Topic 1: Identifying the Economic Problem

1.1 The Economic Problem

1. Nature of economics

Economics is about the material aspect of society, about goods and services that households consume, and firms produce. It teaches us how economic decisions are made and the consequences of those decisions. Economics investigates many questions. What economic forces shape our decisions? How do economic mechanisms operate? How are prices set? How much environmental improvement can we afford? Will an arts and comedy festival make a profit for a state? Economics studies how we decide, individually and collectively, what we want to produce and what resources we are prepared to use to get it.

Ecoterm

Economics is the study of how a society uses its scarce resources to satisfy its wants.

The economic problem

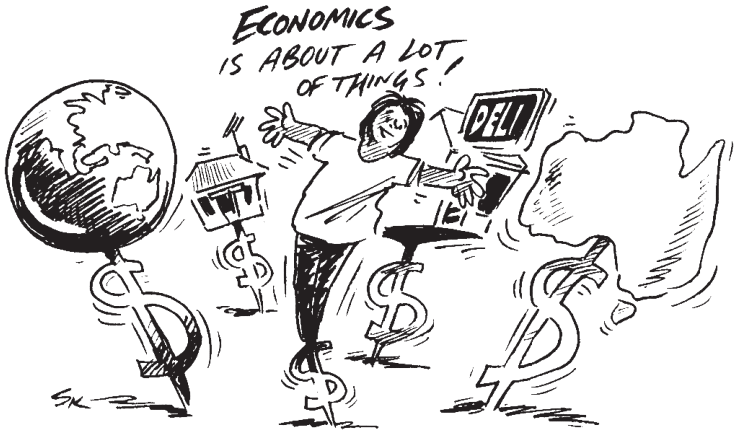
Each society wants an unlimited amount of goods and services. Individuals and groups consume goods and services to satisfy wants. However, the resources available to each society are scarce in comparison to the society's wants. This is the 'economic problem' faced by all societies and is discussed in the next section. Economics studies how societies solve the economic problem.

Economic decisions

Economics studies how basic economic decisions are made.

- How will we, collectively and individually, choose which of our wants to satisfy, since we cannot satisfy them all?
- What resources will be used in producing the goods and services we need to consume in order to satisfy these wants?
- What proportion of the society's total production of goods and services will be available to each individual and group?

These decisions are very important to us.



Economics studies how economic decisions affect individuals and groups. How will a decision by the Reserve Bank of Australia to increase interest rates affect households and businesses? Will Australian exports be affected? How can disadvantage be minimised? Not all economic decisions have such wide-ranging effects. Even a farmer's decision to remove trees or to graze stock on the banks of a creek will create benefits and costs for his own household, and for other businesses and households as well.

Social science

Economics is a social science. This means that it studies an aspect of society – the economic aspect rather than the legal, social, political or religious aspect – in a scientific manner.

It is about society – how humans behave, how we solve problems and how we organise ourselves. It seeks to explain, describe and analyse people's economic behaviour. It involves logical reasoning and conclusions based on factual evidence. It uses its own language with terms that are precisely defined, and the first task of the economics student is to learn this language and use it correctly.

Sciences involve experiments and economics is no exception. However, no laboratories are involved. To analyse the effects of economic conditions and economic decisions, we make use of thought experiments. These involve using models, or theories, to predict the effects of changes. Controlled experiments allow only one element to change at a time. For example, as the weather begins to cool after summer, and no other changes occurred in the market for air conditioners, we can use market theory to predict that their prices will decrease.

2. Models

Economists use models to explain economic processes and to analyse economic events. In a similar way, a plastic model of a heart is used in biology to study the heart. It shows its shape, size and components but it cannot simulate the heart's beating or a heart attack. Models are used in a similar way in economics because they are useful simplifications of the real world and help us to understand it. Economic models are usually in the form of a graph or diagram or are computer-generated. The price determining mechanism is one such model.

Experiments in economics are thought experiments rather than physical experiments, like those performed in test tubes, but it is still important to perform controlled experiments. By allowing only one variable to change, an economist aims for a reliable conclusion. The aim is to provide logical explanations of what can be expected to result from economic decisions.

