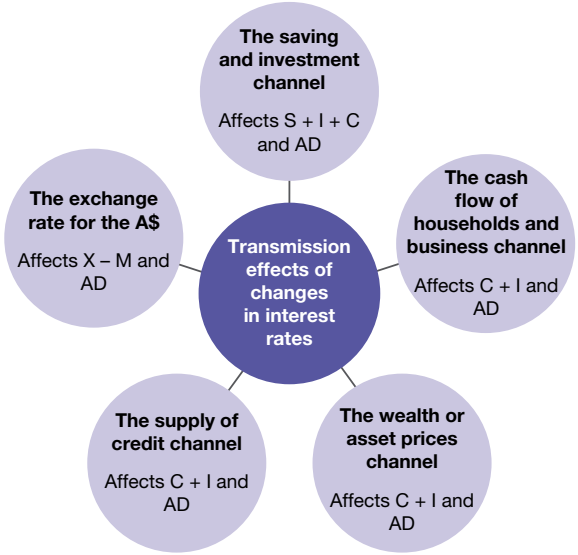
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Monetary policy is an *aggregate demand policy*. In this section, we are going to look at the various **transmission mechanisms** (sometimes called *transmission channels*). They are simply the ways whereby a decrease or increase in the RBA's cash rate operates to bring about a rise or fall in AD and economic activity designed to help improve domestic economic stability. There are at least *five* of these transmission mechanisms or channels, including:

- transmission by affecting *saving and investment* or the cost of credit
- transmission by affecting the *cash flow* of households and firms
- transmission through the *wealth, asset price* or valuation effect
- transmission by affecting the availability or *supply of credit*
- transmission by affecting the *exchange rate.*

An overview of these transmission channels is provided in figure 4.24.

FIGURE 4.24 The five transmission mechanisms on channels of RBA's monetary policy.



4.12.1 Transmission by changing saving and investment



The **saving-investment channel** is the most obvious transmission mechanism. Here, changes in the cash rate and hence other interest rates, affect people's decisions about whether to save or invest. For instance, lower interest rates make borrowing to finance investment and consumption spending relatively cheaper. Furthermore, lower rates also make saving (affecting leakages) less attractive. Together, these can help to stimulate AD and economic activity.

By contrast, higher interest rates raise the cost of credit and make households and firms less willing to borrow in order to finance their spending on goods and services. It also means that people have more incentive to save. With higher savings and weaker consumption and investment spending, AD and economic activity slow.

4.12.2 Transmission by affecting the cash flow of households and firms

Changes in the cash rate and other interest rates can have an effect on AD through the **cash flow channel**. This is because interest rates affect the level of discretionary spending by households and others with *existing* loans (e.g. those with home mortgages and overdrafts), altering the amount of income that they have left to spend on other things.

When interest rates are cut, existing borrowers with variable interest loans have more cash to spend on other goods and services after they have met their interest repayments on debt. This tends to stimulate consumption spending, AD and economic activity. However, when interest rates rise and individuals with existing variable loans have to make larger interest repayments, the lack of cash flow means they have to cut other purchases, slowing national spending.

4.12.3 Transmission through the wealth or asset price effect

Changes in the cash rate and other interest rates can affect AD through the **wealth** or **asset price channel**. *Lower* interest rates, for instance, tend to *increase* the value of property and shares. This is because cheaper credit often causes an increase in the demand for these assets, raising their price or market value. As a result of asset owners now feeling wealthier, they are more likely to increase their consumption spending, leading to an increase in AD and economic activity. Furthermore, asset speculators who use credit to buy cheap and then sell at a higher price may realise big capital gains, adding to AD and economic activity.

In reverse, higher interest rates make credit dearer to borrow. This can cause asset prices or values to rise more slowly or even fall, leaving their owners feeling less wealthy. In turn, this slows AD and economic activity.

4.12.4 Transmission by affecting the availability or supply of credit

Changes in the cash rate and other interest rates work through the **availability of credit channel** to affect spending and economic activity. For example, lower interest rates increase the supply or availability of credit offered by banks and other financial institutions. This is because more borrowers can service their debt and meet bank lending criteria: since the risk of customer default is lower, bank lending approvals are therefore higher. This leads to increases in consumption and investment spending, encouraging AD and boosting activity. However, when interest rates increase, fewer borrowers can meet bank lending requirements. The number of bank approvals and loans fall, limiting spending and economic activity.

4.12.5 Transmission by affecting the exchange rate



Changes in domestic interest rates, relative to rates overseas, can affect AD through the **exchange rate channel**. Changes in domestic interest rates do this by altering the attractiveness or *returns* for international investors choosing their destination between Australia or overseas. By affecting the levels of capital inflow and/or capital outflow, changes in domestic interest rates affect the demand for the value of the A$ in the foreign exchange market, relative to its supply, causing the value of the A$ to rise or fall. In turn, the exchange rate affects the value of net exports (i.e. X − M), and hence the level of AD and domestic economic activity.

For example, a *cut* in our *interest rates,* relative to those overseas, weakens the Australian dollar in two ways:

- First, there is *less* capital inflow to Australia. This is because overseas investors are discouraged by the relatively lower and less attractive returns here, as opposed to those abroad, reducing the demand for the A$ in the foreign exchange market, driving *down* the exchange rate.
- Second, and at the same time, local lenders are now relatively *more* attracted to invest their money overseas because of the higher returns. As capital leaves, this involves more sales or supply of the A$ relative to its demand, pushing *down* the exchange rate.

Following a *fall* in the value of the A$, our exports become relatively cheaper and imports dearer, boosting AD and economic activity.

In reverse, when Australian interest rates *rise* relative to those abroad, Australia becomes a *more* attractive destination for investors than previously. As a result:

- more money capital flows into Australia, increasing the demand for the A$, and
- less capital flows out, decreasing the supply of the A$ in the foreign exchange market.

Together, these forces cause the exchange rate to *appreciate*, slowing net exports (X − M), AD and economic activity.

on Resources

Weblinks How interest rate cuts affect consumers
Monetary policy and the Federal Reserve
Monetary policy (EconMovies 9: Despicable Me)

4.12 Activities

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4.12 Quick quiz on | **4.12 Exercise**

4.12 Exercise

1. **Define** the term *transmission mechanism or channel*, giving two examples. **(2 marks)**
2. **Explain** how each of the following transmission mechanisms or channels would operate to affect AD, following a *rise* in the RBA's cash rate target.
   - **a.** Saving and investment **(2 marks)**
   - **b.** The cash flow of households and businesses **(2 marks)**
   - **c.** The supply or availability of credit **(2 marks)**
   - **d.** The exchange rate **(2 marks)**
   - **e.** The wealth or asset values effect **(2 marks)**

Solutions and sample responses are available online.

4.13 The RBA's monetary policy stance

KEY KNOWLEDGE

- The stance of monetary policy: expansionary (accommodative), contractionary (restrictive) or neutral

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Monetary policy is an aggregate demand management strategy used to help stabilise the economy by changing official interest rates. It is applied in a *countercyclical* way to help regulate the strength of AD, improve domestic economic stability and promote better living standards.

Hence, when the economy is running too *slowly* and economic growth and employment trends are weak, often an *accommodative* or *expansionary stance* is adopted, involving the use of a cut in the cash rate to stimulate AD. In contrast, when activity is too *strong*, causing inflationary pressures, a more *restrictive*, tighter or *contractionary stance* is required, using a rise in the cash rate to slow AD. So what exactly do we mean by the term *monetary policy stance*?

4.13.1 Definition and nature of the RBA's monetary policy stance

In discussion, economists often talk about the RBA's **monetary policy stance**. This simply refers to whether the change in the cash rate target or policy setting, is designed to stimulate, maintain, or slow AD and the level of economic activity. So at a very simple level, there are *three* possible stances or positions that can be adopted by the RBA — neutral, expansionary, or contractionary.

- *A fairly neutral stance.* A neutral monetary policy stance exists when the RBA is neither trying to accelerate nor slow the level of AD and economic activity. This involves having a cash rate that is consistent with achieving *domestic economic stability* (that is, the ideal situation where there is simultaneously the achievement of low inflation, strong and sustainable economic growth and full employment). Estimates of this

particular cash rate vary, but these days, most believe that it is somewhere around 3.0 per cent (or a bit less). The cash rate level corresponding with a neutral stance has decreased considerably over the last two decades, perhaps partly because of the fall in Australia's potential rate of growth and the increase in household aversion to even higher levels of debt. Having this rough guide to what constitutes a *neutral stance* provides us with a handy *reference point* for commentary about the direction of monetary policy.

- *An expansionary stance.* When the RBA reduces its cash rate target to a level below 3.0 per cent, this is often seen as a relatively *accommodating* or *expansionary stance*, since given the absence of inflationary pressures, the intention here is to lift AD, stimulate economic activity and reduce cyclical unemployment.
- *A contractionary stance.* If the RBA were to raise the cash rate target to a level above 3.0 per cent, this would probably be regarded as a relatively tighter or *contractionary stance* designed to curb AD and inflation, and slow the rate of economic growth to a more sustainable rate.

These three positions are summarised in table 4.7.

TABLE 4.7 Describing the RBA's three main monetary policy stances.

Monetary policy stance	Main indicators of the policy stance	Aim of this policy stance

• **Expansionary (accommodative or loose) monetary policy stance (e.g. between 2012 and early 2022)**
• This stance may be adopted by the RBA if there is:
  • very low inflation below 2 per cent
  • slow GDP growth
  • high unemployment
  • a rise in the labour force under-utilisation rate
  • weaker confidence
  • a slowdown overseas
  • a drop in the terms of trade.
	The RBA has an expansionary stance when there is a cut in the cash rate target to a level somewhere below the 3.0 per cent neutral reference point. An example of an expansionary stance would be a series of reductions in the cash rate target from, say, 3.0 to 1.0 per cent.	The aim of using *lower interest rates* and various transmission mechanisms or channels, is to help *stimulate* AD and economic growth and reduce unemployment, without adding to inflationary pressures.

• **Contractionary (tighter or restrictive) monetary policy stance (e.g. 2002–08)**
• This stance may be adopted by the RBA if there is:
  • high inflation above 3 per cent
  • strong spending and confidence
  • unsustainably rapid GDP growth
  • low unemployment with little unused capacity
  • strong global economic growth.
	The RBA has a contractionary stance when the cash rate is above 3.0 per cent and rising. An example of a contractionary stance would be a series of rises in the cash rate target from 3.0 per cent to 5.0 per cent.	The aim of using *higher interest rates* and various transmission mechanisms or channels, is to *slow* AD and economic activity, thereby reducing inflation to within the 2–3 per cent target range.

• **Neutral or normal monetary policy stance (e.g. 2012 and perhaps late 2022)**
• This stance may be adopted if reasonable domestic economic stability already exists with:
  • low inflation of between 2–3 per cent
  • strong and sustainable growth
  • full employment.
	The RBA has a neutral stance when the cash rate target is sitting within the *normal range* for a healthy economy of around 3.0 per cent. It then tries to hold the cash rate fairly steady at this rate by daily open market operations involving both the buying back and selling of government bonds.	The aim here is to neither stimulate nor slow AD and economic activity because conditions are ideal.

4.13.2 The RBA's indicator checklist used to guide its monetary policy stance

At its monthly meetings, the RBA Board reviews trends in a **checklist of economic indicators** to determine whether to adopt a more expansionary (accommodative/looser), contractionary (tighter) or neutral monetary policy stance. Some of the key indicators on this checklist are shown in table 4.8.

TABLE 4.8 Checklist of key indicators used by the RBA Board to decide its monetary policy stance.

Checklist indicator	Description of indicator
1. Trends in inflation	The RBA takes a careful look at quarterly trends in inflation (especially the underlying CPI), costs of materials used in manufacture and wage costs. For instance, when core inflation is below the target range, the RBA might choose to adopt a more expansionary stance to stimulate AD and economic activity. However, when inflation is near or above the upper end of the RBA's 2–3 per cent target, a more contractionary stance is usually required to help control inflation by slowing AD and economic activity.
2. Levels of national spending and confidence	The RBA keeps a close watch on the growth in AD (relative to the economy's productive capacity), housing approvals, household debt, private consumption and investment spending, and changes in consumer and business confidence. For instance, if spending is outstripping the economy's capacity and confidence is strong, this might suggest a need for a more contractionary stance so that high inflation is avoided. In reverse, when spending is rising very slowly, perhaps due to weaker confidence, the RBA might be more tempted to adopt an expansionary stance to boost GDP and jobs.
3. Labour market conditions	Changes in labour market conditions (indicated by trends in the unemployment rate, labour force under-utilisation rate, average hours worked, job vacancies and the labour force participation rate) are seen as important indicators of economic conditions. These tell the RBA whether the economy is operating near its capacity and might throw light on the risk of a boom or recession. For instance, the RBA would be more likely to adopt an expansionary stance if labour market conditions are getting weaker, while a more contractionary stance is likely if conditions are very strong.
4. Budgetary policy stance	When setting its stance, the RBA takes account of the budgetary policy outcome and whether it is becoming more or less expansionary in its effect on AD. For instance, if the federal treasurer is forced to reduce the deficit when the economy is quite weak to slow the rise in government debt (a more contractionary stance), the RBA might help offset this change with a more expansionary stance. Alternatively, a more expansionary budget could cause the RBA to adopt a less expansionary stance than otherwise if it thought there was a risk of inflationary pressures.
5. International developments	The RBA reviews overseas trends in inflation, economic activity, interest rates, the terms of trade and other events such as the recent pandemic and the war in Ukraine. This is because these developments can affect Australia's AD, economic activity and rate of inflation. For example, when there is a slowdown in China or elsewhere and the terms of trade weaken, the RBA is more likely to adopt an expansionary stance to stimulate AD. However, when overseas developments are strongly boosting our expenditure, the RBA might become concerned about the risk of inflation and adopt a more contractionary stance.

After weighing up the sometimes conflicting evidence, the RBA Board releases its monthly statement of monetary policy that indicates any change in its settings or monetary policy stance.

4.13 Activities

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4.13 Exercise

1. **Explain** what is meant by the term *monetary policy stance*. **(2 marks)**
2. **Distinguish** a *contractionary* (tighter) monetary policy stance from an *expansionary* (accommodative or looser) stance. **(2 marks)**
3. **Explain** what is meant by the RBA's checklist of indicators. **(2 marks)**
4. a. **Outline** the circumstances under which the RBA might:
   i. reduce its cash rate target **(2 marks)**
   ii. increase its cash rate target. **(2 marks)**
   b. Carefully **select** one of the following events that you feel would cause the RBA to adopt a more accommodative stance, and one event that might cause the RBA to tighten its stance. For each, **explain** your reasoning. **(4 marks)**
      i. A rise in Australia's unemployment rate from 5 to 6 per cent when inflation was low
      ii. The end of a global pandemic and record high levels of confidence
      iii. Lower inflation and official interest rates overseas, relative to those in Australia
      iv. A slowdown in Australia's rate of GDP growth
      v. Rising prices for oil, fruit and vegetables
      vi. The collapse of the domestic property and share markets
      vii. A very large appreciation of the Australian dollar.

Solutions and sample responses are available online.

4.14 The stance of monetary policy over the past two years and its likely effects on the achievement of domestic macroeconomic goals and living standards

KEY KNOWLEDGE

- The stance of monetary policy over the past two years and its likely effect on the achievement of domestic macroeconomic goals and living standards
- One example of the operation of an unconventional monetary policy tool from the past two years

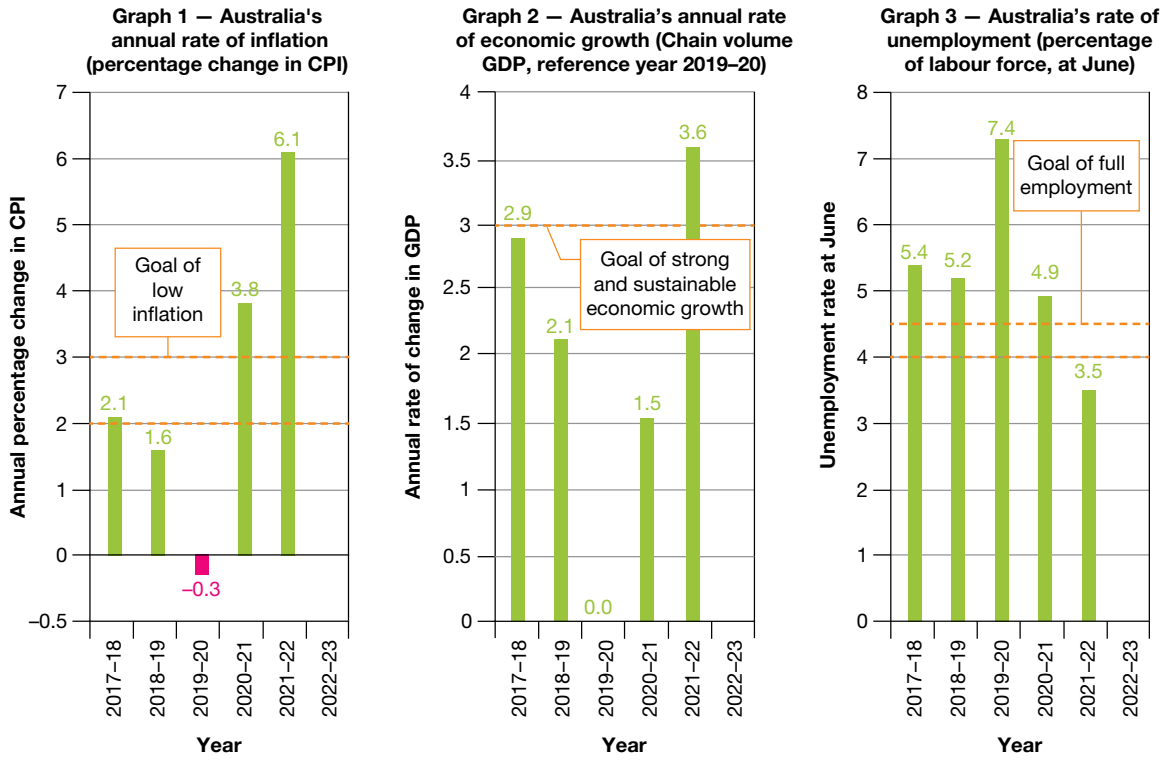
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The RBA's *monetary policy stance* responds to the prevailing macroeconomic conditions and seeks to promote domestic economic stability and improve Australian living standards. For this reason, it is important to refresh our understanding of developments over the last few years.

4.14.1 Recent trends in Australia's domestic macroeconomic conditions

Of late, Australia's economic conditions have been less than ideal. As shown in figure 4.25, our domestic macroeconomic goals and living standards, have not been well achieved, despite some promising signs:

FIGURE 4.25 Recent changes in Australia's domestic macroeconomic conditions.



Source: All data derived from ABS, see https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/consumer-price-index-australia/latest-release; https://www.abs.gov.au/statistics/economy/national-accounts/australian-system-national-accounts/latest-release; https://www.abs.gov.au/statistics/labour/employment-and-unemployment/job-vacancies-australia/latest-release.

- *The goal of low and stable inflation:* The goal of low inflation is an average rise in prices of between 2.0 and 3.0 per cent over time. Until recently, underlying inflation was mostly slow. For instance, during the recession in 2019–20, there was deflation of 0.3 per cent. However, during 2020–21, it picked up speed, first to 3.8 per cent and then rose further to 6.1 per cent in 2021–22, due in part to supply chain disruptions and strong demand. This was the highest rate since 1990. It meant that over the last two years, inflation averaged around 5 per cent, well above the RBA's 2–3 per cent target range. Moving forward, in August 2022, the RBA forecast that inflation would continue to pick up pace to around 7.75 per cent over 2022, before settling back to around 4 per cent for 2023.
- *The goal of strong and sustainable economic growth:* The goal of strong and sustainable economic growth is the fastest rate of increase in GDP that doesn't accelerate inflation or undermine the achievement of other goals. Recently, economic growth has been uneven. In the first half of 2020, the economy contracted and fell into recession. This was followed by a better than expected recovery during 2020–21 and 2021–22, so that the two-year average was around 2.5 per cent. More recently, the RBA optimistically forecast that GDP would rise by around 3.25 per cent over 2022, slowing to just 1.5 per cent over 2023 and 2024.
- *The goal of full employment:* Full employment is defined as the lowest rate of unemployment that doesn't accelerate inflation. Recently, from a monthly peak of 7.5 per cent during the pandemic in July 2020 (or over 11 per cent if it were not for the government's JobKeeper wage subsidy scheme), unemployment then staged an impressive fall to just 3.5 per cent in June 2022 — the lowest rate in 50 years. In August 2022, the RBA's forecast was for an unemployment rate of around 4.0 per cent by 2024. These numbers are

below the government's 4.0–4.5 per cent target zone and suggest there is now little unused capacity, adding to inflationary pressures.
- *Living standards*: Living standards or wellbeing initially took a dive during the 2020 COVID-induced recession. Here, lower disposable incomes reduced purchasing power, and high unemployment also led to health issues that had negative effects on material and non-material wellbeing. However, while more recent strengthening of domestic macro conditions have had some positive impacts, rapid inflation is now eroding living standards.

With this recent background and understanding of changing domestic macroeconomic conditions, let's now take a closer look at how the RBA has used monetary policy has been used by the RBA as a *stabiliser* of AD.

4.14.2 How the RBA recently used monetary policy to stabilise aggregate demand and pursue domestic macroeconomic goals and living standards

In recent years, the RBA has used both *conventional monetary policy* and *unconventional monetary policy* to better achieve Australia's key domestic macroeconomic goals and improve living standards.

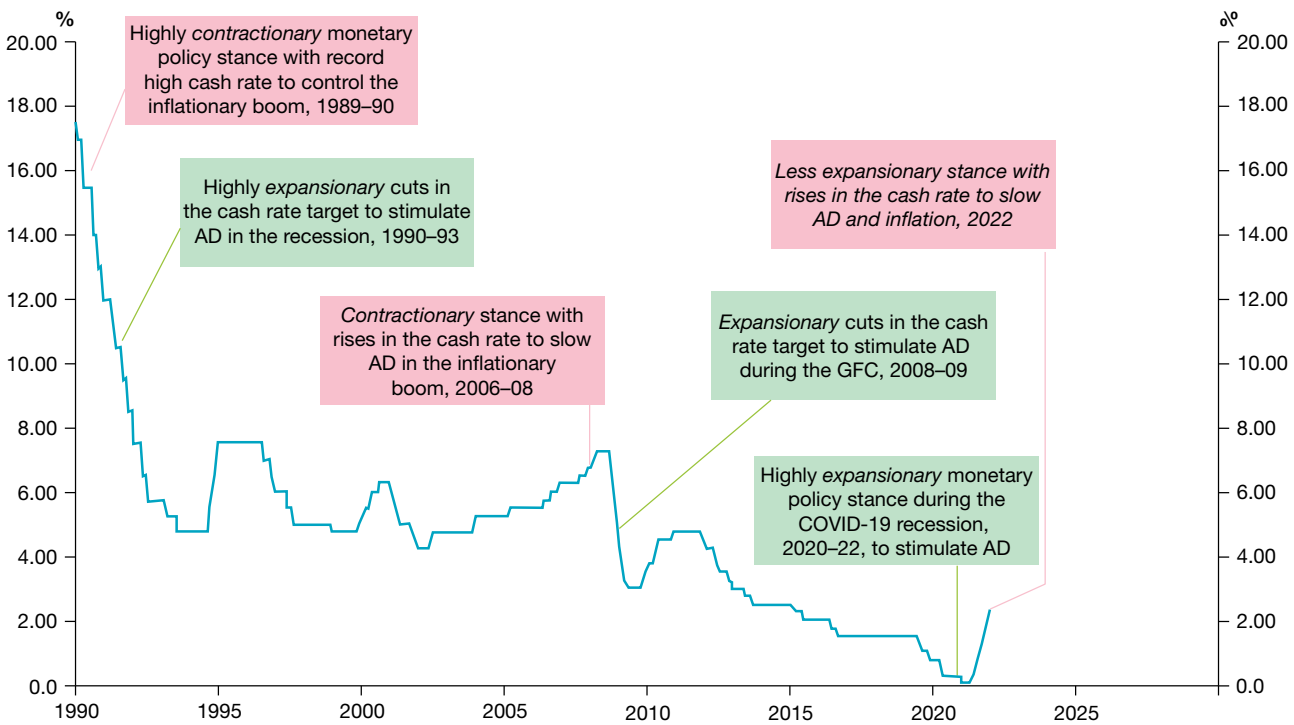
The RBA's recent use of conventional monetary policy

Conventional monetary policy relies on the RBA's countercyclical manipulation of the cash rate target in the short-term money market, to indirectly influence other interest rates and AD.

Figure 4.26 part 1 illustrates how, historically, the *RBA's stance* was changed in a *countercyclical* way to help stabilise AD and economic activity. Notice that the stance was *tightened* during periods of high inflation (e.g. 1990, 2006–08, 2022), *loosened* in slowdowns when economic activity was too weak (e.g. the GFC in 2008–09 and more recently, the COVID-19 recession of 2020).

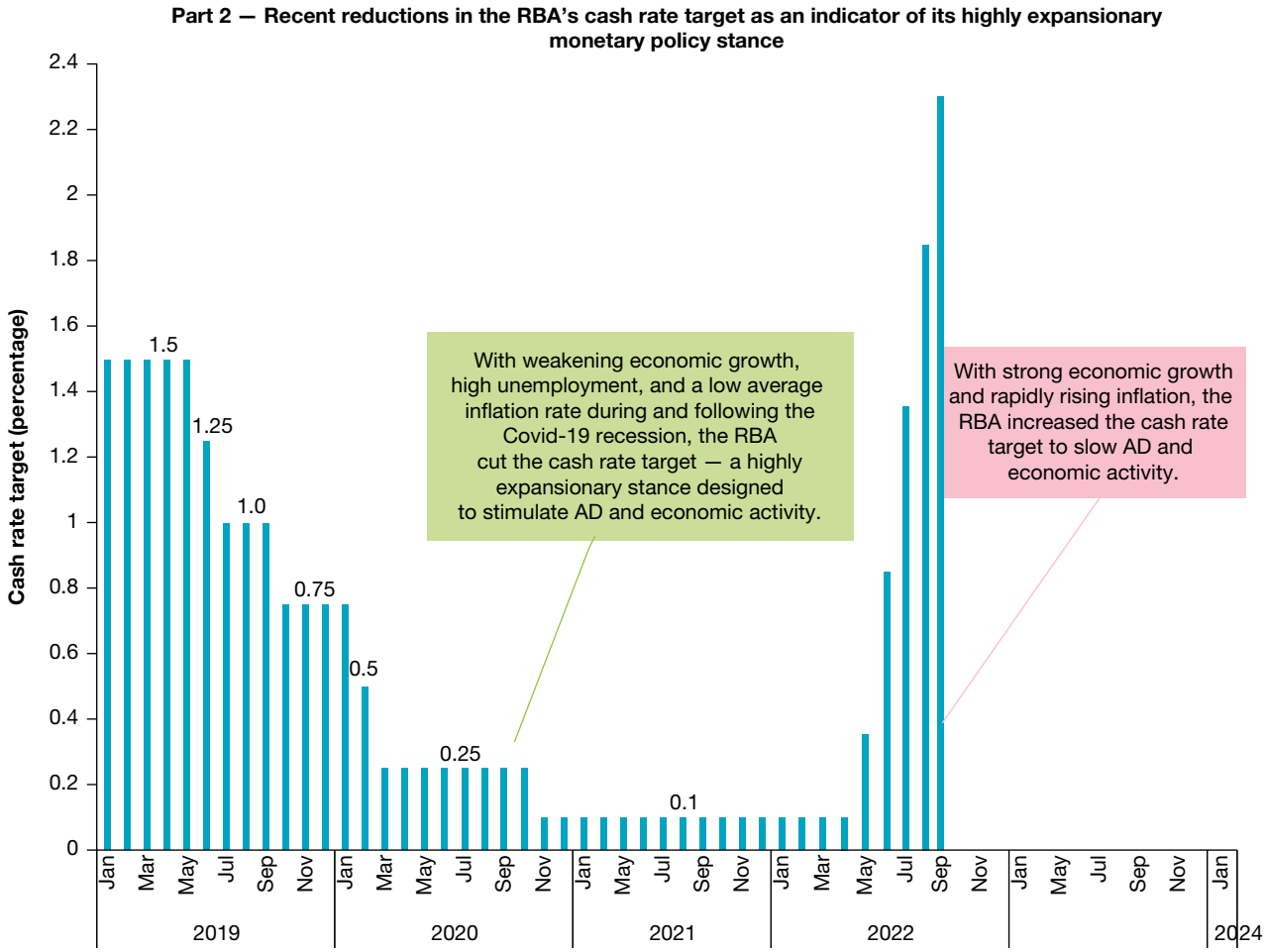
FIGURE 4.26 Countercyclical changes in the RBA's cash rate target to help stabilise AD — conventional monetary policy.

Part 1 — Historical changes in the RBA's cash rate from record highs to record lows, 1990 to 2022



(continued)

FIGURE 4.26 Countercyclical changes in the RBA's cash rate target to help stabilise AD — conventional monetary policy. *(continued)*



Source: RBA, cash rate target, see https://www.rba.gov.au/statistics/cash-rate/

Most recently in the two-year period between late 2020 and late 2022, figure 4.26 part 2 shows that the RBA first *cut* its cash rate target to a record low of just 0.10 per cent, and maintained a *highly expansionary monetary policy stance*. Then, starting in May 2022, the cash rate was increased several times, adopting a less expansionary or more neutral policy stance to slow rising inflationary pressures.

As always, the RBA's Board bases its policy decisions or stance on trends in its *checklist of indicators*. For instance, monthly statements of monetary policy between early 2020 and early 2022, often referred to the following justifications for the *low cash rate target*:

- Australia's economy experienced the biggest contraction in GDP since the Great Depression of the 1930s, as a result of the global COVID-19 pandemic and health crisis starting in early 2020, before a stronger than expected recovery in 2021 and 2022
- Initially, there was a period of deflation but then during the strong recovery, inflation accelerated to quite high levels



- The labour market was initially weak with high unemployment and underemployment, few job vacancies, reduced hours and much unused capacity, but then staged a remarkable recovery where conditions became very strong
- Household C spending and retail sales were originally down because of a fall in average weekly earnings, consumer pessimism, high unemployment rates and high levels of debt, but these weaknesses mostly reversed in 2021 and 2022
- Business I spending was slow due to lockdowns, falling profits, and pessimism, but later picked up
- Many of our main trading partners were in recession, depressing commodity prices, the terms of trade, and exports. However, there was a recovery over 2021 and 2022 with rising inflation globally.

The RBA's recent use of unconventional monetary policy

To reinforce its expansionary conventional monetary policy during the recent recession and recovery to early 2022, the RBA also used unconventional tools. **Unconventional monetary policy** *involves using measures other than changes in the cash rate, to influence the level of AD and domestic economic activity.* Here we will take a quick look at just *two* of these tools.

One of these unconventional strategies used between March 2020 and February 2022 involved the RBA's *purchase of financial assets* from the private sector. This was called **quantitative easing (QE)**. It injected additional cash into the economy, helping to keep the cost of credit or borrowing cheaper than otherwise. To do this, the RBA repurchased more than $330 billion of state and federal government bonds, paying private sellers cash in the secondary market (rather than buying them from the government in the primary market). This increased the public's holding of cash and drove down the yield or interest rate on three-year government bonds towards the cash rate target (e.g. at the time, this was just 0.10 per cent). This action reduced bank borrowing and lending costs. In turn, having access to even cheaper credit incentivised lending, and helped to boost AD and economic activity.

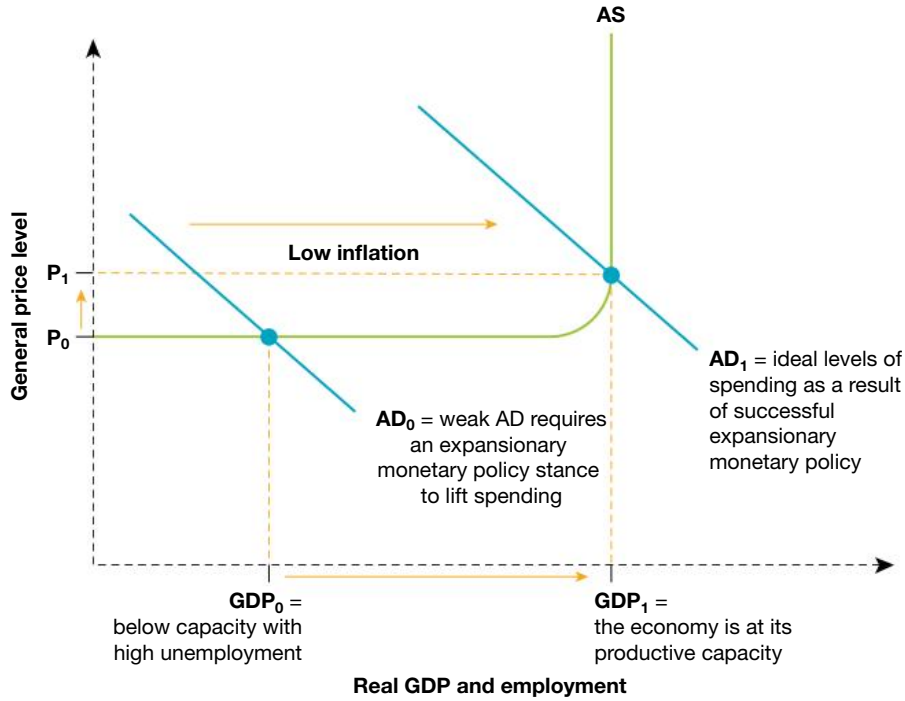
Another unconventional policy applied by the RBA and starting in early 2020, was the setting up of **term funding facilities**. Essentially, the RBA allowed banks and some other authorised financial institutions to borrow up to $90 billion of cheap money, for re-lending to struggling small and medium-sized business enterprises. With current interest rates already very low, this helped to further reduce longer term rates, stimulating investment spending, AD, and economic activity.

Both these unconventional aspects of monetary policy have *complemented* the expansionary impacts of the RBA's conventional cuts in the cash rate target to a low of just 0.10 per cent until early 2022. They strengthened AD and thus helped to create better domestic macroeconomic conditions and living standards than would otherwise have existed.

The effects of the RBA's *expansionary stance* in recent years, especially until rates started to rise in early 2022, can be illustrated hypothetically on the AD–AS diagram shown in figure 4.27. Starting at AD_0 and GDP_0, spending, economic growth and employment were relatively weak. This (and the absence of inflation) prompted the RBA to cut the cash rate. Through the operation of various *transmission mechanisms* or channels, this helped to stimulate spending towards AD_1 and lift GDP and employment in the direction of GDP_1 (where there is domestic economic stability). Initially, there was little risk of serious inflation (there is only a small rise from P_0 to P_1) because of the existence of considerable unused capacity in the Australian economy during and immediately following the recession. However, by early 2022, spare capacity had fallen. This necessitated increases in the cash rate target to limit rising inflation.

So let us now examine the effects of the initial reductions in the cash rate target on the Australian government's key domestic macroeconomic goals.

FIGURE 4.27 How the RBA's recent expansionary monetary policy stance should help to promote domestic economic stability with higher levels of GDP and employment.



The impact of recent monetary policy to help achieve the goals of strong and sustainable economic growth and full employment

Achieving the goal of *full employment* largely depends on having a *sustainably strong rate of economic growth*. However, in 2020, Australia dipped into a *recession* where unemployment peaked at over 11 per cent (if not for the government's JobKeeper wage subsidy). More recently, during 2021 and 2022, there was a strong *recovery*. It is likely that at least some of the credit for this revival was the *highly expansionary monetary policy stance* adopted by the RBA until May 2022. At that point, the RBA was forced to raise the cash rate and adopt a *less expansionary stance* due to rising inflation.

Focusing on the period where there were reductions in the cash rate, and with it, other interest rates, various *transmission mechanisms* kicked in to help stimulate AD, drive up the rate of economic growth and bring down unemployment. Here we might think of the following transmission channels:

- *The cost of credit or the saving-investment effect.* Low interest rates helped to make households and businesses more willing to take out loans than otherwise, increasing the demand for credit and stimulating C and I spending, and hence AD. However, the impact was weakened by depressed consumer confidence and already high levels of household debt.
- *The availability of credit effect.* Low interest rates increased the supply of bank credit made available for spending on goods and services, because more people than otherwise could meet bank lending criteria and so qualify for bank loans. This helped to stimulate household C and I spending, and hence AD. However, unfortunately, higher unemployment and existing high levels of household debt softened the impact of this transmission channel.
- *The cash flow effect.* For some individuals with existing mortgages and overdrafts, the maintenance of low interest rates helped to maintain current levels of disposable income remaining after they met their interest repayments. This helped to support C and I spending and AD.
- *The wealth effect.* The maintenance of low interest rates usually helps to strengthen the demand for assets such as property, causing prices to be higher than otherwise. When this occurs, rising demand and asset prices normally make existing asset owners feel wealthier, possibly stimulating C spending and AD.

- *The exchange rate effect.* Low interest rates relative to those in some countries contributed to a lower exchange rate for the Australian dollar by slowing capital inflow from abroad and increasing capital outflow by local investors searching for better returns abroad. This weakened the demand for our currency and also increased its supply in the foreign exchange market. In turn, the fall in the Australian dollar helped to stimulate X spending (more injections) while slowing M spending (fewer leakages), again boosting AD.

Through a combination of these *transmission mechanisms*, the low cash rate target until May 2022 helped to strengthen AD and orders, and cause stocks to fall, encouraging firms to lift production and employment. Without this expansionary approach, GDP growth would certainly have been weaker and unemployment higher. Even so, we will soon see that there are limits to the amount of stimulus that the RBA could deliver through its cuts in interest rates. This meant that the real burden of promoting the recovery had to be shouldered by expansionary budgetary policy.

In contrast, more recent rises in the cash rate during 2022, meant that various transmission channels worked in reverse to help slow AD, economic activity and inflationary pressures.

The impact of recent monetary policy to help achieve the goal of low inflation

Many economists argue that achieving the *goal of low inflation* is a precondition for achieving economic and employment growth over the medium- to long-term. However, until 2020–21, Australia's underlying inflation rate was too slow and well below the RBA's 2–3 per cent target. At the time, this reflected a weak economy where there was high unemployment and much unused productive capacity.

As the RBA noted, this was not a desirable situation. In its response, between early 2020 and early 2022, it tried to drive up inflation to within the 2–3 per cent target range by cutting the cash rate to an all-time low of just 0.10 per cent — a highly expansionary monetary policy stance. As we know, reductions in the cash rate help to stimulate AD. Firms try to lift output. However, as spare capacity disappeared in early 2022, and supply chain problems worsened and shortages emerged, inflation accelerated quickly. This necessitated a less expansionary stance and several rises in the RBA's cash rate target, starting in May 2022.

on Resources

Weblink RBA cash rate target
RBA Statement of Monetary Policy: Example 1
RBA Statement of Monetary Policy: Example 2

4.14 Activities

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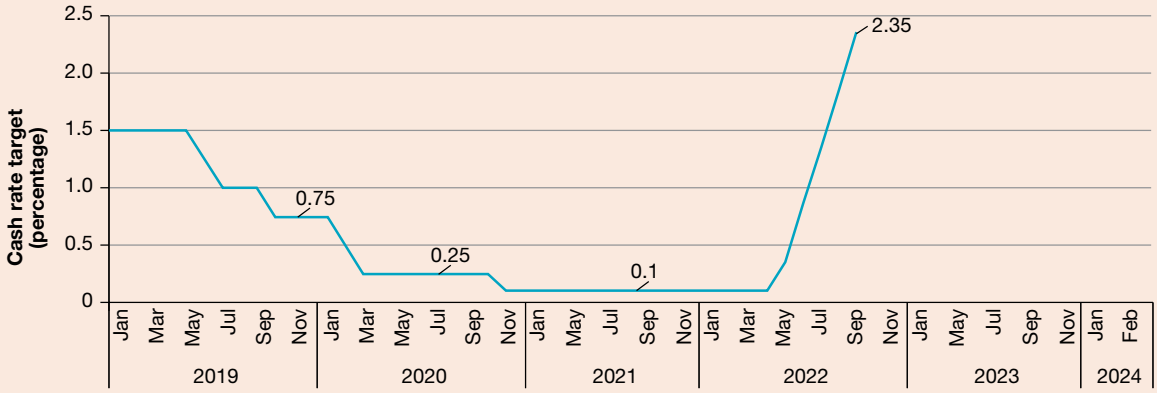


4.14 Quick quiz on | **4.14 Exercise**

4.14 Exercise

1. **Explain** how changes in the RBA's monetary policy stance have been used recently to help promote the achievement of Australia's domestic macroeconomic goals and living standards. **(4 marks)**
2. **Examine** the figure that follows showing recent changes in the RBA's cash rate target in March 2020, and read the extract justifying the RBA's monetary policy decision to cut the cash rate.

Recent changes in the RBA's cash rate target and monetary policy stance.



Source: Data derived from RBA, cash rate target, see https://www.rba.gov.au/statistics/cash-rate/.

Statement by Glenn Stevens, Governor: Monetary Policy Decision
March 2020

The Coronavirus is … also having a very major impact on the economy … As the virus has spread, countries have restricted the movement of people … (with) … major disruptions to economic activity across the world. …… The primary response … is to manage the health of the population, but … monetary and fiscal policy (also) play an important role in reducing the economic … disruption … A priority for the Reserve Bank is to support jobs, incomes and businesses, so … the country is well placed to recover strongly … At a meeting yesterday, the RBA agreed to the following comprehensive package to support the Australian economy through this challenging period:

A reduction in the cash rate target to 0.25 per cent: The Board will not increase the cash rate target until progress is being made towards full employment and it is confident that inflation will be sustainably within the 2–3 per cent target band.

A target for the yield on 3-year Australian Government bonds of around 0.25 per cent: This will be achieved through purchases of Government bonds in the secondary market… A term funding facility for the banking system, with particular support for credit to small and medium-sized businesses. … (so banks) … have access to additional funding if they increase lending to … especially … small and medium-sized businesses. This facility is for at least $90 billion.…

The various elements of this package … will help to lower funding costs across the economy and support the provision of credit … The Reserve Bank is working closely with … the Australian Government to help ensure that … credit is available to households and businesses…. Together, these measures will support jobs, incomes and businesses through this difficult period, and they will also assist the Australian economy in the recovery.

Source: © Reserve Bank of Australia, 2001–2020. All rights reserved.

Note: Other more recent Media Statements of Monetary Policy can be sourced from the weblink **RBA cash rate target** in your online Resources (see Interest Rate Decisions, table, related documents).

Referring to this statement by the RBA:

a. **Describe** the change in the RBA's monetary policy *stance* in March 2020. **(3 marks)**

b. From the extract, **identify** and **explain** *three* important reasons from the RBA's checklist of indicators that were used to justify the decision to cut the cash rate target in March 2020. **(3 marks)**

c. **Outline** the process used by the RBA at this time to cut the cash rate, indirectly affecting other interest rates. Make mention of the policy interest rate corridor. **(3 marks)**

d. **Identify** and **explain** any *three* important *transmission mechanisms* or channels whereby the RBA's decisions to lower its cash rate target might have helped to promote sustainable economic growth and full employment, consistent with achieving the low inflation target. **(3 marks)**

3. Starting in May 2022, the RBA increased the cash rate several times. The RBA Board's justifications for this can be found in various media reports (called a Statement of Monetary Policy); for example, see weblinks **RBA Statement of Monetary Policy: Examples 1 and 2** in your online Resources.

   a. **Describe** the main *domestic economic problems* faced by Australia's economy during 2022. **(2 marks)**
   b. **Identify** and **outline** the main local and international *factors* contributing to Australia's domestic macroeconomic conditions at this time. **(2 marks)**
   c. **Complete** and fully label an AD –AS diagram to illustrate the likely effects of the change in the RBA's monetary policy stance over the last two years. Referring to the diagram, **outline** the likely effects of this stance on the achievement of domestic macroeconomic goals and living standards. **(6 marks)**

4. **Explain** how an increase in official interest rates by the RBA would tend to affect any *three* of the following options. **(3 marks)**
   - The level of private business investment spending
   - Residential building approvals and new car sales
   - Cost and demand inflation
   - Imports of consumer goods and services
   - The level of cyclical unemployment

5. **Distinguish** conventional monetary policy from unconventional monetary policy during a serious slowdown in economic activity, giving an example of each. **(2 marks)**

Solutions and sample responses are available online.

4.15 Strengths and weaknesses of using monetary policy to achieve the government's domestic macroeconomic goals and the effect on living standards

KEY KNOWLEDGE

- The strengths and weaknesses of using monetary policy to affect aggregate demand and influence the achievement of domestic macroeconomic goals and living standards

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

Monetary policy has a number of potential *strengths* and *weaknesses* when it is used to pursue domestic macroeconomic goals and improve living standards.

4.15.1 The strengths of using monetary policy to pursue Australia's domestic macroeconomic goals and living standards

Table 4.9 summarises some of these.

TABLE 4.9 Some strengths of using RBA monetary policy to stabilise aggregate demand and promote the achievement of domestic macroeconomic goals and living standards.

Possible strength	Description of strength
1. Short 'implementation' time lag makes monetary policy flexible	Because of the three types of time lags associated with the use of many government policies (the lag in the 'recognition' of a problem, the lag in 'implementation' of a corrective policy measure and the lag in the policy's 'impact'), some government policies, intended to act as countercyclical stabilisers, run the risk of becoming pro-cyclical, reducing stability because their impact is mistimed (e.g. increased discretionary budget outlays on infrastructure during a recession). As the RBA Board normally meets during most months of the year (or more regularly if required), this means that a change in the cash rate target could theoretically be *implemented* quickly, the day after its meeting. This strength makes the policy more flexible than some discretionary budgetary measures, which are normally changed only once a year.
2. Monetary policy is most effective in controlling inflation	Some commentators suggest that monetary policy is most effective in slowing an inflationary boom rather than promoting a recovery from a recession. This is because if need be, the cash rate can be pushed up a long way (e.g. over 17 per cent in 1989–90) making it quite powerful in slowing AD and inflation. Additionally, during a boom, higher interest rates to slow AD and economic activity are felt directly by borrowers who are *forced* to find extra money to meet interest repayments on existing loans. This makes it a very effective policy in slowing AD because spending on other things has to be reduced and new borrowing deferred.
3. Monetary policy has fewer political implications than budgetary policy	Budgetary policy is implemented by the federal treasurer, who is an elected member of the Australian government. In contrast, monetary policy is implemented by the RBA, which is fairly independent of the government. For instance, during an inflationary boom, rises in interest rates by the RBA are probably less likely to attract adverse political or voter reactions, than if the government increases tax rates or makes cuts in government outlays on education, welfare and health.
4. RBA media releases can affect people's expectations and behaviour	One advantage of monetary policy is that regular media statements by the RBA Governor about the bank's strategy and views on the economy's directions, can affect spending and economic activity. These views are studied carefully by many and have a powerful effect on people's expectations and hence behaviour, even if the cash rate is not changed. Sometimes statements are upbeat or optimistic and talk up spending, while at other times, they try to dampen the economy.

4.15.2 The weaknesses of using monetary policy to pursue Australia's domestic macroeconomic goals and living standards

Monetary policy has a number of potential *weaknesses*. These are summarised in table 4.10.

TABLE 4.10 Some weaknesses of using RBA monetary policy to stabilise aggregate demand and promote the achievement of domestic macroeconomic goals and living standards.

Possible weakness	Description of weakness
1. Long 'impact' time lags make monetary policy less useful as a stabiliser	As mentioned, there can be long time lags associated with the recognition, implementation and impact of many government policies, so some measures run the risk of being mistimed and becoming pro-cyclical. This can limit their usefulness as a short-term stabiliser of AD. While, as noted, changes in monetary policy have quite short *implementation lags*, they have quite long *impact lags*. This partly limits its usefulness in correcting short-term or cyclical instability, and makes it more suited to promoting stability in the medium-term. For instance, one estimate suggested that a 1 per cent change in interest rates ultimately alters GDP by about 0.7 per cent, but that only 40 per cent of this impact will be felt after 12 months, with 80 per cent felt after two years and 100 per cent after three years. In comparison, automatic budget stabilisers have extremely short recognition, implementation and impact lags in boosting AD during a recession. Additionally, even some discretionary budget measures like the temporary doubling of welfare generosity, the introduction of the JobKeeper scheme, and offering special support for struggling industries during 2020–21, were all implemented quickly to support economic activity and their impact was timely.
2. Monetary policy can be a less effective stabiliser in a recession where some transmission channels are weaker	There are several reasons why the RBA's cuts in the cash rate during 2019–20 were less effective in stimulating AD than might have been expected. For example: • Going into the recent recession where the RBA's cash rate was already low at just 0.25 per cent, left little space for further reductions. When the rate was cut to 0.10 per cent, such a small reduction was unlikely to greatly stimulate AD. Little cuts only have small impacts. • Going into the 2020 recession with high levels of household and business debt from previous years, some borrowers were not keen to further increase borrowing and add to their repayments. In addition, some individuals were unable to meet bank lending criteria, depressing the availability of credit and AD. • Between 2020 and 2021, household and business confidence were weak. Despite record low interest rates, pessimism made borrowers reluctant to take out new loans and spend. • While the RBA cut the cash rate in the 2020 recession, so too did many other central banks overseas. This meant that the exchange rate transmission that should have resulted in an even lower A$ and a rise in net exports, was less effective in stimulating AD. • Some existing borrowers were locked into fixed interest loans, so when rates were cut, they failed to benefit from increased cash flow. This also limited the effectiveness of recent monetary policy.

(continued)

TABLE 4.10 Some weaknesses of using RBA monetary policy to stabilise aggregate demand and promote the achievement of domestic macroeconomic goals and living standards. *(continued)*

Possible weakness	Description of weakness
3. Monetary policy is a blunt instrument, unable to precisely target areas of greatest weakness	There are *two* potential problems associated with the degree of precision and the ability of monetary policy to target the exact cause of economic problems: • Changes in interest rates by the RBA affect the overall levels of savings, consumption, investment and net exports (via the impact on the Australian dollar). Because the economic impacts of the policy are so general and widespread, the policy cannot precisely target specific areas of concern. Here, one policy has to fit all states, industries and groups of individuals through Australia, regardless of their circumstances. For example, in the 2020 recession, cutting interest rates did not directly or immediately help the unemployed without work and income, to help them pay their bills and have food on the table in the short-term. Unlike budgetary measures, monetary policy cannot accurately single out particular firms or industries for help such as tourism, hospitality, education, aged care and aviation. In addition, by providing general stimulus through low interest rates, monetary policy can produce unintended effects such as making home ownership less affordable for some by driving up property demand and prices. In reverse, using higher interest rates to slow consumption, for example, also pulls down beneficial investment spending that supports economic growth. This limits the policy's usefulness. • Australia has substantially deregulated interest rates so that the RBA does not *directly* set what banks actually charge customers. For instance, banks may respond to a cut of 0.5 per cent in the RBA cash rate by reducing their customer interest rates by only 0.4 per cent, choosing instead to widen their lending margins. With the banks choosing the extent to which they pass on interest rate cuts or rises, this is likely to reduce the preciseness of monetary policy.
4. Monetary policy may be undermined by budgetary policy — the problem of crowding out or crowding in	When the economy is weak and the government decides to run budget deficits to stimulate AD financed by borrowing through the sale of government bonds domestically, this can increase the demand for credit in local financial markets. As an unintended result, this puts upward pressure on local interest rates at a time when it would be better to have lower interest rates to boost spending. Such higher interest rates can lead to the problem of *crowding out* private sector C and I spending, thereby slowing the recovery. This would undermine the effectiveness of monetary policy. In reverse, during a boom where there is a budget surplus designed to slow AD and economic activity, if the government decides to repay previous local debt, this can put downward pressure on interest rates and lead to the problem of *crowding in* by borrowers, thereby adding to inflation and instability.
5. Monetary policy can involve goal conflicts and trade-offs	Sometimes monetary policy cannot be used for pursuing one particular government economic goal, because it can conflict with the pursuit of another objective. For example, in cutting the cash rate to help strengthen the goals of strong economic growth and full employment, sometimes this can add to inflation — there is a trade-off. Recently too, record low interest rates have fuelled property prices and made home ownership less affordable for some. This has negatively impacted equity and living standards.

