

An introduction to macroeconomic activity

Economics is often thought of as having two branches - microeconomics and macroeconomics. The prefix 'micro' refers to parts of the economy. Microeconomics studies the behaviour of individual households and firms, and addresses questions such as why consumers usually buy more goods and services when prices are low; how producers can make the most efficient use of resources; how the price of a commodity such as oil is influenced by changes in demand and supply; and why markets are considered to be efficient. You will remember these concepts from earlier chapters. Macroeconomics, on the other hand, studies the economy as a whole. The prefix 'macro' means large - macroeconomics is concerned with the big picture of the economy. Macroeconomics focuses on why the economy grows and why economic activity fluctuates over time. It is concerned with the business cycle, economic growth, inflation, unemployment, and government policies developed in response to changes in these variables.

In the study of macroeconomics, economists:

- collect and analyse information about levels of production, output, spending and income in the economy;
- build and test theories such as those you will read about in the next few chapters; and
- propose policy measures to improve the state of the economy in both the short and the long term.

Why study macroeconomics - is it actually relevant to us?

As senior secondary students, you will shortly be making decisions about leaving school and getting a job or continuing with your studies. You have probably wondered how you will 'fit' into the economy (what job you will have, what business you might start or how much you could earn). Every one of us is a participant in the economy. It is, therefore, good to develop 'economic literacy' - the ability to understand economic events and explain how they might affect our lives, jobs and business. On any day of the week, the media publishes articles about:

- economic growth
- unemployment
- inflation
- interest rates and
- our trading relationships with other countries.

An understanding of these macroeconomic concepts is important because they have both direct and indirect impacts on many of the decisions we make from day to day. Would you borrow money to buy a car if interest rates were rising and consumer confidence falling? Is it better to look for work when job vacancies are rising or falling? Economic literacy helps us think critically about what other people are saying and writing. Imagine a news item on radio said the Australian government

has forecast that the Budget will be in deficit. Is this a good thing or a bad thing? How will it impact on us as consumers, workers and business people?

The circular flow of income model

A model is a simplified view of reality that omits many of the complications of the real world in order to provide us with a clear picture of how something works. A street directory is a model - it provides a diagrammatic view of an area of land. The maps in the directory don't really show high levels of detail like individual houses or vegetation, but they provide us with a clear representation of what we need to know to find our way through the suburbs.

The **circular flow of income** is a macroeconomic model that describes the flows of resources, goods and services, and income between the parts of the economy. The model divides the economy into its key sectors - households, firms, the financial sector, the government and the overseas sector. To build the model, we first describe the nature of the household and firms sectors, and the relationships between them. We then introduce other sectors.

Households and firms

The economy is a continuous flow of money, goods, services and productive resources between people that make them, and people that want to buy them. The basic circular flow model in figure 6.1 is based on a number of assumptions that allow us to start our 'map' of the economy:

- there are only two sectors in the economy - households and firms. **Households** are the owners of the productive resources (land, labour, capital and enterprise); and the buyers of final goods and services. **Firms** are the employers of resources, and produce all the goods and services for the economy. All output produced is sold to consumers;
- households spend all their income, so there is no saving;
- there is no government sector; and
- there is no overseas trade.

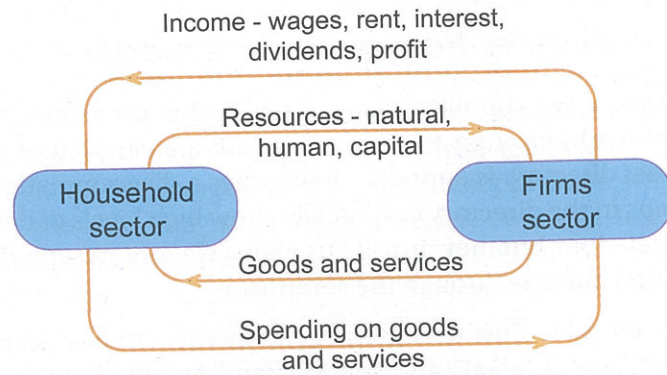
Given these assumptions, figure 6.1 describes the pattern of exchange that would occur in order for people to satisfy their wants and needs in our economy. This simple model has two flows - a **real flow** of goods, services and resources, and a **money flow** of spending and income.