3. The economic problem

We all face the economic problem in our daily lives and we are familiar with it. We would all like to have more than our resources allow. Relative to our unlimited wants, resources are scarce. Note that scarcity is relative. The sun's energy is not often regarded as scarce, indeed there is no price on it, apart from the cost of harnessing it, and so it is a free resource. However, most resources are not free, and their relative scarcity helps determine their price. The more a resource's availability is exceeded by our demand for it, the higher its price.

Ecoterm

The economic problem faced by every society is that wants are unlimited but resources are relatively scarce.

Each individual wants more goods and services than it is possible to have, ranging from the basic needs of food, clothing and shelter to goods and services that will improve our comfort, entertainment, self-image, and experiences. As our incomes increase, so do our wants, and even very wealthy people want more than they can afford.

Oil is a scarce resource. Petrol prices go up as oil becomes scarcer.

As well as individual wants, each group of people wants particular goods and services collectively. For example, Australians collectively want transport infrastructure (road, rail and air transport facilities), national defence, education services and so on. These too exceed the resources needed to supply them.

The economic problem applies to individuals, households, firms (businesses), communities such as local councils, states, and to whole societies. **Each nation's economy must make choices to decide which wants will be satisfied, and which resources will be used to make goods and service to satisfy those wants**.

Notice that economics deals only with material wants, rather than spiritual, emotional or intellectual wants such as justice, peace, love and happiness. Each society has a range of resources available to it for producing goods and services that will satisfy material wants.

4. Wants

Wants are material desires of individuals and communities, satisfied by the consumption of goods and services. Some wants are for essential goods and services but some we don't even know we want until we see them! Wants are unlimited. Once we have satisfied basic wants, others present themselves. Some change with fashion, others are habitual and still others are recurrent, such as the daily want for bread.

Some wants are individual, such as the desire to tell the time, or have a soft drink. Others are collective wants such as education or open spaces for recreation. Collective wants are the result of decisions by groups or communities. It may not be profitable for a firm to supply collective goods and so they are often public goods, provided by government. Publicly produced goods and services such as state schools and national parks are paid for with taxation revenue.

5. Goods and services

Firms produce goods and services. A good is a tangible object. People consume goods to satisfy wants. Examples of goods are a loaf of bread, a T-shirt, a house and a mobile telephone. A service is something that someone else does for you. Examples of services include a haircut, a doctor's consultation, a car wash and an economics lesson. If you go shopping for goods, you will carry something back home. If you go shopping for services, you carry nothing back. However, in both cases you have satisfied wants.

Economic goods

Ecoterm

Economic goods and services are those that have a price.

In economics, the term "goods and services" refers to economic goods and services. Free goods and services have no price. Swimming in the sea, breathing air, enjoying a landscape, drinking rainwater or soaking up sunshine are examples of consumption of free goods. These goods are available in sufficient abundance that all wants can be satisfied and no price is charged for them. In some circumstances, goods that are normally free attract a price. For example, using water from a mountain stream is free but using water from a tap is not. Tap water is an economic good. Environmental economics studies ways of imposing prices on goods that once were free but have been overused or abused with pollution. Fishing licences, air and water pollution taxes and River Murray irrigation charges are examples of pricing formerly free goods.

Consumer goods

Consumers buy final goods, and consume them – that is, they use them for their final purpose. Examples include food, entertainment equipment, cars and houses.

Consumer durables

Some goods last a long time and satisfy wants over a long period. They can be used many times until they need to be replaced or wear out or break. Houses, cars, boats, whitegoods and furniture are examples of consumer durables. Households often borrow to buy these goods.

Capital goods

Some goods are used in production of other goods. These range from plates used in a café to computers used in an office. Other goods are produced for use in production, such as machines and equipment. When goods are used by a firm to produce other goods, then they are capital goods. Capital goods may alternatively be referred to as **producer goods**, to distinguish them from consumer goods.

Intermediate goods

Intermediate goods are goods that still need further processing. They are manufactured goods, used in production of other goods. Examples include alumina, a partly processed aluminium ore, and a tomato. The alumina needs to be used in making aluminium, and the tomato needs to be cut or cooked to make bruschetta or sauce. Intermediate goods are capital goods as they are used in production.

Note that some goods can be either final or intermediate, depending on their purpose. In the case of the tomato, it is an intermediate good when it is used in production, such as an ingredient in tomato sauce. If it is bought by a consumer who then uses it in a salad, then it is a final good, not an intermediate good. What households do is not regarded as production, even if householders make their own salads or sauces, sew their own clothes, or clean. They are only regarded as production the household pays a firm to do these things.

