Chapter 1
Fundamental Economic concepts

1.1 What is Economics all about?

Economics is a **social science** focusing on human behaviour and social interactions. Ultimately, it is about how individuals, groups and organisations choose to allocate their limited resources to achieve their goals and/or satisfy their needs and wants. It's about how these economic agents respond to various incentives and weigh up the costs and benefits associated with any course of action. At the core of Economics is the problem of **relative scarcity** [See Section 1.2], where our limited resources continually force us to make decisions about how they should or could be used. Importantly, the use of these relatively scarce resources is typically guided by considerations related to both efficiency and equity (fairness), and this changes over time as societies evolve.



Economics is all around us. Each person makes what might seem to be small and insignificant economic decisions, but when aggregated, these decisions are likely to have consequences that the original decision maker may not have considered. Economics therefore tries to explain the underlying factors that affect decision making, and analyses and evaluates the short-run and long-run consequences of these decisions. For example, one would hope that your on-going economics education will give you a better understanding of both the costs and benefits associated with your own decision making, as well as more insight into the different perspectives that can be held on various issues involving economic decision making.

As you continue to develop your knowledge of Economics, you may be faced with a number of key questions that economists have attempted to answer. Try to think deeply and creatively about possible solutions to some of these problems and create questions of your own. In some cases, the answers posited by economists may challenge your way of thinking. This is good for your learning and highlights the fact that economists often disagree, and are engaged in regular debate. By the time you have finished Units 3 and 4, you are likely to think differently about a number of issues and your decision making may be assisted as you develop a deeper understanding of the tools and theories used by economics.

Over time, economists have branched out into many areas of knowledge (some of which are beyond the scope of the VCE Economics course). Here is a sample of some of the questions and issues that economists have considered:

- How do consumers decide which goods and services to purchase?
- How do businesses decide what to produce, how to produce it and what prices to charge?
- How do technological advances, including Ai, influence the decisions made by consumers and businesses?
- Why do some workers earn significantly more than others?
- What determines the level of income earned by households, and why do some people experience unemployment?
- Why do the prices of goods and services rise and fall, and what causes inflation?
- Why do governments intervene in markets, and how does this intervention affect economic efficiency, equity and living standards?
- What determines the volume and pattern of international trade, and how does Australia's interaction with the global economy influence our living standards?
- Why does poverty persist, and why do some countries enjoy much higher living standards than others?
- How do governments respond to major economic disturbances, such as global pandemics, financial crises and disruptions to international trade?
- How can economies achieve higher living standards while managing the environmental consequences of economic activity?

Economics as a discipline often faces much criticism. The models developed by economists are often based on a number of simplifying assumptions and these lead to conclusions and decision-making that may, in some cases, not lead to the best outcomes for the majority of society. The economic theories that are presented throughout this book may sometimes conflict with your own experience and understanding of the world. You are encouraged to question the

nature of these theories and the assumptions that underpin them. Unlike a traditional science subject, the outcomes are not, for the most part, absolute facts, and critical thought and creative thinking are therefore encouraged in the study of Economics.

Microeconomics vs Macroeconomics

Many economics courses are divided into the study of microeconomics and macroeconomics. **Microeconomics** is the study of the economic behaviour of individual consumers as well as businesses. The first area of study in the Unit 3 course has a microeconomics focus. In this area of study, the role of markets and the price mechanism is discussed as well as the factors that influence buying and selling decisions.

Activity 1a: Macro or micro?

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

	Concepts/factors/events	Micro	Macro
1	A shortage of new motor vehicles caused by disruptions to the supply of essential components		
2	An increase in the inflation rate above the RBA's 2–3% target range		
3	An increase in the price of coffee following a poor harvest in major coffee-producing countries		
4	A decision by the RBA to increase the target cash rate to reduce infla-tionary pressures		
5	An increase in government subsidies for purchasers of newly con-structed homes		
6	A decline in Australia's real GDP over two consecutive quarters		
7	An increase in demand for EVs following a reduction in their purchase price		
8	A rise in Australia's unemployment rate following a slowdown in eco-nomic growth		
9	A decision to reduce the excise tax imposed on tobacco.		
10	A depreciation of the Australian dollar		
11	The closure of a local bookshop following increased competition from online retailers		
12	A reduction in Australia's aggregate supply following widespread floods that disrupt production across several industries		
13	An increase in the allocation of agricultural resources to avocado pro-duction following stronger consumer demand		
14	An increase in Australia's net foreign debt		
15	A decision by Woolworths to reduce the price of selected groceries to attract customers		
16	An increase in the Australian Government's budget deficit following a decline in taxation receipts and higher welfare payments		

Why don't economists agree?

Economists often disagree on key economic relationships and how various events might affect individuals or groups in an economy. At the time of writing, the world economy was experiencing slower rates of economic growth, combined with strong growth in the general level of prices (and therefore the cost of living) caused by a range of factors. These factors included the ongoing global conflicts (such as the war in Ukraine and tensions in the middle east), global supply chain issues, higher international shipping costs, the transition away from fossil fuels, ongoing natural disasters and stronger growth in government spending. Not surprisingly, there was much disagreement about how to best tackle the combined effects of these, and other factors.

Despite the healthy debate amongst economists about a wide range of contentious issues, there does seem to be some agreement among the majority of economists with regard to some key principles. A number of these key principles were explicitly stated by Gregory Mankiw, a Harvard Professor and former adviser to George W. Bush. Mankiw is the author of the best-selling economics textbook in the world. These principles are related to how people make decisions (1 -4), how people interact (5 -7) and how the economy as a whole works (7 -10). These principles are summarised in Table 1.1 and become a useful starting point for any discussion about the economy. The principles outlined by Mankiw reflect a well-accepted view of key economic conclusions, but not all academics (Economic or otherwise) accept these principles. You are encouraged to revisit this table as your knowledge of economics deepens.

Table 1.1 Mankiw's "Ten Principles of Economics"		
1	People face tradeoffs	In order to get something you like, you usually have to give up something else.
2	The cost of something is what you give up to get it	Whenever a decision is made the decision maker looks at the explicit costs but also include the value of what they have given up.
3	Rational people think at the margin	This is another way of saying that a rational person will do something if the extra benefit of doing so exceeds the extra cost associated with the action.
4	People respond to incentives	The behaviour of people will change when the costs and benefits associated with any action change.
5	Trade can make everyone better off	Trade allows people and countries to specialise in what they do best. By trading, a country's citizens are generally able to buy more goods and services and therefore increase living standards.
6	Markets are usually a good way to organise economic activity	In his 1776 book *An Inquiry into the Nature and Causes of the Wealth of Nations*, Adam Smith observed that households and firms interacting in a market act as if they are guided by an "invisible hand" that leads them to desirable market outcomes. Prices are generally seen as the way the invisible hand works its magic.
7	Governments can sometimes improve market outcomes	In some cases markets are unable to efficiently allocate resources (referred to as market failure). In these cases governments develop public policy to re-allocate resources to those areas that will maximise society's wellbeing.
8	A country's standard of living depends on its ability to produce goods and services	Income is derived from the production of goods and services, so producing a greater volume of goods and services will increase living standards. Increases in productivity will mean that more goods and services can be produced from a nation's resources thereby increasing income and living standards.
9	Prices rise when the government prints too much money	When the government creates large volumes of its money, its value will fall. If this is the case, and there are the same number of goods and services available, then it makes sense that more money will be needed to purchase a given good or service.
10	Society faces a short-term trade off between inflation and unemployment	Reducing inflation often results in a temporary increase in the unemployment rate because it may require policies that reduce the ability of consumers to spend.

As you proceed through this book and gain a deeper understanding of economics, keep Mankiw's principles in mind. Try to regularly reflect upon and question whether Mankiw's principles are able to accurately describe human behaviour and the economic outcomes you have observed yourself. For example, one notable ecological economist, Herman Daly, would argue that there is inadequate reference to the environment in **Mankiw's principles**, arguing that instead, these should be a key starting point for any discussion of Economics and economic decision making. Other economists, who question the **neoliberal model** presented by Mankiw, argue that his models oversimplify economic theory and omit the ways in which markets can degrade human well-being, undermine societies and threaten the planet. If you have studied Unit 1 Economics, you may also question the nature of the rationality principle as you will have investigated instances where humans make seemingly irrational choices (see Box 1.1).