In the **factor market** (the pair of flows at the top of the diagram), firms hire resources (natural, human and capital) from households, in return for which they provide various types of payment. Most households receive the majority of their income in the form of wages or salaries; but some earn rent in return for productive land they hire to producers; some invest money capital in companies in return for dividends; some lend surplus money to borrowers in return for interest; and others use their managerial skills (enterprise) in return for the payment known as profit.

Figure 6.1 Circular flow - households and firms

In the factor market (top flows), households receive income in the form of wages, rent, interest, dividends and profits from the resources they supply to firms for use in the production process.

In the product market, households spend their income in exchange for goods and services produced by the firms sector.



In the **product market** (the lower portion of the diagram), households and business firms spend the income they have earned on goods and services produced by business firms. The model reminds us that people in modern economies are **interdependent** - we all depend on one another to provide the goods and services that satisfy our wants and needs. Very few people in the modern economy can claim to be self-sufficient. In modern economies, very few even try! It is much better, both for individuals and the society, to 'specialise and exchange'.

Saving and investment

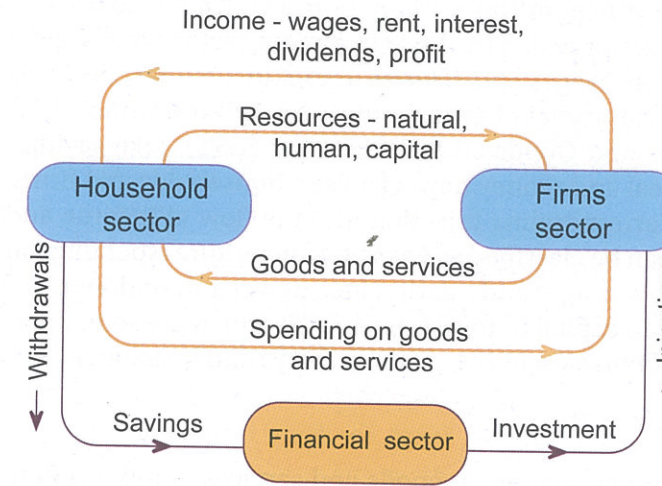
Now let's relax the assumption that households spend all of their income on goods and services. **Saving** is the portion of household income not spent on goods and services for current consumption. Households deposit their surplus funds into financial institutions such as banks, credit unions and superannuation funds. These financial institutions make up what is called the **capital market** or financial sector, as shown in figure 6.2. Saving represents a **leakage** from the circular flow because it reduces the flow of money and goods between households and firms.

Investment (in the economic sense) is defined as expenditure on goods and services which are not intended for current consumption. Investment is the purchase of capital equipment to be used in production. This includes spending by firms on productive equipment and machinery, and spending on buildings and factories. Investment leads to increased production of final goods and services for consumers in the future. Therefore, investment expenditure creates an increase in the flow of income in the future. Investment is an **injection** that offsets the savings leakage in the circular flow.

The government sector

The government plays a significant role in the economy. It is a producer of goods and services such as education, health and defence. To produce these items, the government purchases resources in the factor market. As a consumer, the

Figure 6.2 Circular flow - the capital market

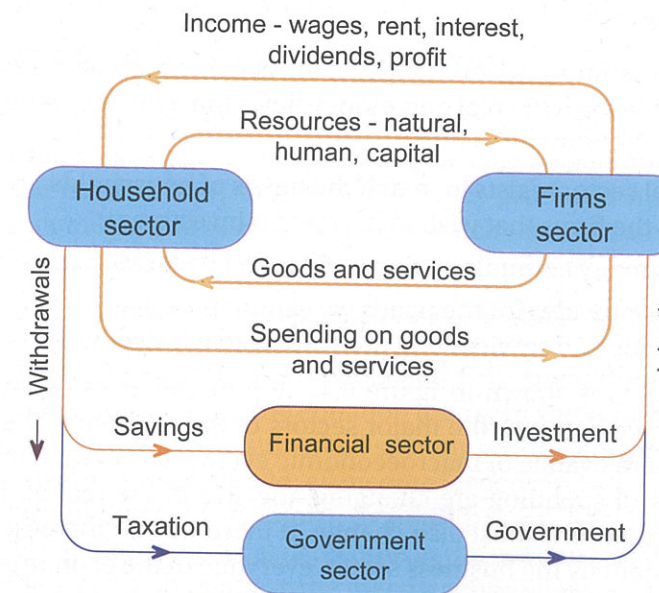


Saving is the proportion of income not spent on consumption, and is a leakage from the flow of current income. **Investment** is firms spending on capital equipment that will be used to produce goods and services in the future. **Investment** is an injection of funds into the circular flow.

