Chapter 1
An introduction to economics

1.1 What is economics?

On your way to school this morning, you will have undertaken some form of activity in the economy. You may have consumed breakfast cereal that was purchased from a supermarket; you may have purchased a ticket for a bus, train or tram; you may have been driven to school in a car using fuel and driving on roads provided by the government; or you may have walked through gardens that are maintained by your local council or municipality. At school, you will be provided with a service (education) that is produced by either the government or a private organisation. Indeed, you may even be consuming telecommunication services as you text a friend or download an App during one of your classes!!

All of these activities, and numerous others that take place every single day, can be described as **economic activity**. This is activity that takes place in order to make our lives more enjoyable and/or activity that is designed to help us achieve our goals or to complete our daily chores. The economic activity that we engage in will involve numerous transactions – which typically involve the exchange of money for something in return. For example, the bus ride to school will have required a payment to the bus operator and the use of SMS texting services requires a payment to the telecommunications provider.

Sometimes the form or nature of any transaction in the economy is much less obvious – such as you walking through a park on the way to school. You might ask, how is this an example of an economic transaction when I haven't paid anything? The answer is that the service provided by the park has indeed been paid for, but indirectly, by those paying taxes to governments or rates to councils.

All **transactions** that we undertake, or indeed all economic activity, naturally take place in an economy. An **economy** exists in any place or region around the world where production of goods and services takes place, expenditure on those goods and services occurs and income is made from the selling of those goods and services.

At this introductory stage, think about **production** as the process of making a good or services, such as producing a car; **income** as the money given to those involved in the production of goods and services, such as wages; and **expenditure** as the spending of income on goods and services.

With respect to an economy, it is most commonly defined by a region. For example, in Australia alone, we have several economies: the Australian economy, the Victorian economy, the NSW economy, and so on. Alternatively, an economy can be defined by the system used to determine how decisions about production, income and expenditure take place. For example, later, we will explore the differences between a "market capitalist" economy and a "planned socialist" economy. So, your decision to be at school, consuming education services, is an example of economic activity that is taking place in both the Victorian and Australian economies. The production of the service is made by your school, expenditure is made by your parents either directly (via fees) or indirectly (via taxes), and the income is earned by the school and its teachers. The provision of this education service is also an example of a transaction that is occurring in Australia's market capitalist economy.

Positive and normative economics?

In your study of economics, you will encounter many statements or claims about various economic relationships. Some will be based on fact, and are therefore objective in nature, while others will be based on opinions, and are therefore subjective in nature. Fact-based economic statements come under the banner of **positive economics** and they can be verified or tested to be either true or false, using evidence. To illustrate, the statement that travelling to school on a bus is an example of economic activity is one based on fact. Evidence can be gathered to prove whether or not a student travelling to school on a bus involves expenditure (spending) that creates production and income.

In contrast, statements or claims that are based on opinion or value judgements come under the banner of **normative economics**. Given their subjective nature they cannot be verified or tested to be either true or false. To illustrate, the statement that travelling to school on a bus contributes to the educational and social development of students is one based on opinion. It is virtually impossible for this claim to be verified with certainty.

This distinction between positive and normative economics can sometimes be a fine one. It is particularly important to know the difference given that we make economic decisions that are influenced by journalists, politicians, economists, teachers and many others. Once we are better able to separate fact from opinion - positive from normative - will we then be in a better position to make accurate and informed decisions over time. Even then it won't be easy, given that the bulk of economic commentary is normative in nature, highlighted by the fact that economists disagree on a wide range of theories about how economies work. This includes disagreement about the best way to use our precious and scarce resources due to the core problem faced by all economies: the problem of **relative scarcity**.

Microeconomics and macroeconomics

Microeconomics is the study of the economic behaviour of individual consumers as well as businesses. This includes an examination of the multitude of factors that influence the buying and selling decisions of economic agents and the various ways that governments can use economic policies to influence this behaviour. Microeconomic analysis will therefore include the study of specific markets and why certain goods or services are preferred over others, or how government taxes might influence the consumption and production of goods and services. Chapters 1 – 6 of this textbook focus primarily on microeconomic issues.

The study of **macroeconomics** builds on the foundational knowledge developed in microeconomics and involves the analysis of economy-wide phenomena, such as the rate of growth in the volume of production (i.e. economic growth), the percentage of those who are considered unemployed (i.e. the unemployment rate) and how quickly the general level of prices is rising (i.e. inflation). An understanding of macroeconomics helps governments to devise economic policies that attempt to lift 'economic activity' and improve living standards for all Australians.

Application Exercise 1a

Complete the table to indicate whether the issue is predominantly a microeconomic or macroeconomic one:

Concepts/factors/events	Micro	Macro
1. Excise tax on petrol is halved during 2022 to ease cost of living pressures		
2. Australia's rate of inflation soars above 5% during 2022		
3. Young investors are demanding crypto currencies in the hope of becoming rich		
4. The war in Ukraine caused oil and gas shortages during 2022		
5. The unemployment rate dropped below 4% during 2022		

Review questions 1.1

1. Explain what is meant by economic activity.
2. Define a transaction.
3. Distinguish production from expenditure.
4. Distinguish income from expenditure.
5. Explain how growth in production is likely to affect income.

6. Explain how growth in income is likely to affect expenditure.
7. Explain how growth in expenditure is likely to affect production.
8. Define the term 'economy'.
9. Describe how education services can be used as an example of economic activity that is taking place in the Australian economy.
10. Distinguish positive from normative economics.
11. Distinguish microeconomics from macroeconomics.
12. Classify the following terms according to whether they relate to 'positive' or 'normative' economics: based on fact, opinion, tested, evidence-based, classifiable as true or false, objective, subjective, verifiable, value judgements.
13. Explain why it is important to know the difference between positive and normative economics.

Application Exercise 1b

1. **In your workbooks, make a list of the five most recent transactions you have undertaken today.**
2. **For each transaction, identify the person or group that is undertaking each of the following:**
   - **Production of the good or service**
   - **Expenditure on the good or service**
   - **Income earned from the production of the good or service**
3. **In the table below, classify each transaction as either production, income or expenditure by ticking the relevant box (note that it is possible for more than one box to be ticked in each row)**

Transaction	Production	Income	Expenditure
1. Jane earns $100 from her employer, 7-Eleven			
2. Dylan, a council employee, prunes roses in the local park			
3. Brittany buys a new car from Kia			
4. Ming sends a text to his girlfriend			
5. Tian receives tutoring from a 1st year university student			
6. A farmer harvests her crop of apples			
7. Jane signs up to a Spotify subscription			
8. Bazil downloads an Economics App from iTunes			
9. Anita calls her mother using her mobile phone			
10. Zaynab buys a pie from the canteen			

Application Exercise 1c

In the table below, classify each statement as either a positive or normative statement and be prepared to justify your decision.

Economic statement	Positive	Normative
1. Company tax cuts should increase economic activity		
2. The Australian government is spending an insufficient amount on education		
3. Australia is one of the wealthiest countries in the world		
4. Australia's minimum wages are too low		
5. Legalising marijuana for medical purposes will increase the rate of illegal drug use		
6. An oversupply of crude oil contributed to lower crude oil prices over 2015-16		
7. Carbon emissions are contributing to global warming and climate change		
8. The best way to address climate change is to prohibit the production of coal fired electricity		
9. Spending on smart phones creates employment and generates income		
10. The increased use of social media by children is harmful to their long term well-being		

1.2 The basic economic problem of relative scarcity and the need for economic decision making

Economics primarily concerns why and how individuals or groups make decisions about the transactions they will undertake on a daily basis. As **consumers**, we need to make decisions about the types and quantities of goods and services to consume. Do we buy an Apple iPad or a MacBook? A skateboard or a scooter? A can of Coke or a bottle of water? Do we travel to school on a bus or ride a bike? Do we attend a government or private school? As **producers** we need to make decisions about the materials, machinery or equipment we use to produce the good or service, as well as the workers to employ. In addition, as **income earners**, we need to decide how best to use our labour or skills in order to derive the maximum possible benefit.

All **economic agents** - which are defined as any individual, group or body involved in economic activity - are required to make decisions for the simple reason that there are numerous alternative options available. In other words, there are a number of choices we are required to make from many possible options. We may ask why can't we have it all. Why can't we have the MacBook, the iPad, the Coke, bottle of water, skateboard, scooter and all the other items on our wish list? The answer lies in an economic concept known as **relative scarcity.** As a community, and across the economy, we want an unlimited number of goods and services and our ability to satisfy these **wants** depends on our capacity to produce goods and services – which, in a country like Australia, is quite large, but not limitless. We are therefore limited by the physical constraints placed on us by the amount of **resources** at our disposal.

While in a country like Australia we have an abundance of resources available to produce goods and services, such as land, machinery or workers, these resources are limited when compared to the unlimited demands we place upon those resources. **Relative scarcity** is therefore the core problem determining decision making in every economy around the world: the fact that the wants and needs of societies are larger than the resources available to satisfy those wants and needs.

Relative scarcity = Wants & needs > resources

Needs versus wants

The **needs** of individuals or households in societies can be defined as the basic goods and services that are necessary for our survival. Our core needs are food, clothing and shelter. However, in a wealthy country like Australia, some would extend the list of needs to other items, such as a car, mobile phone, digital tablet or computer. Indeed, some could mount the argument that some individuals don't require clothing to survive, citing those living in warm climates. In contrast, a **want** is considered to be something we desire to have to improve our satisfaction or quality of life, but that is not necessary for our survival. Regardless of whether we classify something as a want or a need, it is still true that relative scarcity will occur.

Why do economists argue that our wants are unlimited? Surely, once we have enough to provide for a good standard of living, wouldn't we slow down our rate of consumption or spending? Whilst this might be true for some, economists argue that it is human nature to always want more. As our incomes grow and we become wealthier, products that were once considered wants, become needs, and products that were previously 'out of reach' become wants. This is largely due the inherent greed of humans, our competitive instincts (wanting more than our neighbours or trying to keep up with the conspicuous consumption of others) and our materialistic society more generally. The pervasive marketing and advertising undertaken by businesses increases our wants further, helping to make relative scarcity an impossible problem to solve. In other words, no matter how many needs we fulfil, more wants will spring up in their place, meaning our wants and needs will always outstrip the relatively scarce resources available to satisfy them.

If you have any doubts about this idea, consider your own idea about your "needs" compared to those likely to have been experienced by your grandparents when they were your age. It is likely that many of the items you currently consider "needs" would not have even been considered as possible wants by your grandparents when they were growing up.

Resources

Resources are those things that are used to produce goods and services; they are also referred to as **factors of production**. They exist in many different forms, including machinery, equipment, workers, managers, factories, forests, and so on. However, resources all have two important characteristic in common: they are all key inputs in the production process and they all have possible alternative uses. Every organisation involved in production must have examples of 'factors of production' that fit into each of the four categories below:

> **Land or natural resources** refers to all those resources that occur in nature. These can be used in the production process to generate more elaborate products, or consumed in their raw form. Examples of such resources include: water, forests, minerals, land, animals, fruit and vegetables. It may seem obvious, but all production depends on natural resources.

Labour refers to the mental and physical effort by humans in the production process. It primarily includes all of the workers employed by businesses or governments in return for income in the form of a wage or a salary.

Capital refers to those resources that have been made by combining labour and natural resources to create a more sophisticated input in the production process. Capital goods are made with the intention of making more goods and services in the future and generally these will increase the efficiency with which resources can be converted into products for final consumption. Examples of a capital resource include machinery, factories and equipment.

Entrepreneurship (or enterprise) refers to the skills of those individuals who combine our resources to produce goods and services. They take financial risks to establish enterprises (businesses) and are extremely important to wealth creation for every nation. They include not only high profile entrepreneurs like Mike Cannon-Brookes, Elon Musk, Jeff Bezos, Melanie Perkins, or Mark Zuckerberg, but include all business owners. In return for providing their expertise or skills to the business sector of the economy, entrepreneurs will receive income in the form of a profit.

Study tip

Processed materials used in the production of goods and services, such as chemicals, fuels, or plastics used to manufacture many goods are not resources as defined earlier. Instead they are simply referred to as inputs.

Study tip

Whether items are considered to be 'capital' in nature depends on how they are used. For example, a car or computer used by a household for private purposes is considered to be a consumer good. However, if they were used by a business they would be considered to be capital goods.

How relative scarcity affects decision making

Earlier, the concept of **economic activity** was introduced and described as the process of production, income and expenditure that takes place in every economy. Each group responsible for the decision making - producers, income earners and consumers - will experience the problem of relative scarcity in unique ways. However, each group will need to make economic decisions that are ultimately defined by the fact that they cannot satisfy all of their wants or needs with the resources at their disposal.

The **producers** involved in decision making face the problem of relative scarcity by determining the best way to combine resources in order to best satisfy consumers and therefore make the most profit. Think about the production of a simple product like a banana. It involves the use of farming land (the banana plantation), machinery (tractors), workers (farm hands) and, of course, the entrepreneur (the owner/farmer). All of these factors of production are required to produce the bananas that end up in the fruit shops and supermarkets around the country. The producer or the entrepreneur needs to make economic decisions on a daily basis due to the problem of relative scarcity. The farmer will make decisions such as:

- Do I continue to use all of my land for banana production or do I consider using some or all of it for some other crop, such as guavas, or indeed for some non-farming activity, such as eco-tourism?
- How much labour do I employ on the farm?
- Should I use more machinery instead of labour?
- What types of machinery or farm equipment should I employ?

With respect to **income earners**, which include both workers and entrepreneurs, they need to determine how best to use their income earning capacity, or their skills and labour, in order to achieve the best possible outcome. An individual worker can work in a number of different areas or industries, meaning that their skills are often transferable or that labour skills have alternative uses. For example, a truck driver involved in the transportation of bananas and other fruit around the country will need to make decisions such as:

- Do I continue offering my labour services to the food transportation industry? Should I relocate to a mining state and offer my services as a truck driver on a mining site, where the wage is significantly higher?
- Do I retrain or enrol in a course of study that enables me to work in another industry?
- Do I withdraw my labour services and use my wealth to become an entrepreneur by creating a transportation (or some other) business of my own?

Study tip

Note that money is not a resource in itself. While it has important functions, such as a store of value and a means of exchange, in itself, it cannot be of use in the production process as it is only a piece of paper or a coin. Therefore, in Economics, it is incorrect to argue that money is a scarce resource.

With respect to **consumers** we need to make decisions about how we can best use our income or wealth to gain satisfaction from spending or consumption. Ultimately, we all make decisions every day on how best to use our money in order to maximise our well being or living standards. This means that money is relatively scarce and another way of viewing the problem of relative scarcity is to say we don't have enough money to satisfy all of our wants and needs.

Review questions 1.2

1. Distinguish the types of economic decisions made by consumers and producers.
2. Define economic agent.
3. Define the term relative scarcity.
4. Distinguish a need from a want.
5. Discuss whether a nation can solve the problem of relative scarcity.
6. Define the term resources and explain why resources are also referred to as factors of production.
7. Discuss how one decision made by a producer can be linked to the concept of relative scarcity.
8. Discuss how one decision made by an income earner can be linked to the concept of relative scarcity .
9. Discuss how one decision made by a consumer can be linked to the concept of relative scarcity.

Application Exercise 1d

In the table below, classify each item as either a want or a need and be prepared to justify your decision.

Item	Want	Need
House		
Television		
Mobile phone		
Motor vehicle		
Train services		
Food and water		
House		
Underwear		
Dinner suit		
Digital tablet		

Application Exercise 1e

In the table below, classify each of the resources as either natural, labour, capital or entrepreneurship and be prepared to justify your decision.

Item	Natural	Labour	Capital
Tractor			
Computer used at home			
Teacher			
Mineral sands			
Computer used at Australia Post			
Great Barrier Reef			
A computer programmer			
The Prime Minister of Australia			
A motor car used as a taxi			
Farmland			

1.3 The concept and applications of opportunity cost

The use of our scarce resources in one economic activity means that those same resources cannot be used in another. For example, assume that a farmer has a plot of land, let's say 1,000 acres, from which she could produce bananas, guavas or any other crop. It may be that 500 acres is devoted to banana production and 500 acres to the production of guavas. Alternatively, some other combination for the land use could be determined. Regardless, the fact remains, that once the farmer makes a decision about how the land will be used in production, it involves a sacrifice. It means that the farmer is sacrificing the opportunity to use the land for alternative crops or uses. The nature of the sacrifice is defined by the range of alternative land uses available to the farmer, such as melon or pineapple production, or a wildlife sanctuary, nature reserve or even a tourist facility. This idea of there being a cost involved in all economic decision making is referred to as **opportunity cost.** The opportunity cost of using the 1000 acres for a particular purpose is, specifically, the value of the next best alternative for which the land could be used. This requires a judgement on the relative merits of each alternative. The option considered to be the next best alternative becomes the opportunity cost.

Opportunity cost is therefore the benefit sacrificed (economists speak about the benefit "foregone") when choosing one alternative over others. It is measured by the value that would have been created by using the resources in their next best alternative use. The fact is that whenever we decide to use our resources in some way, it necessarily involves us giving up the opportunity to use those same resources in some other way.

All rational **economic agents** will seek to minimise their opportunity costs when making decisions or undertaking economic transactions. This means that the overall net benefits (the benefits gained minus the costs incurred) from any

decision (or transaction) will be the highest possible. Assume that the farmer with 1000 acres of land has conducted extensive research and determined that the land will yield the following benefits in dollar terms:

- $100,000 of annual income if used for banana production;
- $80,000 if used for guava production; and
- $60,000 if used for pineapple production.

Study tip

In Economics, it is necessary to assume that economic agents are rational in their decision making. This means economists assume that economic decisions are made with a view to maximising benefits and minimising costs. Without this important assumption, the predictions made by economists become much less reliable.

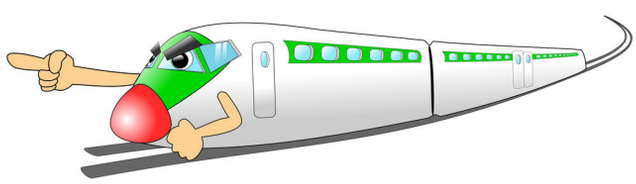
If the farmer is purely motivated by profit, the rational decision would be to use the land for banana production, with the opportunity cost being the $80,000 of guava revenue that will be sacrificed. The decision is rational because the $100,000 of revenue gained from producing bananas will be greater than the $80,000 of revenue that would have been gained if the farmer used the land for guava production.

However, assume now that the farmer decided to use the land for guava production and expects to receive $80,000 per year. This is clearly an irrational decision for a farmer who is solely motivated by profit. The opportunity cost of guava production is now the $100,000 of revenue that has been sacrificed. In this case, the farmer has not minimised opportunity costs because the opportunity cost of the decision is $100,000 (the money that could have been earned from the "next best alternative") when it could have been $80,000.

Further applications of opportunity costs

Each of us experience opportunity costs every day of our lives simply because we make economic decisions on a daily basis. A decision to leave school at the age of 17 may come with financial benefits, such as a full-time income, as well as other benefits, including freedom from the rules and constraints existing at educational institutions. However, it will come at an opportunity cost which is likely to be the benefits that might be provided by a tertiary education, such as a potentially larger income in the future, or possibly improved status in the community.

Once in employment as income earners, individuals will often decide on a change of employer or even a career change. Clearly, these decisions are made on the basis that the opportunity costs of staying with their existing employer have become too great. To illustrate, the Western Australia and Queensland mining boom that occurred in recent years markedly increased the opportunity costs of remaining employed in other areas, particularly for those living in WA and Queensland. The shortage of mining labour resulted in the wage paid to miners increasing to relatively high levels. Someone employed in Western Australia or even Victoria, as a truck driver with Linfox for example, earning $75,000 per year, realised that the next best alternative use of her labour skills would have yielded an income in the order of $150,000 on one of the mines. As the mining wage continued to increase (in order to attract workers to mines), the opportunity costs increased for truck drivers in the transport industry, and many truck drivers moved from the transport industry to the mining industry. This was a rational decision by these economic agents who were keen to minimise the opportunity costs associated with employment. Of course, since the end of the mining boom, the process has worked in reverse, as mining wages have fallen relative to non-mining wages.



Governments have substantial (but limited) funds at their disposal to use for society's benefit and these funds are collected through taxes. The federal government's decision to spend $2 billion towards the construction of a fast railway line between Geelong and Melbourne means that it foregoes or sacrifices the opportunity to use that same $2 billion for investment in health, education or public parks. The opportunity cost in this example is the benefit that could be derived from a $2 billion investment in health, education and/or public parks, whichever is considered to be the next best alternative for the government.

Review questions 1.3

1. Define opportunity cost, using the example of a farmer with acreage to illustrate.
2. Explain how the concept of opportunity cost can be used to illustrate how producers will tend to make rational decisions.
3. Discuss how the government faces opportunity costs when deciding to spend taxpayers' money.
4. Discuss the opportunity costs of a young person deciding to discontinue further education after reaching the age of 17.

