



### **The nature of economics**

- the economic problem – wants, resources, scarcity
- the need for choice by individuals and society
- opportunity cost and its application through production possibility frontiers
- future implications of current choices by individuals, businesses and governments
- economic factors underlying decision-making by:
  - individuals – spending, saving, work, education, retirement, voting and participation in the political process
  - business – pricing, production, resource use, industrial relations
  - governments – influencing the decisions of individuals and business

### **The operation of an economy**

- production of goods and services from resources – natural, labour, capital and entrepreneurial resources
- distribution of goods and services
- exchange of goods and services
- provision of income
- provision of employment and quality of life through the business cycle
- the circular flow of income
  - individuals, businesses, financial institutions, governments, international trade and financial flows

# Chapter 2

# INTRODUCTION



Overview  
02

In any economy, businesses use resources to make products, which are then sold to consumers of those products.

Economists classify those resources used by business into four different types, and taken together, call them the **factors of production** (because they are elements used in the production process). A payment is required by business for using each of the four factors of production, and the name of the factor, its meaning, and the return to the factor (the payment) are outlined in the table below:

Factor	Description	Return	Example
<b>Land</b>	Any natural resource, including land, water, air, wood.	Rent	Real estate
<b>Labour</b>	Effort of individuals	Wages	5 hours of a worker's time
<b>Capital</b>	Goods used to produce other goods - the produced means of production	Interest	A shovel or a loan
<b>Enterprise</b>	Entrepreneurial spirit, required to select and organise the other factors of production in order to create a business and products	Profit	Richard Branson

## Syllabus

production of goods and services from resources – natural, labour, capital and entrepreneurial resources

## Factors of production

There are four factors of production: land, labour, capital and enterprise.

## Capital goods

A good which is used to produce other goods and services. The produced means of production.

Whilst land, labour and enterprise are easily understood, a word about capital goods.

## CAPITAL GOODS

Capital goods are goods which are **used to make other goods** – for example machinery, tools or shovels. Whilst a factory uses real estate (land) and the time of workers (labour), it also uses equipment in the form of machines and it is this which we refer to as capital goods.

Confusion often arises in relation to capital goods because capital also includes money – in the form of loans or funds to the business. Indeed, this second element of capital is why the return to capital is called interest. In your Year 11 studies it is most often more useful to always think of capital goods as goods used to make other goods – called the **produced means of production**.



Link  
L8

## FACTORS OF PRODUCTION ARE OBTAINED IN FACTOR MARKETS

Goods are obtained in markets, which bring together buyers and sellers for the particular item. For example a flower market is a place which brings together buyers of flowers, and sellers of flowers.

For the first three factors of production (land, labour and capital) there are markets where they are obtained. For example the real estate market brings together buyers and sellers of land, the labour market brings together those wanting to work and those wanting to be workers, and the capital market provides a market for capital goods, and a market for capital as money.

These markets collectively are called **factor markets**, as they are markets for obtaining the factors of production. This is an important distinction from **product markets**. Products are what business produces using the four factors of production (like an iPod) and when the iPod is sold, it is sold in a product market.

This distinction between **factor markets**, and **product markets**, is important for both Year 11 and Year 12.

## FACTOR MARKETS AND THE YEAR 11 COURSE

The labour market (market for workers) and the capital market (market for money) are two very important markets in the economy. The government regulates those markets (intervenes in the market by making laws), which means it creates laws and administrative bodies to ensure efficient, stable, equitable functioning of those markets. The labour market is addressed in Chapters 8 and 9, and the capital market (also called the financial markets) is addressed in Chapter 10.

## RESOURCES ARE SCARCE

For each of the three key groupings of IBG, namely individuals, business and government, resources are **scarce**, which means limited. None of these groupings have unlimited cash, or other resources to use.

On the other hand, each of these three groupings of IBG have unlimited wants. An individual has unlimited wants for goods and services (**individual wants**). Collections of individuals in society have unlimited wants for some goods and services to be shared together like libraries and public transport (**collective wants**). Business has an unlimited desire for profit, and the citizenry have unlimited wants for the goods and services to be provided by government.

This nature of unlimited wants and limited resources is referred to as the **economic problem**.

## SCARCITY MEANS CHOICES HAVE TO BE MADE

Because resources are scarce (limited) this means that each of individuals, business and government need to make choices. For example, a consumer may have a choice between purchasing a new cricket bat, or instead purchasing four pairs of shoes. Further, groups of consumers may have a collective want - like a library to be shared between them.

Economists use special terminology in order to refer to the cost of making these choices, which is called **opportunity cost**.

**Factor markets** are markets for the factors of production: land, labour, capital and enterprise.

**Product markets** are markets for goods and services that have been produced using the factors of production.

12

**Syllabus**  
the economic problem – wants, resources, scarcity

the need for choice by individuals and society



Link  
L9

**The economic problem** unlimited wants and limited resources

**Scarcity** limited quantity of resources, leads to the economic problem.

## OPPORTUNITY COST

When a choice is made by any of IBG, the cost of making that choice is called the **opportunity cost**.

Importantly, opportunity cost is not measured in dollars, but is defined as the **alternate use of resources foregone as a result of making a choice**. It is what is given up by making the choice. Some examples are below for each of IBG.

	Choice	Opportunity cost of making the choice Alternate use of resources foregone as a result of making the choice
<b>Individuals</b>	Purchase a cricket bat	Four pairs of shoes
<b>Business</b>	Manufacture 10,000 cans of Coca-Cola	Manufacture 10,000 cans of Fanta
<b>Government</b>	Purchase a submarine	Build 4 new universities

### Syllabus

opportunity cost  
its application through  
production possibility  
frontiers

Opportunity cost  
the alternate use of  
resources foregone as a  
result of making a choice.



Video  
L10

## PRODUCTION POSSIBILITY FRONTIER GRAPHING OPPORTUNITY COST

For the entire economy, a choice is made as to how to use the available resources for production.

Economists (which now includes you) often use graphs to show, on a simplified basis, how various aspects of the world work. These graphs are called models. The first model you meet is called the **Production Possibility Frontier**.

The production possibility frontier demonstrates the principle of opportunity cost by assuming that an economy has a choice between making **just two goods**. It is not reality, but a model that assists development understanding. The economy can:

- use all the resources to produce the first good, and none of the second, or
- use all the resources to produce the second good and none of the first, or
- use all the resources to produce a combination of the two goods (both being lesser than the quantity that would be produced if that good alone were produced).

The possible combinations can be recorded in a table called a production possibility schedule (which is then later graphed to be called the production possibility frontier).

### Possible maximum production combinations of Good A and Good B using all available resources in an economy

<b>Good A quantity</b>	100	99	80	60	40	0
<b>Good B quantity</b>	0	2	5	15	29	30
<b>Unused resources</b>	0	0	0	0	0	0