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4.15 Quick quiz on

4.15 Exercise

4.15 Exercise

1. **Outline** two important *strengths* of using monetary policy to help promote domestic economic stability. **(2 marks)**
2. **Outline** two important *weaknesses* of using monetary policy to help promote domestic economic stability. **(2 marks)**
3. **a.** Assume that the RBA decided to further *increase* the cash rate target because it was concerned about rising inflation (e.g. as in 2022). **Identify** and **explain** *one* important *strength* of using this policy as a stabiliser. **(2 marks)**
   b. Assume that the RBA decided to *increase* the cash rate target because it was concerned about the rise in inflation (as in 2022). **Identify** and **explain** *two* important *weaknesses* or constraints that may be likely to limit the effectiveness this policy. **(4 marks)**
   c. Assume that the RBA decided to *reduce* the cash rate target from 1.0 to 0.75 per cent because economic growth was slowing and unemployment was rising. **Identify** and **explain** *one* important *strength* of using this policy as a stabiliser. **(2 marks)**
   d. Assume that the RBA decided to *reduce* the cash rate target from 1.0 to 0.75 per cent because economic growth was slowing and unemployment was rising. **Identify** and **explain** *two* important *weaknesses* of using this policy as a stabiliser. **(4 marks)**

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4.16 Review

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4.16.1 Summary

The course requires that you understand the nature and operation of both budgetary and monetary policies as aggregate demand policies that can be used to promote the achievement of domestic macroeconomic goals and living standards.

The nature of government budgetary policy as an aggregate demand measure

- Aggregate demand (or macroeconomic) policies include both budgetary (fiscal) and monetary policies.
- *Budgetary* or *fiscal policy* involves the Treasurer manipulating the values of anticipated federal government revenues or receipts (such as direct taxes including personal and company tax, indirect taxes such as sales, GST and excise tax and non-tax revenue) and expenses or outlays (such as government consumption and investment spending on health, defence and education, as well as welfare and other transfers) that can be broken down into current spending (G_1), capital spending (G_2) and transfer payments, for the upcoming year. It is an aggregate demand management instrument designed to influence the level of AD in a countercyclical way and thereby help to promote improved domestic economic stability (namely, strong and sustainable economic growth, full employment and low inflation) and living standards.
- The *budget outcome* depends on the total annual value of receipts against the total value of outlays. There are *three* possible budget outcomes:
  - a *budget deficit* (the total value of receipts is less than the total value of outlays), normally funded by a rise in government debt or borrowing, either locally or overseas, through the sale of government bonds — adding to the level of government debt
  - a *budget surplus* (the total value of receipts is greater than the total value of outlays); the money can be used to retire debt, build up government savings with the RBA for a rainy day, or create special savings funds
  - a *budget balance* (the total value of receipts is equal to the total value of outlays).
- The budget outcome is especially affected by changes in domestic rates of GDP growth, overseas economic activity, the TOT, the Australian dollar, changes in unemployment, wages growth, and political conditions. Sometimes the forecasts and assumptions underlying the budget can change dramatically during the course of the year, affecting the final budget outcome.
- The *budget stance* relates to whether the budget's intention is to boost or slow AD and economic activity. This stance can be expansionary, contractionary or neutral.
  - A bigger budget deficit (expressed as a percentage of GDP) is usually seen as *more expansionary*, designed to stimulate AD and economic activity, while a smaller deficit is seen as *less expansionary* in its impact on AD.
  - A bigger surplus is normally seen as *more contractionary*, designed to slow AD and economic activity, while a smaller surplus is seen as *less contractionary* in its impact on AD.
  - The medium-term operating aim of budgets is to return to a budget surplus at a prudent rate when economic conditions permit.

How budgets, as an aggregate demand instrument, can help to achieve low inflation, full employment, and strong and sustainable economic growth

- In theory, *budgetary policy can help improve domestic economic stability* (where strong and sustainable economic growth, low inflation and full employment are achieved simultaneously) by regulating the level of AD in a *countercyclical* manner through the operation of *two* types of budget stabilisers:
  - *automatic stabilisers* involving changes in the value of tax receipts and welfare outlays and are triggered by cyclical changes in economic activity and require no deliberate government decision
  - *discretionary stabilisers* involve deliberate changes or policy decisions by the treasurer that alter tax rates, the introduction of new taxes or the abolition of existing taxes, or change the generosity or otherwise of benefits for welfare recipients, or funding for infrastructure projects, health and education.
- During a *recessionary downswing* in economic activity (e.g. 2019–20–21), a *more expansionary* stance to boost AD is usually applied as a result of automatic and discretionary cuts in budget receipts, and automatic and discretionary rises in budget outlays. Typically, this involves an increase in the size of the budget deficit. By becoming more expansionary, the aim is to stimulate AD and economic activity, and reduce cyclical unemployment. Again, the achievement of domestic economic stability and general living standards should be improved.
- During a *strong upswing* in AD and economic activity where there are inflationary pressures, a less expansionary or *more contractionary* budgetary stance is progressively applied to help slow AD to sustainable rates. Typically, this entails switching gradually from a deficit to a larger budget surplus by automatic and perhaps discretionary rises in receipts relative to outlays. The new stance helps to slow AD, moderate the inflationary upswing and improve domestic economic stability and living standards.
- Having almost returned the budget to surplus by 2019, the COVID-19 pandemic, high unemployment and the various stimulus packages, are the main reasons for the recent rise in budget deficits (totalling an estimated $340 billion between 2019–20 and 2022–23). With recently stronger economic activity, the size of the budget deficit has again started to shrink.
- When used to promote domestic stability, budgetary policy has various strengths and weaknesses:
  - *Strengths* include short time lags for the effective operation of automatic stabilisers, the ability to precisely target specific areas of weakness (e.g. particular groups of individuals, industries, sectors, states) in the economy, their directness in affecting spending and the possibility of beneficial aggregate supply-side effects. Recently, expansionary budgetary measures can take some credit for softening the negative impact of the COVID-19 recession on living standards.
  - *Weaknesses* include long implementation and impact time lags for some discretionary measures which can potentially cause them to become pro-cyclical and less useful as a short-term stabiliser; some outlays in the budget are inflexible and cannot easily be changed; trade-offs and conflicts in outcomes can exist; financial constraints of running even bigger structural budget deficits in recessions, the possibility of budgetary policy undermining monetary policy (crowding out and crowding in); and strong political considerations or constraints that limit the budgetary options available in booms.

What is the nature of monetary policy?

- *Monetary policy* is an aggregate demand strategy that involves the RBA manipulating the cash rate target countercyclically, to indirectly affect other longer term interest rates, and the levels of lending, savings, and AD. In turn, this can help to promote the achievement of Australia's three key domestic macroeconomic goals and improve living standards.
- O*fficial interest rates* (the *cash rate target*) are determined in the short-term money market by the RBA and are used as an indicator of the monetary policy stance. The cash rate target can be readily changed (see later) following a decision by the RBA's Board.
- The *medium-term operational aim of monetary policy* involves *inflation targeting* or the pursuit of low inflation (an average annual inflation rate or CPI target of between 2–3 per cent over time). Once the goal of low inflation has been achieved, other aims, including strong and sustainable economic growth, full employment and the economic wellbeing of Australians, often become the main focus for RBA policy.
- Monetary policy is regarded as an *aggregate demand management policy* because changes in interest rates have the capacity to affect C, I and even net X as components of AD, through various *transmission mechanisms* or channels.

Using monetary policy to pursue the government's domestic macroeconomic goals

- Theoretically, monetary policy can help *increase domestic economic stability* if it is applied as a *countercyclical* measure and used to steady the rate of increase in AD during booms and recessions. Stabilisation involves a change in monetary policy's *stance* or whether it is intended to be expansionary (looser, more expansionary or more accommodative), contractionary (tighter or restrictive) or neutral in its impact on the levels of AD and economic activity.
- Using a *looser* (more expansionary or accommodating) *monetary policy during a recessionary downswing:* The RBA's monetary policy stance is eased/loosened/becomes more expansionary to stimulate AD when inflation is below the 2–3 per cent target, and GDP growth and employment are weak (e.g. 2020 and 2021, during and following the COVID-19 pandemic). There are several steps involved:
  - Following the announcement of a cut in the cash rate target, this automatically shifts the *policy interest rate corridor* vertically downwards to a level that extends either side of the new lower cash rate target. Close compliance to the new lower cash rate is assured by the RBA, given its ability to legally set deposit and lending rates in the short-term money market (STMM):
    - On the one hand, there is the new lower unattractive deposit rate (normally set at 0.25 percentage points below the cash rate for banks with excess cash in exchange settlement accounts — this provides guidance and an incentive for banks to lend their excess cash to other banks at a higher interest rate that is closer to the new cash rate target.
    - On the other hand, the new RBA lending rate to banks with a shortfall of cash is normally set at 0.25 percentage points above the cash rate — this causes banks that are short of cash to borrow from other banks at a lower rate closer to the new cash rate target.
  - Once in place and to maintain the chosen cash rate, the RBA may then have to conduct open market operations (OMO) involving the buying or selling of government bonds designed to change the supply of cash and offset any tendency for a drift in the cash rate caused by changes in the demand for cash in the STMM.
  - Finally, with the lower cash rate target, various transmission mechanisms kick in to boost AD and economic activity.
- Using a *tighter* (less expansionary) *monetary policy during an inflationary upswing:* The RBA's monetary policy stance is usually tightened/made more contractionary to slow AD when inflation approaches or starts to exceed the 2–3 per cent inflation target (e.g. early 2022). This tightening process occurs through several steps:
  - Following the RBA Board's announcement of a rise in the cash rate target, this automatically shifts the whole *policy interest rate corridor* vertically upwards to a new level spanning either side of the higher cash rate target. Close compliance to the new higher cash rate is assured because the RBA controls its deposit and lending rates:
    - On the one hand, there is the unattractive deposit rate offered by the RBA (normally set at 0.25 percentage points below the cash rate) for banks with excess cash — this provides guidance or an incentive for banks to lend their excess cash to other banks at a higher interest rate closer to the new cash rate target.
    - On the other hand, the new RBA lending rate to banks short of cash is normally set at 0.25 percentage points above the cash rate, causing banks that are short of cash to borrow from other banks at a lower rate closer to the new cash rate target.
  - Once in place and to maintain the chosen cash rate, the RBA may then have to conduct daily open market operations involving the buying or selling of government bonds. These operations change the supply of cash to offset any tendency for a drift in the cash rate caused by changes in the demand for cash in the STMM.
  - Finally, with the higher cash rate target that flows through to increased interest rates elsewhere in financial markets, various transmission mechanisms kick in to slow AD and economic activity to sustainable levels.

- *Transmission mechanisms* are used to help bring about a rise or fall in the level of AD and economic activity, following a change in the cash rate target, so as to better achieve domestic economic stability and improve living standards.
  - Following a *cut in the cash rate* during a slowdown, various transmission mechanisms help *stimulate* AD and economic activity. Lower interest rates cause a rise in the demand for credit to finance C and I, lead to an increase in the supply of credit by banks, boost the cash flow available for household spending, add to a feeling of being wealthier and weaken the exchange. Together these channels strengthen AD, economic growth and employment, improving our general living standards.
  - Following a *rise in the cash rate* during a period of inflation, various *transmission mechanisms* help to *slow* AD, domestic economic activity. Higher interest rates cause a decrease in the demand for credit used to finance C and I, lead to a decrease in the supply of credit, reduce the cash flow available for household spending, weaken the feeling of wealth and strengthen the value of the Australian dollar in the foreign exchange market. Together these channels slow AD, economic growth and employment to sustainable levels, improving our general living standards.
- During 2019–20 and 2020–21, economic growth was weak and well below trend, unemployment was higher than normal and inflation was mostly very low. Hence, monetary policy during this period was *highly expansionary*. To this extent, it is likely that the three reductions in the cash rate target to just 0.10 per cent over the two years to May 2022 helped to stimulate AD and hence reduce domestic instability, improving overall living standards. More recently, starting in May 2022, the RBA moved to lift the cash rate target several times (a less accommodative/more neutral stance) in response to quite high inflation.
- Between March 2020 and February 2022, both *conventional* monetary policy (using countercyclical changes in the cash rate) and *unconventional monetary policy* (using other policy tools like *quantitative easing* and *term funding facilities*) were used by the RBA to help stimulate AD and economic activity. However, the RBA was forced to raise interest rates from May 2022 to slow rapid inflation.
- Monetary policy has both *strengths* and *weaknesses* when used to stabilise AD and pursue domestic economic stability and better living standards:
  - Strengths include the short time lag in *implementation*, greater effectiveness in controlling inflation (it can affect expectations and the behaviour of economic agents), and possibly less political fallout from a tightening of the policy stance in a boom (relative to that with a tighter budgetary policy involving higher taxes or less outlays).
  - Weaknesses include quite long time lags in policy *impact* (up to three years for the full impact of a cut in interest rates to be felt) perhaps leading to the risk of the policy change becoming pro-cyclical, its bluntness or imprecision in pinpointing and correcting areas of greatest weakness in the economy, and its more limited effectiveness than budgetary policy in recessions where interest rates are already close to zero and some transmission channels have become less effective in stimulating AD, shifting the stimulus burden to budgetary policy.

4.16.2 Key terms

Accommodating or **loose monetary policy stance** is one where the RBA sets the cash rate target below the 3 per cent reference rate.
Aggregate demand management policy includes budgetary and monetary policy and is used by the government to influence the level of spending, economic activity and the achievement of key domestic macroeconomic goals.
Aggregate demand policy involves the use of budgetary and monetary policies designed to influence the level of spending on a nation's goods and services and hence the pace of economic activity, employment and prices. As a stabiliser, it is applied in a countercyclical way — expansionary in recessions and contractionary in booms.
Aggregate supply policy involves government measures including budgetary (e.g. tax reform, outlays on infrastructure), trade liberalisation and environmental, that are designed to help grow the nation's efficiency in the use of resources and productive capacity.
Automatic stabilisers (also called cyclical stabilisers) are changes in tax revenues collected and welfare outlays that are built into the budget and operate correctly and spontaneously in a countercyclical way to help stabilise AD and flatten the business cycle, without the federal treasurer deliberately changing their level or announcing new policies.

Availability of credit (or transmission) **channel** alters spending because interest rates affect the willingness of banks to lend, the number of clients who qualify for loans and the availability or supply of credit. This alters spending and economic activity.
Balanced budgets occur when the total annual value of revenue equals the total value of expenses.
Bracket creep occurs when recipients of rising income gradually move into higher marginal income tax brackets, which automatically increases their tax burden.
Budget deficit represents a situation where the total value of government outlays exceeds the total value of its receipts for a period of time, which, for example, happened between 2008–09 and 2022–23. Larger deficits expressed as a percentage of GDP, financed by overseas borrowing, tend to have an expansionary effect on aggregate demand and hence economic activity.
Budget expenses in the budget are outlays involving, for example, the provision of goods and services for the community and transfers like welfare benefits.
Budget outcome represents the difference between the total value of budget revenues and the total value of budget outlays. The budget outcome may be a balanced budget, deficit or surplus.
Budget repair refers to tax and outlay strategies designed to reduce the deficit and return the budget to surplus over the medium-term.
Budget revenues 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.
Budget surplus represents a situation where the total value of government outlays is less than the total value of its receipts measured over a period of time. Budget surpluses occurred between 2006–07 and 2007–08. Larger surpluses may have a contractionary effect on aggregate demand and hence on economic activity, and are suitable for slowing inflationary booms.
Budgetary policy is an aggregate demand measure and relates to changes in the anticipated levels and composition of government revenues (e.g. from personal income tax, company tax) and expenses (e.g. for outlays on welfare or education) for the upcoming year.
Cash flow channel (or transmission channel) is the impact of changes in interest rates on the level of discretionary spending on other goods and services by households with existing variable loans like home mortgages and overdrafts. This affects consumption spending, AD and economic activity.
Cash rate target is the main indicator of the RBA's monetary stance and represents the rate at which cash is borrowed and lent in the short-term money market. Due to competition, this strongly influences other longer term interest rates and is the centrepiece of monetary policy.
Checklist of economic indicators is used by the RBA Board at its monthly meetings to decide if there is a need to change the cash rate target and stance of monetary policy.
Contractionary budgets (e.g. a rise in the surplus as a percentage of GDP) seek to slow AD and economic activity and thereby reduce inflationary pressures.
Contractionary monetary policy stance is one where the RBA sets the cash rate above 3.0 per cent to slow AD and economic activity.
Conventional monetary policy involves the RBA countercyclically manipulating the cash rate target. In turn, the cash rate indirectly affects other interest rates and can help to manage the level of AD and economic activity.
Cost of credit effect (or transmission channel) influences the demand for credit because variations in interest rates alter the cost of borrowing and repaying debt, thereby affecting the level of credit-sensitive spending, AD and economic activity.
Countercyclical means that as aggregate demand measures, budgetary or monetary policies are applied to help flatten the business cycle by stabilising the level of spending. Hence, during a slowdown, a more expansionary stance is used to increase AD and lift economic activity, whereas a more contractionary stance is used during an inflationary upturn or boom to slow AD and control inflation.
Countercyclical application of monetary policy means that, during a slowdown, the RBA will cut interest rates to increase AD and lift economic activity, but during an inflationary upturn or boom, it will raise interest rates to slow AD and control inflation.
Countercyclical budgetary policy adopts an expansionary stance, typically involving an increase in the budget deficit, to increase AD in a slowdown and a contractionary stance, typically involving a rise in the budget surplus, to slow AD during an inflationary upturn, thereby helping to stabilise the level of economic activity.
Crowding in occurs in a situation where the government runs a surplus budget in a boom with the intention of slowing spending to reduce inflation. Unfortunately, if the surplus is used to pay off debt locally, it may put

downward pressure on domestic interest rates and attract more private sector borrowers, boosting spending at a time the RBA is trying to slow AD. This can weaken the effectiveness of monetary policy.

Crowding out occurs in a situation where the government, for example, runs a deficit budget in a recession with the intention of stimulating spending to help promote recovery. Unfortunately, if the deficit is financed by borrowing credit locally, upward pressure is put on domestic interest rates that will push out private sector borrowers and undermine the efforts of monetary policy in promoting a recovery.

Cyclical budget deficits are those caused by a slowdown in economic activity where automatically, there are reduced budget receipts relative to outlays on welfare that tend to make the budget expansionary.

Direct taxes are those levied on individuals and businesses that receive incomes (e.g. company and personal income taxes).

Discretionary stabilisers in the budget are the *deliberate* changes in tax rates, the tax mix and the direction and composition of budget outlays that are specifically announced by the federal treasurer to help steady economic activity in response to serious economic developments.

Domestic economic stability involves the simultaneous achievement of three key domestic macroeconomic goals — the goals of low and stable inflation, strong and sustainable economic growth, and full employment. This ideal situation helps to create conditions optimal for better living standards.

Exchange rate channel (or transmission channel) is where changes in domestic interest rates relative to those abroad affect levels of capital inflow and outflow, changing the demand and supply of the Australian dollar in the foreign exchange market and thus the exchange rate. In turn, when the exchange rate changes, this affects the levels of export and import spending, AD and economic activity.

Exchange settlement accounts are an important part of the short-term money market and involve all banks being legally required to maintain positive cash balances in their exchange settlement accounts held with the RBA, sufficient to meet daily interbank transactions.

Expansionary budgets seek to stimulate AD and economic activity, and typically involve a rise in the size of the budget deficit expressed as a percentage of GDP.

Fiscal consolidation refers to budget measures designed to reduce the size of the budget deficit by increasing tax revenue and/or decreasing outlays.

Government capital spending (abbreviated as G_2) includes government investment spending in the budget to facilitate the production of goods and services for the community.

Government current spending (abbreviated as G_1) includes the day-to-day expenses or budget outlays of the government on the purchase of consumer goods and services (such as the payment of staff in the public sector).

Government debt (or borrowing) occurs when there is a budget deficit where the value of budget receipts is less than the value of budget outlays. Debt therefore increases when there is a budget deficit financed by borrowing locally or abroad. Budget surpluses can be used to pay down debt.

Government transfer payments include cash income supplements or welfare 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 grants to the states and interest on the public debt paid by the federal government. Transfer payments are a major component of budget outlays, but are not seen as actual expenditures on goods and services conducted by the government that make up the G_1 and G_2 components of aggregate demand — the actual spending is done by the transfer recipients.

Headline cash outcome refers to the total cash value of budget receipts minus the total cash value of budget outlays from all sources, without the removal of items that are affected by one-off events such as asset sales and debt repayments.

Indirect taxes are those added onto the price of a good or service at the point of sale (e.g. GST, excise tax).

Inflation targeting means that the RBA's operational goal is to apply monetary policy to achieve an annual average inflation rate of between 2–3 per cent over time.

Interest rates refer to 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).

Monetary policy is a branch of macroeconomic policy operated by the RBA involving changes in interest rates to alter the cost, availability and demand for credit. It is designed to countercyclically regulate the level of AD and economic activity.

Monetary policy stance relates to whether the RBA wants to use interest rates to slow or to accelerate the level of AD and economic activity. The cash rate level is used to determine the stance being adopted. Currently, a cash rate above about 3.0 per cent, for example, is normally regarded as a contractionary stance, but a cash rate below perhaps 3.0 per cent is currently seen as an expansionary stance.

Official cash rate is the interest rate target set by the RBA for the short-term money market and indicates its monetary policy stance.
Open market operations (OMO) relate to the strategies of the RBA in the short-term money market involving the daily sale or repurchase of government securities or bonds with the aim of maintaining a particular policy cash rate target that sits within the chosen policy interest rate corridor.
Pay-as-you-go (PAYG) tax is a direct progressive tax levied on incomes received by individuals at marginal rates of zero per cent up to 45 per cent (2022–23).
Policy interest rate corridor is a band or range of interest rates operating within the short-term money market. Here, the *ceiling* or upper boundary is the interest rate at which the RBA is willing to lend cash to banks, and the *floor* or lower boundary is the RBA's interest rate paid on excess deposits held by banks in their exchange settlement accounts. These two interest rate boundaries create guidance for the actual cash rate: they set up financial incentives for borrowing and lending by banks in the short-term money market. In order to have the actual cash rate at a level close to the chosen cash rate target, the RBA will use its open market operations to change the supply of cash in response to a change in the demand for cash in the market. When the RBA Board announces a cut in the cash rate target as part of an expansionary stance, automatically the whole policy interest rate corridor moves downwards, while a rise in the cash rate target or a less accommodating stance, automatically causes the whole corridor to move upwards.
Pro-cyclical policies are discretionary changes in the budget (e.g. perhaps infrastructure projects) that increase economic instability due to their long time lags in recognition, implementation or impact. They are the opposite of countercyclical policies.
Quantitative easing (QE) is part of unconventional expansionary monetary policy and involves the RBA buying assets in the secondary bond market from the private sector by paying them cash. This increases the supply of cash and puts additional downward pressure on interest rates as a way of further stimulating AD and economic activity.
Reserve Bank of Australia (RBA) aims to keep inflation low, achieve strong and sustainable economic growth, and full employment, thereby creating conditions that improve our living standards. It implements monetary policy, is banker for the government and other banks, and issues coins and notes.
Saving-investment channel or transmission mechanism occurs where changes in the cash rate target alter the cost of borrowing and repaying debt. This alters the incentive to save and the level of investment spending, thereby affecting the level of AD and economic activity.
Short-term money market is a specialist financial institution where cash is borrowed and lent by banks for short periods of time, like overnight. Here, banks are legally required to maintain positive balances in their individual exchange settlement accounts (ESAs) with the RBA, sufficient to meet daily interbank transactions. In addition, within this market, the RBA sets the cash rate target that sits within the interest rate corridor. At the lower extreme of the corridor, there is the RBA's low deposit rate paid to banks with surplus cash. At the upper extreme, the RBA's lending rate for banks that have a shortfall of cash is set above the cash rate target. Changes in rates in this market indirectly cause other interest rates to change, thereby affecting AD and economic activity.
Structural budget deficits are those caused by discretionary policy decisions that reduce receipts (e.g. a cut in tax rates) relative to increases in outlays (e.g. greater welfare generosity) that are not removed when they are no longer needed.
Term funding facilities are part of unconventional monetary policy that can be used by the RBA in a severe downturn. 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.
Time lags in policy can be a weakness and are of *three* types: *recognition lag* for the problem due to the existence of lagging indicators like GDP; *implementation lag* in activating the chosen policy; and *impact lag* in waiting for the policy to actually boost or slow AD and economic activity.
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.
Transmission mechanisms or channels for monetary policy are the various ways that changes in interest rates work to influence AD and the level of economic activity. These include the cost of credit effect, the cash flow effect, the availability of credit effect, the exchange rate effect and the wealth effect.
Treasurer is a member of the government who is in charge of the nation's finances and prepares the annual budget or statement of expected receipts and outlays. The budget is an aggregate demand policy.
Unconventional monetary policy involves the RBA using tools other than changing the cash rate target to manage AD and economic activity. Recently the RBA has used asset purchases/*quantitative easing* and *term*

lending facilities to help further lower borrowing costs and interest rates on bank loans, as additional ways of stimulating AD.
Underlying cash outcome represents the budget's headline balance after subtracting the value of one-off volatile items, such as asset sales, special loans to state governments or debt repayments by other governments.
Wealth or **asset price channel** is a transmission mechanism resulting from a change in interest rates. For instance, a cut in interest rates usually helps to strengthen the demand for assets such as property, pushing up their price. When this occurs, rising asset prices makes asset owners feel wealthier, stimulating C spending and AD.

Resources

Digital documents Topic summary (doc-34676)
Key terms glossary (doc-34514)
Crossword (doc-31513)
Wordsearch (doc-31514)
Match-up definitions (doc-31515)

4.16.3 Practice school-assessed coursework

OUTCOME 1

Discuss the operation of aggregate demand policies and analyse their intended effects on the achievement of the domestic macroeconomic goals and living standards.

Time allowed: 60 minutes

Marks allocated: 52 marks (The marks for each question are indicated at the end of each question.)

Conditions: Closed book (No notes or textbooks may be used when completing this task.)

TASK: STRUCTURED QUESTIONS

1. Accurately **define** what is meant by *budgetary* (i.e. fiscal) policy. Using specific examples of recent measures, **explain** how this policy can be used as an *aggregate demand policy* to help flatten the business cycle. **(5 marks)**
2. **Examine** the table below that has been extracted from the 2022–23 federal government's Budget Papers, March 2022. Referring to data in this table and giving clear reasons for your answer, accurately **describe** the expected *change* in the federal government's *budget stance* over the years between 2020–21 and 2025–26. **(3 marks)**

Actual, estimated and projected changes in Australia's budget outcomes (as of March 2022).

	Actual outcome				Estimates of budget outcome			
Year	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26
Receipts or revenues ($ millions)	485 286	469 398	519 913	**556 626**	547 632	585 208	615 237	643 900
Receipts or revenues (% of GDP)	24.9	23.7	25.1	**24.3**	23.8	24.7	24.7	24.6
Outlays or expenses ($ millions)	478 098	549 634	654 084	**636 447**	625 593	641 740	662 347	689 968
Outlays or expenses (% of GDP)	24.6	27.7	31.6	**27.8**	27.2	27.1	26.6	26.3

Underlying budget balance ($ millions)	−690	−85 272	−134 171	**−79,821**	−77 961	-56 532	-47 108	-43 068
Underlying budget balance (% of GDP)	0	−4.3	−6.5	**−3.5**	−3.4	−2.4	−1.9	-1.6

Source: Data derived from Australian government, Budget 2022–23, Appendix E: Historical Australian Government Data, page 341, see https://budget.gov.au/2022-23/content/bp1/download/bp1_2022-23.pdf.

3. Most politicians and commentators agree that the federal government needs to return to a *budget surplus* in the medium-term. **Identify** and clearly **explain** *two* important *reasons* why Australia must eventually repair the budget and seek to return to a *surplus* over the medium-term as circumstances permit. **(4 marks)**
4. **Examine** the table below sourced from the 2022–23 Budget Papers, showing the 'actual' outcome for economic growth in 2020–21, and the 'forecast' rates for GDP growth between 2021–22 and 2023–24. Assuming that the forecast changes in GDP growth between 2021–22 and 2023–24 prove to be correct, carefully **explain** how the operation of *automatic (cyclical) stabilisers* would normally affect the *budget outcome*. If accurate, how would these forecasts be likely to affect the achievement of Australia's key *domestic macroeconomic goals*? **(6 marks)**

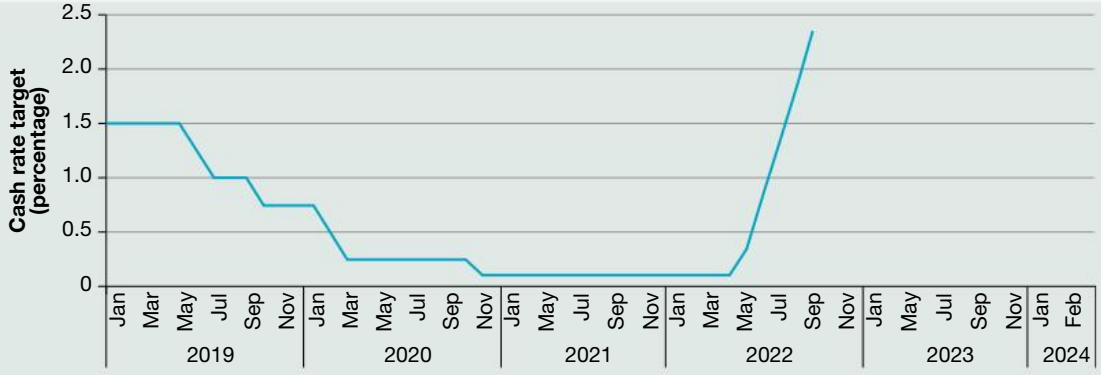
Actual and forecast changes in Australia's rate of economic growth (at March 2022).

Year	Outcome 2020–21	Forecast 2021–22	Forecast 2022–23	Forecast 2023–24
Annual percentage change in real GDP	1.5	4.25	3.5	2.5

Source: © Commonwealth of Australia, March 2022.

5. **Select** an important *discretionary budget stabiliser* announced or applied over the last two years, that you believe will especially help to create jobs and improve overall *living standards* over the medium-term. Briefly **outline** this specific aggregate demand measure, and then **explain** how this might help to create jobs and improve living standards. **(6 marks)**
6. **Identify** and carefully **explain** one important *strength* and one important *weakness* of using *budgetary policy* to help *stimulate* AD and Australia's economic activity in a recession. **(4 marks)**
7. Accurately **define** *monetary policy*. **Explain** why this policy is regarded as an important macroeconomic or *aggregate demand* policy. **(3 marks)**
8. **Examine** the figure below showing the RBA's cash rate target in recent years. Referring to the data from the figure, **explain** the change in the RBA's monetary policy *stance* during the period shown. In addition, referring to the RBA's *checklist* of indicators, **identify** and **outline** the most likely *reasons* used to *justify* the change in the Bank's monetary policy *stance* during 2022. **(3 marks)**

Changes in the RBA's cash rate target and monetary policy stance.



Source: Data derived from RBA, see https://www.rba.gov.au/statistics/cash-rate/.

9. Read the quote below taken from the RBA's 1959 Charter:
'The RBA's duty is to contribute to ... [economic] stability ... the maintenance of full employment in Australia ... economic prosperity and the welfare of the Australian people.'
Source: © Reserve Bank of Australia.

   As noted here, the RBA applies monetary policy to help promote economic prosperity. Hypothetically, assume that there was a rise in Australia's inflation rate during 2022–23.
   Carefully **explain** how the RBA could *tighten* its monetary policy *stance* (referring to the policy interest rate corridor). **(4 marks)**
10. Referring to two important *transmission mechanisms*, clearly **explain** how the recent rise in the *cash rate* is likely to affect the level of AD and the achievement of the government's key *domestic macroeconomic goals*. **(6 marks)**
11. **Explain** how the RBA's conventional monetary policy was supported by its unconventional monetary policy between 2020 and 2022. **(4 marks)**
12. **Discuss** the *effectiveness* of the RBA cutting and maintaining low interest rates in the two years to early 2022 to help stimulate AD and promote domestic economic stability, by referring in detail to one important *strength* and one important *weakness* of using monetary policy. **(4 marks)**

Resources

Digital document Topic 4 Practice school-assessed coursework (doc-38085)

4.16 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



Section A: Multiple choice questions

Question 1

Source: VCE 2021 Economics Exam, Section A, Q1 © VCAA

Two indicators of an expansionary budgetary policy are

A. lower tax rates and increased government spending.
B. higher tax rates and decreased government spending.
C. lower interest rates and increased government spending.
D. higher interest rates and decreased government spending.

Question 2

Source: VCE 2021 Economics Exam, Section A, Q7 © VCAA

Expansionary monetary policy is most likely to be maintained if the

A. Australian Government is still running a budget deficit.
B. value of the Australian dollar is below its long-term average.
C. rate of inflation is below the Reserve Bank of Australia's (RBA) target.
D. unemployment rate is below what is required to achieve full employment.

Question 3

Source: VCE 2021 Economics Exam, Section A, Q11 © VCAA

Which one of the following is **not** a role of the RBA?

A. Adjusting tax rates
B. Issuing Australia's bank notes
C. Managing foreign currency reserves
D. Providing specialist banking services to the Australian Government.

Question 4

Source: VCE 2021 Economics Exam, Section A, Q13 © VCAA

A reduction in the cash rate is likely to result in

A. an increase in the value of the Australian dollar and a lower inflation rate.
B. a decrease in the value of the Australian dollar and a higher inflation rate.
C. a decrease in the value of the Australian dollar and a higher unemployment rate.
D. an increase in the value of the Australian dollar and a lower unemployment rate.

Question 5

Source: VCE 2020 Economics Exam, Section A, Q8 © VCAA

Which one of the following is least likely to be an example of a monetary policy transmission mechanism resulting from lower interest rates?

A. An increase in net capital inflow
B. An increase in borrowings for housing investment
C. A decrease in imports resulting from a fall in the value of the Australian dollar
D. An increase in exports resulting from a fall in the value of the Australian dollar.

Question 6

Source: VCE 2020 Economics Exam, Section A, Q13 © VCAA

Consider the following hypothetical Australian Government Budget figures.

Item	Amount (billions)
Total receipts	$200
total outlays	$175
net cash flows from investments in financial assets (IFAPP)	$10
Future Fund earnings	$5

What is the size of the underlying cash surplus?

A. $10 billion
B. $25 billion
C. $30 billion
D. $40 billion.

Question 7

Source: VCE 2019 Economics Exam, Section A, Q3 © VCAA

One weakness of budgetary policy compared with monetary policy is that budgetary policy

A. may be subject to political constraints.
B. can target certain parts of the economy to give assistance.
C. may be counteracted by the operation of automatic stabilisers.
D. tends to be relatively ineffective in a recession due to low levels of consumer confidence.

Question 8

Source: VCE 2019 Economics Exam, Section A, Q7 © VCAA

As the world economy slows, the Australian Government's budget outcome may

A. deteriorate as demand for Australian exports decreases.
B. improve as employment in Australia increases.
C. deteriorate as domestic output increases.
D. improve as company profits increase.

Question 9

Source: VCE 2019 Economics Exam, Section A, Q12 © VCAA

A contractionary stance in monetary policy by the Reserve Bank of Australia (RBA) could be achieved by

A. selling Commonwealth Government Securities to increase cash in the overnight money market.
B. buying Commonwealth Government Securities to increase cash in the overnight money market.
C. selling Commonwealth Government Securities to decrease cash in the overnight money market.
D. buying Commonwealth Government Securities to decrease cash in the overnight money market.

Question 10

Source: VCE 2018 Economics Exam, Section A, Q2 © VCAA

Expansionary monetary policy is most likely to cause

A. a decrease in welfare payments.
B. an appreciation of the Australian dollar.
C. a reduction in the rate of economic growth.
D. an increase in the size of the budget deficit.

Question 11

Source: VCE 2018 Economics Exam, Section A, Q9 © VCAA

Which one of the following would reduce the size of the Australian Government's budget deficit?

A. Company tax cuts
B. Personal income tax cuts
C. Increasing the rate of the goods and services tax (GST)
D. Increasing the tax-free threshold for personal income tax.

Question 12

Source: VCE 2018 Economics Exam, Section A, Q12 © VCAA

When the economy is experiencing low rates of inflation and low rates of economic and employment growth, the Reserve Bank of Australia will be likely to

A. sell government securities in order to increase the cash rate.
B. sell government securities in order to decrease the cash rate.
C. purchase government securities in order to increase the cash rate.
D. purchase government securities in order to decrease the cash rate.

Question 13

Source: VCE 2018 Economics Exam, Section A, Q13 © VCAA

Imagine the Australian Government's budget is in surplus. If the rate of economic growth were to slow, this may ultimately result in a

A. smaller surplus budget, as receipts rise and outlays fall.
B. budget deficit, as receipts rise and outlays fall.
C. larger surplus budget, as receipts rise and outlays fall.
D. smaller surplus budget, as receipts fall and outlays rise.

Question 14

Source: VCE 2017 Economics Exam, Section A, Q2 © VCAA

Which one of the following might help to reduce a government's budget deficit?

A. A slowing of growth in the world economy
B. Reducing the marginal rate of personal income tax
C. Removing the means test on some items of government welfare
D. Removing the exemptions of education and food from the goods and services tax (GST).

Question 15

Source: VCE 2017 Economics Exam, Section A, Q13 © VCAA

As the level of aggregate demand slows, the budget outcome will

A. improve as unemployment increases.
B. deteriorate as unemployment increases.
C. improve as social security payments decrease.
D. deteriorate as social security payments decrease.

Question 16

Source: VCE 2017 Economics Exam, Section A, Q14 © VCAA

When the Reserve Bank of Australia buys government securities on the overnight market, the effect will be to

A. increase the supply of cash in the money market and increase the cash rate.
B. decrease the supply of cash in the money market and increase the cash rate.
C. increase the supply of cash in the money market and decrease the cash rate.
D. decrease the supply of cash in the money market and decrease the cash rate.

Question 17

Source: VCE 2017 Economics Exam, Section A, Q15 © VCAA

Which one of the following is an example of government capital expenditure?

A. Personal income tax refunds
B. Payment of unemployment benefits
C. Provision of transport infrastructure
D. Government loans to tertiary students for university fees.

Question 18

The *main* difference between the *headline* budget balance and *underlying* budget balance is that:

A. the underlying balance excludes one-off volatile items like asset sales and interest repayments by state governments.
B. the headline balance excludes transfers like welfare outlays, which vary from year to year.
C. the underlying balance removes the effect of automatic stabilisers.
D. the underlying balance removes the impact of inflation on the values of receipts and outlays.

Question 19

What factor(s) might theoretically help to explain why the small $5 billion budget surplus initially projected the treasurer would end up as a budget deficit of $5 billion?

A. More rapid inflation and faster economic growth than initially expected
B. Lower unemployment than initially expected
C. An unexpected boom among our trading partners overseas
D. Lower terms of trade, along with slower levels of domestic economic activity and higher rates of unemployment than initially expected.

Question 20

Examine the hypothetical data shown here for a country (similar to Australia). As treasurer, you are working on the next budget.

Indicator	2023	2024
Unemployment rate (percentage)	4.5	7.5
Inflation rate (percentage of CPI)	2.7	–0.3
GDP (percentage)	3.2	0.1

Other things being equal, which future combination of budgetary policies to apply in 2025 would *best* help to promote *domestic economic stability* given the trends in economic conditions for the two years shown?

A. A rise in the ratio of budget receipts to GDP and a fall in the ratio of budget outlays to GDP.
B. A significant reduction in the budget deficit as a ratio of GDP and following fiscal consolidation, a quick return to a budget surplus.
C. An expansionary budget involving a switch to a larger discretionary budget deficit and a bigger overall budget deficit expressed as a ratio to GDP.
D. Running a bigger budget deficit financed by government borrowing through the increased sale of government bonds domestically, rather than borrowing from overseas.

Question 21

Examine the hypothetical *checklist of indicators* shown in the following table prepared for the government and central bank of a country similar to Australia.

Checklist of economic indicators used by a central bank

Checklist indicator	2022–23	2023–24
Growth in national expenditure (percentage)	2.2	7.0
Chain volume GDP growth (percentage)	2.5	5.1
Headline CPI (percentage)	2.7	3.6
Underlying CPI (percentage)	2.5	3.9
Budget outcome ($ billion)	10.1	15.4
Cash rate target (percentage)	4.5	5.0
Global GDP growth (percentage)	2.5	3.1

What mixture of budgetary and monetary policy best represents the actions that should be taken on the basis of the trends shown in this information?

A. Further increase the budget surplus, combined with a decision to cut the cash rate target lowering the policy interest rate corridor in the short-term money market.

B. Increase the cash rate target raising the policy interest rate corridor, lift budget receipts as a ratio of GDP, and slow budget outlays as a ratio to GDP.

C. Decrease the cash rate target to encourage the Australian dollar to appreciate, combined with reducing budget outlays as a ratio of GDP.

D. Reduce the budget surplus and the RBA lowers the cash rate target.

Question 22

Which statement about Australian *monetary* policy is *most correct*?

A. The implementation lag is long, increasing the chance that policy may become pro-cyclical, but this is offset by the fact that the impact lag is short.

B. Monetary policy is a very precise or surgical instrument that can accurately target and correct specific problem areas in the economy.

C. Monetary policy becomes less effective in stimulating economic and employment growth if interest rates are close to, or at zero per cent.

D. A cut in the cash rate target tends to slow the raise the exchange rate, increase the cash flow for some households, and depress asset prices.

Question 23

Which statement about Australia's monetary policy is *incorrect*?

A. A rise in the cash rate target from 1 to 2 per cent is a less expansionary stance, but not a contractionary stance.

B. Unconventional monetary policy involves RBA strategies other than changing the cash rate target and may include quantitative easing.

C. In a slowdown, when consumer confidence is weak and there is already a high level of household debt, a cut in the cash rate from 0.25 to 0.10 will be very effective in stimulating AD.

D. A rise in the RBA's cash rate target will usually work to encourage saving and discourage investment spending, thereby slowing the growth in AD.

Question 24

Which statement about the strengths and weaknesses of Australia's monetary and/or budgetary policies is most *correct*?

A. Automatic stabilisers have a longer implementation and impact lag than changes in the cash rate target.
B. Using discretionary measures to increase the budget surplus and slow inflation is likely to have more political constraints for the government than relying on the RBA to tighten its monetary policy stance.
C. Discretionary budgetary measures are less able to precisely provide stimulus to specific groups of individuals, industries or regions that are in most need of support, than changes in the RBA's cash rate target.
D. In the policy cash rate corridor, the RBA's deposit rate for banks is always higher than the lending rate.

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Multiple choice answers (doc-34821)

Section B: Extended response questions

Question 1 (14 marks)

Source: VCE 2021 Economics Exam, Section B, Q1b,c&d © VCAA

a. With reference to **one** aggregate demand and **one** aggregate supply factor, **explain** why the Reserve Bank of Australia's (RBA) forecast in February 2021 that unemployment would be around 6 per cent at the end of this year was inaccurate. **(5 marks)**
b. With reference to **one** transmission mechanism, **explain** how the current monetary policy stance is designed to influence aggregate demand and the achievement of full employment. **(5 marks)**
c. **Explain** two weaknesses associated with using monetary policy to achieve full employment. **(4 marks)**

Question 2 (17 marks)

Source: Adapted from VCE 2021 Economics Exam, Section B, Q2a,b&c © VCAA

a. **Explain** the likely effect of the Australian Government's forecast budget outcome for 2021-22 on the level of government (public) debt. **(3 marks)**
b. With respect to the Australian Government's budgetary policy, **explain** the difference between the role of automatic stabilisers and discretionary stabilisers in influencing aggregate demand and stabilising the business cycle. Use an example of each type of stabiliser that may have operated over the past two years to support your explanation. **(8 marks)**
c. **Describe** one strength and one weakness of the operation of the Australian Government's budgetary policy in **either** 2020 or 2021 in stabilising aggregate demand and achieving the Australian Government's domestic macroeconomic goal of strong and sustainable economic growth. **(6 marks)**

Question 3 (4 marks)

Source: VCE 2020 Economics Exam, Section B, Q1a © VCAA

Describe how a lower cash rate in Australia puts downward pressure on the value of the exchange rate and how this might support activity across a range of industries.

Question 4 (15 marks)

Source: Adapted from VCE 2020 Economics Exam, Section B, Q2a,b&c © VCAA

a. **Describe** two economic reasons why the Australian Government might find it difficult to achieve a budget surplus in the short- to medium-term. **(4 marks)**

b. **Explain** the role of automatic stabilisers in influencing aggregate demand and stabilising the business cycle in 2020. **(5 marks)**

c. **Describe** how two discretionary budgetary policy initiatives announced over the last two years might influence aggregate demand and the achievement of the domestic macroeconomic goal of strong and sustainable economic growth. **(6 marks)**

Question 5 (6 marks)

Source: Adapted from VCE 2020 Economics Exam, Section B, Q2d © VCAA

Evaluate the effectiveness of monetary policy over the last two years in achieving the Australian Government's domestic macroeconomic goal of full employment.

Question 6 (6 marks)

Source: VCE 2019 Economics Exam, Section B, Q2d © VCAA

Using two monetary policy transmission mechanisms, **explain** the role of monetary policy in countering a slowdown in rates of economic growth.

Question 7 (6 marks)

Source: VCE 2019 Economics Exam, Section B, Q2e © VCAA

Assume an economy is experiencing a fall in the rate of unemployment but a weaker than expected growth in wages. **Explain** how this scenario might influence the setting of aggregate demand policies.

Question 8 (17 marks)

Source: Adapted from VCE 2019 Economics Exam, Section B, Q3a–d © VCAA

a. **Explain** the relationship between the budget outcome and the level of government (public) debt. **(4 marks)**

b. **Select** one example of a budgetary policy automatic stabiliser and **describe** how it operates to influence aggregate demand and the rate of economic growth. **(4 marks)**

c. **Discuss** one likely impact of the Australian Government's budgetary policy stance this year, as announced in the 2022–23 Budget, on the achievement of full employment and low inflation (price stability). **(6 marks)**

d. During 2021 and 2022, Australia's annual wages growth remained weak. **Describe** how wages growth remaining at low levels might have influenced the stance and focus of monetary policy during 2021 and 2022. **(3 marks)**

Question 9 (11 marks)

Source: VCE 2018 Economics Exam, Section B, Q2b&c © VCAA

a. Monetary policy influences aggregate demand and the wider economy via transmission mechanisms. Imagine the Reserve Bank of Australia raised the cash rate from 1.50% to 2.00%. **Explain** how two monetary policy transmission mechanisms might have operated to affect the level of aggregate demand and the rate of economic growth under those conditions. **(8 marks)**

b. **Outline** one weakness associated with using monetary policy to increase aggregate demand and the rate of economic growth. **(3 marks)**

Question 10 (11 marks)

Source: Adapted from VCE 2018 Economics Exam, Section B, Q4b,c&d © VCAA

a. The Australian Government has run a number of budget deficits in recent years. **Outline** two options available to the government when deciding how to finance a budget deficit. **(4 marks)**

b. 'The Government is delivering on its fiscal strategy and budget repair ….' (Source: The Commonwealth of Australia).
Explain one reason for the Australian Government's rationale related to its fiscal strategy and budget repair, and its wish to finally get back to a budget surplus. **(3 marks)**

c. **Examine** the likely effect of one important budgetary policy initiative announced in recent years, on aggregate demand and on the achievement of one of the government's domestic economic goals. **(4 marks)**

Question 11 (16 marks)

Source: Adapted from VCE 2017 Economics Exam, Section B, Q3d&e © VCAA

a. **Explain** how aggregate demand policies have influenced jobs and economic growth in the last two years. **(8 marks)**

b. **Evaluate** one strength and one weakness of using *each* of budgetary policy and monetary policy, in promoting economic growth and lowering unemployment recently. **(8 marks)**

Question 12 (25 marks)

Read the following extract from the RBA in June 2022 before answering questions that follow:

Statement by Philip Lowe, Governor: Monetary Policy Decision (7 June 2022)

At its meeting today, the Board decided to increase the cash rate target by 50 basis points to 85 basis points. It also increased the interest rate on Exchange Settlement balances by 50 basis points to 75 basis points (i.e. to 0.75 per cent).

Inflation in Australia has increased significantly … (and) is higher than earlier expected. Global factors, including COVID-related disruptions to supply chains and the war in Ukraine, account for much of this increase … But domestic factors are playing a role too, with capacity constraints in some sectors and the tight labour market contributing to the upward pressure on prices. The floods earlier this year have also affected some prices.

Inflation is expected to increase further... Higher prices for electricity and gas and recent increases in petrol prices mean that, in the near term, inflation is likely to be higher than was expected … Today's increase in interest rates will assist with the return of inflation to target over time.

The Australian economy is resilient, growing by 0.8 per cent in the March quarter and 3.3 per cent over the year … Macroeconomic policy settings are supportive of growth and national income is being boosted by higher … terms of trade.

The labour market is also strong … and the unemployment rate is 3.9 per cent … the lowest rate in almost 50 years. Job vacancies and job ads are at high levels … (and) point to a lift in wages growth … as firms compete for staff in a tight labour market.

One source of uncertainty about the economic outlook is how household spending evolves, given the increasing pressure on Australian households' budgets from higher inflation …

The Board will also be paying close attention to the global outlook, which remains clouded by the war in Ukraine and its effect on the prices for energy and agricultural commodities. Real household incomes are under pressure … as central banks withdraw monetary policy support in response to broad-based inflation. There are also ongoing uncertainties related to COVID, especially in China …

Today's increase in interest rates by the Board is a further step in the withdrawal of the extraordinary monetary support that was put in place to help the Australian economy during the pandemic … (that) is no longer needed … The Board expects to take further steps in the process of normalising monetary

conditions in Australia over the months ahead … (and) will be guided by the incoming data … for inflation and the labour market. The Board is committed to doing what is necessary to ensure that inflation in Australia returns to target over time.