Application Exercise 1f: Smoking and opportunity costs

Consumers are bombarded with different messages influencing their decision making, many of which are deliberate attempts by businesses to create a demand for their product through marketing and advertising. Ultimately, the decision to purchase any particular good or service will come at both a financial cost (the cost of the product) as well as an opportunity cost (foregoing the value of the next best alternative). For most purchases, the opportunity costs are quite transparent. The purchase of an apple for $1 means that we forego the opportunity to use that same $1 to purchase a pear. The benefits that are foregone when not purchasing the pear are similar to the benefits to be enjoyed from consuming the apple and these are easily measured (such as satisfied hunger and a healthier diet).

This is not the case with a decision to purchase a packet of cigarettes. For many years tobacco manufacturers have been able to employ sophisticated marketing strategies to attract young smokers, hoping to create brand loyalty and capture them as customers for life. The decision to take up smoking involves opportunity costs, many of which are delayed, making it much more difficult for consumers to make a rational decision. When a young person decides to purchase cigarettes they will equate the cost of a packet of cigarettes, perhaps $20, with the potential benefits, including the perception of being cool, tough or independent. But the long term costs in terms of damage to health and well-being are delayed so far into the future that many young consumers generally don't take this into account when evaluating the net benefits (i.e. the benefits minus the costs) of smoking.

In terms of opportunity costs, the benefit that could be derived from using that $20 in the next best alternative (which might be health food or even saving in the bank) is clearly superior to the net benefits that are gained from smoking. Accordingly, the opportunity costs of smoking are higher than opportunity costs of using that same $20 to buy most other goods. In other words, when consumers decide to spend $20 on a packet of cigarettes, all the evidence suggests that they are not minimising their opportunity costs. But why do people still smoke? Are their hidden or unknown benefits of which only smokers are aware? Are consumers simply making irrational decisions? Or are tobacco manufacturers successfully blinding consumers to the long term damage that smoking causes, making an irrational decision appear more rational?

Questions

1. **Define the term 'net benefits' and discuss how it might influence the decision making of consumers.**
2. **Illustrate one way that tobacco manufacturers seek to persuade consumers to purchase their product.**
3. **Outline some possible alternatives to spending $3000 on cigarettes in a given year.**
4. **Determine the opportunity cost of spending $3000 on cigarettes over a one year period.**
5. **Discuss why the consumption of cigarettes may not be the most rational decision, using the concept of opportunity cost in your answer.**

Application Exercise 1h

Assume that you run a small surf shop selling surf gear and making repairs to boards and equipment. Your electricity bill is quite substantial and you seek ways to reduce it. You discover a device costing $1,000 that will decrease your electricity bill by $50 every year. You figure that you could take the money out of your cash balance to purchase the machine and therefore save $50 per year. Alternatively, you could decide to invest the $1,000 in a term deposit with a bank, earning 10% per annum. The final alternative is that you could leave the $1,000 in the business cheque account, where it earns a low 1% interest per annum.

Questions

1. **Make a list of the competing uses for the $1,000.**
2. **Determine the opportunity cost of purchasing the machine.**
3. **Assuming that your business does not experience cash flow problems, explain why the business should not leave the cash in the business cheque account. In your answer, refer to opportunity cost.**
4. **Referring to opportunity cost, explain why it might be a rational decision not to purchase the machine.**

Application Exercise 1g

Fill the gaps in the paragraph below:

Economics is all about how people make ___________ about the use of resources. These decisions must be made because every nation's ___________ are __________ when compared to the demands placed upon those ____________. This is referred to as the problem of __________ ___________.

When we decide to use our resources in some way, it necessarily involves us foregoing the ______________to use those same ___________ in some other way. This is because the availability of resources is __________ and they have alternative ways of being _____. The opportunity ______ of decision making can be defined as the _________ that could have been gained if the next _______ alternative was chosen.

1.4 The production possibility curve and its applications

A production possibility curve (PPC) is also referred to as the **Production Possibility Frontier (PPF)**. It is an abstract tool used by economists to highlight a number of different concepts, including the concepts of scarcity, choice, opportunity cost, underutilisation of resources and efficiency.

The PPC involves a representation of the production alternatives available to an economy producing only two goods or services, in the form of a diagram. While it is not strictly realistic, because all economies can produce more than two goods or services, it does demonstrate some useful points and helps us to make better economic decisions. The PPC relies on a number of simplified assumptions, the key ones being:

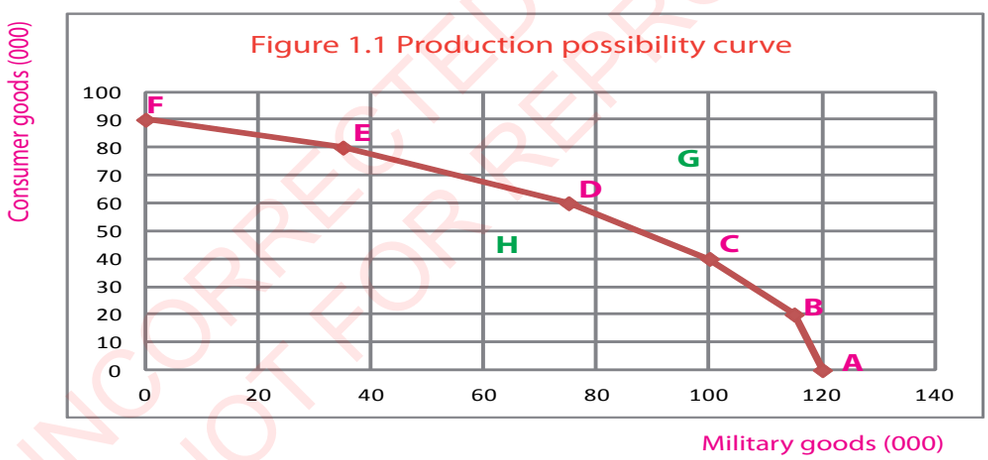
- only two goods (or services) are being produced in an economy;
- all resources or factors of production can be used in the production of either good (or service), and so they are easily able to be swapped between production of the two goods (or services); and
- all resources are fully and efficiently employed.

Assume that an economy can decide to use its resources to produce either military goods, such as tanks and grenades, or consumer goods, such as food and clothing. The production possibilities could be as follows:

Table 1.1

Combination	Military goods (000)	Consumer goods (000)
A	120	0
B	115	20
C	100	40
D	75	60
E	35	80
F	0	90

When we plot this onto a two dimensional diagram we get a production possibility curve (PPC) as follows:



How the PPC illustrates economic concepts

The way the PPC is drawn clearly highlights the concept of **relative scarcity.** Given that we have limited resources relative to the demands placed on those resources, we must make **choices** about the best way to use our scarce factors of production (such as labour and capital) in the production of goods and services for society. In the above example, our choice is between consumer and military goods - a choice faced by every nation in the world. Which is the best choice is a **normative** consideration that ultimately depends on value judgements. Those countries with valuable natural resources and who also feel under threat from powerful neighbours might prefer to choose production combinations C or B. In contrast, those countries without fear of foreign exploitation or military intervention might prefer production combinations E or F.

A movement from one point to another along a PPC means that a country is allocating more to the production of one good and less to another. In the above example, as the economy produces more military goods it involves a sacrifice in the production of consumer goods, clearly an example of **opportunity cost**. If we assume that the economy was initially operating at point F, producing no military goods and 90,000 consumer goods, then a decision to produce 35,000 military goods will involve an opportunity cost expressed in terms of the production of consumer goods that will be foregone – in this case 10,000 consumer goods.

All points along the curve represent the maximum production possibilities achievable at that particular point in time. Points outside the curve (like point G) are not achievable today, but are achievable in the future through an increase in the quantity or quality or resources. For example, if the nation improves its **productivity** (or **efficiency**), which means that it can produce more of both goods with the same volume of resources, then the whole PPC line will shift out to the right.

Points inside the PPC (like point H) indicate that the economy is not efficiently using its resources in the production of military and consumer goods. In other words, there will be an **underutilisation of resources**, meaning that some available resources are not being fully utilised in production. Better or more efficient use of the nation's existing resources would therefore increase production. Producing within the PPC is also likely to reflect some unemployment or underemployment of the nation's resources and every economy is keen to ensure that production occurs on its PPC.

The construction of a PPC is not limited to the production of two goods or services for an economy. It can be used to illustrate the production possibilities available to any economic entity, such as the farmer referred to earlier who can produce either guavas or bananas. Alternatively, it can be used to illustrate the trade-offs/opportunity costs associated with savings and consumption decisions, where the more of our money we devote to consumption, the less we can devote to savings.

Application Exercise 1i

Using the data in the adjacent table, construct a PPC for health foods and junk foods and answer the questions that follow. You should use grid paper, or some other method to ensure your PPC is accurate.

Combination	Health foods (000)	Junk foods (000)
A	200	0
B	190	40
C	170	80
D	140	120
E	100	160
F	0	200

Questions

1. **Discuss the implications for the economy if it produces at point F.**
2. **Discuss the implications for the economy if it produces at point A.**
3. **Discuss the implications for the economy if it decides to reallocate its resources and move from production point F to D.**
4. **Identify the opportunity costs associated with a change in production from point A to E.**
5. **Assume that the economy produces 130,000 items of health food and 100,000 items of junk food. Label this point G on your diagram and discuss its implications.**
6. **Label a point H on the outside of your PPC diagram and provide two examples of changes that could occur in the economy for this point of production to be achieved in the future.**

Efficiency and the PPC

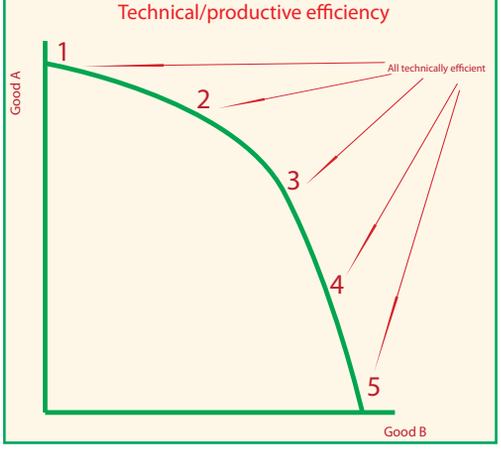
The PPC was used to highlight the opportunity costs associated with the production decisions for an economy. It can also be used to distinguish different types of efficiency that exist in economies. In general terms, **efficiency** refers to the extent to which effort or resources are well used for their intended task or purpose. However, there are two major types of efficiency that help to determine how well an economy is functioning – productive and allocative efficiency.

Productive/technical efficiency

Given that the PPC is defined as the maximum production possibilities available when all resources are fully and efficiently employed, by definition, it represents one measure of efficiency – **productive (or technical)** efficiency. Productive (technical) efficiency is defined as that situation where a nation's resources are producing the maximum amount possible (and at the lowest cost). This type of efficiency means that productivity levels in an economy are at their peak, where productivity is defined as the ratio of output (or production) to the total inputs used in production. In this case, the inputs include our factors of production plus other inputs such as materials.

All points along the PPC are productively efficient. The values society places on the goods in question is irrelevant when the focus is on productive or technical efficiency. So long as production occurs along the PPC, the nation is efficient in a productive sense – it has achieved productive (technical) efficiency. This is highlighted in Figure 1.2.

Figure 1.2
Technical/productive efficiency

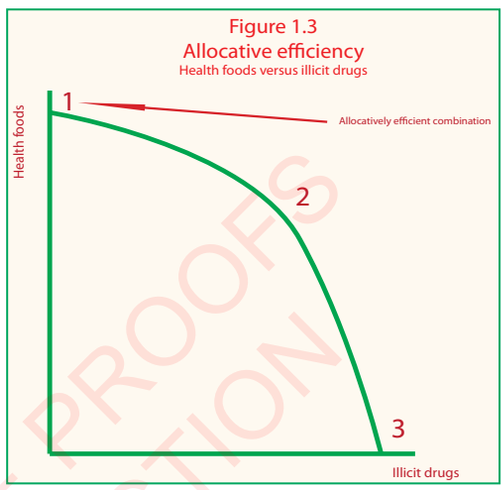


Allocative efficiency

However, economists are also concerned about a different type of efficiency, **allocative efficiency**, where resources need to be allocated or used in the economy in combinations that provide the maximum possible benefits for consumers and the nation. An economy can have the highest levels of technical (productive) efficiency imaginable – where output is as high as possible, at the lowest cost - but this is of little value if the goods being produced in this economy are either not the goods wanted by society, or goods that are not in society's best interests. To illustrate, assume that an economy can produce health foods or illicit drugs. Its PPC might look something like that highlighted in Figure 1.3.

Despite all combinations of production being technically efficient (i.e. points 1-3), there is only one combination that is in the national best interest. This is point 1. This means that if the economy moved from point 1 towards point 2, it would be allocating fewer resources to the production of health food and more resources to the production of illicit drugs. This would clearly not be in the nation's interests as its welfare or living standards would decline.

Figure 1.3
Allocative efficiency
Health foods versus illicit drugs



The most **efficient allocation of resources** (i.e. allocative efficiency) can therefore be defined as one where all of the nation's resources are being used to produce the best possible combination of goods and services such that national welfare or living standards is maximised. This then implies that any change in the way resources are allocated from this point will result in a deterioration of national living standards.

What is, or isn't, considered to be the most efficient allocation of resources for any particular nation largely depends on the values it places on various goods and services. For example, a nation that is highly materialistic is likely to value the highest possible production levels, regardless of the impact on the environment. Compared to another country that is more environmentally conscious, it will therefore tend to produce more carbon intensive forms of energy (creating greater levels of $C0_2$ emissions) relative to more environmentally friendly energy production (such as solar or wind energy).

Review questions 1.4

1. Define production possibility curve (PPC) and list the assumptions underpinning the construction of a PPC.
2. Using Table 1.1, identify the opportunity cost of the nation increasing its production of military goods from 35,000 to 100,000.
3. Using Table 1.1, identify the opportunity cost of the nation increasing its production of consumer goods from 20,000 to 60,000.
4. Discuss the possibility of producing at a point outside the PPC, such as point G in Figure1.1.
5. Outline the implications for an economy that produces inside the boundary of its PPC, such as point H in Figure1.1.
6. Explain how the PPC can illustrate the concepts of scarcity, choice, opportunity cost, underutilisation of resources.
7. Define productivity.
8. Define technical (productive) efficiency.
9. Distinguish technical efficiency from allocative efficiency, using a PPC to illustrate.
10. Explain how an improvement in technical efficiency might not be accompanied by an increase in allocative efficiency.
11. Explain what is meant by the most efficient allocation of resources.
12. Discuss why a nation's values determine what it considers to be the most efficient allocation of its resources.

Application Exercise 1j Efficiency, efficiency, efficiency.....

1. **Assume that an economy is achieving technical efficiency and it achieves a boost to productivity as a result of new technology. Explain how this is likely to affect both technical and allocative efficiency. Use a PPC to illustrate.**
2. **Assume that an economy is not achieving technical efficiency and it achieves a boost to productivity, illustrate how this is likely to affect its PPC.**
3. **Assume that an economy is achieving technical efficiency. Explain how it could achieve a more efficient allocation of resources without pushing out its PPC.**
4. **Assume that two countries had exactly the same quality and quantity of resources. Explain why the most efficient allocation of resources as depicted by a point on their respective PPCs is unlikely to be the same.**
5. **Discuss whether the most efficient allocation of resources, as determined by the 'best' production point on the PPC, is more closely related to normative economics or positive economics.**

1.5 The basic economic questions

What and how much to produce?

This is concerned with how we allocate our scarce resources. Should we produce bananas or guavas? Capital goods or consumer goods? Coal fired electricity or solar electricity? Military weapons or better-resourced schools? Once we determine the types of goods and services we will produce, precisely how much should be produced?

Australia has a predominantly **market capitalist economy**, with the majority of Australia's resources privately owned and with the allocation of resources being determined primarily by the **market**. This means that the goods and services produced will ultimately be determined by the wants and needs of consumers. Providing businesses can make a profit from producing these goods and services, a market will develop, where **buyers** and **sellers** come together to exchange goods and services at an agreed price. In this context, 'the market' will determine how the nation's resources are allocated in production. In other words, 'the market' will determine what goods and services are produced and in what quantities they will be produced.

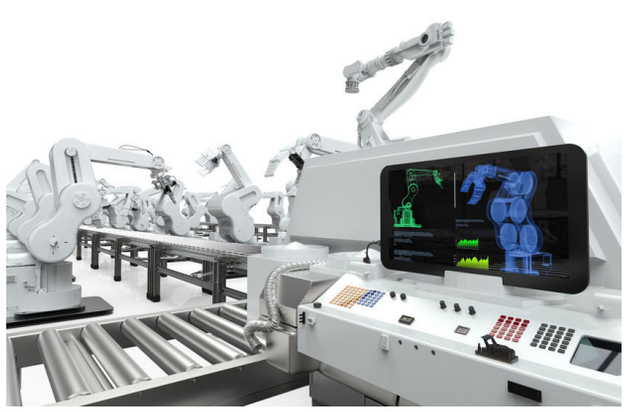
It is useful to note at this introductory stage of the course that a market does not involve a single body or authority dictating the process. Instead it involves consumers and producers, guided primarily by self-interest, determining the type and quantity of goods and services to be produced in the economy. [The role and operation of the market in the Australian economy will be explored in Chapter 3.]

While markets play the primary role in determining what is produced, Australian governments ensure that there is some degree of government intervention to protect against the problems inherent with unregulated markets. These 'problems' are commonly referred to as **market failures** and include the under-production of essential services, such as public housing, prisons, schools, hospitals and emergency services, as well as the over-production of undesirable goods and services such as illicit drugs, some weapons, alcohol and tobacco. In this respect, governments will not only influence what goods and services are produced, but how much production will be tolerated in certain instances. For example, the government provides defence and national security services itself because a market would fail to develop for these services. This is because it would be too difficult for producers to extract payment from consumers, resulting in insufficient profit to justify the investment. In other instances, governments allow a market to develop for goods and services, but will be keen to limit the amount of consumption and production that takes place. Common examples include dirty energy (such as coal fired electricity), tobacco, alcohol and gambling services. Governments will use a range of measures to limit the consumption or production of certain goods and services, such as outright prohibition, taxes, regulations and advertising.

Overall, while governments do play a role, it is the market that ultimately determines what goods and services will be produced and in what quantities. It is therefore consumers who are 'in the driving seat' and experience what is commonly referred to as **'consumer sovereignty'**. This means that consumers primarily determine what will be produced in Australia.

How to produce?

This is also an allocation question and asks what combination of factors of production will be used to produce goods and services. Do we use more **labour** than **capital** (i.e. more labour intensive forms of production) or more capital than labour (i.e. more capital intensive production methods)?



In Australia, most of the decisions about how goods and services are produced is also determined by the market. A mining company, such as BHP, having already decided that it will produce iron ore, will then need to determine the best mix of resources to use in its drilling and mining operations. Its decision will be determined by what it considers to be the most cost efficient method of production, which in turn depends upon how efficient or productive each factor of production is relative to its cost. Given the relative difficulty of extracting ore deposits from the earth, mining companies are heavily **capital intensive** – meaning they use mostly

machinery - because it is the most cost efficient and profit maximising method of production. In this respect, the overall cost of labour is too high relative to the cost of capital, resulting in more capital employed relative to labour.

Governments do influence how goods and services are produced to a limited extent. For example, governments provide taxation and other incentives for businesses to spend more on research and development into new technologies and innovation. This helps the business sector to increase efficiency over time and reduces costs for consumers. Governments also influence the cost of labour for businesses by introducing laws that ensure **minimum wages** are paid, occupational health and safety standards are high and equal opportunity and anti-discrimination measures are enforced. In addition, the government has laws in place that restrict the ability or freedom of foreign labour to offer their services in Australia.

For whom to produce?

This is really concerned with how the goods and services are allocated or distributed to society. If left to free markets, those with greater **economic power** (such as the wealthier members of society) will have greater access to goods and services and some members of society (e.g. those earning minimal incomes) will be unable to purchase some essential goods or services like health care or education. As a consequence, in a free market, only those people with sufficient funds would be able to afford the cost of education for their children. Similarly, some low income earning families would be unable to have access to even basic housing services.

In Australia, it is the market once more that determines who gains access to the majority of goods and services. Income earners in Australia generate the bulk of national income from their contribution to the production of goods and services. Generally speaking, those with higher or unique skills earn larger incomes and will have the greatest access to goods and services. However, this is influenced by government attempts to achieve a more equitable distribution of income and wealth. These government actions include the implementation of a progressive income tax system that redistributes income to lower income earners, as well as the direct provision of goods and services for lower income groups, such as public housing.

How different economic systems answer the three key economic questions

Market capitalism

A market capitalist economic system is one where the allocation of resources like labour and capital is based on the buying and selling decisions of consumers and producers, and productive resources are owned by private individuals and firms. In the section above, we examined how the basic economic questions are answered in the Australian economy, which is a 'predominantly' **market capitalist economy**, and often referred to as a **mixed economy**, with the government playing a role in determining the answers to the basic economic questions. A 'pure' market capitalist economic system is one that therefore implies an absence of government intervention. Under this hypothetical economic system, the answers to the basic questions are determined solely by 'the market' or the 'forces of demand and supply'. This means that:

- the needs and wants of consumers determine what goods are produced;
- the profit motivated behaviour of producers determine how these goods are produced; and
- the given level of income and/or wealth of individuals or groups determines who gets access to those goods.