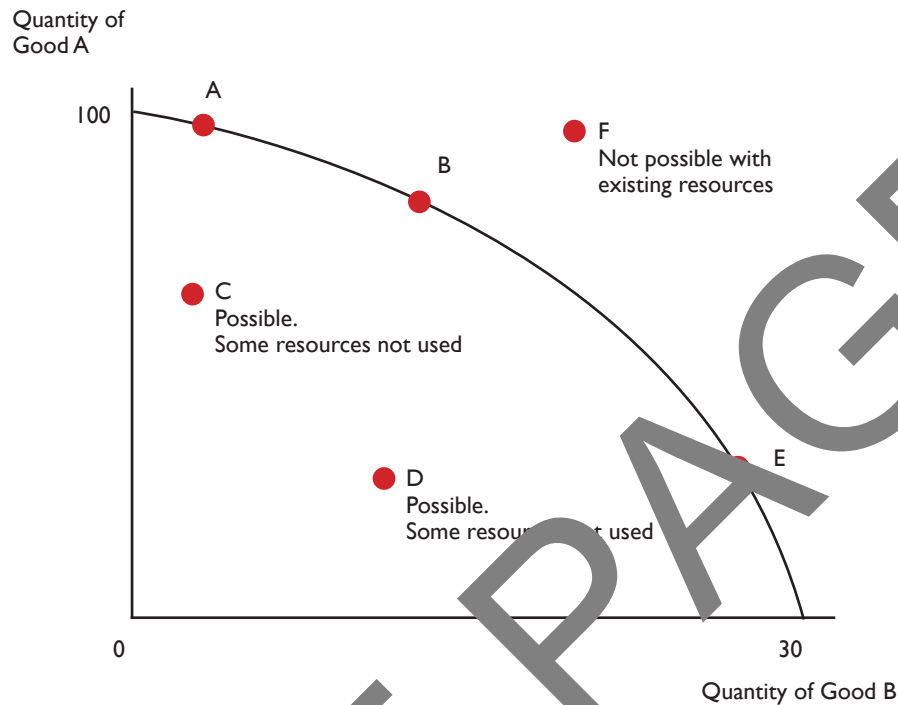
### PPF

A graphical representation of the maximum combinations of two goods which can be produced using all of the resources in an economy.



Video F21

**FIGURE 2.1: Production Possibility Frontier**



The line of the **production possibility frontier** (on which points A, B and E sit) is all of the possible combinations of producing the two goods using **all** of the resources in the economy. It follows that any point above the PPF (i.e. point F) is not possible as there are insufficient resources. Points beneath the PPF (for example points C and D) are possible, but because they are beneath the PPF, they indicate that not all of the resources in the economy are being used. In other words, there are unemployed resources in the economy if operating at a point beneath the PPF.

Some economies produce beneath the PPF as a result of some unemployment.

### MATHS USING THE PPF

The PPF is a graphical representation of opportunity cost. For example, in the graph above, the opportunity cost of producing 30 good B is 100 good A. This is because the possible combinations indicated in the graph are 30 B and no A, or 100 A and no B. The alternate use of resources foregone as a result of choosing to produce 30 of good B is 100 of good A (which is given up).

In addition to calculating the opportunity cost of 30 good B, one can also calculate the opportunity cost of **one** unit of good B. In order to produce one unit of good B it is necessary to give up  $100 \div 30$  good A. In other words, the opportunity cost of making one good B is 3.3 of good A.

On the other hand, one can calculate the opportunity cost of 100 good A as 30 good B, and the opportunity cost of one good A as 0.3 good B.

Note that the opportunity cost is **not measured in dollars**, but is the alternate use of resources foregone as a result of making the choice.

## SHIFTS OF THE PPF

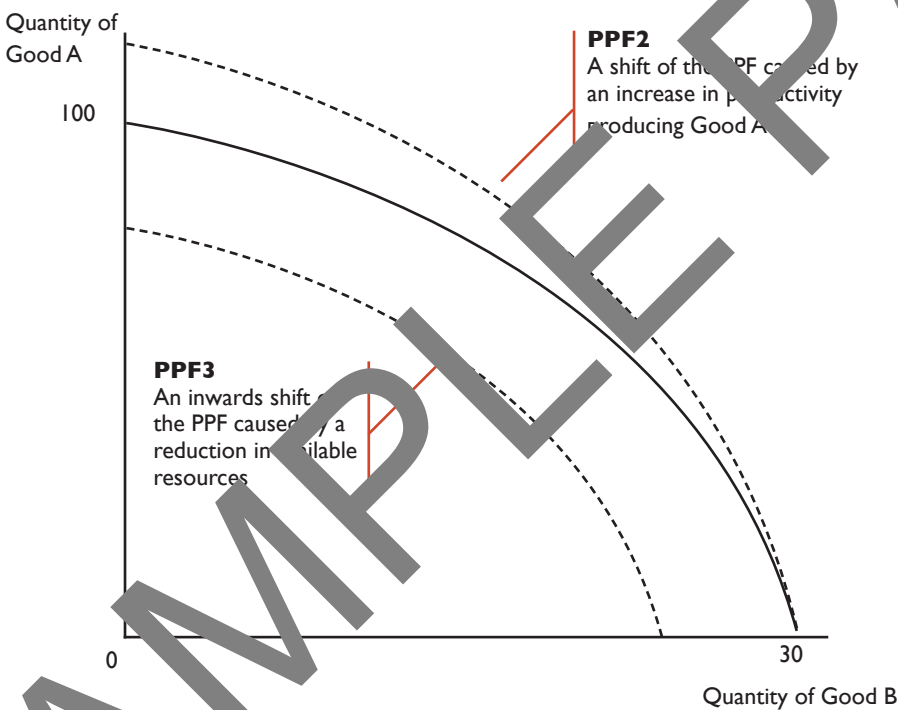
There are a couple of ways in which the PPF may shift (move). The first ways result from an increase in efficiency of production (called productivity), and the second ways relate to changes in the level of available resources in the economy.

### Shifts in the PPF caused by productivity improvements

Productivity is an important concept in both Year 11 and Year 12, and the definition of productivity must be learned as it is often used in short answer and essay questions.

Productivity is defined as **output per unit input**. For example, the number of t-shirts produced per labour hour. If productivity of producing one of the two goods in the PPF increases, for example as a result of technology improvements in the production of good A, then the quantity of good A that can be produced using the same resources will increase. However, the increase in productivity of producing good A will **not** affect the quantity of good B that can be produced. This increase in productivity then causes the PPF to shift out, but only in relation to good A (PPF2 below).

**FIGURE 2.2: Shifts of the production possibility frontier**



### Shifts in the PPF caused by change in available resources

Since the PPF is the maximum combinations of two goods that can be produced using all of the resources in the economy, if the available resources increase, or decrease, then the PPF will shift outwards, or inwards, respectively.

If resources decrease, for example as a result of resource depletion of non-renewable resources, then the PPF shifts in as indicated in the diagram (PPF3). If resources increase, as a result of new mineral or resource discoveries (land) or increased migration (labour) then the PPF will shift out. Importantly, where the amount of available resources (factors of production) increases then the PPF shifts out on both axes, unlike what happens when there is an increase in productivity in producing one of the two goods.

**Productivity**  
Output per unit input.

12



Video  
F22

**PPFs** are used in Year 12 in the context of environmental sustainability. Failure to address environmental sustainability can reduce available resources, with the result that the PPF in future shifts in, reducing future production.

12

### WHY THE PPF IS NOT A STRAIGHT LINE

The shape of the PPF is important – it is never drawn as a straight line.

This means that the opportunity cost across the PPF is not constant. That is, the opportunity cost of producing the first of good A is less than the opportunity cost of producing the last of the 100 units of good A.

This is because of an assumption made as to the **order in which the resources are used** when producing the good. The assumption is that the first goods produced use the resources which are **best suited** to making the good. So if an economy has timber, cement, fabric and glass, and good A is shirts, then the resources which will be first used to make the first shirt is the fabric. However, to make the 100th shirt, all that is left is some timber and glass – and a lot of timber and glass will be needed in order to try to create a shirt. In other words, the opportunity cost of the 100th shirt (that is the alternate use of resources foregone as a result of making a choice) will be greater.