Source: Edited version of RBA, Media release, see https://www.rba.gov.au/media-releases/2022/mr-22-14.html

a. **Define** the term *monetary policy*. **(2 marks)**

b. **Outline** the decision of the RBA Board in June 2022, regarding the settings or stance for conventional monetary policy. **List** and **outline** the domestic and international factors that led to this decision. **(4 marks)**

c. **Outline** the main features of the *policy interest rate corridor*. With the cash rate target in June 2022 set at 0.85 per cent, **describe** the levels of the RBA's deposit rate and lending rate in the short-term money market. **(2 marks)**

d. **Explain** how the RBA can use its daily open market operations to help ensure that the actual cash rate stays close to the RBA's new cash rate target. **(3 marks)**

e. **Explain** what the RBA means by 'the withdrawal of the extraordinary monetary support that was put in place to help the Australian economy during the pandemic'. **(4 marks)**

f. **Explain** the implied connection in the extract between falling unemployment, faster wage growth and a higher inflation rate. **(2 marks)**

g. **Explain** one potential *weakness* of the change in the RBA's monetary policy stance adopted in June 2022. **(2 marks)**

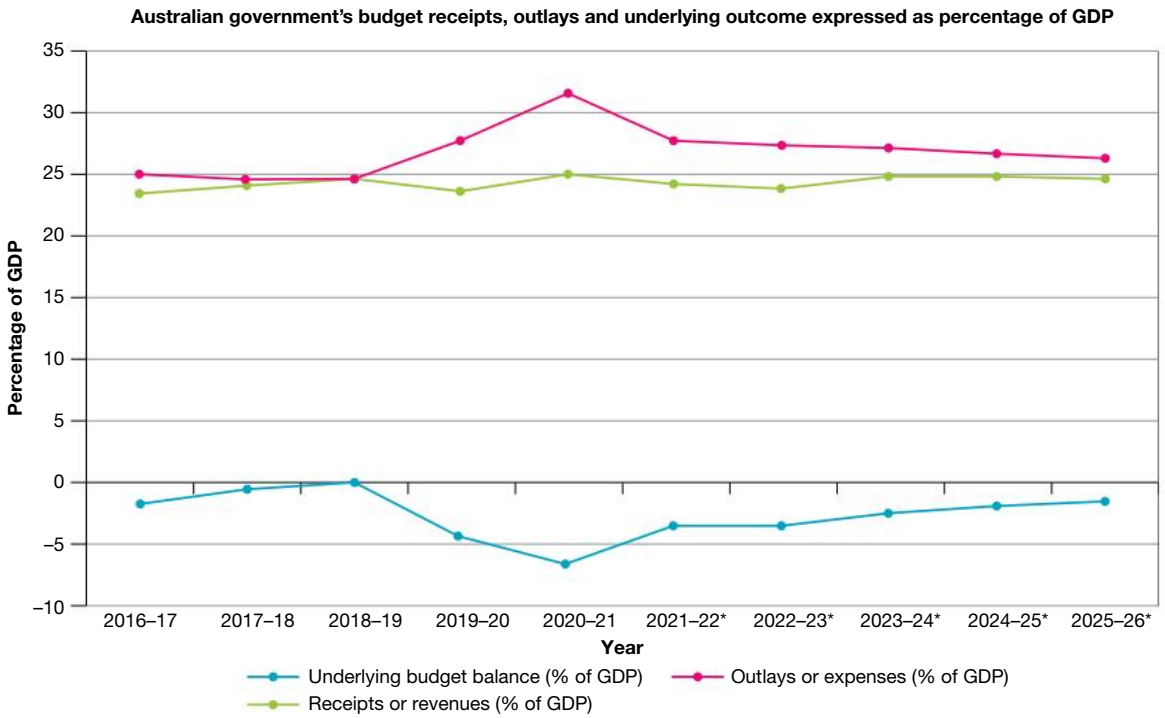
h. Referring to the extract, **explain** the circumstances under which the RBA may decide to further *raise* its cash rate target. **(2 marks)**

i. **Identify** and **explain** how both the exchange rate and cash flow channels as transmission mechanisms, would normally operate to affect AD and economic activity following a rise in the cash rate target in June 2022 from 0.35 to 0.85 per cent. **(6 marks)**

Question 13 (28 marks)

Examine the following graph before answering the questions that follow:

Australian government budget receipts, outlays and underlying outcome expressed as percentage of GDP.



Source: Derived from the Australian government, Budget, Statement 10, Historical government data, P341, see https://budget.gov.au/2022-23/content/bp1/download/bp1_2022-23.pdf.

a. **Define** the term *budgetary policy*, and **explain** why it can be regarded as an aggregate demand policy. **(3 marks)**

b. **Outline** the main aims of the Australian government's budgetary policy in recent years. **(2 marks)**

c. **Outline** why many commentators prefer to use budget data expressed as a percentage of GDP as shown on the graph, rather than simply in terms of the number of dollars. **(2 marks)**

d. Referring to the graph and giving reasons, **describe** the *change in policy stance* over each of the following periods:

- **a.** 2018–19 to 2020–21
- **b.** 2020–21 onwards. **(4 marks)**

e. **Explain** how you would expect the budget stance in 2020 –21, to have affected Australian living standards **(4 marks)**

f. **Identify** and **outline** two important factors that might explain why the treasurer has forecast a decline in the size of the budget deficit in upcoming years. **(2 marks)**

g. Referring to the graph, **explain** the impact of recent budget outcomes on the level of government debt. **(2 marks)**

h. Over the medium-term, **explain** why it is it important to undertake *fiscal consolidation*, reduce the budget deficit and return to surplus. **(3 marks)**

i. **Explain** how the operation of automatic and discretionary budget stabilisers would be likely to impact the budget outcome if Australia's rate of economic growth accelerated to 4.0 per cent, over the next few years. **(6 marks)**

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TOPIC

5 Aggregate supply policies

UNIT 4 AREA OF STUDY 2

Aggregate supply policies

OUTCOME 2

On completion of this unit the student should be able to discuss the operation of aggregate supply policies and analyse the effect of these policies on the domestic macroeconomic goals and living standards.

LEARNING SEQUENCE

5.1 Overview 410
5.2 The nature of aggregate supply policies 413
5.3 The budget as an aggregate supply policy 419
5.4 Encouragement of skilled immigration as an aggregate supply policy 449
5.5 Trade liberalisation as an aggregate supply policy 463
5.6 A market-based environmental strategy as an aggregate supply policy 473
5.7 Strengths and weaknesses of using aggregate supply policies — review 488
5.8 Review 492



5.1 Overview

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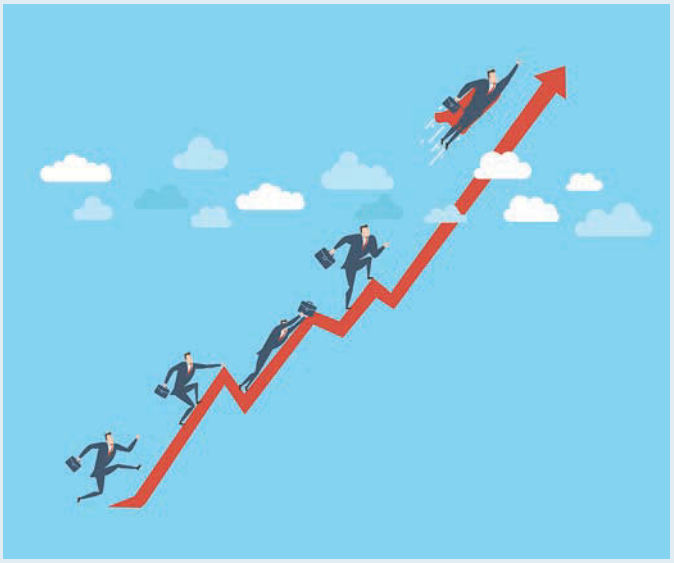
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5.1.1 Introduction

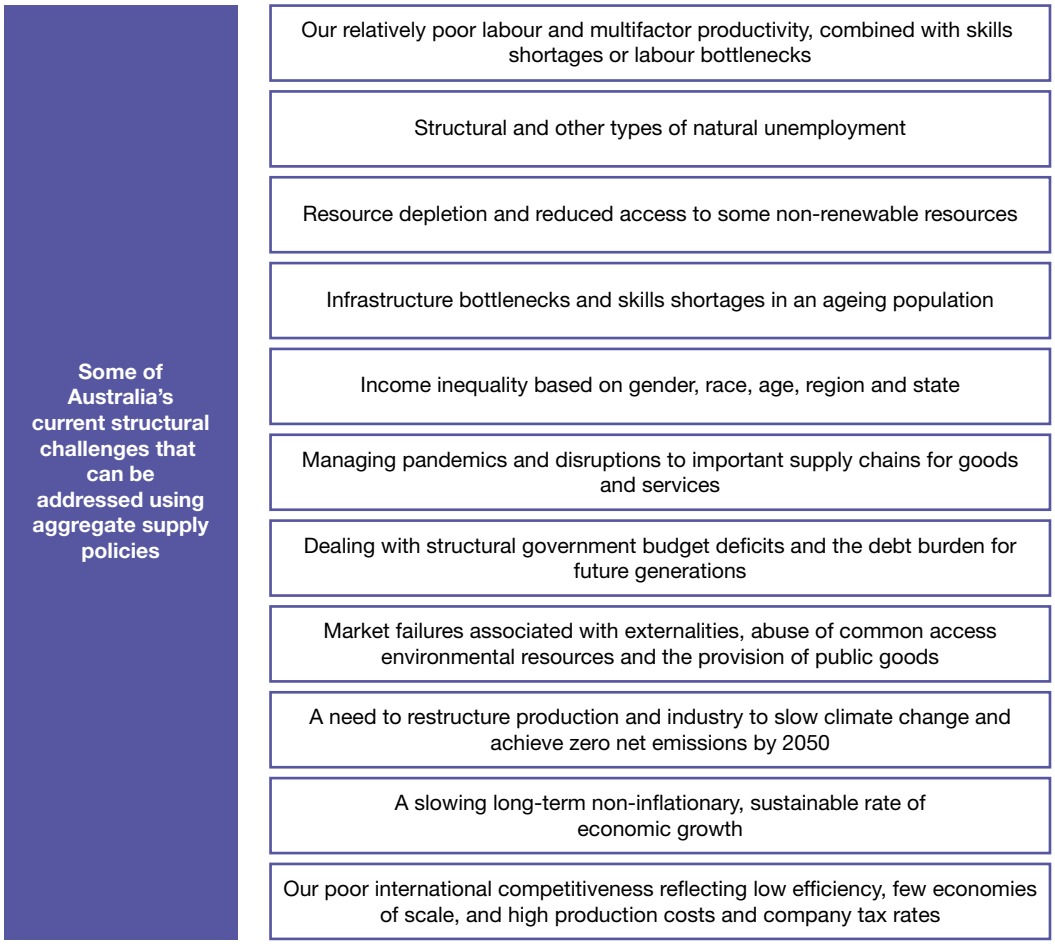
AGGREGATE SUPPLY POLICIES

Aggregate supply policies consist of a wide range of government cost-cutting, efficiency-promoting strategies designed to make aggregate supply conditions more favourable for producers. Producers are consequently more able and willing to supply goods and services and in so doing, grow Australia's productive capacity or the potential size of GDP and income. For example, these policy measures might include creating financial incentives or subsidies for individuals and businesses to expand operations, the building of more efficient national infrastructure, the use of trade liberalisation to increase competition and efficiency in resource allocation, tax reforms to incentivise effort and investment, and improving education and training to lift labour productivity. By helping to grow the economy's productive potential in these ways, key domestic macroeconomic goals like strong non-inflationary economic growth, full employment, and low inflation should be more achievable, allowing us to enjoy higher living standards.



Today, the Australian economy faces significant *structural problems* that act as barriers which make suppliers of goods and services less willing and/or able to produce, weakening our economic performance. These obstacles mostly relate to *how* we go about making goods and services. Some of the aggregate supply-side *structural challenges* are shown in figure 5.1.

FIGURE 5.1 Some structural challenges facing Australia that can be lessened using government aggregate supply policies.



Unfortunately, the existence of these barriers undermines our *living standards*. However, unlike *cyclical problems* such as booms and recessions, demand inflation and cyclical unemployment, *structural problems* cannot be fixed simply using government *aggregate demand policies* that focus on countercyclically managing the levels of spending on economic activity. These *structural problems* require the use of *aggregate supply policies* like:

- building national infrastructure
- improving education and training
- encouraging research and development (R&D)
- using subsidies to change behaviour
- tax reform
- encouraging skilled immigration
- liberalising international trade
- applying market-based environmental initiatives to reduce emissions and improve sustainability.

These policy measures offer an opportunity to reduce the severity of *structural challenges*, and in so doing, help to create an environment that is more sustainable over time and conducive to better *material* and *non-material living standards*.

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 use of aggregate supply policies to complement aggregate demand policies in promoting non-inflationary economic growth over time	**5.2**
◯ The operation of aggregate supply policies in improving supply-side conditions through their impact on the quantity and quality of the factors of production, the costs of production and productivity, and the effect on Australia's international competitiveness, productive capacity and aggregate supply	**5.2**
◯ How one of the following budgetary policies is designed to affect aggregate supply, Australia's international competitiveness, the achievement of domestic macroeconomic goals, and living standards: – Training and education – Research and development – Subsidies – Infrastructure – Tax reform	**5.3**
◯ The effect of skilled immigration policy on population, productivity and participation and the subsequent effect on productive capacity, aggregate supply, international competitiveness, the achievement of domestic macroeconomic goals, and living standards	**5.4**
◯ Trade liberalisation and its short-term and long-term effects on Australia's international competitiveness, the allocation of resources, aggregate supply, and the domestic macroeconomic goals and living standards	**5.5**
◯ One market-based environmental policy and its short-term and long-term effects on aggregate supply, intertemporal efficiency and living standards	**5.6**

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 economic issues and form conclusions
◯ Discuss the operation of aggregate supply policies
◯ Analyse the effect of budgetary, immigration and trade liberalisation policies on aggregate supply, international competitiveness, the achievement of the domestic macroeconomic goals and living standards
◯ Analyse the effect of an environmental policy on aggregate supply and living standards over time

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Digital document Key terms glossary (doc-34514)

5.2 The nature of aggregate supply policies

KEY KNOWLEDGE

- The use of aggregate supply policies to complement aggregate demand policies in promoting non-inflationary economic growth over time
- The operation of aggregate supply policies in improving supply-side conditions through their impact on the quantity and quality of the factors of production, the costs of production and productivity, and the effect on Australia's international competitiveness, productive capacity and aggregate supply

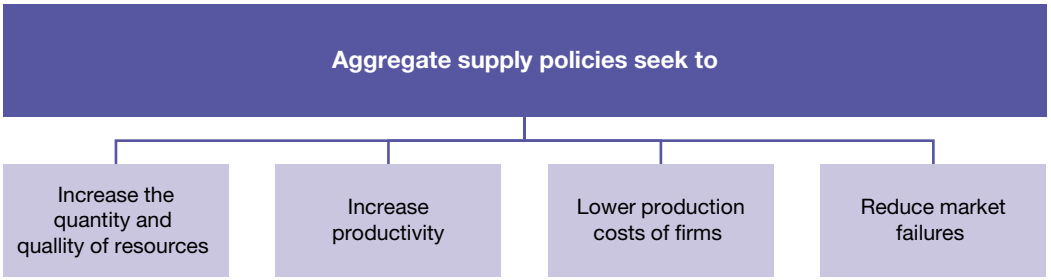
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5.2.1 Definition of aggregate supply policies, and an overview of their operation

Aggregate supply policies *include a wide range of government strategies designed to make supply conditions more favourable for individuals, firms and industries that produce goods and services, so they are more able and willing to expand output and grow Australia's productive capacity. These policies include budget outlays on infrastructure, education and training, R&D and subsidies, along with other strategies such as tax reform, the encouragement of skilled migration, trade liberalisation and environmental policy.*

Together, these measures seek to:

- ***increase the quantity*** (volume) ***and quality*** (efficiency) of natural, labour and capital *resources* available to enable and encourage the growth of productive capacity and the potential non-inflationary rate of economic growth
- ***raise productivity***, so more output can be gained from the same or fewer inputs, thereby increasing productive capacity and the potential, non-inflationary rate of economic and income growth
- ***lower the production costs of firms*** so they are more internationally competitive and profitable, making them more willing to expand their operations, and increase the potential, non-inflationary rate of economic growth
- ***reduce market failure*** to help improve efficiency in resource allocation and the satisfaction of society's wants, wellbeing and living standards, both now and into the future.



Many of the beneficial macroeconomic effects of *successful aggregate supply policies* can be illustrated using an *aggregate demand–supply diagram*. These impacts are shown in figure 5.2.

Here, policies that increase Australia's *productive capacity,* shift the whole *aggregate supply line* outwards and to the right of the original line (the increase from AS_1 to AS_2 on the AD–AS diagram, or on the *production possibility diagram*, this could be shown through an outward shift of the production possibility frontier). Returning to the AD–AS diagram, notice that aggregate supply policy measures that grow productive capacity through increased resources and/or efficiency, will boost the sustainable level of national production (the rise from GDP_1 to GDP_2) that can be achieved, whilst at the same time, allowing us to enjoy even lower cost inflation and prices (the fall from P_1 to P_2). In the long-term and with the right strategies, it may also be possible

to expand national output with less environmental damage. Clearly aggregate supply policies can *complement* aggregate demand policies and offer enormous potential for governments to help strengthen our macroeconomic environment, competitiveness and living standards. We will soon look more closely at how these strategies might work to reduce the structural challenges we now face.

FIGURE 5.2 How effective aggregate supply policies can slow cost inflation, lift the sustainable rate of GDP and employment growth, and improve Australia's international competitiveness and material living standards.

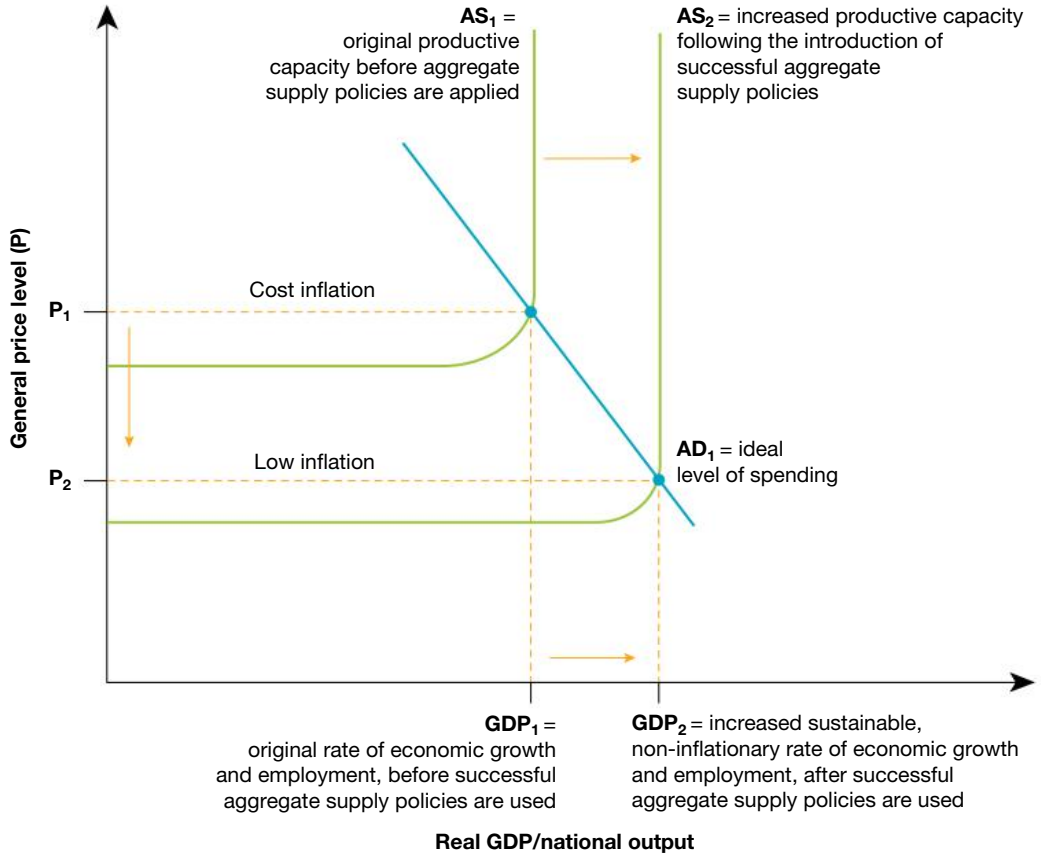


Figure 5.3 provides an overview of the aggregate supply policies on which we will focus during this topic.

While these *aggregate supply policies* can be seen as largely *complementary* to the *aggregate demand measures* that we studied earlier in Topic 4 (since both are used to help promote the government's domestic macroeconomic goals and improve living standards), they *differ* in at least *three* important ways:

- ***They work in different ways and use different economic theories.*** On the one hand, aggregate demand budgetary and monetary policies influence Australia's domestic macroeconomic conditions by countercyclically stabilising the growth in the level of *spending* (AD) and economic activity. This is based on Keynesian economic theory. On the other hand, aggregate supply policies like tax reform, skilled immigration and budget outlays on education and infrastructure, try to make conditions more favourable for producers, grow our economy's efficiency and increase productive *capacity* (AS) so that the country can produce a higher, more sustainable level of national output (AS). A combination of these two approaches allows Australia's rising demand for goods and services to be matched or *balanced* by a growing capacity to supply, without accelerating inflation.
- ***They work on slightly different economic problems.*** By helping to countercyclically stabilise spending, aggregate demand budgetary and monetary policies can help to moderate *cyclical problems* like booms and recessions, demand inflation and cyclical unemployment, that would otherwise undermine our living standards. In contrast, aggregate supply policies can help to overcome *structural problems* — such as cost

inflation, poor international competitiveness, high natural unemployment, skills shortages, and a low non-inflationary environmentally sustainable rate of economic growth — as a way of enhancing our general wellbeing.

- ***They often operate over different time frames.*** Aggregate demand policies largely focus more on stabilising spending over the short- to medium-term, whereas some (but not all) aggregate supply policies tend to concentrate more on improving longer term conditions that affect the economy's productive capacity and performance.

FIGURE 5.3 An overview of the key government aggregate supply policies.

Overview of the Australian government's aggregate supply policies

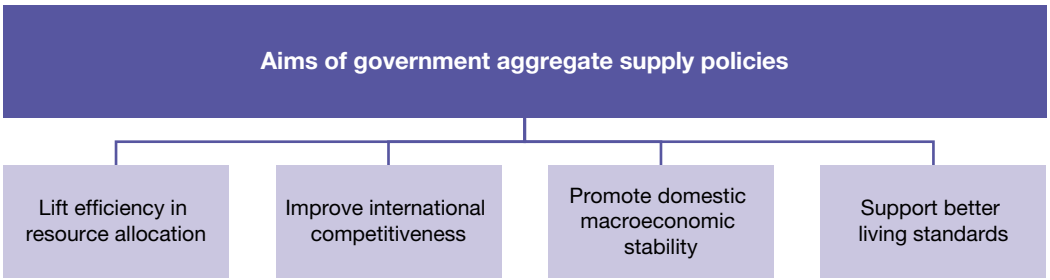
... generally involve measures to improve the *willingness* and *ability* of Australian firms and individuals to produce goods and services by increasing the resources available and allocating them more efficiently, and in so doing, help to increase our international competitiveness, improve the domestic macroeconomic environment, and sustainably strengthen our living standards.

1. A budgetary policy used to affect aggregate supply:	2. The policy of skilled immigration to affect aggregate supply:	2. The policy of trade liberalisation to affect aggregate supply:	3. A market-based environmental policy to affect aggregate supply:
Some budgetary measures can help make aggregate supply conditions more favourable by increasing efficiency, cutting production costs, strengthening profits, and improving international competitiveness so producers become more willing and able to expand productive capacity. They include (students must select *one* policy measure) ... • Budget outlays to improve national infrastructure • Budget outlays to improve education and training • Budget support for R&D • Budget subsidies • Tax reforms.	The policy of skilled immigration seeks to increase efficiency, grow productive capacity and expand aggregate supply. It involves ... • Giving priority entry to young immigrants with wanted skills, thereby improving the quality of our human capital resources • Growing the size of our labour force in a country with an ageing population. This can help to ease skills shortages, grow productivity and keep wage costs lower.	Trade liberalisation seeks to increase competition and efficiency and hence grow aggregate supply. It involves gradually reducing levels of industry protection from import competition. Trade liberalisation may include ... • Cutting tariff rates (taxes on imports) • Abolishing import quotas (quantitative and qualitative limits) • Signing more bilateral and regional free trade agreements • Easing other types of restrictions on imports and capital flows.	Market-based environmental policies seek to improve aggregate supply conditions and increase intertemporal efficiency. Over time, living standards are more sustainable. This strategy reduces CO_2 pollution by using market or price incentives to change the behaviour of producers and/or consumers of goods and services. Policies may include (students must select *one* policy measure) ... • A carbon tax • The operation of an emissions trading scheme (ETS) • Providing targeted subsidies for projects that reduce carbon emissions.

5.2.2 The aims of government aggregate supply policies

Government *aggregate supply policies* seek to promote at least *four* key aims:

- Foremost, they try to lift *efficiency* (i.e. allocative, technical, dynamic, and intertemporal) in the allocation of scarce resources
- Through greater efficiency and cost cutting, they usually seek to improve our *international competitiveness*
- Greater efficiency and competitiveness help *promote the government's three key domestic macroeconomic goals* (i.e. low inflation, a strong and sustainable rate of economic growth, and full employment)
- Through greater efficiency, improved international competitiveness, and a stronger domestic economic performance, the hope is that over time, conditions will become optimal for *better living standards* and general wellbeing.



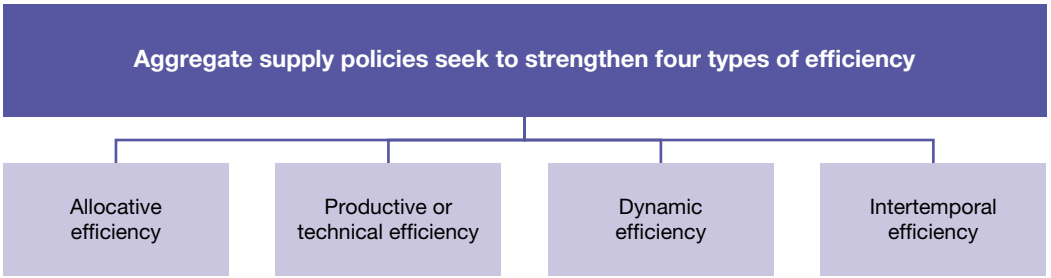
Now for a closer look at each of these *four* aims so that when specific aggregate supply policies are examined shortly, you will more readily be able to make connections.

1. Aggregate supply policies aim to improve efficiency in resource allocation

A central aim of aggregate supply policies is to grow Australia's productive capacity and the potential level of GDP and aggregate supply, through increasing **efficiency** (the change in the ratio of output gained from a unit of productive inputs used) in how our resources are allocated over both the short- and long-term. When more output is gained from the same inputs, it is possible for a nation to expand its productive capacity leading to higher living standards. Specifically, aggregate supply policies seek to strengthen *four* different types of efficiency:

- **Allocative efficiency** can be illustrated on a production possibility diagram (PPD), as any point on the production possibility frontier (PPF). At a moment in time, any point chosen on this frontier could potentially maximise the general satisfaction of society's wants. It is about ensuring that resources go to where they are most wanted or valued by society. Even so, allocative efficiency may be improved by using government aggregate supply policies to promote stronger competition between sellers of goods and services in various markets, perhaps by using measures like trade liberalisation to expose local firms to stronger competition from imports. These aggregate supply policies help to ensure that scarce resources move to where they are most efficiently used. Allocative efficiency can sometimes require government policy intervention to overcome market failure associated with positive externalities. In the absence of such policies socially-beneficial goods and services like education and health may be underproduced. In this way, aggregate supply policies can help to ensure that resources go into areas that maximise society's satisfaction or general wellbeing over both the short- and long-term.
- **Productive** or **technical efficiency** is about businesses using the least-cost method of production. Aggregate supply policies such as government encouragement of skilled immigration, along with budget outlays on education and training, and research and development, can help firms to cut their production costs by employing the best international practices, skills, technology, and equipment that is available. Improvements in technical efficiency should also help to shift a nation's production possibility frontier outwards, enabling even more wants to be satisfied, thereby increasing allocative efficiency and society's general wellbeing.
- **Dynamic efficiency** involves firms being adaptive and creative in response to changing economic circumstances. Here, aggregate supply policy needs to encourage market flexibility and resilience when faced with changing tastes among buyers. Better dynamic efficiency can help improve the general satisfaction of society's wants. Dynamic efficiency is also enhanced when employees upgrade their education and training, when there is a culture of market research and product development, and when firms are encouraged to be innovative and creative. Thinking of the production possibility diagram, dynamic efficiency affects the *speed* of moving from one point chosen on the frontier to another, thereby ultimately increasing allocative efficiency and general wellbeing.
- **Intertemporal efficiency** is about finding the right balance between employing resources for immediate versus future use. This involves trade-offs. One of the costs of taking a short-term view could be leaving a degraded environment and lower living standards for future generations caused by the over exploitation of non-renewable resources and common access resources (e.g. the air, rivers, forests, oceans, and climate). Clearly, aggregate supply policies including environmental measures, can help to rebalance intertemporal

efficiency so it is more equitable and sustainable. This will affect the *long-term* size of a nation's PPF and the extent to which society's wellbeing is maximised.



So, the main thing about *aggregate supply policies* (budgetary, skilled immigration, trade liberalisation, and environmental measures), is that especially over time, they all help to strengthen various aspects of efficiency. In turn, greater efficiency not only allows for higher non-inflationary and sustainable rates of economic, employment and income growth, but also better material and non-material living standards for Australians.

2. Aggregate supply policies aim to strengthen the international competitiveness of Australian industry

A second aim of aggregate supply policies is to make local businesses more *internationally competitive* so that they can sell quality goods at lower prices, than their overseas rivals. Appropriate policies here might involve measures to reduce cost inflation by providing financial support for research and product development, increased budget outlays on education, training and infrastructure, reforms to reduce business tax rates to stimulate investment in new equipment and technology, and trade liberalisation to strengthen competition and efficiency in domestic markets. Because of better competitiveness, Australian firms should then be able to grow their sales at home and abroad, boosting output, employment, incomes and living standards.

3. Aggregate supply policies aim to promote domestic macroeconomic stability

The Australian government uses efficiency-promoting, cost-cutting, capacity-building *aggregate supply policies* to help strengthen the achievement of Australia's *domestic macroeconomic goals*:

- *The aim of a sustainable, non-inflationary rate of economic growth through greater efficiency:* A strong and sustainable rate of economic growth is the fastest increase in Australia's GDP, perhaps averaging around 3 per cent a year, that does not accelerate inflation or undermine the achievement of other economic and environmental goals. Normally, faster rates of economic growth over the long-term put pressure on inflation and degrade the environment. Because aggregate supply policies like the encouragement of skilled immigration, government investment in infrastructure, spending on education and R&D, tax reform, and environmental policy, can lift efficiency and reduce production costs, they also increase the speed at which the economy could potentially grow, sustainably improving living standards, both now and into the future.
- *The aim of promoting low inflation by cutting production costs:* The goal of low inflation (price stability) is to keep the average rise in consumer price to between 2 and 3 per cent per year over time. Normally, inflation rises quickly when there are demand and/or cost pressures pushing up prices. Many aggregate supply policies such as government investment in national infrastructure, budget outlays on education and subsidies, reforms involving lower tax rates and encouragement of skilled immigration, aim to improve productivity and slow production costs (e.g. the cost of transport and wages). With lower cost pressures, firms can profitably sell their goods and services more cheaply, keeping the inflation rate lower than otherwise.



- *The aim of promoting full employment, especially in the long run:* The goal of full employment is the lowest rate of unemployment, perhaps around 4 to 4.5 per cent of the labour force, that does not cause wages costs and prices to rise (i.e. NAIRU). While cyclical unemployment can be caused by a lack of spending, natural unemployment is mostly the result of structural changes in the way goods and services are produced. In the *long-term*, aggregate supply policies including budget outlays on education, training, and infrastructure, along with reforms like lower rates of company tax, can help reduce the rate of natural unemployment, without accelerating inflation. Here, budget outlays on training can help fill labour shortages and improve the employability of labour resources. Aggregate supply policies can also help cut production costs and make Australian firms and workers more internationally competitive and profitable. When profits are stronger, fewer firms close down; in contrast, more businesses start up or expand. *Over time*, this could also help to create more jobs and reduce structural unemployment. As a result, real incomes and living standards ought to benefit. However, this is not to deny that especially in the *short-term*, some aggregate supply policies like trade liberalisation and environmental measures, may cause a rise in structural unemployment.

4. Aggregate supply policies aim to support better living standards

Today, the Australian economy faces significant *structural* or aggregate supply *problems* that are a barrier to better living standards. As we shall see in some detail, over time, appropriate government *aggregate supply policies* (e.g. tax reform, building national infrastructure, improving education and training, encouraging R&D, using subsidies, further liberalising trade, immigration to ease labour shortages, and applying environmental initiatives to reduce emissions and climate change), can reduce the severity of these *structural problems*.

By increasing the quantity and efficiency of resources available, creating incentives for suppliers of goods and services, and growing productive capacity, aggregate supply policies can improve our international competitiveness, strengthen domestic macroeconomic conditions, and ultimately, support sustainable *living standards* for Australians.

on Resources

Weblinks Policies for managing aggregate supply
Supply-side policies
Supply-side economics
Productivity

5.2 Activities

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5.2 Quick quiz on | 5.2 Exercise

5.2 Exercise

1. **Define** aggregate supply policies. **(2 marks)**
2. **Identify** and **outline** the main aims of aggregate supply policies. **(4 marks)**
3. **a** **Contrast** aggregate supply policies and aggregate demand policies. **(4 marks)**
   b. Aggregate supply policies try to increase efficiency.
   Distinguish between the following types of efficiency:
   i. allocative efficiency and technical (productive) efficiency **(2 marks)**
   ii. intertemporal efficiency and dynamic efficiency. **(2 marks)**
   c. **Draw** and **use** a fully labelled and annotated AD–AS diagram to show how successful aggregate supply policies might be expected to affect each of the following: **(4 marks)**
   i. AS line and efficiency in resource allocation
   ii. the sustainable rate of economic growth
   iii. the inflation rate
   iv. material living standards.
   d. In general terms, **outline** how aggregate supply policies may be used to help achieve any *two* of the following government goals:
   i. low inflation (also called price stability)
   ii. strong and sustainable economic growth
   iii. lower unemployment
   iv. improvements in living standards. **(4 marks)**

Solutions and sample responses are available online.

5.3 The budget as an aggregate supply policy

KEY KNOWLEDGE

- How one of the following budgetary policies is designed to affect aggregate supply, Australia's international competitiveness, the achievement of domestic macroeconomic goals, and living standards:
  - Training and education
  - Research and development
  - Subsidies
  - Infrastructure
  - Tax reform

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

Some budgetary policies can be used to increase aggregate supply and help grow Australia's resources, efficiency and productive capacity, thereby strengthening our living standards. **Aggregate supply budgetary policies** *involve changes in particular budget receipts and/or outlays to help allocate resources more efficiently into key areas, correcting market failure*. **The Economics Study Design (2023–27) lists five specific aggregate supply budgetary measures:**

1. Government investment in building national infrastructure
2. Government spending on training and education
3. The selective use of government subsidies
4. Provision of government research and development (R&D) grants and tax concessions
5. Tax reforms.

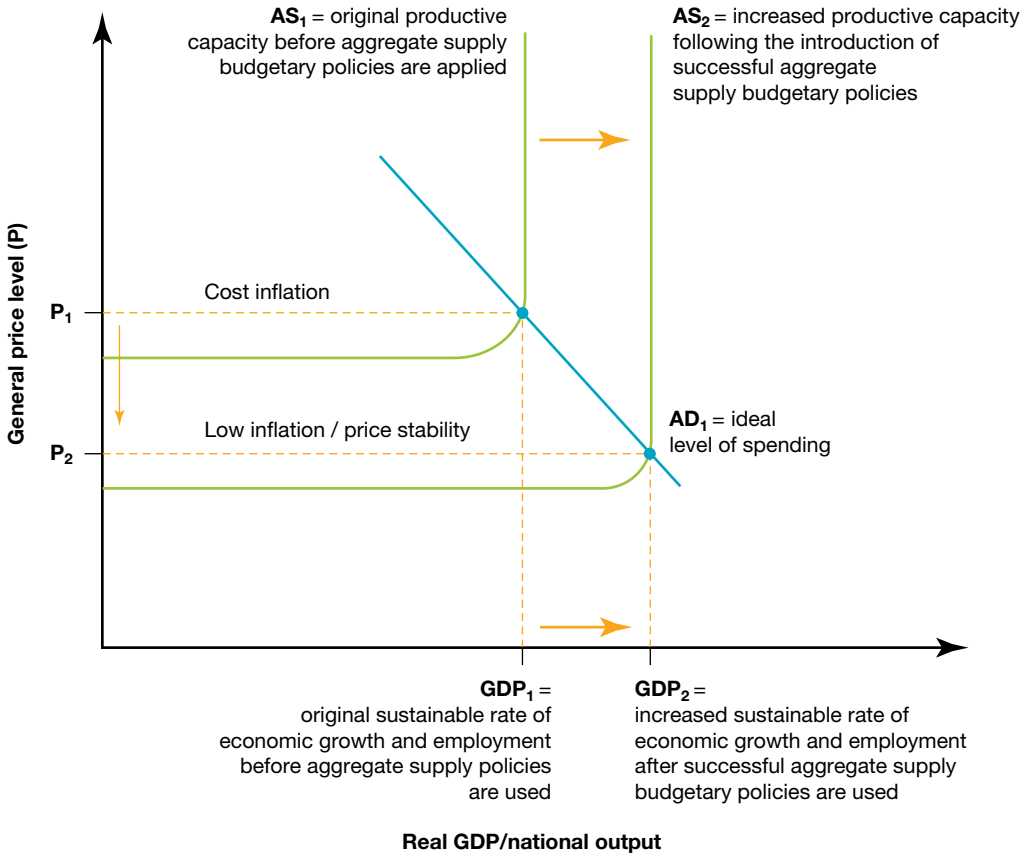
Of these five options, students are required to select just one for investigation. To help inform your choice, take a look at figure 5.4. It provides a brief overview.

FIGURE 5.4 An overview of five budgetary measures that can affect aggregate supply (students to select one option).



With this broad outline in mind, figure 5.5 diagrammatically illustrates how these five budgetary policy measures can be used to strengthen conditions so individuals and firms become more willing and able to produce. This helps to grow productive capacity and increase aggregate supply (the shift from AS_1 to AS_2), boosting the sustainable level of real national output (the rise from GDP_1 to GDP_2). At the same time, these efficiency measures can also slow cost inflation (the fall from P_1 to P_2). In other words, aggregate supply aspects of budgetary policy can enable the country to enjoy higher average incomes, more purchasing power, and better living standards.

FIGURE 5.5 How aspects of budgetary policy can be used to grow Australia's productive capacity and AS.



5.3.1 Option 1: Budget outlays on national infrastructure can grow aggregate supply

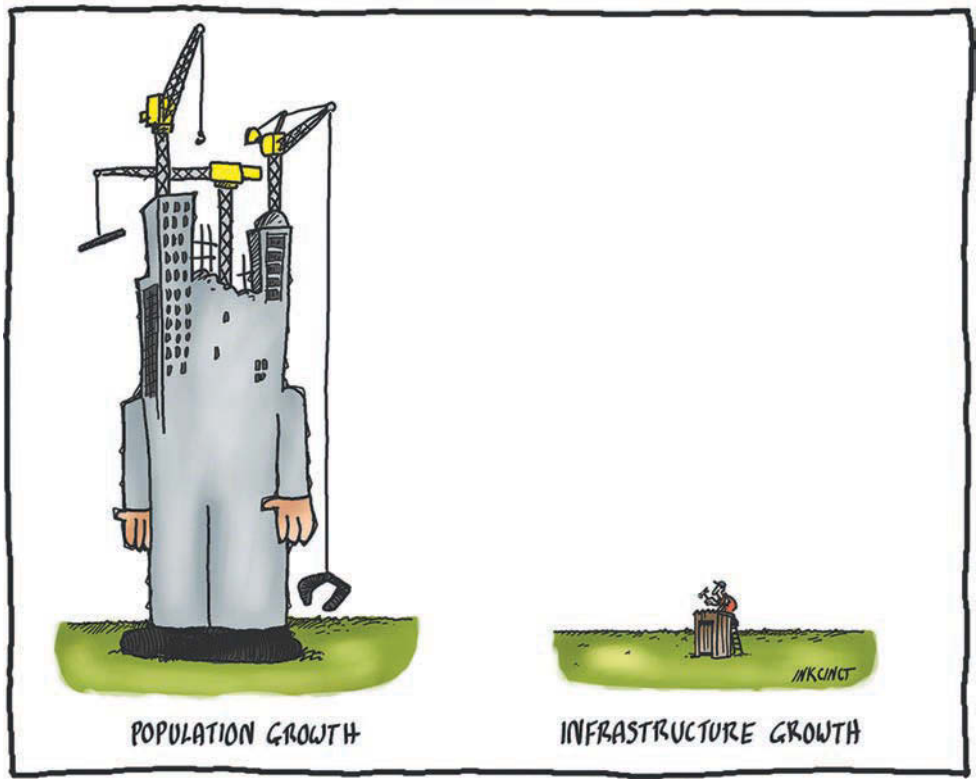
Infrastructure investment *can be regarded as an aggregate supply budgetary policy that involves federal government outlays on capital resources (G_2) that are used by suppliers to produce other goods and services.*

There are *two* types of infrastructure:

- *Social infrastructure* involves the provision of capital goods mostly connected with education and health.
- *Economic infrastructure* includes highways, railways, sea ports, airports, electricity capacity and delivery, gas, telecommunications, sewerage and water supply.

Both types of infrastructure can influence the level of aggregate supply and help to make firms more able and willing to produce. However, in this section we will focus mostly on *economic* infrastructure.

FIGURE 5.6 It is widely recognised that building national infrastructure projects involving investment in transport, water, communication and electricity can enhance efficiency and the productive capacity of the economy. Good infrastructure should make producers more able and willing to supply goods and services by reducing their production costs and encouraging them to expand operations, rather than close down. In turn, infrastructure can help grow our potential GDP and incomes, and allow Australian producers to be more internationally competitive. Unfortunately, the building of infrastructure has not kept pace with our rapid growth in population.



There are also other features of infrastructure investment that need to be kept in mind:

- There are usually long lead times in their identification, planning and construction.
- For some infrastructure projects, low profits in the short term can cause them to become relatively unattractive for private sector investors. This can lead to underproduction and market failure.
- In most markets, the price system efficiently allocates resources between uses. Supply-side shortages are indicated or signalled by rising prices and increased profitability. This normally attracts extra resources into production. However, despite recent government reforms, infrastructure markets (e.g. for urban and rural water, power, road, rail transport, and gas) are still not very responsive in this way.
- Infrastructure often involves external benefits (positive externalities) where the economic and social returns are far beyond those directly received by individual investors. This leads to its underproduction, market failure and capacity restrictions that limit the potential level of GDP.

Key features of the government's recent policy on infrastructure

Government budget outlays on national infrastructure involve spending on capital resources associated with areas like transport, power, telecommunications and water, that are needed to produce other goods and services. If the government provides adequate and efficient infrastructure, this can lower production costs, and make aggregate supply conditions more favourable, encouraging business expansion and a higher potential level of national output. However, if infrastructure provision is inadequate and there are shortages or bottlenecks, efficiency is lower, production costs are higher, international competitiveness is reduced, and our productive capacity (and potential GDP) and AS are limited.

Traditionally, Australia's national infrastructure projects have been largely financed directly through government (public) investment or capital outlays in the budget (G_2). At the federal level, these ventures are sometimes paid directly from tax receipts, but they can be funded by borrowing, perhaps through the sale of government bonds or by using dividends generated from special purpose savings funds that are mostly managed by the Future Fund. *Infrastructure Australia*, a statutory body, has been set up to advise the government about infrastructure, including impediments to efficiency. It is also required to develop a 'priority list' for important national infrastructure projects.



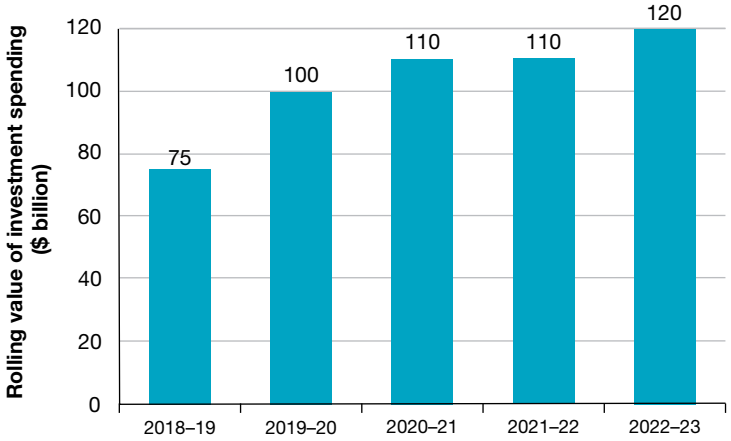
While still important, increasingly, there has been a shift away from direct provision by the government, towards *contracting out* of the construction and operation of infrastructure projects to the private sector, sometimes using *public-private partnerships* (PPP). This has been encouraged and incentivised using subsidies and tax concessions designed to make it more profitable and to help correct *market failure* and underinvestment due to the existence of *positive externalities*.

Today, however, we are faced with infrastructure *bottlenecks or shortages*. These are due in part to inadequate levels of investment spending in the face of rapid population growth and high levels of immigration. These shortages limit capacity, undermine efficiency, raise production costs for Australian firms and reduce our international competitiveness. In turn, this contributes to business closures and slows expansion, limits the growth of productive capacity and lowers average living standards.

Figure 5.7 shows that the Australian government ramped up its building of national infrastructure in key areas like energy, water and telecommunications, and especially transport in an attempt to catch up the backlog. Starting a few years back, a rolling Ten-Year Infrastructure Plan was adopted. For example, the 2018–19 budget committed $75 billion, but more recently for 2022–23, this had increased to $120 billion in budget outlays.

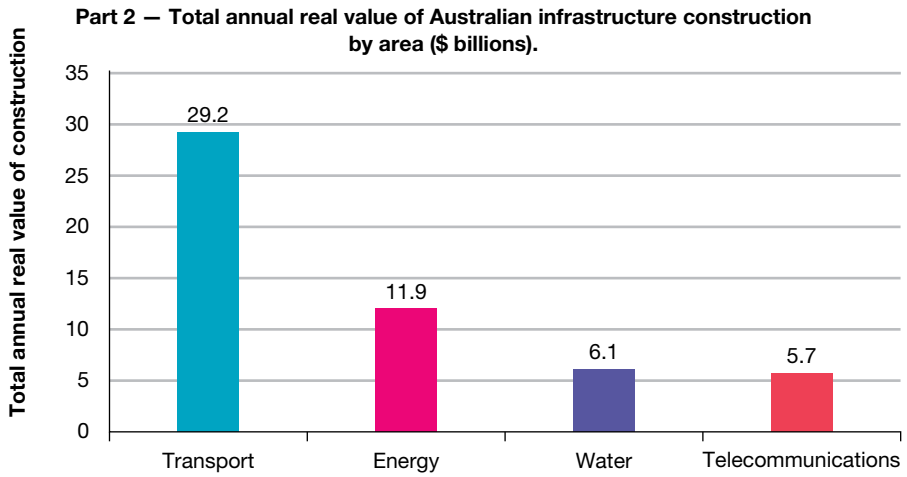
FIGURE 5.7 Snapshot of Australian government budget outlays on national infrastructure projects.

Part 1 — Trend in the annual rolling 10-year value of Federal government budget funding committed to building national infrastructure ($ billion).



(continued)

FIGURE 5.7 Snapshot of Australian government budget outlays on national infrastructure projects. *(continued)*



Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (BITRE), Yearbook 2021, see https://www.bitre.gov.au/sites/default/files/documents/bitre-yearbook-2021.pdf.

Some of the more specific government policy initiatives include the following:

- *Transport projects:* Road, rail, sea and air transport infrastructure is an important influence on an economy's level of efficiency, production costs and ultimately, the prices paid by domestic and overseas consumers of our goods and services. For instance, poor transport infrastructure and congestion mean higher costs due to extra fuel usage, longer travel times, increased wages, and higher maintenance of vehicles and equipment, along with other costs including the loss of life due to accidents. Unfortunately, there has been under-investment in this area, given our rapid population growth and long transport distances. This has discouraged business expansion causing some firms to relocate overseas, closer to key markets. Some of the important areas for infrastructure investment have included to following:
  - *Air transport:* Recent budgets to 2021–22 allocated funding to improve our airports. For example, $5 billion was made available to build the new Western Sydney International (Nancy-Bird Walton) Airport, and upgrade works have and are being undertaken for the Hobart, Newcastle and other regional airports.
  - *Rail transport:* Funding has been provided in recent budgets to 2022–23, for a range of rail projects including the Melbourne Intermodal Terminal to transfer freight, the commencement in 2022 of the $5 billion Melbourne Airport Link, the upgrade of the Tasmanian rail network, improvements to the Shepparton and Warrnambool rail lines, and the $2 billion Geelong–Melbourne fast rail lines, an ongoing commitment to the $9 billion Melbourne–Brisbane fast inland rail link and the METRONET rail development in WA.
  - *Road transport:* Recent budgets to 2022–23 have allocated funds for improving the efficiency of road transport through measures to lift road safety and reduce urban congestion. Specific projects have included $1 billion for local road projects, $1 billion for safety upgrades, the dairy industry supply chain and freight roads in south-west Victoria, the Great Northern Highway in WA, the Monash and Pakenham freeways, and the M80 ring road.



  - *Other:* Recent budgets set up the $5 billion Northern Australia Infrastructure Facility with low interest loans as part of a plan to develop Australia's north. This involves making low-cost infrastructure loans available for PPPs between the private sector and the governments of WA, NT and Queensland for the purpose of constructing pipelines, ports, electricity and water infrastructure. This is in addition to investing $600 million on key northern roads, and another

$100 million for roads considered important to the northern Australian cattle industry. The 2021–22 budget extended this loan facility from 2021 to 2026.

- *Telecommunication projects:* Fast and efficient telecommunications are vital to growing business and the economy across a wide range of industries. The National Broadband Network (NBN) project is Australia's largest and most ambitious single infrastructure project, involving the building of a high-speed fibre optic and cable internet and telecommunications system for use by businesses and households. Figure 5.8 shows that this $56 billion construction commenced in 2011 and was substantially completed in early 2022 (although further upgrades will need to occur). The project connected over 12 million premises, resulting in direct and indirect social and economic benefits for businesses and households. For example, the NBN sought to cut production costs, improve connectivity to world markets, and make firms more creative, productive, innovative and, hence, internationally competitive. As an aggregate supply infrastructure policy, the building of the NBN has led to an increase in Australia's productive capacity, aggregate supply, and potential GDP and incomes. However, despite the huge cost, and long building time, we have a second rate, non-state-of-the-art system, by comparison with world leaders.

FIGURE 5.8 Timeline in building Australia's $56 billion NBN, telecommunications infrastructure.