Factors of production

Resources are sometimes referred to as factors of production, because they are combined together to produce goods and services, just as the factors of six, three and two, are combined, multiplied in this case, to make six. For example, a smoothie is made by combining fruit (a natural or land resource), milk and frozen yoghurt (intermediate, capital goods) by a café worker (a labour resource) in a blender (a capital resource).

6. Resources

Ecoterm

Resources are anything used by firms in the production of goods and services.

They are also known as the factors of production because they are combined together to produce goods and services. For example, to produce a tomato sandwich, bread, tomato slices and pepper are combined. However, these are not the only resources used. A person is needed to do the sandwich making. That person will use tools and equipment such as knives and a peppershaker, and probably a whole kitchen in the case of a café. Three main groups of resources can be identified – land, labour and capital resources.

Land

Land resources are defined as anything naturally occurring that is used in production. Examples include tomatoes, peppercorns, trees, fish, minerals and sunlight.

Refrigerators and food warmers are capital goods used in a tuck shop.

Labour

Labour resources are any human effort used in production of goods and services. Examples include chefs, managers, teachers and forklift drivers. Some texts discuss entrepreneurship as a separate resource classification. Entrepreneurship is the skill of combining resources to produce goods and services at a profit. In this book we will include entrepreneurship in the labour classification.

Capital

Capital resources are manufactured goods used for production. Examples include peppershakers, knives, buildings and textbooks.

7. Production possibilities curves

Ecoterm

A production possibilities curve shows the combinations of two products that can be produced by an economy with full use of all resources, using the best available production methods.

The model

We use this model to understand how the economic problem relates to a nation's productive ***capacity***. Resources, used to produce goods and services, are scarce relative to wants. The production possibilities curve (PPC) model, or theory, illustrates what level of production is possible when all resources are used and what happens when there is unemployment of some resources. It also illustrates the idea that increased production of one good or service can only be achieved if less of another good or service is produced, if no resources are idle.

The PPC model is represented by a two-dimensional diagram and so it assumes that the economy can only produce two goods or services, and that resources can be used to produce either product.

The curve

Ecoterm

The production possibilities curve represents an infinite number of combinations of two products that can be produced with existing resources, using the best available technologies.

The curve represents the economy's productive capacity, or potential production. Hence the term production *possibilities* curve. The economy must decide to which combination it will allocate its resources.

Every point *on* the PPC indicates a production combination for which all resources are fully employed using the best, known technologies. Hence each point on the curve represents the productive capacity of the economy.

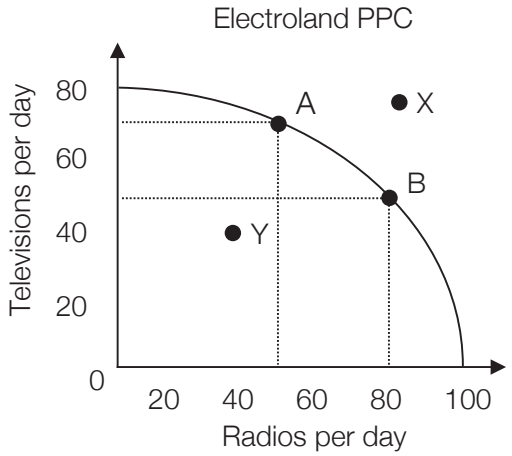


Figure 1.1

The imaginary economy of Electroland, represented in figure 1.1, will serve as an example. With its known resources it can produce only two products; either radios, televisions or a combination of both. The economy could produce

70 televisions and 50 radios per day at A, or 50 televisions and 80 radios per day at B, if it used all its resources and the best, known production methods.

The point Y represents unemployment of some resources because it is inside the curve. Only points on the curve represent full use of resources. From Y idle resources can be brought into production so that more radios as well as more televisions can be produced. For example, more radios can be produced without having to give up production of any television sets. In practice, economies operate inside their PPCs because there are always some productive resources not in use.

The point X represents the production combination of 80 televisions and 80 radios per day, a combination that is currently impossible as it is outside the economy's production possibilities. This is shown by it being outside the curve, with all points on the curve representing production combinations that are only possible when all resources are being used with the best, known technologies.