### PRACTICE

1. Below is a hypothetical production possibility schedule.

<b>Cars</b>	150	9	1	0
<b>iPods</b>	0	5	48	50

- (a) Draw a PPF for this economy
  - (b) Calculate the opportunity cost of 150 cars
  - (c) Calculate the opportunity cost of 50 iPods
  - (d) Calculate the opportunity cost of 1 car
  - (e) Calculate the opportunity cost of the first car
  - (f) Calculate the opportunity cost of the last car
2. An economy produces meat and tables. Explain (using a diagram) the impact on the economy's PPF of an increase in the productivity of table making.  
An economy produces toys and shovels. Explain (using a diagram) the impact on the economy's PPF of increased migration.
  4. Explain why opportunity cost changes along the PPF.

### ASSESSMENT COMMENT

The construction and interpretation of PPFs, and calculation of opportunity cost, is a common feature of Year 11 assessment. In Year 12, whilst the language of opportunity cost briefly recurs in Topic 1, no opportunity cost calculations have occurred in the HSC examination.

## FUTURE IMPLICATIONS OF CHOICES TODAY BY IBG

In addition to shifts of the PPF as a result of changes in productivity, or changes to resources, the PPF may shift **in the future** as a result of choices which are made **today**. In other words, there are future implications for the PPF of choices taken today by each of individuals, business and government.

### Individuals

An individual today has a PPF, which reflects resources available to them – specifically their level of income. If the individual spends the income on education today (i.e. attending university) rather than on new clothes, or a holiday, then income in the future will increase and the PPF for that individual will shift out **in future**.

In other words, in the future the individual will be able to purchase more of both goods as a result of the decision taken today. Those decisions today will be influenced by a range of factors, including the desire to spend versus save, the desire to work versus spend time in education and the desire to retire or continue working. Individuals may also pursue and promote their interests through voting and participation in the political process.

### Business

Just like individuals, businesses also have a PPF, which reflects resources available to them.

If the business spends money today on new product development, rather than producing inventory of existing product designs, the resources available in the future (sales) will be different, and the PPF in the future will shift out. Those decisions today will be influenced by choices on pricing for products, decisions on levels of production, decisions on resource use (what factors of production to use in production) and choices on industrial relations (what pay and conditions to provide to workers).

### Government

The final of the three in IBG, government, also has a PPF.

If the government today spends more on education and less on defence, that may lead to an improved quality of the labour force, leading to more employment and business profits, which will increase the amount of taxes collected in future, which would increase the resources available to the government in the future.

This choice to increase education spending today may then lead to an outwards shift of the government's PPF in the future. Government decisions also have an important dimension of influencing the decisions of individuals and business - taxing activities, or providing subsidies for other activities, can influence the purchasing and production decisions taken by individuals and business.

### The Economy - Consumer goods and capital goods

In addition to the future impact on the PPF of decisions today by each of IBG, students should also consider the impact on the future PPF for an economy where the two goods on the PPF are consumer goods, and capital goods. If an economy changes production and produces significantly less capital goods (i.e. more consumer goods) today, this will result in a reduction in future productive capacity (as worn out machinery is not replaced) resulting in an inwards shift of the PPF in future. The opposite occurs where an economy changes production and produces significantly more capital goods, with the PPF in future shifting out.

#### Syllabus

future implications of current choices by individuals, businesses and government

#### Syllabus

economic factors underlying decision-making by IBG.

IBG is also a critical way of thinking and writing in Year 12, and is commonly used to structure essay responses or high value short answer questions.

## THE OPERATION OF AN ECONOMY

With this background in factors of production, factor markets, product markets, and choices being made by each of IBG, we can examine how these interact in the economy. That is, **how the economy actually operates**. The process of how an economy operates is detailed on the next page.

Essentially:

- Businesses, in factor markets, acquire factors of production (land, labour, capital)
- Using the factors of production, businesses produce goods and services
- The types of goods (what is produced), however, are really determined by consumers (business will not produce goods that customers have indicated they will not purchase. This concept is called consumer sovereignty – consumers as the kings – and is examined later in the course.)
- The final goods are then purchased by consumers in product markets
- To purchase the goods, consumers (individuals) use income received from businesses (for wages) and income received from the government (transfer payments)
- We count the total value of the **final** goods and services produced in a period, which is called **Gross Domestic Product**. Changes in GDP over time is called **economic growth**, or **GDP growth**.
- Over time the prices paid by consumers for goods increase. Increases in these prices over time is called **inflation**.

On the following page, ensure you can locate each of the following in the operation of the economy:

- Each of IBG
- Factors of production
- Factor markets
- Product markets
- Wages
- Social welfare payments, also known as transfer payments (pensions, unemployment benefits called Newstart)
- GDP
- Inflation

## FOUR QUESTIONS FOR EVERY ECONOMY

There are four key questions that must be answered in every economy. This applies for the Australian economy, the New Zealand Economy, and the economy of the UK. Those four questions, and who answers those four questions, are below:

Question	Answered by
1. <b>What goods</b> should be produced?	Consumers (individuals)
2. <b>How many</b> of those goods should be produced?	Business
3. <b>How</b> should the goods be produced (i.e. what factors of production should be used?)	Business
4. To whom should the goods be <b>distributed</b> ?	Incomes



Link  
L15

### Syllabus

provision of income

### GDP

Gross domestic product refers to the total value of final goods and services produced in an economy for a period. In Australia, the ABS measures GDP each quarter (three months) and each year.

### Economic growth (GDP growth)

The percentage change in GDP between two periods.

### Inflation

The percentage change in prices paid by consumers between two dates.

12

### The four questions

The four questions are a very important construct which repeats throughout the course. You should ensure you memorise these four questions as early as possible.

**THE ECONOMY**

Business acquires factors of production in factor markets and produce products (goods and services) which are sold to individuals in product markets. Individuals obtain income from firms, and also from the government.



**Factors of production**



**Factor Markets**



**1. WHAT gets made**  
(consumer sovereignty)



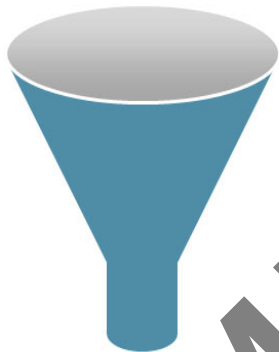
**2. How many will be produced**  
(economies of scale)



**3. How will be produced**  
(what factors of production)



**4. Distribution of goods**  
Who in society will be able to purchase the goods



**GDP**

Value of final goods and services produced for a period

**Economic growth rate**  
% increase in GDP between years

**Inflation rate**

Change in consumer prices over time



**Business**



**Product Markets**



**Individuals**

Income  
Salary/wages



Income  
Social welfare payments



**Government**

### QUESTION 1: WHAT GOODS WILL BE PRODUCED?

The first question in any economy is what goods will be produced with the limited resources (land, labour, capital and enterprise) which are available within the economy.

This question is determined by, or answered by, consumers. This follows because business will only produce the goods that consumers want to purchase. It will not be profitable for business to produce goods that consumers do not want to purchase. For example, Sony will not continue to produce one mega pixel cameras because consumers will now only purchase 10 mega pixel cameras. In economics, this is called **consumer sovereignty** (the word sovereign refers to being a king). In other words, the consumers are the kings, and determine what goods and services will be produced.

### QUESTION 2: HOW MANY GOODS WILL BE PRODUCED?

If consumers will purchase 10 mega pixel cameras, how many cameras will be produced in the economy? Here it is the second of IBG, Business, that determine the answer to the question.

As will be explained later in Chapter 5, businesses will produce the quantity at which their **average cost of production is the smallest**. This will maximise returns for the business.

So question 1 is determined by individuals (consumers), and question 2 is determined by business (firms).

### QUESTION 3: HOW WILL THE GOODS BE PRODUCED?

Business determines that their lowest average cost of production of 10 mega pixel cameras occurs when producing 400,000 units. The next question is how will they be made – what combination of resources (land, labour, capital and enterprise) will the business use to manufacture the 400,000 cameras?