- *Utilities, including electricity projects:* Spiraling energy costs for businesses and households have been a particular media focus during the last few years to 2022. Australia's electricity and gas prices are among the highest in the world (e.g. double the US average). They are a severe cost obstacle for the survival of local manufacturing and export firms that seek to expand, be internationally competitive, avoid closure and

grow their productive capacity and AS. One problem has been indecision by successive governments over energy policy associated with renewable energy targets, the roles of base-load coal power and the closure of some coal-fired power stations. In part, this has led to inadequate investment spending in energy by the private sector, bottlenecks and a shortfall in electricity supply. This has driven up power prices. Clearly, increased investment is needed in power infrastructure using a variety of supply-side budgetary measures. The following outlines some of the recent budget outlays in this area:

- *Pumped hydro Snowy Mountains 2.0 project:* The Snowy Mountains Hydro Electricity Scheme was originally built after World War II. However, faced with rapidly rising power prices and the closure of coal-fired power stations in recent years, there was a need to increase the supply of electricity. As an aggregate supply measure, the Australian government announced a major redevelopment of the scheme. It involves budget outlays of around $4 billion to double the generation capacity. Work commenced in 2019, but it will not be completed till late 2024. Essentially, the project involves spending on dams, pipelines and tunnels so that the water can be used to generate hydro-electricity during peak-hour consumption, and then later be reused by pumping it back up into the upper reservoir during off-peak times when electricity is cheaper.
- *Plan to build a gas-fired electricity plant in NSW:* The government plans to build a $600 million gas-fired electricity power station to replace lost capacity from coal generators.
- *Major transmission projects and networks:* Recent budgets allocated $250 million to accelerate major transmission projects and improve the electricity grid, as well as $53.6 million for micro-grid programs to support the development of projects in regional Australia.
- *Electricity connection with Tasmania:* At a cost of $56 million, a second electricity transmission link to Victoria was announced to boost power supplies in the national grid.
- *Gas supply projects:* Recently, $78 million was set aside for onshore gas exploration to boost gas supply, along with $7 million for a study into new gas pipelines to SA from the NT and WA. In addition, the treasurer threatened possible restrictions on companies exporting gas, causing shortages and driving up prices and announced that $52 million would be set aside to unlock gas supply and undertake market reforms designed to drive down prices.
- *Fuel security:* Recent budgets have set aside over $250 million to improve the infrastructure needed to increase Australia's future fuel storage capacity. The aim is to help mitigate various threats and global disruptions to supply that could paralyse the economy.

How budget outlays on infrastructure affect the achievement of domestic macroeconomic goals, international competitiveness and living standards?

As an aggregate supply policy, government budget outlays (capital spending or G_2) on national infrastructure projects can help strengthen domestic macroeconomic conditions, particularly in the longer term, increase our international competitiveness and improve our living standards. To understand these policy impacts, it is a good idea to regularly refer back to the AD–AS diagram used in figure 5.5.

Budget outlays on infrastructure can increase the non-inflationary rate of economic growth

Government infrastructure investment helps to make aggregate supply conditions more favourable for producers by cutting their costs and growing profits. Firms become more willing and able to produce. There are several ways infrastructure investment improves aggregate supply conditions, grows productive capacity and lifts the sustainable rate of economic growth:

- Investment in economic infrastructure provides additional capital resources or inputs needed by suppliers to allow them to increase their production of other goods and services. It helps to reduce infrastructure bottlenecks that would otherwise hold back production, limit productive capacity and aggregate supply, and slow the potential rate of economic growth.
- Building new infrastructure lifts both the quantity of Australia's capital resources available, along with their technical efficiency. New projects normally contain superior technology, growing productive capacity, and therefore our potential level of GDP.
- Infrastructure projects can also improve allocative efficiency. They do this by reducing market failure associated with positive externalities causing these goods to be under-produced. In the absence of adequate

government investment in infrastructure, this would act as a barrier to building productive capacity and the sustainable rate of economic growth.
- Better infrastructure helps reduce production costs for suppliers associated with transport, utilities and telecommunications. It represents more favourable aggregate supply conditions that encourage business competitiveness and expansion.
- Given Australia's rapid population growth, there are massive bottlenecks. Infrastructure investment simply hasn't kept up as seen by problems in power, transport, water and telecommunications. Building new infrastructure should help address the backlogs, growing efficiency, productive capacity and the potential non-inflationary rate of economic growth.

So, again thinking of the AD–AS diagram (figure 5.5), budget outlays on infrastructure help to grow Australia's productive capacity and shift the AS line outwards and to the right, boosting the non-inflationary rate of economic growth (a rise from GDP_1 to GDP_2).

Budget outlays on infrastructure can slow cost inflation and strengthen our international competitiveness

There are several ways that government investment in infrastructure can help to make aggregate supply conditions more favourable, slow cost inflation pressures and improve the international competitiveness of local firms:

- As mentioned already, infrastructure investment can strengthen intertemporal, technical and allocative efficiency. Improved efficiency translates into lower production costs. As a more favourable aggregate supply condition, this allows firms to profitably sell at lower prices.
- More specifically, investment in better infrastructure can lower business costs for air, road, sea and rail transport used to move goods and services — the costs for fuel, vehicle maintenance and labour costs (time). There are also cost savings for electricity, gas and water used that can be gained from upgraded utilities, along with cost reductions from better connectivity, and faster, more efficient systems of telecommunication. Having reduced costs means that local firms can profitably sell at lower prices, strengthening their international competitiveness.

Thinking again of the AD–AS diagram, greater efficiency in infrastructure and lower production costs mean that there is a slower rate of inflation (falling from P_1 to P_2), despite a faster potential rate of economic growth.

Budget outlays on infrastructure can lower structural unemployment

In the long-term, infrastructure investment can help keep structural unemployment lower than otherwise:

- As previously explained, better infrastructure helps to lift efficiency and slow production costs. This strengthens business profitability and encourages existing and new firms to expand their operations, rather than close. This boosts aggregate supply and reduces structural unemployment.
- Better transport also improves the geographic mobility of the labour force, eases regional labour shortages and wage pressures, reducing structural unemployment.
- By helping to keep production costs lower, better infrastructure makes local suppliers more internationally competitive and profitable, both here and overseas, encouraging the expansion of business and employment opportunities.

Budget outlays on infrastructure can improve living standards

By making aggregate supply conditions more favourable, strengthening our international competitiveness and the domestic macroeconomic environment especially over the longer term, budget outlays on infrastructure can support improved living standards. For example:

- As we have just seen, by helping to accelerate the sustainable rate of GDP growth, slowing cost inflationary pressures, improving our international competitiveness and reducing structural unemployment, investment in infrastructure can grow average real incomes and purchasing power, creating conditions for required better *material* living standards.
- Budget outlays on infrastructure can also help to improve *non-material* living standards. This is mainly because over the long-term, more efficient infrastructure keeps structural unemployment rates lower. In

turn, having a job helps to strengthen happiness, social connectedness, feelings of self-worth, and mental and physical health outcomes.

Weaknesses of budget outlays on infrastructure as an aggregate supply policy

From what we have seen so far it is clear that in theory, government investment infrastructure can produce substantial aggregate supply-side benefits. In practice, this policy has *weaknesses*.

- ***Financial constraints:*** Efficient infrastructure is vital for an expanding economy. However, in Australia's case, bottlenecks or shortages exist in all key areas, largely because budget outlays have been too low given our rapid population growth. In part, this inadequate funding reflects recent concern over large government budget deficits and the rising burden debt for future generations.
- ***Poor decisions:*** Despite high levels of investment in infrastructure, Australia's multifactor productivity has been slowing. Normally we would expect the reverse. Blame is sometimes attributed to bureaucratic failure, delays in approval, and poor data analysis. Indeed, cost–benefit analysis by Infrastructure Australia (used to help establish project priorities) show that for some projects, the returns barely outweigh the costs! So, while the net benefits for the new western Sydney airport are estimated to return $1.90 for each dollar of cost, returns for the Inland Rail project are just $1.10 for every dollar spent — a very marginal benefit.
- ***Long time lags:*** There are long time lags in the implementation and completion of projects like the NBN and new Sydney airport. This means that the policy provides no quick fix to current infrastructure bottlenecks.

5.3.2 Option 2: Budget outlays on training and education can grow aggregate supply

Government spending on training and education *involves budget outlays that are are used to help cultivate better skills, innovation and creativity of Australia's labour resources, growing the quality or productivity of Australia's human capital resources. This helps to boost our productive capacity, aggregate supply and the potential level of GDP.*

Again, it is useful to refer back to the AD–AS diagram shown in figure 5.5 to visualise how budget outlays on training and education as an aggregate supply budget measure can help to improve Australia's domestic macroeconomic conditions, international competitiveness and living standards.

Key features of the government's recent policy on training and education

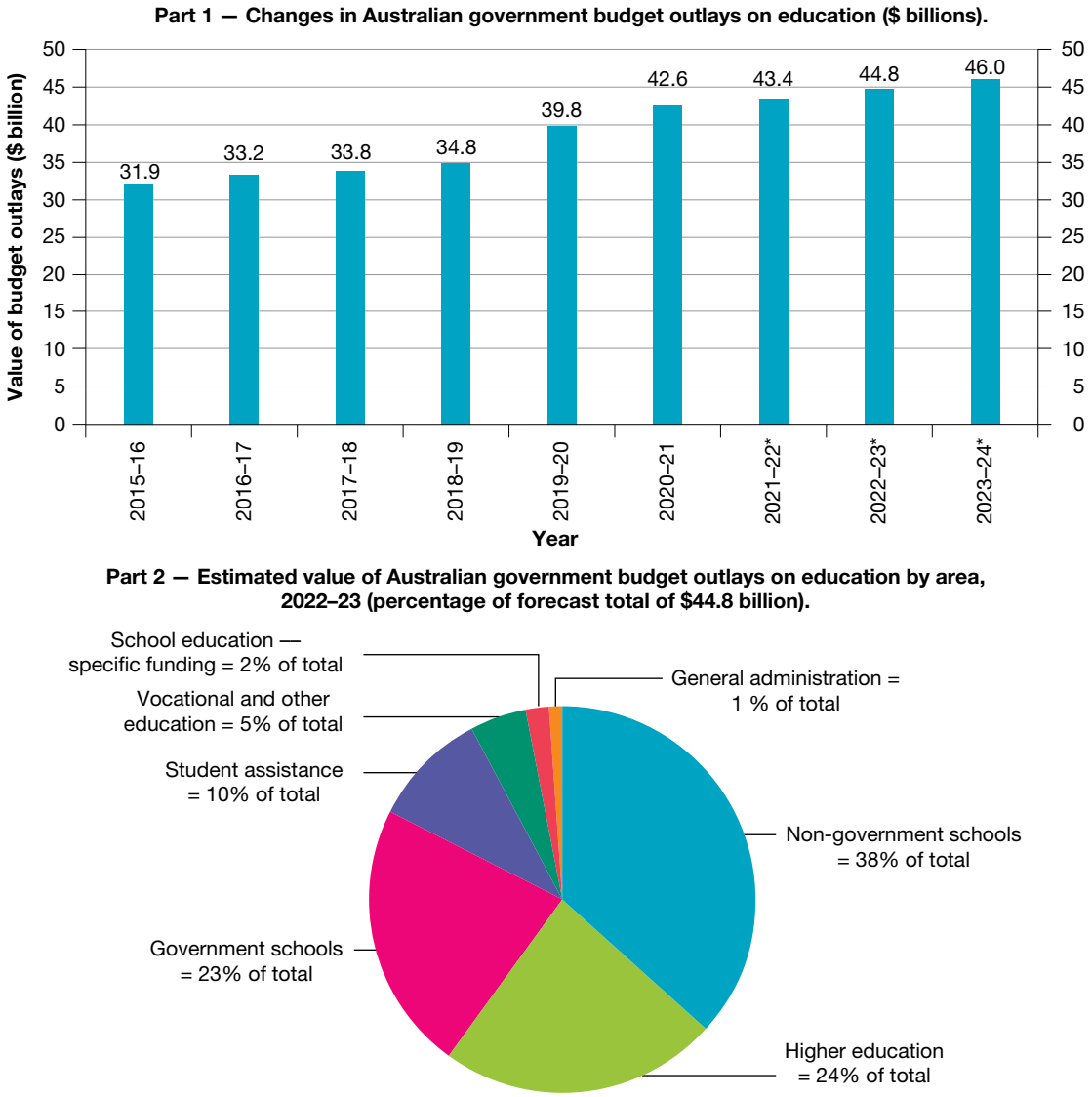


Each year's federal budget involves government outlays on education and training (on top of education spending by state governments). As an aggregate supply budgetary policy, this is designed to help support primary and secondary state and private schools, the VET and apprenticeship system and universities, improving our human capital. This funding seeks to boost Australia's technical and dynamic efficiency, lower business costs, and expand our productive capacity.

The graph in figure 5.9 part 1, provides a general overview of the recent changes in the Australian government's budget outlays on training and education. Notice from the graph that spending increased from $31.9 billion to an estimated $44.8 billion in the 2022–23 budget, with a projected rise to $46.0 billion by 2023–24.

In addition, the table making up part 2 of figure 5.9 shows that the two largest forecast recipients of federal government financial support in 2022–23 are the higher educational institutions like universities, government and, especially, non-government schools (the latter do not get state government funding).

FIGURE 5.9 Snapshot of the Australian government's outlays on education and training.



**Note:* Forward estimates only, at March 2022.
Source: Data derived from the Australian government, 2022–23, Budget, Statement 5, Expenses and Net Capital Investment, Paper No1, P150, see https://budget.gov.au/2022-23/content/bp1/index.htm.

The following is an outline of some of the federal government's specific educational initiatives that have been announced, through to the 2022–23 budget:

- ***Increased federal school funding:*** There is a big projected increase in school funding to over $25.3 billion in 2022–23. This seeks to improve educational outcomes, lifting future labour productivity, productive capacity and AS.
- ***Pre-school funding*:** The 2022–23 budget committed $2 billion in funding to provide 15 hours per week of free preschool training for the young as part of the Preschool Reform Agreement.
- ***Apprenticeship and traineeships:*** Federal funding worth $2.7 billion was provided in the 2021–22 and $2.8 billion in the 2022–23 budget, to support and encourage apprenticeships and traineeships.
- ***Support for women:*** The 2021–22 and 2022–23 budgets offered support for women in education through STEM scholarships in partnership with businesses, along with funding for over 50 000 places for training in non-traditional trades.
- ***Scholarships and other:*** The Rural and Regional Enterprise Scholarships program in 2022 offers students financial support of up to $18 000. It is designed to increase educational opportunities for young people in regional and remote communities, to complete their tertiary training. Additionally, in 2020 during the

COVID-19 pandemic, the Australian government decided to invest around $300 million to provide 12 000 supported tertiary education places designed to help guide departing Year 12 students into areas of skill shortage in the labour market. This is on top of creating an additional 17 000 places in 2021.

- ***The JobTrainer Fund:*** The COVID-19 lockdowns in 2020 caused over 1 million Australians to be unemployed. In response, the Australian government initially allocated $1 billion to set up the JobTrainer Fund to create over 340 000 additional free or low-cost training and job retraining places to ensure the unemployed and school leavers have the wanted skills needed to get a job. The 2021–22 and 2022–23 budgets increased financial support for the JobTrainer Fund to around $2.1 billion, creating a total of 478 000 free or low fee training places for school leavers and the unemployed to up-skill in areas like health, education, IT, agriculture and science.

How government budget outlays on education and training affect living standards

Government budget outlays on education and training can help to make aggregate supply conditions more favourable, strengthening many aspects of material and non-material living standards, by improving domestic macroeconomic conditions that support better living standards. This improvement can again be illustrated by referring to the AD–AS diagram shown in figure 5.6 with the outward shift in the AS line (the rise from AS_1 to AS_2) because education outlays cause a rise in productive capacity.

Budget outlays on education and training can increase the non-inflationary rate of economic growth

There are several ways that budget outlays on training and education help to boost productive capacity and aggregate supply, and accelerate the sustainable, non-inflationary rate of economic growth:

- In the long-term, outlays improve the quality of our human capital resources, making workers more productive, adaptive and innovative. This lifts Australia's dynamic and technical efficiency.
- Improved training can ease Australia's skills shortages or bottlenecks that would otherwise limit national production and restrict the growth in Australia's productive capacity, AS and potential rate of growth in GDP.
- By increasing efficiency and easing labour shortages, these budget outlays slow the growth in wage costs. This strengthens business profitability and international competitiveness, and makes aggregate supply conditions more favourable, encouraging business expansion rather than closure.

Budget outlays on education can slow cost inflation and improve international competitiveness

Outlays on education and training can slow production costs for businesses. In the long-term, this promotes aggregate supply and *eases cost inflation* pressures in *two* main ways:

- As mentioned, improving the quality of our human capital helps to make labour more efficient (it increases GDP per hour worked). This slows business costs, allowing local firms to profitably sell their goods at lower prices, thereby strengthening their international competitiveness.
- Improving the funding of education and training also helps to ease the skills shortages that would normally be reflected in higher wage costs and prices.

Budget outlays on education and training can lower structural unemployment

In the long-term, budget outlays on education and training help to reduce structural unemployment:

- Having the right skills can help to make our labour force *more employable* and job ready, reducing *structural* unemployment that is often caused by the mismatch of skills and job requirements.
- By easing skills shortages, budget outlays on education and training can *slow* the growth in *wage costs* that otherwise would occur. This encourages business expansion, *fewer closures* and improved competitiveness, leading to less structural unemployment.

Budget outlays on education and training can improve living standards

Budget outlays on education and training make aggregate supply conditions more favourable, strengthening the domestic macroeconomic environment and improving many aspects of living standards:

- Through accelerating the non-inflationary rate of GDP growth, slowing cost inflationary pressures, improving our international competitiveness, and, in the long-term, expanding employment opportunities,

outlays on education and training can help to grow average *real incomes* and *purchasing power*. This creates conditions that over time, strengthen *material* living standards.

- Budget outlays on education and training can help to *reduce market failure* and the underproduction of socially-beneficial services due to the existence of positive externalities, otherwise ignored by profit-seeking private owners of resources. In so doing, this can *improve allocative efficiency* and more fully maximise the extent to which society's *material* wants are satisfied.
- Budget outlays on education and training can also make workers *more employable*. They are less likely to be unemployed and on inadequate welfare, because they have desirable skills that can be used to grow the economy's productive capacity. By helping to lower structural unemployment, this policy measure improves *non-material* living standards by reducing stress, and improving mental and physical health outcomes.

Weaknesses of budget outlays on training and education as an aggregate supply policy

So far, we have investigated how government outlays on training and education have helped to grow Australia's efficiency, productive capacity and aggregate supply. These have strengthened domestic macroeconomic outcomes, international competitiveness and living standards. However, in practice, aggregate supply-side budgetary policy measures can have *weaknesses,* limiting their effectiveness:

- ***Financial constraints:*** Even though education and training are key drivers of productivity, economic growth and living standards, and despite a rise in government budget outlays on education, funding as a proportion of GDP is still below other comparable countries (Australia was ranked 13th in 2020–21). One reason for inadequate spending in this area over recent years, is concern about the impact of government spending and the level of debt and the burden this creates for generations.
- ***Money is sometimes misdirected:*** Despite the spending of billions of dollars on education and training each year, some of this has been directed towards the purchase of dubious resources (e.g. school canteens and gyms), often based on political considerations rather than social or economic outcomes.
- ***Poor educational outcomes:*** Misdirected and inadequate funding of education, are factors contributing to poor learning outcomes and a general decline in standards against those in some other countries. For example.
  - Around 30 per cent of 15-year-olds do not reach national literacy standards.
  - In Mathematics, Australian student performance has declined by the equivalent of about half a year.
- ***Funding promotes inequity of opportunity:*** Some critics argue that the use of recent education funding models mean that too many resources are directed towards non-government or private schools, unfairly widening the gulf in facilities and opportunities offered to students.

5.3.3 Option 3: Budget subsidies can grow aggregate supply

Subsidies *are a budgetary measure designed to improve resource allocation, grow productive capacity and make aggregate supply conditions more favourable. They generally involve government financial incentives to encourage particular types of production — either as cash payments (equal to about 45 per cent of the total value), or as tax concessions (equal to around 55 per cent of the total value). Most typically, subsidies can:*

- help lower the production costs for particular industries and increase their profits, leading to business expansion and more jobs, rather than closure
- enable firms to profitably sell their goods and services at lower prices, increasing their affordability and strengthening international competitiveness
- reduce market failure associated with positive externalities where some socially-beneficial goods or services are under-produced because decision makers focus on private gains, rather than considering the broader social benefits affecting society's general wellbeing.

Whatever form it might take, a government subsidy is normally only justified when there is a *net gain in society's wellbeing* as a result of improved efficiency in resource allocation, or increased equity in the distribution of incomes, goods and services.

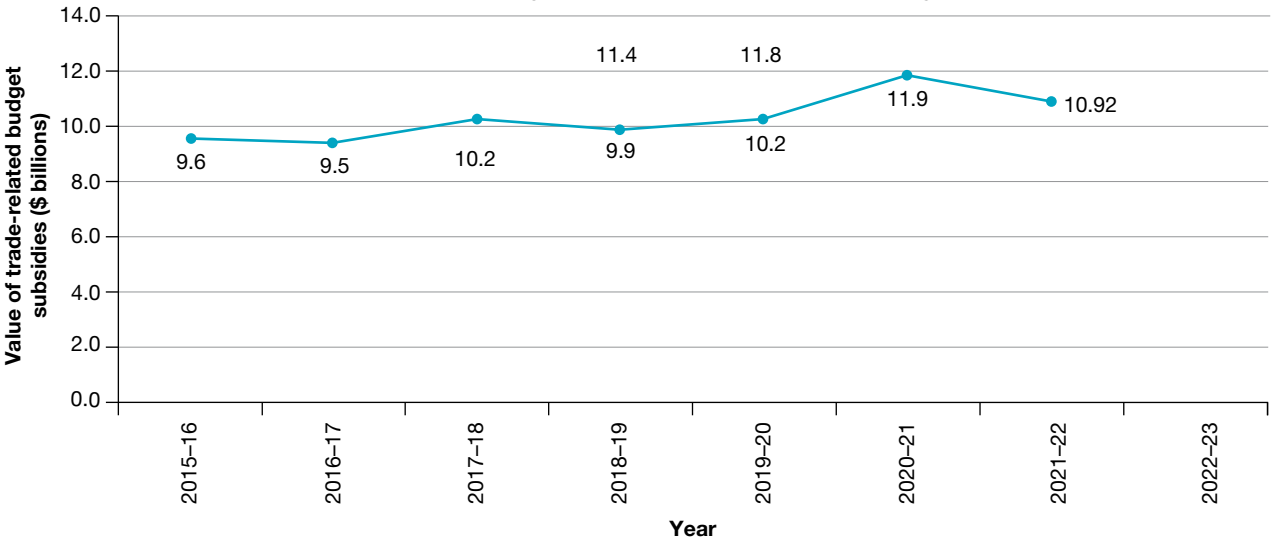
Key features of the government's recent policy on subsidies

Figure 5.10 part 1 shows that in the year to 2021–22, the Australian government spent an estimated $10.92 billion on subsidies and industry assistance in the form of cash payments and tax deductions (excluding temporary COVID-19 assistance measures). Overall, this value represents a decrease since the high levels of the 1970s. However, although not shown in figure 5.10 part 1, between June 2020 and March 2021, the Australian government again dramatically increased its budget outlays on subsidies, as part of its COVID-19 emergency support packages that included around $90 billion for the JobKeeper wage subsidy and additional support for specific industries including the airlines, arts, tourism, higher education, aged care and building sectors.

Figure 5.10 part 2 summarises a few of the areas that have received Australian government subsidies through recent budgets, while part 3 provides some recent examples of subsidies. In each case, remember that they seek to create positive incentives to change behaviour and make aggregate supply conditions more favourable, thereby encouraging the growth of productive capacity, AS and our potential level of national output.

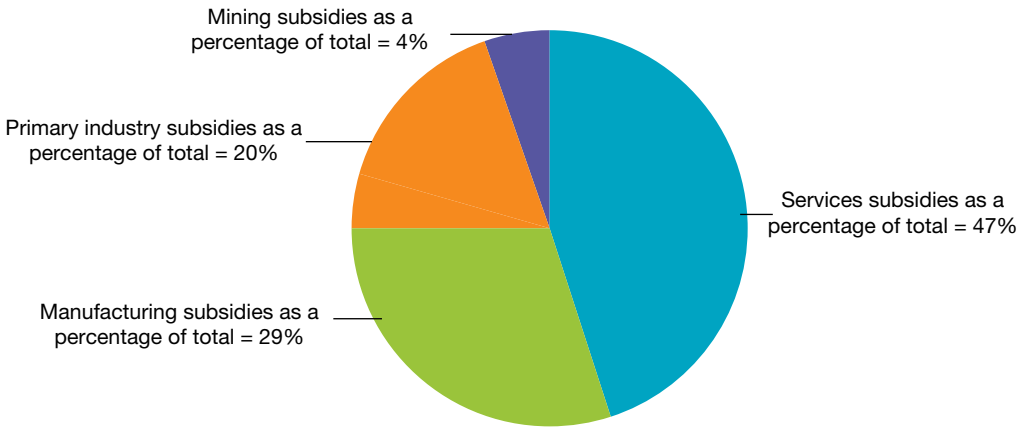
FIGURE 5.10 Snapshot of the Australian government's budget outlays on subsidies and other assistance.

Part 1 — Estimated annual value of gross subsidies and other industry assistance* ($ billions, excluding temporary assistance provided during COVID-19).



***Note:** During June 2020 through to March 2021, the treasurer announced wide-ranging, temporary emergency measures that are not included in the above data. These include the JobKeeper wage subsidy costing over $90 billion, training subsidies, and a range of other industry subsidies whose total value dwarfed the outlays shown above.

Part 2 — Percentage of gross budget outlays on subsidies and other assistance by Australian industry (excluding temporary assistance measures during COVID-19).



(continued)

FIGURE 5.10 Snapshot of the Australian government's budget outlays on subsidies and other assistance. *(continued)*

Part 3 — Some recent examples of Australian government budget outlays on subsidies to incentivise productive capacity and grow aggregate supply.

Name of subsidy	Details
Export Market Development Grants (EMDG)	Managed through Austrade, these grants of up to $770 000 seek to help firms cover up to 50 per cent of the costs involved in the promotion of their goods and services in foreign markets.
Tax Incentive Scheme	There is a Tax Incentive Scheme for investment in R&D by smaller companies involved in innovation and the commercialisation ofideas for manufacturing and rural industry. It is designed to lift productivity and sales, and accounts for around a third of all budget assistance.
Help for farmers suffering hardship	Financial assistance payments are available to eligible farmers who have experienced severe financial hardship due to drought, fires and floods. This reduces farm closures and maintains jobs and productive capacity.
Tasmanian Freight Equalisation Scheme	This scheme aims to reduce the transport cost disadvantage for businesses operating in that state, keep prices competitive, encourage expansion and develop new employment opportunities.
Wage subsidies including temporary JobKeeper payments	The 2018–19–20–21 budgets provided various types of ongoing wage subsidies to encourage employers to take on older, Aboriginal and Torres Strait Islander, rural and other disadvantaged groups and employ new apprentices. However, the temporary JobKeeper wage subsidy set a new record and cost over $90 billion between June 2020 and May 2021. Initially, it involved payments to eligible firms of $1500 per employee per fortnight so that eligible businesses suffering at least a 30 per cent fall in turnover, could continue to employ and pay their valued staff and start up quickly on the other side of the pandemic.
Childcare subsidies	Having access to affordable childcare, through funding in the 2019–20–21–22 budgets, allows lower income parents to increase their participation in work, which grows the size of Australia's labour force and increases productive capacity.
Subsidies for education and training including the JobTrainer scheme	Subsidies are available through both the 2021–22 and 2022–23 budgets to encourage individuals to update and upskill their education and training. For instance, the *JobTrainer* scheme introduced in 2020, made some training courses available either free, or at a very low cost. The aim is to help make our labour force more productive, employable and job ready, thereby improving Australia's human capital, lifting efficiency in our use of resources and growing productive capacity.
Subsidies to the coal mining industry	Cash subsidies of around $5 per tonne are paid to coal mining companies to encourage production, consumption and employment. In addition, there are generous subsidies in the form of exemptions from fuel excise. Here, subsidies help to strengthen competitiveness, and expand sales, jobs and our mining capacity (although there is a trade-offinvolving negative externalities associated with accelerated climate change).
Subsidies to encourage higher levels ofinvestment spending	Subsidies in the form of accelerated depreciation allowances and instant tax write-offs for businesses purchasing capital items, can reduce the cost of business investment spending. This helps to grow jobs and productive capacity. The 2019–20–21–22 budgets, for example, increased subsidies to small and medium-sized firms as instant tax write-offs for the purchase of capital items to help reduce production costs and expand capacity. Recently, the scheme was modified to allow eligible firms to deduct from tax, the full cost of depreciable capital assets.

***Note for Part 1:** During June 2020 through to March 2021, the treasurer announced wide-ranging, temporary emergency measures. These include the JobKeeper wage subsidy costing over $90 billion, training subsidies, and a range of other industry subsidies whose total value dwarfed previous outlays.

Sources: Data for parts 1 and 2 derived from Productivity Commission, Annual Report Series, 2019–20, Trade and Assistance Review, 2019–20, P6, see https://www.pc.gov.au/research/ongoing/trade-assistance/2019-20/trade-assistance-review-2019–20.pdf and other.

How budget subsidies affect the achievement of domestic macroeconomic goals, international competitiveness, and living standards

Subsidies can be used to make aggregate supply conditions more favourable for individuals and firms so that collectively, they become more willing and able to produce goods and services. In turn, referring to the AD–AS diagram used in figure 5.5 it is possible to see that subsidies could help increase productive capacity and shift the AS line out and to the right (an increase from AS_1 to AS_2), so that equilibrium occurs at the higher level of GDP (the rise from GDP_1 to GDP_2) yet at a lower level of prices (the fall from P_1 to P_2). Generally, this would tend to improve domestic macroeconomic conditions, international competitiveness, and living standards.

Budget subsidies can increase the non-inflationary rate of economic growth

There are several ways whereby targeted budget outlays on subsidies (e.g. those for the *mining industry, instant tax write-offs* for businesses purchasing new equipment, or the *Tasmanian Freight Equalisation Scheme*, and the *temporary industry assistance* provided to various industries like aviation and tourism during COVID-19) can help to boost productive capacity and aggregate supply, and accelerate Australia's long-term sustainable rate of economic growth:

- Subsidies can be used by businesses to upgrade their equipment and technology, and restructure their operations, leading to better *technical efficiency*. In this way, they can grow Australia's productive capacity.
- Government subsidies can help to cover some of the production costs of local businesses, making them more profitable. This makes firms more willing and able to expand their capacity and output.

Budget subsidies can slow cost inflation and improve international competitiveness

Government outlays on subsidies (e.g. *instant tax write-offs* for firms purchasing new equipment, *childcare, training,* and *Export Market Development Grants*) can reduce production costs for businesses and individuals. This can help to ease inflationary pressures and increase our international competitiveness in *two* main ways:

- As mentioned, by meeting some of the production costs of local firms, businesses can profitably sell their goods and services at lower prices, slowing cost inflation and strengthening international competitiveness.
- When subsidies are used to encourage businesses and industries to restructure their operations more efficiently, they can again help reduce cost pressures and inflation, and strengthen the international competitiveness of local firms.

Budget subsidies can reduce structural unemployment

When subsidies are used to encourage local businesses to buy new equipment or to help cover wage costs, they can help to reduce structural unemployment:

- Subsidies can be used to make firms more profitable by covering some of their costs, encouraging expansion and reducing the number of business closures (e.g. during COVID-19 lockdowns, the *JobKeeper* wage subsidy payments lowered the unemployment rate for June 2020 from 11.5 to 7.5 per cent).
- Subsidies can also be used to reduce the cost of retraining and up-skilling individuals who might otherwise be unemployed because they have the wrong training or experience for the jobs on offer (e.g. the *JobTrainer* scheme). Over time, this can help reduce structural unemployment.

Budget subsidies can improve living standards

Well-targeted budget subsidies can strengthen many aspects of living standards:

- By helping to accelerate the sustainable rate of GDP growth, slowing inflationary pressures and assisting employment, in the long-term, subsidies can grow average real incomes and the purchasing power of individuals, supporting better *material* living standards.
- Subsidies paid to consumers of goods and services (like solar panels and rainwater tanks) can help ease environmental problems (such as carbon emissions and climate change), reduce negative externalities (such as those associated with power production and consumption) and improve *non-material* living standards including personal health outcomes.
- Subsidies can reduce market failure associated with positive externalities (e.g. the Australian government subsidising the development of a COVID vaccine, and providing free vaccination and testing). In the absence of government funding in these circumstances, it is likely there would be underproduction of some

socially beneficial goods or services because owners of resources make decisions based on private rather than wider social returns that benefit the general community and raise society's wellbeing.

Weaknesses of budget subsidies as an aggregate supply policy

So far we have seen that budget outlays on subsidies can be considered an aggregate supply policy because they can make conditions more favourable for Australian businesses and grow our potential GDP, leading to better living standards. However, the payment of subsidies can have *weaknesses*:

- ***Subsidies involve financial constraints:*** Recently, there has been concern expressed about large budget deficits and rising levels of government debt. Some fear that this may become a burden on future generations because of the pressure to reduce outlays on government services and/or the need for higher taxes. Given these financial constraints, funds available for subsidies have been limited so that some potentially good projects have missed out.
- ***Subsidies involve trade-offs:*** In a way, the payment of subsidies to one group or industry represents a higher tax levied on other individuals or businesses. There is also an opportunity cost or trade-off in terms of other budget outlays (such as education, infrastructure, health and welfare) that cannot go ahead or have to be cut. The government needs to carefully weigh up what is forgone, and think of which outlays promote the greatest public benefit.
- ***Subsidies can reduce efficiency:*** Subsidies can sometimes reduce efficiency in the allocation of resources by diverting them into areas of cost disadvantage (see Topic 3). Additionally, some subsidies can allow local firms to remain inefficient and avoid restructuring their production more competitively or perhaps undertaking R&D. As a consequence, subsidies can sometimes reduce our productive capacity and living standards.
- ***Subsidies can cause government failure:*** Subsidies can lead to government failure and unintended consequences (e.g. subsidies to the coal industry increase CO_2 emissions and climate change). They can reduce society's welfare by being less efficient than the free operation of the price system. They can also involve opportunity costs where resources are redirected away from other uses where they may have added even more to our general living standards.
- ***Subsidies may not create jobs:*** Subsidising inefficient industries or firms rarely creates jobs in the long-term.
- ***Political constraints:*** Subsidies are often politically popular when given, but are difficult to take away when they are no longer needed.
- ***Transparency:*** Subsidies are not always transparent and may be subject to political abuse designed to buy popularity with particular groups of voters.

5.3.4 Option 4: Budget support for research and development can grow aggregate supply

Government support for research and development (R&D) *in the budget is designed to grow productive capacity and aggregate supply by encouraging institutions, universities, businesses and individuals to innovate and develop new ideas, processes and products. Financial support creates incentives that involve either cash payments, or more commonly, generous tax incentives or write-offs up to 150 per cent of the cost of R&D expenditure. This helps to offset some of the costs involved. Apart from encouraging innovation and the application of new technology that increases technical and dynamic efficiency needed to grow the economy's capacity, this support also strengthens Australia's international competitiveness.*

A recent Australian Innovation System Report by the Department of Industry, Innovation and Science highlighted the importance of innovation encouraged by R&D, perhaps through government budget grants. In addition, the Organisation for Economic Co-operation and Development (OECD) estimates that perhaps up to 50 per cent of a nation's long-term rate of economic growth can be attributed to the level of *innovation*. Experts estimate that every $1 spent on Australian R&D by the public and private sectors produces an average benefit or return of $2 worth of increased business sales. This is because innovation greatly contributes to better efficiency in the use of resources, improved competitiveness, stronger business sales and profits, more jobs, higher incomes and better living standards.



Key features of the government's recent policy on R&D

The federal government plays an important role in encouraging various types of R&D through its refundable tax concessions, incentives or offsets, and direct financial support for businesses undertaking appropriate research. Figure 5.11 provides a snapshot of the policy:

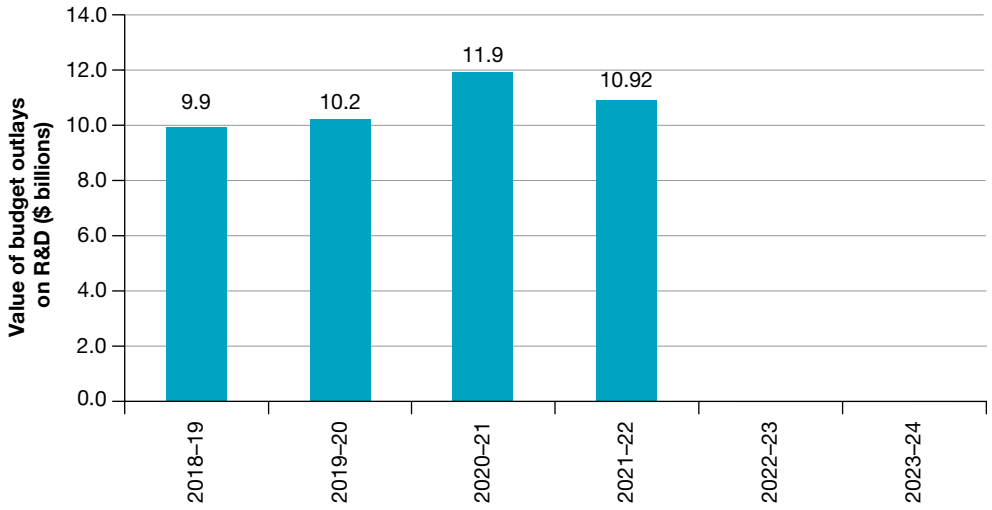
- Part 1 shows a slight overall rise in Australian government investment funding of R&D and other assistance, especially over recent years.
- Part 2 illustrates changes in the type of assistance provided and the recent change towards using tax concessions.
- Part 3 shows the general estimated breakdown in government outlays on R&D and other assistance across the various sectors, where higher educational institutions and the private business sector together received over 55 per cent of all grants. This was followed by the government sector (including research agency the Commonwealth Scientific and Industrial Research Organisation, or CSIRO) and multi-sectors (rural, health and medical, energy and environmental research).
- Finally, part 4 reveals the number of funded R&D projects by industry sector. Not surprisingly, health (including vaccine development, diabetes and traumatic injuries, heart disease), soil and water, food, environment, energy, advanced manufacturing, resources, transport and cybersecurity, had the greatest number of funded projects.

More specifically, highlights of R&D funding from recent budgets include the following:

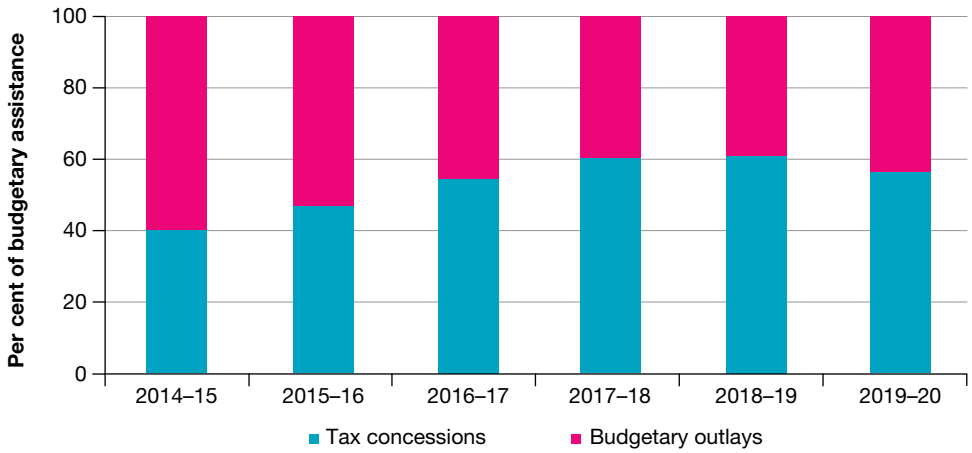
- ***Research & development tax offsets:*** For 2021–22–23, Australian companies conducting eligible R&D activities costing up to $150 million, can again apply for grants. The size of the offset provided depends on the company's annual turnover. These grants totalling $2 billion, are designed to increase R&D investment and its application in the economy.
- ***CSIRO funding:*** The Commonwealth Scientific and Industrial Research Organisation is a government statutory authority. The 2020–21 budget provided $459 million in funding over four years to 2025, to conduct research into areas like agriculture, livestock, food, oceans, bio-security and disease, artificial intelligence, space, oceans, the Antarctic, and climate.
- ***Medical research:*** During 2020–21, the Medical Research Future Fund (MRFF) distributed about $380 million for specific medical R&D projects to organisations. In addition, and in response to the COVID-19 pandemic in 2020 and 2021, the budget allocated $42 million for vaccine development, not just to ease the health emergency, but also to reduce business closures and grow productive capacity.
- ***The Patent Box tax incentive:*** The Patent Box tax incentive scheme will start in July 2022. Australian-owned firms inventing and conducting R&D locally, and successfully gaining a medical and biotech patent, will have to pay just 17 per cent tax on their business profits.

FIGURE 5.11 Snapshot of the Australian government's budget R&D and other assistance.

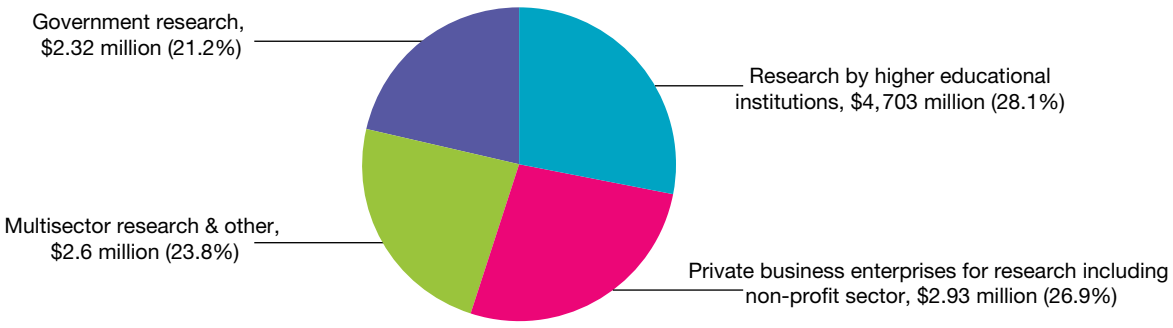
Part 1 — Trends in Australian government budget outlays on R&D and other assistance ($ billions — prior to the temporary COVID-19 support measures*).



Part 2 — Changes in the share of Australian government budget outlays on R&D and other assistance, by type.



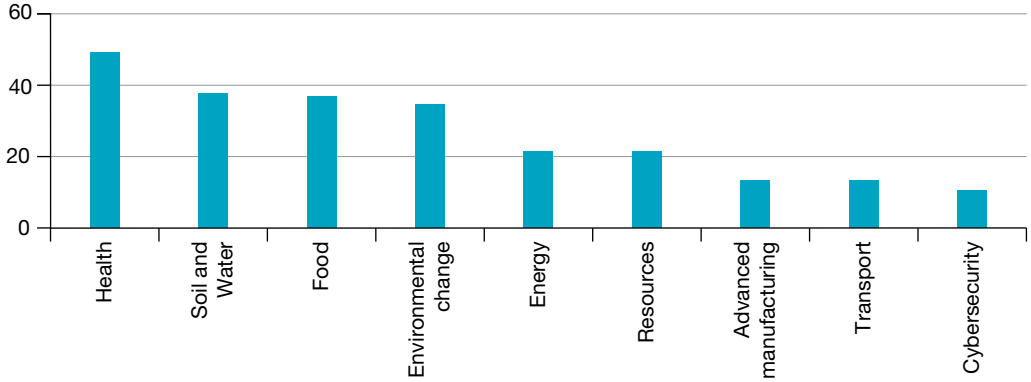
Part 3 — The distribution of Australian government budget outlays on R&D by research sector, 2021–22.



(continued)

FIGURE 5.11 Snapshot of the Australian government's budget R&D and other assistance. *(continued)*

Part 4 — Number of government-funded R&D projects by focus area, 2021–22.



**Note for part 1:* During June 2020 through to March 2021, the treasurer announced wide-ranging, temporary emergency measures that are not included in the above data. These include the JobKeeper wage subsidy costing over $90 billion, training subsidies, and a range of other industry subsidies whose total value dwarfed the outlays shown above.

Sources: Data from various sources. Parts 1, 3 and 4 are from Australian government, Science, Research & Innovation (SRI Budget tables, 2021–22 and other. See https://www.industry.gov.au/data-and-publications/science-research-and-innovation-sri-budget-tables and Microsoft Power BI); Part 2 from Australian government, Productivity Commission, Annual Report, Trade and Assistance Review, 2019–20, Figure 1.11, P18, see Trade and Assistance Review 2019–20 (pc.gov.au).

How budget support for R&D affects the achievement of domestic macroeconomic goals, international competitiveness and living standards?

Government budget outlays and tax concessions to incentivise R&D, are mostly designed to improve Australia's technical and dynamic efficiency, and by doing so, grow Australia's productive capacity. Potentially, this policy can help to create more favourable conditions for the achievement of our key domestic macroeconomic goals, and therefore advance general living standards. Again, when looking at the macroeconomic effects of budget outlays on R&D, it is useful to refer to the AD–AS diagram shown in figure 5.5. Here greater efficiency and the growth of productive capacity helps to increase AS (the rise from AS_1 to AS_2). This causes national equilibrium to occur at a higher, non-inflationary level of economic and employment growth (the rise from GDP_1 to GDP_2), with a slower rate of inflation (the fall from P_1 to P_2). Let us now look at the specific ways in which R&D grants might help to improve economic conditions.

Budget support for R&D can increase the non-inflationary rate of economic growth

Budget support for R&D can help increase Australia's sustainable, non-inflationary rate of economic growth:

- By encouraging innovation, expanding information, and developing new ideas and products, government financial support of R&D can promote dynamic and technical efficiency. This can help to grow Australia's productive capacity. One recent example of R&D assistance in action was the funding of important health research into the development and manufacture of an effective COVID vaccination. The hope now is that our high vaccination rates will reduce lockdowns, keep businesses and supply chains open, maintain productive capacity and hence increase the non-inflationary rate of economic growth.
- Budget support for R&D can help to create more favourable aggregate supply conditions. It lowers production costs and raises the profitability of firms wanting to develop new products. This can make businesses more internationally competitive, strengthening economic growth.

Budget support for R&D can slow cost inflation and enhance our international competitiveness

The use of budget outlays and tax concessions to encourage R&D, can eventually help to improve the efficiency of resources — more output can be gained from fewer inputs. As mentioned, this can translate into lower production costs for producers so they can profitably sell quality goods and services at lower prices. This eases inflationary pressures. At the same time, lower prices, along with new and more innovative products, can improve the international competitiveness of Australian businesses.

Budget support of R&D can reduce structural unemployment

The impact of budget outlays on R&D on Australia's unemployment rate depends mostly on the time period considered:

- Depending on its nature it is possible that the encouragement of R&D may increase structural unemployment in the shorter term as firms innovate, restructure operations and develop new products and manufacturing processes.
- However, in the long-term, failure to innovate will cause industries to go into decline and die, adding to structural unemployment. So, although there should be many new jobs created by innovative businesses, these may be in different industries or areas, and involve the employment of staff with different skills, requiring effective education and retraining policies.

Budget support of R&D can improve living standards

Financial support of R&D by budget outlays or tax concessions can help to improve our living standards:

- ***Material living standards*** may be strengthened by using budget outlays and tax concessions to encourage R&D. These can make aggregate supply conditions more favourable for firms, by cutting their costs. In turn, they encourage the expansion of productive capacity and GDP, grow average real incomes and purchasing power, and lead to higher consumption per head. Support of R&D also makes local firms more internationally competitive. This can create more employment opportunities. In addition, through greater efficiency, R&D grants can slow cost inflation and improve the purchasing power of incomes.



- ***Non-material living standards*** and the quality of life may benefit from budget support of R&D for projects like medical research, renewable energy and the reduction of emissions that accelerate climate change and severe weather events. In addition, by creating new jobs in the long-term, unemployment could be lowered, improving outcomes for health, happiness, family and the wider community.

Weaknesses of budget support for R&D as an aggregate supply policy

As an aggregate supply policy, providing budget support for R&D has certain *limitations*:

- ***Financial or budget constraints:*** Given the government's weakened budget position and rising debt levels following the GFC and the recent pandemic, there have been financial constraints limiting the use of this policy. This helps to explain the recent decline in government outlays on R&D grants as a percentage of GDP. In addition, by international standards, government support of R&D expressed as a percentage of GDP, lags well behind many nations. We are currently ranked twentieth and are well below the OECD average.
- ***Long time lags for impact:*** There are often quite long impact time lags between providing the grants and seeing their effects on innovation and efficiency. Financial support is not a short-term solution.
- ***Outcomes are uncertain:*** R&D grants come with no guarantee of success. Results are uncertain. Indeed, the money might produce no benefit, increasing the opportunity cost of the government's decision and lowering society's wellbeing.

5.3.5 Option 5: Tax reform in the budget can grow aggregate supply

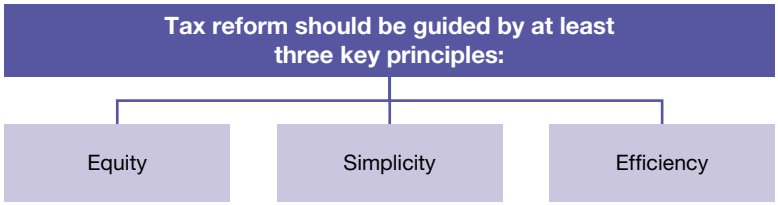


Tax reform *in recent years has often involved reducing tax rates (although there are also other aspects). It can make conditions more favourable for individuals and firms supplying goods and services so they are more willing and able to produce and expand the economy's productive capacity.* More specifically, 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, possibly also involving the provision of *tax concessions and tax rebates*
- reviewing the **tax base**, coverage or inclusiveness of what particular types of things are to be taxed or not taxed (which goods or services, which income, what assets)
- improving the *tax mix* or combination of different types of tax used to raise revenue (direct tax versus indirect, consumption taxes versus income taxes)
- *reducing tax avoidance* and improving the integrity and effectiveness of the tax system.

In addition, tax reform should be guided by *three* key principles:

1. ***Equity.*** Taxes should be equitable keeping in mind that those on higher incomes have a greater capacity to carry more of the tax burden, reducing the gap between high- and low-income earners.
2. ***Simplicity.*** The tax system needs to be simple and easy for firms and individuals to follow.
3. ***Efficiency.*** The tax system needs to encourage or incentivise effort and the earning of incomes by individuals and businesses, and have a minimum of red tape in administration.



Through these types of tax changes, governments seek to *increase the incentives* for businesses to invest and produce, encourage individuals to work harder by reducing penalties for 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.

In looking at the economic impacts of tax reform, it is handy to again refer to the AD–AS diagram shown in figure 5.5. Here, for example, lower tax rates create stronger financial incentives for producers to grow capacity and increase AS (the rise from AS_1 to AS_2). In turn, this increases the sustainable rate of economic and employment growth (the rise from GDP_1 to GDP_2), while at the same time, prices actually fall (the drop from P_1 to P_2) improving our international competitiveness. Over time, domestic macroeconomic conditions are strengthened, supporting better living standards.