Planned Socialism

A completely different type of economic system is one in which the government is primarily responsible for resource allocation. Governments may make long-term and short-term plans about what to produce, how to produce it and who receives the production after it is produced. This type of economic system is based on socialist principles, where the emphasis is not on the ability for 'individuals' to create and amass personal wealth. Instead, the emphasis is on the collective health and wealth of society, or the common good, with the underlying goal to achieve social and economic equality. Under a **planned socialist economy,** the productive assets are state owned (on behalf of the people) and therefore no one individual should be in a position to benefit excessively from the production and/or distribution of goods and services.

Planned Capitalism

An unusual economic system may evolve whereby the government directs the private owners of productive assets to produce certain goods and services. Therefore the output of the country is planned. This has been used by countries during war time when the owners of factors of production are directed to the production of goods and services that are needed for defence. In a **planned capitalist economy**, the ownership of factors of production remains with private individuals, and so it continues to be called a form of capitalism.

Market Socialism

In a **market socialist economy**, the government owns most of the resources (socialism) but markets determine what goods and services are ultimately produced (market system). For example, the businesses may be owned by the government but their operations would be left to independently appointed management who would try to maximise profits based on what consumers wanted most.

Review questions 1.5

1. Discuss what is meant by the three basic economic questions facing the Australian economy.
2. Explain how Australia decides 'what' and 'how much' is produced. In your answer, make reference to the role of markets and why government intervention is needed.
3. Explain how Australia decides 'how' goods and services are produced and outline how the government influences how goods and services are produced.
4. Explain how Australia decides who receives the goods and services that are produced and outline how the government influences who gains access to goods and services that are produced.

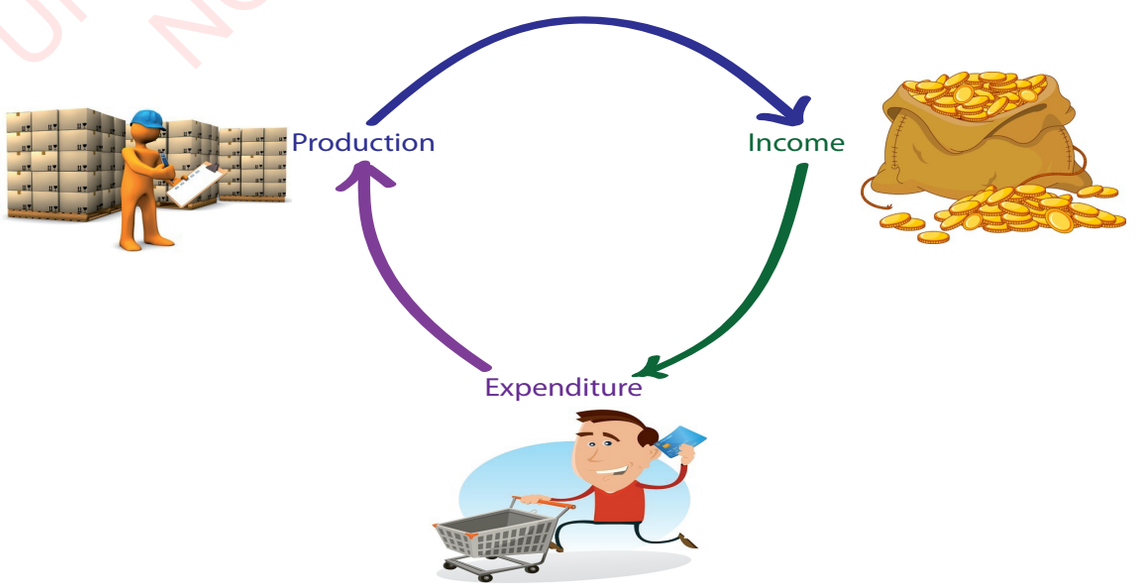
1.6 The purpose of economic activity and the influence on living standards

Earlier we introduced the term 'economic activity' in the context of discovering what economics is about. We said that economic activity refers to production, income and expenditure that takes place in an economy. We said that **production** is the process of making a good or services; **income** is the reward given to those involved in the production of goods and services; and **expenditure** is the spending of income on goods and services.

Over time, the total value of production, income and expenditure in an economy should be equal. This should make sense because all of the production taking place is measured in monetary terms and must eventually be returned to factors of production (such as workers and owners) in the form of income. In other words, those who provide the factors of production receive payment for those factors when they are used in the production process. All of this income will then eventually be spent (i.e. expenditure) at some time in the future on various goods and services (i.e. production).

In its most simplest form, economic activity can be characterised by a basic **circular flow diagram** as shown in Figure 1.4, where the values of production, income and expenditure flow from one to the other over time.

Figure 1.4
Circular flow of income



However, this model is based on a number of simplifying assumptions, such as an absence of governments, and it provides no detail about the important sectors of the economy responsible for economic activity. A more realistic model of economic activity includes the key sectors of the economy: households, businesses and governments.

The three-sector and four-flow model of the economy

The circular flow of production, income and expenditure can also be demonstrated by including the three key sectors in a mixed economy that are responsible for economic activity - the **business sector,** the **household sector**, and the **Government sector**. This is shown in Figure 1.5 below.

Figure 1.5
The three sector circular flow model for a mixed economy

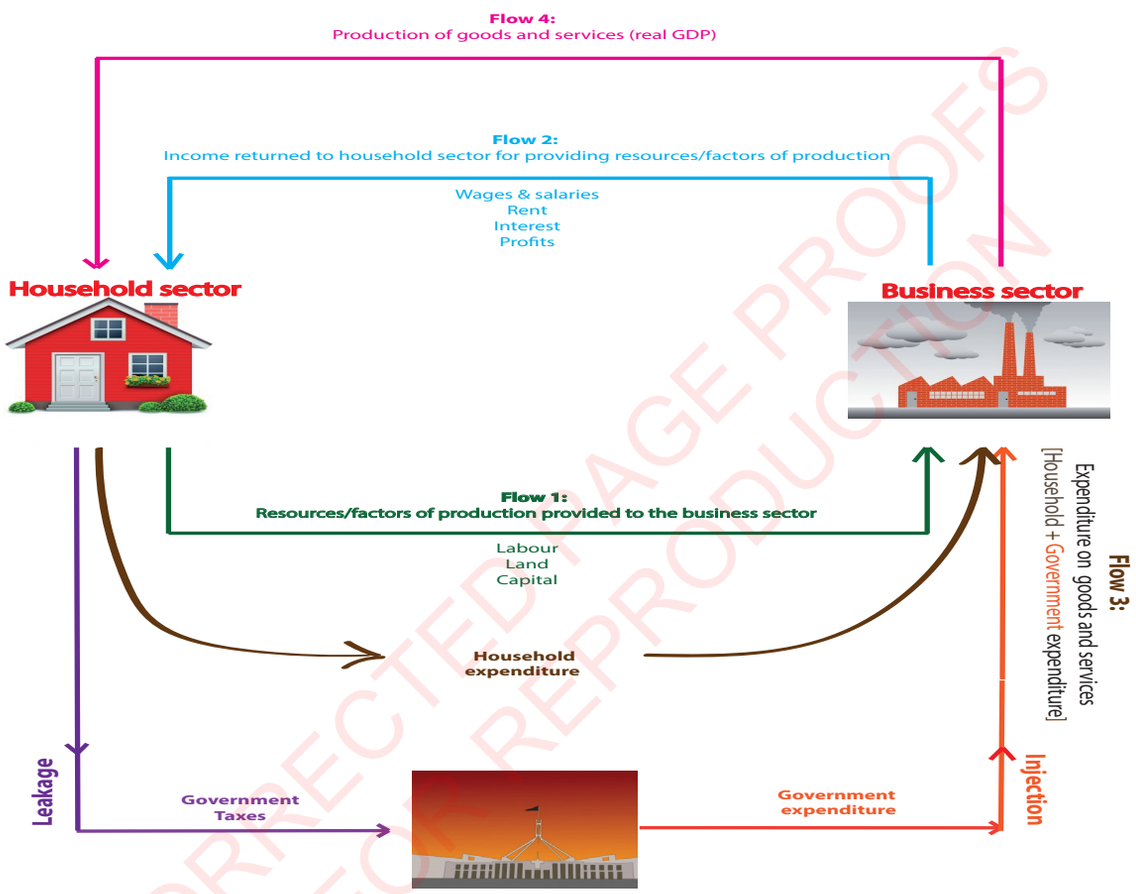


Figure 1.5 shows that the flows of production, income and expenditure occur as a result of transactions between the business and household sectors. The household sector provides the business sector with resources (such as labour) and this is highlighted by Flow 1 in the diagram. In return, the business sector provides the household sector with income (such as wages), which is highlighted by Flow 2. This income is then mostly spent by the household sector on the purchase of goods and services (i.e. Household expenditure), which forms part of Flow 3. However, some of the household income 'leaks' from the model and is paid to the government in tax (Government Taxes) but then returns as an injection in the form of Government expenditure. This results in the total expenditure on goods and services (Flow 3) being made up of both Household and Government expenditure, which then results in the production of goods and services by the business sector - represented by Flow 4.

This model is predicated on there being no international trade (i.e. a closed economy is assumed) and it therefore ignores one other important sector of the economy - the external sector. It also ignores the important flows of savings (leakage) and investment (injection) which are facilitated by the financial sector of the economy. Despite these simplifications, it remains useful because it helps us to gain a better introductory understanding of the core influences affecting economic activity in a country like Australia. For example, it should be obvious that any decision by the household sector to contribute more resources to the business sector (e.g. providing more labour) will ultimately result in more income, expenditure and production (i.e. economic activity) taking place in the economy. This boost in economic activity is therefore heavily linked to the willingness and ability of both the household sector and the government sector to spend money on goods and services that helps to improve Australian living standards. [Chapter 6 explores a more realistic five-sector circular flow model of the economy.]

Economic activity and living standards

Ultimately, economic activity takes place because it helps to improve our individual and collective **standards of living**, both in **material** and **non-material** terms. This means that most people are keen to improve their enjoyment and quality of life over time, which usually takes the form of them being more able to purchase goods and services. In this respect, there is typically a positive correlation between economic activity and living standards, such that an increase in economic activity leads to an increase in living standards. This is because the earning of income leads to expenditure on goods and services that provides people with additional satisfaction. However, living standards are not only related to the ability to consume goods and services and will depend on both material and non-material factors that determine our overall living standards.

Study tip

*The term 'real' in **real** GDP means that the impact of inflation or rising prices has been removed from the calculation of GDP. This ensures that any growth in the value of (real) GDP has occurred because there has been a genuine increase in production (or economic activity) rather than an increase caused by higher prices.*

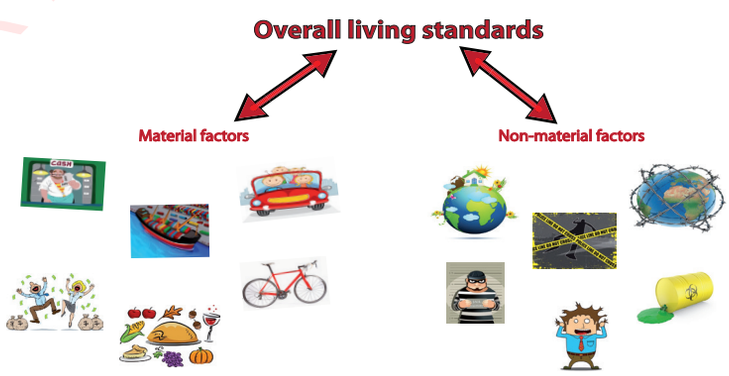
Material living standards

Australian governments are keen to stimulate growth in production as measured by growth in **real gross domestic product**, or real GDP, over time. [Real GDP will be covered more fully in Unit 2 but at this stage simply remember that it is the main statistical measure of production.] Growth in real GDP is also referred to as **economic growth** and it means that there has been an increase in the real values of production, income and expenditure from one period to another. Any increase in real GDP or economic activity will help to raise material living standards, on average, for Australian households. Higher production levels lead to more incomes and/or employment, enabling households to purchase more goods and services, thereby increasing their material prosperity. This is referred to as an increase in **material living standards,** and is most commonly measured by increases in **real GDP per capita**. [Real GDP per capita will also be covered in Unit 2.]

Non-material living standards

Clearly, there is more to our living standards than the ability to purchase goods and services. In other words, there exists a wide range of factors that influence our well-being beyond our ability to purchase a newer car or house, more fashionable clothes, or the latest technological gadgetry. These influences are often referred to as 'non-material' or 'quality of life' factors that impact on our overall living standards. These include the following types of factors:

- Access to clean air, water and other natural resources
- Access to health and education services
- Congestion or pollution levels
- Depletion of resources
- Exposure to crime
- Job satisfaction levels
- Leisure time
- Stress levels
- Life expectancy
- Freedom of expression
- Income and wealth inequality
- General happiness levels
- Quality of goods and services available
- Levels of gender equality
- Lack of social conflict.



Some of the factors above relate to the non-material benefits attached to any growth in economic activity, such as the satisfaction gained from employment or the reduced stress levels associated with earning an income and building a stockpile of wealth. However, a number of the factors on the list are non-material costs associated with economic growth. This includes congestion, pollution and depletion of resources. The benefits of economic growth will always need to be weighed up against the costs of economic growth when determining the overall impact on living standards. Government policies that seek to take into account the changes to **overall living standards** will be explored more fully in Unit 2. But first, it will be useful to first examine the nature of both 'trade-offs' as well as cost-benefit analysis.

Review questions 1.6

1. Outline the relationship between production, income and expenditure using figure 1.4 to illustrate your response.
2. Refer to Figure 1.5 and describe the flows that represent economic activity.
3. Explain a factor that could contribute to a rise in economic activity. Use the two sector model to illustrate.
4. Describe the general link between economic activity and living standards.
5. Distinguish between the material and the non-material factors that impact on living standards.
6. Identify two separate factors that could contribute to growth in material living standards.
7. Identify two separate factors that could contribute to growth in non-material living standards.
8. Discuss whether an increase in economic activity will lead to an increase in overall living standards.

1.7 The need for trade-offs and cost-benefit analysis

As economic agents, any decision we make will typically be made with a view to maximising our satisfaction, and these decisions will always involve **trade-offs**. This means that to gain something of value with our time or money, we necessarily forego the opportunity to do a range of other things with that time or money. For example, a decision to spend $1,000 on jewellery involves trade-offs in terms of what we could have been purchased with that $1,000, such as purchasing a holiday, a new smartphone, or donating the money to charity. Alternatively, a decision to spend excessively long hours at work might involve a trade-off in terms of one's health in the long term. These trade-offs are necessary because, to varying degrees, we have a finite amount of money to spend (or resources to use) and an infinite number of uses for that money (or resources). This is of course tied to the core problem of **relative scarcity** and **opportunity costs** that we examined at the start of this text: our resources are scarce relative to the unlimited demands placed upon those resources. It therefore begs the question: 'what is the difference between trade-offs and opportunity costs?'

Relative scarcity will necessarily result in one or more trade-offs being made, such as the holiday, the smartphone or the donation being traded-off for the purchase of the jewellery worth $1,000. However, the existence of the trade-offs creates an opportunity cost that is quite unique in terms of the value of the next best alternative that has been foregone. For example, if your next best choice was a $1,000 donation to charity, then this becomes the opportunity cost, despite it being one of three things being traded-off when purchasing jewellery. Accordingly, opportunity cost is more specific, narrowing the focus to only one of the trade-offs: the trade -off that was considered to be most valuable and therefore most difficult to forego.

There are numerous examples of specific trade-offs that are made at both a **microeconomic** level and a **macroeconomic** level. For example, trade-offs experienced at the microeconomic level might include:

- The trade-off between spending and saving
- The trade-off between work and leisure.

Trade-offs experienced at the macroeconomic level might include:

- The trade-off between economic growth and the environment
- The trade-off between efficiency and equity.

Examples of trade-offs

The trade-off between the current (or **short run**) and the future (**long run**) is perhaps the most common form of trade-off experienced by economic agents. Given that time is arguably endless, and most of us live for a relatively long period of time, our economic decisions will need to balance our current needs against our future needs. For example, trading -off **current consumption** for **future consumption** means that our living standards will be lower today and higher in the future. This type of trade-off will typically involve **saving** more of our current day income for use in the future. It is effectively transferring consumption through time, from today to some future date. Conversely, any decision to **borrow** money today to support current consumption involves trading-off future consumption. In this case, it is once again transferring consumption through time, but this time from the future to today.

The trade-offs and opportunity costs associated with delaying or not delaying current consumption will vary over a person's lifecycle. Generally, as we age, we are more likely to have responsibilities and be closer to retirement. As a consequence, our willingness to think about the future increases and it becomes much easier to trade-off current

consumption for future consumption. This contrasts with young people, who are generally less concerned about the future and find it more difficult to envisage retirement. This means that the opportunity costs for older people of delaying consumption will be lower compared to younger people, who are not only less willing, but less able to save for the future.

The trade-off between current and future is also one that is regularly faced by businesses and governments. The end of the **mining boom** in Australia over recent years saw mining companies slow down the rate of spending on capital equipment and productive capacity and instead focus on saving some of the gains that were earned during the boom years. They decided that continued spending and expansion today would ultimately result in excess capacity in the future. In contrast, when the mining boom was at its peak, with very high prices being received for Australian minerals, companies decided to spend heavily on capital expansion (e.g. expanding mine capacity) in order to take advantage of the growing demand that was expected to continue into the future.

With respect to governments, their decisions constantly balance the needs of the future with the demands of the present. Currently, this is particularly evident given our **ageing population** and the negative impact this is expected to have on our future living standards. With an increasing proportion of the Australian population nearing retirement age, the large exit of workers from the labour force will cause the rate of growth in economic activity (i.e. economic growth) to slow and government expenditure to rise (as more retirees will require the aged pension and health care costs will accelerate). This will have major negative implications for the government's finances (i.e. its budget position) in the future, with income from taxes expected to fall and expenditure on health and welfare expected to rise. Without acting today to protect against the possibility of a much higher budget deficit (government spending exceeding income), future generations of Australians will be forced to face the burden of supporting older Australians. In essence, failure to act today means that we would be trading-off future prosperity for current consumption. As a consequence of the need to trade-off the current for the future, recent governments have developed policies that seek to address the trade-off. This includes measures to expand the size of the future population, by encouraging a higher birth rate and immigration of younger persons, as well as efforts to reduce the budget deficit and return the budget to surplus in the medium term.

COVID-19 is the most severe pandemic that the world has experienced since the Spanish flu of 1918, forcing governments to make decisions that involved significant trade-offs. In Australia, state and federal government responses to the pandemic centered around the need to minimise infections, reduce the mortality rate and manage the demand on health systems. A key plank of government responses to the pandemic was the implementation of strict lockdown measures. These lockdowns were particularly severe in the state of Victoria and involved restrictions on both the free movement of individuals, as well the ability of businesses to operate. These lockdown measures reflected the government's view that the physical health and well being of Victorians was paramount and that lockdowns were worth pursuing despite the costs imposed. These costs included both the economic costs, in terms of reduced economic activity, as well as the social costs in the form of reduced freedoms and the increased risk of mental health issues arising from social isolation.

This provides an example of a trade-off in the sense that the government (and Victorians to the extent that they agreed with the lockdown measures) was prepared to trade off the social and economic costs in the short term in order to enjoy the longer term benefits associated with better health (and economic) outcomes once the disease is controlled via the development of effective vaccines and (herd) immunity. [For an insight to a cost/benefit analysis of the lockdowns, refer to Extension Exercise 1m.]

The other common example of a trade-off faced by governments relates to **climate change**. It is generally accepted that excessive carbon emissions associated with the production and consumption of goods and services across is contributing to global warming and changes to the climate that are expected to result in longer term costs. The longer term costs associated with climate change include the increased incidence of natural disasters and the economic and social costs this imposes on communities and the economy more generally. Australian governments have therefore been faced with decisions that effectively trade-off current rates of economic activity, and the benefits this provides, against future rates of economic activity. In short, acting to address climate change today via the implementation of policies such as carbon pricing, or a carbon tax, will negatively impact on current rates of economic activity. This is because producers will face higher costs (e.g. from a carbon tax or a requirement to purchase carbon permits) which results in higher prices and reduced demand for and production of goods and services. In contrast, delaying action on climate change today will preserve current rates of economic activity, but come at the expense of greater environmental damage and the negative

economic and social consequences that are expected to follow. This means that more progressive or aggressive policies to reduce carbon emissions today effectively trade-off current rates of economic activity and living standards for future rates economic activity and living standards. The reverse applies in the event that the government makes little effort to reduce carbon emissions today.

Application Exercise 1l: Consume now or save for the future?