One of the challenges of studying Economics is that economic theories, concepts and statistics are sometimes misunderstood, oversimplified or selectively presented in public debate. Politicians, commentators and the media may emphasise particular aspects of an economic issue while overlooking others, potentially creating a misleading impression. This can give rise to what is sometimes called 'econobabble' — the use or misuse of economic terminology and reasoning to make an argument appear more convincing than the evidence warrants.

As a student of Economics, it is important to develop the ability to evaluate the economic information you encounter critically. Consider the credibility of the source, the evidence supporting its claims, the assumptions being made and whether important information has been omitted. Where possible, seek alternative perspectives, particularly when examining contentious economic issues. Be cautious of simplistic solutions to complex problems and recognise that economic decisions frequently involve trade-offs, competing objectives and consequences that will often differ across individuals and groups.

Studying Economics therefore involves much more than memorising definitions and theories. It requires you to question assumptions, assess evidence, recognise competing arguments and apply economic reasoning to real world situations. While some economic questions have relatively clear answers, others involve uncertainty, differing interpretations of evidence and value judgements about what society should prioritise.

Although this may seem challenging at first, the rewards are considerable. As your economic literacy develops, you should become better equipped to distinguish sound economic reasoning from misleading claims, make more informed decisions and develop a deeper understanding of how economic agents (individuals, businesses, and governments) and economies interact to shape our lives and the world around us.

Box 1.1 Economists make assumptions



When economists develop their models and theories, they often make simplifying assumptions about human behaviour and the way variables might interact with one another. As we progress through the textbook, it might be useful to reflect upon and regularly challenge these assumptions to deepen your understanding of the relevant theories. You may also gain some insight into why it is often difficult for economists to make accurate forecasts and predictions. Four of the key assumptions that economists make are outlined below.

1. **Ceteris Paribus:** Economists often want to know how one variable (such as price) affects another (such as the demand for a particular product). As you discover in the next chapter, economic theory suggests that an increase in price will result in a decrease in demand for the given product. This relationship is made using the assumption ceteris paribus, which means that all of the other factors that might affect the decision to buy the product at a point in time are held constant. The ceteris paribus assumption is unlikely to reflect the real world but it helps to isolate key economic relationships. Econometric programs can test the validity of economic theories by isolating the effect of the two (or more) relevant variables.
2. **Rational economic decision making:** Economists also assume that humans are rational decision makers. This assumes that whenever a decision needs to be made, an economic agent will consider all of the relevant information and weigh up the potential costs and benefits. This assumption inherently implies that consumers (in particular), have access to perfect information and know exactly what they are buying. It might also suggest that humans are devoid of emotions and that they can process the information necessary to make the decision. Behavioural economists have devoted years of research to the questioning of this key assumption.
3. **Consumers are utility maximisers and firms are profit maximisers:** Many of the established models of economic behaviour (one of which will be covered in the next chapter), assume that individuals seek to maximise their utility. This means that they will, for example, purchase those goods and services that they believe will generate the highest level of individual satisfaction. The models also assume that firms will make decisions that maximise their profits (which is equal to their revenue minus their expenses). Inherent in this assumption also is that economic agents are acting in their own self-interest.
4. **Diminishing marginal utility:** The consumer is assumed to benefit from greater (rather than less) consumption of a good or service. This is why products may be described as goods (rather than bads!). It is generally assumed, however, that each additional unit of a good does not necessarily generate the same degree of satisfaction. Economists argue that the more of a good or service that is consumed per period, the smaller the increase in total utility (satisfaction) that is generated from the last unit. This is referred to as **diminishing marginal utility.**

1.2 Relative Scarcity: needs and wants

If you ask someone who may have studied Economics what it is about, they may initially struggle to provide you with a concise explanation. As we have seen in Section 1.1, there are a vast array of issues that could be considered in an economics course. Economics is often described as a subject about incentives, choices, and consequences. It is essentially focused on the management of a society's scarce resources to maximise a society's wellbeing. Most economics courses therefore start from the premise of **relative scarcity.** Something is seen as scarce when it is desired but access to it is limited. We start by making the (perhaps challengeable) assumption that our collective needs and wants can never be fully satisfied (they are therefore considered **infinite**). In contrast, the resources needed to meet all of our needs and wants have physical limits (they are therefore **finite**).



All economies face the problem of relative scarcity, no matter how wealthy or resource-rich they are. Therefore Economics studies how different **economic systems** attempt to allocate scarce resources (discussed in Section 1.3) to meet the needs and wants of their people. In fact, one could argue that the problem of scarcity is likely to get worse over time as more and more of the world's finite resources are consumed and the size of the human population increases.

Economists often distinguish between needs and wants when they discuss relative scarcity. A **need** is seen as good or service that is deemed to be necessary for one's survival. As societies evolve over time, what is considered a need by some individuals (in rich industrialised nations like Australia) may be seen by others as a want (those who may be living in a less developed nation like Zimbabwe). A **want** is therefore a good or service that is not necessary for one's survival, but consumption of which adds to the quality of one's life. Most would accept that food, water, clothing and shelter are needed for survival, but what about telecommunications services, electricity and healthcare? Are these needs or wants? Like many areas of Economics, there is no definitive answer and each person will express a different opinion on how they perceive each of these 'products'. The economic models that are discussed throughout this book are based on another key economic assumption; households seek to maximise their needs and wants through their interactions in the economy and that for most people, these needs and wants cannot be fully satisfied. In other words, as one need or want is satisfied, another will emerge in its place. For example, you might be about to each lunch, but you will need to access more resources tomorrow and the next day, etc.

Economics as a discipline tries to improve the experience of humanity by seeking (constantly) to overcome the problems created by relative scarcity. Scarcity makes it necessary for economic decision making to allocate resources to best meet the needs and wants of society. Economic agents cannot have everything they want and usually have a limited income they can use to meet their desires. They also cannot work 24 hours per day and therefore need to allocate their scarce labour resource to that area of production that a) is within their skills set and b) will maximise their wellbeing (which may include, but is not totally limited to, the ability to purchase the goods and services that are available). Economics continually seeks to understand why humans make the choices they make and then tries to analyse the consequences of these choices for the economy as a whole and for a number of key stakeholders.

Study tip

Many of the theories and models that will be investigated in this course will be based on key assumptions. Assumptions are often needed to develop a theory and to explain key relationships between economic variables. While it might seem like an obvious assumption that 'needs and wants can never be satisfied' there will be some theorists and some individuals around the world who would openly question the validity of such a viewpoint. Therefore, as you progress through the course, pay particular attention to the assumptions that are explicitly stated and how these might affect the validity of economic predictions. [Also see Box 1.1 'Economists make assumptions']

1.3 Resources and the key economic questions

An **economy** is a place where scarce resources are allocated among competing uses. Economists distinguish between three main types of **resources** that can be used to produce goods and services to meet the needs and wants of the people on the planet. For this reason, they are also referred to as **factors of production**, where the quantity and quality of these factors of production has a big impact on national living standards or welfare. The three factors of production are as follows:

- **Land or natural resources** refers to all those resources that occur in nature. These can be **utilised** 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 ultimately depends on natural resources.

- **Labour** refers to the mental and physical effort by humans in the production process. For example, your teacher is currently exerting effort to provide you with an education and your doctor has to think deeply when presented with the challenges associated with diagnosing a patient. A construction worker may be involved in more physical effort than some other professions. In some cases people will become unemployed or leave the labour force (covered in Chapter 5) and may therefore be unable (or unwilling) to contribute their labour resource to 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. 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 natural resources can be converted into end-use products for consumption. Examples of physical capital include machinery, tools, factories, infrastructure and artificial intelligence.

In some texts you will see reference to a fourth type of resource (or factor of production) referred to as **entrepreneurship** or **enterprise**. This refers to the skills of those individuals who combine resources to produce goods and services. They take financial risks to establish enterprises and are extremely important to wealth creation for every nation. They not only include high profile entrepreneurs like Jeff Bezos, Gina Rinehart or Janine Allis, but include the owners of every small or medium-sized business in existence. This type of scarce resource typically forms part of 'labour resources,' given that entrepreneurs are providing their expertise or skills to the business sector of the economy.