Key features of the federal government's recent budget policy involving tax reform

Various governments have recognised that the tax system periodically needs to be reformed or changed. Reforming Australia's tax system is an ongoing process because of shifting domestic and international developments. Table 5.1 provides a snapshot of key *tax reforms*. Here you should focus especially on the reductions in tax personal and company rates, and think about how these *incentivise* effort, participation in work, and business investment and expansion, factors that grow Australia's productive capacity.



TABLE 5.1 A snapshot of the Australian government's key budget tax reforms as an aggregate supply budgetary measure.

Name of tax	Outline of key tax reforms	Top rate in 2022–23	Historical top rate

Reform of PAYG income tax	There have been many changes to Australia's personal income tax system:
	• **2012–13** — from July 2012, the tax-free income threshold was increased from $6000 to $18 200.
	• **2013–14** — the Medicare levy was increased from 1.5 to 2.0 per cent of taxable income to pay for the National Disability Insurance Scheme (NDIS).
	• **2014–15 to 2016–17** — there was an additional 2 per cent budget repair levy for those in the top marginal tax bracket.
	• **2017–18** — there was some tax relief for low- and middle-income earners by lifting the upper income cut-off for the 32.5 per cent tax bracket.
	• **In July 2019,** a progressive three-stage reform package for personal income tax was finally passed by the Parliament:
	  • **Stage 1 (2018–19/2021–22):** the upper income cut-off for the 32.5 per cent tax bracket was increased from $87 000 to $90 000 starting from July 2018, along with a rise in the low-middle income tax offsets, providing relief for low- and middle-income earners.
	  • **Stage 2 (2022–23/2023–24):** the upper income cut-offs for the 19 and 37 per cent tax brackets will be increased from $37 000 to $45 000 and from $90 000 to $120 000 respectively, starting July 2022, along with rises in the low-middle income tax offsets to provide tax relief.
	  • **Stage 3 (2024–25):** the 32.5 and 37 per cent tax brackets will be abolished and replaced with a single 30 per cent tax bracket covering incomes from $45 001 to $200 000 starting July 2024, which, along with rises in the low-middle income tax offsets, will provide further incentive and relief for low-middle- and high-income earners.
	• **2020–21** — In the delayed 2020–21 budget (due to COVID-19), the treasurer announced that stage 2 of the legislated cuts in personal income tax would be brought forward and backdated to July 2020, not only to give a boost to AD, but also to incentivise effort and AS.
		In 2022–23, the top marginal rate is 47 per cent, made up of the 45 per cent standard top tax rate plus the 2 per cent Medicare levy.	75 per cent (< 1951–52)

(continued)

TABLE 5.1 A snapshot of the Australian government's key budget tax reforms as an aggregate supply budgetary measure. *(continued)*

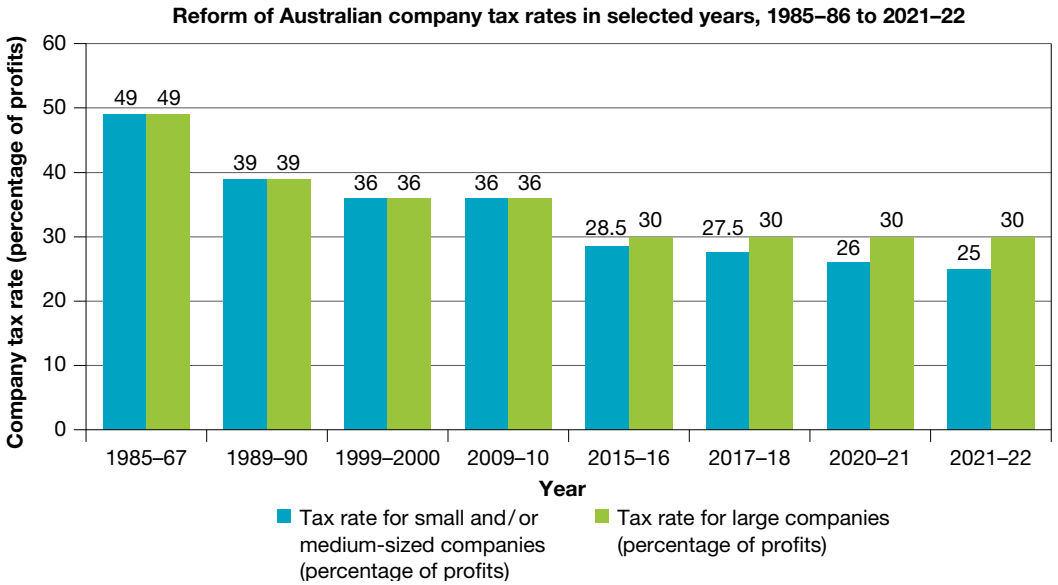
The three-stage reform of Australia's system of personal income tax (from July 2018–July 2024)

Stage 1: PAYG rates from July 2018 to June 2020		Stage 2: PAYG rates from July 2020 to June 2024		Stage 3: PAYG rates from July 2024	
Taxable income thresholds ($)	**Marginal tax rates (%)**	**Taxable income thresholds ($)**	**Marginal tax rates (%)**	**Taxable income thresholds ($)**	**Marginal tax rates (%)**
$0 to $18 200	0	$0 to $18 200	0	$0 to $18 200	0
$18 201 to $37 000	19	$18 201 to $45 000	19	$18 201 to $45 000	19
$37 001 to $90 000	32.5	$45 001 to $120 000	32.5	$45 001 to $200 000	30 (replaces the 32.5 per cent bracket)
$90 001 to $180 000	37	$120 001 to $180 000	37	NA	NA (the 37 per cent tax bracket is abolished)
$180 001 and over	45	$180 001 and over	45	$200 001 and over	45

Name of tax	Outline of key tax reforms	Top rate in 2022–23	Historical top rate
Reform of company tax	Rates of company tax have been lowered as part of tax reform. These have included the following: • **2000–01** — the tax rate on company profits was lowered from 36 to 34 per cent. • **2002–03** — the company tax rate was further reduced to 30 per cent. • **2015–16** — the company tax rate for smaller businesses with a turnover less than $2 million was cut to 28.5 per cent. • **2016–17** — The company tax rate for small to medium-sized businesses with an annual turnover less than $10 million was cut to 27.5 per cent. • **2017–18** — the definition of small to medium-sized companies was broadened to an annual turnover of up to $25 million. • **2018–19** — the 27.5 per cent tax rate was extended to small and medium-sized firms with an annual turnover up to $50 million. • **2020–21 and 2021–22** — The business tax rate was reduced to 26 per cent in July 2020 for small and medium-sized business enterprises (SMEs), with a further reduction to 25 per cent from July 2021. • **Instant tax write-offs for capital items** – Recent budgets provided tax relief through instant tax write-offs for small to medium-sized businesses purchasing capital equipment.	30 per cent for large companies and 25 per cent from July 2021 for small to medium-sized companies with an annual turnover less than $50 million.	49 per cent (1986–88)

(continued)

TABLE 5.1 A snapshot of the Australian government's key budget tax reforms as an aggregate supply budgetary measure. *(continued)*



Source: © Australian Taxation Office for the Commonwealth of Australia.

Name of tax	Outline of key tax reforms	Top rate in 2022–23	Historical top rate
Reform of capital gains tax (CGT)	Capital gain tax is levied on the proceeds or gains after the sale of an asset like property and shares. • **1986–87** — the tax rate on capital gains (except on the family home, which is exempt) was effectively halved — only 50 per cent (not 100 per cent as before) of the capital gain was to be taxed. • **2018–19–20** — there was debate about the fairness of this tax discount between the Coalition and Labor Party.	The maximum rate of 23.5 per cent (including the Medicare levy applies)	NA (before 1986)
Reform of superannuation tax concessions	For many years, Australian governments have wanted to encourage superannuation by providing generous tax concessions for contributions and end benefits. Their hope is to reduce the number of people dependent on the old age pension that is assets and means tested. • **2012–13** — the treasurer reduced the maximum concessional contribution for tax from $50 000 to a limit of $25 000 — also the current limit. • **2019–20** — there was discussion about the equity and efficiency of generous concessions that are especially enjoyed by the rich and weaken the budget outcome. No significant permanent changes were made.	15 per cent contributions tax up to the concessional limit (zero rate for end benefits withdrawn after age 60)	30 per cent (1983 on lump sum payments above a threshold)

(continued)

TABLE 5.1 A snapshot of the Australian government's key budget tax reforms as an aggregate supply budgetary measure. *(continued)*

Name of tax	Outline of key tax reforms	Top rate in 2022–23	Historical top rate
Reform of tariffs	Tariffs are an indirect tax added onto the price of imported goods making them dearer and protecting local industry. Over the last 40 years or so, these have been reduced. • 1996–97 — by 1996, the general tariff rate on most manufactured imports had been dramatically reduced from 38 per cent in 1968–69 to only 5 per cent. • 2010–11 — the tariff rate on imported cars was cut from 10 to 5 per cent, and the tariff on textiles and clothing came down from 15 to 10 per cent. • 2015–16 — the tariff on textiles and clothing was reduced to the general rate of just 5 per cent or less. • By 2022 — the tariff rate was less than 1 per cent.	Average rate of less than 1 per cent (general tariff rate)	38 per cent (general tariff rate, 1968–69)
The carbon tax	The carbon tax was levied from July 2012 to late 2014, on Australia's 500 environmentally dirtiest companies, starting at $23 per tonne of CO_2. It was seen as a way of internalising costs or negative externalities associated with carbon emissions and climate change. • **2014** — this tax was abolished, partly because of concerns about its effectiveness and the unintended consequences that reduced the international competitiveness and expansion of some Australian industries.	0 per cent (now abolished)	The starting rate was $23 per tonne of carbon emissions
Other tax reforms	Some multinational companies have been able to shift their tax liability from Australia to a lower tax offshoot overseas, reducing the revenue collected by the government. To counter this, a Diverted Profits Tax of 40 per cent was applied starting in 2017–18. In 2021, 130 OECD countries agreed to a minimum corporate tax rate of 15 per cent to help ensure transnational firms better meet their responsibilities and equitably share the tax burden.	Nominal rate of 40 per cent	Nominal rate of 40 per cent
	Other possible tax reforms that may be reviewed in upcoming years: • changes to franking credits from share dividends • negative gearing and capital gains discounts • superannuation tax concessions for salary sacrificing.		

Source: Data derived from many sources including the Treasury's *Economic Roundup*, winter 2006; budget papers 2008–09 to 2022–23; the ATO and media reports.

Probably the two most important tax reforms noted in table 5.1, have involved changes to personal and company taxes:

- ***Reforming income tax by cutting PAYG rates.*** Overall, significant cuts have been made to some marginal rates applied to personal income tax (Pay As You Go or PAYG) in recent budgets, with massive reforms currently scheduled for July 2024. These should help to grow Australia's productive capacity and aggregate supply. Reductions in income tax may work in various ways:
  - They may help to encourage greater *personal effort* and *motivation* to work hard, seek longer hours, gain extra skills or training, pursue promotion, participate in the labour force and stay in Australia, rather than go overseas where incomes are often higher and tax rates lower. Failure to cut tax rates would have diminished the quantity and quality of our human capital, lowered efficiency and would have acted as a barrier slowing Australia's productive capacity and living standards.

- Cutting personal income tax rates helps to reduce the disincentives caused by *bracket creep* (also called *fiscal drag*) as individuals move into higher tax brackets when their incomes rise. Lower tax rates avoid an increasing tax burden that would otherwise act as a disincentive, slowing the growth in productive capacity and aggregate supply.

- ***Reforming company tax rates.*** There have been significant reductions in tax rates for small and medium-sized companies over recent years. This has taken the rate from 30 to 25 percent since July 2021. Furthermore, recent budgets to 2022–23 also provided tax relief through instant tax write-offs for small to medium-sized businesses purchasing capital equipment. For example, the 2020–21 budget allowed businesses with an annual turnover of up to $5 billion to be able to deduct the full cost of improvements in eligible depreciable assets, and this was extended in the 2021–22 budget to June 2023. Company tax reforms like these have been used to grow Australia's productive capacity and promote aggregate supply:
  - Lower corporate rates create powerful financial *incentives* for businesses to expand through investment in new plant, equipment and technology. This boosts technical efficiency and capacity. In turn, higher efficiency helps keep production costs down and causes after-tax profits to be stronger. As a result of better returns, profit-hungry firms and individuals supposedly become more willing and able to expand production, increasing aggregate supply.
  - Lower company tax rates in Australia *relative* to those *overseas* have helped to make local export and import-replacing firms even more *internationally competitive*. This has also led to business expansion and the growth of aggregate supply.
  - In addition, relatively lower company tax rates here should help to attract foreign investment that would help to grow efficiency and aggregate supply.

How tax reform as part of the budget can affect domestic macroeconomic goals, international competitiveness and living standards

Many economists argue that the government's tax reforms announced in various budgets (mostly involving lower tax rates), have ramped up the positive *incentives* to encourage higher levels of business investment, reward greater effort, increase participation in the work force and encourage hard work by individuals. Through greater incentivisation, reforms have made Australia's aggregate supply conditions for businesses and individuals more favourable, thereby growing our productive capacity.

To better understand the economic impacts of tax reform, it is useful to refer to the AD–AS diagram shown in figure 5.5. Here, for example, lower personal and company tax rates create stronger incentives to grow capacity and increase AS (the rise from AS_1 to AS_2). In turn, this increases the potential rate of economic and employment growth (the rise from GDP_1 to GDP_2). At the same time, prices actually fall (the drop from P_1 to P_2). This also improves our international competitiveness. Over time, it is likely that these tax reforms have helped to strengthen domestic macroeconomic conditions, supporting better living standards. With this in mind, let us now take a closer look at how tax reform might operate to achieve these desirable outcomes.

Tax reforms in the budget can increase the non-inflationary rate of economic growth

The government seeks to have the highest sustainable rate of economic growth that does not add to inflation (namely, when chain volume GDP rises by an average of perhaps 3 per cent a year). Budgetary tax reforms can work in several ways to expand productive capacity, and increase aggregate supply and the potential rate of economic growth:

- ***Lower personal income tax rates*** (e.g. 2018–24) can create greater rewards or incentives, and motivate individuals to work harder, seek longer hours and gain promotion. They can also encourage higher rates of participation in the labour force (helping individuals avoid the welfare trap). This increases access to labour resources, grows productive capacity and boosts Australia's potential level of GDP.
- ***Cutting company tax rates*** (e.g. 2018–21) incentivises domestic and foreign investment and promotes business expansion by increasing rewards and after-tax profits. Cuts therefore help to stimulate both technical efficiency and intertemporal efficiency, increasing aggregate supply and the potential rate of economic growth.

Tax reforms in the budget can slow cost inflation and strengthen international competitiveness

The RBA and the government want to promote the goal of low inflation (an average rise in consumer prices over time of 2–3 per cent a year). Reforms involving reductions in tax rates have helped to slow Australia's rate of cost inflation:

- ***Lower company tax rates*** allow firms to gain stronger after-tax profits. They can sell profitably and more competitively at lower prices. Furthermore, with better profits, firms are more able to afford new technology, boosting their technical efficiency, suppressing cost inflation pressures, and enhancing international competitiveness.
- ***Lower rates of personal income tax*** can act as an incentive to work even harder and gain new skills, thereby lifting labour productivity. Again, this slows cost inflation.
- ***Lower tariffs*** have forced local firms to restructure their operations and specialise in areas of comparative cost advantage. This enhances allocative and technical efficiency, and eases cost inflation pressures.
- The ***abolition of the carbon tax*** increased the after-tax profits of some businesses, allowing them to sell competitively at lower prices (although this had adverse impacts on CO_2 emissions and the environment).

Tax reforms in the budget can reduce structural unemployment

Another government goal is full employment, where the unemployment rate is relatively low (perhaps around 4.0–4.5 per cent of the labour force or at a rate that doesn't accelerate inflation). Lower tax rates and changes to the tax mix can help reduce structural unemployment, especially in the long-term:

- ***Lower rates of personal income tax*** (e.g. 2018–24) can strengthen incentives to work and get a job (assuming these are available), lowering voluntary unemployment. Importantly too, lower rates may lift worker productivity, slow business costs and make local firms more competitive at home and abroad. This can also reduce the number of business closures, encourage expansion and cut structural unemployment.
- A ***reduction in the company tax rate*** (2018–21) for small and medium businesses who are now able to improve their after-tax profits, reduce company closures by making local firms more internationally competitive, encourage investment and expansion, and hence cut structural unemployment.

Tax reforms in the budget can increase living standards

Tax reform can help support Australia's living standards in several ways:

- By slowing cost inflation and growing the international competitiveness of local firms, tax reform has helped to grow the *purchasing power* of incomes, consumption and material living standards.
- Tax reform has increased financial incentives to work hard and invest. This has strengthened efficiency and lifted our potential GDP per capita, increasing *real incomes* and hence material living standards.
- Through encouraging greater efficiency and competitiveness, tax reform has helped to lower structural unemployment and boost *real disposable incomes* for individuals (because earnings from paid work have been higher than welfare benefits). This has lifted our *material* wellbeing. In addition, lower unemployment is beneficial to the general happiness and health of families, and potentially, may have kept crime rates lower. This also strengthens *non-material* living standards.

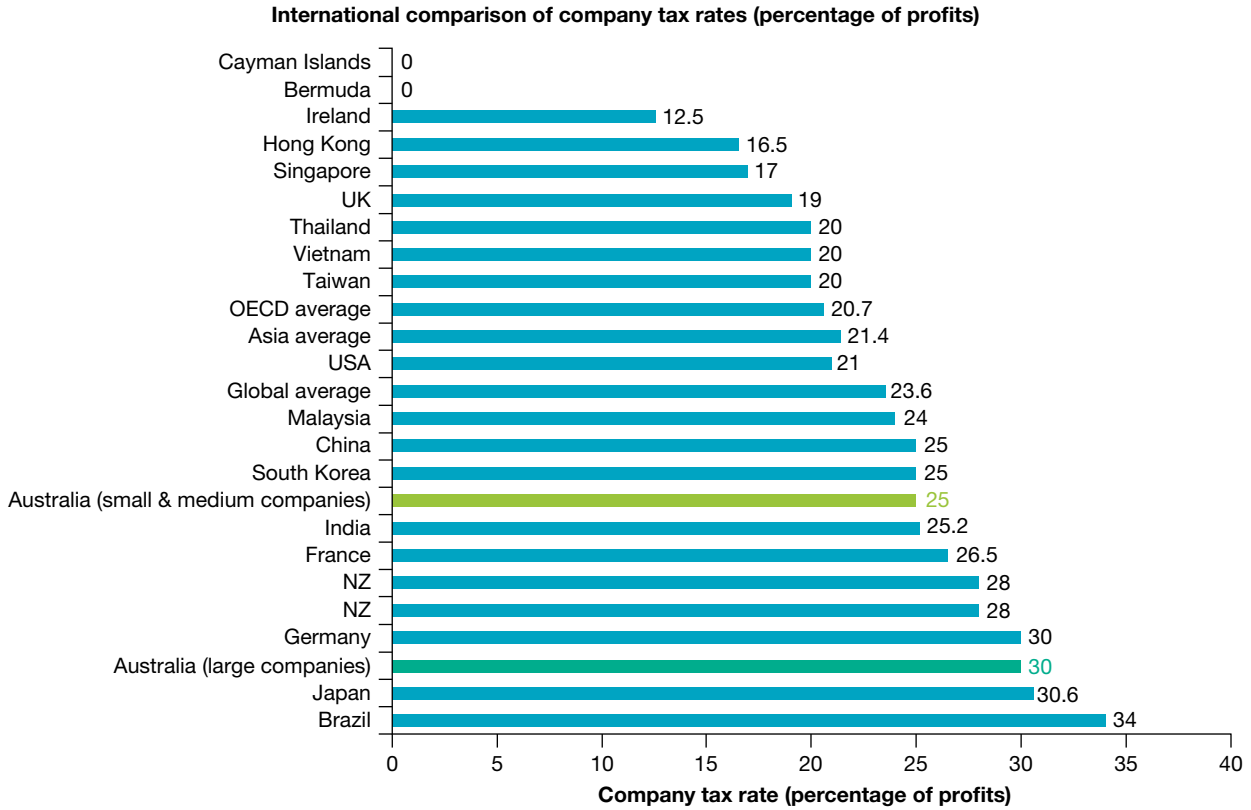
Weaknesses of tax reform in the budget as an aggregate supply policy

We have seen that tax reform involving lower tax rates, offers the potential for greater efficiency and productive capacity, boosting aggregate supply. However, the use of this microeconomic policy has *weaknesses*:

- ***Inconclusive evidence:*** The evidence that very low rates of personal income tax boost efficiency and grow our productive capacity, might be surprisingly *weak*. In fact, some economists claim the opposite: that up to a point, higher tax rates will create an increased incentive and necessity to work even harder in order to get ahead and have higher incomes, especially if over-generous welfare is not an option. Lower PAYG rates might simply allow middle- and upper-income earners to use their lower tax rate to enjoy more leisure time, without adding to the availability of labour resources or productive capacity.

- ***Financial constraints:*** Currently, there is concern over large budget deficits. Tax cuts tend to weaken the government's finances, perhaps necessitating an increase in government debt and interest repayments, creating an added burden on future generations. This acts as a financial constraint limiting the extent to which further cuts in tax rates are affordable. As a result, it reduces their beneficial impacts on aggregate supply. Indeed, figure 5.12 shows that despite reductions in rates of company tax for small to medium firms to 25 per cent from July 2021 with 30 per cent for large firms, this still leaves our company tax rates well above the OECD average of 20.7 per cent, and higher than that for Asian countries where it is just 21.4 per cent. It places Australia at a distinct *competitive disadvantage* in trade and investment, and discourages the growth of new firms and aggregate supply. Furthermore, if generally lower tax rates do *not* significantly boost efficiency and productive capacity, the danger is that there may be little addition to real incomes. All that might happen is that tax cuts will lead to *structural budget deficits* and the burden of rising debt. In addition, by reducing budget receipts, governments may not have sufficient resources to maintain the quality and affordability of public goods and services, a problem that we are now seeing in Australia. It could become a race to the bottom for the public sector, jeopardising the provision of quality infrastructure, education, health, transport, communications and housing. This would erode future economic growth and living standards.

FIGURE 5.12 International comparisons of Australia's rate of company tax against rates in other nations.



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.

- ***Trade-offs exist*:** Tax reform involving lower tax rates to increase efficiency, is seen by some as conflicting with the government's pursuit of an equitable distribution of income. To them, lower tax rates on companies, superannuation and capital gains mostly help the wealthy, and the supply-side idea that benefits will eventually 'trickle down' to those on lower incomes, only allows the rich to become even better off.

- ***Political constraints:*** Another weakness of Australia's recent attempts at tax reform, is the huge *political constraint* faced by governments who lack the numbers in the upper house or Senate, sufficient to pass the necessary legislation. In addition, voter reactions must be considered. As a result, difficult tax reforms have been deferred or abandoned. For instance, further debate is likely over the fairness or equity of the Stage 3 of the current income tax reform plan scheduled for July 2024. Some middle-income earners may be better off when the 32 and 37 per cent marginal tax rates are abolished to become a single 30 per cent bracket. In addition, those in the highest marginal tax bracket will also gain when the entry income level is pushed out to incomes over $200 000 from the current $180 000 per year. This raises a question about equity, given that currently, there is no proposed rise in the tax-free threshold for low-income earners who struggle to maintain living standards and be incentivised to participate in the labour force!
- ***The tax mix is not optimal:*** Other commentators point to Australia's over-reliance on direct income taxes that discourage the growth of investment and efficiency, and our under-reliance on indirect taxes on goods and services that encourage consumption. They feel there should be a more effective tax mix.

on Resources

Weblinks
- Why tax reform?
- Taxes on housing
- Tax reform — online quizzes
- Indirect tax
- How company tax impacts living standards
- Labour market reforms
- How the minimum wage creates unemployment
- Labour market
- The labour market
- Minimum wage consequences
- Understanding supply-side economics

5.3 Activities

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5.3 Quick quiz on | **5.3 Exercise**

5.3 Exercises

1. **Define** the term, *aggregate supply budgetary policies*. **(2 marks)**
2. From the following, **select** *one* budgetary policy measures that can be used to affect aggregate supply:
   - Outlays on infrastructure
   - Outlays on education and training
   - Budget subsidies
   - Financial support of R&D
   - Tax reforms.

   a. **Describe** the main features of the selected budget measure. **(2 marks)**

   b. In general terms, **explain** how the policy can be used to affect aggregate supply. **Illustrate** this using a fully labeled AD–AS diagram showing the *before* and *after* situations for an economy. **(4 marks)**

c. Giving reasons, **explain** how, over time, the selected policy could be used to help achieve each of the following domestic macro goals:
   i. The goal of a strong and sustainable rate of economic growth **(2 marks)**
   ii. The goals of low inflation and international competitiveness **(2 marks)**
   iii. The goal of full employment **(2 marks)**
   iv. The goal of improving living standards. **(2 marks)**

d. **Identify** and **explain** *two* important weaknesses or limitations of using your selected policy to improve general living standards. **(4 marks)**

Solutions and sample responses are available online.

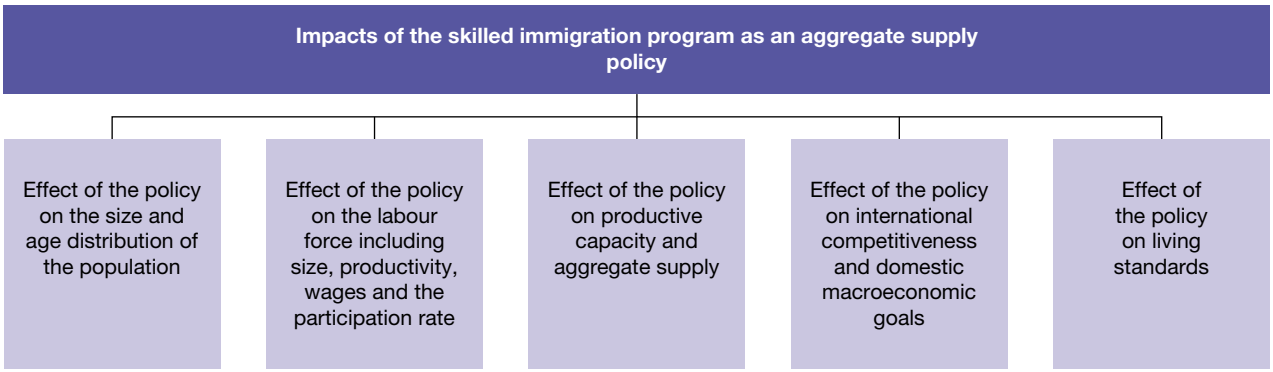
5.4 Encouragement of skilled immigration as an aggregate supply policy

KEY KNOWLEDGE

- The effect of skilled immigration policy on population, productivity and participation and the subsequent effect on productive capacity, aggregate supply, international competitiveness, the achievement of domestic macroeconomic goals, and living standards

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

In this section of the course, we will study the Australian government's strategy of *encouraging skilled immigration* as an *aggregate supply policy*. In particular, we will investigate the impacts of this *skills policy* on Australia's population, worker productivity, and the labour force participation rate. In addition, we will examine how this strategy affects Australia's productive capacity, international competitiveness, and the achievement of domestic macroeconomic goals and living standards.



By way of background, this skills program is just one element making up the Australian government's overall *immigration target* that until September 2022, was capped at 160 000 till 2023–24. However, faced with skills shortages, a decision has recently been made to lift this to 195,000 *permanent entry visas* starting in 2022-23. This broader immigration target is broken down into *four* main categories or *streams*:

- *The Skill Stream* normally makes up around 70 per cent of permanent visa holders and seeks to fill skill shortages in the labour market.
- *The Family Stream* is for Australian citizens or permanent residents to reunite with their family members from overseas.
- *The Special Eligibility Stream* involves those in unusual circumstances.
- *The Child Stream* is driven by demand.

Target levels for each of these entry categories can be varied to reflect changing domestic conditions (e.g. in the labour market and broader economy) and international developments (e.g. COVID-19 with border closures meant targets were not reached and there was actually net emigration, where more people left Australia than entered).

FIGURE 5.13 By using its immigration policy, the Australian government hopes to grow the size and skills of our labour force, partly reversing the effects of an ageing population. It also hopes that this policy will reduce **labour bottlenecks** and increase the nation's productive capacity. This could allow for a faster potential rate of economic growth and improved material living standards.

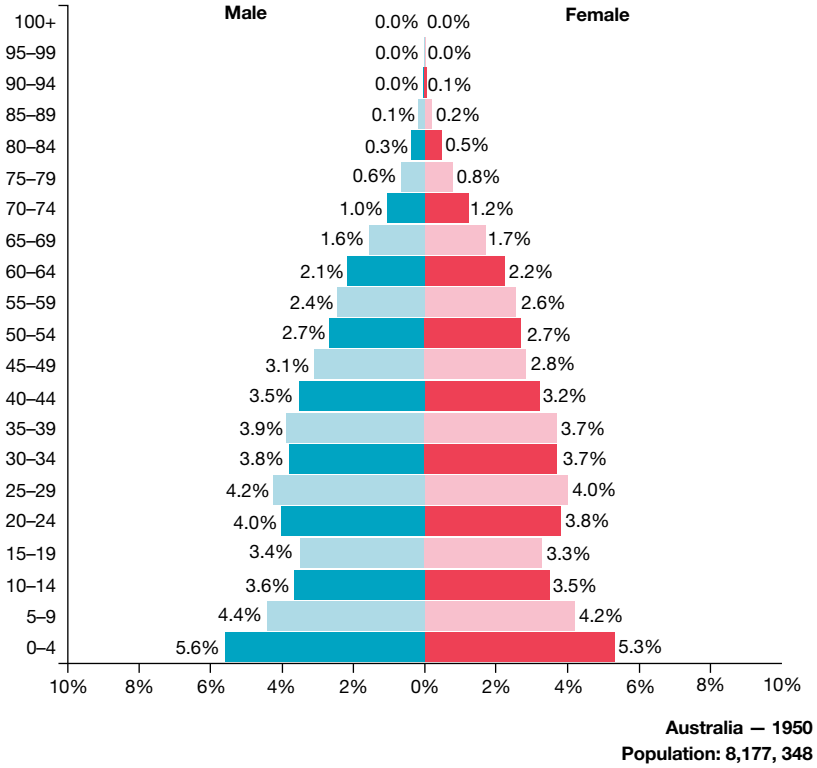


In arriving at our immigration policy *today*, decisions have been driven by *two* factors.

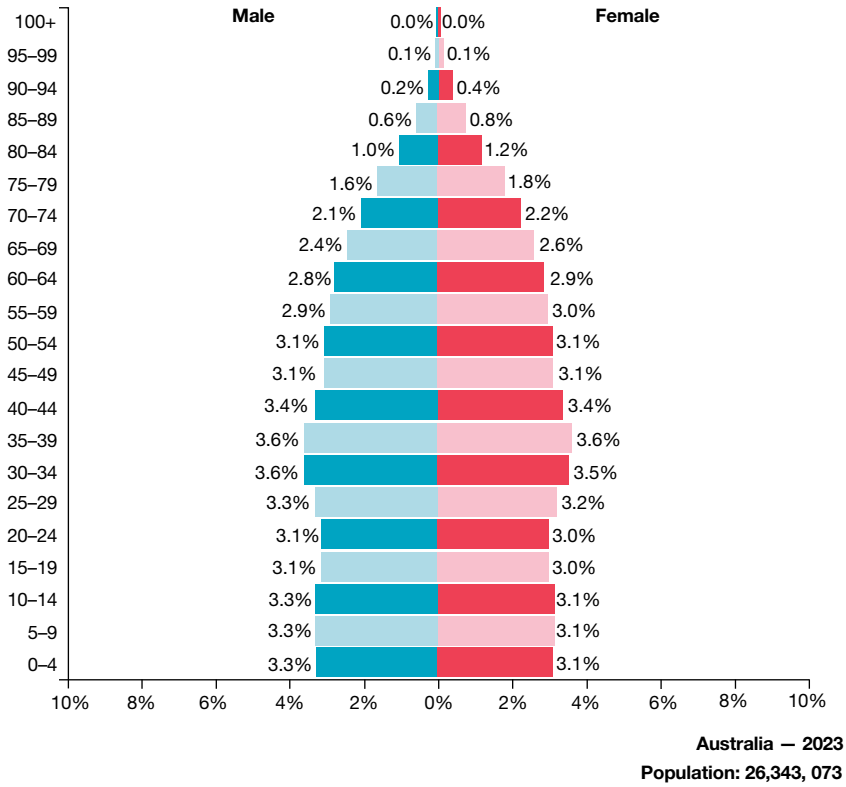
- Firstly, back in the years following the end of World War II (1945), Australia was seen as a vast *underpopulated* country with massive natural resources just waiting to be exploited. With this attitude, immigration was needed for economic and political reasons. 'Populate or perish' was the slogan of the time. During the 1950s and 1960s, the federal government even offered to pay the cost of the boat passage to Australia, to boost European migration numbers.
- More recently, however, we recognise that Australia has an *ageing population* with a growing proportion of the population in older age groups nearing or beyond retirement. This is partly due to smaller families and a *falling birth rate*. The extent of Australia's ageing population can be seen in figure 5.14, which compares *population pyramids* (showing the *age–sex distribution* of a population) at two points in time: 1950 and 2023 (projected).

Notice that by 2023, instead of a relatively wide *base* on the population pyramid like in 1950 (i.e. young people make up a relatively high percentage of the total population), the pyramid base has become narrower, and instead of inward sloping walls with lots of people in younger age groups, moving upwards the sides have become almost vertical. This shows that there is now a higher proportion of the population in older age groups. We have an *ageing population* with more nearing retirement and leaving the labour force, creating labour and skills shortages.

FIGURE 5.14 The changing shape of Australia's population pyramid comparing 1950 with 2023 (projected), showing our ageing population.



Source: PopulationPyramid.net, Retrieved from: https://www.populationpyramid.net/australia/1950/. Licensed under CC BY 3.0.



Source: PopulationPyramid.net, Retrieved from: https://www.populationpyramid.net/australia/2023/. Licensed under CC BY 3.0.

So, our *immigration policy* that consists of around 80 per cent of people aged less than 30 years, is now seen as one way of easing serious problems caused by our ageing population. These include:

- our worsening *labour shortages* (especially those with special skills required to fill shortages)
- our relatively *high wage costs* (caused by labour shortage which makes local production less internationally competitive)
- the erosion of the *government's financial position* (caused by the need to increase outlays on aged pensions and health, because there is now a relatively smaller proportion of younger taxpayers in the labour force).

These less favourable conditions act as *barriers*, limiting Australia's productive capacity, aggregate supply, international competitiveness, and ultimately, living standards — problems that have been well documented in various government *Intergenerational Reports* (the latest in 2021).

5.4.1 Definition and features of Australia's recent skilled immigration policy

As an aggregate supply policy, Australia's **encouragement of skilled migration** *is closely geared to meeting the needs of our labour market in growing the economy's size with an ageing population. As the government states, "the Skilled Stream of the Migration Program, is designed to attract migrants who make a significant contribution to the Australian economy and fill positions where no Australian workers are available. Skilled migrants have very high participation rates in the workforce, helping to stimulate economic growth, which results in more jobs … It also plays an important role in regional development through providing skills and labour which can't be sourced locally, as well as encouraging investment and promoting local spending in regional areas."* (See Australian government, Department of Home Affairs).

As an *aggregate supply policy*, this *skills program* has several key features:

- It sets *annual targets* to manage the overall number of people allowed visa entry. This affects the size and growth of both the general population and our available labour force, expanding Australia's productive capacity and aggregate supply.
- The policy allows flexibility since the annual intake target can be varied to reflect changing domestic conditions and overseas circumstances.
- It gives *priority* to immigrants who have *special types of skills and talents* (technical and other skills including English language) where we have current labour shortages. This helps to remove a barrier to expanding capacity and output. It also helps to grow productivity or the quality of our human capital or labour resources available, again boosting capacity and aggregate supply.
- It encourages those in *younger age groups* (around 80 per cent of all entrants are aged less than 30 years) who are more likely to make a valuable and ongoing economic contribution to the Australian economy for many years to come, temporarily slowing the effects of our ageing population. Over the medium-term, this helps to ensure that our productive capacity and aggregate supply can continue to grow.

The *general skills migration* program is based on a points system reflecting how likely the migrant is to make the greatest economic contribution according to criteria like work experience, age, and education.

- There are *three* possible categories for *skills* entry:
  - There is the *employer-sponsored migration* program. Here, an employer can recommend people who have the special skills they seek.
  - The *distinguished talent* program, for attracting those who are internationally recognised in their field of expertise.
  - Finally, there is the *business innovation and investment* program. This is to attract those with financial backing and a previous good track record of running successful businesses.

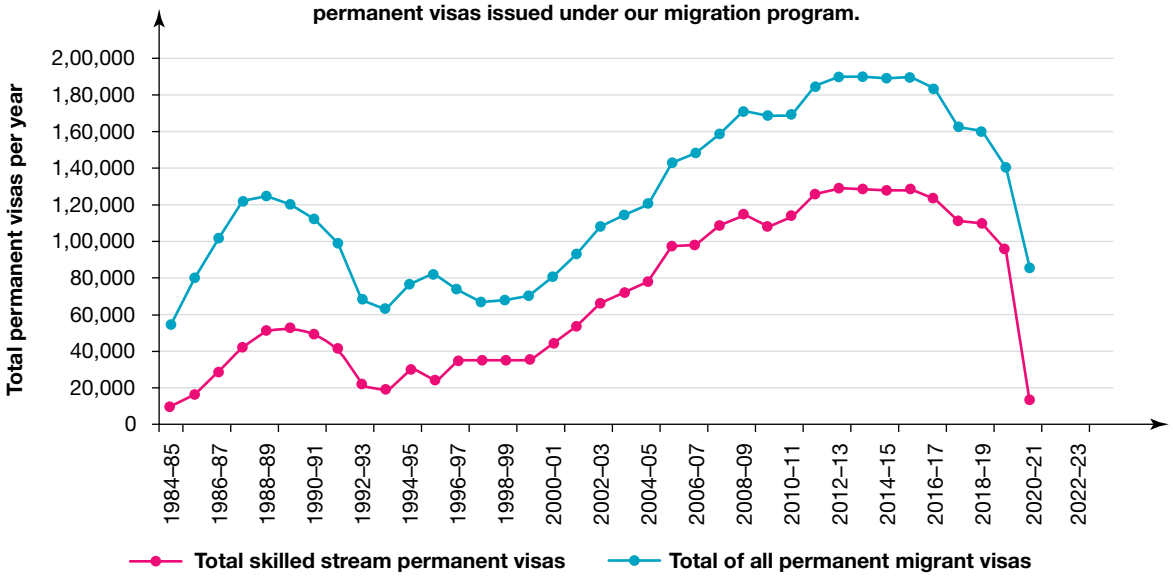
Figure 5.15 provides a quick *snapshot* of the Australian government's policy of encouraging skilled immigration:

- Part 1 shows that in most recent years prior to COVID-19 border closures, skilled immigrants made up nearly 70 per cent of all permanent visas issued.

- Part 2 identifies some of the key areas of skills shortages recently targeted by the skills program — for instance, health care professionals, partly reflecting the impact of COVID-19 and our ageing population.
- Part 3 shows the occupations where employment and jobs are forecast to rise most (e.g. health and social assistance, and food services) and least (e.g. manufacturing and information media), up till 2025. This affects the future priority areas for the skills program. Notice the relative faster growth of health and accommodation, but the decline in manufacturing.

FIGURE 5.15 Snapshot of the Australian government's policy of encouraging skilled immigration.

Part 1 — Changes in Australia's number of skilled as opposed to all permanent visas issued under our migration program.



Source: Data derived from Australian government, Department of Home Affairs, see https://data.gov.au/data/dataset/australian-migration-statistics.

Part 2 — Key areas of skills shortages recently targeted by the migration program.

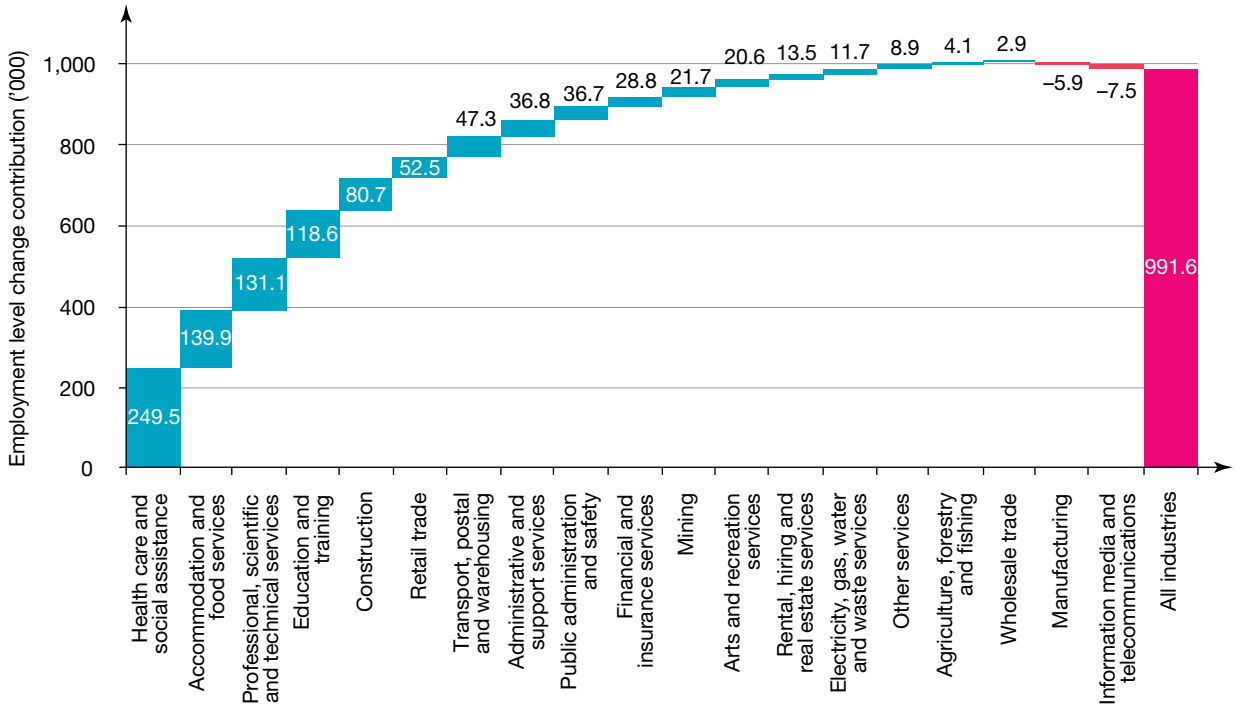


Source: Information derived from Australian government, National Skills Commission, see https://www.nationalskillscommission.gov.au/chapter-4-skills-workers-todays-labour-market.

(continued)

FIGURE 5.15 Snapshot of the Australian government's policy of encouraging skilled immigration. *(continued)*

Part 3 — The contribution of key occupations to Australia's projected employment growth for the five years to November 2025, showing likely areas of skills shortages.



Source: Australian Government, NSC, 2020 Employment Projections, five years to November 2025, see https://www.nationalskillscommission.gov.au/five-year-employment-projections.

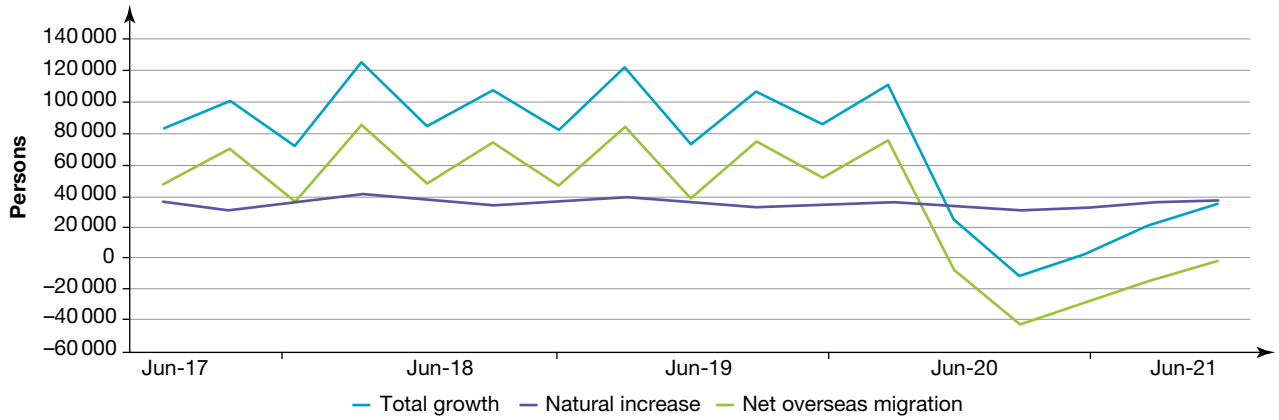
5.4.2 The impact of the skilled immigration program on Australia's population

As previously mentioned, our immigration policy has been generally shaped by *two* drivers. Firstly, given our many resources, it was felt that Australia was *underpopulated*, so an increase in population numbers was seen as the answer. Secondly, we have an *ageing population* (i.e. a rising percentage of the population in older age groups nearing or already in retirement). This trend is largely due to our declining birth or fertility rates, resulting in growing *labour shortages*. If not addressed, an ageing population will slow our sustainable rate of economic, employment and income growth, and will put the *government's finances* under greater pressure due to increased outlays and reduced tax revenues. Again, these problems are the rationale behind the government's encouragement of immigration, with its focus on attracting those with *skills*!

Figure 5.16 part 1 shows that recently, *net immigration* (the excess of immigrants over emigrants) normally accounts for around 60 per cent of our total population growth, of which skilled migrants make up the majority. The remaining growth in population has come from *natural increase* (i.e. the excess of births over deaths), although COVID-19 and border closures recently changed this normal pattern. Part 2 of figure 5.16 clearly shows that most immigrants are young, with 80 per cent aged less than 30 years. This is how immigration has helped to slow our ageing population — well at least temporarily, since of course further down the track, immigrants also get old! Part 3 of figure 5.16 reveals that most migrants chose to live in Melbourne and Sydney where there are more opportunities for employment in the labour market.

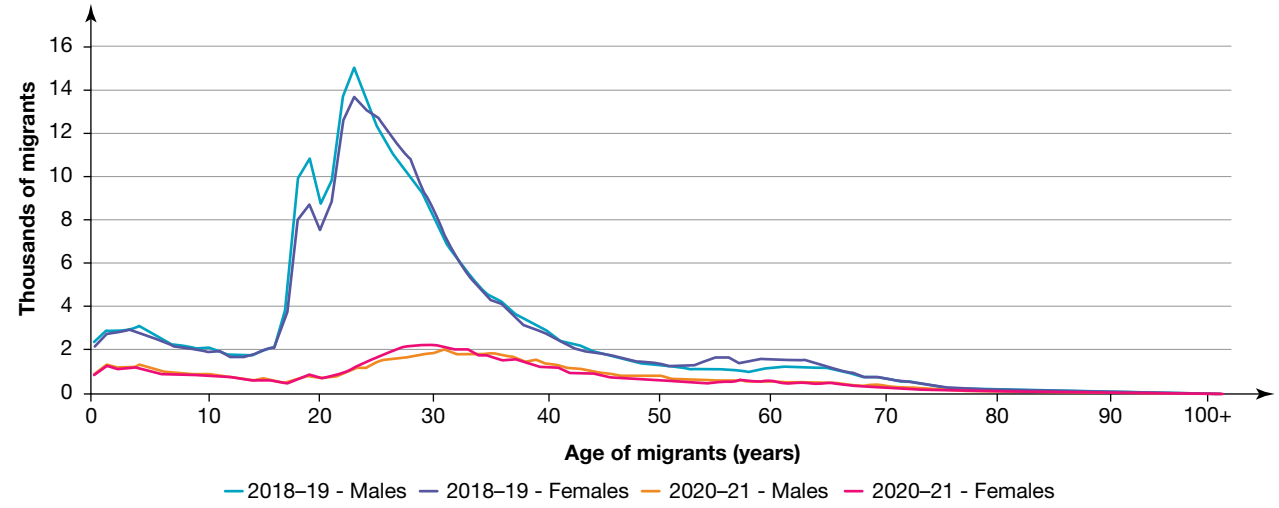
FIGURE 5.16 Some effects of immigration on Australia's population.

Part 1 — The quarterly contribution of immigration to the growth in Australia's population size.



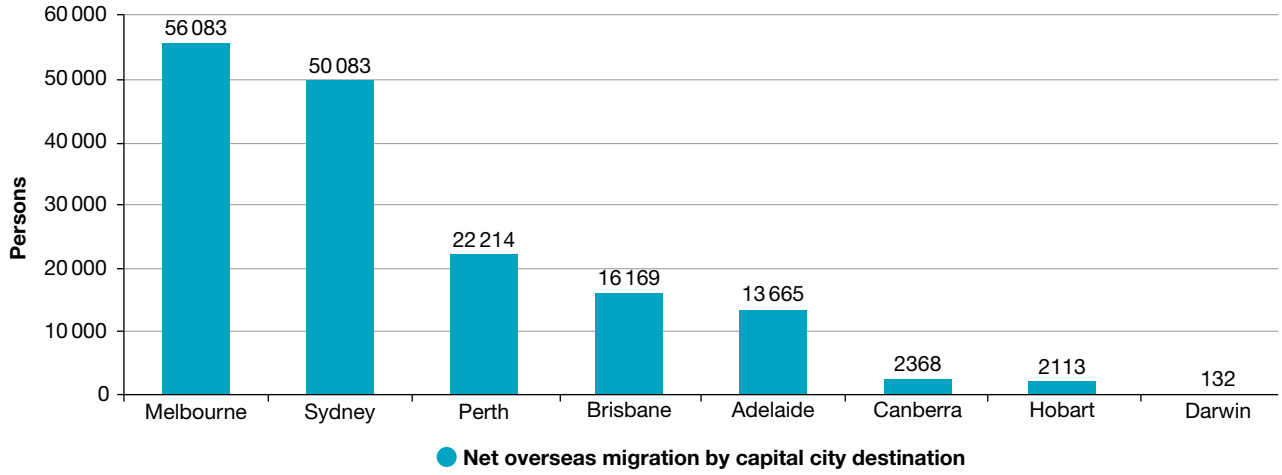
Source: Australian Bureau of Statistics, national, state and territory population June 2021.

Part 2 — How mostly younger male and female immigrants should help to slow Australia's ageing population and fill labour shortages.



a. Estimates for 2019–20 are preliminary. See revision status on the methodology page.
Source: Australian Bureau of Statistics, overseas migration 2020–21 financial year.

Part 3 — Most immigrants chose to locate in Melbourne and Sydney where there are often more job opportunities.



a. Population estimates for 2019–20 are preliminary.
Source: Regional population, 2019–20.
Source: Australian Bureau of Statistics, migration, Australia 2019–20 financial year.