Income that we earn can either be consumed (i.e. spent on consumption goods and services) or saved (e.g. deposited in the bank). Given that savings should accumulate (and become wealth), they will eventually be spent some time in the future. In this respect, savings represent future consumption or 'deferred' consumption. This means that any given level of income today can either be spent on current or future consumption. It is in this respect that saving money is often referred to as 'an investment'- because it results in future benefits for the saver. Accordingly, the more of our income that is devoted to current consumption, the less that is devoted to future consumption and vice versa. This means that our decision to consume or save necessarily involves a **trade-off**. To become wealthier in the future we need to trade-off current consumption in order to create room for savings, which can then be invested for wealth creation. Overall, if we 'party' too hard today, we may have less opportunity to 'party' tomorrow, and if we prepare too much for tomorrow, we may not enjoy today as much as we could. The trade-off between current and future consumption (or consumption and savings) is clearly a personal choice and ultimately depends on one's ability or willingness to think beyond the short term.

Questions

1. **Explain why savings is also referred to as 'deferred' or 'future' consumption.**
2. **Discuss how a decision to save more today involves a trade-off.**
3. **Discuss how a decision to save less today will impact on your living standards over time.**
4. **Outline two ways that a person can increase their wealth over time.**
5. **Discuss what is meant by the expression: if we 'party' too hard today, we may have less opportunity to 'party' tomorrow.**

Cost-benefit analysis

The need for trade-offs will often involve the need for a **cost-benefit analysis** to help determine the best trade-offs to make - one that minimises the **opportunity cost** associated with any given decision.

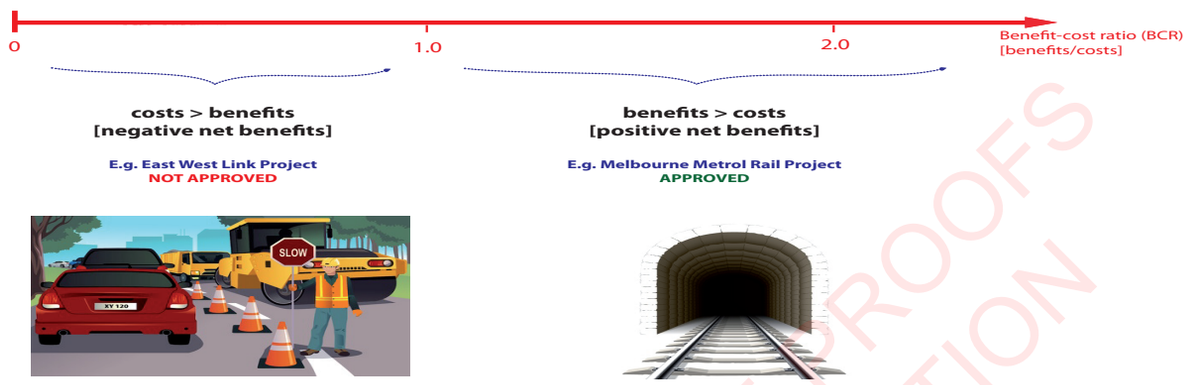
A cost-benefit analysis is a comparison of the expected costs and the expected benefits of a particular course of action or project. Most of us will conduct a simple cost-benefit analysis whenever we make a decision about how to spend our time or money. This is usually completed in our minds, without the use of technology or other tools, and includes everyday decisions such as whether to attend school, whether to smoke cigarettes or drink alcohol, or whether to indulge in excessive consumption of fatty foods. Clearly, these types of decisions necessarily involve weighing up whether the benefits of a particular course of action outweigh the costs. In the case of cigarettes for example, consumption today will provide benefits in the short term (e.g. relieving stress or looking 'cool') but will ultimately be outweighed by long term costs in the form of poor health. Many people will be able to make this determination without any complex calculations or detailed analysis, choosing to refrain from cigarette consumption as the widely known evidence points to it being extremely damaging to the long term health of smokers.

More complex cost-benefit analyses are undertaken by governments (and businesses) before a decision is made on whether to proceed with a major project (such as the construction of a new road or railway) or invest the funds in some other activity. The cost-benefit analysis will generally become a key component of 'the business case' put forward by the government and will often take a considerable period of time to prepare, involving the expert input of numerous professionals, including accountants, economists, actuaries, and other finance professionals. All of the **benefits** and **costs** will typically be listed in a common unit of measurement (i.e. money), with future costs/benefits valued in current dollar terms to remove the effects of inflation (or higher prices). Once the experts have itemised all costs and benefits in current dollar terms, the project will only become viable if the benefits outweigh the costs (i.e. the **net benefits** are positive and not negative). It is also common to refer to this measure as a '**benefit-cost ratio**' (benefits divided by costs).

In a benefit-cost ratio, a ratio greater than 1.0 indicates that a project's benefits outweighs the costs, whereas a ratio of less than 1.0 indicates that the costs outweigh the benefits. See Figure 1.7 below for further clarification.

There have been numerous examples of cost-benefit analyses being conducted by governments and other groups over recent years. Arguably the two highest profile projects have been the Melbourne Metrol Rail Project and the abandoned East West Link Project. The benefit-cost ratio (BCR) for the Melbourne Metrol Rail Project was in excess of 1.0, suggesting that the expected benefits outweighed the costs, and the project was approved. However, the East West Link Project's BCR was less than one and the project did not proceed.

Figure 1.7
Cost-benefit analysis
benefit-cost ratio (BCR)



Given that many costs and benefits are non-monetary in nature, it can be a subjective exercise converting these into monetary values for the purposes of a cost-benefit analysis. For example, the failed proposal to build the East-West Road Link (connecting the Eastern Freeway to the Western Ring Rd) needed to take into account the loss of some public parkland (i.e. parts of Royal Park). Clearly, the loss of parkland will be a bigger loss to some compared to others and the measurement of this 'cost' in the cost-benefit analysis is highly subjective. Despite this, organisations and governments continue to see the value in conducting cost-benefit analyses to minimise the opportunity costs of major economic decisions and ensure that the most efficient allocation of resources is achieved (e.g. allocative efficiency).

Review questions 1.7

1. Outline the relationship between trade-offs and opportunity cost.
2. Explain why trade-offs are necessary. In your answer refer to scarcity.
3. Distinguish microeconomics from macroeconomics.
4. Identify one example of a microeconomic trade-off
5. Identify one example of a macroeconomic trade-off
6. Explain what is meant by 'trading off current consumption for future consumption'.
7. Explain what is meant by 'trading off future consumption for current consumption'.
8. Outline why it is easier for an older person to trade-off current consumption for future consumption compared to a younger person.
9. Describe how mining companies might make a trade-off between current and future spending.
10. Explain how an ageing population has forced the government to make a trade-off between current and future spending.
11. Explain what is meant by the trade-off between the short run and the long run. Use an example to illustrate.
12. Define 'cost-benefit analysis' and discuss how a cost-benefit analysis is related to trade-offs and opportunity costs.
13. Briefly outline how a cost-benefit analysis is undertaken.
14. Define 'benefit-cost ratio' (BCR) and explain the implications of a BCR on a project being less than 1.
15. Describe why the state government of Victoria decided to proceed with the Melbourne Metrol Rail Project and abandon the East West Link Project. In your answer, refer to the respective BCRs of the projects.
16. Explain why some of the costs and benefits contained in a cost-benefit analysis are subjective in nature.

Extension Exercise 1m: Cost-benefit analysis

Inquiry into the Victorian Government's Response to the COVID-19 Pandemic: Opening statement by Professor Gigi Foster

….Lockdowns and social-distancing measures inflict unemployment, business collapse, education neglect, health neglect and loneliness. The virus does not do these things; government directives do these things, as we are seeing right now in Melbourne. Like many people around the world, I have come to the conclusion that the costs of wholesale lockdowns are far greater than the benefits.

First, the benefits. In all countries that have gone through a proper first wave, between 0.05 per cent and 0.1 per cent of the population has died with COVID, and deaths are now levelling off. This fraction translates into 12 000 to 25 000 deaths in Australia. So 25 000 is an upper bound estimate of lives lost to COVID in Australia in the counterfactual scenario that we did everything wrong such that we ended up with the worst first wave per capita death count in the world. …[But] far fewer than 25 000 people should be counted as a realistic estimate of the number of COVID deaths averted by lockdowns.

This leads me, then, to the costs of lockdowns, which it would be heartless not to recognise. The biggest cost felt today is that of mental health sacrificed due to loneliness, anxiety and other suffering directly related to locking people away from the broader social sphere. The IMF reports that lockdowns per se have large impacts on economic activity, and these impacts will be felt in suffering for years to come until our economies recover. Children's schooling disruption during lockdowns is also costly in future forgone wages of those children, lower productivity of their parents and lifetime costs of more domestic violence and the development of bad habits.

If these costs count, which they should just as much as should suffering due to COVID now and in the future, including longer run impacts, then we need a common currency in which to measure both them and COVID-related deaths and suffering. That currency can be quality-adjusted life years, statistical lives or WELLBYs—wellbeing years, a currency recently developed at the London School of Economics. QALYs are appealing in the present context because they are commonly used to measure welfare gains when making decisions about the allocation of scarce resources, yet QALYs do not count the importance of loneliness, mental health suffering, loss of dignity or loss of joy. The WELLBY does include those elements and is therefore particularly useful in the present scenario when these human costs loom so large. The COVID deaths that may have been saved so far via wholesale lockdowns are mainly of people over 70. In ethically fraught situations like battlefield triage, for example, or decisions about who gets scarce organs or which drugs to include in the PBS, we recognise that saving a 20-year-old means saving more human welfare than saving an 80-year-old. This recognition is embodied in the concept of QALYs and WELLBYs.

In these same currencies we can measure other costs of our response, including crowded-out or delayed care for problems other than COVID both now and in the future. This includes deaths due to delayed screenings or other care because of lockdowns. More broadly it includes all deaths sacrificed in the future because we were not making investments into approaches to making life better and longer that we would have been making had we not been putting what money we had disproportionately into COVID research while simultaneously reducing the total bucket of money available through stabbing our economy in the stomach, which is happening right now as borders remain closed and trade, tourism, arts and education are taking huge hits with no endgame in sight.

Research and development in health and other welfare-promoting areas is financed mainly by the government, which spends about 40 per cent of GDP in developed countries. When our GDP falls, so too does that spending, which translates into deaths not visible today but occurring over a period of many years. Other less visible costs include the damage to wellbeing of higher unemployment now and yet to come and for young people the long-run scarring of entering a job market in a recession. My back-of-envelope estimate for Australia indicates that even with conservative assumptions that bias the case in favour of lockdowns, wholesale lockdowns harm welfare at least three times more relative to a counterfactual of not locking down in a COVID-19 world.

What should governments have done? They should have controlled fear, directed resources and attention towards protecting the most vulnerable, set policy based on the knowledge of a range of experts rather than only health scientists and evaluated the likely impact of their policy choices on total human welfare as time progressed and more data became available.
https://www.parliament.vic.gov.au/images/stories/committees/paec/COVID-19_Inquiry/Transcripts_Round_2/Foster_12_August_verified_transcript.pdf

[In mid 2022, Professor Foster released an interim report "Do Lockdowns and Border Closures Serve the 'Greater Good'? A Cost-Benefit Analysis." (Draft Executive Summary) by Gigi Foster with Sanjeev Sabhlok. May 11, 2022. The report concludes that the costs of Australia's COVID lockdowns were 36 times greater than the benefits.]

Questions/tasks

1. **Identify some of the costs associated with lockdowns. In your answer, refer to IMF reports.**
2. **Identify some of the benefits associated with the lockdowns. In your answer, refer to 'deaths averted by lockdowns'.**
3. **Explain what is meant by both WELLBYs and QALYs and discuss the relevance of these terms in the context of the costs of lockdowns.**
4. **Explain why Professor believes that the lockdowns are equivalent to 'stabbing our economy in the stomach'.**
5. **Determine the benefit-cost ratio as calculated by Professor Foster and (assuming she is correct) discuss the implications for the opportunity costs associated with lockdown measures..**

1.8 Multiple choice review questions

1. Which of the following is not regarded as being a 'factor of production'?
a) money
b) machinery
c) land
d) workers

2. The opportunity cost of producing a given product is:
a) the price of the product
b) the best alternative product that could have been purchased
c) the price paid for the resources used in the production of the product
d) the value of the best foregone alternative which the resources used in its production could have produced

3. Economics can be best defined as the study of
a) resource allocation in a market capitalist economy
b) how scarce resources are allocated in an economy by the public and private sectors
c) how government, households and firms influence business decision making
d) how limited wants affect an abundance of resources

4. Which of the following is not regarded as a key factor describing economic activity in Australia?
a) Governments
b) Production
c) Income
d) Expenditure

5. A business has narrowed down the most viable investment options to (1) the construction of a new mine costing $100 million and (2) the purchase of a $100 million shareholding in a foreign mining firm. The opportunity cost associated with the construction of a new mine is which of the following?
a) the $100 million spent on the construction of the mine
b) the benefits that would have been provided by the $100m shareholding
c) the dividends (share of profits) that would have been generated from the $100m shareholding
d) unknown since insufficient information is given

6. With respect to the production possibility curve, which of the following statements is false?
a) a movement along the curve, from one point to another, is related to opportunity cost
b) unemployment is likely to occur when the economy is producing inside the curve
c) it is not possible to produce at a point outside the curve (i.e. beyond the frontier)
d) at any point in time, an economy cannot possibly produce at two different points along the curve

7. Which of the following is not one of the basic economic questions faced by Australia?
a) What to produce
b) When to produce
c) For whom to produce
d) How to produce

8. If a technically productive nation further improves efficiency via the introduction of new technology, then the change may be illustrated graphically by
a) a movement along the production possibility curve
b) a shift outwards of the production possibility curve
c) a shift inwards of the production possibility curve
d) a shift towards the production possibility curve

9. With respect to the distinction between normative and positive economics, which of the following is most likely to be a normative statement?
a) Spending on education is more important than spending on science and technology
b) An increase in personal tax rates will tend to reduce expenditure by households
c) An ageing population will increase health costs in the future
d) Payment of school fees is an example of expenditure in an economy

10. Assume that we have the production possibilities shown in the table below:

Combination	Military goods (000)	Consumer goods (000)
A	120	0
B	115	20
C	100	40
D	75	60
E	35	80
F	0	90

The opportunity cost of producing 40,000 consumer goods is:

a) 120,000 military goods
b) 20,000 military goods
c) 115,000 military goods
d) 100,000 military goods

11. In relation to the two sector flow model of the economy, which statement is incorrect?

a) Wages flow from the Business sector to the Household sector
b) Resources flow from the Business sector to the Household sector
c) Expenditure flows from the Household sector to the Business Sector
d) Production of goods and services flows from the Business Sector to the Household sector

12. In Australia, resources are allocated by

a) consumers and their demand for factors of production
b) producers and their demands for scarce resources
c) 'the market' primarily, with some government intervention (or planning)
d) government decision making, with a limited role for 'the market'

13. Which of the following is most likely to increase material living standards?

a) Increased levels of production
b) Increased freedom of expression
c) Reduced levels of stress
d) Increased leisure time

14. The need for trade-offs in economics is closely related to which of the following?

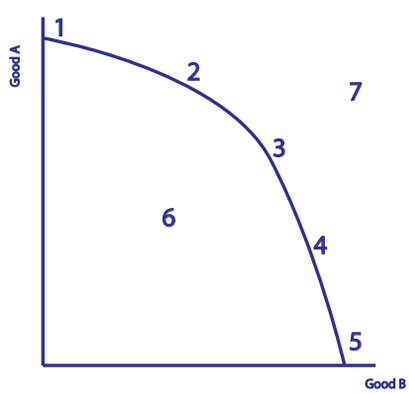
a) The concept of opportunity cost
b) How to produce goods and services
c) Non-material living standards
d) The circular flow of income

15. Relative scarcity in economics means that

a) The demands placed upon resources are very high
b) The demands placed upon resources are excessive when compared to the availability of those resources
c) Resources available for use in production are limited
d) Economies experience shortages of all factors of production

16. In relation to the Production Possibility Curve (or frontier) to the right, which of the following statements is correct?

a) Points 1 to 5 represents production combinations where productive efficiency is being achieved
b) A movement from point 1 to 4 means that the economy will be producing a combination of goods and services that better satisfies society
c) Point 6 represents a production combination where allocative efficiency is being achieved
d) A movement from point 5 to 3 means that fewer resources will be-allocated to the production of Good A



17. Which of the following is least likely to push the PPC outwards in Australia?

a) An increase in productivity
b) A discovery of iron ore deposits
c) Investment in a super fast broadband network
d) A large decrease in the number of skilled migrants to Australia

18. Which of the following is incorrect in relation to the benefit-cost ratio (BCR)?

a) A BCR greater than one suggests that the net benefits of a project are positive
b) A BCR less than one suggests that the costs of a project outweigh the benefits
c) A BCR for a project that is too high suggests that a project is likely to be rejected
d) A BCR is calculated by dividing the benefits of a project by the costs

19. Which of the following factors about a cost-benefit analysis is incorrect?

a) A cost-benefit analysis is usually subjective which reduces the value of a cost-benefit analysis
b) A cost-benefit analysis helps businesses and government achieve a more efficient allocation of resources
c) A cost-benefit analysis will usually be done using a common unit of measurement (e.g. money)
d) A cost-benefit analysis is typically completed for major government projects that are planned for the future

20. Which of the following is not a return to the Household sector for their contribution to production?

a) wages
b) expenditure
c) profits
d) interest

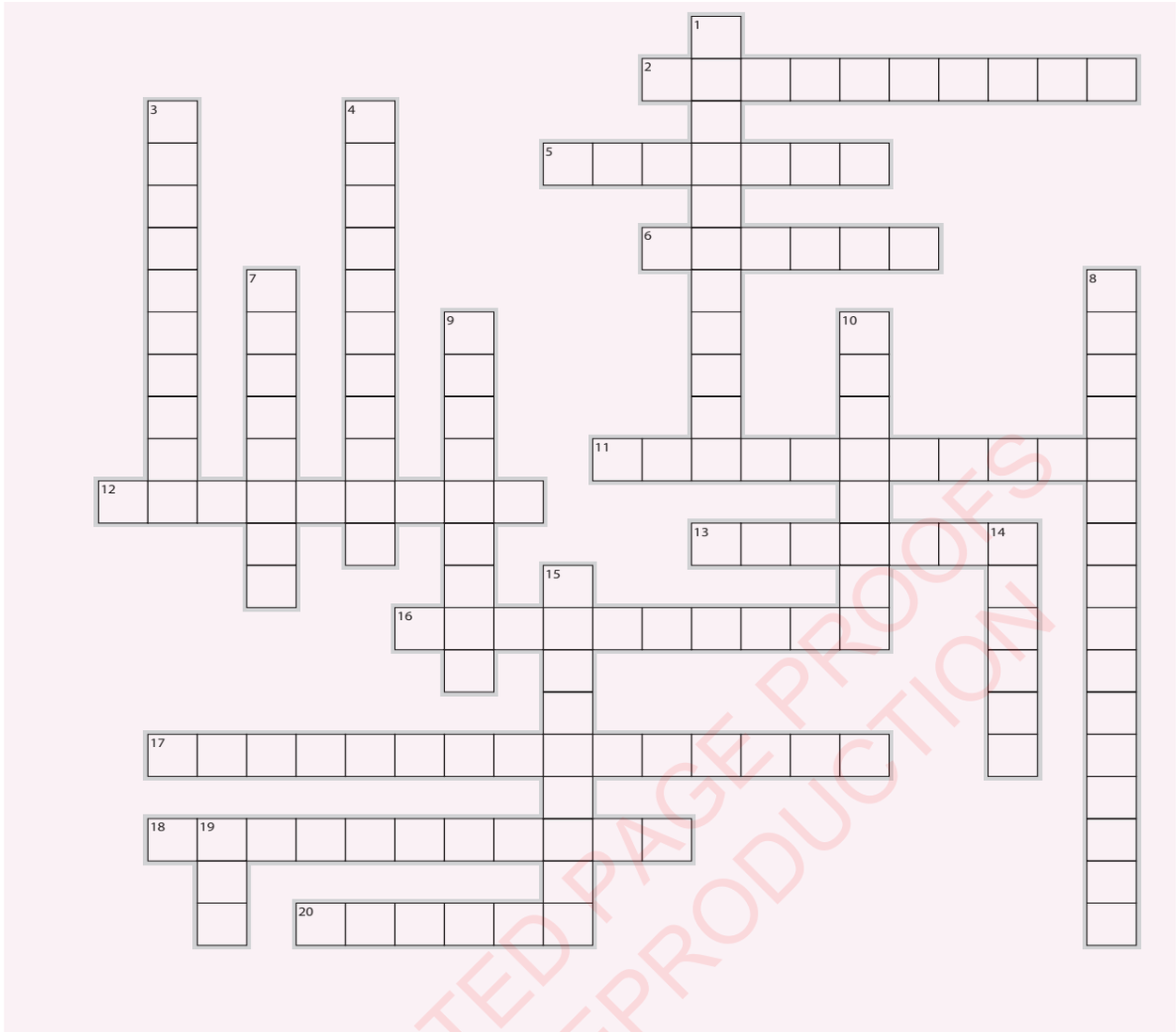
1.9 Chapter crossword puzzle

Across

2. The process whereby goods and services are made and also refers to the total amount of goods and services that have been made over a period
5. Any place or region around the world where production of goods and services takes place
6. This primarily determines how resources are allocated in Australia
11. When this ratio is above one it suggests that a project's benefits outweigh its costs (2 words)
12. Factors of production, such as labour and capital
13. Resources that have been made by combining labour and natural resources to create a more sophisticated input in the production process
16. The type of efficiency where the resources are allocated in combinations that create the maximum possible benefits for the nation
17. This is made up of both material and non-material factors that impact on our quality of life (2 words)
18. This is a cost that is measured in terms of the benefit foregone (or sacrificed)
20. Money received by those involved in the production of goods and services, such as wages

Down

1. The exchange of money or something else of value for something in return
3. The type of efficiency where a nation's resources are producing the maximum amount possible (and at the lowest cost)
4. Spending of income on goods and services
7. This is related to opportunity cost and refers to something being sacrificed when a choice is made (2 words)
8. Unlimited wants compared to limited resources (or money) that are used to satisfy these wants (2 words)
9. A part of the private sector that is not part of the business sector
10. Those economic statements that can be verified or tested to be either true or false
14. The reward for this factor of production is most commonly wages
15. Economic statements or claims that are based on opinion or value judgements
19. The acronym used to represent the production alternatives available to an economy



1.10 Chapter summary

1. An economy exists in any place or region around the world where production of goods and services takes place, expenditure on those goods and services occurs and income is made from the selling of those goods and services.
2. Economics primarily concerns why and how individuals or groups make decisions about the transactions they will undertake on a daily basis.
3. Fact based economic statements come under the banner of positive economics and they can be verified or tested to be either true or false. In contrast, statements or claims that are based on opinion or value judgements come under the banner of normative economics.
4. Microeconomics is the study of the economic behaviour of individual consumers as well as businesses whereas macroeconomics involves the analysis of economy-wide phenomena, such as economic growth, unemployment and inflation.
5. Relative scarcity is the core problem determining decision making in every economy around the world. It is defined as the wants and needs of societies being larger than the resources available to satisfy those wants and needs. This creates the need to make economic decisions and choices.
6. The needs of individuals or households in societies can be defined as the basic goods and services that are necessary for survival.
7. Resources are those things that are used to produce goods and services and are also referred to as 'factors of production'. Land or natural resources are all those resources that occur in nature. Labour refers to the mental and physical effort by humans in the production process. Capital refers to those resources that have been made by combining labour and natural resources to create a more sophisticated input in the production process. Entrepreneurship (or enterprise) refers to the skills of those individuals who combine our resources to produce goods and services.
8. The producers involved in decision making face the problem of relative scarcity by determining the best way to combine resources in order to best satisfy consumers and therefore make the most profit. Income earners face the problem of relative scarcity when they determine how best to use their income earning capacity, or their skills and labour, in order to derive the best possible outcome. Consumers face the problem of relative scarcity when they make decisions about how to turn their income or wealth into the satisfaction provided by spending

or consumption.