The model shows how the capital market is the intermediary between savers and investors - it pools the surplus funds of savers to create a pool of funds on which investors can draw.

government buys goods and services from businesses. In Australia, the 3 levels of government together employ about 18 per cent of the workforce (2 million people), and has become responsible for the provision of social welfare (such as pensions, the job search allowance and child care allowance). In economics, these are called **transfer payments**. Government also regulates many aspects of economic activity so that commerce runs smoothly and equitably.

Figure 6.3 Circular flow - adding the government sector



The government sector collects taxation from households and spends those funds to provide goods and services for collective consumption or transfers such as social security.

Like savings, taxation is a leakage from the flow of income between households and firms. Government spending is the injection by which funds are returned to the flow.

Figure 6.3 illustrates the role of the government in the circular flow - households pay some of their income to the government (the **taxation** leakage) which is returned to the flow through **government expenditure**. Many of the collective goods and services our community needs are provided by the government sector, which raises most of its revenue from taxation. Wages and salaries attract income tax, business firms pay a tax on profits, and certain types of consumption expenditure attract taxes, such as sales and excise duties and Goods and Services Tax (GST). Like savings, taxation is a leakage from the real and money flows between households and firms. Government spending is the corresponding injection into the flow of income and goods. Government spending can be classified as **current** expenditure (spending on current goods and services such as wages and salaries, fuel, power and stationery) or **capital** expenditure (spending on capital or investment goods which are sometimes called public or **social infrastructure** - schools, roads, railways and hospitals).

The overseas sector

All households spend some of their income on goods and services imported from overseas. Similarly, people in other countries purchase Australian-made goods and services. Hence, we should relax the assumption that the economy is closed. An **open economy** is an important contributor to our economic well-being - trade allows us to buy items we cannot produce ourselves, and foreigners to buy products that they cannot produce with their resources. For example, China and India buy Australian iron ore; Japan buys natural gas; students from Asia and Africa purchase Australian education. The international sector is also a source of investment funds, both in to and out of Australia. Figure 6.4 adds the overseas sector to our model. Imports are a leakage from the simple circular flow, and exports are an injection. A transaction is classified as an **import** when the money flows from Australia to overseas. In the case of **exports**, the flow of money is from overseas to Australia.

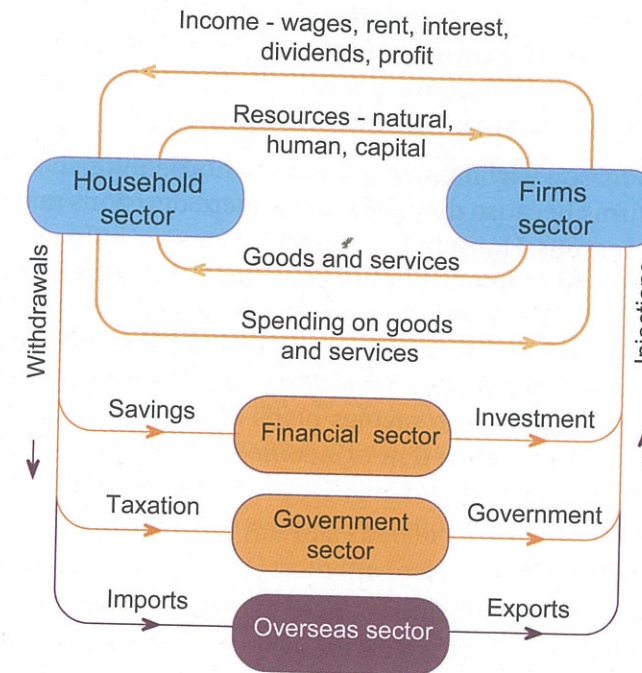
The full circular flow model

As we have relaxed our original assumptions, our model of the economy has become progressively more realistic. Aside from the real and money flows that constitute the simple circular flow, the full model recognises that:

- a capital market (financial sector) exists to match the needs of households with surplus income and the firms that wish to borrow for investment;
- the government provides many community needs, financed by taxation;
- trade with other countries provides for the needs we cannot produce ourselves in return for goods and services that are surplus to our needs.