5.4.3 The impact of the skilled immigration program on Australia's labour force

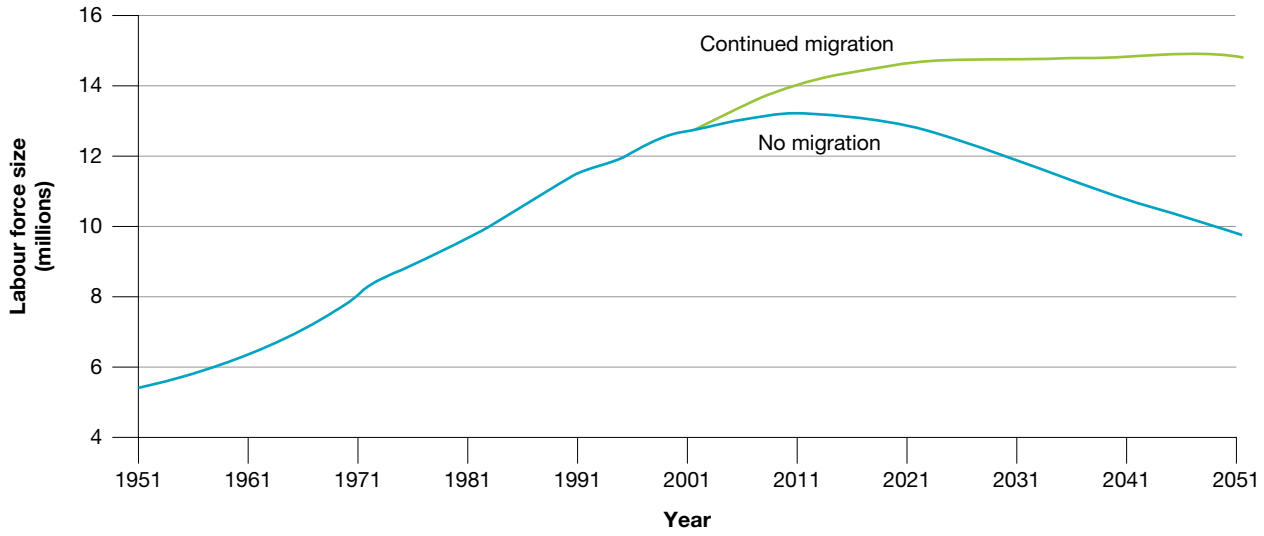
Skilled immigration has impacted the labour market by affecting the size and skills of the labour force, its productivity, and the participation rate.

Skilled immigrants have grown the size of the labour market



The government's encouragement of *skilled immigration* has greatly increased the *size* of Australia's labour force (i.e. all those aged 15 and over, who are able and willing to work), reduced labour shortages, and increased the *quality* of our human capital resources. Without immigration policy, figure 5.17 shows that the overall *size* of Australia's labour force (the total supply of labour) would have started to shrink from about 2011–12 onwards. This would have led to even worsening labour bottlenecks, especially *skills shortages*, leading to higher wage-cost pressures that would have reduced our international competitiveness. In turn, as a less favourable aggregate supply factor (and given our relatively slow growth in productivity), skills shortages would have limited the expansion of productive capacity, aggregate supply, and the potential level of economic, employment and income.

FIGURE 5.17 How immigration has enabled Australia's labour force size (millions) to keep growing, despite our ageing population and falling birth rate, thereby easing skills and other labour shortages.



Source: © Australian Bureau of Statistics.

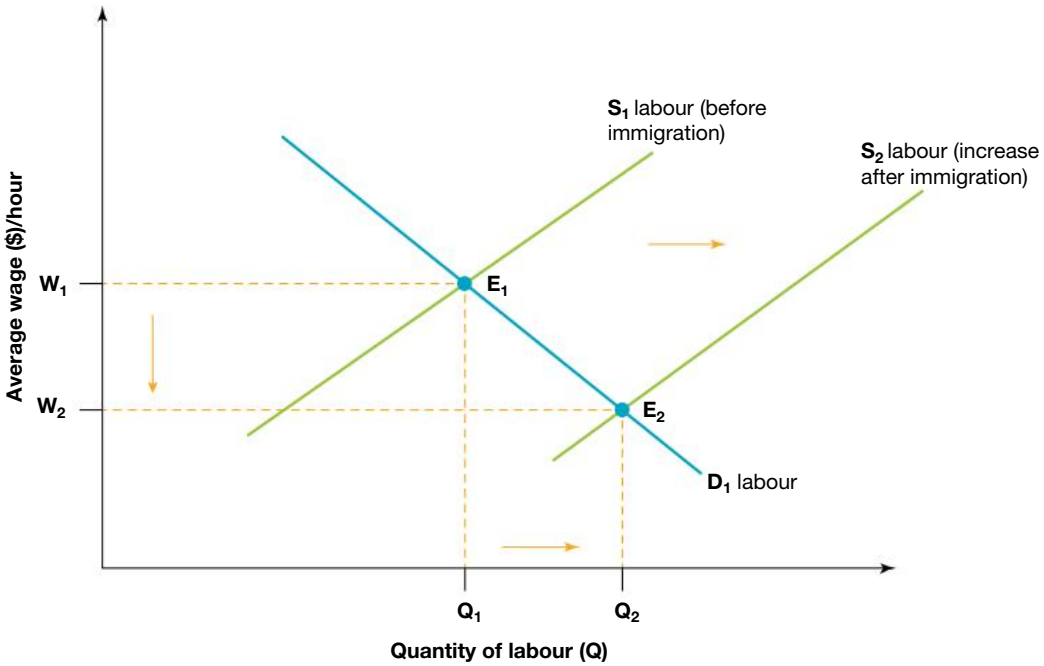
On average, around 70 per cent of immigrants are classified as *skilled*. Figure 5.19 part 1 illustrates hypothetically, how the migration program has *increased the supply of skilled labour,* typically growing the size of the workforce by 100 000–120 000 each year (shown as the increase from S_1 to S_2). This helps to ease labour shortages. If we assume that nothing else changes (i.e. we make a *ceteris paribus* assumption), this will tend to *slow* the growth of wages for skilled workers (shown here as the drop from W_1 to W_2). In addition, immigrants tend to work longer hours and have higher levels of productivity than locals, further boosting the supply of labour. As a more favourable aggregate supply factor, this should strengthen business expansion, productive capacity, and the potential non-inflationary rate of economic, employment, and income growth.

However of course, immigration doesn't just grow the supply of labour and skills. Migrants are also consumers (e.g. of food, housing, clothing, education, health), lifting the demand for goods and services and hence also, *increasing the demand for labour*. Figure 5.18 part 2 assumes that there is no change in the supply of labour due to immigration, but that there is only an increase in labour demand (the rise from D_1 to D_2). In this case, immigration would put some *upward* pressure on wages (from W_1 to W_2) and tend to lower the unemployment rate.

FIGURE 5.18 Using demand–supply diagrams to show Australia's market for skilled labour before and following immigration.

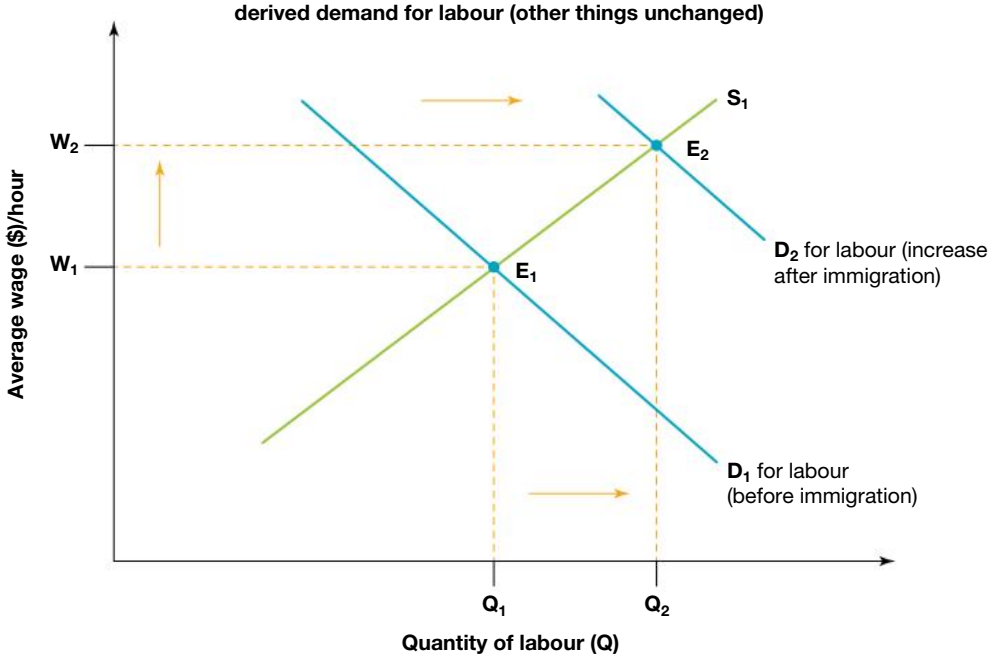
Part 1 — How skilled migration grows the supply of labour, eases labour shortages and slows wage costs.

The hypothetical effects of immigration on the overall supply of labour (other things unchanged)



Part 2 — How skilled immigration also increases the demand for labour, creating more jobs and higher wages.

The hypothetical effects of immigration on the demand for goods and services and the derived demand for labour (other things unchanged)



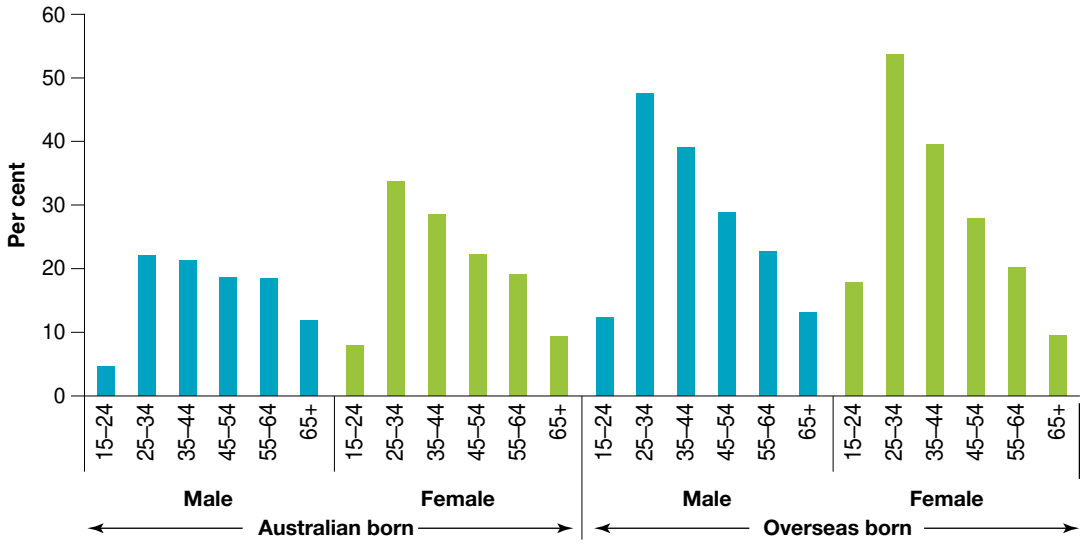
Overall, while immigration has increased the *supply* of skilled workers in the labour market, it has also increased the *demand* for labour. In theory, whether immigration ultimately slows or accelerates wage-cost pressures over the short-term or longer term, depends partly on whether the rise in the supply of skilled labour is greater or less than the rise in demand.

Skilled immigrants help to strengthen productivity

Labour productivity is an important driver of economic growth and higher real incomes. It is usually measured by GDP per hour worked and closely reflects the skills and levels of training gained through education. Most of the 120 000 immigrants entering each year on permanent visas, are classed as *skilled*.

Indeed, figure 5.19 shows that on average, *skilled immigrants* have significantly *higher levels of education* across all age groups, than Australian-born residents. So, it is fair to suggest that the skilled immigration program has helped to increase the quality of Australia's human capital. It strengthens *labour productivity*, slows wage costs, and improves business competitiveness and profits, expanding productive capacity, increasing Australia's aggregate supply and boosting the non-inflationary rate of economic, employment and income growth.

FIGURE 5.19 The higher proportion of overseas-born people with a degree or higher educational qualification by age and gender, relative to those people born in Australia.



The labour force participation rate

The *participation rate* represents the proportion of the population aged 15 and over, that are in the labour force — either employed or unemployed. Relative to many countries, Australia's participation rate at around 65–66 per cent is low. For instance, Switzerland's rate is around 83 per cent, and Qatar and Sweden are at 88 and 89 per cent respectively.

The problem with *low* participation rates is that they *reduce* the total supply of labour, and limit productive capacity and aggregate supply.

What the skilled immigration program has done is to help lift our participation rate. One reason for the higher labour force participation rate of around 90 per cent among our skilled immigrants, is that over 80 per cent are aged less than 30 years, compared with an average age of around 45 years for Australian-born individuals.

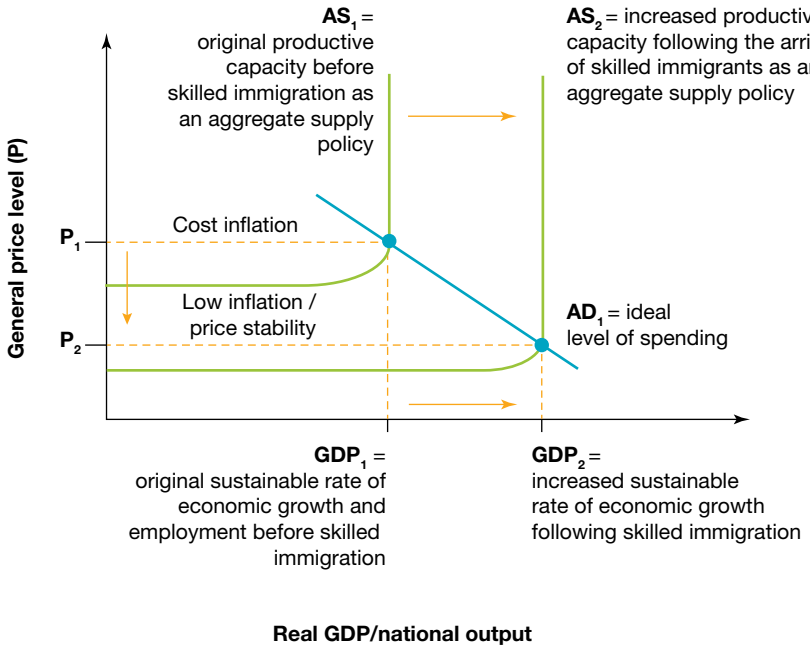
Another explanation is that with higher skill levels and an ability to fill labour shortages, these migrants can more readily gain employment, lifting the participation rate. In turn, this helps to enhance Australia's productive capacity, boost aggregate supply, and grow the potential level of economic, employment and income growth.

5.4.4 The impact of the skilled immigration program on productive capacity, aggregate supply, domestic macroeconomic goals, international competitiveness, and living standards

We have seen that the Australian government's policy of encouraging skilled immigration has many beneficial effects that help to make aggregate supply conditions more favourable for producers of goods and services, growing the economy's productive capacity. For instance, the entry of skilled migrants has helped to slow the problem of our ageing population. This has grown the supply of labour to help fill labour shortages by increasing productivity and increasing the labour force participation rate.

The AD–AS diagram shown in figure 5.20 can again be used to illustrate how skilled immigration can help to grow Australia's labour resources and productive capacity, cause a rise in aggregate supply (notice the increase from AS_1 to AS_2), and boost the sustainable level of national output (the rise from GDP_1 to GDP_2). Potentially, this can help strengthen the achievement of Australia's domestic macroeconomic goals, international competitiveness and material living standards.

FIGURE 5.20 How the encouragement of skilled immigration can help to grow Australia's level productive capacity, aggregate supply, potential GDP, and average material living standards.



The impact of skilled immigration on international competitiveness

International competitiveness is about local producers being able to sell their quality goods and services profitably at relatively low and attractive prices in various markets, against their foreign rivals. Among other things, our firms need access to a skilled and innovative work force to help lift labour productivity. In turn, this will help to hold down domestic labour or wage costs that are currently among the highest in the world.

In addition, immigration can also help local firms to gain greater economies of large-scale production, since it increases the population and size of the domestic market. Here, a firm's average costs can be spread more thinly

as output expands for a now bigger market. This means that firms can profitably sell at lower prices, making them more internationally competitive.

The impact of skilled immigration on domestic macroeconomic goals

The government attempts to achieve the *ideal* situation where there is *domestic economic stability* — that is, the simultaneous achievement of the goals of low inflation, a strong and sustainable rate of economic growth, and full employment.

Skilled immigration can slow inflation

The *goal of low inflation* means keeping the rise in consumer prices to 2–3 per cent a year. Assuming that over time, immigration adds more to the supply of labour relative to the demand for labour, our labour shortages (due to an ageing population) should be reduced, and wage costs kept lower than otherwise. The Productivity Commission projected that between 2014 and 2060, immigration may slow wage rises, possibly by 20 per cent, allowing local firms to profitably sell at lower prices.

Another way that skilled immigration of around 100 000–120 000 per year may help to slow cost inflation, is that many Australian firms produce on a smaller scale, causing their average unit costs (such as product development, machinery and advertising) to be higher, simply because these cannot be spread out more thinly over higher levels of output.

Even so, it is also possible that immigration could contribute to inflationary pressures in specific areas, if it adds to the demand for resources, goods and services, more than it adds to their supply. Here, for example, we might think of the considerable impact that immigration has had in pushing up property prices in our major cities and significantly reducing housing affordability for other Australians. In addition, the extra demand generated by immigration has probably contributed to infrastructure bottlenecks and the rising cost of utilities (electricity, gas, and water).

Skilled immigration can increase the non-inflationary rate of economic growth

The government looks to achieve the *goals of a strong and sustainable rate of economic growth* — that is, the fastest rate of increase in GDP of perhaps around 3 per cent a year, that doesn't accelerate inflation or undermine the achievement of other economic or environmental goals. Over recent decades, the trend rate of economic growth has been slowing, partly because of weaker productivity, skills shortages, an ageing population, and other structural constraints limiting the growth of the economy's productive capacity. With this in mind, the encouragement of skilled immigration has helped to fill some of the skills shortages, boost productivity and grow the size of the domestic market so firms can gain better economies of large-scale production. In turn, these help to strengthen the non-inflationary rate of economic growth.

However, this still leaves unanswered the question of environmental sustainability. Some economists have drawn attention to the stresses resulting from our exceptionally rapid rate of population growth on water, land for housing, non-renewable natural resources, urban congestion, waste disposal and greenhouse gas emissions. Because skilled migrants alone add on average 100 000–120 000 people every year — equal to a mid-sized city — it accelerates *environmental damage* making the achievement of net zero emissions by 2050, even more challenging.

Skilled immigration can help create full employment

The government tries to achieve the *goal of full employment*. This means the lowest rate of unemployment, perhaps around 4.0 to 4.5 per cent of the labour force, that doesn't accelerate inflation (NAIRU). Although you may hear claims that immigration takes the jobs of locals, this is not likely to be the case with the skilled migration program, because these people often fill the jobs that can't be covered locally.

Another reason is that by filling labour shortages, it reduces barriers and allows businesses to start up or expand. There is also less pressure on firms to relocate overseas in search of suitable staff. In addition, immigration

policy may have helped to *reduce* our unemployment rate because migrants also become consumers of goods and services (food, housing, holidays, transport, and medicine), increasing *aggregate demand*, economic activity and the derived demand for labour. This would tend to reduce Australia's level of cyclical unemployment.

The impact of skilled immigration on living standards

While there are many positive impacts of the *skilled migration program* on our living standards, there are also some negative effects:

The effects on material living standards:

Material living standards reflect real per capita GDP and incomes, and the *quantity* of goods and services consumed. As an aggregate supply policy, the *encouragement of skilled immigration* has mostly strengthened our economic wellbeing by making conditions more favourable for producers and creating a stronger domestic macroeconomic environment. For example:



- It has eased *labour shortages* that otherwise would be a hurdle limiting business expansion and the growth of new industries that help to grow our productive capacity, and potential GDP, employment, and incomes.
- It has helped to boost labour *participation rates* and productivity, expanding aggregate supply and the non-inflationary rate of economic, employment and income growth
- It has helped to keep *wage costs* lower than otherwise, improving the real purchasing power of higher incomes.

Economic modelling lends some support for the general economic benefits of immigration, although unfortunately, it fails to single out *skilled* immigration where benefits are likely to be considerably greater than those for *all types* of immigration. For example, the 2021 *Intergenerational Report* estimated that overall, immigration (including those with skills) would cause real GDP to be 4.7 per cent higher by 2060–61. In addition, the Productivity Commission's 2016 report estimated that if there was ongoing immigration of all types between 2014 and 2060, this would cause Australia's real GDP per capita to be 5 per cent higher than having zero net migration, amounting to $5100 per person. Furthermore, projections also show that by slowing ageing and creating a bigger economy, immigration can help strengthen the bottom line of the government's budget by increasing tax revenue (a greater number of younger taxpayers) more than budget outlays (on the services needed for a bigger population).

One offsetting factor on the material side is that the addition of 100 000–120 000 skilled migrants each year, has contributed to reduced housing affordability, especially for young first-home buyers, by driving up the demand for property, relative to its supply. Additionally, by contributing to shortages in water and energy markets, it has put upward pressure on the cost of living, slowing the purchasing power of incomes and reducing consumption levels.

The effects on non-material living standards:

Non-material living standards relate to the average quality of everyday life for ordinary Australians. They reflect a host of influences which are often hard to measure. On the one hand, skilled immigration has made for a far more vibrant, creative, innovative, tolerant, rich, and interesting multicultural society, improving our wellbeing.

On the other hand there are some non-material downsides. For instance, there is little doubt that by greatly increasing our population size, immigration has significantly added to work travel times and traffic congestion, reducing leisure and family time. Importantly too, it has added to environmental challenges, and has reduced *social cohesion* causing some groups to feel alienated, unwanted, and unhappy.

5.4.5 Weaknesses of the policy of encouraging skilled immigration

As we have just seen, *skilled immigration* as an aggregate supply policy is designed to make aggregate supply conditions more favourable. For example, it has grown the size, skills, and productivity of the labour force, eased labour shortages and slowed wage costs, boosting the economy's capacity. However, when the policy is used to promote domestic macroeconomic goals and improve living standards, it has some critics:

1. ***Not a permanent solution:*** Unless immigration rates keep on rising, it is not a permanent solution to the problems caused by skills shortages with Australia's ageing population. Immigrants also get old!
2. ***Economic benefits are relatively small:*** Modelling presented in the 2021 Intergenerational Report, forecast that immigration's total addition to real GDP and incomes by 2060 was just 4.7 per cent. If correct, some would say that overall, the economic case for immigration is surprisingly weak!
3. ***Non-material trade-offs or costs:*** Despite its benefits, immigration undermines some aspects of non-material living standards. For instance, it accelerates our environmental problems and resource depletion, adds to Australia's greenhouse gas emissions, weakens social cohesion, worsens traffic congestion and overcrowding in capital cities, and reduces the amount of leisure time left to spend with family and friends.
4. ***Political constraints:*** While less applicable for the entry of skilled workers, immigration is a political issue because its benefits and costs are not shared evenly.

on Resources

Weblink How immigration can help the economy

5.4 Activities

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5.4 Quick quiz on | **5.4 Exercise**

5.4 Exercise

1. **Describe** the key features of Australia's policy of encouraging skilled immigration. **(4 marks)**
2. **Outline** the main reasons *why* Australia needs a policy of encouraging skilled immigration. **(2 marks)**
3. This question is about aspects of Australia's policy of encouraging skilled *immigration* as an aggregate supply policy that is especially designed to affect the labour market.
   a. **Explain** how the Australian government's skilled immigration policy can be regarded as an important aggregate supply policy that helps to boost Australia's productive capacity and sustainable rate of economic growth. Use a fully labelled AD–AS diagram to **illustrate** hypothetically, the *before* and *after* effects of increased immigration on the economy. **(5 marks)**
   b. **Explain** how you would expect Australia's skilled immigration policy to affect each of the following:
      i. the size of the population and labour force
      ii. labour productivity
      iii. the participation rate
      iv. the unemployment rate
      v. the demand for labour
      vi. the inflation rate
      vii. non-material living standards. **(14 marks)**

4. In 2021, the federal government released the Intergeneration Report. One of the challenges identified was that presented by an *ageing* population.
   a. **Explain** what is meant by an *ageing population*. **(2 marks)**
   b. **Identify** and **outline** *two* important economic problems that might be caused by Australia's ageing population. **(4 marks)**
   c. **Analyse** how skilled *immigration* might be used to help reduce the impacts of an ageing Australian population. **(3 marks)**
5. **Identify** and **analyse** two important effects of the government's planned increase in the skilled immigration target from 2022–23, to 195,000 people per year. **(4 marks)**
6. **Outline** one important strength and one important weakness of using immigration policy to help promote the goal of a strong and sustainable economic growth. **(4 marks)**

Solutions and sample responses are available online.

5.5 Trade liberalisation as an aggregate supply policy

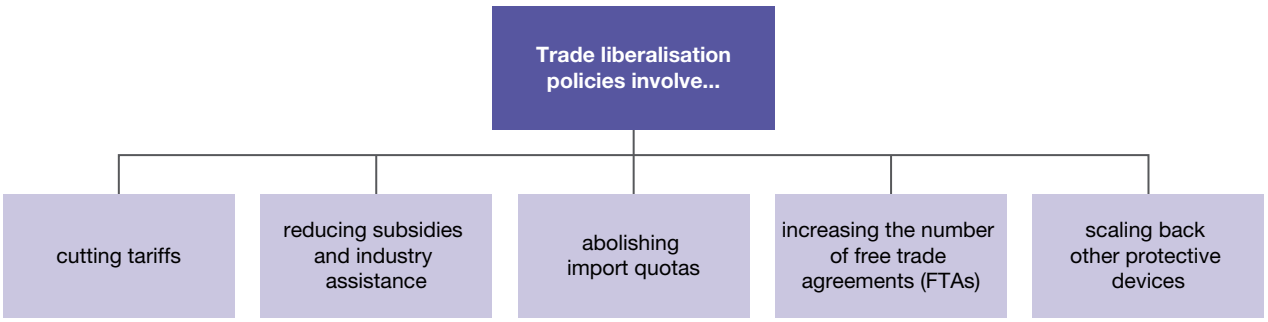
KEY KNOWLEDGE

- Trade liberalisation and its short-term and long-term effects on Australia's international competitiveness, the allocation of resources, aggregate supply, and the domestic macroeconomic goals and living standards

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

Trade liberalisation *is an aggregate supply policy of the Australian government used over the last 50 years. This has involved gradually reducing the level of trade barriers or protectionism that shields local industry from import competition.*

- cutting tariffs or the indirect tax that makes imports more expensive for consumers in local markets
- reducing subsidies or cash payments that help local firms cover their costs
- removing quotas and other restrictions on the type and volume of imports allowed entry into the country
- signing up many free trade agreements (FTAs) where there are no tariffs on trade between two countries (bilateral FTAs), and regional agreements (FTAs with groups or blocs of countries)
- easing other restrictions.



There are several ways that *trade liberalisation* as an *aggregate supply policy*, can help grow *efficiency in the allocation of resources* over time, and hence boost the economy's productive capacity, international competitiveness, and the potential rate of economic growth.

For example:

- Reducing protection from import competition encourages *specialisation* in those areas of production where Australia's *comparative cost advantage* is greatest, or where the disadvantage is least. Growing efficiency and reducing costs improves our international competitiveness.

- Greater *competition* from overseas means that local firms are forced to *restructure their operations* and find ways to raise efficiency and cut their production costs, perhaps by using technology or equipment that can now be imported more cheaply from abroad. This helps firms to become more internationally competitive.
- Liberalising international trade grows the *size of markets*, allowing local firms to gain more *economies of large-scale production* where lower unit costs help to strengthen our international competitiveness.

In the *long-term*, greater competition and efficiency in domestic markets should help boost productive capacity, and raise national output, employment and real average per capita incomes. This creates better domestic macroeconomic conditions, supporting higher living standards for Australians.

Most economists believe that trade liberalisation (i.e. the gradual reduction in the level of government protection of local industry from import competition), helps to increase efficiency in Australia's allocation of resources. Greater efficiency is a good thing because more output can be gained from each input or unit of resources, leading to higher real incomes.



Source: Nicholson Cartoons.

Of course, while there is agreement among most economists that *over time*, trade liberalisation is the way to go, few deny that this policy may create problems in the *shorter term*, especially the rise in structural unemployment associated with the closure of those local firms unable to cut their costs, grow efficiency and become more internationally competitive.

5.5.1 The Australian government's policy of trade liberalisation

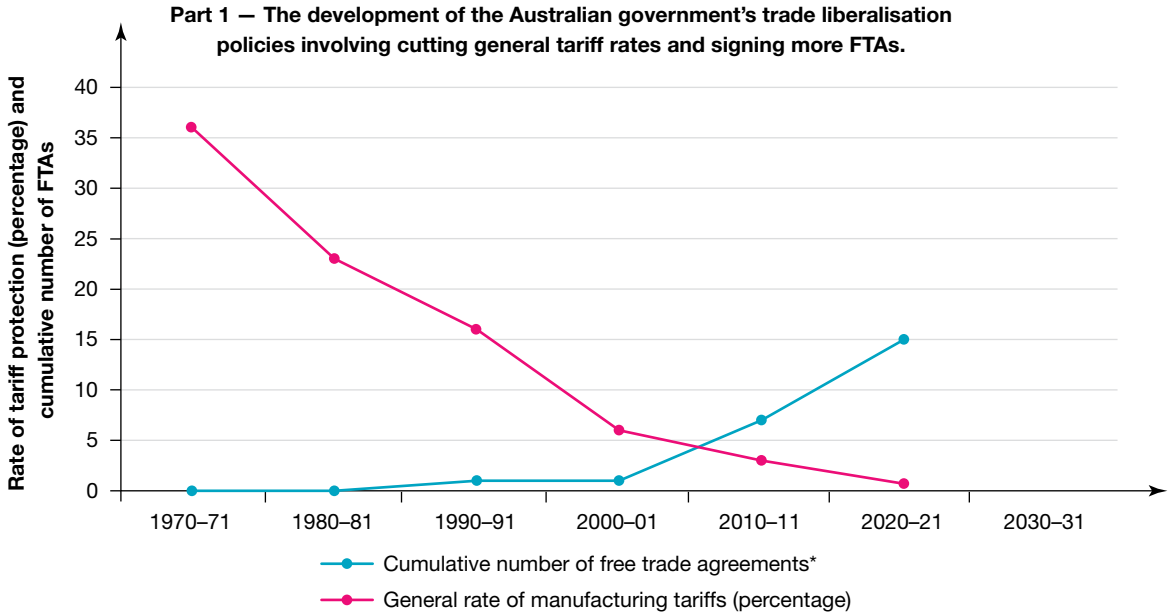
Like most governments around the world, especially since the 1990s, the Australian government has gradually adopted the policy of *trade liberalisation*. Essentially, *trade liberalisation involves progressively reducing the protection of local industry from import competition*. This approach differs from the policy of *free trade*, which is the *complete removal* of all forms of government industry protection.

Figure 5.21 provides a snapshot of the key elements making up the Australian government's policy of *trade liberalisation*:

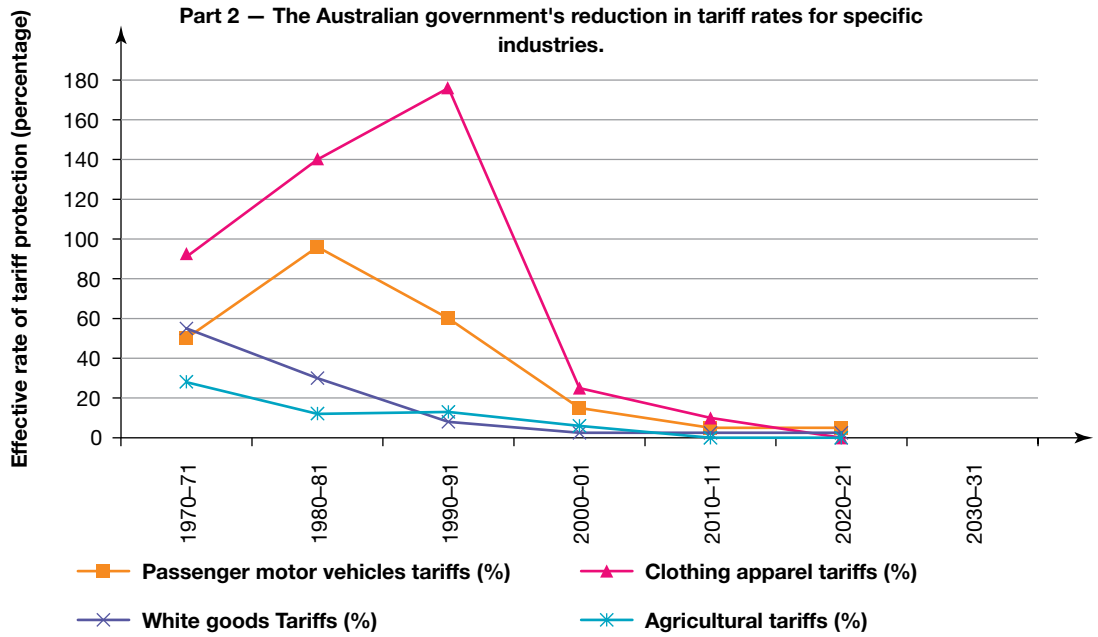
- Part 1 reveals the dramatic reduction in the *general manufacturing tariff rate* from around 36 per cent in 1970–71 to less than 0.7 per cent by 2020–21. At the same time the number of FTAs has grown rapidly from just one in 1983 with New Zealand, to a total of 17 in operation or signed up by mid 2022.

- Part 2 shows the path towards reduced tariffs in *specific Australian industries* like white goods (i.e. fridges, washing machines), cars, clothing, and agriculture, so that by 2021, local producers did not depend heavily on tariff protection to survive.
- Part 3 provides a timeline for the signing of our impressive array of *bilateral* and *regional FTAs* between the first one in 1983, up till the end of 2021.

FIGURE 5.21 Snapshot of the Australian government's aggregate supply policy involving various aspects of trade liberalisation.



Note: There were 15 FTAs operating in December 2021. However, there are 2 other FTAs — one with the UK that was signed in late 2021 (but awaits ratification by parliament in 2022), and the RCEP or Regional Comprehensive Economic Partnership Agreement that since came into force from January 2022.

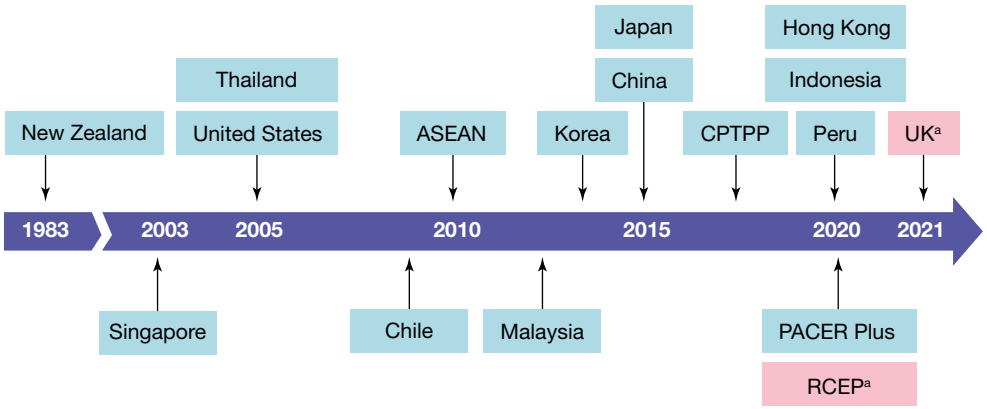


Sources: Data for parts 1 and 2 were derived from many sources including AGPS; Industry Commission; 2002 Trade Policy Review for Australia; Productivity Commission, Trade and Assistance Review 2019–20 and other years; DFAT; Budget Review 2006–07; Budget Papers 2008–09 to 2021–22 and other.

(continued)

FIGURE 5.21 Snapshot of the Australian government's aggregate supply policy involving various aspects of trade liberalisation. *(continued)*

Part 3 — The growth in the number of Australia's bilateral and regional free trade agreements (by year entered into force).



Note: There were 15 FTAs operating in December 2021 (by mid 2022, this had increased to 16). Apart from all the bilateral trade agreements, there were also regional ones — the CPTPP is the Comprehensive and Progressive Agreement for the Trans-Pacific Partnership, and PACER Plus, or the Pacific Agreement on Closer Economic Relations. In addition, the diagram shows that there were two other FTAs (shown in pink callouts) — that with the UK was signed in late 2021 (but has been awaiting ratification by parliament during 2022), and the RCEP or Regional Comprehensive Economic Partnership Agreement (that since came into force in January 2022).

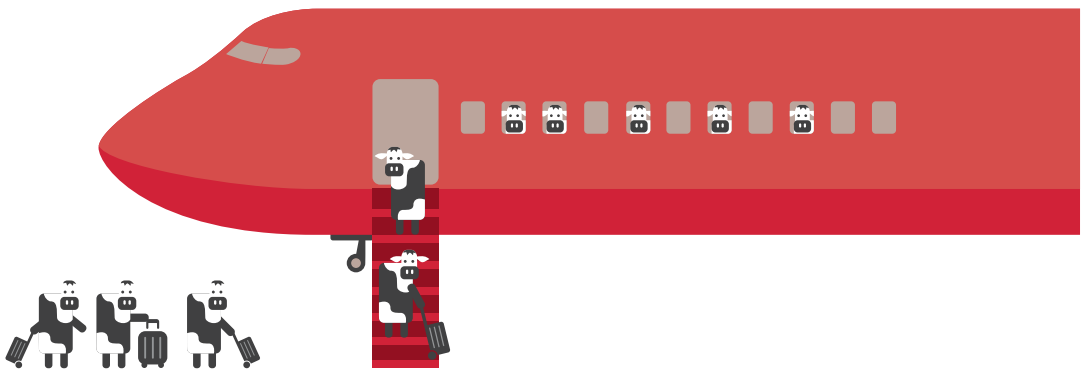
Source: Above diagram from DFAT (2021) reproduced from the Australian government, Productivity Commission, Trade & Assistance Review 2019–20, Fig 3.7, P66, see https://www.pc.gov.au/research/ongoing/trade-assistance/2019-20.

So, let's now drill down a little into the detail of the Australian government's aggregate supply policy involving the *liberalisation* of international trade.

Tariff cuts

As mentioned, *tariffs (also called import duties) represent an indirect tax levied on selected imported goods. In general, tariffs are added onto the price of imports to make them dearer or less attractive to local consumers than the locally-made good.* They limit foreign competition and restrict the total supply of goods sold in local markets, driving up consumer prices.

'According to critics of agricultural protectionism, consumers and governments in rich countries pay around $350 billion per year supporting agriculture — enough to fly their 41 million dairy cows first class around the world one and a half times.'



Source: World Trade Organization.

Because of this, economists mostly believe that high tariffs cause resources to be allocated inefficiently into industries where we have no *comparative cost advantage*. This type of protection weakens competition.

It means that local firms can remain inefficient and uncompetitive, and yet still survive, while local households and businesses must pay higher prices for these items, reducing their purchasing power and living standards. These costs tend to offset any possible short-term gains from keeping the tariffs, such as an increase in incomes and employment. Additionally, when one country raises its tariffs, this becomes a justification for other nations to retaliate and increase their protection (i.e. a *trade war* can develop). In turn, this reduces trade volumes, average real incomes, consumption and living standards.

In contrast to high levels of protection, the Australian government's policy of *trade liberalisation* with its gradual reduction to near zero tariffs over the past 30–50 odd years (as shown in figure 5.22 in section 5.5.1), has helped to dramatically improve *allocative, technical* and *dynamic efficiency*. Importantly, tariff cuts encourage local firms to become more internationally competitive by forcing them to trim their costs and restructure production. Over time, this helps to expand Australia's productive capacity, aggregate supply, average real incomes per capita, and hence, living standards.

Reduced net subsidies and other assistance to local producers

Subsidies *are government cash payments or tax concessions made to local producers and industries designed to help them cover some of their production* costs. Using well-targeted industry subsidies can reduce market failure and help solve the underproduction of socially-beneficial goods and services. By increasing allocative efficiency, this can improve society's general wellbeing.

However, despite these exceptions, most economists believe that poorly targeted subsidies (especially permanent ones) can damage *allocative efficiency*. Unless managed carefully, they can cause resources to be *misallocated* into areas where local firms have *no comparative cost advantage*. This slows trade and adds to opportunity costs that reduce a nation's productive capacity, potential output, employment and incomes, undermining society's general wellbeing.

So, as part of *trade liberalisation policy* designed to grow efficiency and aggregate supply, the Australian government has generally tried to reduce the value of subsidies to local firms. After a peak of $25 billion a year in 1970–71, there was an overall reduction to around $11 billion by 2020–21. However, this figure *excludes* the dramatic increase during 2020–21–22, due to the introduction of *temporary* measures to support businesses and help avoid closures during the COVID-19 pandemic and ensuing lockdowns.

Abolition of import quotas and licences

Import quotas *are designed to restrict the supply or quantity of specific types of overseas goods allowed into the country.* They act to protect local businesses and limit foreign competition. 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 limited the total supply of particular goods in the market, driving up the prices that local firms can charge. They were commonplace in Australia during the 1970s and early 1980s, especially on cars, textiles, footwear, and clothing.

However, with the adoption of *trade liberalisation* as an aggregate supply policy, import quotas were progressively abolished. The last one, applying to cheese, was terminated in 2000–01. Again, this demonstrated that the Australian government believes that, in the long-term, import quota removal and the adoption of freer trade will increase efficiency in resource allocation. In turn, this helps to boost productive capacity and sustainable economic growth. It also helps to slow cost inflation and improve international competitiveness — ultimately strengthening our living standards.

The increased importance of free trade agreements

The Australian government's aggregate supply policy involving *trade liberalisation*, is based on the belief that efficiency is generally maximised when resources are allocated to industries where we have a *comparative cost advantage*. Over time, *specialisation* in production based on this principle will not only grow our productive capacity, aggregate supply and competitiveness, but it will also swell the value of international trade. So, with this in mind, the Australian government has been keen to develop export markets abroad by pushing the idea of

reducing protectionism and signing many *free trade agreements* (FTAs). Australia has used its membership of various *multinational trading groups* (each involving many countries) such as the World Trade Organization (WTO) to urge all countries to reduce trade barriers. Despite these efforts, progress has been slow due to significant opposition from interest groups.

Given this sluggish pace of *multilateral trade reform*, Australia has increasingly negotiated *bilateral free trade agreements (FTAs)* with two or more individual countries, as well as several regional agreements. These agreements reduce or abolish tariffs. For example, by mid 2022, we had signed 17 FTAs with 16 operational:

- Australia–New Zealand FTA (also known as Closer Economic Relations) commenced in 1983
- Australia–Singapore FTA in 2005
- Australia–Thailand FTA in 2005
- Australia–United States FTA in 2005
- Australia–Chile FTA in 2007
- ASEAN–Australia–New Zealand FTA in 2009
- Malaysia–Australia FTA in 2012
- Korea–Australia FTA in 2014
- Australia–Japan FTA in 2014
- China–Australia FTA in 2015
- Trans-Pacific Partnership (TPP) in 2018
- Australia–Hong Kong FTA in 2020
- Peru–Australia FTA in 2020
- Indonesia–Australia Comprehensive Economic Partnership Agreement in 2020
- The Pacific Agreement on Closer Economic Relations Plus (PACER Plus), in 2020
- Regional Comprehensive Economic Partnership Agreement (RCEP), starts from January 2022
- The Australia-United Kingdom Free Trade Agreement (A-UKFTA), signed December 2021 (but in early 2022, still requires parliamentary approval).

FTAs like these have exposed local firms to more intense foreign competition, forcing them to *specialise*, become more cost efficient and improve their international competitiveness. Over time, these agreements have also helped Australian producers gain access to potentially huge export markets abroad, allowing them to extract *greater economies of large-scale* production, grow Australia's share of export sales and incomes, and improve living standards. However, despite the potential benefits over the *longer term*, FTAs can also have *negative* effects in the *short-term*. For instance, those local firms unable to reduce their costs and become internationally competitive, may be forced to close, leading to job losses and structural unemployment.

Trade liberalisation has also necessitated changes to other government policies

Trade liberalisation is regarded by economists as an important government *aggregate supply-side* policy designed to improve efficiency in the use of resources and grow Australia's international competitiveness and living standards. However, as a direct consequence of adopting trade liberalisation and greater openness, the government has also been forced to introduce other productivity-promoting reforms including the following policy measures:

- reforms involving greater *deregulation of the labour market* to improve productivity and keep wage costs lower
- *taxation reforms*, including the lowering of company and personal income tax rates to bolster incentives, profits and business expansion.

5.5.2 The effects of trade liberalisation on Australia's international competitiveness

As an *aggregate supply policy*, trade liberalisation (i.e. lowering the level of protection by cutting tariffs, reducing subsidies, abolishing import quotas and negotiating FTAs) has been under way now for some

decades. While reducing protection levels generates significant long-term benefits, it can cause problems in the short-term.

- **Effects in the short-term:** As trade barriers come down, imports become cheaper and more attractive to consumers. As a result, local firms that are unable to cut their costs and prices fast enough, find that their sales and profits decline. Some firms may be forced to close — for instance, in 2010–22, some of those involved in the manufacture of cars, textiles, and clothing. Their poor competitiveness was not helped by Australia's high labour costs relative to low worker productivity.
- **Effects in the long-term:** Despite short-term pain associated with reduced protectionism, gains surface more over the longer term. As summarised in figure 5.22, the hope is that these policy measures should help to strengthen Australia's *international competitiveness* and living standards.

FIGURE 5.22 Over time, trade liberalisation can help to increase business efficiency, cut costs, and improve the international competitiveness of local firms so they can sell profitably at lower prices both here and overseas.



Overall, it is extremely difficult to measure the *effectiveness* of trade liberalisation policies on Australia's international competitiveness. However, one thing that we do know is that Australia's *international competitiveness ranking* has plunged over the past decade. In July 2009, one measure ranked our economy as 5th out of 64 nations, but by 2021, we had sunk to 22nd place. This might suggest that over the long-term, the government's policy of trade liberalisation (exposing local firms to stronger competition) has *not* been all that successful. Potential investors also point to specific barriers like Australia's higher rates of company tax, expensive wages, unreliable and costly infrastructure, expensive borrowing costs, and a weak R&D culture.

5.5.3 The effects of trade liberalisation on domestic macroeconomic goals

As an important government aggregate supply policy, *trade liberalisation* has helped to lift allocative, technical, and dynamic *efficiency*, grow Australia's productive capacity, and increase AS. However, it has created winners and losers. Over the *longer term*, this policy has generally helped to promote the Australian governments *three* key *domestic macroeconomic goals* (i.e. low inflation, a strong and sustainable rate of economic growth, and full employment), even though in the *short- to medium-term*, there were some downsides.

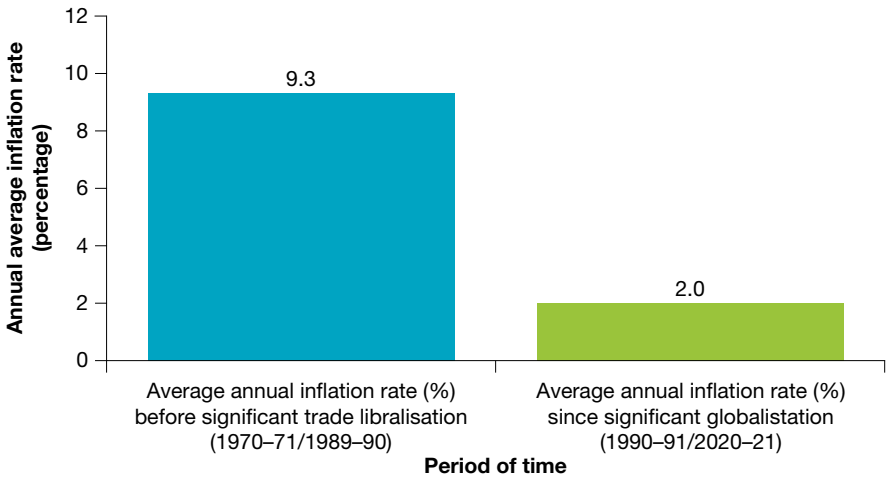
Effect of trade liberalisation on the achievement of low inflation

The RBA's *goal of low inflation* (keeping the average rise in price around 2–3 per cent per year over time) is one important domestic macroeconomic goal. Trade liberalisation has helped to slow Australia's rate of *cost inflation* in several ways:

- Trade liberalisation has led to specialisation in the production of those goods and services where we have a comparative cost advantage. This has caused resources to move into their most *efficient* use and out of areas of inefficiency and high costs. As a result of greater efficiency, inflation has slowed.
- Trade liberalisation (especially FTAs) has grown our access to *larger markets* abroad, allowing local firms to gain greater economies of scale that cut their average unit costs of production.
- Trade liberalisation has greatly reduced the costs of imported equipment and raw materials purchased overseas, easing inflationary pressures.
- Trade liberalisation has forced local firms to *restructure* their operations more efficiently, cut production costs and apply the world's best practices in their production processes. This has increased dynamic efficiency and also helped to reduce inflationary pressures.

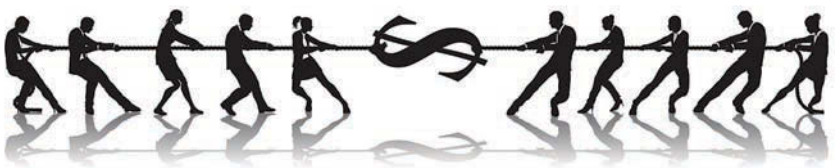
It is not surprising that since the start of significant trade liberalisation from the early 1990s, Australia's average inflation rate has slowed dramatically to around 2 per cent over the last 30 odd years, compared with over 9 per cent during the previous 20 years (1970s–80s). This is shown in figure 5.23.

FIGURE 5.23 The probable link between the Australian government's policy of trade liberalisation and our lower inflation rate.



Sources: © Reserve Bank of Australia, 2001–2021. All rights reserved. RBA Statistics, Occasional Paper 8A; ABS 5206.0 Table 34.

So, while the adoption of trade liberalisation policies is not the only cause of Australia's reduced inflationary pressures (there were also other aggregate supply-side government policies that helped such as tax reform, outlays on education and deregulation of the labour market), it is likely to have been one important contributing factor.



Effect of trade liberalisation on the achievement of strong and sustainable economic growth

Another core macroeconomic objective of the Australian government is to promote the *goal of strong and sustainable economic growth*. This is defined as the fastest average rate of growth in real GDP, around 3 per cent per year, that does not significantly accelerate inflation and is consistent with achieving other economic and environmental goals. Trade liberalisation should strengthen the *economically* sustainable rate of growth in several ways, particularly over the *medium- to longer term*:

- Trade liberalisation leads to greater production *specialisation* in areas of comparative cost advantage, leading to a more efficient allocation of resources involving lower opportunity costs. This means there is more output gained from the same or fewer inputs, thereby growing Australia's production possibility frontier or productive capacity. This increases the potential rate of GDP growth.
- With trade liberalisation, local businesses need to *restructure their operations* more efficiently to allow them to survive stronger competition from imports and become more internationally competitive. This allows for an increase in productive capacity and hence the potential rate of economic growth.
- Trade liberalisation has allowed our local firms to access *better equipment*, materials, and technology at a lower cost, creating more favourable aggregate supply conditions needed to grow Australia's GDP.
- Trade liberalisation has grown the *size* of Australia's *export market*, turbocharged sales and encouraged firms to boost production levels and expand GDP.