9. Opportunity cost is the benefit foregone (or sacrificed) when choosing one alternative over others and is measured by the value of using the resources in their next best alternative use.
10. All rational economic agents will seek to minimise their opportunity costs when making decisions or undertaking economic transactions.
11. The Production Possibility Curve (PPC) is an abstract tool used by economists to highlight a number of different concepts, including the concept of opportunity cost. It involves a diagrammatic representation of the production alternatives available to an economy producing only two goods or services.
12. A movement from one point to another along the PPC means a country is allocating more to the production of one good and less to another. All points along the curve represent the maximum production possibilities achievable at that particular point in time. Points inside the PPC reflect that the economy is not using its resources efficiently and there is an underutilisation of resources.
13. Technical (productive) efficiency is defined as that situation where a nation's resources are producing the maximum amount possible (and at the lowest cost).
14. Allocative efficiency occurs when resources are allocated in combinations that derive the maximum possible benefits for consumers and the nation.
15. The most efficient allocation of resources occurs when all of the nation's resources are being used to produce the best possible combination of goods and services such that national welfare or living standards is maximised.
16. If 'the market' determines how the nation's resources are allocated, then consumers and producers, guided primarily by self-interest, determine what goods and services will be produced, how these goods are produced and who gains access to or enjoyment of these goods and services.
17. No country allows 'the market' to solely determine the allocation of resources because markets fail in many instances. This means that markets, left unregulated or without any form of government intervention, will lead to an undesirable (or inefficient) allocation of resources.
18. Australia has a market capitalist economy, with approximately 80% of Australia's resources privately owned and with the allocation of Australian resources being determined primarily by the market.
19. In Australia, a combination of government decision making and 'markets' will answer the basic economic questions of what to produce, how to produce and for whom to produce.
20. Other economic systems exist which feature a lesser role for the market and a greater role for central authorities or governments. These systems typically have a greater emphasis on the collective health and wealth of society, or the common good. These systems include Planned Socialism, Market Socialism and Planned Capitalism.
21. Economic activity in Australia, characterised by the production, income and expenditure taking place in the Australian economy, is undertaken or influenced by individuals or groups operating within either the public or private sector.
22. Economic activity takes place because it helps to improve our individual and collective standards of living, both in material and non-material terms.
23. Australian governments are keen to stimulate growth in production as measured by growth in real gross domestic product, or real GDP, over time.
24. There is more to our living standards than the ability to purchase goods and services. In other words, there exists a wide range of factors that influence our well-being beyond our ability to purchase goods and services (e.g. access to clean air and leisure time).
25. As economic agents, any decision we make will typically be made with a view to maximising our satisfaction and these decisions will always involve trade-offs.
26. Our economic decisions will need to balance our current needs against our future needs.
27. Trading off the short run for the long run is very similar to trading off the current for the future. Similarly, trading off the long run for the short run is very similar to trading off the future for the current.
28. As a general rule, decisions made with short term benefits in mind will often involve a trade-off in the form of long term benefits that are necessarily sacrificed.
29. A cost-benefit analysis is a comparison of the expected costs and the expected benefits of a particular course of action or project. All of the benefits and costs will typically be listed in a common unit of measurement (i.e. money), with future costs/benefits valued in current dollar terms to removes effects of inflation (or higher prices).
30. In a benefit-cost ratio, a ratio greater than 1.0 indicates that a project's benefits outweighs the costs, whereas a ratio of less than 1.0 indicates that the costs outweigh the benefits.

The economic agents

2.1 Economic agents and the concept of the private and public sectors

Economic agents

Economic agents are individuals and organisations that participate in the economy, and make economic decisions. There are numerous economic agents including consumers or households, businesses, social enterprises and not-for-profit organisations, such as charities, as well as special interest groups including trade unions. These economic agents form the private sector in the economy. In contrast, public sector economic agents include local, state and federal governments, government business enterprises (GBEs) such as Australia Post, and statutory authorities such as the Reserve Bank of Australia (RBA) and the Australian Competition and Consumer Commission (ACCC). In short, the 26 million people who populate the Australian economy are all considered economic agents whether they are consumers, workers, politicians, economists or entrepreneurs.

Economic agents participate in the economy in numerous ways. This includes households and businesses buying and selling resources in factor markets, and buying and selling goods and services in product markets. The government collecting taxes and spending the funds raised on collective goods and services, and formulating and implementing economic policies. It also involves financial institutions collecting savings deposits and issuing loans to fund the consumption and investment undertaken by households and businesses, and special interest groups such as ACOSS (Australian Council of Social Service) advocating that the government increase the size of transfer payments for disadvantaged members of society.

Private and public sectors

The Australian economy is a mixed economy with the overwhelming majority of economic activity (about 80 per cent) occurring in the private sector while the remainder takes place in the public sector (about 20 per cent). The private sector relates to private ownership and control of resources, and the economic decisions made by the owners of these resources. On the other hand, the public sector relates to government ownership and control of resources, and the economic decisions made by the government and its agencies.

Households and businesses account for the bulk of private sector activity. Businesses can be unincorporated businesses such as sole traders and partnerships. Typical examples of such entities include cafes, florists and hairdressing salons. They can also be incorporated businesses such as private (or proprietary limited) companies, and publicly-listed (or limited) companies whose shares can be traded on the Australian Stock Exchange (ASX). Examples of such entities include BHP Group, Commonwealth Bank , CSL, Telstra and Woolworths.

All tiers of government, whether federal, state of local, contribute to public sector activity as do GBEs such as Australia Post, Australian Naval Infrastructure, Australian Rail Track, NBN Co., and Snowy Hydro Limited, and statutory authorities like the RBA and ACCC.

Application Exercise 2a: Research into incorporated businesses

Conduct research into private and publicly-listed companies, and prepare a short report.

Part A of your report must highlight five differences between these two types of company structures.

In Part B provide an overview of an ASX-listed company of your choice that addresses the following points:

1. Name of the business
2. The CEO
3. Mission statement
4. Core business activities
5. Market capitalisation and relative position among ASX listed companies
6. Share price, price-earnings ratio and dividend yield
7. Current challenges
8. Future plans

For Part C include an overview of a private company of your choice similar to the one above but omit points five and six.

In Part D focus on a Government Business Enterprise (GBE) of your choice. This section of your report should address the same points as Part C.

Extension: You might also wish to investigate a social enterprise of your choice and present your findings. Here you should focus on the differences between social enterprises and not-for-profit organisations. You should also cover the points contained in Parts C and D.

Application Exercise 2b: Privatisation investigation

Numerous Government Business Enterprises (GBEs) have been privatised over the last three decades including the likes of the Commonwealth Bank, Medibank Private, Qantas and Telstra. Privatisation is the process of selling government assets to the private sector. This is done through an initial public offering (IPO), which facilitates the transfer of government assets into private hands. Prior to privatisation, many GBEs were corporatised. This involves the government retaining ownership but running these businesses as if they were private sector corporations.

Investigate a government-owned asset that has been privatised and prepare a short report that addresses the 4 Ws. Use the 4 Ws as sub-headings for your report.

- Which GBE was privatised?
- Who instigated the privatisation?
- When was the GBE privatised?
- Why was the GBE privatised and has it been successful? Provide evidence, if possible.

Review Questions 2.1

1. Define economic agent and provide some examples.
2. Provide examples of some of the ways that economic agents participate in the economy.
3. Distinguish between the private and public sector, and quantify their contribution to economic activity.
4. Provide examples three public sector organisations and determine if they are GBEs
5. Define privatization and provide a possible justification for privatizing a GBE.

2.2 The traditional economic viewpoint of consumer behaviour

Economists are concerned with understanding what motivates economic agents and how economies function. Needless to say, economic agents and the economies they inhabit are immensely complex. Therefore, in order to develop theories or models capable of explaining and predicting how economic agents are likely to respond to incentives, or behave in certain contexts, economists must make simplifying assumptions. Such assumptions enable economists to focus on what is most important. The resultant theories can provide economists with powerful insights that can be used to design incentive schemes and economic policies directed at raising living standards and enhancing societal welfare. However, it is always worth remembering that theories/models developed in social sciences, such as Economics, are not perfect.

The traditional economic viewpoint of consumer behaviour has a long history, and is a useful tool for analysing and predicting consumer behaviour. At the centre of this theory is the notion of the 'representative consumer', known as **homo economicus** or 'rational economic man'.

Rationality, self-interest and utility maximisation

Economists assume that consumers are rational. This basically means that consumers act in their self-interest to maximise their **utility** or satisfaction given their **budget (or income) constraint**. Accordingly, a rational consumer will compare the costs and benefits of each choice, and choose those options where the benefits outweigh the costs. This also includes considering the future consequences of their choices. In short, the rational consumer will strive to make decisions that yield the greatest **net benefits** or maximum utility.

What does this all mean in the context of the real world? Consider the following practical examples to illustrate these concepts. A rational consumer might, for example:

- purchase a Volkswagen Golf if the price of a Honda Civic increases;
- buy a more expensive house if their income increases; or
- switch to a cheaper lender if the interest rates on offer are more attractive.

Study tip

Is utility maximisation possible? The psychologist Abraham Maslow famously said: 'it isn't normal to know what we want. It is a rare and difficult psychological achievement'. Behavioural economists would agree with this statement.

On the face of it, this seems pretty obvious and uncontroversial, given that the consumer response in each situation is reasonably predictable. In this respect, the traditional economic viewpoint is the dominant theory for explaining and predicting consumer behaviour. However, it is not the only theory. The relatively new field of Behavioural Economics uses insights from the field of psychology to enhance our understanding of consumer behaviour. This is explored in detail in Chapter 5, helping to provide a more complete theory of consumer behaviour.

Informed decision making

Economists also assume that consumers have access to relevant and accurate information to make rational decisions. Armed with **perfect information** consumers can calculate and compare the costs and benefits of each choice, and rank these choices based on their relative net benefits. Obviously, the first choice is the optimal or utility maximising choice.

Marginal benefits from consumption

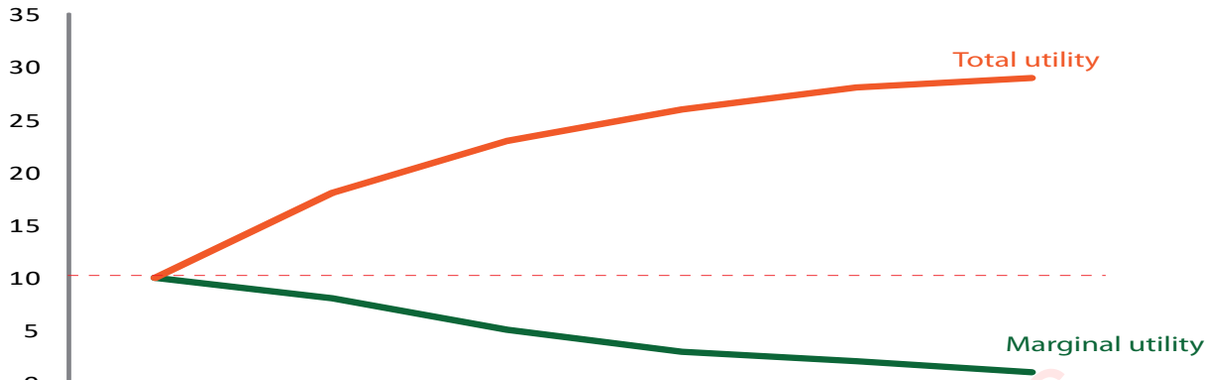
In Economics, the **law of diminishing marginal utility** states that each additional (or marginal) unit of a good or service that is consumed generates less utility (satisfaction) than the previous one. According to this theory, the second unit of something consumed provides less satisfaction (utility) than the first, and the third unit provides less than the second, and so on. Therefore, **total utility** *grows less rapidly* with each additional unit consumed. For a numerical and graphical representation of the law of diminishing marginal utility refer to the pizza example below. In the example, the utility gained from the pizza slices has been calculated using 'Utils' – a theoretical measure of utility (satisfaction) gained from consumption.

Table 2.1: Marginal and total utility of pizza consumption

Pizza	Marginal utility (Utils*)	Total utility (Utils)
1st Slice	**10**	10
2nd Slice	**8**	18
3rd Slice	**5**	23
4th Slice	**3**	**26**
5th Slice	**2**	28
6th Slice	**1**	29

**Utils are a theoretical measure of utility*

Chart 2.1: Marginal and total utility



1st Slice	2nd Slice	3rd Slice	4th Slice	5th Slice	6th Slice
10	8	5	3	2	1
10	18	23	26	28	29

Table 2.1 and Chart 2.1 highlight that the first slice of pizza that is consumed will provide a relatively high level of satisfaction (utility) for the average person. This makes sense because the first slice is the most 'enjoyable' or 'pleasurable'. The second slice will be slightly less enjoyable and so on, until we eventually get to a point (perhaps after slice 6) where another slice of pizza provides us with no additional satisfaction at all. In other words, the marginal utility (extra satisfaction gained) continues to fall towards zero.

Given that consumers experience diminishing marginal utility, they will seek to consume goods and services in different combinations in order to maximise their total utility over time. For example, when buying 'take-away food' over the course of a week or month, a person is likely to 'mix it up' and visit different fast food outlets, perhaps purchasing pizza one day, sushi the next, and fish and chips the night after. This variety will typically lead to a higher overall level of utility or satisfaction compared to one where a person purchases the same take away food each day.

A practical application of the law of diminishing marginal utility are sales promotions run by service stations where they offer their customers a 50 per cent discount on the purchase of a second chocolate bar or bag of chips. Given that consumers derive less utility from the second confectionary bar, the price discount is used to entice them to purchase an additional chocolate bar. This pricing strategy is often used in a range of markets, including retail clothing, health products and perfumes.

The law of diminishing marginal utility is one of the theoretical underpinnings of the downward sloping demand curve (see Chapter 3).

Review Questions 2.2

1. Explain why economic theories contain assumptions.
2. Describe the traditional economic viewpoint of consumer behaviour. Your response should cover the ideas of rationality, self-interest and utility maximisation.
3. Describe why informed decision-making is an important assumption in the traditional economic viewpoint of consumer behaviour.
4. Explain how the law of diminishing marginal utility can affect consumer decisions. Use an example to illustrate your explanation.
5. Provide an example of how businesses can apply the law of diminishing marginal utility to increase sales revenue.

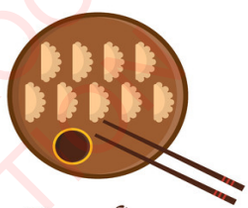
Application Exercise 2c: Utility

Complete the data in the table below calculating the marginal utility from dumpling consumption.

Dumplings	Marginal utility (Utils)	Total utility (Utils)
First dumpling		15
Second dumpling		28
Third dumpling		37
Fourth dumpling		42
Fifth dumpling		44
Sixth dumpling		45

Questions/tasks

1. **Construct a line graph, plotting the data on marginal utility and total utility. Plot the total utility on the y-axis (vertical) and number of dumplings consumed on the x-axis (horizontal). Ensure you fully label the graph.**
2. **With reference to the graph, explain the relationship between marginal utility and total utility.**
3. **Using what you have learned about the theory of diminishing marginal utility (DMU), explain why the data shown on the graph is likely to be an accurate representation of the average consumer's utility (satisfaction) in consuming dumplings.**
4. **Imagine that you own a shop specialising in the serving of dumplings. Outline how you could use your knowledge of DMU to increase total revenue (i.e. total sales) for the shop.**



Dumplings

2.3 The ways consumers and workers might respond to positive and negative incentives

The authors of *Freakonomics*, Steven D. Levitt and Stephen J. Dubner describe economics as 'the study of incentives'. An **incentive** encourages economic agents to make particular choices. Incentives typically employ benefits or rewards to encourage the desired behaviour. By contrast, a disincentive discourages economic agents from making specific decisions. A feature of disincentives is the use of costs or penalties to influence behaviour. Many economists would argue that the distinction between incentives and disincentives is not particularly important. They would simply say that an incentive is any measure that leads to a change in behaviour. Needless to say, by altering costs and benefits, governments and businesses can motivate consumers and workers to make particular choices, and achieve desired outcomes.

Before reading on, complete the following Give One, Get One thinking routine.

How can the government influence the behaviour of consumers and workers?	
My ideas to give	Ideas from my friend

Governments use their control over the tax system and their considerable spending power to influence the decisions of consumer and workers. They can also seek parliamentary approval for new laws to mandate or even prohibit the consumption of certain goods. Put simply, governments use their authority and power to create both incentives and disincentives.

Taxes and tax rebates, subsidies and regulations

Study tip

Externalities are sources of market failure. Market failure describes a situation where the pursuit of self-interest by consumers and businesses results in an inefficient allocation of resources, which compromises the living standards or economic welfare of all members of society. The belief that markets can 'fail' is a justification for government intervention in markets through the use of taxes, subsidies, laws and other policies. Externalities and market failure are covered in greater detail in the VCE Economics Unit 3 course.

Governments seek to encourage the consumption of goods and services that generate positive spillovers or **externalities**. A **positive externality in consumption** occurs when the consumption of a good or service confers a benefit on a third party or bystander. This means that someone who did not pay for the good or service receives part of the benefit from that good or service. For example, when a person gets vaccinated against the flu, it reduces the risk of infection for the individual, but society benefits too . These benefits to society are in addition to the benefits to the individual because a decision to get vaccinated not only protects the individual from catching the flu, but others too, namely those people who have not been vaccinated. The government recognises that it is in society's best interests for as many people as possible to be vaccinated, as it raises the level of immunity among the population (referred to as 'herd immunity'). Moreover, there are many other 'external' benefits that stem from vaccinations, such as fewer working days lost and fewer people presenting ill at hospitals and clinics, resulting in cost savings for the healthcare system.

Study tip

A subsidy is a cash payment. Subsidies can be paid to either the consumer or producer. The former is known as a consumption subsidy while the latter is known as a production subsidy.

For all of these reasons, the government uses **subsidies** or cash payments to reduce the cost of vaccines to encourage more people to get vaccinated. These subsidies can be paid directly to consumers or to businesses providing the vaccines. Alternatively, the government can provide them free-of-charge, as is the case with COVID-19 vaccinations. In the absence of such government intervention, too few resources will be allocated to goods and services that generate positive externalities as people cannot monetise the benefits they provide others. In other words, 'good deeds' such as being vaccinated are not correctly valued by the market.