Three economic concepts illustrated

- The economic problem

The economic problem is that resources are scarce relative to wants. It is not possible to produce beyond the economy's capacity to satisfy all wants. Therefore it is necessary to make choices between possible production combinations. The PPC model illustrates this concept by showing that it is not possible to produce a combination represented by points outside the curve, such as the point X in figure 1.1, as there are insufficient resources.

- What to produce

The economy must choose to produce a particular combination of televisions and radios, such as A or B, in the diagram above. Only one combination can be produced at any one time. If more radios are produced, in response to consumer demand, then fewer TVs must be produced.

- Opportunity cost

Ecoterm

Opportunity cost is the value of the next best alternative given up by a decision to do something else

In order to produce more of one good, some of another good has to be given up. Because resources are too scarce to allow us to produce everything we want to consume, if we produce more of one good we must give up some production of another good. Note that this only applies if all resources are being used. If the economy is not producing at full capacity, as at the point Y in figure 1.1, using idle resources can produce more of each good and service.

The opportunity cost of a concert ticket might be a tennis racquet.

There is an opportunity cost associated with consumption, as well as production of goods and services. If an individual spends some of his income on one good, say a DVD, those same dollars cannot be used to buy anything else and so he must forego something, say a new T-shirt. Similarly, a person must decide between going to a football match or going to a party if they are on at the same time. The opportunity of choosing the football match is missing out on the party.

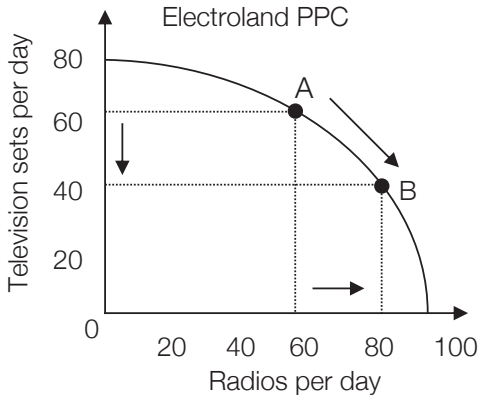


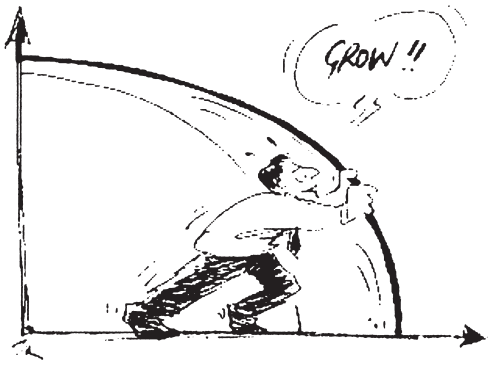
Figure 1.2

Opportunity cost is what we give up to gain something else. Figure 1.2 represents the production possibilities of Electroland. Assume Electroland is operating at combination A. The opportunity cost of producing 20 more radios (moving from combination A to B) is 20 televisions. Opportunity cost exists because, to produce 20 more radios, scarce resources must be diverted away from television production. Those resources cannot be used in both productions and so a choice must be made, and 20 televisions must be foregone.

Shifting the PPC

It is not possible to produce outside the PPC, at the point X for example, as explained above. In the long run, however, it is possible to shift the PPC outwards. To do this there must be either

- an increase in resources or
- an improvement in technology, or both.



Increase in resources

One way to increase productive capacity is to use new resources. New land resources can be grown or mined and new natural forces such as solar energy can be harvested. New capital resources can be produced. New labour resources come with immigration or natural population increase. For example, China's population is increasing by about 80 million people a year.

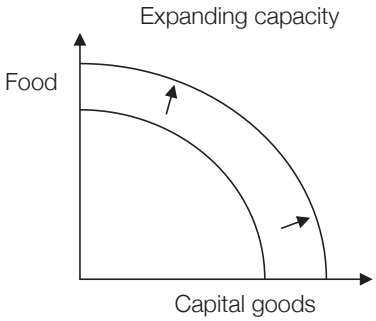


Figure 1.3

The other way is to improve the use of existing resources with better technologies. Think of technologies as ways of doing things, methods of production. If more production can be achieved with the same resources, through better production methods, the economy's production possibilities increase. Technology improves productivity, the output per unit of resources input. This simple but powerful concept is fundamental to understanding many current economic policies. For example, if a country's workforce is made more productive with better technology, the same number of workers can produce more goods and services, increasing productivity, that is increasing the efficiency of production.