Due to the existence of relative scarcity (limited resources and unlimited demands), all **economic agents** and all economies need to make choices. These choices can be guided by answering three key basic questions:

1. **What goods and services will be produced and in what quantities?**

All economies must decide on the different goods and services that should be produced. For example, the Australian economy produces more education services than it does television sets. Economic theories have been developed to explain why this occurs. In a predominantly market-based economy (such as Australia), the question of what and how much to produce is assumed to be answered through the interaction of demand and supply of independent self-interested consumers and producers. What to produce will also be affected by government decision making. For example, during the COVID-19 pandemic, the Australian Government purchased millions of faces masks to protect medical professionals, and later purchased millions of Rapid Antigen Tests to increase the likelihood that education services could continue to be provided. However, there were a host of temporary measures that were introduced which limited the production of goods and services, such as laws preventing live venues from opening and the forced closure of some 'high risk' manufacturing facilities (such as meat processing plants).

Study tip

A note about language. In Economics, you will come across a lot of new terms. One term you will see often is 'utilise'. Some students assume this is just a fancy way of saying 'use'. Technically, in Economics, we talk about 'utilising' our resources or 'capacity utilisation' to signify that we mean they are being used for some benefit or being used effectively.

Study tip

In Economics, we often use the expression 'economic agents' to refer to any entity (such as a person, household, government or business) that makes economic decisions.

2. **How will the goods and services be produced?**

This key economic question looks at the methods of production that are employed to meet the needs and wants of society. Producers need to decide on the degree to which the production process is labour intensive or how effective it might be to replace labour with technology, such as artificial intelligence. This decision is likely to be affected by the relative price of the resources. For example, some countries have an abundance of labour and lower wages which might encourage manufacturers to employ more people in the production process. Generally speaking, these decisions will be made by businesses to maximise their profits (another key assumption). How to produce will therefore be heavily influenced by the costs and benefits associated with different production methods. In some cases, the government will influence how goods and services are produced. For example, governments often require that firms alter their production processes to meet occupational health and safety standards. Alternatively, governments will typically legislate for minimum wages to apply across the country. These types of interventions will tend to increase the cost of labour relative to capital, and influence how firms produce goods and services.

3. **For whom will these goods and services be produced?**

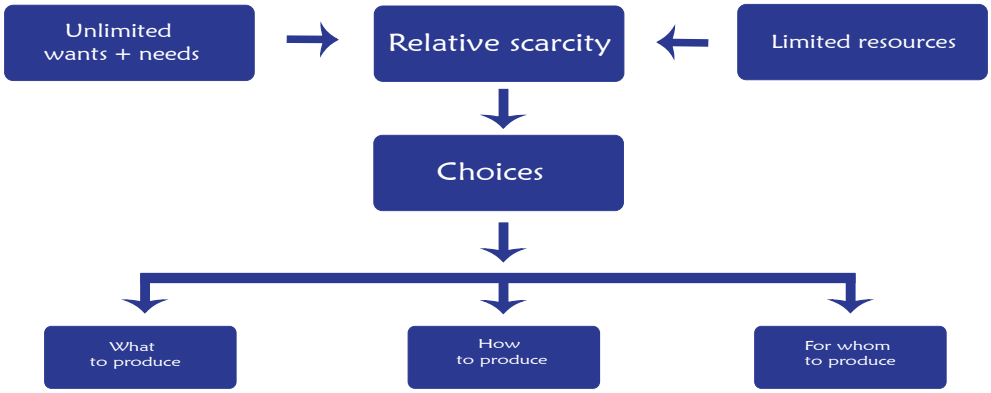
The final key question that all economies must consider is associated with the **distribution** of the benefits derived from production. Once the goods and services have been produced and made available for consumers, how might an economy decide who gets to enjoy them? Should the decision be based on the ability to pay or should need or social standing be a relevant determinant? The approach taken by economies when answering this question is the cause of much debate, and like many areas of economics there is not a definitive solution that will satisfy all relevant economic agents. In Australia, this question is largely answered based on who can afford to buy what is produced (which is affected by the value of their economic contribution to the production process). It is therefore heavily linked to markets. In most countries (and in varying degrees), the government will redistribute incomes (via taxes and transfers) to alter the access to goods and services as well as provide some essential items at reduced or zero prices. As you will discover in Chapter 3, the government will produce those goods and services that benefit society but may not be profitable for businesses in a free market (i.e. one without government intervention).

Study tip

In the VCE 3/4 Economics course, we focus on the role of the Australian Federal Government and how it influences resource allocation. In reality, all levels of government (which includes State and Local governments) play an active role in re-allocating resources to areas considered to be in the national interest. They influence each of the key economic questions, which is further discussed in Activity 1b.

Figure 1.1 highlights the core economic problem faced by all economies, characterised by an imbalance between our unlimited needs and wants and limited resources which results in scarcity and the need to make key economic decisions about how resources will be allocated. Box 1.2 refers to general options available to countries when deciding which economic system will deliver the best outcome.

Figure 1.1
Relative scarcity and choices



Box 1.2 Different systems used to allocate resources

Market capitalism: A market is any place that allows buyers and sellers to interact and exchange goods and services. This interaction and exchange may or may not take place in a physical space. A market system is therefore one that allocates resources based on the buying and selling decisions of consumers and producers. Prices give signals, which influence the behaviour of these buyers and sellers. Capitalism refers to an economic system where the majority of productive resources are owned by private individuals and firms. Capitalists will therefore use their assets to generate revenue which motivates them to provide the goods and services that are demanded.

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 is referred to as a planned economy. Socialism indicates that the majority of productive assets are state owned (owned by the people of the country collectively) and therefore no one can benefit excessively from producing 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 this system, the ownership of factors of production remains with private individuals, and so it continues to be called a form of capitalism.

Market Socialism: Under this system 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 1.1 - 1.3

1. **Explain why Economics is often referred to as a social science and describe the key elements of social sciences.**
2. **Outline why there exists disagreement between economists.**
3. **Outline why the predictions made by economists will often be different to the predictions made by other social scientists.**
4. **Define the term relative scarcity. Explain why this is such an important concept when studying Economics.**
5. **Discuss the concept of relative scarcity with respect to the time you have available to undertake all of the activities you want to complete today.**
6. **Distinguish between microeconomics and macroeconomics.**
7. **Provide examples and explain the importance of each of the 'factors of production'.**
8. **Identify the three essential economic questions that each economy seeks to answer. Using Australia as an example, explain how the economy might answer each of these questions.**

Activity 1b: Quick Thinking Activity?

Consider a dairy farm. Identify and classify factors of production that might be used to produce a range of dairy products.

Natural	Labour	Capital

Activity 1c: Housing shortages and affordability – scarcity, choice and the allocation of resources



Australia faces an ongoing challenge in providing sufficient housing to meet the needs and wants of its growing population. Strong housing demand, combined with constraints on new-home supply, has contributed to housing affordability pressures in many parts of the country. For some Australians, particularly younger people seeking to enter the property market, purchasing a home has become increasingly difficult. Others have experienced rising rents or have been unable to find suitable rental accommodation.

The housing shortage provides a useful illustration of the fundamental economic problem of relative scarcity. While Australians desire affordable, well-located, and comfortable housing, the resources available to meet these needs are limited. These include land, construction workers, building materials, machinery and the finance required to undertake new housing developments. In recent years, the construction industry has faced a range of challenges, including shortages of skilled labour, higher building costs and difficulties securing suitable land for residential development. These constraints can limit the number of homes that can be built, even when housing demand is strong.

The scarcity of resources means that choices must be made. For example, a parcel of land near a railway station could be used to construct apartments, a shopping centre, a public park or a new school. Choosing one use necessarily involves sacrificing the opportunity to use the land for another purpose. Similarly, construction workers employed to build new homes cannot simultaneously use the same working hours to construct hospitals, roads or other infrastructure. These decisions highlight the concept of opportunity cost, which is the value of the next best alternative forgone when a choice is made (see Section 1.4). The housing shortage also illustrates the three key economic questions that every economy must answer.