Sometimes the government can resort to more punitive actions or disincentives. The government can introduce bills to parliament to make laws or regulations that prohibit or mandate certain behaviour. For example, during COVID-19, the government implemented restrictions, lockdowns and stay at home orders to minimise the spread of the virus. In relation to COVID-19 vaccinations, the government was not prepared to mandate vaccinations, but was keen to invoke genuine measures that acted as real disincentives for those refusing to get vaccinated. It devised a range of measures that effectively punished those members of society who were not prepared to vaccinate. This included restrictions on their freedom of movement, such as laws preventing them from attending certain venues, travelling on commercial aircraft and working in some organisations. This is similar to the 'No Jab, No Pay' legislation that came into effect in 2016 that involved parents who do not vaccinate their children (against common childhood illnesses) from accessing government benefits such as the childcare rebate (which covers a portion of the fees charged by childcare centres).

Education also provides positive externalities for society as a whole. For example, a better educated population is likely to:

- generate higher levels of productivity
- lead to more innovation resulting in higher levels of economic growth
- create a more tolerant and harmonious society
- result in less crime
- mean more informed citizens, resulting in better quality government.

For these reasons, the government uses the law to mandate a minimum school leaving age of fifteen and provides education free-of- charge through public schools. In the absence of direct provision by the government, too few resources (such as labour and capital) would be allocated to education, as the costs of educating a child for most parents would be too prohibitive.

On the other hand, a **negative externality in consumption** occurs when the consumption of a good or service imposes

a cost on a third party or bystander. Without government intervention too many resources are allocated to goods and services that result in negative externalities. This is because, when making decisions about what to consume, people typically ignore the harmful effects of their consumption on third parties. That is, they only consider the costs to themselves, while ignoring the costs that accrue to bystanders. For example, the consumption of cigarettes results in negative externalities, as non-smokers can develop smoking-related illnesses from inhaling second-hand smoke (i.e., passive smoking). To curb the consumption of cigarettes, the government uses indirect taxes. Over the past 10 years, the federal government has increased excise on tobacco by more than 300% (from approximately $0.35 to $1.12 per cigarette. The tobacco companies generally pass on any increases in excise taxes to consumers in the form of higher prices, effectively deterring consumption. Of course, this is the government's intention as the increase in the price of a packet of cigarettes leads to a decrease in the quantity of cigarettes demanded. However, because tobacco is an addictive substance, any increase in price results in a less than proportional decrease in the quantity demanded. A World Bank study showed that a 10% increase in the price of cigarettes reduces consumption by about 4% in developed countries and 8% in developing countries.

Study tip

The imposition of an indirect tax on products like cigarettes (or fuel and alcohol) creates a disincentive for consumers to smoke. However, the fact that these goods are addictive means that the taxes also raise significant revenue for the government.

The government can also use the law to create disincentives to smoke. Australia's **plain packaging laws** prohibit tobacco companies from adorning cigarette packets with appealing graphics and prominent brand names. These laws also require cigarette packets to display confronting images of the health effects of smoking accompanied by jarring health warnings such as 'smoking kills'. The aim of such laws is to decrease the demand for cigarettes. Plain packaging laws are also backed up by anti-smoking campaigns in the mass media. For example, QUIT Victoria regularly runs TV advertisements aimed at persuading people to give up smoking. Moreover, laws prohibit smoking in public places such as restaurants, bars, shopping centres and sporting venues. All of these measures are designed to ameliorate the negative externalities associated with the consumption of tobacco.

The government can also use **direct taxes** to influence the behaviour of consumers and workers. For example, the government can incentivise greater labour force participation and greater labour productivity by lowering the marginal tax rates that apply to people's incomes. Personal income taxes are essentially a tax on the wages and salaries people receive in return for contributing to the production process. Therefore, taxing income too heavily can stifle the incentive to work and/or to work hard. By lowering the marginal tax rates that apply to the lower tax brackets and raising the tax-free threshold, unemployed people (particularly those who are unskilled and are only suitable for lowly-paid jobs) will have an even stronger incentive to secure work. Lower income tax rates mean that these people get to keep more of the income they earn, which makes working relatively more attractive than remaining on welfare and receiving unemployment benefits. Such changes to income tax can eliminate 'welfare traps' caused by a poorly designed tax and welfare system.

Study tip

The marginal tax rate is the tax rate people pay on each additional dollar of income earned. Australia has a progressive income tax system, which means that the marginal tax rate increases as income rises. The goal of a progressive income tax system is to promote a more equitable distribution of income by taxing people according to their earnings, with low-income earners being taxed at a lower rate than higher-income earners.

Additionally, lowering the marginal tax rates on middle- and upper- tax brackets, as announced in the government's *Personal Income Tax Plan*, is likely to encourage people in these tax brackets to work harder and be more entrepreneurial as they get to keep more of the income they earn from their efforts. Stage 3 of the Plan which takes effect on 1 July 2024, will see an increase the top threshold of the 32.5 per cent tax bracket from $120,000 to $200,000, and the removal the 37 per cent tax bracket completely. The plan means that around 94 per cent of all taxpayers are projected to face a marginal tax rate of 32.5 per cent or less in 2024-25. This compares with a projected 63 per cent of taxpayers in 2024-25 without such a change to current settings.

Another option available to the government is the use of **tax rebates (tax offsets)**. In response to the COVID-19 induced recession of 2020, the government announced the retention of the Low and Middle Income Tax Offset (LMITO). This measure effectively reduces the amount of personal income tax paid by low-and middle-income earners after they lodge their tax returns at the end of the financial year. In monetary terms, eligible households will receive up to $1080 (and couples $2160), boosting their disposable income. At the macroeconomic level, this represents a personal income tax cut of $7.8 billion for households. Given the LMITO is targeted at low-and middle-income earners with a relatively high **marginal propensity to consume (MPC)** this measure would have been reasonably effective in stimulating consumption spending (C) and aggregate demand (AD), and supporting the economic recovery from the recession.

Study tip

The ageing population is a natural phenomenon which refers to an increase in the median age of the population or an increase in the proportion of the population of retirement age (65+). If nothing is done to address this long-term challenge, living standards are projected to decline.

In recent federal budgets the government has made various adjustments to childcare subsidies to make childcare more affordable in order to boost labour force participation. One reason for the relatively lower labour force participation rate among women is the high cost of childcare. If women are allocating the majority of their wage or salary to pay for childcare, it is not really worth their time and effort to work. The childcare rebate aims to make work a better economic proposition. It is predicted that this initiative will incentivise greater labour force participation, helping to address the looming challenge of an ageing population.

Study tip

Moral hazard is a common problem in insurance markets because buyers of insurance cannot be closely monitored. It is an example of 'asymmetric information' as a market failure, an area of Economics that will be covered in VCE Economics Unit 3.

The nature of some types of incentives can lead to unexpected results. A case-in-point is insurance services, which provide monetary compensation in the event of a specified loss, damage, illness or death, in return for the regular payment of a premium. The protection or cover provided by car insurance can create 'perverse incentives', causing insured people to behave recklessly because the insurer rather than the insured person will bear the cost of repairs in the event of an accident.

This is compounded by the fact that insured people cannot be easily observed or monitored, and thus might be tempted to act in an irresponsible way. Unsurprisingly, accidents have a greater probability of occurring. Economists use the term **moral hazard** to describe this situation. The description moral hazard is used because of the heightened 'risk' or 'hazard' of inappropriate or 'immoral behaviour'. In contrast, those people without insurance have an incentive to be more careful because they don't have the 'peace of mind' of being compensated for any losses they might incur.

Further, moral hazard causes more problems as the insurer receives more claims than they anticipated, resulting in a higher number of insurance payouts, forcing them to charge higher premiums for all their customers, even the well-behaved ones!

Application Exercise 2d: Moral Hazard

Most consumers participate in the market for car insurance. To insure their cars, consumers pay an annual insurance premium but also an excess when they make a claim. The excess is the contribution that they make to the cost of repairs if they are involved in an accident and it is their fault. Car insurance policies can be structured to screen buyers of insurance. **Screening** mechanisms are used to induce buyers to reveal important information in order to help sellers of insurance deal with the problem of moral hazard. A car insurance company can offer its customers the choice of two car insurance policies:

Policy No. 1: High annual insurance premium but low excess.
Policy No. 2: Low annual insurance premium but high excess.

1. **Identify which policy a risky driver would select and which policy a safe driver would select. Justify your response.**
2. **Discuss the following proposition: 'Offering its customers the choice of different car insurance policies is a clever screening mechanism.'**

Governments encourage **enterprise bargaining**, whereby businesses directly negotiate with their workers regarding wages and conditions of employment. These negotiations result in enterprise agreements. When negotiating **enterprise agreements,** businesses and trade unions often include productivity clauses, which link wage increases to productivity growth. Higher productivity occurs when higher levels of output are achieved from the same inputs. For example, labour productivity increases when the hours worked (the input) results in more goods and services (the output) being produced. Moreover, because productivity growth reduces a business' average costs of production, businesses can afford to pay their workers higher wages without having to sacrifice profit margins. Such schemes are designed to incentivise hard work by providing appropriate monetary rewards.

Non-monetary rewards can also be used to motivate workers to work hard. For example, many business firms formally recognise their best workers through awards such as 'employee of the month'.

Review Questions 2.3

1. Distinguish between an incentive and a disincentive, and provide two examples of each.
2. Explain the difference between a tax and a tax rebate (offset).
3. Distinguish between positive and negative externalities, and provide examples of each.
4. Explain how the government uses incentives to promote the consumption and production of goods and services that generate positive externalities.

5. Explain how the government uses disincentives to discourage the consumption and production of goods and services that result in negative externalities.
6. Explain how a mix of incentives can be used to support stronger labour force participation rates and higher growth in labour productivity.
7. Use the problem of moral hazard and insurance markets to explain the idea of 'perverse incentives'.
8. Explain why enterprise agreements often include productivity clauses.

Application Exercise 2e: Child care and incentives

In Economics, an incentive is anything that motivates an economic agent (e.g. a consumer or a business) to behave in a particular way. Incentives can be extrinsic or intrinsic. An extrinsic incentive is external to an economic agent and includes things such as cash rewards, bonuses, profits and fines. It also encompasses non-monetary incentives, such as peer recognition or disapproval, social status, power or even the threat of incarceration. On the other hand, intrinsic incentives are internal to the economic agent. For example, getting satisfaction from the work one does or the "warm inner glow" from making a positive difference to society, perhaps through volunteering or participating in civic life.

As Levitt and Dubner, the co-authors of the popular Economics book Freakonomics assert "incentives are the cornerstone of modern life". Indeed, understanding them is the key to solving just about any riddle, from match fixing to online dating to violent crime. Economists have great faith in incentives. They believe that properly designed incentive schemes can fix just about any problem, economic or otherwise. At a simple level, price discounting can be an effective incentive for consumers that ultimately helps a business to clear excess (surplus) stock. Similarly, offering complimentary eye tests can incentivise individuals to undergo important testing that has the potential to identify the risk of developing diabetes and conditions such as hypertension. Such information can then be used by the patient in consultation with their doctor to make timely lifestyle changes.

However, seemingly well-designed incentives can sometimes go awry. A case-in-point is the incentive scheme used in childcare centres in Israel. In the coastal city of Haifa, child care centres close at 4.00 pm. They essentially rely on the goodwill of parents to pick their children up on time. More often than not, parents collected their children on time and rarely, if ever, came after 4.30 pm. Parents were rarely late because it meant relying on the generosity of one childcare worker, who would have to stay back to look after the children of latecomers. Being late meant having to face a potentially irate childcare worker and possibly having to make a grovelling apology for the inconvenience caused.

These observations prompted a pair of behavioural economists, John List and Uri Gneezy, to conduct an experiment. What would happen if a financial disincentive, such as a fine, was introduced to discourage parents from picking up their children late? The results were unexpected. The introduction of the financial penalty actually caused parents to show up late. In fact, parents stopped showing up on time entirely.

The experiment involved 10 childcare centres across Haifa. In six of these centres a small fine of $3 per child was introduced for every time a parent showed up more than 10 minutes late. These fines would then be added to parent's monthly childcare bill. In these childcare centres, parents immediately started showing up late, with tardiness eventually settling at about twice the pre-fine level. In other words, the introduction of the fine caused twice as many parents to show up late. Interestingly, tardiness remained unchanged in the four childcare centres that did not introduce fines!

This experiment called into question the so-called 'power' of financial or monetary incentives to bring about the desired change in human behaviour. In the case of childcare centres, non-financial incentives such as avoiding the guilt of inconveniencing childcare workers were far more effective. The introduction of the fine simply meant that parents could assuage their guilt (i.e. they could turn up late 'with a clear conscience'). The great economist, Adam Smith, described 'conscience' as "a permanent partner in an inaudible conversation, who acted as a check and scrutineer". So, in cases like these, it is clear that the power of financial or monetary incentives can be undermined by the role that conscience plays in decision making. Undesirable patterns of behaviour that are ordinarily controlled, to some extent, by the operation of a person's conscience are perversely encouraged by financial incentives designed to discourage this behaviour (e.g. the simple payment of a fine).

In the completely unrelated example of car safety, incentives also yielded unexpected results. The introduction of laws mandating the wearing of seat belts in the United States led to drivers driving less safely, a phenomenon known as the 'Peltzman effect'. The heightened sense of security engendered by a seat belt unexpectedly led to more risk taking and reckless driving on US roads.

Questions

1. **Define incentives.**
2. **Distinguish between extrinsic and intrinsic incentives and provide examples.**
3. **With reference to the experiment at childcare centres in Haifa, analyse why the introduction of a fine for tardiness failed to have the desired effect. In your answer, make reference to the role of a person's 'conscience'.**
4. **Explain why well-meaning laws such as the mandatory wearing of seat belts resulted in perverse outcomes.**

2.4 The traditional economic viewpoint of business in the economy: profit maximisation

The traditional economic viewpoint is based on the idea that self-interest is the motivating force that drives market economies. That is, consumers and businesses act purely for their own benefit. Consumers aim to maximise their utility, while businesses aim to maximise **profit**. Profit is the income earned by a business and is calculated by deducting costs of production (or expenses) from revenue (or sales). This income is then distributed to the business' owners or reinvested in the business.

The following extract from Adam Smith's economic treatise *The Wealth of Nations (1776)* neatly summarises the traditional economic viewpoint:

> ***'It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love (self-interest), and never talk to them of our necessities but of their advantages'.***

Adam Smith essentially claimed that markets have a remarkable ability to coordinate the actions of millions of self-interested consumers and businesses to achieve an efficient allocation of resources. In other words, when 'left alone' (known as **laissez faire**), markets tend to produce those goods and services that consumers value most, and which also happen to be the most profitable for businesses to produce.

Nobel Laureate Milton Friedman, in a now-classic article written for the New York Times Magazine in 1970, asserted:

> ***…there is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits so long as it stays within the rule of the game, which is to say, engages in open and free competition without deception or fraud. ('The Social Responsibility of Businesses Is to Increase Its Profits')***

Friedman was dismissive of the idea that businesses had obligations to anyone or anything beyond their shareholders. In his view, business decisions should be directed at maximising returns for shareholders and increasing shareholder wealth. In other words, the sole consideration of any business firm is profit.

The ideas of these economists are also expressed in the notion of **consumer sovereignty**, which describes how consumers determine what and how much is produced by casting 'dollar votes'. Businesses motivated by profit respond accordingly by producing those goods and services that consumers want. Further, as consumers' preferences change when new information becomes available businesses will naturally respond by reallocating resources to the production of those goods and services being demanded.

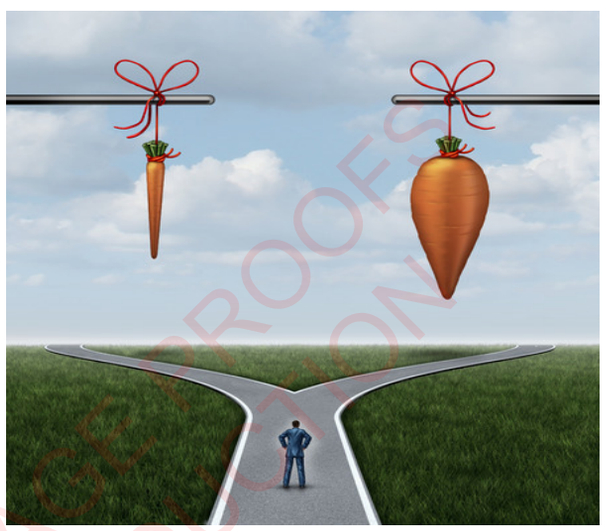
Apart from allocating resources in accordance with consumers' wishes, businesses also seek to improve their productivity to maximise their profits. As mentioned earlier, higher productivity can be achieved by increasing the quantity of output from a given quantity of inputs, or by maintaining current output levels but using a smaller quantity of inputs. Either way, higher productivity reduces a business's average costs of production, which increases their profit margins. Indeed, producing at the lowest possible cost is a major consideration for any businesses seeking to maximise profits.

Review Questions 2.4

1. Outline the traditional economic viewpoint of businesses in the economy.
2. Do you agree with this traditional economic viewpoint? Justify your position.
3. Explain how markets can serve the interests of both consumers and businesses.
4. Outline two ways that businesses can maximise profits.

2.5 The ways businesses might respond to incentives and disincentives, including taxes and tax rebates, subsidies and regulations

Businesses like consumers also respond to positive and negative incentives. The lure of higher profits is the ultimate incentive for businesses. For instance, an increase in consumer demand for a particular product will result in an increase in its price relative to other products. Accordingly, businesses will respond to this price signal by allocating more resources to the production of the product because of the better profit opportunities that now exist. Similarly, as the price of a product falls due to weaker consumer demand, businesses will allocate fewer resources to the product, as it is now less profitable to produce. In short, changes in relative prices result in changes to relative profitability, providing the incentive for businesses to reallocate resources to the production of those goods and services where the most lucrative profit opportunities exist.



The government can use incentives to affect a business's costs of production, profits and production decisions. For example, the government can provide **production subsidies** to businesses in order to reduce their costs of production and provide them with additional incentives to produce particular goods and services. A case-in-point is the subsidies provided to farmers during droughts to support them in maintaining their presence on the land. During such adverse weather events, the carrying capacity of the land is compromised by a lack of water, making it difficult to sustain livestock and grow crops. Production subsidies are therefore used by farmers to buy feed to keep livestock healthy and farms viable. In the absence of such incentives more farmers are likely to leave the land, which would have negative implications for food security and the Australian economy more generally.

Conversely, the government can also withdraw production subsidies, which can accelerate the demise of an industry. For example, the government decided to stop 'propping up' Australia's car manufacturing industry, which was one of many factors that contributed to the decision of Ford, GM Holden and Toyota to cease all car manufacturing operations at the end of 2017. These production subsidies were essentially a 'life line' to Australia's ailing car manufacturing industry struggling to compete and remain viable as a result of a number of factors. These included the high value of the Australian dollar (exchange rate), which made imported cars relatively cheaper, and the gradual removal of tariffs over time by the Australian government, which resulted in even lower prices for imported cars compared to locally-produced vehicles.

The removal of **tariffs** (taxes on imports) is also an example of how the government can use negative incentives to bring about change in business behaviour. Lowering tariffs is about promoting structural change to improve the economy's performance over the long run. Some commentators have equated tariff reform to Economic Darwinism or 'survival of the fittest' as the removal of tariffs lowers the price of imported goods, exposing Australia's import-competing industries to intense competition from foreign-made or imported goods. To remain viable, Australia's import-competing industries are forced to restructure their operations by implementing new technology and by adopting more efficient work practices, in order to raise productivity and lower costs of production. These cost savings can then be passed onto consumers in the form of lower prices, enhancing the international competitiveness of Australia's import-competing industries. So over time, Australia's import-competing industries should be able to compete with imported products without the need for protection from tariffs.

Inevitably, some industries won't be able to adapt to the new, highly competitive environment and thus will be forced to close down. Therefore, reductions in tariffs can also lead to a reallocation of resources to areas where Australia possesses a **comparative advantage**, such as minerals, beef, wine, education, tourism and biotech products. The theory of comparative advantage asserts that countries should allocate resources to those goods and services they can produce at a lower opportunity cost than their trading partners. It is only through specialising in the production of a narrower range of goods and services in which a country possesses a comparative advantage that it can maximise the total level of output from their resources. Any surplus can be exported and the income earned can be used to import those goods and services a country is relatively less efficient at producing.