Ecoterm

Productivity is output of goods and services per unit of resources input.

If either of these above changes occurs, production possibilities increase, and the increase is represented by the curve moving out. This is shown in Figure 1.3, representing an economy producing capital goods and food. More resources or better technology will allow more food and more capital goods to be produced. For example, an increase in the working age population will create more labour resources and these resources are used in production of both goods.

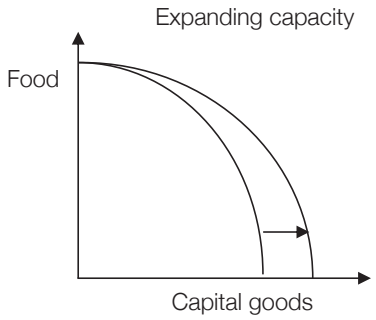


Figure 1.4

Increases in resources or improvements in technology will not necessarily increase production possibilities evenly throughout all industries. Some industries will be affected, and others will not. For example, a new deposit of iron ore will increase resources, increasing the economy's capacity to produce capital goods but not altering the possibilities of food production. This situation is represented in figure 1.4, showing the curve moving out on the capital goods axis but not the food axis.

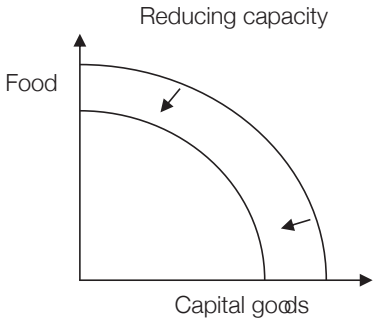


Figure 1.5

It is also possible that the production capacity of an economy could shrink. Warfare or a tsunami could destroy resources. In such a case, the production possibilities curve would shift inside its original position.

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Focus Questions

1. Define
   (a) economics.....
   (b) the economic problem.....
   (c) productivity.....
   (d) resource.....
2. Classify the following as individual or collective wants.
   (a) toothbrush.....
   (b) garbage collection.....
   (c) parklands.....
   (d) Adelaide-Darwin railway.....
3. Why do you think collective goods such as roads and defence are not often produced by private firms?

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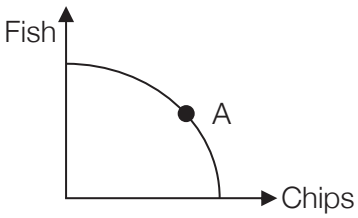
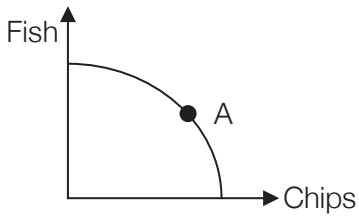
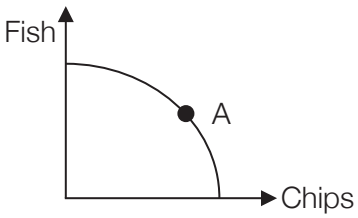
4. Classify the following resources as land, labour or capital and suggest a good or service it is used to produce.
   (a) economist.....
   (b) hammer.....
   (c) toasting machine.....
   (d) DVD recorder.....
   (e) wheat.....
   (f) bricklayer.....
   (g) solar energy.....
   (h) lawn.....
5. The diagram shows the production possibilities for Sandy Island whose economy produces two products, fish and chips. Draw three diagrams and draw a new **position** on each diagram to represent the changes described. Label your new point 'B'.



(a) Consumers decide they want more fish and fewer chips.

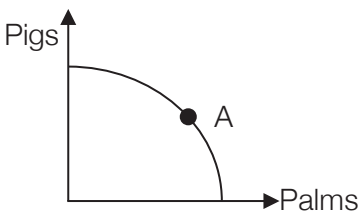


(b) Demand for chips increases.

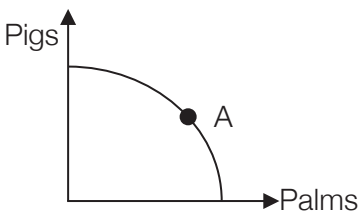


(c) Sandy Island has unemployed labour.