By increasing the non-inflationary rate of GDP and employment growth, trade liberalisation has helped to boost real national incomes and thus material living standards.

For instance, one comprehensive investigation concluded that trade liberalisation had delivered a rise in average family incomes over the two decades since trade liberalisation, of around $3900 per family per year by adding 1.8 per cent to real GDP (*Benefits of Trade and Trade Liberalisation* by DFAT and Centre for International Economics).

While trade liberalisation over the long-term has helped to strengthen Australia's sustainable rate of economic growth, especially in the short-term it forced some companies to close due to low profits. Here we might think of recent casualties like firms in the car industry, textiles, clothing and footwear, and low-end manufacturing.

Effect of trade liberalisation on the achievement of full employment

The *goal of full employment* is one of the three domestic macroeconomic objectives of the Australian government. This is defined as the lowest rate of unemployment, perhaps around 4.0–4.5 per cent of the labour force, that does not greatly accelerate inflation (NAIRU).

So, what effect has the policy of trade liberalisation had on Australia's unemployment rate? This is a difficult question to answer. However, the impact does seem to depend on whether we consider the *short-run* or the *long-term* period.

Starting with the *longer term*, there are several ways that trade liberalisation has helped to create *more jobs* and keep the unemployment rate lower:

- Over time, by boosting *efficiency* and slowing domestic inflation, trade liberalisation may help to make local businesses more internationally competitive than otherwise, encouraging expansion, rather than closure. This has helped to reduce structural unemployment and create more jobs.
- Trade liberalisation, especially FTAs, have created *bigger markets* for our exports broad, allowing for increased sales and business expansion. This also creates job vacancies and helps to lower unemployment.
- Trade liberalisation allows local firms to reduce their average unit costs of equipment and materials, gaining greater *economies of large-scale production*. This is a favourable aggregate supply factor that enhances business competitiveness and profitability, again reducing business closures and structural unemployment.

However, despite these benefits of trade liberalisation over the longer term, the main criticism is that in the *shorter term*, the policy can prevent the growth of *infant industries* that face higher start-up costs, destroy those that are uncompetitive and cause higher levels of structural unemployment among trade-exposed industries.

5.5.4 The effects of trade liberalisation on living standards

Trade liberalisation as an aggregate supply policy, has had mostly positive effects on Australia's *material* and *non-material* living standards, although this partly depends on the time period considered:

- *Material living standards* relate to the annual *quantity* of goods and services consumed by each person. They are affected by the level and distribution of the nation's GDP and incomes, and the extent to which society's wants are met or satisfied.
- *Non-material living standards* or the *quality* of daily life, is affected by many things including personal happiness, freedom, life expectancy, stress, the level of cultural enrichment, crime rates, and a clean and sustainable environment for current and future generations to enjoy.

In the *longer term*, trade liberalisation has encouraged international competitiveness and business expansion, created more jobs and lowered unemployment. This has led to higher real per capita incomes, consumption and *material living standards*. In addition, by expanding export markets and sales abroad and by lowering structural unemployment over the *long-term*, trade liberalisation has helped to support various aspects of *non-material living standards* including greater happiness, reduced social isolation, improved physical and mental health outcomes, and less financial stress and family conflict.

However, as previously mentioned, over the *short- to medium-term*, both material and non-material living standards could be undermined. This is most likely among those employed in trade-exposed industries that are unable to restructure operations and use resources more efficiently, leading to business closures and structural unemployment. In these industries, lower employment and incomes not only cut consumption and *material living standards*, but also undermined *non-material wellbeing* by adding to stress and unhappiness among those who became unemployed, weakening their mental and physical health outcomes, adding to tensions in relationships and causing social isolation.

5.5.5 Weaknesses of trade liberalisation as an aggregate supply policy

We have now looked at the ways *trade liberalisation* has helped to lift allocative, technical and dynamic *efficiency*, growing Australia's productive capacity and increasing AS. As a result, the policy should have supported the achievement of the government's *three* key *domestic macroeconomic goals* (i.e. low inflation, a strong and sustainable rate of economic growth, and full employment) and ultimately, better living standards. Even so, particularly in the short-term, trade liberalisation, has some *weaknesses*:

- ***Trade-offs exist:*** Trade liberalisation does involve significant trade-offs in exchange for greater efficiency in the use of resources. For instance, faced with stiffer competition, some jobs have been lost in industries unable to lift their efficiency and cut costs, pushing up unemployment. In addition, increased foreign competition may have discouraged the start-up of infant industries that have higher initial costs.

  Moreover, by encouraging greater international specialisation in areas of comparative cost advantage, Australia has been more exposed to significant disruptions in supply chains brought on by international tensions and global pandemics like COVID-19. Having lost some of our key manufacturing industries, we now find ourselves unable to provide the basic goods and services needed to maintain living standards.

  Additionally, there are environmental trade-offs associated with excessive international specialisation in production. Countries producing crops, for instance, tend to develop monocultures that further damage soil fertility, and there is also a growing level of CO_2 emissions accelerating climate change, from the dramatic rise in sea and air transport. These would not occur to the same extent with greater localisation of production.
- ***Political constraints:*** Because some groups gain more than others from trade liberalisation, governments can face political constraints and opposition both in the parliament and among voters. As a result, the policy may be softened or delayed, reducing the economic benefits flowing from greater efficiency.
- ***Long time lags:*** Trade liberalisation has taken Australia many years to implement, and we are still not there yet. It offers no quick fix as a way of boosting efficiency.

5.5 Activities

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5.5 Quick quiz on

5.5 Exercise

5.5 Exercise

1. **Define** the term, *trade liberalisation*. **(2 marks)**
2. One aspect of trade liberalisation for Australia has been the rapid growth in the number of FTAs. **Explain** the nature of bilateral FTAs and why are they potentially important for Australia. **(2 marks)**
3. **Explain** how trade liberalisation as a policy can beneficially impact Australia's aggregate supply. **(4 marks)**
4. Since the 1990s, the policy of *trade liberalisation* has gained pace. **Explain** how you would expect Australia's policy of trade liberalisation to *beneficially* affect each of the following: **(5 x 2 marks)**
   a. Australia's international competitiveness
   b. The inflation rate
   c. The sustainable rate of economic growth
   d. The unemployment rate
   e. General living standards.
5. **Discuss** how the Australian government's policy of trade liberalisation may impact each of the following: **(3 x 2 marks)**
   a. The potential rate of economic growth
   b. The rate of unemployment
   c. Material and non-material living standards.
6. Despite Australia and China having a free trade agreement, during 2020 and 2021, China decided to impose trade restrictions on the entry of some of Australia's exports including barley, beef, cotton, timber, iron ore, copper, wine, and coal. **Explain** the likely effects of this decision on Australia's domestic macroeconomic conditions. **(4 marks)**

Solutions and sample responses are available online.

5.6 A market-based environmental strategy as an aggregate supply policy

KEY KNOWLEDGE

- One market-based environmental policy and its short-term and long-term effects on aggregate supply, intertemporal efficiency and living standards

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

Like it or not, we can't escape the growing reality that there is a close link between the environment and living standards, both now and into the future! So far in this topic we have studied how aggregate supply policies can be used to make conditions more favourable for individuals and businesses so they are more willing and able to lift output, increasing productive capacity and living standards. However, it's not just about using aggregate supply policies to grow the overall capacity or potential size of the economy. These policies also need to consider whether higher output, particularly of some types of goods, is sustainable.

More specifically, whilst faster non-inflationary rates of growth in GDP may be *economically sustainable* right now, there is still the nagging thought that all this is not *environmentally sustainable*. In other words, will future generations be able to enjoy the living standards we currently appreciate? So, when promoting better aggregate supply conditions, it is also vital that government policy makers, businesses and consumers take a far broader and longer term view of the concept of *sustainability* and consider the question of *intertemporal efficiency* in the use of resources — that is, where there is an appropriate and equitable balance between using resources for immediate, as opposed to future use.

So, in seeking to expand the economy's capacity, attention must be paid to the *type* of goods and services produced and consumed, and *how* these are made. For *environmental sustainability*, the extra production and consumption that we generally seek to encourage using aggregate supply policies, also need to minimise environmental harm. They must avoid worsening *market failure* associated with the depletion of non-renewable natural resources and the abuse of environmental or *common access resources* like the air we breathe, the water we drink, and the oceans we fish. Failure to act appropriately will cause worsening carbon emissions and climate change, undermining our material and non-material living standards.

In late 2021, the Australian government committed to *zero net emissions by 2050* where economic activities that discharge greenhouse gases, are offset by other activities that reduce these emissions. But the big question is, how might this target be reached and what are some of the policy options available? So, in the final section of this topic, our attention turns to see how *market-based, environmental policies* can be used to affect aggregate supply in a way that improves *intertemporal efficiency*, ultimately sustaining better living standards into the future.



5.6.1 The need for an environmental policy as a measure to affect aggregate supply

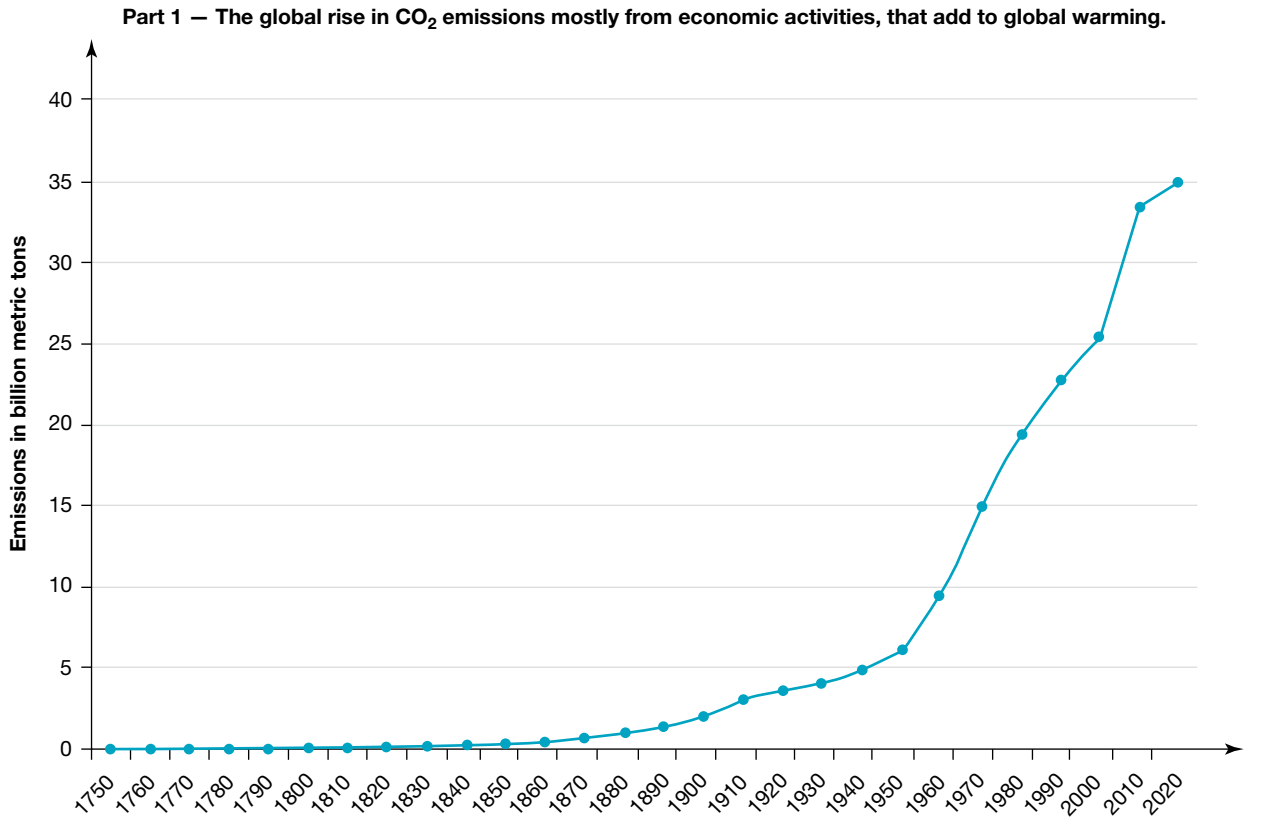
Other than the spread of COVID-19, perhaps the next biggest worry of people around the world, is the *climate crisis*. For instance, in 2021, around 74% of Australians viewed climate change as a critical threat. This problem is linked to greenhouse gas emissions that economists see as a *negative environmental externality* or cost for third parties resulting from economic activities. Climate change threatens our wellbeing in many ways:

- global warming of around 1.1 degree Celsius since 1880
- melting of the polar ice caps and rising sea levels (by between 0.5 and 1 metre), displacing island and coastal communities
- destruction of the ozone layer which protects us from harmful rays
- the doubling of the frequency of extreme weather events over the last 20 years in comparison to the previous two decades at the end of the twentieth century (e.g. more severe drought, floods, cyclones, and bushfires that cause the loss of life, and the destruction of business and infrastructure)
- acid rain (where carbon and other emissions in the atmosphere cause rain to become dangerously acidic)
- deteriorating air quality leading to illnesses
- toxic substances entering our food chain
- the spread of diseases connected with climate change
- waste disposal issues for most cities
- deforestation and the loss of space for recreation

- the general lack of healthy environmental river flows to maintain important ecosystems
- destruction of biodiversity (where some plant and animal species have become extinct)
- disrupted economic activity following severe weather events that weaken the government's financial position (with lower tax revenue collected and the need for higher government outlays for restoration).

Climate change is seen as a *less favourable aggregate supply factor*. It limits economic capacity and ultimately, wellbeing. Much evidence now exists about the impact of *human-induced climate change*. For instance, figure 5.24 part 1 shows the acceleration of CO_2 emissions, mostly associated with rising economic activity. As a result of growing greenhouse gas emissions, part 2 of figure 5.24 shows that there has been a rise in average global temperatures. This is linked to a doubling of the frequency of severe weather events over the last 50 years. Part 3 of figure 5.24 shows that while Australia emits just 1.5 per cent of global emissions, on a per capita basis, our carbon footprint is the biggest of all countries, with over 27.3 metric tonnes per person per year (relative to USA 23.4, Japan 10.5, and Italy 2.6). This suggests that as a country, we need to pull our weight and do far more to reduce carbon emissions. Part 4 breaks down the current sources of Australia's emissions by sector. Notice that as a proportion of our total emissions, electricity, transport and agriculture are the main areas that need to be targeted by policy makers. Finally, part 5 highlights some of the negative impacts of climate change for Australia, on a state-by-state basis.

FIGURE 5.24 Snapshot of Australian and global environmental issues.

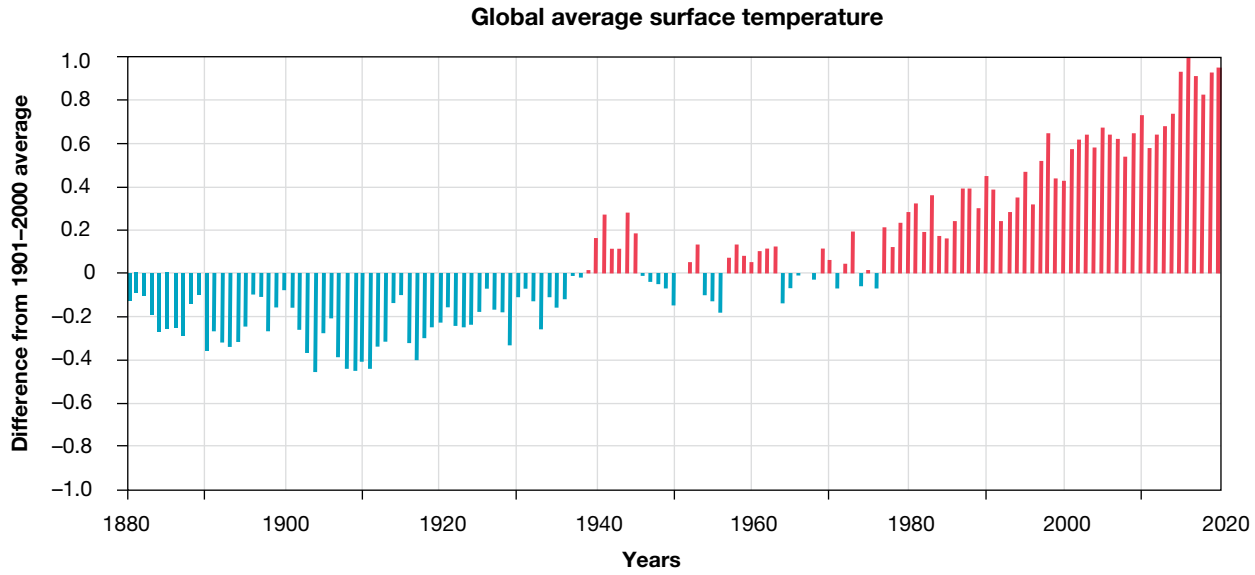


Source: Based on data from Global Carbon Project. (2021). Supplemental data of Global Carbon Budget 2021 (Version 1.0) [Data set]. Global Carbon Project. https://doi.org/10.18160/gcp-2021. ICOS data is licensed under the Creative Commons Attribution 4.0 International licence (CC BY 4.0).

(continued)

FIGURE 5.24 Snapshot of Australian and global environmental issues. *(continued)*

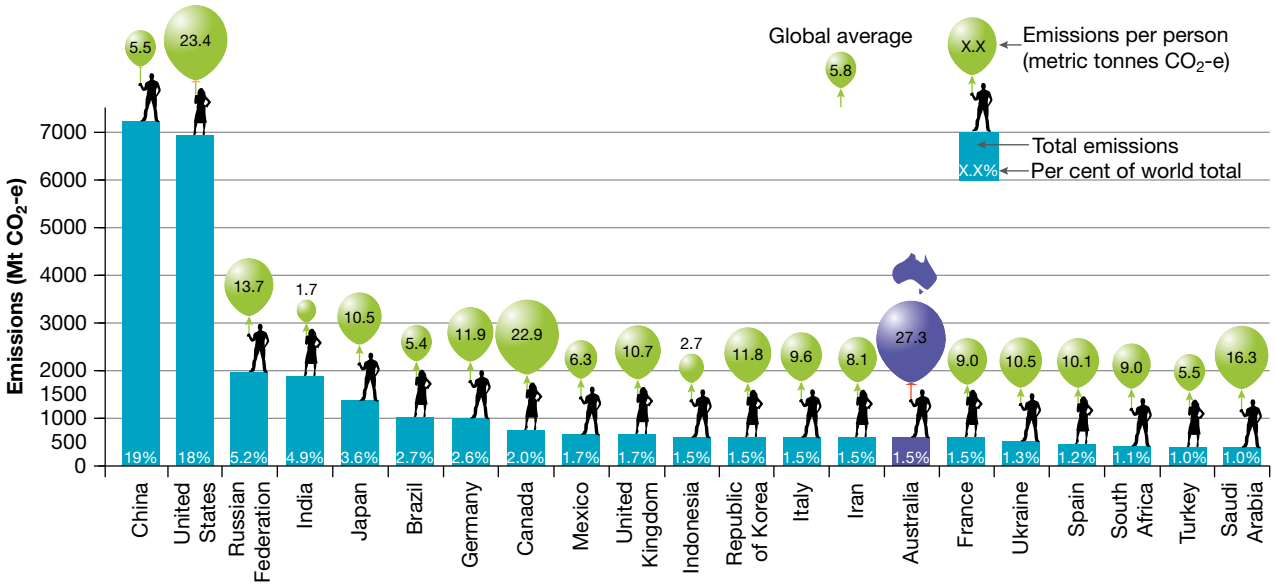
Part 2 — The mostly human-induced rise in the global average surface temperature, is estimated to be more than 1.1° Celsius (1.9° Fahrenheit) since 1880, that has added to the frequency of severe weather events.



Yearly surface temperature in the twentieth century average from 1880 to 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: Department of Industry, Science, Energy and Resources, National Greenhouse Gas Inventory, quarterly update June 2021, see https://www.industry.gov.au/data-and-publications/national-greenhouse-gas-inventory-quarterly-update-june-2021.

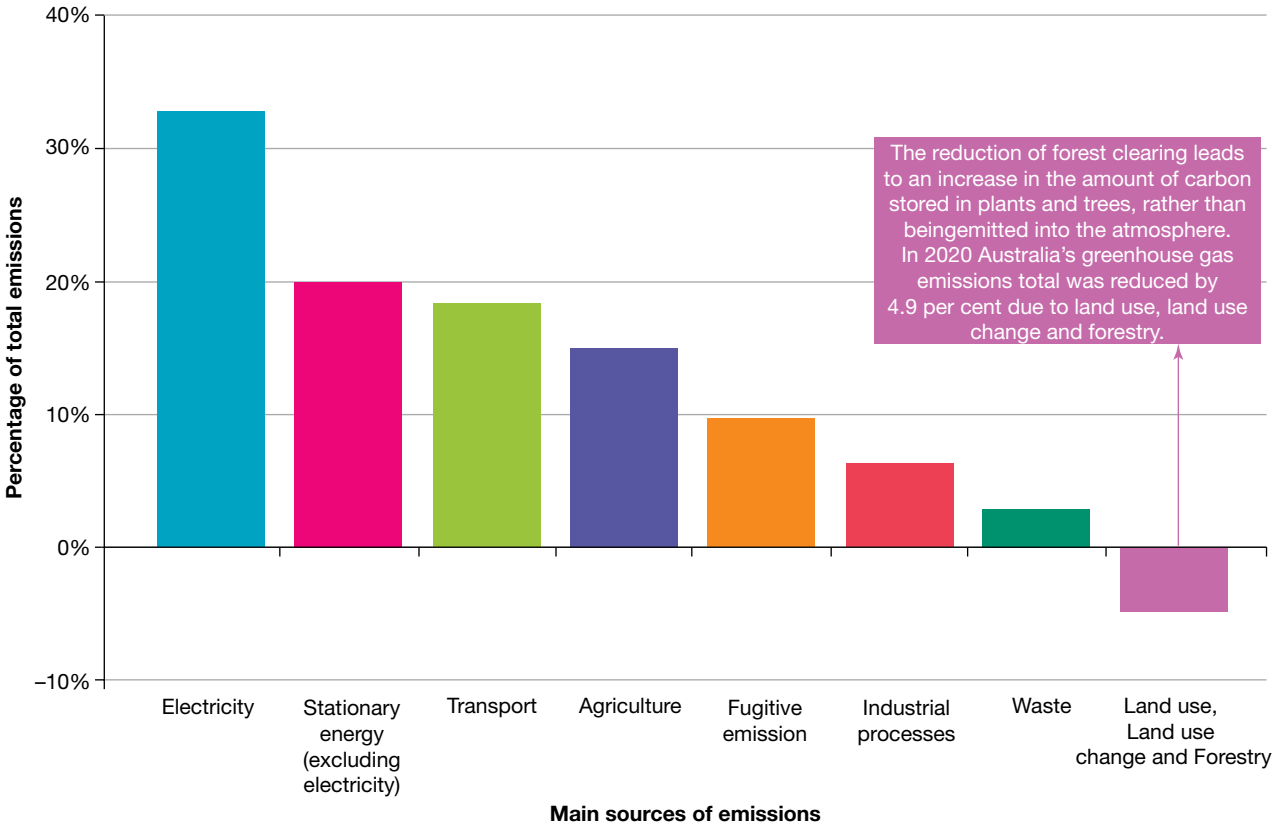
Part 3 — Comparison of CO_2 emissions and carbon footprints for Australia and selected countries (where the balloons show tonnes per capita and the columns show countries' percentage of total global emissions).



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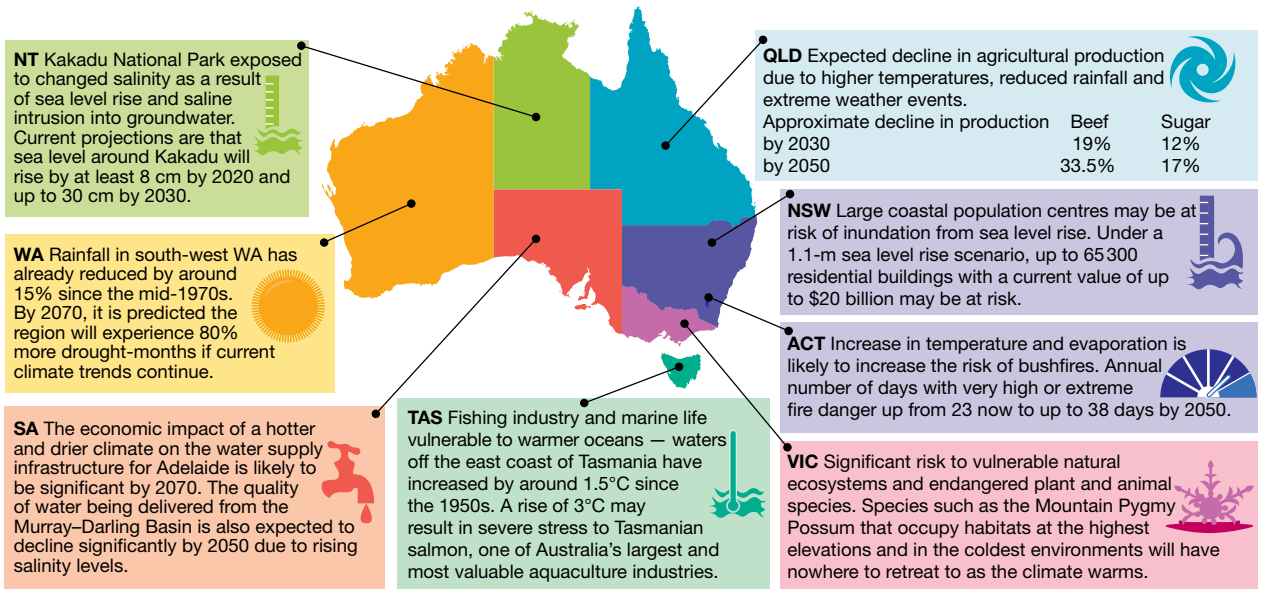
FIGURE 5.24 Snapshot of Australian and global environmental issues. *(continued)*

Part 4 — The main sources of Australia's total CO_2 emissions by sector.



Source: Climate Change: Global Temperature, by Rebecca Lindsey and Luann Dahlman, Reviewed by Jessica Blunden, Published March 15, updated August 12, 2021 https://www.csiro.au/en/research/environmental-impacts/climate-change/climate-change-qa/sources-of-ghg-gases#:~:text=Energy%20production%20is%20the%20largest,%2C%20agriculture%2C%20and%20industrial%20processes.

Part 5 — Some of the predicted effects of climate change in Australia state-by-state.



Source: Department of Climate Change and Energy Efficiency, Impacts in Australia, Fact Sheets.

5.6.2 Market-based environmental government policies

As a result of growing concern, the Australian government has either used or considered various *environmental* policies. These measures seek to reduce the release of greenhouse gas into the atmosphere (including CO_2 and nitrous oxide). The dramatic rise in these emissions is closely linked with adverse climate change and these gases are normally generated by rising economic activity. Emissions and global warming are also seen as a *negative externality* or cost to third parties not directly involved with our current production or consumption of goods and services. So, in this context, government environmental strategies have the potential, as a branch of aggregate supply policy, to alter the composition of the goods and services we produce and consume. Such policies can encourage the switch to goods and services with lower emissions that slow climate change and are more environmentally sustainable.

Growing international and domestic pressures to cut emissions have helped to spur our government into climate action. For example, Australian governments have made various commitments to reduce carbon emissions, starting with the signing of the *Kyoto Agreement* in 2007. Here the target was to cut carbon emissions to 108 per cent of the 1990 emissions level. Later, a new reduction target was set at 5 per cent of 2000 levels by 2020. Then came the *Paris Climate Summit* where the Australian government initially agreed to a 26–28 per cent cut by 2030 (later increased to 43 per cent), against the level in 2005. Most recently at the *Glasgow Climate Summit* (COP26) in November 2021, there was a general commitment to *zero net emissions* by 2050. In addition, changing public opinion domestically has helped to force the government to sit up and take notice. For instance, over 74 per cent of Australians now believe climate change poses a critical threat to living standards.

To reduce emissions, some governments have tried using *direct controls* and penalties for non-compliance. However, experience shows greater success in countries using *market-based environmental policies*.

A **market-based environmental policy** *can include carbon taxes, tradeable pollution permits, and subsidies that are designed to positively change the behaviour of producers and consumers of goods and services that damage the environment. These policies manipulate the operation of key markets and relative prices, creating financial incentives and disincentives that constructively change how resources are used. They either reward those who reduce their emissions (e.g. by using subsidies), or discourage polluters by making it costly and less profitable (e.g. by using a carbon tax or an emissions trading scheme). In so doing, the aim is to reduce market failure involving negative environmental externalities resulting from some types of economic activity, thereby improving intertemporal efficiency (i.e. re-balancing how resources are used between current and future consumption). The hope is that our living standards will become more sustainable.*

The Economics Study Design (2023–27) requires that students select just one market-based environmental policy. Three of these options are summarised below, to help inform your choice.

Option 1: Rely on a carbon tax

The *carbon tax* puts a *price* on emissions that in turn, act as a negative incentive to discourage the production and consumption of goods with high CO_2 emissions.

OR

Option 2: Have an emissions trading scheme

The use of an *emissions trading scheme* (*ETS*) involves putting a price on carbon emissions through the use of tradeable pollution permits or offsets that are purchased by dirty firms in a carbon market. This added cost acts as a negative incentive designed to discourage polluting activities.

OR

Option 3: Pay subsidies

Paying *subsidies* acts as a positive financial incentive that can help change the behaviour of consumers and/or producers of goods and services who switch to low emissions products. These could help to reduce market failure associated with positive externalities that would otherwise lead to the underproduction of socially beneficial goods.

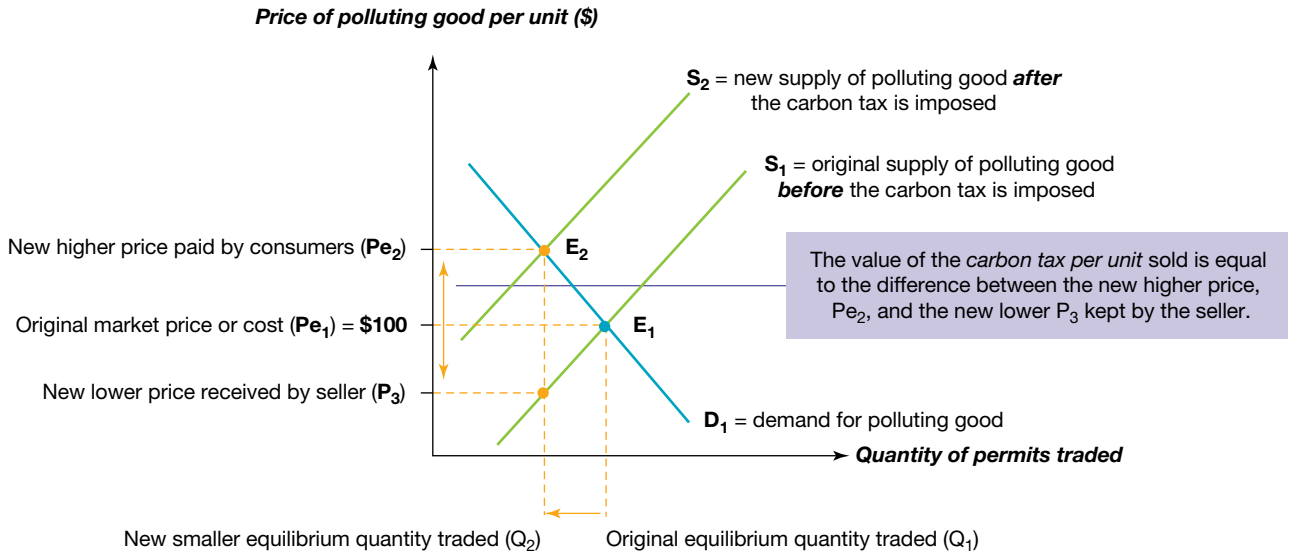
Option 1: The use of a carbon tax as a market-based environmental policy

A **carbon tax** *is one type of market-based government aggregate supply policy involving the use of negative incentives designed to change the type of goods and services produced and consumed, thereby helping to reduce greenhouse gas emissions and climate change. The tax is a fee or levy that is imposed on firms and households whose activities (i.e. production and consumption of goods and services) result in carbon emissions and negative externalities or costs to third parties, including the suffering associated with climate change, global warming, and severe weather events. The intention is to correct market failure by putting a price on carbon emissions, so costs are internalised and are not passed on to others uninvolved in the particular activity that causes harm.*

In other words, a carbon tax is one way to ensure that the polluter pays for the emissions arising from the goods and services they supply! Here, the addition of a carbon tax becomes an added cost that is spread between businesses and consumers. It changes behaviour by creating *financial incentives* to lower emissions by modifying the nature of economic activities.

The effects of using a carbon tax on the market for *high emissions goods*, can be illustrated hypothetically using the demand–supply diagram shown in figure 5.25. Here, the imposition of the tax made *supply conditions less favourable* for producers, so there is a reduction in the quantity supplied at a given price from S_1 to S_2. Initially, this creates a temporary shortage driving up the equilibrium market price paid by consumers of this product from P_1 to P_2. Eventually, demand and supply are again equal, but with a lower equilibrium quantity of the polluting good being traded (i.e. the fall from Q_1 to Q_2).

FIGURE 5.25 The impact of a carbon tax, on the market for a product with high emissions.



Looking at the *behaviour of consumers*, as the price rises towards P_2, notice that the demand for this high emissions product contracts. With a contraction in the number of consumers, there will be lower emissions, slowing climate change.

Again, let's also return to the *behaviour of producers* of this high emissions product. 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_{e2}), must go to paying the carbon tax. After *subtracting the value of tax*, the producer only gets to keep a lower, *less profitable unit price* of P_3. This 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, thereby reducing *negative externalities* and climate change. In so doing, the carbon tax has helped to increase *intertemporal efficiency* by striking a better balance between employing resources for immediate as opposed to future use.

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 levy is too low, perhaps just $10 per tonne of carbon where the demand for polluting products is price inelastic or unresponsive, 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 excessive level of tax could be disastrous for Australia's trade-exposed industries, GDP, employment, incomes and living standards.



Today, nearly 30 countries (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, and improve *intertemporal efficiency*. Australia also had a carbon tax between 2012 and 2014 (when it was abandoned). 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.

Because the tax drove up electricity charges as well as the price of transport and food, caused business closures and the loss of some jobs, the government decided to compensate low-income earners and some polluting businesses, using the $7 billion collected annually in tax revenue. However, this reduced the effectiveness of the tax in changing the behaviour of household and business. 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 for the lowest cost.

Option 2: The use of an emissions trading scheme as a market-based environmental policy

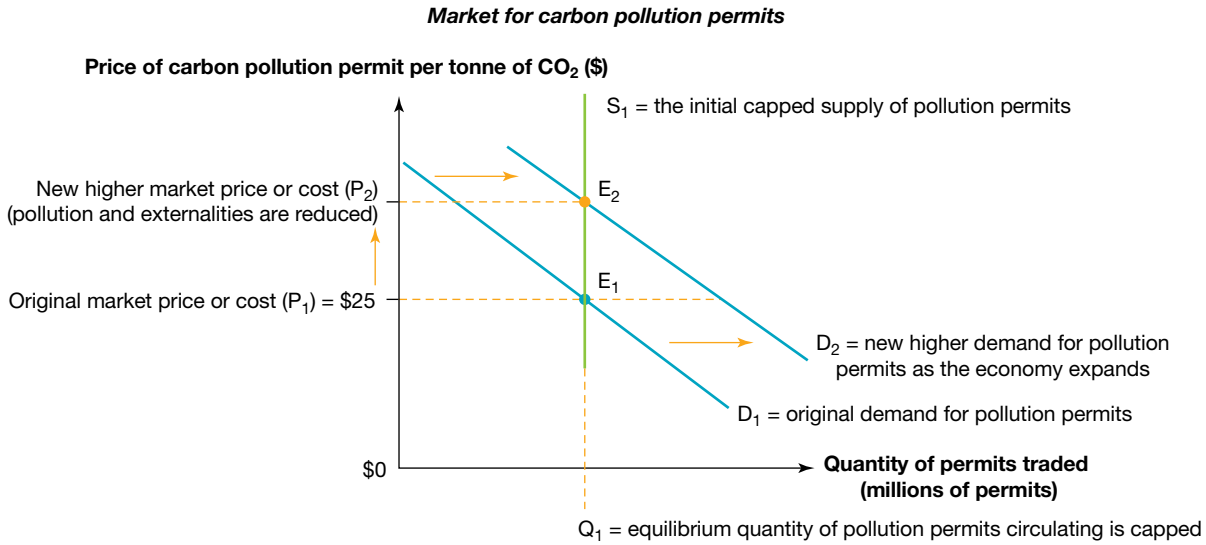
An **emissions trading scheme (ETS)** *is another market-based, aggregate supply environmental policy. It works to change the type of goods and services produced, by putting a price on CO_2 emissions through creating a market for 'tradeable' pollution permits. As in all markets, there are buyers and sellers who negotiate a price, or in this case, determine the cost of pollution to be paid by polluters, rather than some other third party. On one side of the market, the buyers or demanders of pollution permits are the businesses that must own or purchase the required number of permits (each permit allowing the release of one tonne of CO_2) so they can undertake production. On the other side of the market, the initial seller of permits (i.e. the supplier of pollution permits — S) is the government that in the first instance, could distribute these free to firms, or auction them off. The government could also 'cap' the number of permits issued at a certain level, so that a given emissions reduction target could be achieved.*



Under this so-called *cap-and-trade scheme* the price of permits would move up and down creating market signals or incentives that change behaviour and the allocation of resources between competing uses. In other words, changes in the cost of pollution would reflect the *conditions of demand for pollution permits relative to their supply*. For instance, prices could be driven up in a rapidly growing economy where there would be a stronger demand relative to the fixed or capped supply of permits. In this situation, polluting would become more expensive, hence incentivising the supply of cheaper and cleaner products and the use of technologies with lower emissions. In reverse, weaker demand relative to the fixed supply of permits, would cause the price or cost of polluting to fall. Under this system, 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! Additionally, intertemporal efficiency would be improved by creating *new aggregate supply conditions* that strike a better and more equitable balance between resources for current, as opposed to future use.

The operation of an ETS can be illustrated, hypothetically, using the demand–supply diagram shown in figure 5.26. Under this system, polluting firms with high emissions are required to have (or purchase) sufficient carbon pollution permits to cover their reported level of CO_2 emissions. This creates a demand for permits (initially shown 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 (initially shown as P_1). Once this cap is in place, the price of permits moves up and down and is mostly driven by new conditions of demand by polluting firms. 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) and thus the incentive not to pollute will increase. This helps to achieve the required emissions reduction target.

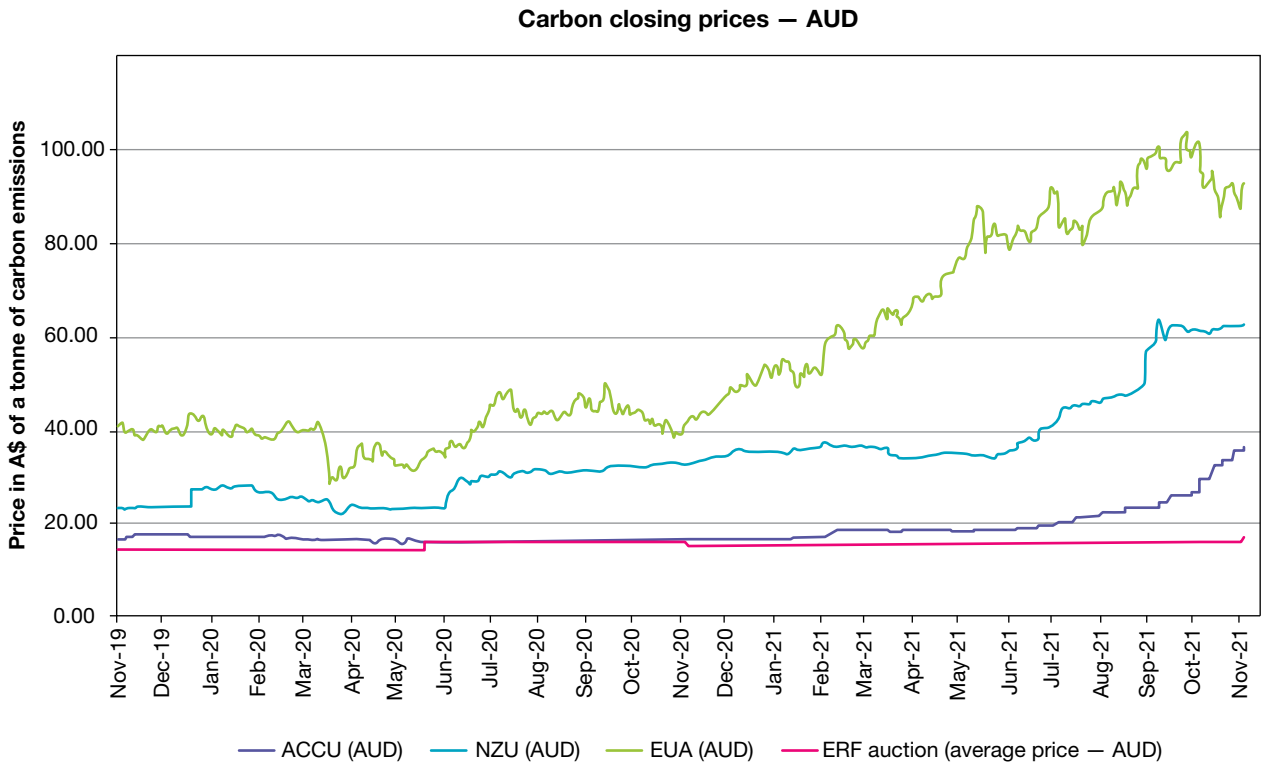
FIGURE 5.26 The operation of a carbon market involving an emissions cap-and-trade scheme where there is a rise in the demand for pollution permits by polluters wanting to increase their production.



The advantage of an ETS like this, as opposed to a carbon tax, is that the set 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 (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 readily be changed to meet new circumstances. However, a disadvantage of the ETS is that the price of pollution is uncertain. This is because the price of pollution permits can potentially fluctuate markedly from day to day. This makes it trickier for businesses and consumers to plan (as compared with the 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, but even NZ has one. Australia has a trading scheme that's 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 of the credits are funded by the government through its *Emissions Reduction Fund* (ERF). These credits 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) oversees 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 5.27, the market price of our ACCUs is far lower than that for NZ or EU permits, showing the more limited nature and weaker effectiveness of our current scheme, that critics feel will not deliver the emissions reductions now sought.

FIGURE 5.27 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.

Option 3: The use of subsidies as a market-based environmental policy

Subsidies *are another aggregate supply, market-based environmental policy designed to reduce carbon emissions by changing the type of goods and services produced and consumed. Essentially, they involve using positive financial incentives designed to change behaviour. They seek to encourage economic activities by producers and households that are environmentally friendly, by rewarding those who help to reduce emissions. As such, they are the opposite to having a tax or price on carbon that relies on a negative financial incentive designed to punish polluters.*

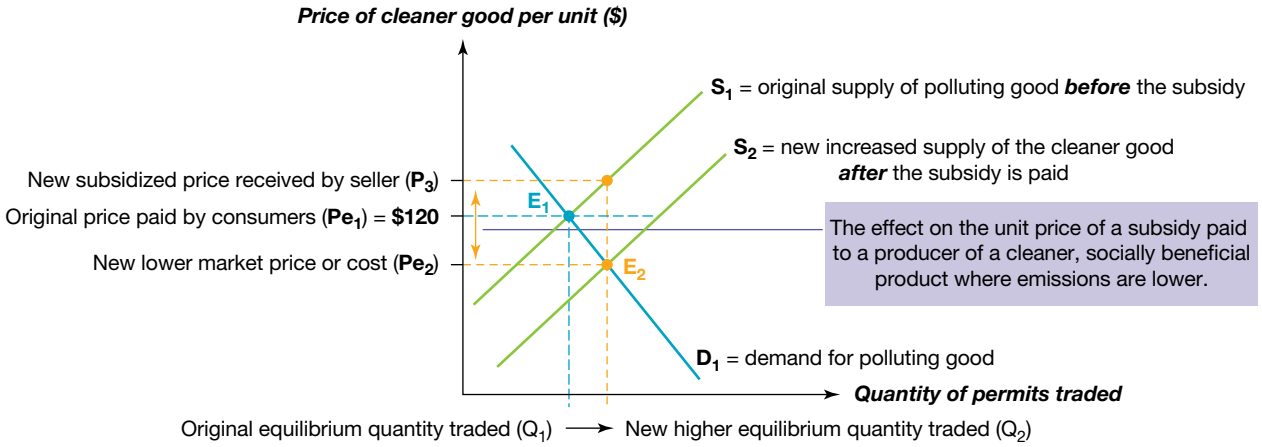
Government subsidies can be provided to firms or individuals to help reduce *negative externalities* and *market failure* associated with rising emissions from the supply of specific high emissions goods and services. There are different types of subsidies that can help to increase *intertemporal efficiency* and sustainable living standards. For example, they may involve:

- the payment of *cash grants* to firms, to reduce the cost of production; or to households that consume fewer polluting goods
- *tax concessions*, allowing the deductibility of costs of materials and equipment associated with cutting pollution, which may include tax-free holidays for firms 'greening' their operations
- *preferential government buying arrangements* for low emissions products when purchasing or awarding contracts
- *low interest loans* to businesses for their production, or to consumers when buying goods with lower emissions.

Figure 5.28 uses a demand–supply diagram to 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 good supplied at a given price (the increase from S_1 to S_2) because supply conditions have become more favourable and *profitable* for sellers. Initially, this creates a market glut, forcing the equilibrium price paid by consumers downwards (the 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). As previously mentioned, subsidies can be used as a positive financial incentive to change the behaviour of economic agents.

FIGURE 5.28 The impact on the market of a government subsidy paid to businesses that produces a more environmentally friendly product.

The market for a greener product before and after the introduction of a subsidy



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 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 also been changed by the subsidy. Following the subsidy, the market price fell towards Pe_2. As it fell, consumer demand for this lower-emissions product *expanded* (at the same time as the demand for the now more expensive polluting substitute product fell). Because of changed behaviour, CO_2 emissions levels are down, improving *intertemporal efficiency* and environmental sustainability.

Governments around the world now use subsidies as a market-based aggregate supply policy to help clean up the environment. For example, the rapid growth of the Chinese economy has involved environmental trade-offs including smog and deteriorating air quality that has endangered the health of tens of millions. As a response in 2016, the government decided among other measures, to use subsidies (including tax concessions and priority procurement), 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 too uses subsidies. For instance, subsidies are provided from the *Emissions Reduction Fund* to incentivise firms with projects that can deliver the maximum reduction in CO_2 at the lowest cost per tonne. Subsidies are also offered 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. However, it seems contradictory that Australia also has a long-standing government policy that heavily subsidises the coal industry and the burning of fossil fuels. Surely this would seem to undermine the effectiveness of our environmental policies! Instead, perhaps the gradual withdrawal of fossil fuel subsidies would accelerate technical research and innovation, create business opportunities for new firms, and help to clean up the environment.

5.6.3 The short- and long-term effects of environmental policy on aggregate supply, intertemporal efficiency and living standards

Market-based environmental policies use price signals and financial incentives to overcome market failure and the negative externalities associated with some economic activities. They try to rebalance *intertemporal efficiency*, to share the costs of economic activities more equitably between current and future generations. The exact effects of these policies on aggregate supply and living standards are variable and often hard to measure. However, in part, their impact depends on the specific policy measure used and the time period considered. As with all policies, there will be winners and losers. Often the short- to medium-term impacts on *aggregate supply* and *living standards*, are less favourable than those over the longer term. So, with these things in mind, let's take a closer look at the *effects* of environmental policies.

The effects of environmental policies on intertemporal efficiency

As mentioned previously, *intertemporal efficiency* is about striking an appropriate and fair balance between resources for current as opposed to use by future generations.

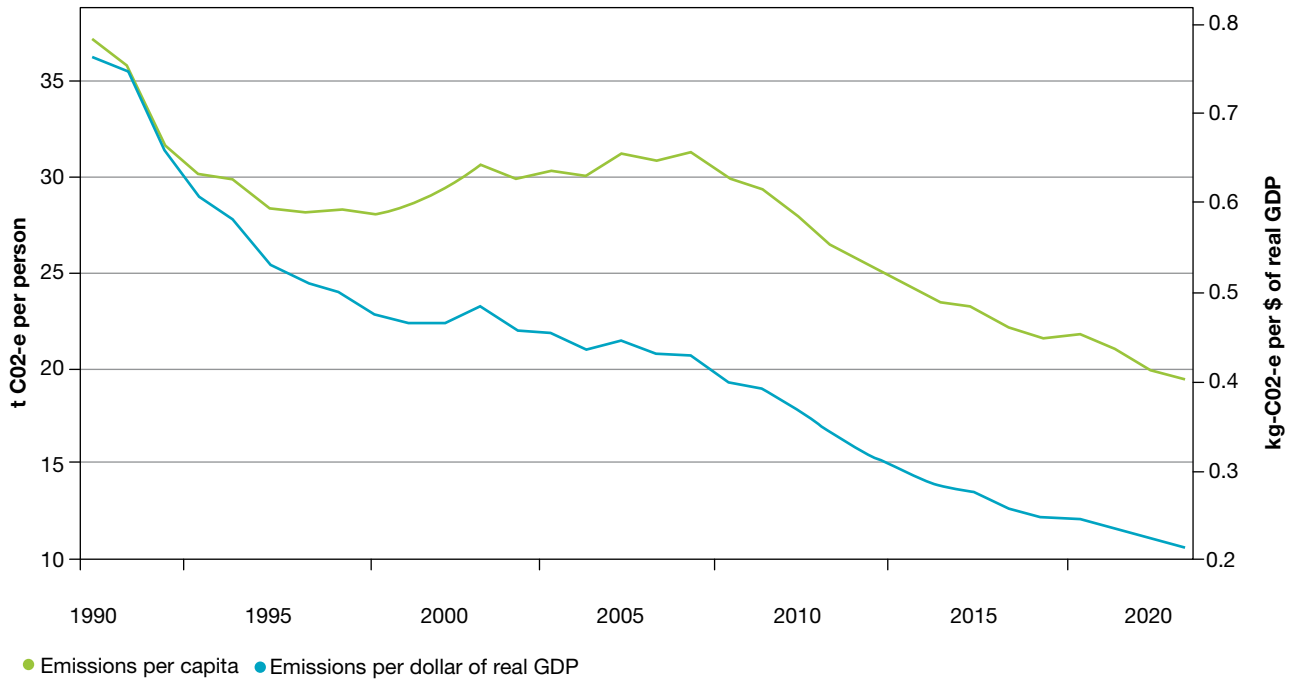
Perhaps the biggest, but certainly not the only, environmental threat right now is human-induced *climate change* associated with global warming, rising sea levels and severe weather events. This change is largely driven by the dramatic rise in greenhouse gas emissions (CO_2, nitrous oxide, and methane), that now undermines the quality of *common access resources*. For decades, many were in denial of the huge threats posed by climate change, so there were delays taking appropriate action. Now, however, we really have little choice, despite the economic costs that will be felt. It can't be business as usual! The crisis is very real and for many, survival is at stake.