The complete circular flow model is shown in figure 6.4. The model gives us an overview of the **interdependence** between the major sectors of the economy. The model helps us understand the relevance of macroeconomic events to everyone in the economy. Whenever levels of spending are changing, the size of the real and money flows shown in the circular flow must also change. If there was an increase in investment in capital equipment by the business sector, everyone in the economy

Figure 6.4 Circular flow - the full model



The addition of the overseas sector completes the full circular flow model. Flows between Australia and the overseas sector include imports and exports of goods and services.

Imports are a leakage, and reduce the flow of income in Australia, whilst exports are an injection which adds to the flow.

For equilibrium:

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

That is, the sum of the leakages from the flow equal the sum of injections entering the flow.

can expect to benefit because money and real flows increase. A rise in taxes, on the other hand, would reduce the amount of money that people have to spend, probably leading to reduced production, which will then lead to a fall in income. On the other hand, a rise in exports (for example rising sales of iron ore to China and India) would bring more money into the circular flow, and increase income earned. These types of changes are examined in more detail in the next section.

Macroeconomic equilibrium

An important conclusion to be drawn from the simple version of the circular flow model (see figure 6.1) is that 'one man's spending is another man's income'. In the circular flow, the value of output produced by firms must equal the value of income paid to resource owners, which must in turn equal the value of spending by households to produce the output.

This equality can be expressed as an identity: $\Sigma O = \Sigma Y = \Sigma E$

where O = output, Y = income and E = expenditure and the Greek letter sigma (Σ) means 'the sum of'. The equation thus says 'the sum of all output equals the sum of all income equals the sum of all spending in the economy'. As long as the assumptions mentioned earlier hold, all income is spent and all output is consumed. In economic terminology, this is known as **equilibrium**. When equilibrium occurs, there is no tendency for the level of income in the economy to change. Equilibrium means that the system (in this case the macroeconomic system) is 'in balance'.

In introducing the capital market into the circular flow model, we said that households save part of their income which the financial institutions pool before lending the money to business wishing to invest in capital equipment. The capital market can only be in equilibrium when savings equal investment ($S = I$): when the size of the flow of funds coming in to the capital market from the savings leakage is matched by the size of the flow of funds going out of the capital market as an injection.

In practice, however, there is no reason why the savings plans of households should match the investment plans of firms because they are independent decisions made by different people, for different reasons. Household saving decisions are influenced by the need for financial security and to finance future consumption. Firms invest in equipment which will be used to make goods and services which can be sold at a profit in the future. Firms may invest to expand their business, to take advantage of new innovations and improved technology, or because they hope economic conditions will be buoyant in the future. If the savings plans of households don't match the investment plans of firms, the circular flow of income is out of equilibrium, and the level of income in the economy will rise or fall in the future. Disequilibrium, however, is probably the 'normal' state of the economy, because of the independence of savings and investment decisions.

When savings exceeds investment ($S > I$), the flow of income in the economy must contract, as leakages exceed injections. Total spending will be less than output, so unsold stocks of good held by firms (inventories) increase. Firms will react by cutting production and reducing the amount of resources (factors) they employ in production. Households will then receive less income, so consumption and savings will fall. This pattern will continue until savings again equals investment, at a lower level of income. If firms plan to invest more than households plan to save, on the other hand ($I > S$) there will be an expansionary effect on the circular flow causing the level of income to increase. Total expenditure will exceed current output causing inventory levels (stocks of unsold goods) to fall. Firms will react by increasing production and employing more resources, so incomes paid to households would rise. The level of economic activity would expand. Only when the aggregate level of savings equals the aggregate level of investment will the level of income again be constant or stable.