This decision is also determined by business. Here they will select the combination of resources based both on their cost, and their productivity (which is the output level per unit input). The business will decide whether to use labour, or robotics, or other machinery in order to manufacture the cameras.

### QUESTION 4: HOW WILL THE GOODS BE DISTRIBUTED?

This final question in every economy often confuses students. Students, especially Business Studies students, see the words distribution of goods and assume that it relates to the physical shipment, or physical distribution, of goods in the economy. That is, they assume that the fourth question is about trucks, and is about ships.

This is wrong.

The final question in every economy is actually about **who gets to use the goods and services** – that is, to whom are the goods and services distributed. In an economy such as ours, goods are distributed based on people's ability to pay the price of the good (using money to achieve the exchange), which in turn depends upon their level of income. In this way, it is individuals' incomes that determine the distribution of goods in an economy.

Rather than exchange goods and services directly (called barter where a farmer exchanges two cows for a plough), the exchange of goods and services in an economy occurs through the use of money as a means of payment as it is much more efficient than barter.

As we will see, governments often intervene in how income is distributed in the economy in the form of pensions, family payments, disability payments and unemployment payments, which in turn makes the distribution of goods and services in the economy more equitable (fairer).

#### Syllabus

distribution of goods and services

exchange of goods and services



Video L18

### ECONOMIC OBJECTIVES

As well as answering the four common questions, every economy has the same overall economic objectives which can be considered as stacks of balancing rocks to understand the interdependence between them.

Economic objectives are fundamental to the Year 12 course. Specifically, they are in the syllabus in SAC Topic 4, however students need the concept throughout all topics in order to be high performing.

12

**GDP growth = Economic growth**  
Measured by GDP growth rate (% change in total value of final goods and services produced between two periods)

**Quality of life = economic development**  
Measured by UN Human Development Index

Environmental sustainability

Income distribution (Gini co-efficient of income inequality)



Current Account Deficit as %GDP

Net Foreign Liabilities as %GDP  
NFL = NFD + NFE

Net Foreign Debt as %GDP

Terms of Trade

International competitiveness

Currency stability

**Full employment**  
Measured by Unemployment rate  
$$\frac{\text{Unemployed}}{\text{Unemployed} + \text{Employed}}$$



CAD %GDP

NFL %GDP

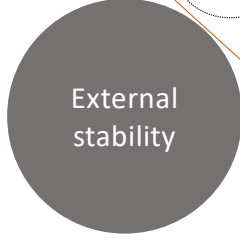
TOT

NFD %GDP

AUD

IC

**Price Stability**  
Measured by Inflation rate  
% change in consumer price index (CPI) over time (addressed later)



The financial relationship between Australia and the rest of the world.



### Objectives conflict

In addition to being interdependent (i.e. GDP growth needs internal stability and external stability), some of the objectives conflict. For example, as inflation gets worse, unemployment gets better and vice versa.

12

## ECONOMIC OBJECTIVES AS INTERDEPENDENT

As indicated in the visual representation, sustainable economic growth (GDP growth) depends upon an economy achieving both internal balance, and external balance. This means that if any of these elements are problematic (for example unemployment) this could threaten achieving the most important economic objective of GDP growth and quality of life for the citizens in the economy.

**You should practice drawing the representation of the economic objectives from memory, as it is an often used construct for analysis throughout the Year 11 and Year 12 courses.**

### Business cycle

Fluctuations in the level of economic activity.

## THE BUSINESS CYCLE

An increase in GDP, called economic growth, is the most important and central of the economic objectives. If GDP increases, this means that there are more goods and services available for the citizens in the economy.

The growth in GDP, however, is never a constant growth rate every year, but has cyclical (up and down) fluctuations (changes). As a result of human behaviour, the level of GDP has always been seen to evidence fluctuations: periods of growth, then periods of low growth or even negative growth – followed by a return of growth.

The business cycle is the terminology used to refer to this characteristic of economies.

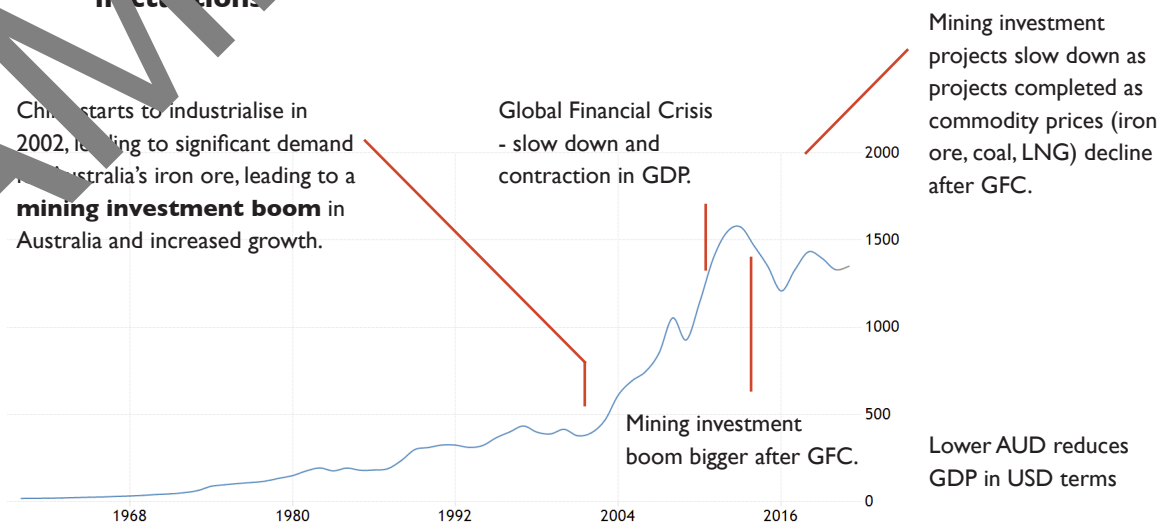
**Business cycle:** the fluctuations in the level of economic activity in an economy.

Commonly the business cycle is shown by graphing the level of GDP over time – the Australian GDP is shown below (measured in USD billion). Note that it is not a straight line, but there are periods of strong growth, and periods of slow, or negative growth.



Link  
L19

**FIGURE 2.3: Australian GDP (in USD billions) evidences cyclical fluctuations.**

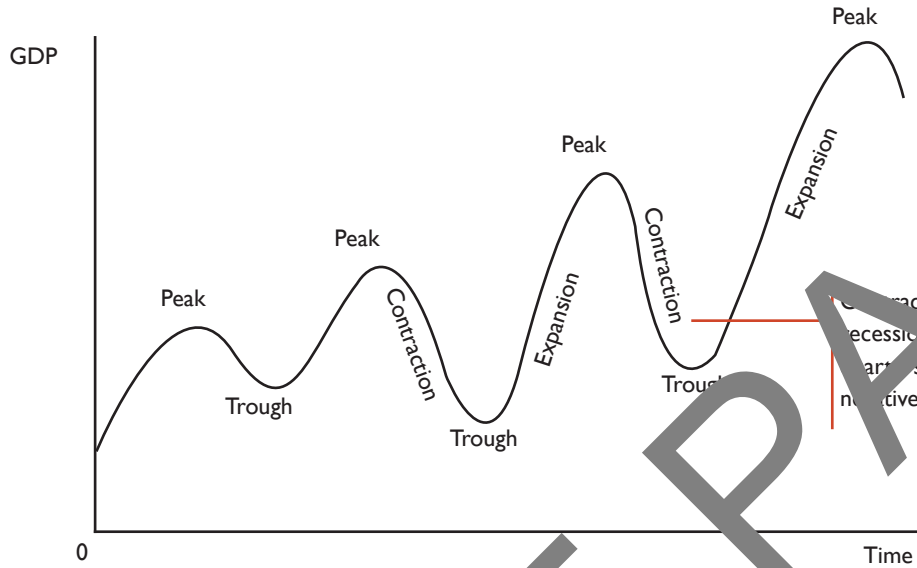


SOURCE: TRADINGECONOMICS.COM | WORLD BANK

**COMMON PHASES TO THE BUSINESS CYCLE**

The business cycle is typically drawn in four phases, with axes of GDP on the vertical axis, and time on the horizontal axis.