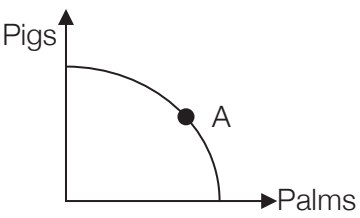
6. The diagram shows the production possibilities for the economy of Daydream Island that produces two products, coconut palms and pigs. Draw three PPC diagrams and mark a new **curve** on each diagram to represent the changes described.



(a) A cyclone destroys a lot of palm trees.



(b) The people of Daydream Island receive immigrants from Coral Island.



(c) Pigs are interbred with Coral Island pigs to produce litters of greater numbers of piglets.

7. Draw a diagram to show the opportunity cost concept and write an explanation in which you refer to your diagram by its labels.

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8. Write definitions of

   (a) A production possibilities curve.....

   (b) Opportunity cost.....

9. Draw four PPC diagrams for the economy of Cornucopia that produces two products, tin and sheep, and draw a new **position or curve** on each diagram to represent the changes described.

   (a) A disease kills large numbers of sheep.

   (b) New tin deposits are discovered.

   (c) Cornucopians decide to eat more meat.

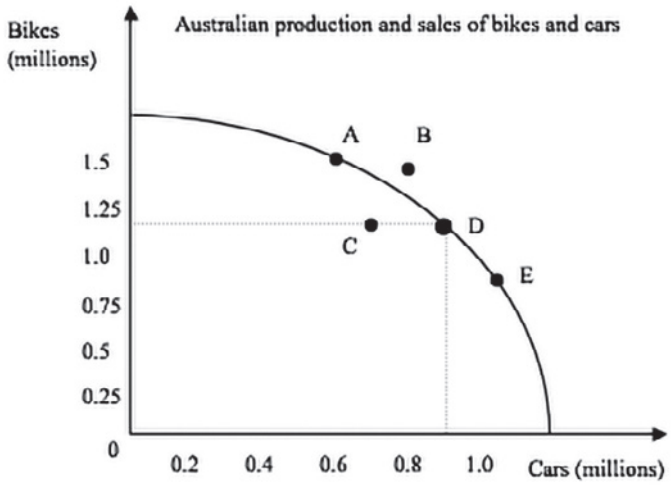
   (d) Reductions in unemployment occur in both industries.

Examination revision

City cyclists gear up

The number of cyclists on Australian city streets has been increasing each year this century. Census figures showed a 28 per cent increase in people riding to work in capital cities in 2008. And for the ninth consecutive year bicycle sales outrode car sales, with 1.2 million bicycles sold in 2008 compared with Australian Bureau of Statistics figures showing 86,772 new motor vehicles sold.

Refer to the diagram.



(a) A production possibilities curve shows an economy's

A actual production of two goods

B future production of two goods

C past production of two goods

D potential production of two goods

(b) Assuming the economy is using all its resources with the best available technologies, which of the positions, A, B, C or D best represents the 2008 production decision?

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(c) If neither the resources available or the production technologies changed, what would be the opportunity cost of increasing production of bikes from D to A?

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(d) Explain why the production combination represented by the point B on the diagram was not possible in 2008.

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1.2 Economic decisions

The problem of resource scarcity prevents satisfaction of all of society's wants. With this in mind we need to be aware that trying to satisfy one set of wants may be at the expense of satisfying other wants. The study of economics enables us to decide how we can best use our scarce resources to satisfy as many of our infinite wants as possible. The economic problem leads a society to ask three fundamental economic questions.

1. What to produce

Ecoterm

The what question is what goods and services will be produced, and how much of each

Each economy must decide what goods and services (and in what quantities) to produce. Somehow, these decisions must be coordinated in each society. In some, the government decides. In others, consumers' and producers' decisions act together to determine what the society's scarce resources will be used for.

In a market economy such as Australia, this 'to produce decision is made mainly by consumers, acting in their own interests to satisfy their wants. Their demands are met by firms seeking profits. For example, if mobile telephones are in demand it will financially benefit private firms to make and sell these. If nobody wants to buy black and white television sets, it is not worth producing them. If a producer makes a product that consumers do not buy in much quantity, there will be insufficient profit. The producer will have to improve the quality and change the product to suit consumer preferences. If the product is still not popular, the producer will probably stop making it. In this way, consumers get the products they want. This idea is referred to as consumer sovereignty. Consumers rule the what decision. They 'vote' for particular goods and services by spending dollars on those they prefer. Each producer needs to supply what consumers want in order to compete successfully against other producers.