1. What and how much to produce: Should scarce resources be directed towards constructing detached houses, high-density apartments, social housing or other goods and services?
2. How to produce: Should homes be constructed using traditional building methods, prefabricated components or other technologies that may reduce construction time and resource requirements?
3. For whom to produce: Who should receive access to the available housing? Should housing be allocated primarily according to people's ability to pay, or should governments intervene to improve access for particular groups?

In a market-based economy, prices play an important role in allocating scarce resources. When demand for housing exceeds the available supply at existing prices, upward pressure on house prices and rents will typically result. Higher prices incentivise developers to build more homes, but they also make housing less affordable for lower-income households. Governments may respond by releasing additional land for residential development, changing planning regulations, investing in infrastructure, providing incentives for new construction or increasing the supply of social and affordable housing. However, these decisions also involve trade-offs. Government expenditure on housing, for example, involves a trade-off in the form of reduced expenditure on other services or higher taxation or borrowing. Ultimately, Australia's housing affordability challenge demonstrates that scarcity cannot be eliminated simply by increasing the supply of one particular product. Even if more homes are built, society must continue to make choices about how to allocate its limited resources among competing needs and wants.

Questions

1. **Define relative scarcity and explain how Australia's housing shortage illustrates this fundamental economic problem.**
2. **Identify three resources required to construct new housing. Classify each according to the relevant category of our scarce resources (factors of production).**
3. **With reference to the housing market, explain why scarcity makes choice unavoidable.**
4. **A government decides to use a parcel of land to build 200 new homes. Explain how this involves a trade-off.**
5. **Using examples, explain how Australia's housing challenge illustrates each of the three key economic questions.**
6. **Explain how an increase in house prices can influence both the allocation of resources.**
7. **Discuss how a government decision to increase spending on social housing could involve trade-offs between competing economic objectives.**

1.4 Choice and opportunity cost

If scarcity is described as the basic economic problem, then it is evident that not every need and want of humans can be met. The problem of scarcity has not yet been solved, even in the richest economies.

Economists argue that every decision that humans make involves a cost. By devoting this minute to writing these words, the author is intrinsically sacrificing their ability to allocate their time to their second-best alternative. While the authors see the writing of this book as their best choice, they also acknowledge that there is a cost in doing so (which is how economists tend to think). For example, the second best choice might be the design of a highly engaging lesson plan.

Study tip

When students are asked about the opportunity cost of a particular decision, they sometimes create a list of all the possible alternatives. Remember that the opportunity cost is only referring to the value or net benefits that would have been enjoyed if the next best alternative was selected. There is no need to mention the 3rd, 4th or subsequent choices as part of the answer. It is also important to remember that the value of the choice foregone is not the choice itself, but rather the net benefit that would have been gained by making that choice.

Whenever you are faced with a choice, there may be a myriad of alternatives available to you. Consider the allocation of your time on Friday night. You may be able to go to the movies with your friends, chat with a potential love interest online, eat dinner with your parents or sit in your room and learn more about the interesting theories developed by economists on human behaviour. Once you have made a choice, you have essentially foregone (given up) the ability to undertake the alternatives. However, economists are only interested in the second-best alternative when considering the **opportunity cost.** It can be defined as the value (or net benefit) that is being sacrificed, or would have been enjoyed, if the next best alternative was selected.

Consider your decision to read this chapter in preparation for your first assessment task at school. Assume that you have wisely decided that this is the 'best' use of your time. While you might not agree, the fact that you are actually reading these words is evidence that you have made this your first choice. In doing so, you may have sacrificed many alternatives such as those mentioned in the previous paragraphs. Let's assume that you are reading this book late into the evening so your second best choice may be getting a good night's sleep so that you can concentrate better in class tomorrow. By choosing to read the book, you may in fact be foregoing the benefits that are associated with deep restorative sleep. This is your opportunity cost – the **value** of what you have given up in making your choice.

Opportunity cost can be measured in a number of ways. Let's consider the decision to buy a new iPhone (even though your old one might still be working). A person with no background in Economics may think that the cost of the purchase is the price paid. A person who has studied Economics, however, will realise that the opportunity cost has not been fully considered in this buying decision. The person who foregoes $1500 to purchase the new phone may no longer be able to afford to take an overseas holiday. The benefits associated with this holiday is the real cost of the purchase, if this was indeed the next best alternative. If the person has a mortgage, then the opportunity cost might be the benefits associated with paying off their home loan sooner . It is important to remember that there can only be one opportunity cost, and that is the value or net benefits attached to the next best alternative that has been foregone.



1.5 The production possibility frontier

One way of illustrating the concept of opportunity cost and to show how an economy might allocate scarce resources, is to use a simple model of the economy called the **production possibility diagram** (or production possibility frontier or curve – PPF or PPC.) Given that an economy must decide what goods and service it will produce to satisfy its citizens' needs and wants, it would be reasonable to assume that there are an excessively large number of combinations of goods and services that could be produced in a nation. The combination that is ultimately chosen can be reflected using this simplified model. Whenever a combination of goods/services is produced using the available resources, it follows that another combination will no longer be achievable (i.e. there will be an opportunity cost).

Generally speaking, a production possibility diagram is a simplified model that looks at the **trade-off** between producing two particular goods or services. For example, we could assume that an economy could devote all of its resources to the production of goods or services (or a combination of both goods and services). The model could be simplified further

to show the decision to produce computers or guitars (or any other conceivable alternatives). The PPF could be used to illustrate a range of trade-offs including:

- The allocation of hours in a day between working and leisure activities
- How an economy allocates resources towards consumer versus capital goods (which might shift the PPF outwards)
- How a farmer allocates her scarce land between the production of strawberries and raspberries
- How an economy allocates its resources between goods that are harmful and those that promote wellbeing.

The simplest PPF model assumes that an economy can produce only two goods. When a PPF is constructed it is also assumed that:

- the economy has a fixed amount of land, labour and capital
- the resources are being used in the most efficient way to maximise production.

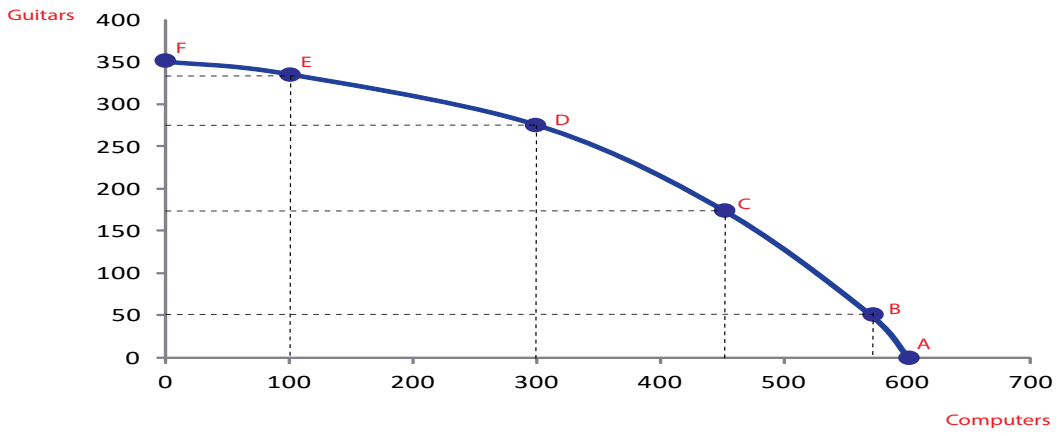
Table 1.2

Production combinations	Production of computers (units per year - million)	Production of guitars (units per year - million)
A	600	0
B	570	50
C	450	175
D	300	275
E	100	335
F	0	350

If the data above is transferred to a Production Possibility Frontier (PPF), then it would appear like Figure 1.2, with the production of guitars on one axis (in this case the y-axis) and production of computers on the other axis (x-axis).

The PPF highlights a number of ways that the economy could allocate its scarce resources. The economy can choose, for example, to allocate all of its scarce resources to the production of computers (at which point they would produce 600 million computers and no guitars). If they were able to achieve this point along the PPF then it is said that they have efficiently allocated their resources (using one measure of efficiency called technical efficiency which will be discussed in Section 1.6).