We have explored disequilibrium (the inequality of savings and investment) in some detail because inequalities are a powerful force in causing fluctuations in the level of economic activity - the level of expenditure, quantity of output produced, and amount of income earned. Note that equilibrium in the capital market does not necessarily imply an optimal level of economic activity (the level of income at which all resources are fully employed).

Figure 6.3 introduced the government sector into the circular flow model. Government expenditure on current and capital items is mainly financed by taxation. For equilibrium in the government sector, the level of taxation must balance the level of government spending. That is,

$$T = G$$

When there is inequality between the taxation leakage and the government expenditure injection, the level of output and income in the economy will either rise or fall. If $T > G$, the amount of money withdrawn from the circular flow exceeds the expenditure injection, so the level of income will be expected to fall. If $G > T$, on the other hand, the level of income can be expected to rise.

The open economy circular flow was introduced in figure 6.4. For equilibrium in the overseas sector, the leakage (spending on imports) must balance the injection (revenue from exports). That is,

$$M = X$$

When there is an inequality between imports and exports, the level of output and income in the economy will either rise or fall. If $M > X$, the amount of money withdrawn from the circular flow exceeds the funds injected, so the level of income can be expected to fall. If $X > M$, on the other hand, the level of income can be expected to rise because injections increase the size of the real and money flows circulating around the economy.

For equilibrium in the full circular flow (i.e. the whole economy) the sum of the withdrawals ($S+T+M$) from the real and money flow between households and firms must equal the sum of the injections ($I + G + X$) going back into the flow. That is:

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

From this aggregate perspective, the sum of the parts is more important than the individual sectors. That is, imports could exceed exports if the shortfall was made up by extra government spending or investment. However, if $S+T+M > I+G+X$, aggregate withdrawals are greater than injections, and producer output and household income will fall. If $I+G+X > S+T+M$, aggregate injections exceed withdrawals, so household income and producer output will rise.

What happens when there are changes in leakages or injections?

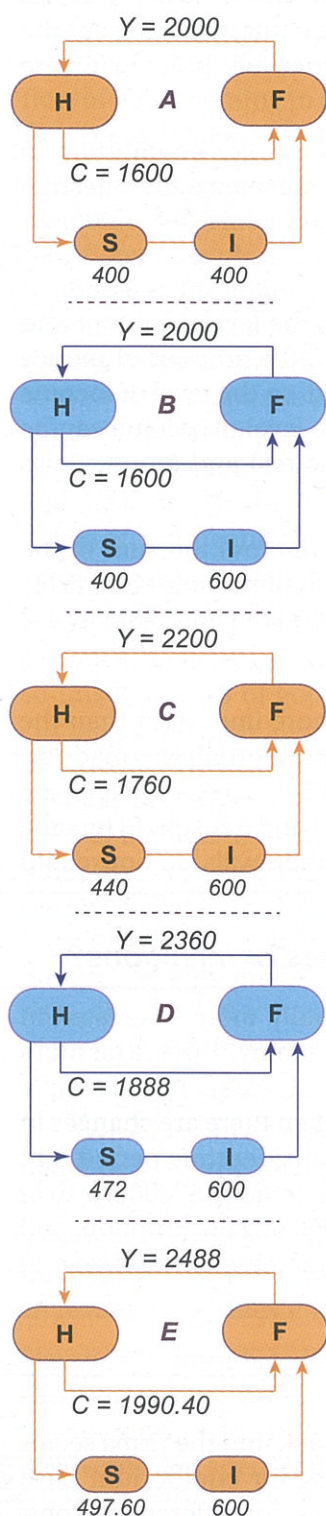
Equilibrium is a theoretical concept. Economists are actually more interested in disequilibrium - what causes it and how it impacts on the economy. This is a far more interesting topic to study. Figure 6.5 provides an illustration. Its sequence of simple circular flow diagrams help us understand what happens when there are changes in one of the leakages or injections we have just discussed. Consider time period A in figure 6.5. \$2000 of goods and services have been produced, creating \$2000 worth of income for households. Assume that households spend \$1600 on consumption, and save \$400. In other words, households spend 80 per cent of their income and save 20 per cent.

$$\text{As } Y = C + S$$

$$\text{so } 2000 = 1600 + 400$$

In equilibrium, $S = I$. The \$400 savings leakage is injected back into the firms sector as expenditure on capital items ($I = 400$). Both conditions for equilibrium have been met. As we know, households and firms save and invest for different reasons.