Governments also play some part in making what decisions. For example, an Australian law requiring all cyclists to wear a helmet creates demand for cycle helmets, and profit-seeking firms will produce them. In an economy like Cuba or North Korea, governments make most of the what decisions.

2. How to produce

Ecoterm

The how question is what combination of resources will be used in production.

This decision is about the combination of resources to use to produce each good and service. In Australia, these decisions are usually made by firms that try to make their products at lowest cost. For example, banks have replaced most of their counter service people with automatic teller machines, EFTPOS (electronic funds transfer at the point of sale), telephone banking and Internet banking. These electronic methods of transferring money, using capital instead of labour resources, have reduced the banks' production costs.

In the 1950s dams were being built in China by thousands of people using buckets and shovels. At the same time dams were being built in America with the use of enormous earth-moving equipment. The first method of production, using a resource mix consisting of a little capital and much labour, is labour-intensive while the second, using a little labour and much capital, is capital-intensive. Each of these how decisions was made on the basis of the least cost combination of resources, and available technology.

Automatic teller machines replaced tellers in banks – a "How?" decision

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3. For whom to produce

Ecoterm

The for whom question is what share of the economy's goods and services each person will consume.

This decision is about who gets what share of the goods and services that the economy produces. for whom decisions make some people better off and some worse off. In Australia, the share of production that each individual and household can consume depends upon their income. Income is distributed according to the value of resources we have to sell. For example, a top tennis player will earn much more income than an economics teacher. (How fair is that?!) A top tennis player has a resource to sell that is scarce, and so a lot of people will pay a high price to watch. Teachers are not so scarce. The for whom decision can also be influenced by skills shortages, in which case firms will offer higher incomes to attract employees with scarce skills. Similarly, high wages may be needed to attract workers to remote locations, such as mines in the desert. Both of these latter two influences have been seen during the mining boom of the 2000s.

Remember that every choice involves an opportunity cost. If the Adelaide City Council decides to use a space to build a Convention Centre, the same space cannot be used for a public swimming pool. Production of a convention centre uses resources; in particular, it uses a scarce piece of central-city land. The use of those resources prevents production of an alternative good or service from the same resources. Producing one good or service incurs a lost opportunity of producing another. If the state government decides to use its resources to promote the production of warships, then it gives up the opportunity to improve health care. Individuals face opportunity costs too. If Hannah and Amelia decide to spend their income on concert tickets, they give up the opportunity to buy new tennis racquets.

Focus Questions

1. Give a personal example of opportunity cost.

2. Complete the table below by deciding which type of decision is illustrated by each example. Give a reason for your choice.

Example	What, how or for whom?	Reason
Tax changes favour middle and high-income earners.		
Banks provide electronic banking and reduce the number of bank workers.		
Digital video technology creates demand for digital video equipment.		
The SA Government charges an emergency services levy.		
Law requires smoke alarms to be fitted to all new houses.		

3. Explain the following terms:

   (a) Opportunity cost .....

   (b) Consumer sovereignty .....

   (c) The what question .....

   (d) The how question .....

   (e) The for whom question .....

4. Why do the world's best rock stars earn so much money? Write your answer in terms of the theory set out in the text about the "For whom" question.

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Examination revision

Woolies cut cage eggs

Woolworths has decided to reduce the number of cage-laid eggs it sells. In 2009 a spokeswoman for Woolworths said that, in response to customers, it would replace cage-laid eggs with barn-laid or free-range eggs. It would do so to follow the way customer-buying habits were changing.

(a) (i) Classify the Woolworth's decision as one of the following basic economic decisions

A What

B How

C For whom

(ii) Explain your classification in (i).

.....

(iii) Explain how the type of economic decision you named in (i) is made in the Australian economy.

.....

.....

(b) (i) Name one scarce resource used in the production of free-range eggs.

.....

(ii) Suggest why free-range eggs are more expensive than cage-laid eggs.

.....

(iii) Classify the resource you named in (i) as

A Land

B Labour

C Capital

(c) (i) Classify eggs as

A Economic goods

B Free goods

(ii) Explain your classification in (i).

.....