Figure 1.2: Production Possibility Frontier



The PPF indicates that any point could be chosen and in doing so there would always be trade-offs. Once a point on the PPF has been reached, the only way to move to another point is to give something up. For example, the economy could move from point A - where it was making only computers and the total output was therefore 600 computers- to point C - where it is now making 175 guitars, but only 450 computers. In making this shift – a reallocation of resources – the economy will gain 175 guitars, but in doing so it will no longer be able to produce 150 of the computers. This loss of 150 computers is the opportunity cost of producing the first 175 guitars. By producing more guitars and fewer computers, the economy has effectively changed its allocation of resources (there is a reallocation of resources because more land, labour and capital will be devoted to the production of guitars and less will be devoted to the production of computers when compared to point A). This could be due to a number of factors, many of which will be discussed in Chapter 2. In a **market capitalist economy**, the combination of guitars and computers that is chosen will usually be determined through

the interaction of demand and supply and therefore be heavily influenced by the needs and wants of consumers and the supply conditions that prevail in the market.

Important information to note about this PPF:

- A movement along the PPF to the right and downward means a country is allocating more to the production of computers and less to the production of guitars. To increase production of computers the economy must **sacrifice** the production of guitars. The opportunity cost of producing extra computers is therefore measured in terms of the lost production of guitars.
- Production points outside the PPF are not achievable today. This highlights the economic problem of relative scarcity and the need for choice. The economy simply does not have enough resources to reach a production point outside its PPF, since its PPF represents the maximum possible output using all its resources efficiently. However, an economy could manage to consume at a point outside its PPF if it chose to specialise in the production of one good, such as guitars and traded some of these in exchange for computers, which may be produced cheaper/more efficiently in another country. The economy may also choose to consume more than their economy is capable of producing through **external borrowing**, but this may be associated with lower consumption levels in the future. These options will be discussed further in Chapter 7.
- Over time, a country may expand its **productive capacity** and therefore the PPF will shift out and to the right. This would indicate that there can be an increase in output of *both* computers and guitars. This could be achieved if there are discoveries or availability of new resources that can be utilised in the production process (such as land, labour or capital), or people develop more efficient production techniques, whereby more output can be generated from the existing resources (the inputs). This will be discussed in Chapter 4.
- Points inside the current PPF indicate that the economy is not allocating its resources efficiently. It may also mean that some resources are either **underemployed** or **unemployed** (see Chapter 5) as the maximum potential production levels are not being attained.

In reality, no economy is likely to produce at a point on its PPF because all economies have some unemployment and labour (and other factors of production) will not always be utilised in the most efficient manner. The PPF can also be used to discuss the concept of efficiency and the different ways that economists can measure the efficiency of resource allocation. This is covered in Section 1.6 below.

Review Questions 1.4 - 1.5

1. Define the term opportunity cost and explain how it is intrinsically linked to the concept of relative scarcity.
2. Consider the decision to purchase a new car. Explain how an economist would include the concept of opportunity cost into their decision-making process. What might be the opportunity cost of such a decision?
3. Think of a critical choice you have made in the last week and describe the opportunity cost associated with making this decision.
4. Outline the possible opportunity costs associated with the following decisions:
   - purchasing a lottery ticket
   - eating an apple
   - going for a run
   - smoking a cigarette.
5. Explain how a production possibility diagram demonstrates the trade-off between producing two products. What are the key assumptions associated with the construction of such a model?
6. Refer to Figure 1.2, which highlights the production possibilities for a small hypothetical economy.
   a. If the economy moves from point A to point B, they can produce 50 guitars that were not previously possible. What is the opportunity cost of this decision?
   b. Describe the economic problem that might result if there was only demand for 100 computers and 200 guitars.
   c. An economy seeks to achieve the most efficient allocation of resources. In your own words, describe what this would mean for the hypothetical economy shown in Figure 1.2.
   d. If the people valued guitars and computers equally, what would be the most efficient allocation of resources for this economy?
   e. If the consumers of the economy wished to consume 500 computers and 200 guitars, how could the economy consume this amount? What problem might this create?

1.6 The nature and types of economic efficiency

This first chapter has focused on the nature of the economic problem and how economies attempt to answer the three key economic questions of *what to produce, how to produce and for whom to produce*. Ultimately the economy will need to allocate its scarce resources to produce the goods and services that best meet the needs and wants of its citizens. The **allocation of resources** that is achieved is therefore a discussion of where land, labour and capital are utilised in the production process and which particular combination of goods and services are produced by the economy. Should the economy produce more guitars or computers? Is land allocated to the farming of beef or soybeans? Do more people work in medicine or the farming of the land? These are key questions for any economy and economists are also interested how efficiently resources are allocated. They want to know not only if production is being maximised, but also whether efforts are being made to maximise society's wellbeing. Is the economy able to respond quickly to changing preferences and circumstances and does an emphasis on meeting the needs and wants of current generations come at the expense of future generations? Each of these questions can be evaluated by looking at the different measures of **efficiency** discussed below.



Allocative efficiency

The **most efficient allocation of resources** will be one that is able to maximise the satisfaction of the needs and wants of society. If resources are allocated efficiently, the goods and services that people gain the highest level of utility from will be produced in the best possible way (i.e. the right goods and services will be produced, using the most efficient production methods). Goods and services will be made in the right quantities and will generally 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.

While this ideal may never be achieved in reality, it is certainly possible to make assessments about whether resources are being allocated more efficiently over time. A reduction in waste or higher living standards for a society may be some of the indicators used to assess whether a society is allocating its resources more efficiently. It may also occur when markets clear and there is no shortages or surpluses of certain goods or services. With reference to Figure 1.2 earlier, only one point on the PPF will be considered **allocatively efficient**. This will occur when the allocation of resources chosen maximises society's wellbeing. In a market economy this will be determined through the interaction of demand and supply (which will be discussed in Chapter 2). Prices, which are assumed to be a measure of the additional benefits that consumers generate from each unit of consumption, provide producers with a valuable signal that can help determine where they allocate their scarce resources. It would be unrealistic to expect that any economy will be able to achieve allocative efficiency, but it provides a benchmark against which the current allocation may be measured.

Technical (or productive) efficiency

This type of efficiency is said to occur when it is not possible to increase output without increasing inputs (resources). Therefore the most **technically efficient** point of production occurs where productivity is at a maximum and where average costs are at a minimum. Technical efficiency could therefore be improved if workers are able to produce more goods or services per hour worked (an increase in labour productivity). With reference to Figure 1.2, it is assumed that all points on the PPF are technically efficient because all resources are fully employed and being utilised efficiently.

Dynamic efficiency

This refers to how quickly an economy can reallocate resources to achieve allocative efficiency or how quickly an economic entity can reallocate its resources from one activity to another. This type of efficiency therefore relates to the speed of adjustment and economists are interested in how quickly and how easily resources can be reallocated so that needs and wants can be maximised in any economy. With reference to the PPF, a dynamically efficient market would be one where the movement of resources from the production of guitars to computers could occur quickly if the demand for computers were to increase for some reason. This would require mobile resources and a flexible workforce whose skills are transferrable.

Because prices are often seen as **'sticky'** (i.e. slow to adjust) it takes some time before resources are reallocated to where they are best able to meet the needs and wants of society. For example, some markets may be dynamically inefficient because it is not possible to quickly reallocate resources. If there was a week of horrible weather that resulted in fewer people attending the movies, it would be very difficult for the movie theatre operators to change how they allocate their cinemas. They may still need to show the movie even if the cinema is half empty, which is not maximising output using available inputs. During the COVID-19 pandemic, it was evident that some businesses adapted much faster than others, switching from one area of production to another area that suddenly experienced an increase in demand. As mentioned earlier, some producers of alcohol were quickly able to alter their production process to meet the demand for hand sanitiser.

Successive Federal Governments from both sides of politics have encouraged flexibility in a range of markets to promote dynamic efficiency, for, by example, deregulating markets or removing subsidies that distort the price signals that alter the allocation of resources. Reforms to the way wages and conditions are determined in labour markets have also been designed to reduce rigidities that would otherwise slow down the rate at which organisations can respond to changing market conditions.

Inter-temporal efficiency



This type of efficiency focuses on balancing the allocation of resources between different time periods. Economic agents are increasingly concerned about how resources are managed not only now but whether they will be available to meet future needs and wants. If resources are consumed in excessive proportions by current generations then future generations may suffer a relative decrease in their living standards (therefore sacrificing allocative efficiency in the future). Alteration of the earth's delicate ecosystem due to our current actions, could also create greater problems associated with relative scarcity in the future. This may mean that a cost is being imposed on future generations and one could argue that this is not inter-temporally efficient.