Disincentives can be used to tackle the long-term challenge of climate change. The burning of fossil fuels such as coal for industrial production, releases CO2 emissions into the atmosphere leading to global warming. It is future generations that bear the brunt of the costs connected to a warming planet. In 2012, to address these negative externalities and mitigate the effects of climate change, the government introduced a **carbon tax** of $23 per tonne of CO2 emissions. This tax, which is an example of '**carbon pricing**', was levied on Australia's 500 biggest polluters. The carbon tax sought to change the structure of relative prices by increasing the price of carbon-intensive production, such as energy generated

from fossil fuels, relative to the price of less carbon intensive production, such as energy generated from renewable sources such as wind and solar power. Given the carbon tax was an additional cost of production for carbon intensive producers, it motivated them to take action to reduce their CO2 emissions in order to lower their production costs. In essence, the carbon tax served as a disincentive to release CO2 emissions. Furthermore, given that these additional costs were typically passed on to consumers, resulting in higher prices, consumers also had an incentive to switch to cheaper, low-emissions alternatives such as wind or solar energy. By altering the structure of relative prices, the carbon tax aimed to lower the level of CO2 emissions.

The government also pledged a proportion of the revenue generated from the carbon tax to support the development of green sources of energy. This financial support in the form of a **production subsidy** strengthens the business case for 'green energy' by lowering the costs of production and incentivising large-scale investment in renewables such as wind and solar. Further, by increasing the supply of 'green energy' this helps to drive down its cost and ultimately lowers the prices paid by consumers. For economic and political reasons, the carbon tax was repealed in 2014 and replaced with a **Direct Action Plan**, which focused more on the government supporting (via subsidies) those endeavours that had the potential to reduce emissions. Going forward, in line with Australia's commitment to reduce CO2 emissions by 43% by 2030, it is clear that state and federal governments will increasingly disincentivise CO2 emissions via carbon pricing in an attempt to further increase the relative price of 'dirty' forms of production (which reduces the relative price of 'clean' forms of production.

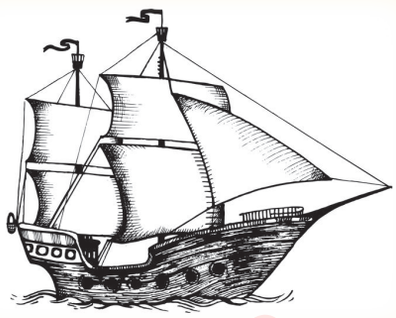
The government can provide **tax rebates** or **tax concessions** to businesses that undertake research and development (R&D) into new production methods and products. Currently, the Federal Government allows businesses to claim R&D expenses at a rate of 150% for tax purposes. This favourable tax treatment incentivises the development of new, more efficient production technologies, which have the potential to boost the international competitiveness of Australian businesses in an increasingly integrated and competitive global economy. Moreover, the development of new and desirable products can stimulate economic growth and job opportunities.

In response to the COVID-19 induced recession of 2020, the Federal Government introduced a **wage subsidy** known as **JobKeeper** to assist businesses significantly affected by the pandemic. To be eligible for the wage subsidy, businesses with an annual turnover (revenue) of less than $1 billion had to demonstrate that their turnover had declined by 30% or more. While businesses with an annual turnover of more than $1 billion had to show that their turnover had fallen by at least 50%. The JobKeeper Payment was a fortnightly payment paid at $1,500 per employee. This payment sought to partially cover businesses' wages costs, so more Australians could retain their jobs (stay 'on the books') and continue to 'earn' an income. In the absence of such an incentive businesses would have retrenched many more employees in order to stem their losses and remain financially viable. Consequently, the subsidy prevented the official unemployment rate from climbing to well above 10%. The JobKeeper Payment serves to illustrate how powerful incentives can be used to 'engineer' the right sorts of outcomes that serve the national interest.

In the section on consumers and incentives, the issue of moral hazard was introduced, where products such as insurance can create 'perverse incentives'. Moral hazard can also create 'perverse incentives' for businesses. For example, during the Global Financial Crisis there were rising concerns about the security of bank deposits. In response, many governments around the world, including the Australian Government, guaranteed bank deposits to reassure deposit holders and stop a potential 'run on the banks'. However, this guarantee could have encouraged some banks to take unnecessary risks with their customers' deposits, as they knew they had the backing of the government. That is, the government would come to their rescue or 'bail them out' if a bank made poor investment decisions that ultimately threatened both the value of deposits and, by extension, the viability of the banking system.

Application Exercise 2f: The Second Fleet and incentives

In 1790 the Second Fleet set sail from Portsmouth, England. However, unlike the First Fleet, this was a commercial operation as the British Government 'outsourced' the transportation of nearly 1000 convicts to shipping contractors Camden, Calvert & King, for a flat fee of 6 pennies for each convict that boarded their vessels for the fledging colony of New South Wales. Accordingly, they crammed their 'human cargo' onto the ships the Surprize, Neptune and Scarborough for the journey.



The five-month voyage around the Cape of Good Hope and across the vast Indian Ocean was notoriously harsh for the convicts. This was further compounded by decisions taken by the management at Camden, Calvert & King to keep costs down. The first of which was to recruit the crew from seedy dock-side taverns.

This crew of hard-drinking illiterates, were brutal in their treatment of the convicts, frequently administering vicious floggings with the cat-o'-nine-tails. The convicts also received starvation rations, so surplus food could be sold on arrival at Sydney Cove. They were also kept in squalid conditions below deck and in leg-irons for long periods of time. Further, scurvy, a disease caused by a lack of Vitamin C, ran rampant. Its symptoms included bleeding gums, loosening of teeth, the opening of previously healed wounds and general malaise. By the time the ships berthed at Sydney Cove the convicts were covered in lice, and about one-third of the convicts who had departed England had perished. Many of the survivors of what came to be known as the 'Death Fleet' were left in a terrible state, lean and emaciated, barely able to move and speak. An eye witness, the Reverend Johnson, wrote: "the misery I saw amongst them is indescribable…their heads, bodies, clothes, blankets, were all full of lice. They were wretched, naked, filthy, dirty, lousy, and many of them utterly unable to stand, to creep, or even to stir hand or foot." (Wikipedia, Second Fleet).

When news reached England of the calamity there was outrage. This prompted the British Government to change the payment mechanism for the transportation of the Third Fleet of convicts. Shipping contractors would now be paid on results, with approximately 20 per cent of the payment depending on the convict arriving in good health. Needless to say, the outcomes were vastly better. There was less overcrowding and far better treatment of the convicts. These improvements in conditions was ultimately reflected in a sharp drop in the death rate from 1 in 3 convicts to 1 in 11 convicts. The change to incentives – a theme central to the study of Economics - led to a change in the way Camden, Calvert & King treated their 'human cargo'.

The improvements between the Second Fleet and Third Fleet also highlights another major theme in Economics: trade-offs. This is where an economic agent chooses a course of action and, in the process, sacrifices something of value. For example, when Camden, Calvert & King were paid by the number of convicts that set sail from England they chose to pack as many convicts as they could aboard the ships. The trade-off was a higher death rate, much to the dismay of the British Government and public. However, once they had a strong financial incentive to get their 'human cargo' to Sydney Cove alive and in a good state of health they opted for a different trade-off: fewer convicts per ship, more rations per convict and better treatment during the voyage.

Questions

1. Compare the outcome of the voyage of the Second Fleet with the Third Fleet.
2. Describe some of the decisions Camden, Calvert & King made to maximise their profits when transporting convicts as part of the Second Fleet.
3. Compare the incentive schemes used for the transportation of convicts for the Second and Third Fleets.
4. Explain why the incentive scheme used for the Third Fleet resulted in vastly improved outcomes.
5. Define trade-offs.
6. Compare how the trade-offs changed when the incentive scheme used for the transportation of convicts changed.
7. "At its root, economics is the study of incentives". Discuss.

Review Questions 2.5

1. Distinguish between a tax rebate and a subsidy, and provide an example of each.
2. With reference to an example, explain how the provision of production subsidies can support businesses through difficult periods.
3. With reference to an example, explain how the withdrawal of production subsidies can affect the ongoing viability of an industry.
4. Explain the intention behind the government's decision to remove tariffs on imported cars.
5. With reference to the recent past, explain how the government combined incentives and disincentives to tackle the long-term challenge of climate change.
6. Explain how the government used subsidies during the COVID-19 induced recession of 2020 to prevent a significant increase in unemployment.
7. Explain how the government's guarantee on bank deposits during the Global Financial Crisis had the potential to create a moral hazard.

2.6 The traditional economic viewpoint of the government in the economy: maximisation of living standards

The traditional role of the government in the economy is to maximise both dimensions of living standards; that is, **material living standards** and **non-material living standards**. Improving material living standards is essentially about increasing people's access to goods and services as measured by real GDP per capita. With respect to non-material living standards, this involves enhancing people's 'quality of life' by achieving the following types of outcomes:

- reducing traffic congestion
- improving air quality
- raising literacy and numeracy
- increasing life expectancy
- cleaning up waterways
- lifting general levels of happiness
- lowering crime rates.

It should be noted that the factors listed above are by no means an exhaustive list of the ways that people's 'quality of life' can be enhanced.

To improve society's living standards, the government will use various economic policies to pursue its macroeconomic goals. This includes promoting sustainable economic growth and employment opportunities, while keeping inflation to a minimum. Achieving economic growth improves people's access to goods and services, and generates both employment and income, which provides a sense of happiness and satisfaction. Growing the economy in a sustainable manner (i.e. strong and sustainable economic growth) also enables future generations to enjoy comparable living standards. For example, keeping inflation low preserves people's purchasing power and protects the value of their savings, helping to make Australia's tradables sector internationally competitive. In addition, achieving economic growth without without creating excessive environmental damage preserves resources for use by future generations of businesses and consumers. The government also seeks to improve society's living standards by promoting an efficient allocation of resources and an equitable distribution of income.

The next section deals with the government's role in maximising society's living standards in more detail.

Review Questions 2.6

1. Distinguish between material and non-material living standards.
2. Explain how material and non-material living standards are measured.
3. Outline how the pursuit of sustainable economic growth and job creation, along with the maintenance of low inflation contribute to higher living standards.

2.7 The role of government in economic stabilisation, improving efficiency in resource allocation and redistribution of income to improve living standards

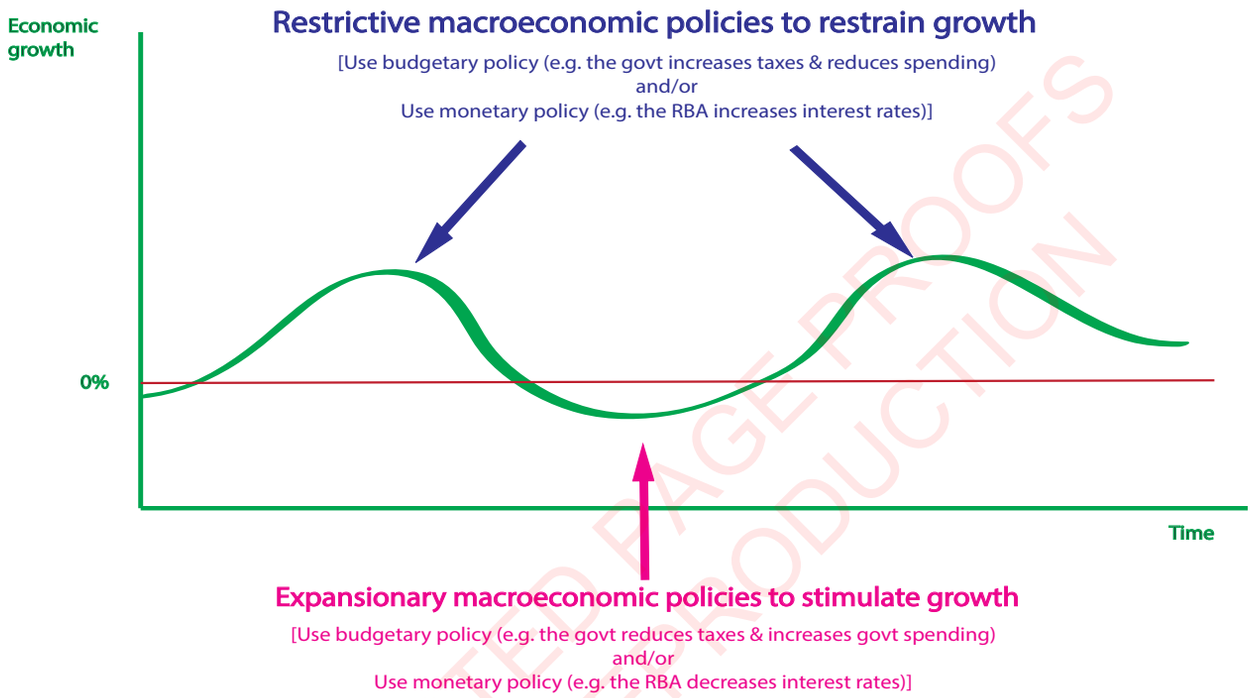
Economic stabilisation

A feature of market capitalist economies such as the Australian economy is the **business cycle**, which refers to the cyclical movement of economic activity over time, with periods of above average rates of economic growth and periods of negative or low rates of economic growth as measured by Real GDP. The business cycle consists of different phases including expansions (upswings, upturns), peaks (possibly booms), contractions (downswings, downturns) and troughs (possibly recessions).

In the short to medium-term the main determinant of the business cycle is the level of aggregate demand or total expenditure on final goods and services produced within Australia's borders. Thus, any changes in aggregate demand will be reflected in the different phases of the business cycle, such as expansions, peaks, contractions and troughs. Further, without any government intervention, the wave-like or cyclical pattern of economic activity would be more volatile. That is, the economy would be more likely to experience protracted periods of declining (or negative) rates of economic growth and higher rates of unemployment, as well as long and destabilising inflationary booms. Therefore, it there is a compelling case for government intervention in the economy to stabilise the business cycle.

The Federal (or Commonwealth) Government and the Reserve Bank of Australia (RBA) play a major role in the **economic stabilisation** by implementing **aggregate demand policies** such as budgetary policy and monetary policy to stabilise the business cycle. The use of budgetary policy to stabilise the cycle involves the Federal Government altering the level and composition of government revenues and expenditure to stimulate or dampen aggregate demand to smooth out fluctuations in the business cycle. While, monetary policy relates to the RBA altering the cash (interest) rate, and at times resorting to unconventional monetary policy tools (such as during the 'Covid recession of 2020'), to stimulate or restrain aggregate demand to stabilise the business cycle. Figure 2.1 below highlights how budgetary and monetary policies can be used in a counter-cyclical manner to achieve economic stabilisation.

Figure 2.1 Economic stabilisation policies



The stabilisation of the business cycle is critical to achieving three important macroeconomic goals pursued by the Federal Government with the support of the RBA. These goals are:

Strong and sustainable economic growth involves achieving the highest rate of economic growth possible, consistent with strong employment growth, but without jeopardising both price stability and intertemporal efficiency, as well as avoiding unacceptable external pressures, such as a build-up of 'bad' or unproductive foreign debt. The rate of growth in real GDP per annum that is considered both strong and sustainable is 3 - 3.5 per cent per year.

Full employment entails achieving the maximum growth in employment and the lowest level of unemployment possible without jeopardising price stability. This is often expressed in terms of the NAIRU or the non-accelerating inflation rate of unemployment. In the current context this is thought to be an unemployment rate of approximately 4.25%.

Price stability (also referred to as low and stable inflation) involves keeping increases in the general price level (as measured by growth in the Consumer Price Index) to between 2 and 3 per cent, on average, over time. This is the medium-term operational objective monetary policy, which has the endorsement of the Federal Government.

When these three macroeconomic goals are achieved simultaneously, **domestic economic stability** is attained. Indeed, the simultaneous achievement of these three macroeconomic goals will raise society's **living standards** in both material and non-material terms.

The macroeconomic goals are also supported by the use of aggregate supply policies that operate over a longer time frame. These policies seek to improve the willingness and ability of business firms to supply goods and services, increasing the total volume of goods and services available for sale in the economy and boosting the economy's capacity to supply (i.e. productive capacity).

Aggregate supply policies refer to any government policy action that is designed to reduce the costs of production and/or

improve supply conditions for business firms. Such policies increase the economy's potential level of output by making aggregate supply conditions more favourable and ultimately expand the 'speed' at which the economy can grow, over the long-term. These policies will typically include those government initiatives that seek to improve the quality and/or quality of the nation's productive resources, such as physical capital (e.g machinery and infrastructure) and human capital (i.e. labour). Examples of these policies include government initiatives that are designed to improve education and training in order to raise labour productivity; subsidising childcare to increase labour force participation; tax concessions for research and development expenditure; and removing outdated or cumbersome business regulations that will help to incentivise business activity.

Efficiency in resource allocation

The Federal Government also strives to promote an **efficient allocation of resources,** which entails all of the nation's resources being used in the production of goods and services in such a way that national welfare or living standards is maximised. This then implies that any change in the way resources are allocated from this point will result in a deterioration of national living standards. What is, or isn't, considered to be the most efficient allocation of resources for any particular nation largely depends on the values it places on various goods and services. For example, a nation that is highly materialistic is likely to value the highest possible production levels, regardless of the impact on the environment. Compared to another country that is more environmentally conscious, it will therefore tend to produce more carbon intensive forms of energy (creating greater levels of C02 emissions) relative to more environmentally friendly energy production (such as solar or wind energy).

Achieving the most efficient allocation of resources will typically imply that the economy has achieved 'efficiency' in all its possible forms. This includes allocative efficiency, productive efficiency, dynamic efficiency and intertemporal efficiency. Given the basic economic problem of relative scarcity it is no wonder that societies and economists are concerned with the efficient use of the economy's limited resources.

Study tip

In a first year microeconomics course, allocative efficiency has a much more specific meaning and is commonly described as the situation where production of goods and services occurs at a point where the marginal benefits of consumption equate to the marginal costs. An increase in production beyond this point results in marginal costs exceeding marginal benefits and any production below this point is sub-optimal because an increased production volume will yield positive net benefits.

Allocative efficiency

Allocative efficiency occurs when resources are used to produce those goods and services that best satisfy society's needs and wants. This means that the goods and services that provide people with the highest level of utility will be produced in the best possible way. Goods and services will be made in the right quantities and will go to those people who value them the most. When allocative efficiency occurs, no resources will be wasted, and it will be impossible to make someone better off without making someone else worse off. From a production point of view, the cost of producing a given output is minimised (or maximising the output from a given quantity of inputs) and from a consumption point of view, the goods and services produced by society will provide the highest level of 'collective' satisfaction. This type of efficiency is often defined in the same was as 'an efficient allocation of resources' described earlier, but can also have a more specific meaning that is beyond the scope of this text (See Study Tip).

Study tip

The Austrian economist, Friedrich Hayek argued that markets were the most efficient mechanism for allocating resources because they represented the individual decisions of millions of consumers and thousands of producers—the wisdom of crowds, if you like. Bureaucrats and politicians would never have enough information to allocate resources as efficiently. Hayek was essentially making the point that market capitalist economies are superior to planned socialist economies in allocating resources and maximising living standards.

It is this inherent ability of market capitalist economies to generally allocate resources efficiently, in an allocative sense that delivers the high living standards that has made market capitalism the most successful and dominant economic system worldwide.

Productive efficiency

Productive efficiency is also referred to as **technical efficiency** and entails maximising the output of goods and services from all available resources or factors of production. This implies that goods and services are being produced at the lowest possible cost. Technical efficiency could therefore be improved if workers and/ormachinery are able to produce more goods or services per hour worked (an increase in labour productivity) or per machine hour used (an increase in capital productivity).

Dynamic efficiency

Dynamic efficiency is the speed at which resources are reallocated from one area of production to another in response to a change in consumer preferences or tastes. This implies that resources are highly mobile and easily interchangeable. To be dynamically efficient businesses must be adaptive and creative in response to changing economic circumstances. This may involve developing and using new technologies and/or being innovative with product offerings to be able to better meet the changing tastes of consumers. For example, during COVID-19, manufacturers of alcohol and cleaning products quickly adapted their production processes, reallocating their resources (e.g. labour and capital) to the production of hand sanitisers that was in short supply during the early stages of the pandemic.

Allocative, productive and dynamic efficiency are generally conditional on markets being competitive with no or low barriers to entry to markets, and the absence of powerful businesses with the ability to exercise **market power,** restricting output and raising prices to the detriment of consumers (technically referred to as firms abusing market power and eroding consumer surpluses). To illustrate, If there are high barriers to entry to markets (e.g. large set up costs as in mining or the requirement for government licenses as in banking), the incumbent businesses would not face the threat of new competitors entering the market in response to better profit opportunities. This would enable the incumbents to earn **abnormal profits** (or **supernormal profits**) in perpetuity. Such profits are above what is considered necessary to warrant ongoing participation in the market. Similarly, businesses would not face the necessary competitive pressures to use their resources as efficiently. For example, businesses will be under less pressure to extract as much output as possible from their inputs in an effort to reduce costs/prices in order to win over customers from rival businesses. Further, if there were only a small number of large businesses in a market (as opposed to numerous small businesses each with only a tiny fraction of total sales), they would be tempted to collude to restrict output, which raises prices and generates supernormal profits.

Given the detrimental impact of uncompetitive markets on allocative, productive and dynamic efficiency, the government seeks to promote competition through laws such as the Competition and Consumer Act (2010), which prohibits anti-competitive behaviour and is enforced by the Australian Competition and Consumer Commission (ACCC). This is explored in detail in Chapter 4.