Figure 6.5 The equilibrium process



Households save for future security, and to purchase items such as furniture and cars. Businesses invest to produce goods and services in the future, and are influenced by the interest rate on borrowed funds and expected business conditions. As a result, there is little reason why planned household savings should match planned business investment. When the savings and investment plans of households and firms are different, levels of expenditure, output and income in the whole economy will change, and equilibrium must change.

Panels B through E in figure 6.5 illustrate what happens when savings plans do not match investment plans. Refer to panel B. Imagine that firms have growing confidence in the immediate future of the economy and expect that sales will rise, so they increase total investment from \$400 to \$600. The circular flow is now out of equilibrium, because total expenditure ($C + I$) exceeds current levels of output and income (Y). The new investment expenditure expands the output of the firms sector in the next time period, so the level of income earned in the next period (panel C) will rise by the amount of the initial investment - from \$2000 to \$2200.

If households maintain the same consumption and saving proportions we assumed above (i.e. they spend 80 per cent of income, and save 20 per cent), then consumption in panel C rises to \$1760 (an increase of \$160), and saving to \$440 (an increase of \$40).

This is not the end of the adjustment process, however. The higher levels of consumption expenditure create extra demand for goods and services - firms produce more output to meet demand, and employ more factors of production. Thus income rises. In panel D, income and output rises to \$2360 to match total expenditure of \$1760 (consumption in period 3) plus \$600 (investment in period 3). In the last period, shown in panel E, income rises to \$2488 (\$1888 + \$600).

The economy will continue to expand after the initial increase in investment in panel B. The expansion will continue until a new equilibrium is reached when the level of income is \$3000. Savings will again

The resources boom and the circular flow model

Starting in 2003, commodity prices for minerals such as iron ore, LNG (gas) and coal rose strongly (as much as 3 times) due to demand from China and other Asian countries. The high prices, which lasted for a number of years, provided incentive for companies such as BHP, Rio and Chevron to invest heavily in mines and associated infrastructure, and the resulting boom is regarded as the strongest in Australia's history.

Like all booms, it had to end. Commodity prices fell back as growth rates in China fell, and the new facilities paid for by the investment boom were completed.

Use the circular flow model to explain how both the boom, and the end of the boom, would have impacted on the Australian economy.

See ABC RN and search for 'The Mining Boom that Changed Australia' (Keri Phillips, 13 April, 2016).

equal investment at \$600. At that level of income, the equality of investment and saving is restored, and $\Sigma Y = \Sigma O = \Sigma E$, and the equilibrium level of income is higher. Equilibrium will probably be temporary, however. The level of economic activity is always changing because it consists of independent individuals and groups seeking to improve their own welfare. Thus the levels of savings and/or investment will change again in the future as the plans of firms and households respond to other events in the economy.

What if planned savings exceed investment? The series of diagrams in figure 6.5 showed the progressive changes in income, consumption and savings caused by an initial rise in investment - an increase in injections to the circular flow. If household savings increase, on the other hand, the level of income and output in the economy must contract. An excess of savings over investment means that less goods and services will be purchased by households, so firms will cut their output as they notice that their stocks (inventories of unsold goods) are rising. They might cut the overtime of their staff, or perhaps lay off some employees. This means the aggregate level of income in the economy will fall, so spending will again fall in the next time period (as will savings).

Aggregate expenditure

The circular flow model depicts the economy as a constantly circulating flow of real goods and services, and money. Statisticians and economists have developed national income accounting systems, based on the circular flow concept, to measure economic activity. In Australia, these are called the National Accounts.