An alternative way to look at inter-temporal efficiency is to look at the balance between the level of consumption and savings over a period of time. If inadequate savings are available in the current period, then investment opportunities may be sacrificed (the opportunity cost of excessive spending). Current investment is likely to create future consumption opportunities, so it is important for a country's long-term economic prosperity to maintain adequate levels of investment. If economic agents consume excessively in the current period by going into debt, then they may have to sacrifice future consumption because an increasing portion of their income will be devoted to servicing and paying off previously accumulated debt.

Given that the traditional economic models are based on rationality, one might also consider the consumption decisions made by individuals in terms of inter-temporal efficiency. A decision today to consume excessive volumes of alcohol (which might increase immediate utility) is likely to reduce utility in the future (both short run and long run). It might therefore be considered inter-temporally inefficient.

Study tip

When discussing the impact on efficiency of a change in economic conditions or government policy, try to focus on one or two of the types of efficiency discussed here.

Links between the different types of efficiency

There may in many cases be a complementary relationship between different types of efficiency. For example, if the economy is able to generate more goods and services at a lower cost, then it is likely that technical efficiency will be achieved. By producing more at the lowest possible cost, more goods and services can be attained which is likely to maximise society's needs and wants (i.e. improve allocative efficiency). A society that is dynamically efficient is also more likely to achieve allocative efficiency. When market conditions change, businesses need to respond quickly and if they are able to do so then they are more likely to maximise the needs and wants of society.

Achieving one type of efficiency, however, does not guarantee that another type will also be achieved. For example, an economy could be technically efficient by reducing costs and boosting productivity. But if this involves producing goods and services that nobody wants, then it will not be seen as allocatively efficient. Producing at the lowest cost might also mean taking shortcuts with safety and increasing the level of pollution that is emitted into the atmosphere. If more people are hurt in the workplace and there are higher levels of pollution, then this could be an indication that

society's collective satisfaction is not being maximised. Similarly a decision by the Federal Government to subsidise solar panels will help to promote inter-temporal efficiency because it will reduce greenhouse gases. Experts have agreed, however, that it might be one of the most inefficient ways for an economy to reduce carbon emissions. In this respect, the improvement in inter-temporal efficiency is not matched by an improvement in allocative efficiency.

Activity 1d: Types of efficiency

Examine the scenarios described in the left hand column. In the right hand columns, identify a kind of efficiency that is likely to be affected and identify if there is likely to be an improvement (↑) or a worsening (↓) of efficiency. In some cases, more than one type of efficiency will apply and you should be prepared to justify your choice(s).

Scenario	Efficiency type(s)	↑ or ↓
The government places an excise tax on all alcoholic beverages		
A factory replaces its workers with robots		
The RBA increases interest rates to slow down consumption demand		
Supply disruptions caused by government mandated lockdowns		
Students learn a range of competencies that allow them to work in a variety of workplaces.		
The government introduces a policy to make Rapid Antigen Tests free		
The Victorian Government bans the sale of puppies from "puppy farms"		
The Australian Government provides recommended daily water usage on water bills		
The government makes 'HECS-HELP' fees higher for Economics degrees and lower for Teaching degrees		
An increase in the number of fake news articles posted on social media		

Activity 1e: A link between food choices and efficiency



Much of Chapter 1 has focused on relative scarcity, choice and opportunity cost. Every choice we make has consequences, some of which may not be immediately apparent. Economists traditionally assume that consumers make rational decisions by weighing up the costs and benefits of different alternatives. However, consumers may have imperfect information or place greater importance on immediate satisfaction than long-term wellbeing. Our food choices provide a useful example of how individual decisions can influence economic efficiency.

Allocative efficiency occurs when resources are allocated to the combination of goods and services that maximises society's wellbeing. In a free market, consumers influence resource allocation through their purchasing decisions. However, these decisions may not always result in an allocatively efficient outcome. For example, consumers might purchase sugary drinks because they are inexpensive, convenient and enjoyable, without fully considering their potential long-term health consequences. Furthermore, some costs associated with diet-related illnesses may be borne by taxpayers through the public healthcare system. These external costs may not be reflected in market prices, potentially resulting in overconsumption and an overallocation of resources to these products. Nevertheless, consuming a sugary treat is not necessarily inefficient, particularly if the consumer is fully informed and the benefits of consumption outweigh the relevant costs.

Technical efficiency occurs when the maximum possible output is produced from a given quantity of resources, or a given level of output is produced using the minimum quantity of resources. Food choices can influence technical efficiency through their effects on workers' health and productivity. For example, persistent poor nutrition may contribute to fatigue, illness and absenteeism, reducing the quantity of output produced from a given quantity of labour and other resources. Alternatively, businesses may need to employ additional workers to maintain production levels. By contrast, a balanced and nutritious diet may improve concentration, energy levels and overall productivity, helping businesses achieve higher levels of technical efficiency.

Inter-temporal efficiency occurs when resources are allocated efficiently between the present and future to maximise society's wellbeing over time. Food choices made today can influence the availability and use of scarce resources in the future. For example, excessive consumption of added sugar over an extended period may increase the risk of developing chronic health conditions, including type 2 diabetes and cardiovascular disease. This could increase future healthcare expenditure and create an opportunity cost for governments, which may need to divert resources away from other services such as education and infrastructure. Poor health may also reduce future labour productivity and participation. Conversely, allocating resources towards nutritious food and preventative healthcare today may improve future health outcomes and reduce healthcare costs. The challenge is to balance the benefits of current consumption against its potential future costs.

Ultimately, food choices highlight the interconnected nature of the three forms of efficiency. Decisions that provide immediate satisfaction may have broader consequences for society's wellbeing, productivity and the availability of resources in the future.

Questions

1. **How does allocative efficiency differ from technical efficiency?**
2. **With reference to food consumption, explain how individual choices might lead to a decline in technical efficiency. What food choices might enhance technical efficiency?**
3. **Explain how imperfect information and external costs associated with the consumption of certain foods might lead to an allocatively inefficient outcome.**
4. **With reference to a particular type of food or drink, explain how current consumption decisions might lead to a decline in inter-temporal efficiency.**
5. **Evaluate whether a free market will achieve an allocatively efficient outcome in the market for food.**
6. **Discuss whether governments should intervene in food markets to influence consumer choices and improve economic efficiency. Consider at least one potential benefit and one potential limitation of government intervention**

Activity 1f: University Education: Weighing Up the Costs and Benefits?



As a Year 11 or 12 student, you have probably encountered advertisements encouraging you to attend university. These advertisements often emphasise the career opportunities, higher incomes and personal fulfilment associated with obtaining a degree. However, is university necessarily the best choice for everyone? Economists would argue that this decision requires consideration of both the benefits and costs, including the opportunity cost of pursuing further education.

One of the main benefits of a university education is the potential to earn a higher income over a lifetime. University qualifications can provide access to professions such as medicine, engineering and law, while also improving employment and promotion opportunities. Other benefits include personal satisfaction, the development of friendships and the acquisition of knowledge and skills. From society's perspective, university education can improve labour productivity, encourage innovation and contribute to economic growth. Research undertaken by universities can also lead to technological advances and new production methods, helping businesses improve technical and dynamic efficiency.

However, university education is expensive. While eligible students can defer tuition payments through the Higher Education Loan Program (HELP), they accumulate a debt that is generally indexed annually. In 2026–27, compulsory repayments commence when annual repayment income exceeds $69,528, with repayments calculated using marginal rates. Graduates may therefore spend many years repaying their education debt, potentially affecting their ability to save or borrow for major purchases.

Perhaps the highest cost is the opportunity cost of attending university. A student undertaking a three-year degree generally sacrifices the income they could have earned through full-time employment during that period. Other costs might include the stress associated with study, reduced leisure time and the possibility of graduating without securing employment in their chosen profession.

Rapid technological change, particularly the growing use of artificial intelligence (AI), adds further uncertainty. Some skills acquired during a degree may become less valuable as technology changes, while new employment opportunities may emerge. Alternative pathways, such as apprenticeships, vocational education, and direct entry into the workforce, may offer greater benefits for some individuals.