**FIGURE 2.4: The business cycle**



**Recession**  
Two consecutive quarters of negative GDP growth



Link L20

Contraction may result in a recession (two consecutive quarters (3 months) of negative GDP growth)

**Syllabus**  
provision of employment and quality of life through the business cycle

Whilst GDP is generally increasing over time, it exhibits fluctuations along the way. These fluctuations have significant implications for various of the economic objectives – especially unemployment and inflation. During contractions, less goods are purchased, which means business produce less goods, which often means business needs less labour, leading to increased unemployment. Expansions and contractions in the business cycle have a number of impacts on each of IBG as indicated below.

	Impact during Expansion	Impact during Contraction
<b>Individuals</b>	<ul style="list-style-type: none"> <li>Increased wage growth</li> <li>Lower unemployment</li> <li>Higher inflation</li> <li>Increased quality of life</li> </ul>	<ul style="list-style-type: none"> <li>Lower wage growth</li> <li>Higher unemployment</li> <li>Lower inflation</li> <li>Decreased quality of life</li> </ul>
<b>Business</b>	<ul style="list-style-type: none"> <li>Increased production</li> <li>Increased investment in new equipment/expansion</li> <li>Increased profits</li> </ul>	<ul style="list-style-type: none"> <li>Decreased production</li> <li>Decreased investment in new equipment/expansion</li> <li>Decreased profits</li> </ul>
<b>Government</b>	<ul style="list-style-type: none"> <li>Increased collection of company and personal taxes</li> <li>Reduced spending on social welfare payments (unemployment)</li> </ul>	<ul style="list-style-type: none"> <li>Decreased collection of company and personal taxes</li> <li>Increased spending on social welfare payments (unemployment)</li> </ul>

Note that the analysis of the impact of the phases of the business cycle proceeds by analysing the impact on each of IBG.

### Economic growth

The percentage change in GDP between two periods.

12

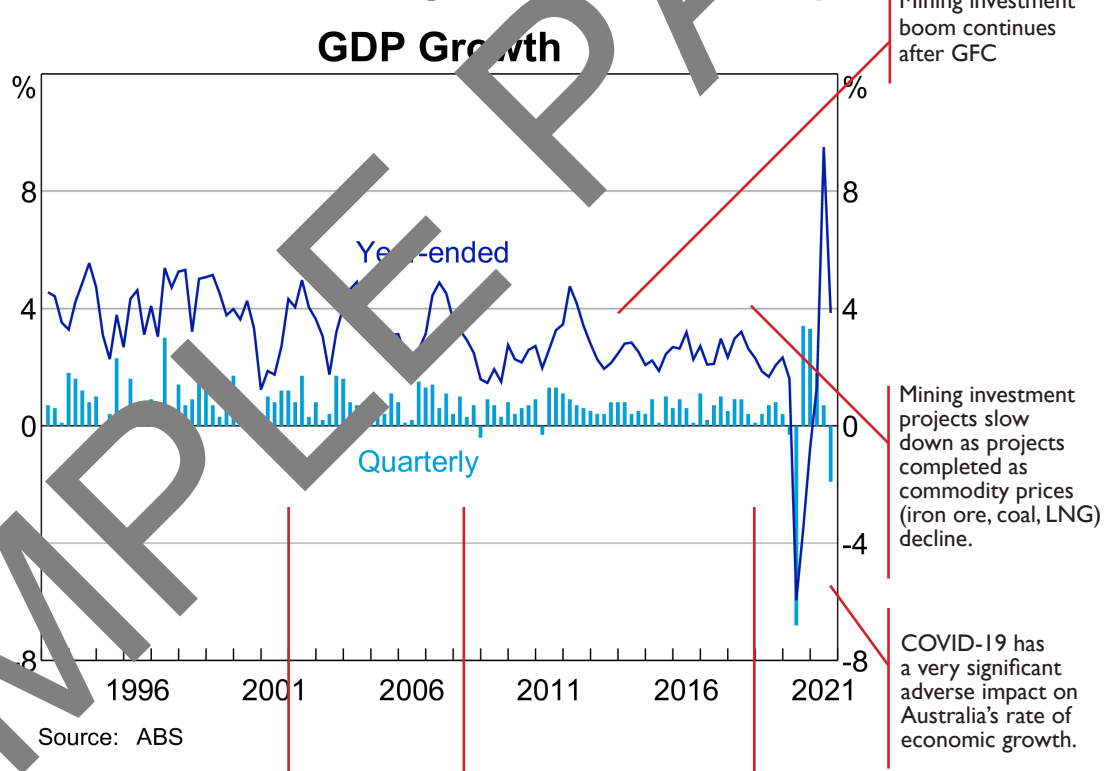
## BUSINESS CYCLE VIEWED AS PERCENTAGE CHANGES IN GDP

Whilst the business cycle graph is typically drawn with GDP on the vertical axis, in practice most economists, and the Reserve Bank of Australia (RBA), the Australian Bureau of Statistics (ABS) and Treasury, graph the percentage change in GDP. Any positive number (i.e.  $> 0$ ) means there has been growth in GDP, and a negative number would indicate a contraction, or a reduction in GDP.

The ABS measure this percentage change each quarter (each 3 months) and also measure the annual (12 months) percentage change in GDP (year-ended growth means just quarter 2021 percentage change from June quarter 2020).

The RBA produce an outstanding online, freely available Chart Pack, which includes the following graph which graphs quarterly GDP growth rate in the range bars at the bottom of the graph, and annual GDP growth rate (year-ended) in the line above.

FIGURE 2.5: Australia's GDP growth annual and quarterly



Video F25



Link L25

China starts to industrialise in 2002, leading to significant demand for Australia's iron ore, leading to a mining investment boom and increased growth in Australia

Global financial crisis - slowdown and contraction in GDP

Note that in this entire period of history, including the GFC, Australia did not experience a recession until COVID-19.

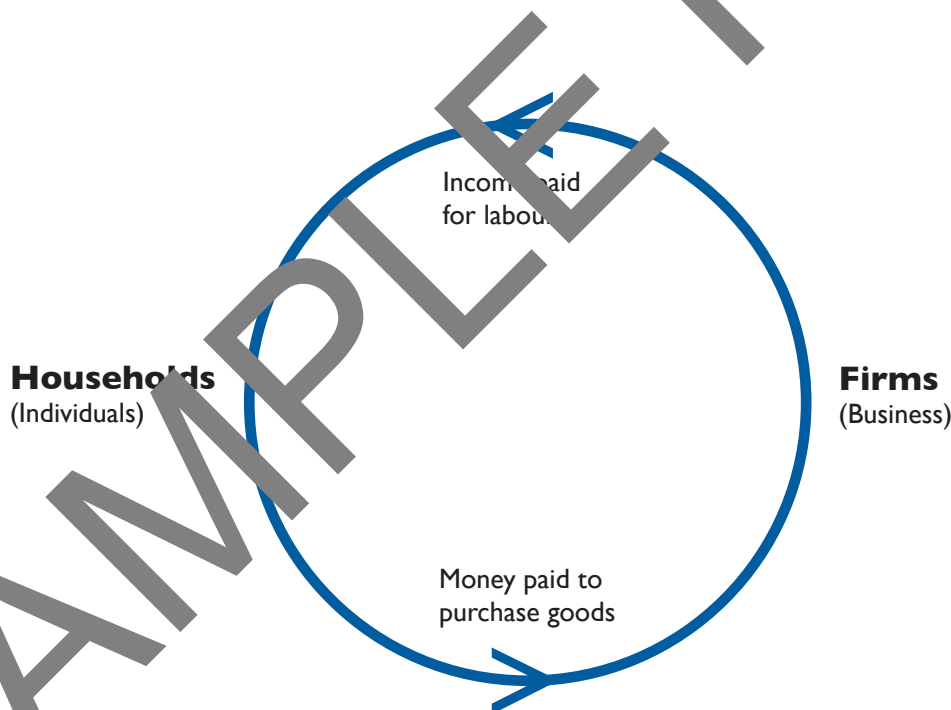
## THE CIRCULAR FLOW MODEL OF INCOME

A key skill for economists is to be able to forecast likely changes in the economic objectives based on emerging domestic and global circumstances. In order to do this, they build models of the relationships between various aspects of the economy.