Inter-temporal efficiency

Study tip

The environmental economist Herman E. Daly famously said "the economy is a wholly owned subsidiary of the environment, not the reverse". This quote highlights that long-term prosperity is intrinsically tied to the good stewardship of the natural environment.

Inter-temporal efficiency is achieved when resources are appropriately allocated between current consumption and future consumption. An idea that is closely connected to inter-temporal efficiency is sustainable development. According to the Brundtland Report:

> ***"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs".***

Therefore, the over-consumption of resources by current generations will jeopardise the living standards of future generations, and ultimately compromise inter-temporal efficiency.

Study tip

Market failures such as public goods, externalities, asymmetric information and common access resources are studied in detail in Unit 3.

However, even competitive markets can result in an inefficient allocation of resources. This situation is referred to as **market failure**, which occurs when the pursuit of self-interest by market participants such as consumers and businesses leads to an allocation of resources that does not maximise societal welfare and living standards. This is because self-interested consumers and businesses are primarily concerned with utility and profit maximisation respectively, rather than overall societal welfare. Types of market failure include public goods, externalities (as previously discussed in the section on incentives), asymmetric information and common access resources. In such instances, government intervention in specific markets is justified to address market failure.

A case-in-point are common access resources (CAR) such as air, forests and fish. CAR possess two characteristics that lead to market failure. Firstly, CAR are subject to rivalry in consumption, which means that one person's consumption reduces the amount of the resource that is available for someone else. Secondly, CAR are non-excludable, which means that anyone can utilise them without paying for them. Therefore, there tends to be an overconsumption of CAR because of the lack of excludability and the absence of prices. Thus, it stands to reason that economic agents acting in their self-interest will seek to exploit CAR before they run out, which perversely accelerates the depletion of these resources for everyone. This overconsumption of fish by current generations reduces the stock of fish available to future generations jeopardising inter-temporal efficiency. With future generations less able to satisfy their needs and wants, their living standards will be diminished.

A possible government intervention in the case of CAR is the use of regulations such as issuing fishing licences, imposing fishing quotas and size restrictions on the fish that can be caught, and policing this through the Coast Guard/Water Police. These interventions should curb the overconsumption of fish, and promote the sustainable harvesting of fish stocks. Ultimately, this supports the attainment of inter-temporal efficiency by providing this CAR for both current and future generations, effectively maintaining living standards over time.

Redistribution of income

The government will also aim to promote a more **equitable distribution of income.** The nature of market capitalist economies is such that they reward effort, personal betterment, risk taking, innovation, entrepreneurship and plain old greed. These attributes inevitably result in inequality in the distribution of income (and wealth). Given inequality is an inherent feature of market capitalist economies, governments seek to redistribute incomes in a fair but not equal manner, to ensure that all members of society can enjoy a dignified standard of living, and avoid absolute poverty. This is seen as a hallmark of civil and affluent society, and necessary for maintaining social cohesion.

To promote an equitable distribution of incomes the government maintains a progressive personal income tax system and provides means-tested transfer payments to financially support the most disadvantaged members of society. It also seeks to provide equality of opportunity through free and compulsory education, and schemes that provide people from certain backgrounds with better access to university to pursue higher education. An equitable distribution of income will be explored extensively in Chapter 10.

Review Questions 2.7

1. Describe the business cycle, and identify the main determinant of the business cycle in the short to medium-term.
2. Describe why government intervention to stabilise the business cycle is warranted.
3. Briefly outline how budgetary policy and monetary policy can be used to stabilise the business cycle.
4. Explain the three macroeconomic goals pursued by the government, and outline how they contribute to higher living standards.
5. Explain the difference between aggregate demand policies and aggregate supply policies.
6. Provide some examples of aggregate supply policies.
7. Describe an efficient allocation of resources.
8. Define allocative efficiency, and the role of markets and capitalist ownership in promoting allocative efficiency.
9. Define productive efficiency and its relationship to allocative efficiency.
10. Define dynamic efficiency and its relationship to allocative efficiency.
11. Analyse why uncompetitive markets can be detrimental to the achievement of allocative, productive and dynamic efficiency.
12. Briefly outline the role of the Australian Competition and Consumer Commission (ACCC).
13. Define intertemporal efficiency and its connection to sustainable development.
14. Explain why free (unregulated) and competitive markets can result in market failure.
15. Describe the market failure of common access resources, and how the government can intervene to correct this type of market failure.
16. Outline the notion of an equitable distribution of income, and describe why inequality in the distribution of income is a characteristic of market capitalist economies.
17. Identify two ways that the government can promote a more equitable distribution of income.

2.8 Multiple choice review questions

1. **Which of the following would be considered a negative externality?**
   a) Cigarette smoke inhaled by non-smokers in public spaces
   b) The Formula 1 Grand Prix in Melbourne promoting the city of Melbourne to international tourists
   c) Beautifying your home and the benefits this provides to your neighbours, both aesthetically and in terms of their property values
   d) The research and development done by the defence industry and its dissemination to other industries

2. **Which of the following combinations are not considered to be positive externalities?**
   i. **Abnormally high property prices enjoyed by homeowners located in the immediate vicinity of zoned, top performing public schools**
   ii. **The overall decline in car theft as a result of some car owners installing concealed anti-theft devices in their cars**
   iii. **The Formula 1 Grand Prix in Melbourne and the disruption it causes to local traffic**
   iv. **Loud music from a raucous party disturbing the neighbours' sleep**

   a) Statements i & ii.
   b) Statements i & iv.
   c) Statements ii & iii
   d) Statements iii & iv

3. **Which of the following government policies is most likely to address a negative externality?**
   a) Reduction in excise tax on petrol
   b) Abolition of national park entry fees
   c) Lowering rebates on the installation of solar panels
   d) Increasing fees on metered car parking spaces in the city

4. **Which of the following combination has the most potential to create a moral hazard?**
   i. **The decision by the Australian Government to guarantee bank deposits in the event of another Financial Crisis**
   ii. **Third party car insurance, which only covers the cost of repairs to the motor vehicle of the party who was not at fault**
   iii. **Comprehensive car insurance, which covers the cost of repairing the motor vehicles of both parties involved in a motor vehicle accident irrespective of who is at fault**
   iv. **The installation of video surveillance cameras in the workplace**

   a) Statements i & ii.
   b) Statements i & iii.
   c) Statements ii & iii
   d) Statements iii & iv

5. **Which of the following does not represent an increase in productivity?**
   a) Output remains unchanged but fewer inputs are used up in production
   b) Output increases but the same amount of inputs are used in production
   c) Output remains the same but more inputs are used up in production
   d) Output increases but fewer inputs are used up in production

6. **When compared with country B, people in country A are twice as productive at producing cars and three times as productive at producing computer software. According to the theory of comparative advantage**

   a) country A will not buy either cars or computer software from country B
   b) country A will buy cars from country B and sell computer software to country B
   c) country A will buy both cars and computer software from country B
   d) country A will buy computer software from country B

7. **Which of the following is not an example of a government action to reduce a negative externality?**
   a) Legislation to ensure that petrol has lower levels of harmful substances like lead
   b) The granting of a licence to Adani Mining Company to open coal mines in central Queensland
   c) Requiring commercial fishing companies to limit their catch so as to encourage sustainable fish stocks in Port Phillip Bay
   d) Providing tax incentives to companies who invest in research and development so as to make their products more sustainable

8. Which of the following is not considered an example of an aggregate supply policy initiative designed to increase productive capacity?

a) Lower interest rates
b) An increase in childcare subsidies
c) More spending on education and training
d) Reducing the regulatory burden on businesses

9. Which of the following is not an element of domestic economic stability?

a) Full employment
b) Low and stable inflation
c) An efficient allocation of resources
d) Strong and sustainable economic growth

10. Which of the following combinations are considered to be positive externalities?

i. Abnormally high property prices enjoyed by homeowners located in the immediate vicinity of zoned, top performing government schools
ii. The research and development done by the defence industry and its dissemination to other industries
iii. The Formula 1 Grand Prix in Melbourne and the disruption it causes to local traffic
iv. Loud music from a wild party disturbing the neighbours' sleep

a) Statements i & ii
b) Statements i & iv
c) Statements ii & iii
d) Statements iii & iv

11. With reference to the traditional economic viewpoint, which of the following assumptions is incorrect?

a) Consumers aim to maximise utility subject to a budget constraint
b) Consumers seek to derive the most satisfaction from the income at their disposal by buying those goods and services that reflect their preferences
c) Consumers act in the interests of others
d) Consumers make rational choices

12. Diminishing marginal utility generally means that

a) greater consumption of a good or services always yields more utility
b) each additional unit of a good or service consumed is a little less satisfying
c) the opportunity cost of extra consumption is always lower
d) products that are scarce will have a higher price

13. Which of the following is classified as a direct tax?

a) Goods and services tax
b) Personal income tax
c) Excise tax
d) Tariffs

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

a) dynamic efficiency
b) allocative efficiency
c) productive efficiency
d) intertemporal efficiency

15. Which statement regarding the use of aggregate demand policies is not correct?

a) Monetary policy will be tightened (higher interest rates) during the boom phase of the business cycle
b) Budgetary policy will become more contractionary during an economic downturn
c) Government spending is likely to fall relative to government revenue when the unemployment rate falls to very low levels
d) Monetary policy and budgetary policy will often be used in tandem to manage the business cycle

16. Non-material living standards are most likely to increase when

a) average incomes increase, thus improving access to goods and services
b) there are higher levels of production
c) people experience less leisure time
d) there is less congestion on roads

17. Which of the following is not considered to be an indicator of non-material living standards?
a) air quality
b) literacy and numeracy rates
c) general levels of happiness
d) Real GDP per capita

18. Which type of efficiency is closely related to the goal of strong and sustainable economic growth?
a) Allocative
b) Productive
c) Inter-temporal
d) Dynamic

19. Which of the following would be classified as a disincentive?
a) A production subsidy
b) A tax rebate
c) An advertising campaign
d) An indirect tax

20. Which of the following is least likely to be an example of an initiative that would reduce carbon pollution?
a) Subsidies to 'dirty' producers who agree to reduce emissions
b) The re-implementation of a carbon tax
c) Subsidies to 'clean' producers for further investment into renewable energy
d) A decrease in the research and development tax concessions available to businesses

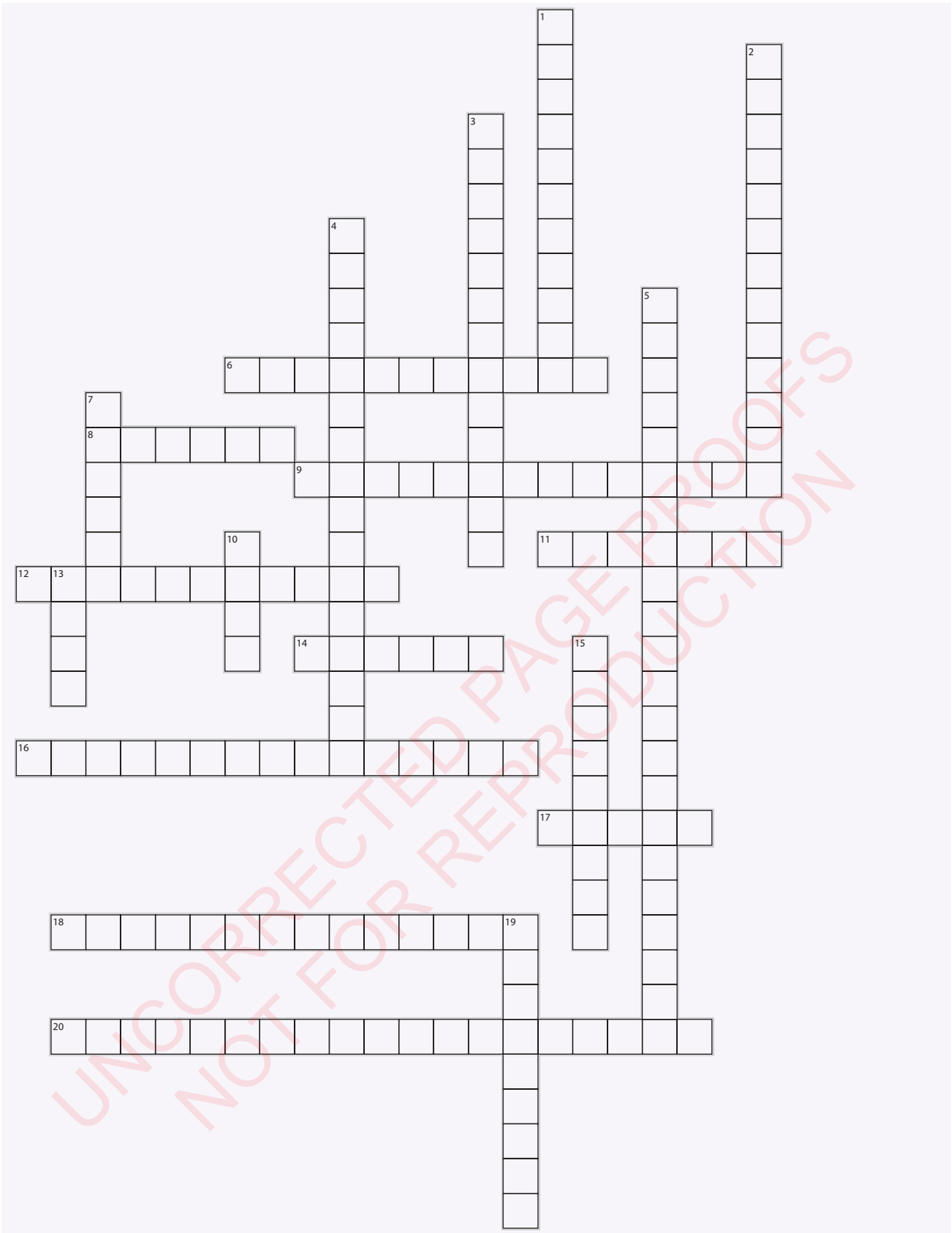
2.9 Chapter crossword puzzle

Across

6. The JobKeeper scheme implemented during the COVID-19 induced recession of 2020 is an example of this (two words)
8. A common form of incentive used by the government, where part of the original payment for a good or service is returned to the buyer
9. A Latin term meaning 'rational economic man' (two words)
11. A type of efficiency that involves resources moving swiftly from one activity to another
12. Where consumers act with considered self-interest
14. A tax on an import
16. The satisfaction that consumers gain from consuming an additional unit of a good or service (two words)
17. A measure of satisfaction, happiness or well-being
18. Consumers, businesses and governments are classified in this way (two words)
20. A principle that states that in market capitalist economies, consumers determine how resources are allocated by casting 'dollar votes' (two words)

Down

1. A situation where an economic agent has an incentive to increase their exposure to risk because it does not bear the full costs of that risk
2. The main variable that is manipulated when monetary policy is changed (two words)
3. The wave-like movement of economic activity over time, as measured by Real GDP (two words)
4. The fixed amount of income consumers have at their disposal to spend (two words)
5. A concept closely related to intertemporal efficiency (two words)
7. The difference between sales revenue and the costs of production
10. Another term for 'equitable' in the context of government efforts to achieve an equitable distribution of income
13. A statutory authority involved in policing competition laws
15. Something that induces an economic agent, whether a consumer or business, to act
19. An action taken by an uninformed party to induce an informed party to reveal information



2.10 Chapter summary

1. The traditional economic viewpoint of consumer behaviour is based on the idea of Homo economicus or 'rational economic man'.
2. Homo economicus strives to maximise their utility (or satisfaction) given their budget constraint, preferences and the relative prices of goods and services.
3. Consumers experience diminishing marginal utility from the consumption of goods and services and, therefore over a period of time will 'mix it up' by consuming different combinations of goods and services in order to maximise their total utility.
4. Contemporary economic thinking recognises that consumers are also influenced by a range of internal factors or factors that pertain to the individual and external factors or broader societal factors.
5. Internal factors include personality types, ethics and habit. External factors include culture, marketing and government.
6. With respect to personality types some people are 'status seekers' and will demand greater quantities of certain goods as their price rises because of their 'snob value'. Other people lack will power and make choices that they later regret. This is known as present bias or over valuing the present and undervaluing the future. Common examples include overeating, spending too much on credit, not saving enough for retirement, problem gambling and illicit drug taking.
7. With respect to ethics, people's consumption decisions are influenced by ideas of what is right and what is wrong. People who are ethical will make choices that are acceptable or highly regarded by society.
8. In terms of habit, people can be 'creatures of habit' and regularly purchase the same brands of goods and services because it takes very little cognitive effort.
9. Culture also influences people's decisions. Society's shared values, attitudes and beliefs have shifted over time. For example, tobacco consumption is largely frowned upon in modern Australia.
10. Marketing can also influence people's choices. The way options or propositions are presented or framed in advertisements can ultimately influence the choices that people make. Advertising can also be used to cultivate brand loyalty to make consumers less responsive to price increases.
11. Governments can also influence people's consumption decisions through laws, taxes, subsidies and other incentives. For example, governments seek to encourage the consumption of those goods and services that generate positive externalities or confer benefits on third parties or bystanders, such as vaccinations. This can be achieved through the use of subsidies or through direct provision free of charge.
12. Conversely, governments aim to discourage the consumption of those goods and services that generate negative externalities or impose costs on third parties or bystanders, such as second-hand cigarette smoke. This can be achieved through the use of taxes or laws prohibiting consumption.
13. Governments have also drawn on the lessons from Behavioural Economics and have used 'nudges' to subtly coax consumers into making better choices, such as eating healthier foods. Nudges employ framing to accomplish this goal.
14. Behavioural economics incorporates the insights from psychology into economics to enhance its explanatory power.
15. Behavioural economics includes three insights into how people make decisions: bounded rationality, bounded willpower and bounded self-interest.
16. Bounded rationality is the idea that people are satisficers. That is, they make decisions that are 'good enough' (as distinct from decisions that maximise utility) because of the availability of information, the complexity of decisions, the brains' cognitive limitations and time constraints..
17. A range of decision-making biases and errors, such as overconfidence, vividness, status quo, anchoring, herd behaviour, present bias and framing, mean that people are incapable of maximising their utility. That is, they are satisficers rather than utility maximisers.
18. Bounded willpower acknowledges that people have self-control problems in some aspects of their lives and thus can succumb to their urges, appetites and emotions when making consumption decisions.
19. Bounded self-interest is the idea that people care about fairness. That is, even though a deal or proposal might make them better off they will reject it if they perceive it to be unfair.
20. Consumers and workers can be influenced by positive and negative incentives. Certain products such as insurance can create 'perverse incentives' because of the problem of moral hazard. This is where the insured party is more likely to act irresponsibly or recklessly, as they know they are insured against any loss.
21. Incentives such as childcare subsidies, lower income taxes and less generous welfare payments can be

used to encourage more people to participate in the labour force.

22. Monetary incentives such as pay rises linked to productivity improvements and non-monetary incentives such as the recognition of employees' achievements can be used to boost workplace productivity.
23. Technology has had a major impact on consumer behaviour from the rise of collaborative consumption to online shopping.
24. The traditional economic viewpoint of business behaviour is based on the idea of profit maximisation. That is, businesses seek to maximise their profits by producing those goods and services that consumers value most and by producing them at the lowest possible cost.
25. Businesses, like consumers and workers, respond to positive and negative incentives, such as taxes, production subsidies, tariff reform and wage subsidies.
26. In more recent times, business goals have evolved to include other objectives such as sustainability, community involvement and gender equality. These goals are reflected in the concept of the 'triple bottom line' or 3BL. That is, the notion that businesses not only have a responsibility to their shareholders to maximise profits but also have wider responsibilities to society as a whole and the environment.
27. Advancements in technology are generally welcomed by businesses as they help to raise a business's productivity, lowering its costs and boosting its profits. It can also improve the effectiveness of its marketing helping to boost total sales.
28. Technology can be disruptive threatening the viability of traditional business models. A case-in-point is the rise of collaborative consumption or the sharing economy.
29. Price discrimination involves a business charging consumers different prices for the same product. It enables businesses to maximise revenue by imposing a higher price for 'high value' customers (namely those with the ability and preparedness to pay more) and a lower price to 'low value' customers (namely those unable or unwilling to pay a higher price).
30. Examples of price discrimination in action are quite common, and include discount tickets to events offered to pensioners or students.
31. Multibranding is defined as individual companies marketing their products under separate and distinct brand names. There are some common examples, such as the Coca-Cola company producing numerous soft drink brands (including Coke, Fanta and Sprite), Cadbury producing a number of chocolate brands (including Flake, Dairy Milk and Roses) and Kellogg's producing various brands of cereal (including Cornflakes, Special K and Rice Bubbles).
32. The Australian Competition and Consumer Act (2010) is designed to promote competition and eliminate any behaviour that is deemed to be 'anti-competitive' to the detriment of consumers and society more generally. It is enforced by the Australian Competition and Consumer Commission (ACCC).
33. Predatory pricing occurs when a company sets its prices at a sufficiently low level with the purpose of damaging a competitor, or forcing a competitor to withdraw from the market.
34. A cartel is defined as two or more businesses joining forces to maximise profits. It means that they agree not to compete against each other and instead develop joint strategies to manipulate the market at the expense of consumers.