Increasingly, there is belated climate action in most countries using combinations of market-based environmental policies like carbon taxes, ETSs and subsidies to slow emissions and improve *intertemporal efficiency*. Those nations that began earlier with well-designed, competition-friendly environmental policies, have shown more success in cutting CO_2 emissions per unit of GDP and in per capita terms. Figure 5.29 shows Australia's progress towards lower emissions. However, unfortunately, the significant emissions reductions here are the result of many



factors. Technological progress and improvements in energy efficiency have especially played significant roles, making it hard to quantify the effectiveness of any single carbon-pricing policy measure.

FIGURE 5.29 Changes in Australia's emissions per capita and per unit of GDP, 1990–2021.





Sources: Australian government, Department of Industry, Science, Energy and Resources, *Quarterly Update of Australia's National Greenhouse Gas Inventory: June 2021*. © Commonwealth of Australia 2021. Licensed under CC BY 4.0; NOAA.

Despite reduced emissions, the main problem is that they are still too high to stop climate change. As stated by the OECD in 2022, 'the time for talk has passed and significant action is desperately required if the global rise in average temperature is to be limited to less than 2 per cent (preferably 1.5 per cent) of pre-industrial levels. In addition, it is possible that the "low-hanging fruits of energy savings and resource reallocation might have already been exploited, and further emission reductions might require radical technology changes and vast resource reallocations …".' In the end, the extent to which there are improvements in sustainability and the *rebalancing of intertemporal efficiency*, will largely reflect the outcome of government decisions that seek to balance environmental, economic, social, and political considerations.

The effects of environmental policies on aggregate supply and living standards

Living standards are affected by both *material* elements (related to per capita real incomes and consumption), and *non-material* developments (the quality of daily life — for instance, levels of happiness, life expectancy, freedom, fulfilment, and the state of the environment). So, our attention now turns to consider the impact of environmental policies on these aspects of our wellbeing over both the shorter and longer term periods of time.

The shorter term effect of environmental policies on aggregate supply and living standards

Traditionally, it was felt that *environmental policies* would tend to have mostly *negative* effects on material and non-material *living standards*, especially in the *short-term*.

- **Material living standards:** Here, the argument goes that putting a price on carbon emissions (e.g. using a carbon tax or tradeable carbon emission offsets to be purchased by firms), creates *less favourable aggregate supply conditions*. In the *short-term*, these policies weaken domestic macroeconomic conditions and hence, create economic conditions that undermine our economic wellbeing in several ways:
  - Firstly, putting a price on emissions adds to production costs and erodes profits. This forces firms with high emissions to increase the prices of the goods and services they sell. The rise in cost inflation reduces the purchasing power of household incomes, making some worse off.
  - Secondly, faced with higher costs among polluting firms and exposure to international competition, some local businesses will be forced to close, reducing productive capacity, and slowing GDP growth. Some high-emission companies may even relocate overseas to countries with weaker climate policies. This tends to depress aggregate supply, slow economic and income growth, and curb material living standards without solving the problem.
  - Thirdly, with the closure of some firms producing high-emission products, structural unemployment is likely to rise, reducing incomes and purchasing power. The material wellbeing of some is reduced.
- **Non-material living standards:** Over the *short-term*, environmental policies may undermine non-material living standards. This is because policies that cause business closures also drive-up structural unemployment. In turn, experience from around the world shows that higher unemployment undermines non-material wellbeing by reducing happiness, worsening the mental and physical health outcomes of individuals, exacerbating feelings of personal failure, causing social isolation, and placing relationships under stress.

The longer term effect of environmental policies on aggregate supply and living standards

While environmental policies to reduce our carbon footprint can have negative effects on aggregate supply over the *short-term* (especially via their effects on high-emission industries), these will usually tend to fade over time. Policies can be designed to mitigate many of the negative impacts of measures and enhance the positives. Existing firms will restructure for cleaner operations and new innovative companies will start up, keen to seize business opportunities. At the same time, pressures on climate change are eased, intertemporal efficiency is rebalanced equitably, and our living standards are more sustainable.

- **Material living standards:** Evidence has emerged to suggests that over the *longer term*, well-designed, staged, and predictable environmental policies can create new investment opportunities for business and have a *positive* net effect on *aggregate supply conditions*, improving intertemporal efficiency and sustainable living standards. This is especially the case when most countries make a similar environmental commitment (e.g. net zero emissions by 2050). Recently, for example, the OECD released its findings from a ten-year study. One surprising conclusion was that *over time*, government environmental policies 'had little aggregate effect on economic performance, despite achieving significant environmental benefits' (see ExecutiveSummary | Assessing the Economic Impacts of Environmental Policies: Evidence from a Decade of OECD Research | OECD iLibrary (oecd-ilibrary.org)).
  - Firstly, competition-friendly environmental policies (especially well-targeted subsidies) that *incentivise innovation* and *new research*, can eventually reduce costs and help offset the added price of carbon reductions. As experience has shown from most countries, the net impact of environmental measures on inflation is likely to be relatively small.
  - Secondly, by creating price signals and incentives, encouraging new directions and opportunities for some firms to restructure and expand their operations to become more profitable, some environmental

policies can help to grow a low emissions, *green economy* with a whole range of new industries that previously were not viable. In addition, during late 2021, there was discussion within the EU that countries with relatively slow progress on reducing their emissions (including Australia), may be targeted with high tariffs on their exports leading to reduced sales, and economic and income growth. Furthermore, the increase in severe weather events recently experienced, has already destroyed businesses and infrastructure and has slowed productive capacity. So, again, over time, environmental measures offer the best option to protect Australia's productive capacity, support changes in aggregate supply, and maintain sustainable material living standards.

  - Finally, while some jobs have been lost in the shorter term in high emissions industries due to business closures and the reallocation of resources, the transition to a greener economy also creates employment opportunities, even though the jobs might not involve the same skills or be in the same industries. For this reason, it is important that environmental policies are combined with other aggregate supply measures like budget outlays on education and training, so that displaced workers gain the new skills needed to become more employable, earning them higher incomes and better living standards.

- **Non-material living standards:** As we have seen, over the *long-term*, environmental policies have certainly helped to significantly reduce greenhouse gas emissions. It is hoped that these measures will reduce the loss of life, the displacement of island and coastal communities as sea levels rise, the spread of diseases, and the destruction of species and ecosystems.

5.6.4 Weaknesses of market-based environmental strategies as an aggregate supply policy

We have seen that worrying climate change has prompted governments to adopt *environmental strategies*. Many governments have opted for *market-based policies* like a carbon tax, ETS or the use of subsidies, rather than *regulation-based measures*. We have now seen that market-based strategies can affect aggregate supply and cause resources to respond to price signals and move into the production of goods that are less environmentally damaging. This helps the transition to a greener economy. In the process there has been a rebalancing of intertemporal efficiency so that moving forward, living standards are more sustainable. However, there are some weaknesses, especially in the *short-term*:

- ***Trade-offs exist:*** Environmental policy clearly involves trade-offs. For instance, to have a more sustainable economy over the longer term, strategies will create some pain in the short-term. Particularly, trade-exposed industries are likely to suffer most. Placing a cost on carbon emissions as a negative financial incentive erodes profits, perhaps causing some firms to close or move overseas. This then leads to higher structural unemployment, reduced incomes, lower living standards and wider inequality in income distribution.
- ***Political constraints:*** Because some groups gain more than others as emissions are reduced, governments face political constraints and opposition, both in the parliament and among voters. For example, there were protests over the imposition of the carbon tax in 2012. More recently, commitments by some parties to reign in support for the coal industry meant reduced popularity in some electorates by workers worried about job losses.
- ***Long time lags:*** The time lag between announcing a policy and its impact on emissions can be quite long, so in the meantime, climate change continues. Indeed, it will take some countries well beyond 2050 to get to net zero emissions (e.g. for China as the biggest polluter, it may be 2060 at the earliest)!
- ***Financial constraints:*** Government subsidies as an environmental strategy work by creating positive financial incentives for firms and consumers to reduce emissions. However, there is a cost to the bottom line of the budget. In current times where government debt has been rising and there is concern about the burden that this places on future generations, governments are likely to be reluctant to endorse a wide-ranging program to reduce emissions in this way.
- ***International constraints:*** Environmental issues are not just those experienced here in Australia and so their solution requires international collaboration. While there has been plenty of talk, some countries are light on decisive and effective action needed to deliver the agreed emissions reductions.

5.6 Activities

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5.6 Quick quiz on | **5.6 Exercise**

5.6 Exercise

1. **Explain** what is meant by *climate change*. **(2 marks)**
2. **Explain** how climate change, global warming and severe weather events are closely linked with rising global levels of economic activity. **(2 marks)**
3. **Identify** and **outline** *two* important *problems* caused by climate change that threaten our *living standards*. **(2 marks)**
4. **Define** the term, *market-based environmental policy.* **(2 marks)**
5. In the context of environmental policy, **outline** what is meant by *intertemporal efficiency*. **(2 marks)**
6. **Select** *one* market-based environmental policy. **Explain** how it would be likely to affect each of the following over both the short-term and long-term:
   a. Aggregate supply **(2 marks)**
   b. Intertemporal efficiency **(2 marks)**
   c. Living standards. **(4 marks)**
7. **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.'* **(5 marks)**

Solutions and sample responses are available online.

5.7 Analyse the strengths and weaknesses of using aggregate supply policies — review

KEY SKILL

- Analyse the effect of budgetary, immigration and trade liberalisation policies on aggregate supply, international competitiveness, the achievement of the domestic macroeconomic goals and living standards

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In this final section, let's just review some of the strengths and weaknesses of using government aggregate supply policies to affect the achievement of international competitiveness, domestic macroeconomic goals, and Australian living standards.

5.7.1 The strengths of using aggregate supply policies to pursue domestic macroeconomic goals, international competitiveness and improve living standards

A few of the *strengths* of aggregate supply policies used to help pursue domestic macroeconomic goals, international competitiveness and improve sustainable living standards, are summarised in table 5.2.

TABLE 5.2 Some strengths of using aggregate supply policies to promote the achievement of domestic macroeconomic goals, international competitiveness and living standards.

Possible strength	Description of strength
1. Aggregate supply policies can precisely target and help solve structural problems in the economy	A great strength of aggregate supply policies is that they can be used to precisely target structural problems (e.g. skills shortages, poor labour productivity, infrastructure bottlenecks, lack of innovation, weak profitability and business closures, environmental problems like climate change) that can prevent the achievement of international competitiveness, domestic macroeconomic goals. For example, especially in the longer term: • Using aggregate supply-side measures to increase efficiency in the use of resources and cut production costs, can help to slow cost inflation and strengthen our international competitiveness. • They can also help to make producers more willing and able to lift national output, thereby growing the economy's productive capacity and the non-inflationary rate of economic growth. At the same time, environmental strategies can improve intertemporal efficiency and strengthen the sustainability of living standards. • In the long-term, by assisting producers to be more efficient and internationally competitive, and by keeping production costs down and profits up, aggregate supply policies can encourage new firms to start up, or existing firms to expand or avoid closure, thereby helping to lower structural unemployment.
2. Aggregate supply policies work in a complementary way with aggregate demand policies to improve living standards	Aggregate supply policies can work in a complementary or supportive way with aggregate demand policies: • Aggregate supply policies can help to reduce long-term structural problems that can reduce the achievement of key domestic macroeconomic goals, while macroeconomic or aggregate demand policies can be used to help stabilise the cyclical level of spending and domestic economic activity in the shorter term. Together these policies can help create domestic conditions that support better living standards. • Additionally, while aggregate demand policies are needed to steady the growth in expenditure, aggregate supply policies are required to ensure that society's growing wants can actually be met by sustainably growing our productive capacity and potential GDP.
3. Not all aggregate supply policies involve trade-offs when used to pursue government economic goals	Aggregate supply policies generally face fewer dilemmas or conflicts between the pursuit of economic goals than aggregate demand policies. For instance, in the long-term, aggregate supply policies can lessen cost inflation without slowing economic growth or causing a rise in unemployment. In reverse, aggregate supply policies can boost the sustainable rate of economic and employment growth, without adding to inflationary pressures. This makes them very attractive.
4. Aggregate supply policies can also have beneficial effects on the level of aggregate demand	Some policies (such as government outlays on infrastructure investment, education and the payment of subsidies) to boost productive capacity and grow aggregate supply, can simultaneously strengthen the level of aggregate demand. This can be handy if the cyclical level of domestic economic activity is weak.

5.7.2 The weaknesses of using aggregate supply policies to pursue domestic macroeconomic goals, international competitiveness and improved living standards

Table 5.3 summarises the main *weaknesses* of using aggregate supply policies to promote the achievement of Australia's domestic macroeconomic goals, international competitiveness and living standards.

TABLE 5.3 Some weaknesses of using aggregate supply policies to promote the achievement of domestic macroeconomic goals, international competitiveness and living standards.

Possible weakness	Description of weakness
1. Long 'implementation' and 'impact' time lags reduce the usefulness of aggregate supply policies over the short-term	As we know, there can be **long time lags** with recognition, implementation and impact of many government policies. This can reduce the effectiveness of these measures, especially in the short-term. Unfortunately, many aggregate supply policies such as budget outlays on infrastructure, education and training, trade liberalisation and environmental measures can take some time to implement and their impact won't be immediately felt. Changes in spending on education, for instance, may take 10–15 years to impact on productivity, and major infrastructure projects such as the NBN has taken twelve years to roll out. This means that some are of little use in reducing economic instability in the short-term.
2. Financial constraints limit the impact of some aggregate supply policies	Most aggregate supply policies involve heavy budget outlays and are expensive to implement. When governments have run many budget deficits (as seen recently), concern of rising debt levels acts as a **financial constraint**. This is likely to reduce the funding available for aggregate supply measures like tax reform involving cuts in rates, important infrastructure projects, improved training, business subsidies, and R&D grants. This limits their effectiveness in growing productive capacity and aggregate supply.
3. Some aggregate supply policies involve trade-offs that can reduce wellbeing	Some aggregate supply policies designed to increase efficiency, can involve trade-offs and undermine the achievement of other government goals, especially in the short-term. For example, reforming tax and cutting tax rates might increase efficiency, but they may reduce equity in the distribution of income. Similarly, environmental strategies or trade liberalisation might increase structural unemployment in the short-term. This could also undermine equity and living standards for some.
4. Aggregate supply policies often face political constraints in parliament and from voters	Recent Australian governments have found that their lack of a majority in the upper house or Senate blocks the passing of legislation needed for some reforms including tax, education and those involving immigration and environmental policies. As a partial result of this political constraint, some policies have been watered down, potentially reducing their beneficial impact on living standards.
5. On its own, the increase in productive capacity as a result of aggregate supply policies is not enough	Aggregate supply policies can increase productive capacity and the potential for a sustainably bigger GDP. However, on their own, this does not guarantee that national production and jobs will actually increase, unless they are also matched by rising spending or aggregate demand.
6. Some of the assumptions behind the operation of aggregate supply policies may not apply in practice	For example, supply-siders recommend lower tax rates to motivate hard work and increase the incentive to invest and grow businesses. However, this assumption may be false. For some, lower tax rates allow individuals to reduce their hours of work and devote more time to leisure, yet still keep the same income. Additionally, lower taxes also limit government revenue and hence the money available for outlays on public services (like education and health) and welfare. This might reduce living standards.



Resources

Weblinks Supply-side economics
The napkin sketch that introduced supply-side economics

5.7 Activities

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5.7 Quick quiz on | **5.7 Exercise**

5.7 Exercise

1. Giving examples, **outline** *two* important general strengths of using aggregate supply policies to achieve the government's key domestic macroeconomic goals and improve living standards. **(2 marks)**
2. Giving examples, **outline** *two* important general *weaknesses* of using aggregate supply policies to pursue the government's key domestic macroeconomic goals and improve living standards. **(2 marks)**
3. Select *one* aggregate supply policy from *either* immigration policy *or* tax reform. **Analyse** the strengths and weaknesses of using this aggregate supply policy to improve international competitiveness and accelerate Australia's non-inflationary rate of economic growth. **(6 marks)**

Solutions and sample responses are available online.

5.8 Review

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5.8.1 Summary

What are aggregate supply policies?

- *Aggregate supply policies* are government strategies that seek to increase the quantity and quality of resources, create incentives, increase efficiency and reduce costs, and grow profits. They are designed to help create more favourable aggregate supply-side conditions where businesses will thrive and want to expand, and the economy's productive capacity increases.
- Aggregate supply policies include the following four categories of measure:
  - selected aggregate supply aspects of budgetary policy (infrastructure, education, subsidies, R&D and tax reform)
  - trade liberalisation
  - encouragement of skilled immigration
  - market-based environmental policies.
- These policies can help to grow productive capacity (shift the AS line outwards) in the long-term by increasing efficiency, strengthening incentives, lowering production costs, raising profits and improving the volume and efficiency of labour and other resources.

The aims of aggregate supply policies

- The key aim of aggregate supply policies is to increase productive capacity (AS) through greater *allocative, technical, dynamic* and *intertemporal* efficiency.
- In turn, aggregate supply measures and improved efficiency are the means to better achieve other key government domestic macroeconomic goals including the following:
  - boosting the long-term sustainable rate of economic growth through increased efficiency
  - promoting *low inflation* and improved international competitiveness, by boosting efficiency and cutting production costs
  - promoting *full employment* in the long-term through better efficiency, stronger profits and increased international competitiveness.
- By better achieving these goals, governments hope to create domestic conditions conducive for improvements in Australian *living standards*.

The budget as an aggregate supply policy

- Aggregate supply aspects of budgetary policy often include measures involving changes to budget receipts and outlays designed to boost efficiency and productive capacity, and grow AS.
- The 2023–27 Study Design requires that students select just one of the following aggregate supply budgetary policies:
  - increased *spending on education and training* (to improve the skills and productivity of our labour resources and reduce labour bottlenecks)
  - *investment in national infrastructure* projects (to grow capital resources, reduce bottlenecks in production, increase productive capacity and create an environment where firms can expand)
  - *grants for R&D* (to incentivise innovation and product development that can lift efficiency, cut costs and improve international competitiveness)
  - *subsidies* (to encourage a more efficient allocation of resources and grow productive capacity)

- *tax reform* (lower tax rates to boost after-tax profits and encourage business expansion to grow the economy's productive capacity).

- These aggregate supply budgetary policies can help to:
  - slow *cost inflation*. They can potentially lift efficiency, reduce production costs and improve business after-tax profits (e.g. through outlays on education, R&D, subsidies and infrastructure projects). Lower costs and better profits mean that firms can profitably sell their goods and services at lower prices. This can help slow cost inflation and improve our international competitiveness.
  - strengthen the non-inflationary, *sustainable rate of economic growth*. This may be done by using well-targeted subsidies to encourage business expansion rather than closure. In addition, lower rates of company tax and better infrastructure are powerful ways to help grow efficiency, cut costs, lift profits and encourage business expansion of productive capacity and GDP.
  - reduce *natural unemployment* in the long-term. This involves using policies like tax reform, outlays on targeted industry subsidies, and outlays on education and training. The latter, for example, allows individuals to become more employable so they can better fill job vacancies in new industries. In addition, investment in infrastructure can reduce production costs, lift our international competitiveness, strengthen profits, reduce business closures and encourage expansion, lowering unemployment in the long-term.
  - promote better *living standards* in the long-term. By increasing efficiency and lowering costs, the economy's productive capacity is boosted. This can lead to higher real per capita incomes, purchasing power, consumption, and material and possibly non-material living standards.
- Aggregate supply aspects of budgetary policy can have *weaknesses*:
  - Despite high levels of investment in infrastructure, these projects have not always been well managed by governments, and some returns are more limited than might be expected.
  - Opportunity costs exist and, on occasions, greater value may have been extracted through outlays on alternatives to those selected by the government.
  - There are currently severe financial constraints due to large budget deficits in recent years and concern over rising levels of debt. These may limit the scope and effectiveness of budget outlays or cuts in tax rates.
  - There are usually long time lags for implementation and impact of policies like infrastructure investment, R&D grants, and spending on education and training.
  - There are often political constraints for measures like tax reform, where approval through the upper house is not guaranteed. Sometimes, there is also a fear of adverse voter reaction.

Trade liberalisation as an aggregate supply policy

- *Trade liberalisation* involves the Australian government gradually reducing trade barriers that protect local industries from import competition — in particular, cutting all tariffs, reducing the overall value of government subsidies to local firms, abolishing import quotas, and signing more FTAs.
- Trade liberalisation should help increase our international competitiveness by forcing businesses to *use resources more efficiently* in areas of *comparative cost advantage*. It also forces firms to restructure and cut production costs, and allows them to gain better *economies of large-scale production* by selling in bigger markets overseas.
- Trade liberalisation increases efficiency in the use of resources, cuts the cost of imports and promotes stiffer competition. Over the longer term, this can help to better achieve the government's domestic macroeconomic goals:
  - It slows inflation pressures by helping to lift efficiency and lowering production costs.
  - It strengthens the non-inflationary potential rate of economic growth through greater efficiency in the use of resources, restructuring production, growing access to overseas markets and sales, and increasing economies of large-scale production.
  - In the long-term, it can reduce structural unemployment and grow jobs, although structural unemployment may rise in the short-term as some uncompetitive firms close down.
- Trade liberalisation can help to create *better domestic macroeconomic conditions* that support improved living standards — lower inflation raises the purchasing power of incomes, strengthens productive capacity

and the potential rate of economic growth and in the long-term, more jobs, and raise average incomes and purchasing power.
- Trade liberalisation involves *strengths and weaknesses*, partly determined by the time period considered:
  - *Material* living standards can gain in the longer term, by raising efficiency in resource allocation, mainly due to stiffer competition from abroad. This helps to increase the potential level of output, income and consumption.
  - *Non-material* living standards can gain in the long-term mostly by lowering unemployment that in turn, can result in better mental and physical health outcomes with less stress and feelings of social isolation.
  - *Negative effects* of trade liberalisation are more likely in the *short-medium-term*. The policy may increase structural unemployment, increase environmental problems including the depletion of resources, reduce the growth of infant industries.

Encouragement of skilled immigration as an aggregate supply policy

- An important focus of Australia's *immigration policy* has been to encourage and give priority entry to younger immigrants with particular *skills*. It is designed to counter our ageing population, grow the size of the labour force, fill labour shortages, improve participation and increase productivity, expanding the economy's productive capacity and AS.
- Our policy of encouraging skilled immigration can help to:
  - slow *cost inflation*, by increasing the supply of labour in the labour market and relieving skills shortages and bottlenecks that otherwise would lead to higher wage costs and prices
  - strengthen the *sustainable rate of economic growth* by helping to reverse the immediate effects of ageing, by increasing access to labour resources with skills that lift labour productivity and Australia's productive capacity
  - grow our productive capacity faster than would otherwise be the case and hence, increase the size of Australia's production and income cakes available for distribution, consumption and improving living standards.
- Encouraging skilled immigration can have *weaknesses*:
  - It is not a permanent or sustainable solution to Australia's ageing population — immigrants also grow old and that would necessitate even more immigration and a much larger and ever-increasing population.
  - Because immigration also adds to the demand for labour along with that for final goods and services (in some cases, more than it adds to their supply), it can cause inflation and lead to shortages, problems and bottlenecks in areas like housing, transport, electricity and water.
  - While immigration has greatly enriched our culture and boosted skills, there are trade-offs including lowered social cohesion, added urban congestion, reduced housing affordability, and made it more difficult to achieve improved environmental outcomes. These erode some aspects of Australian living standards.

A market-based environmental strategy as an aggregate supply policy

- There are many environmental issues, not the least of which is climate change that has already negatively impacted our material wellbeing (incomes and consumption levels) and non-material living standards (quality of daily life) through an increase in the number and severity of extreme weather events.
- A *market-based environmental* policy might include governments using a carbon tax, emissions trading scheme or targeted subsidies to reduce environmental problems. The 2023–27 Study Design requires that students select just one policy option. These policies involve governments creating financial incentives and disincentives to change relative prices and the decisions made by producers and consumers responsible for pollution. If successful, market-based environmental policies can promote the transition from a high- to a low-emissions, greener economy by changing the type of goods and services produced and consumed.
- A market-based environmental policy can help improve *intertemporal efficiency*. It does this by re-balancing the consumption of resources more fairly and ecologically sustainably, between use by current and future generations. By reducing the negative externalities of our current economic activities (many of which have high emissions that accelerate climate change, global warming and severe weather events), living standards are more sustainable.

- Despite their strengths, environmental policies have their downsides:
  - Especially in the *short-term*, they can lead to the closure of high emissions industries causing the rate of economic growth to slow and structural unemployment in trade-exposed sectors of the economy to rise. This may reduce living standards.
  - There are also political and social constraints that are likely to limit the scope and effectiveness of policy action.

Some general strengths and weaknesses of using aggregate supply policies to promote domestic macroeconomic goals and living standards

- *Strengths* of aggregate supply policies might include the following:
  - In the long-term, they can precisely target structural weaknesses (e.g. low productivity, skills shortages) and effectively *reduce structural problems* like cost inflation, a slow sustainable rate of economic growth and natural unemployment.
  - They can *work in a complementary way* with aggregate demand polices to enhance domestic macroeconomic goals and improve living standards.
  - Often there are *fewer trade-offs* than when aggregate demand policies are used (e.g. it is possible to pursue rapid economic growth and still have low inflation using aggregate supply policies, but this is not usually the case with aggregate demand policies).
  - Many aggregate supply policies (such as infrastructure investment, education spending and subsidies) also have *useful aggregate demand-side effects* that may also help promote stability.
- *Weaknesses* of aggregate supply policies might include the following:
  - There are often *long time lags* (many years) for policy implementation and impact (in infrastructure, education, R&D, subsidies, trade liberalisation, welfare and tax reform), so they are not much use in the short-term.
  - Aggregate supply policies are *not enough on their own*; they must also be accompanied by aggregate demand policies.
  - Some aggregate supply policies make dubious *assumptions about peoples' behaviour* and reaction to positive and negative incentives (such as changes in tax and welfare).
  - There are often *political constraints* associated with reforms, immigration and aggregate supply budget measures involving tax reform and outlays. These can limit the government's policy options.
  - There are sometimes *financial constraints* and opportunity costs associated with many aggregate supply policies. Most are expensive and require adequate funding (e.g. improved infrastructure, education, or tax reform) that limit what the government can do and achieve when there is already concern over government debt.
  - There are sometimes *trade-offs*, especially in the short-term; for example, aggregate supply policies may increase efficiency (e.g. tax reforms), but reduce equity, while others may increase GDP growth, but undermine non-material living standards.

5.8.2 Key terms

Aggregate supply (AS) is the total or combined output of all types of goods and services produced over a period by the nation's businesses. It is especially affected by the availability of a nation's resources and the efficiency with which these resources are used.

Aggregate supply policies include a wide range of efficiency-promoting, cost-cutting, incentive-enhancing government strategies that seek to grow the quantity and quality of resources available and the productive capacity or potential of the economy in the long-term, by making aggregate supply conditions more favourable and increasing the willingness and ability of suppliers of goods and services (individuals and businesses) to produce. Examples include budgetary measures (e.g. outlays on infrastructure or tax reform), trade liberalisation, immigration and even environmental policy.

Aggregate supply budgetary policies are measures involving changes in various government tax rates and/or outlays in the budget (e.g. related to infrastructure, education, subsidies, R&D and tax reform) that can grow a nation's productive capacity and its potential GDP.

Aggregate supply conditions represent the factors that affect the ability and willingness of sellers to actually produce goods and services (e.g. production costs, profits, climatic conditions, productivity).

Allocative efficiency is where resources are used in ways that maximise society's satisfaction and general wellbeing. Resources are directed to where they are most wanted or valued.
Carbon tax is a fee or levy that is imposed on firms and households whose activities (i.e. production and consumption of goods and services) result in carbon emissions and negative externalities or costs to third parties — including suffering associated with climate change, global warming, and severe weather events. The intention of carbon taxes is to correct market failure by putting a price on carbon emissions, so costs are internalised and are not passed on to others uninvolved in the particular activity.
Climate change focuses on the problem of global warming driven by economic activities that involve the release of greenhouse gas emissions into the atmosphere that increase the number and severity of severe weather events.
Dynamic efficiency involves how quickly producers can change the way resources are used in response to changes in technology and consumer preferences.
Economic constraints *See* financial constraints.
Economies of large-scale production are reductions in a firm's average costs per unit associated with an increase in its annual production and sales levels, perhaps enabled by trade liberalisation that expands export markets (e.g. following the signing of FTAs).
Efficiency is the ratio of output of goods and services, to the input of resources used.
Emissions trading scheme (ETS) works to change the type of goods and services produced by putting a price on CO_2 emissions through creating a market for 'tradeable' pollution permits or offsets. Typically, the supply of permits is capped and hence changes in demand determine the price at which the permits are traded (called cap and trade system). It forces external costs of climate change to be internalised by firms, reducing market failure and improving society's general wellbeing. In turn, price signals act to change behaviour and reallocate resources away from products with high emissions.
Encouragement of skilled migration is closely geared to meeting the needs of our labour market in growing the economy's size with skills shortages and an ageing population. It is designed to attract migrants who can make a significant contribution to the Australian economy and fill positions where no Australian workers are available. Skilled migrants have very high participation rates in the workforce, helping to stimulate economic growth, which results in more jobs.
Financial constraints are budget restrictions imposed on policy makers in cutting tax rates or lifting budget outlays on education or infrastructure, because such measures will increase the budget deficit and government debt. This limits the overall scale and hence effectiveness of many aggregate supply policies on the economy.
Free trade agreements (FTAs) involve two or more nations collaborating to remove various forms of protection of their local industries. They are often seen as beneficial because countries will be encouraged to specialise in areas of comparative cost advantage where opportunity costs are minimised and material living standards, maximised.
Greenhouse gas emissions include CO_2 and nitrous oxide, and are the result of economic activities that involve the burning of fossil fuels. They add to climate change and other environmental problems.
Government support for R&D is designed to grow productive capacity and aggregate supply by encouraging institutions, universities, businesses and individuals to innovate and develop new ideas, processes and products. Financial support creates incentives that involve either cash payments, or more commonly, generous tax incentives or write-offs up to 150 per cent of the cost of R&D expenditure. This helps to offset some of the costs involved. In the long-term, these outlays expand our economy's productive capacity or potential GDP.
Government outlays on training and education represent an aggregate supply budgetary measure that seeks to cultivate the skills, productivity and creativity of Australia's labour resources (grow our human capital resources). In turn, these outlays help grow our productive capacity.
Government spending on training and education is designed to help support primary and secondary schools, the VET apprenticeship system and universities. It involves improving the knowledge, skills, innovativeness and quality of our human capital. This funding seeks to boost Australia's technical and dynamic efficiency, lower business costs, and expand our productive capacity.
Immigration policy is an aggregate supply policy that is now closely geared to help meet the needs of the labour market for skilled workers in our growing economy with an ageing population. It involves setting annual immigration targets to manage the overall number, composition, skills and age of migrant arrivals from overseas. It prioritises those who are more likely to make a very valuable and ongoing economic contribution to the Australian economy.
Immigration target refers to the total number and category of immigrants allowed to enter the country each year. The current cap on the number of *permanent* entry visas till 2023–24 is set at 160 000.
Import quota A government restriction on the quantity of particular goods that can be imported into Australia.

Infrastructure investment as an aggregate supply measure, mostly involves federal government outlays in the budget to grow our capital resources (G_2) such as roads, railways, electricity generation, dams and telecommunications. In turn, these are used by businesses and suppliers to produce other goods and services. Improved infrastructure can lift efficiency, cut costs, and help to grow our productive capacity and aggregate supply.

Intertemporal efficiency involves an appropriate balance between resources for current consumption as opposed to future use. Environmental policies can help make this balance more equitable and sustainable over time.

International competitiveness means that Australian businesses are relatively more efficient in their use of resources against overseas rivals, so they sell their goods and services both here and in markets around the world, at a lower price.

Labour bottlenecks are labour and skills shortages that limit a nation's productive capacity, perhaps caused by an ageing population, a slowing birth rate, strong economic growth and other factors.

Labour market is an institution where sellers (S) and buyers (D) of labour negotiate wages and conditions. This market has been partly deregulated but still has some government controls. Changes in conditions in this market are affected by the participation rate, population size and growth, age distribution and the availability of skills.

Long time lags are a weakness of many aggregate supply policies. These are the delays in time due to the need to recognise the problem, implement a selected policy, and then wait for it to impact on aggregate supply.

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.

Market failure occurs in situations when changes in demand, supply and relative prices cause resources to be allocated inefficiently in ways that do not maximise society's general wellbeing. There are different types of market failure including externalities, the use of common access resources, the provision of public goods, and asymmetric knowledge. Reducing market failure requires government intervention like using indirect taxes, providing subsidies, informative advertising and laws designed to change the behaviour of economic agents.

Negative externalities are costs associated with the production or consumption of goods and services. These costs are passed onto third parties not directly connected with producing or consuming the good or service. The costs are paid by others and without government intervention, socially undesirable goods are overproduced, lowering society's general wellbeing.

Net zero emissions is a 2050 target agreed to by some countries for the level of release of CO_2 into the atmosphere. It is designed to limit climate change by ensuring that new emissions of greenhouse gases are offset by equivalent reductions.

Political constraints occur when the government is forced to consider the reaction of voters and the opposition in parliament, before putting forward its policies. These can dilute the effectiveness of policies (e.g. tax reform, immigration, environmental policies).

Productive capacity represents the physical limits (potential GDP) to the total level of production in an economy largely dictated by the quantity (volume) and efficiency (quality) of resources available.

Productive or **technical efficiency** is about businesses using least-cost methods to produce goods and services. These help to dictate productive capacity and the size of the nation's PPF.

Subsidies are generally cash payments or tax concessions given by the government to businesses, industries or individuals. 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 over the long-term. They can also reduce market failure, which can occur when a socially-beneficial good is under-produced, lowering society's general wellbeing.

Supply-side budgetary policies are selected measures related to budget receipts and/or outlays (e.g. tax reform or outlays on infrastructure, education, subsidies and R&D) that can affect the ability (related to the quantity and quality of resources available) and willingness (often related to the profit incentive) of individuals and firms to produce goods and services. These measures can affect the nation's productive capacity, potential GDP and the level of aggregate supply.

Tariff an indirect tax added onto the price of imports to make them dearer to local consumers and protect local industries from overseas competition.

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, narrowing the tax base.

Tax reform involves changing the rates or burden of tax, along with the tax base. Recent examples include cutting rates of company and income tax. As an aggregate supply policy, usually there is an attempt to lower tax rates to increase incentives to invest, produce and work. The overall aim is to make the tax system more efficient while delivering equity. This helps to grow the economy's productive capacity and aggregate supply, and thereby advance domestic macroeconomic goals and living standards.
Time lags are often associated with the use of government policies and may involve the period between recognising the need for policy, implementing that policy and awaiting its impact. Sometimes, the impacts are only felt over the long-term rather than in the short-term (e.g. many aggregate supply policies).
Trade barriers are restrictions (e.g. tariffs, import quotas) placed on imports from abroad, designed to protect local industry from foreign competition.
Trade-exposed industries are those local businesses that are forced to compete against imports (e.g. local low-end manufacturing).
Trade liberalisation is an aggregate supply government policy that entails reducing protection of local industry from import competition by cutting tariffs, subsidies and import quotas, and the signing of more FTAs. This encourages specialisation in production and greater efficiency in the allocation of resources.
Trade-offs occur where the use of a policy to achieve one desirable goal means the loss of another (e.g. trade liberalisation may cause greater efficiency over time, but in the short-term, may cause unemployment, inequity and slower economic growth).
Trade protection is a government policy that involves using high tariffs, import quotas and subsidies paid to local producers to help firms compete with imports.

on Resources

Digital documents
Topic summary (doc-34677)
Key terms glossary (doc-34515)
Crossword (doc-31521)
Wordsearch (doc-31522)
Match-up definitions (doc-31523)

5.8.3 Practice school-assessed coursework

OUTCOME 2

Discuss the operation of aggregate supply policies and analyse the effect of these policies on the achievement of domestic macroeconomic goals and living standards.

TASK: DATA ANALYSIS

A possible task for Unit 4, SAC 2 is one involving data analysis. The following may provide you with practice for this type of question. **(14 marks)**

Atlantis is going under!

Imagine that you have been appointed to the position of head of the economic taskforce set up to advise the government of Atlantis about various aggregate supply policies. This action was prompted by the fact that economic conditions had deteriorated seriously over the 5 years to 2023. Table 5.4 uses statistical indicators to summarise the dire economic problems faced by Atlantis.

TABLE 5.4 Economic indicators for Atlantis — annual average over the 5 years to 2023.

Economic indicators for Atlantis	Percentage
Average annual growth rate in GDP	1.1
Average annual unemployment rate	7.9
Average annual change in real household consumption per head	1.5
Average annual rise in population	0.2
Average annual change in the inflation rate	5.3

(continued)

TABLE 5.4 Economic indicators for Atlantis — annual average over the 5 years to 2023. *(continued)*

Economic indicators for Atlantis	Percentage
Average annual change in labour productivity	0.1
Average annual change in multifactor productivity	1.2
Average annual change in RULCs	3.5
Average annual change in the wages for skilled workers	6.5
Average proportion of Year 12 students undertaking tertiary study	5.1
Annual average rise in company tax rates	1.4
Annual average change in CO_2 emissions (tonnes)	6.9

1. Using the following headings, briefly **outline** the economic conditions that had developed in Atlantis over the 5-year period.
   - i. Inflation
   - ii. Unemployment
   - iii. Economic growth
   - iv. Living standards. **(2 marks)**
2. Using a labelled AD–AS diagram, in *general* terms **explain** how aggregate supply policies could potentially help to correct the economic problems experienced by Atlantis over the 5 years to 2023. **(2 marks)**
3. Select *two* aggregate supply policies and **explain** how similar policies to those used in Australia might help to alleviate Atlantis's economic problems.
   - i. Budget measures (select any one of tax reform or outlays on infrastructure, education, subsidies, and R&D)
   - ii. Trade liberalisation
   - iii. Skilled immigration
   - iv. Market-based environmental policy (select one from a carbon tax, ETS or subsidies). **(6 marks)**
4. **Identify** and **outline** *two* problems that may arise with the policies you selected (see your answer to question 3), if they were used to promote domestic macroeconomic goals and living standards. **(4 marks)**

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Digital document Topic 5 Practice school-assessed coursework (doc-38086)

5.8 Exam questions

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Section A: Multiple choice questions

Question 1

Source: VCE 2021 Economics Exam, Section A, Q6 © VCAA

The removal of a 5% tariff on imported cars would result in a shift of

A. the supply curve for cars to the left and a higher equilibrium price.
B. the supply curve for cars to the right and a lower equilibrium price.
C. the demand curve for cars to the right and an increase in the equilibrium price.
D. both the demand and supply curves for cars to the right and no change in the equilibrium price.

Question 2

Source: VCE 2019 Economics Exam, Section A, Q4 © VCAA

An increase in the labour force participation rate is most likely to

A. increase productivity.
B. increase productive capacity.
C. decrease government revenue.
D. increase government expenses.

Question 3

Source: VCE 2019 Economics Exam, Section A, Q15 © VCAA

In terms of achieving an efficient allocation of resources, the need for balancing current and future consumption relates to

A. dynamic efficiency.
B. allocative efficiency.
C. productive efficiency.
D. intertemporal efficiency.

Question 4

Source: VCE 2018 Economics Exam, Section A, Q4 © VCAA

Of the following policy initiatives, which one is least likely to increase aggregate supply in the economy?

A. increased government spending on infrastructure
B. increased government spending on education and training
C. increased government outlays allocated to payment of unemployment benefits
D. a reduction in company tax rates.

Question 5

Source: VCE 2018 Economics Exam, Section A, Q6 © VCAA

An increase in productivity is likely to

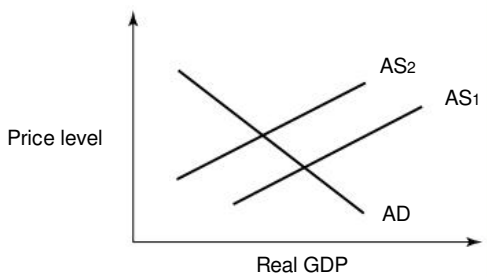
A. worsen Australia's international competitiveness and increase inflation.
B. worsen Australia's international competitiveness and decrease inflation.
C. improve Australia's international competitiveness and increase inflation.
D. improve Australia's international competitiveness and decrease inflation.

Question 6

Source: VCE 2018 Economics Exam, Section A, Q7 © VCAA

Refer to the following aggregate demand (AD) and aggregate supply (AS) diagram.

Which one of the following is *likely* to cause a shift in the aggregate supply curve from AS_1 to AS_2?



A. a decrease in interest rates
B. an increase in production costs
C. an increase in government spending
D. an increase in profitability of businesses.

Question 7

Source: VCE 2017 Economics Exam, Section A, Q3 © VCAA

Which one of the following is unlikely to increase productivity?

A. Increasing tariffs
B. Labour skills training
C. Innovation in work practices
D. Investment in physical capital.

Question 8

Source: VCE 2016 Economics Exam, Section A, Q4 © VCAA

Which one of the following terms describes the 'potential output of an economy'?

A. Production
B. Productivity
C. Productive capacity
D. Gross Domestic Product (GDP).

Question 9

Comparing aggregate supply policies with aggregate demand policies, which statement is most *correct*?

A. Aggregate supply policies usually seek to lift efficiency, cut costs and expand productive capacity, while aggregate demand policies are about regulating the growth in expenditure.
B. Aggregate supply policies help affect the long-term capacity or sustainable speed limit for economic growth, whereas aggregate demand policies affect the extent to which a nation's productive capacity is actually utilised.
C. Both (A) and (B) are correct.
D. Neither (A) nor (B) are correct.

Question 10

Which statement about aggregate supply policy in Australia is *incorrect*?

A. The skilled migration policy has probably resulted in higher levels of unemployment among those already here.
B. National infrastructure projects including the NBN have helped to cut production costs and grow productive capacity.
C. Budget outlays on education and training help to grow Australia's productive capacity, but only in the short-term.
D. Government research and development grants usually help to grow technical efficiency.

Question 11

In Australia, aggregate supply policies are justified because:

A. our material living standards have recently been falling relative to those in some countries.
B. Australia's sustainable rate of economic growth could be higher if severe aggregate supply-side constraints limiting rises in productive capacity are reduced.
C. Australia's labour productivity level has tended to fall, adding to inflationary pressures.
D. all of the above are generally applicable.

Question 12

Which of the following statements about aggregate supply policy is most correct?

A. Investment in infrastructure affects the levels of both AS and AD.
B. Tax reforms can affect the levels of both AS and AD.
C. Both (A) and (B) are correct.
D. Neither (A) nor (B) are correct.

Question 13

Concerning Australia's policy of trade liberalisation, which of the following is *most correct*?

A. A reduction in the protection levels for local industries
B. A reduction of general manufacturing tariffs to less than 1 per cent by 2021–22
C. The abolition of import quotas and the signing of additional FTAs
D. All of the above answers are correct.

Question 14

Which statement about Australia's recent skilled migration policy is *least correct*?

A. It increases the demand for labour.
B. It increases the supply of skilled labour available.
C. It lowers our overall labour force participation rate among those with skills.
D. It may aggravate environmental problems and reduces housing affordability for those born in Australia.

Question 15

As an aggregate supply policy, increased budget outlays on national infrastructure can work to improve our living standards over time by:

A. lifting productivity, reducing production costs, and improving international competitiveness.
B. raising productive capacity and the potential rate of economic growth.
C. reducing business closures, increasing labour force mobility, curbing structural unemployment, and adding to average incomes.
D. all of the above.

Question 16

In explaining the aggregate supply side effects of budget outlays on training and education in helping to reduce structural unemployment, which of the following is *least correct*?

A. They work by increasing spending in the economy leading firms to lift output and employment.
B. They work by making people more employable.
C. They work by boosting productivity, cutting business costs leading to business expansion rather than closures.
D. They work by helping to fill various skills shortages that otherwise could lead to business closures or relocation.

Question 17

Subsidies and support for R&D in the budget can help to *improve* international competitiveness or living standards by:

A. encouraging innovation and the development of new products by firms at attractive prices, that may lead to new sales.
B. helping to reduce production costs, allowing firms to profitably sell at lower prices against their overseas rivals.
C. reducing positive externalities as a market failure by potentially increasing the production of goods or services with wider social benefits.
D. all of the above, which may apply.

Question 18

Which statement about Australia's recent mixture of aggregate demand and aggregate supply policies is *least correct*?

A. Aggregate supply policies are best when used to lower natural unemployment, whereas aggregate demand polices are most effective in helping to lower cyclical unemployment.
B. Aggregate supply policies are best when used to cut the size of cyclical unemployment, whereas aggregate demand polices are more effective in helping to make local producers more competitive and lower structural unemployment.
C. Aggregate supply policies are best when used to increase Australia's productive potential and long-term or sustainable rate of economic growth, whereas aggregate demand polices are effective in helping to ensure that our productive capacity is not wasted.
D. Aggregate supply policies are best when used to lower cost inflation, whereas aggregate demand polices are effective in helping to lower inflation caused by excess expenditure.

Question 19

Trade liberalisation is *likely* to slow inflation because:

A. resources are reallocated into areas where efficiency is highest and relative costs are lowest.
B. local firms are exposed to stiffer competition from imports so they must cut costs.
C. firms can spread their average unit costs more thinly over larger production runs as export markets expand.
D. of all of the above, which may be applicable.

Question 20

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 bauxite 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 21

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 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 22

Which of the following statements about environmental issues is *least correct*?

A. In the absence of government action, the rise in greenhouse gasses is a market failure associated with the abuse of common access resources and linked with global warming that reduces both material and non-material living standards.
B. CO_2 emissions are seen as a positive externality where those people outside the polluting firm, are forced to pay the costs of polluters, lowering their wellbeing.
C. Market-based policies that use financial incentives to change the behaviour of polluters, can help improve intertemporal efficiency and make living standards more sustainable for current and future generations.
D. In the short-run, it is likely that most environmental policies may cause a rise in structural unemployment and make aggregate supply conditions less favourable for some firms.

Question 23

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's indirect tax is imposed on single-use plastics manufactured involving high emissions
B. Building a new freeway to carry more cars
C. Budget outlays to improve the quality, reliability, comfort and convenience of public transport quality
D. Using budget subsidies to encourage local businesses to purchase new technology that reduces emissions.

Question 24

Regarding tax reforms in the budget as a recent aggregate supply policy of the Australian government, which statement is generally *false*?

A. The policy can involve trade-offs like reduced equity and possibly a weaker financial position for the government's budget, especially in the shorter term.
B. Reforms have decreased after-tax profits, so as a result, firms may close causing structural unemployment.
C. The policy is usually only popular with some, but not all voters, so there is a political constraint limiting the extent and effectiveness of the policy measures.
D. Tax reforms may pose a financial burden on future generations.

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Digital documents Multiple choice answer grid (doc-34822)
Multiple choice answers (doc-34823)

Section B: Extended response questions

Question 1 (4 marks)

Source: Adapted from VCE 2021 Economics Exam, Section B, Q2d © VCAA

Explain how *one* of the following aspects of the Australian Government's budgetary policy might influence aggregate supply and the achievement of the goal of low inflation and international competitiveness:

- education and training
- research and development
- subsidies
- infrastructure
- tax reform.

Question 2 (10 marks)

Source: Adapted from VCE 2020 Economics Exam, Section B, Q3a&b © VCAA

a. **Explain** the relationship between an efficient allocation of resources and aggregate supply. **(4 marks)**
Explain how the following aspects of budgetary policy might influence aggregate supply and the achievement of strong and sustainable economic growth. **(6 marks)**

- a budgetary policy measure
- a market-based environmental policy.

Question 3 (3 marks)

Source: VCE 2019 Economics Exam, Section B, Q4a © VCAA

Distinguish between trade liberalisation and barriers to trade.

Question 4 (13 marks)

Source: Adapted from VCE 2018 Economics Exam, Section B, Q1 © VCAA

a. **Distinguish** between allocative efficiency and dynamic efficiency. **(3 marks)**

b. **Explain** one likely effect of decreasing the annual skilled immigration intake on the labour market and aggregate supply. **(4 marks)**

c. **Outline** one strength of using skilled immigration to achieve the goal of strong and sustainable economic growth. **(3 marks)**

d. **Explain** how a rise in the skilled immigration target would be likely to affect Australia's international competitiveness. **(3 marks)**

Question 5 (4 marks)

Source: VCE 2018 Economics Exam, Section B, Q3b © VCAA

Discuss one likely effect of trade liberalisation on Australia's international competitiveness and living standards.

Question 6 (8 marks)

Source: Adapted from VCE 2017 Economics Exam, Section B, Q3b&c © VCAA

a. **Select** one of the following aggregate supply policies:

- a budgetary policy measure
- skilled migration policy.

Explain how this policy might be implemented to increase 'jobs and growth'. **(4 marks)**

b. **Select** an aggregate supply policy from the list in part a. above. **Discuss** one strength and one weakness of using this policy to increase employment and rates of economic growth. **(4 marks)**

Question 7 (6 marks)

Source: VCE 2017 Economics Exam, Section B, Q5b © VCAA

Explain the likely effect of trade liberalisation on any *two* of Australia's domestic macroeconomic goals.

Question 8 (11 marks)

Source: Adapted from VCE 2016 Economics Exam, Section B, Q3a, b & d © VCAA

In recent years, the Australian Government has implemented various reforms of Australia's taxation system.

a. **Outline** one likely reason why the Australian Government wanted to reform the tax system. **(2 marks)**

b. **Explain** how reforms of both personal income tax policy and company tax in the budget might influence aggregate supply and therefore the rate of economic growth. **(6 marks)**

c. Using one example, **explain** how one *aggregate supply policy* (other than tax reform) might be used to improve Australia's *international competitiveness*. **(3 marks)**

Question 9 (16 marks)

Recently it was claimed by some that there was a global *climate crisis*.

a. **Explain** the nature and causes of this climate problem. **(2 marks)**

b. **Explain** how climate change represents a market failure causing negative externalities that undermine living standards. **(3 marks)**

c. **Select** *one* of the following market-based environmental policies that could be used to reduce CO_2 emissions and negative externalities:

- a carbon tax
- an emissions trading scheme (ETS)
- subsidies.

Describe the policy and **explain** how this policy might be used to improve intertemporal efficiency. **(5 marks)**

d. **Discuss** the effects on living standards of the government using environmental policies to reduce the negative externalities associated with the release of greenhouse gasses over both the short- and long-term. **(6 marks)**

Question 10 (4 marks)

Select *one* of the following aspects of the Australian Government's budgetary policy and **explain** how it might influence aggregate supply and the achievement of the goal of full employment:

- education and training
- research and development
- subsidies
- infrastructure
- tax reform.

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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, telecommunications 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).

Recovery 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 or **wellbeing** *See* living standards; economic welfare or wellbeing.

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 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.

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