Importantly, models are a simplification of something very complex - like a LEGO car is a simplification of a real car – however it teaches us that there are four wheels on a car, and a windscreen, and a driver.

A very common, and very important, model of how the level of GDP is determined in an economy is called the **circular flow model of income**. At its heart is the concept of a circular flow of income moving between businesses and individuals (or households). At its simplest, business pays income to workers for working, and the only thing that the workers can do with this income is to pay it back to the firm for goods. In this circular flow of income, the value of final goods and services produced in the economy (that is the level of GDP) is also the level of income flowing around. One way to think about this is with a water metaphor – the level of water flowing around in the circle (in the circular flow of income) is the level of GDP in the economy.

**FIGURE 2.6: Two sector circular flow model of income**



This is called the **two sector** circular flow model of income, as it represents a very simplistic view where there are only households and businesses in the economy.

When we are finished, the whole model will have three more sectors, namely financial institutions (banks, insurance companies), the government (who will both tax as well as spend money) and the overseas sector comprising exports and imports.

**Syllabus**  
the circular flow of income

The components of the circular flow model of income are very important for Year 12.

12

**GDP**  
The level of GDP in an economy is the level of income in the circular flow model of income.



Water is a great metaphor to help understand the processes and interactions when the other three sectors are added to the circular flow model of income. In the picture of the popular children's water canal toy below you can see a central flow in an ellipse. Then there are yellow gates which can open and close to let water in and out of the circular flow of water. If a gate opens, the level of water in the circular flow lowers as water moves out of the circular flow.



Video F27

The circular flow of income is between Businesses and Households. Income can leave this circular flow (**leakage**) when households do not use their income to purchase goods from firms, but for other things, including saving some of their money (putting it in the bank), paying taxes (to the government) or buying imports (from overseas). Money can come into the circular flow as an **injection** where banks loan money to businesses (investment), where the government spends money on goods and services (government spending) or where people overseas buy our goods (exports).

**FIGURE 2.7: Leakage and injections in the circular flow**

**Leakages**

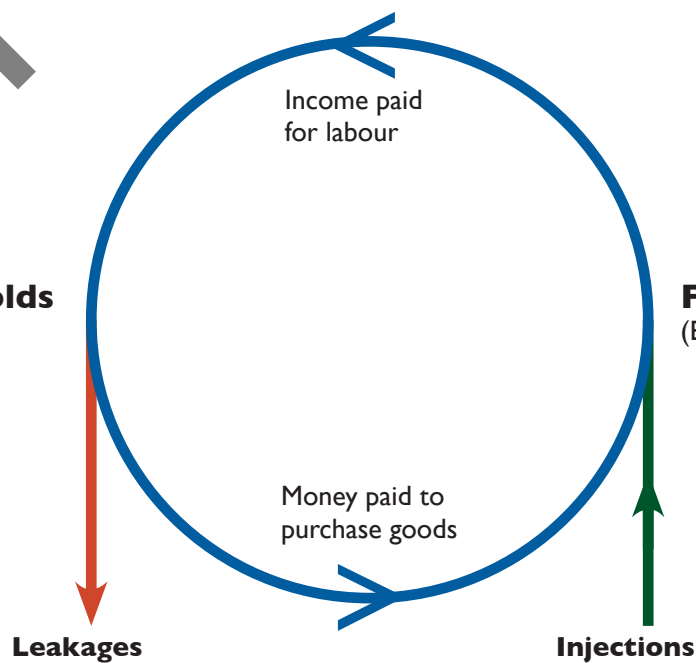
Elements of the circular flow model of income which reduce the level of GDP, including Savings, Taxes and Imports.

**Injections**

Elements of the circular flow model of income which increase the level of GDP, including Investment, Government spending and Exports.

**Households**  
(Individuals)

**Firms**  
(Business)



12

## FIVE SECTOR CIRCULAR FLOW MODEL OF INCOME

Below is the five sector circular flow model of income, which introduces the **financial** sector, the **government** sector, and the **overseas** sector.

Each of these sectors can be a leakage from the circular flow of income, which reduces the money paid by households to purchase goods. Those leakages from the circular flow of income are called savings (S), taxes (T) and imports (M).

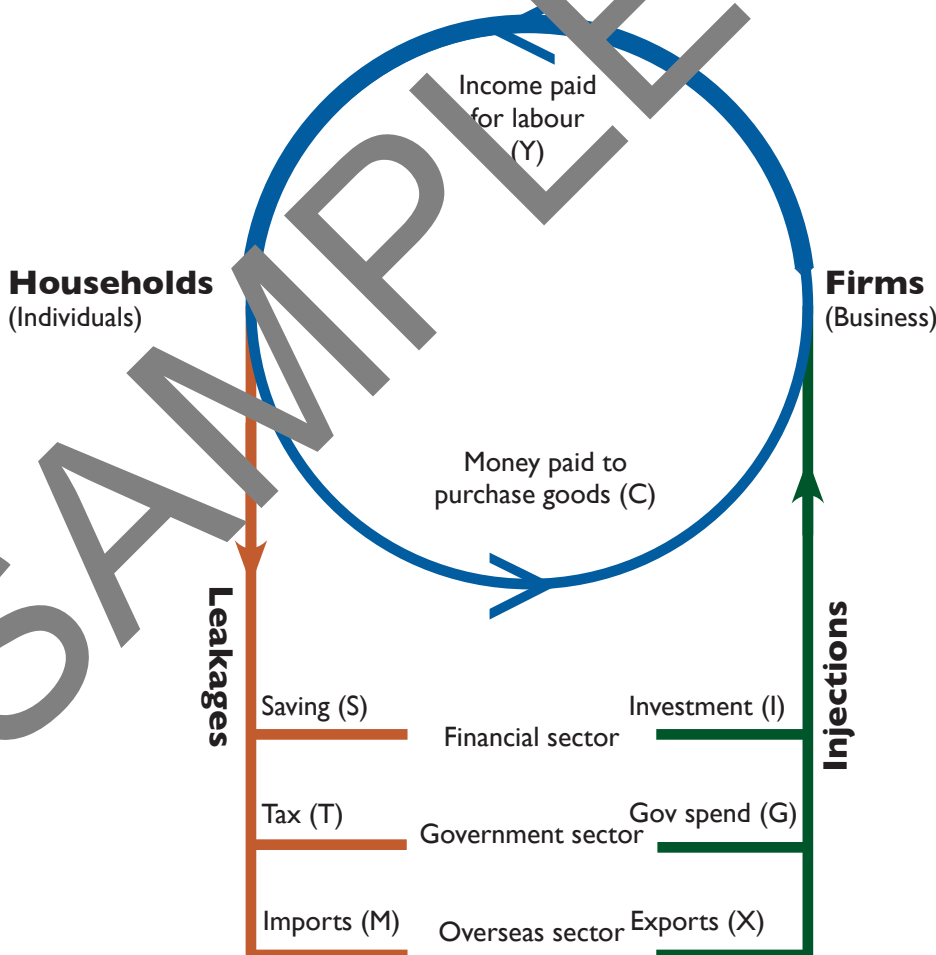
Each of these sectors can also be an injection into the circular flow model of income, which increases the income in the circular flow. Those injections into the circular flow of income are called investment (I), government spending (G) and exports (X).