The decision also raises questions about the efficient allocation of society's scarce resources. Governments subsidise university education because it can generate broader economic and social benefits (positive externalities). However, if resources are directed towards courses that produce graduates whose skills are not in demand, some of this spending may be inefficient. Conversely, underinvestment in education may create skill shortages and limit future productivity and innovation.

Ultimately, the decision to attend university involves weighing up the expected private and social benefits against the financial costs, opportunity costs and uncertainty associated with different education and career pathways.

Questions

1. **Define opportunity cost, using a relevant example.**
2. **Identify and explain two opportunity costs associated with attending university.**
3. **Construct a T-table identifying the potential costs and benefits of university education for an individual.**
4. **Evaluate the view that government spending on certain university courses may represent an inefficient allocation of resources.**
5. **Explain how spending on university education might contribute to an improvement in technical efficiency.**
6. **Explain how spending on university education might contribute to an improvement in dynamic efficiency.**

Activity 1g: Buy now, pay later – what is the real opportunity cost?



The growth of online shopping and buy-now-pay-later (BNPL) services has made it easier for consumers to purchase goods immediately while spreading payments over several weeks or months. Services such as Afterpay and Zip allow eligible consumers to divide purchases into instalments, often without paying interest if repayments are made on time. However, does this convenience encourage consumers to overlook the opportunity cost of their decisions?

Imagine you are a Year 12 student earning $25 per hour from a part-time job. You discover a pair of sneakers online costing $200. Rather than paying the full amount immediately, you decide to use a BNPL service that allows you to pay four instalments of $50. The sneakers might seem more affordable when the purchase is divided into smaller payments, but the total cost remains $200, equivalent to eight hours of work before tax.

The opportunity cost of purchasing the sneakers is the next-best alternative forgone. This might be purchasing a different item, saving the money towards a car or using it to fund a holiday after your exams. Importantly, the opportunity cost is not necessarily the eight hours of work required to earn the money. It is the value of the next-best alternative sacrificed when making the purchase. Now imagine that you purchase several other items using BNPL services. Although each instalment appears relatively small, your future income becomes increasingly committed to repayments. This reduces your ability to purchase other goods and services, save money or respond to unexpected expenses. Late payment fees may also increase the overall cost of some purchases.

This raises questions about inter-temporal efficiency. By bringing consumption forward, BNPL services can provide immediate satisfaction and may help consumers manage their cash flow. However, excessive reliance on these services can reduce future consumption possibilities and compromise wellbeing over time.
The challenge is to recognise that delaying payment does not eliminate scarcity or opportunity cost. A rational decision requires consideration of both the immediate benefits of consumption and the alternatives that must be sacrificed, including those in the future.

Questions

1. **Define opportunity cost, using a relevant example.**
2. **Explain the opportunity cost associated with purchasing the $200 sneakers.**
3. **Explain why dividing a purchase into smaller instalments might encourage consumers to underestimate its opportunity cost.**
4. **Discuss how the use of BNPL services might improve or reduce a consumer's inter-temporal efficiency.**
5. **Discuss whether BNPL services help consumers make more rational economic decisions.**

Activity 1h: Shopaholics – opportunity cost and economic efficiency



In the film Confessions of a Shopaholic (2009), Isla Fisher plays Rebecca Bloomwood, a consumer whose compulsive spending on fashionable clothing leaves her heavily in debt. Her behaviour raises questions about whether consumers always make rational decisions by carefully weighing up the costs and benefits of their choices, including the opportunity cost.

Today, online shopping, social media advertising and buy-now-pay-later (BNPL) services have made it easier for consumers to purchase goods immediately, sometimes without fully considering the financial consequences. For example, a consumer who repeatedly purchases fashionable clothing using credit may enjoy immediate satisfaction but sacrifice the opportunity to save or purchase other goods and services in the future. Interest charges and late payment fees can further increase the financial burden, requiring a greater proportion of future income to be devoted to debt repayments.

This behaviour raises questions about inter-temporal efficiency, which occurs when resources are allocated efficiently between the present and future to maximise society's wellbeing over time. Excessive borrowing to finance current consumption may reduce future consumption possibilities and wellbeing. However, borrowing is not necessarily inefficient if the benefits of bringing consumption forward outweigh the associated costs.

The growing popularity of fast fashion also raises broader concerns about economic efficiency. The frequent purchase and disposal of inexpensive clothing requires significant quantities of resources, including water, energy and raw materials. Clothing production, transportation and disposal can also generate pollution, greenhouse gas emissions and textile waste. Where these environmental costs are not fully reflected in market prices (related to negative externalities, which are explored in Chapter 3), clothing may be overproduced and overconsumed, contributing to allocative inefficiency. Furthermore, the depletion of natural resources and accumulation of waste may reduce the

wellbeing of future generations, potentially contributing to inter-temporal inefficiency.
Ultimately, the example of excessive shopping highlights how decisions that provide immediate satisfaction typically entail significant opportunity costs and consequences that extend well beyond the individual consumer.

Questions (responses may be enhanced by watching the film mentioned in the case study)

1. Explain the opportunity cost associated with excessive spending on clothing.
2. Define inter-temporal efficiency.
3. Explain how excessive borrowing to finance current consumption might lead to inter-temporal inefficiency.
4. Explain why consumers might underestimate the opportunity cost of their purchasing decisions.
5. Discuss how the fast-fashion industry might contribute to both allocative and inter-temporal inefficiency.

Activity 1i: Business decisions – accounting profit versus economic profit

When making business decisions, entrepreneurs must consider not only their financial costs but also the opportunity cost of using their own resources. Consider a smoothie bar that sells 400 smoothies per day at $6 each, generating $2,400 in revenue. If the business incurs daily expenses of $2,000, its accounting profit is $400. These expenses are known as explicit costs because they involve actual payments, such as wages, rent and ingredients.

Economists calculate profit differently. They also consider implicit costs, which represent the value of the next-best alternative use of the business's resources. For example, an entrepreneur who runs their own business sacrifices the income they could have earned elsewhere. Similarly, if they own their business premises, they sacrifice the rental income they could have received from another tenant. Economic profit is therefore calculated by subtracting both explicit and implicit costs from total revenue.

Consider a graduate who establishes an Economics tutoring business and earns an annual accounting profit of $100,000. Their next-best alternative is employment as a teacher earning $105,000. Assuming that the forgone salary is the only implicit cost, their economic profit is −$5,000. The business is therefore making an economic loss despite generating a positive accounting profit. However, this does not necessarily mean the entrepreneur should abandon the business. Other factors, such as independence, job satisfaction and the potential for future growth, may influence the decision, depending on the value the entrepreneur places on each of these factors.

Questions

1. **Define opportunity cost.**
2. **Distinguish between explicit and implicit costs, using examples.**
3. **Explain how economic profit differs from accounting profit.**
4. **Use the following information to calculate the accounting profit and economic profit earned each week by a lawn-mowing business.**

Item	Per week
Services provided per week	25
Price charged per service	$50
Petrol expenses	$500
Advertising expenses	$250
Insurance expense	$12
Other expenses	$18



Additional information: The owner could earn $470 per week working in a local restaurant and has been offered $50 per week to rent their lawnmower to a friend. Assume these alternatives represent the next-best use of the owner's resources and that no other implicit costs exist.

5. **Based on your calculations in Question 4, evaluate whether the owner should continue operating the lawn-mowing business. Consider both financial and non-financial factors.**

Review Questions 1.6

1. Explain why governments seek to maximise the efficiency of resource allocation.
2. Distinguish technical efficiency from allocative efficiency.
3. Distinguish dynamic efficiency from inter-temporal efficiency.
4. Explain why a more technically efficient allocation of resources can boost allocative efficiency.
5. Explain why dynamic efficiency is intrinsically linked to the concept of allocative efficiency.
6. Explain why a more technically efficient allocation of resources may in some instances not lead to the achievement of allocative efficiency.
7. Explain why every point on the PPF is considered technically efficient, but only one point on the PPF is considered allocatively efficient.
8. Identify some factors that might promote a more efficient allocation of resources.
9. Explain, with reference to an example, why an increase in allocative efficiency might be associated with a decline in inter-temporal efficiency.