Measuring GDP

The most frequently used measure of economic performance is the **Gross Domestic Product (GDP)** - defined as the total market value of all final goods and services produced in a country during a period of time (usually a year). Three approaches can be used to measure the level of GDP:

Factors affecting net exports

Exports and **imports** are also quite volatile components of aggregate expenditure, particularly in Australia which, as a 'small open economy' has a high intensity of trade. Aggregate exports are influenced by economic conditions in Australia and the rest of the world - domestic agricultural production rises and falls due to the vagaries of seasons, such as drought. Overseas demand for Australian commodity exports fluctuates according to regional and world economic conditions - witness

Exports result in a flow of money in to the Australian economy. Imports result in a flow of money from Australia to overseas economies.

for example the ongoing demand for mineral commodities like iron ore and coal associated with the high economic growth rates and urban development in China and India.

Domestic levels of economic activity influence Australians' propensity to import. Traditionally, Australian imports seem elastic with respect to GDP - if GDP rises by 5 per cent, then it is likely that imports will rise by 10 per cent. This has much to do with the small size of Australia's economy. In periods of high

economic activity, consumers import goods which cannot be sourced from local manufacturers, and businesses buy capital equipment not available domestically.

The **exchange rate** is an important influence on net exports. Exchange rates are determined by market forces (demand and supply). When the Australian dollar (\$A or AUD) appreciates, one Australian dollar (AUD1) can buy more units of other currencies, and people overseas can buy less units of AUD (i.e. it costs them more to buy Australian goods and services). Other things being equal, appreciation makes the price of imports cheaper for Australian buyers, but makes our exports more expensive for overseas buyers. Similarly, if the AUD loses value against other currencies (depreciates) exports become more competitive in overseas markets and imports become more expensive for Australian buyers. An appreciation in the AUD will decrease net exports while a depreciation of the AUD will increase net exports.

The **terms of trade** also influence net export expenditure. If Australian products are in demand on overseas markets, the terms of trade rises and the prices received for exports increase, meaning the value of export sales will rise. Likewise, a fall in the terms of trade sees the prices received for exports fall relative to the prices paid for imports, in which case the value of net exports decrease. Australia's terms of trade have been strong in recent years due to the high level of demand for our commodity exports, which has forced up their prices on world markets.

Figure 6.7 summarises the factors that affect each of the components of aggregate expenditure. Understanding why each of these components of expenditure can change helps to unlock the secrets of the business cycle, as discussed in the next chapter.

Figure 6.7 The determinants of aggregate expenditure

Factors influencing aggregate consumption expenditure C	<ul style="list-style-type: none"> • disposable income (Y_d) • interest rates (r) • expectations • household confidence • stock of wealth (property, shares) • government policy
Factors influencing aggregate investment expenditure I	<ul style="list-style-type: none"> • business expectations • interest rates (r) • level of past profits (π) • government policies (e.g. taxation)
Factors influencing government expenditure G	<ul style="list-style-type: none"> • determined in accordance with government policy objectives e.g. social welfare, health, education, full employment, economic growth, income redistribution
Factors influencing net exports X - M	<ul style="list-style-type: none"> • domestic business cycle • overseas business cycle • exchange rates • commodity prices • terms of trade

Chapter 6 Review

Worksheet - macroeconomics; circular flow of income

1. Distinguish between microeconomics and macroeconomics.
2. Outline two benefits of developing 'economic literacy'.
3. Explain the purpose of models in social science. What is the purpose of the circular flow model specifically?
4. Describe how the product and factor markets in the circular flow model differ from each other.
5. Explain the role of households and firms in the circular flow model.
6. Distinguish between the real and the money flows in the circular flow model.
7. What is the relationship between output, income and expenditure?
8. For what reasons might households save some of their income?
9. Why is savings a leakage in the flow of income?
10. Why do firms invest, and what impact does investment have on the 'rest of the economy'?
11. In what way is the economic definition of investment different from the 'popular' definition of investment which most people would use?
12. What role does the government play in the flow of income and goods in the economy?
13. What role does the overseas sector play in the circular flow?
14. Give four examples of how YOU participate in the circular flow of income.