Income in the circular flow is referred to as  $Y$ , and money used to purchase goods from businesses is called  $C$  for consumption. Because there are three items in the model that start with the letter  $I$  (income, investment and imports), it is necessary to use different letters for income and imports, and the letter  $I$  for investment. It is just historical convention. In a 1957 letter from economist John Keynes to John Hicks, Keynes writes:

“On one point of detail. I regret that you use the symbol  $I$  for income. One has to choose, of course, between using it for income or investment. But after trying both, I believe it is easier to use  $Y$  for income and  $I$  for investment.”

And so income became  $Y$ .

**FIGURE 2.8: Five sector circular flow model of income**



Video  
F28

Students will very often use the language of leakages (STM), injections (IGX), income (Y) and consumption (C) in both Year 11 and Year 12 economics.

<b>Leakages</b> (decrease level of income in circular flow)		<b>Injections</b> (increase level of income in circular flow)	
<b>S</b>	Savings	<b>I</b>	Investment (in capital goods)
<b>T</b>	Taxes paid to the government	<b>G</b>	Government spending
<b>M</b>	Imports	<b>X</b>	Exports

### Equilibrium and disequilibrium in the circular flow model of income

Remembering the physical metaphor of water for the circular flow model of income, the level of water (income) in the circular flow between households and firms is the level of GDP in the economy.

We now consider some maths in relation to STM and IGX.

If  $S + T + M$  adds up to the same number as  $I + G + X$  then the same amount of income is leaving the circular flow as the amount that is entering. The result of that is that the level of income in the circular flow will not change. It will be stable. We call this situation **equilibrium** – there is no tendency for the level of income (GDP) to change in this situation.

However, if  $S + T + M$  is greater than  $I + G + X$  then more income is leaving the circular flow than is entering the circular flow and therefore the level of income (GDP) in the economy will reduce. We call this **disequilibrium**.

Finally, if  $S + T + M$  is less than  $I + G + X$  then more income is being injected into the circular flow than is leaving the circular flow in leakages, and therefore the level of income (GDP) in the economy will increase. We also call this **disequilibrium**.

<b>Situation</b>	<b>Called</b>	<b>Impact on GDP</b>
$S + T + M = I + G + X$	Equilibrium	GDP remains the same, stable, unchanged.
$S + T + M > I + G + X$	Disequilibrium	GDP reduces because leakages are greater than injections.
$S + T + M < I + G + X$	Disequilibrium	GDP increases because injections are greater than leakages.

In this way, an economist (like you) can predict what will happen to GDP if there is a change in an element of the circular flow model. If imports increase, GDP will decrease. If business investment reduces, GDP decreases. If taxes decrease, GDP will increase. These relationships between a change in an element of the circular flow of income and the impact on GDP are important for both Year 11 and Year 12.

#### Equilibrium

Where  $S + T + M$  equals  $I + G + X$  and the level of income in the circular flow model of income is stable and not changing.

#### Disequilibrium

Where  $S + T + M$  does not equal  $I + G + X$  and the level of income in the circular flow model of income is unstable and will change.

12

## HOW THE ECONOMY RETURNS TO EQUILIBRIUM

If there is disequilibrium, for example injections are greater than leakages by 5, then the level of income in the circular flow, and therefore GDP, will increase.

However, something **quite unusual** happens when injections are greater than leakages in the circular flow.

Assume an economy where  $Y = 100$ , and it is in equilibrium, that is:

$$S + T + M = I + G + X$$

Now, if  $G$  increases by 5, that will mean injections are greater than leakages, and GDP will increase. This means that 5 additional dollars will now flow to households. When households receive the 5 extra dollars, assume that households typically save 20% of income, and pay 20% of income in taxes (they actually save much less in Australia).

When given the 5 extra dollars, this means one dollar is saved, one dollar is paid in taxes and 3 dollars (the balance) goes into consumption - back to business which again increases the income in the circular flow. The second time this comes around, households receive 3 extra dollars, with savings and taxes of 40% that is \$1.20. So this time \$1.80 flows around again. See the pattern? Every time the increased income flows around, some leaves the circular flow as leakages, and some goes around again. Every time the amount goes around gets smaller and smaller, until eventually it returns to equilibrium where  $S + T + M = I + G + X$  again.

But here is the key. The level of income in the circular flow, the level of GDP in the economy, will have increased not just by 5 - but increased by a **multiple** of 5.

The table below provides a list of how that occurs.

In Year 12, students will learn how to calculate what the new level of GDP will be when there is an increase in one of the injections. Essentially, the lower the saving rate in the economy, the higher will be the multiplied impact of any change in one of the injections.

12

	Situation	Y	S (20% saving rate)	T (20% tax rate)	C	GDP
<b>Start</b>	Equilibrium	100				100
<b>Add 5</b>	Disequilibrium	105	Increases by 1	Increases by 1	Increases by $5 - 2 = 3$	105
<b>3 comes around</b>	Disequilibrium	108	Increases by 0.6	Increases by 0.6	Increase by $3 - 1.2 = 1.8$	108
<b>1.8 comes around</b>	Disequilibrium	109.8	Increases by 0.36	Increases by 0.36	Increase by $1.8 - 0.72 = 1.08$	109.8
<b>1.08 comes around</b>	Disequilibrium	110.88	Increases by 0.22	Increases by 0.22	Increase by $1.08 - 0.44 = 0.64$	110.88
<b>...</b>						
<b>FINALLY</b>	Equilibrium	112.50	Stable	Stable	Stable	112.50



Video L26

## The nature of economics

- as a result of **scarcity**, all economies face the **economic problem**: unlimited wants and limited resources
- Wants can be **collective** (library) or **individual** (ice cream)
- Given scarcity, individuals, business and government (**IBG**) must make choices (what to consume, what to make, what to spend government money on)
- **opportunity cost** is the alternate use of resources foregone (by IBG) as a result of making a choice (not measured in dollars)
- there are **future implications** (for each of IBG and the economy) as a result of making choices today

## Production Possibility frontiers

A graphical representation of the maximum combinations of production of two goods using **all** the resources in an economy.