Multiple choice review questions

1. Relative scarcity is likely to be caused by:
a) A growing population
b) The depletion of non-renewable resources
c) Infinite needs and wants and finite resources
d) All of the above

2. The economic question of what to produce is least likely to be determined in a modern economy like Australia by:
a) The buying decisions of consumers
b) Surveys completed by market researchers
c) Changes in relative prices
d) Changes in the availability of key resources

3. Which of the following outcomes might be inconsistent with Mankiw's 10 principles of Economics?
a) A decision by a consumer to burn $10,000
b) A person considers the opportunity cost associated with learning economics
c) A country attempts to contain the rapid rise in prices, but this leads to a recession
d) The central bank prints money causing the general level of prices to rise

4. Resources are likely to be more scarce if:
a) There is an increase in the number of people retiring
b) Output per hour worked increases
c) Humans make better use of solar resources
d) There is increased use of recycled products

5. Which of the following is least likely to be considered a microeconomic investigation?
a) An investigation into the economic consequences for Australia caused by the war in Ukraine.
b) A discussion of the consequences of a cut in interest rates for the market for housing
c) An analysis of the impacts of an increase in excise taxes on the market for cigarettes
d) An analysis of exchange rate movements on the demand for education by international students.

6. The opportunity cost associated with building a new link between the Eastern Freeway and the Metropolitan Ring Road might include:
a) An increase in the number of deliveries that can be made per hour
b) A decrease in road congestion
c) The government no longer being able to fund the employment of more teachers across the country
a) An increase in the price of oil used to make the freeways.

7. The opportunity cost associated with dancing all night with your friends might be:
a) improved dancing ability
b) the loss of income from working all night instead
c) fatigue
d) the need to purchase new shoes

8. A country may experience an immediate shift of its production possibility frontier to the left if:
a) Net migration to Australia is negative
b) There is an increase in the participation rate
c) There is a new discovery of oil
d) There is an increase in the use of artificial intelligence in the production process.

For questions 9, 10 and 11, refer to the following production possibilities for a hypothetical economy producing only apples and beef (million units per year).

Production combinations	Production of beef (units per year - million)	Production of apples (units per year - million)
A	1 000	0
B	800	1 000
C	600	1 300
D	300	1 700
E	50	1 900
F	0	2 000

9. If the people of this country value apples twice as much as beef, then the optimal allocation of resources is:
a) Combination A
b) Combination C
c) Combination E
d) Combination F

10. If the country decides to increase its production of apples from 1300m units to 1900m units, then the opportunity cost is:
a) the production of 600m units of beef
b) the production of 300m units of beef
c) the production of 0m units of beef
d) the production of 550m units of beef

11. If the country experiences a bushfire that results in a fall in production to 500m units of beef and 0m units of apples, then this may create the economic problem of:
a) allocative inefficiency
b) unemployment
c) technical inefficiency
d) all of the above

12. Tastes and preferences in an economy change such that more people now prefer avocadoes to tomatoes. Dynamic efficiency is likely to be evident if:
a) the government has to introduce a tax on avocadoes
b) the government introduces new subsidies for those who produce tomatoes
c) more land is made available for the production of avocadoes in a short period of time
d) the supermarkets put tomatoes on sale every week

13. Inter-temporal efficiency is likely to improve if:
a) a tax is imposed on carbon emissions
b) the price of an avocado increases
c) the price of water decreases
d) the government reduces the excise tax on petrol

14. Technical efficiency is likely to increase if:
a) the price of education increases
b) there is an increase in the level of competition across markets
c) the government prevents the import of foreign fruit and vegetables
d) the tax on alcohol is reduced

15. An increase in the price of all university fees is likely to cause:
a) a decline in inter-temporal efficiency
b) a decline in technical efficiency
c) a decline in dynamic efficiency
d) all of the above

16. Which of the following is not a key assumption that economists make when constructing most of their models?
a) Economic agents are rational
b) Consumption of a good is associated with decreasing marginal utility
c) The relationship between two variables can be better determined by holding all other variables constant
d) Consumers do the best they can with limited information

17. Which of the following is not an example of capital resource for your school?
a) A teacher
b) An electronic whiteboard
c) A school building
d) A teacher's laptop

18. Which of the following might cause an economy to operate at a point inside its PPF?
a) A reduction in tax rates for all income earners
b) Reduced spending on vocational education and training
c) An increase in borrowing by households
d) An increase in export demand

19. A study of macroeconomics is likely to include:
a) an analysis of how an increase in income affects the demand for sausages
b) the degree to which households alter their spending on mobile phones when the exchange rate depreciates
c) an analysis of the causes of a world-wide recession
d) an evaluation of the effect of changes in child care subsidies on the market for child-care

20. Consider a PPF with consumer goods on the y-axis and capital goods on the x axis. Based on this information, which of the following statements is likely to be untrue?
a) A movement along the PPF to the right is likely to result in a shift of the PPF to the right in the future.
b) The citizens could consume at a point beyond the PPF if they borrowed from a neighbouring country
c) If the economy is operating at a point inside the PPF, there is likely to be unemployed resources.
d) The most efficient allocation of resources occurs when the economy operates on the x-axis.

Chapter summary

1. Economics is the study of choices; the factors that influence choice and the consequences of these choices for the individual and society.
2. Relative scarcity occurs because the demands on resources are assumed to be infinite but the earth can only provide limited resources to meet our needs and wants.
3. A need is a good or service that is essential for human survival.
4. A want is a good or service that is not necessary for survival, but which adds to the quality of one's life.
5. Economists distinguish between three main types of resources that can be used to produce goods and services to meet the needs and wants of the people on the planet – land or natural resources, labour and capital.
6. Land or natural resources are those inputs used in the production process that are acquired from the natural world and which may be used in a relatively unprocessed state or transformed into more elaborate inputs or products.
7. Labour resources represent the physical and mental effort of humans in the production process.
8. Capital resources combine a variety of natural resources and are developed by humans (labour) so that the production process is more efficient.
9. Microeconomics studies the behaviour of individual economic agents and markets, whereas macroeconomics studies issues that are related to the whole or larger parts of the economy.
10. Economists often disagree on a number of issues with regards to human behaviour and how economies will respond to different events and policies. A summary of the key principles that most economists agree with can be found in 'Mankiw's Principles' (Table 1.1).
11. All economies attempt to answer the three basic economic questions of what to produce, how to produce and for whom to produce.
12. The primary way that resources are allocated (and therefore how we answer the key economic questions) in the Australian economy, is via the market mechanism. This means that resources are used to make the goods and services that are most desirable for the end consumers.
13. Whenever a choice is made there is always a cost. The existence of trade-offs means that there will be an opportunity cost – the value of the next best alternative foregone.
14. A production possibility curve (frontier) is a simple economic diagram that models the choices available to citizens of an economy. It shows the combinations of two particular goods or services that could be produced using the available resources in the most efficient manner.
15. Opportunity cost can be illustrated using a production possibility frontier. Production of more of one of the goods involves the sacrifice of some of the other good because the resources are allocated from one area of production to another.
16. It is impossible for a country to produce at a point outside their PPF in the short term. Over time they may add to their resource pool through discoveries (which provides the nation with more land resources), improvements in the quality of resources, immigration (more labour resources), or find ways to use their resources more productively.
17. Any point inside the PPF represents an inefficient allocation of resources, as some resources will be idle. This will make it impossible to achieve technical and hence allocative efficiency
18. A country can consume at a point outside its PPF through trade or by borrowing.
19. Allocative efficiency is achieved when resources are directed to those goods and services that provide society with the highest end-use and maximises the benefit to society.
20. Technical efficiency occurs when the society is able to produce the largest volume of goods and services from their given factors of production. Technical efficiency is a prerequisite for allocative efficiency but does not guarantee that it will be achieved.
21. Dynamic efficiency can be improved when factors of production can be reallocated quickly following changing economic circumstances (such as changes in tastes and preferences)

22. Inter-temporal efficiency focuses on the balance between consumption today and consumption tomorrow. This type of efficiency looks at the impact of current economic activity on resource depletion, pollution and how savings and investment decisions made now affect future living standards and wellbeing. It may also be affected by consumption decisions today that can reduce one's quality of life in the future.

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