Economic analysis - the circular flow of income model

1. Draw the full circular flow model.
2. Describe the real and financial flows which take place between the household and firms sectors in the model.
3. Explain why taxation is a 'withdrawal'. If firms also pay tax on their profits, why doesn't the model show this?
4. In 2016-17, private investment was \$330 billion; net exports (X-M) was \$2 billion; total government spending was \$397 billion; and GDP was \$1,700 billion at constant prices. Calculate the aggregate consumption expenditure in that year.
5. Refer to figure 6.5. Use this figure as a base to illustrate what would happen in the economy if Australian grain exports rose by \$20 billion; if income tax increased by \$5 billion.
6. Explain the effect that each of the following events would have on the circular flow of income. Identify which sector/s is/are affected, and whether you think the size of the monetary and real flows will increase or decrease in the medium term (1-2 years):
 - a. a reduction in the company tax rate.
 - b. a reduction in interest rates.
 - c. an increase in number of tourists traveling to Australia from overseas.
 - d. an increase in taxes levied on petrol and tobacco.
 - e. an increase in unemployment.

Matching terms

Match the term in the left column with its definition or description in the right column. There may be more terms than definitions.

Term	Description
A budget deficit	1. expenditure on goods and services by households.
B circular flow of income	2. sector of the economy that owns resources.
C consumption	3. flow of goods and resources between households and firms.
D equilibrium	4. spending by firms on capital equipment
E firms	5. output that is not sold.
F government spending	6. the main source for government revenue.
G households	7. the purchase of goods and services from overseas residents.
H imports	8. the subject which is concerned with the functioning of the whole economy.
I inventories	9. when leakages equal injections in the circular flow model
J investment	10. spending on goods and services by the government.
K macroeconomics	11. model which describes the flow of income between different sectors of the economy.
L microeconomics	12. flow of income and consumer spending between households and firms
M money flow	13. occurs when government spending exceeds taxation.
N real flow	14. the subject which is concerned with the functioning of a specific sector of the economy.
O savings	15. sector of the economy responsible for producing goods and services.
P taxation	

Mathematical techniques - equilibrium and the circular flow

Refer to figure 6.5.

Assume the economy is initially in equilibrium, with $Y = 1500$ and both S and I at 500. This means households spend 67% of their income, and save 33%. Households then decide to increase their level of savings from 500 to 750, but there is no corresponding change in the investment plans of firms. Using a series of circular flow diagrams, show how the level of income and consumption changes in the economy under these conditions during the first four time periods.

Worksheet - aggregate expenditure

1. What are the two ways of measuring GDP?
2. National income consists of which categories of income?
3. Which are the four major sectors of the economy used to categorise expenditure?
4. Distinguish between durable and non-durable consumption.
5. List the three categories of private investment. In what way is the use of the term 'investment' different to the way it is normally used?
6. Explain the impact of an increase in interest rates on (a) durable consumption; (b) non-durable consumption; (c) services; and (d) private investment.
7. Explain how 'expectations' influence consumption and investment spending.
8. Discuss the meaning of risk, and explain why it is relevant to investment decisions.
9. Distinguish between nominal and real interest rates. Calculate the real rate of interest if nominal rates are 7 per cent, and the rate of inflation is 3 per cent.
10. What is the likely relationship between investment and business profitability?
11. List the factors affecting net exports. Explain why net exports often have a negative sign in Australia's expenditure accounts.
12. How would drought overseas impact upon Australian aggregate expenditure patterns?
13. If the Australian dollar (AUD or \$A) appreciated (i.e. one unit of AUD bought more overseas currency units), how would this impact on export and import spending?
14. Research and explain the meaning of the phrase 'terms of trade'. How would a rising terms of trade impact on the level of aggregate expenditure?

Data analysis

Refer to the aggregate expenditure table over to answer the questions below

Questions

1. Calculate aggregate expenditure (AE) for each financial year, using the formula $AE = C + I + G + (X - M)$.
2. Calculate the average proportion of AE in each component over the series of years.
3. Calculate the average rate of annual change over the period of your data. Enter your results into the final column. Suggest an alternate name for the final column?
4. Which element of AE is most stable over the years shown? Suggest why. Hint: refer to the table of factors affecting this component of aggregate expenditure.
5. Which element of AE is the most volatile (subject to change) over this series? Suggest why.
6. Private investment expenditure fell in five of the years in this series. Explain the implications of these falls? (think in terms of the circular flow of income model (see figure 6.4). Does there seem to be a link between the annual rate of change of private investment spending and the rate of change in aggregate expenditure? Suggest reasons for the possible link.