1. Cannot produce above existing PPF unless economy finds or acquires more resources (land, labour, capital, enterprise) or increases productivity
2. Can produce below PPF if not all resources are used (unemployment)
3. Increase in *productivity* (output per unit input) in production of goods shifts axis for that good
4. *Increased resources* shifts PPF out on both axes, decreased resources shifts PPF in
5. Can calculate opportunity cost from PPF - *not* measured in dollars

## Economic factors underlying decision-making by:

	<b>Economic factors underlying decision making</b>
<b>I</b> <b>Individuals (households)</b>	spending, saving, work, education, retirement, voting and participation in the political process
<b>B</b> <b>Business (firms)</b>	pricing, production, resource use, industrial relations
<b>G</b> <b>Government</b>	influencing the decisions of individuals and business

## The operation of an economy

- an economy produces goods and services using four factors of production, each of which have a return: **Land** (rent), **Labour** (wages), **Capital** (interest), **Enterprise** (profit)
- The market for a factor of production is called a **factor market**
- The market for a consumer good (produced using factors of production) is called a consumer market (or a **product market**)
- **GDP** is the total value of final goods and services produced in an economy for a period

## An economy has four questions to answer

Question	Answered by
1. <b>What goods</b> should be produced?	Consumers (individuals) - consumer sovereignty
2. <b>How many</b> of those goods should be produced?	Business (volume which has lowest average cost of production)
3. <b>How</b> should the goods be produced (i.e. what factors of production should be used?)	Business (based on relative costs of different factors of production)
4. To whom should the goods be <b>distributed</b> ?	Income in the economy and the income distribution policies of government

## Economic objectives

- All economies have the same framework of economic objectives
- The most important objectives are **GDP growth** (economic growth - percentage change in GDP) and **Quality of life** (economic development - GDP per capita)
- Internal stability has two objectives
  - **Full employment** (measured by unemployment rate, target 4.5%)
  - **Price stability** (measured by inflation rate, target 2%-3% on average over time)
- Includes **Environmental Sustainability** and **Income Distribution**

## The business cycle

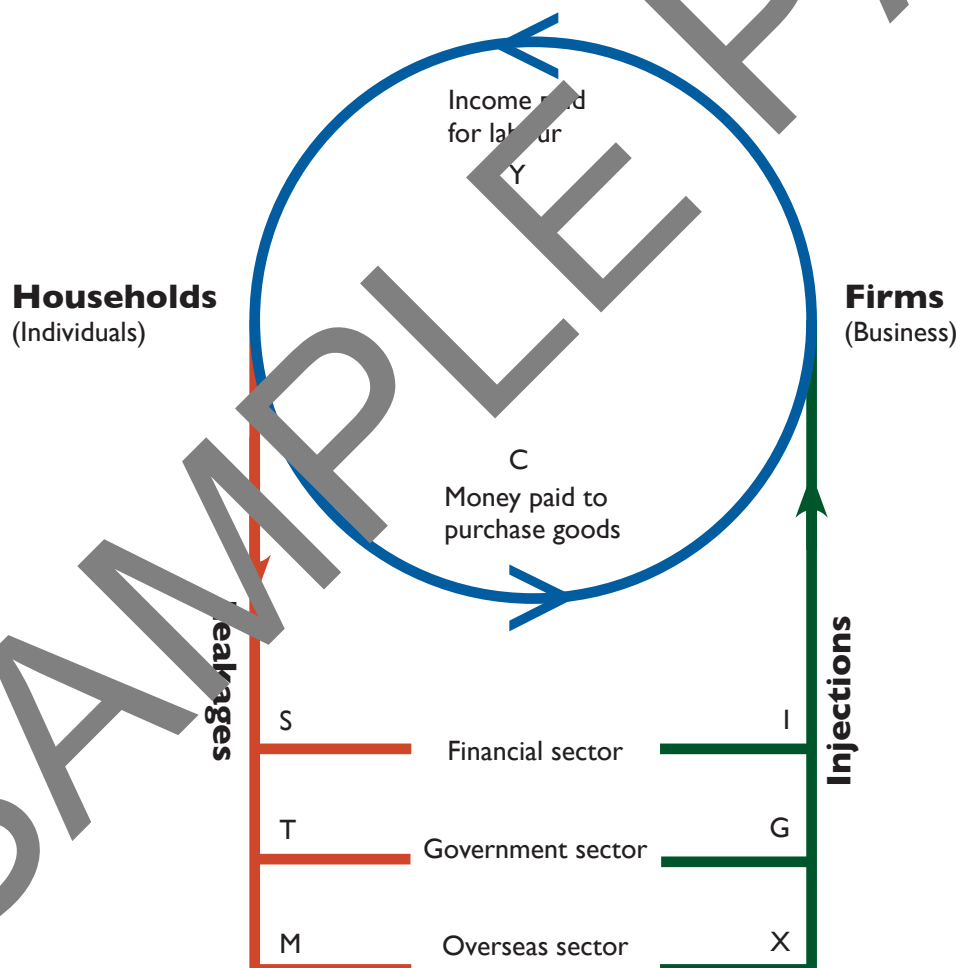
- the business cycle is the fluctuations in the level of economic activity, including booms and busts
- a **recession** is two consecutive quarters of negative GDP growth (no special language for booms)
- the stage of the business cycle has implications for the economic objectives, and for each of IBG
  - a bust: lower income growth, higher unemployment, lower quality of life
  - a boom: high income growth, lower unemployment, higher quality of life

# reimagined Syllabus Introduction

## The circular flow model of income

Circular flow is between households (individuals) and firms (business).

- level of circular flow is GDP
- leakages take money out (savings (S), taxes (T), imports(M))
- injections put money in (investment (I), government spending (G), exports (X))
- **equilibrium:**  $S + T + M = I + G + X$
- **disequilibrium:**  $S + T + M$  does not equal  $I + G + X$
- where injections are greater than leakages, the excess injection flows around and around, gradually getting smaller as leakages reduce the added flow, until a new equilibrium is reached with GDP increased by a **multiple** of the original excess injection



# THE ECONOMY

Business acquires factors of production in factor markets and produce goods and services which are sold to individuals in product markets. Individuals obtain income from firms, and also from the government.

## Factors of production



Factor Markets



1 **WHAT gets made**  
(consumer sovereignty)



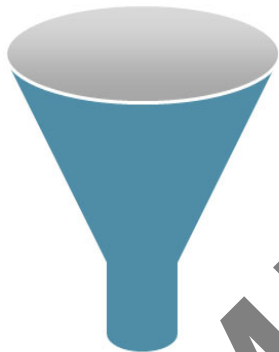
2 **How many will be produced**  
(economies of scale)



3 **How will be produced**  
(what factors of production)

4

**Distribution of goods**  
Who in society will be able to purchase the goods



### GDP

Value of final goods and services produced for a period

**Economic growth rate**  
% increase in GDP between years

### Inflation rate

Change in consumer prices over time



Business



Product Markets



Individuals

Income  
Salary/wages



Income  
Social welfare payments



Government


## INTRODUCTION

1. Outline the four factors of production and their returns.
2. Define opportunity cost.
3. Explain how the production possibility frontier can be used to calculate opportunity cost.
4. An economy can produce 400 tables or 200 drills using all the resources in the economy. Calculate the opportunity cost of 400 tables, and the opportunity cost of one drill.
5. Outline an opportunity cost in the context of each of business and government.
6. Distinguish between a factor market and a product market.
7. Define gross domestic product.
8. Define inflation.
9. Outline two sources of income for households.
10. Define the business cycle.
11. Explain how GDP and unemployment are impacted by a contraction in the business cycle.
12. Define a recession.
13. Identify the 5 sectors in the circular flow model of income.
14. What could a government do to reduce a decrease in GDP caused by a recession?
15. Draw and label the circular flow model of income.
16. Define equilibrium in the circular flow model of income.
17. An economy is at equilibrium with a GDP of \$400 million. Explain what happens in the short and long term to GDP as a result of injections increasing by \$20 million.
18. When was Australia's last recession (research)?
19. Describe the four questions every economy must answer.



Chapter  
C2

Answers  
Videos  
Revision

- 
20. How many times does the formulation (phrase) of “individuals, business and government” appear in pages 15 and 16 of the NESA Economics syllabus?
  21. Explain why GDP increases by a multiple of the amount by which an injection is increased when the economy is at equilibrium.
  22. Outline a common misconception by students in relation to the fourth question asked in every economy.
  23. Describe the kinds of questions that could be asked in assessment contexts for students to demonstrate their understanding of opportunity cost.
  24. Describe the kinds of questions that could be asked in assessment contexts for students to demonstrate their understanding of the circular flow model of income.
  25. Explain the impact on Australia’s PPF and GDP growth of migration to Australia.