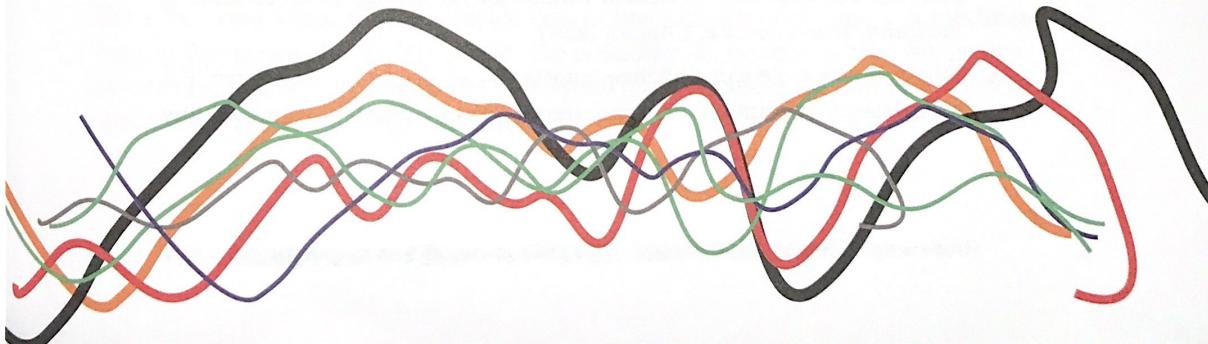


# 8

## The Business Cycle

### Chapter concepts

- *an introduction to macroeconomics*
- *the concept of the business cycle*
- *the business cycle phases and causes*
- *the business cycle and economic indicators*
- *analysing macroeconomic events*



## What is macroeconomics?

Macroeconomics is the study of the performance of the economy as a whole, and the policies used to improve that performance. In studying macroeconomics, economists:

- collect a range of data that describe the state of production, expenditure and income in the economy at any point in time;
- use economic concepts to interpret the data to describe and explain trends in economic activity; and
- suggest policy measures to improve economic performance in both the short term and the long term.

Macroeconomics should be distinguished from microeconomics, which studies the behaviour of individual economic agents (households and firms) and sectors of the economy.

## The relevance of macroeconomics

Articles about the economy appear daily in the media. They often refer to news about inflation, unemployment, economic growth, monetary policy, interest rates, and the like. The following excerpts are from media releases and commentaries over the last thirty years.

- "The economic climate will remain tough for the first half of 1991, as job losses depress spending. However, some signs of a modest recovery should be present by year's end." (*ANZ Business Indicators, February, 1991*).
- "Continued growth in employment and real wages should underpin further expansion in disposable incomes and consumption, although not at the high rates of 1994-95" (*Reserve Bank Bulletin, January, 1996*).
- "The world economy is now expected to grow by around 2 per cent in 2001, down significantly from 3 per cent expected at Budget, and down sharply from the 4.7 per cent growth recorded in 2000. This would be the lowest global growth rate since the early 1990s. World economic growth is expected to recover during 2002, to be 2 per cent, rising to 3 per cent in 2003". (*Treasury pre-election fiscal outlook, October 2001*).
- Domestic economic data in recent months have signalled a pick-up in the pace of growth in demand and activity. Capacity utilisation is high after a lengthy period of expansion, and unemployment over recent months has declined. Business and household confidence are strong. (*Reserve Bank of Australia, Media Release, 8 August 2007*).
- "There is now a slew of evidence pointing to an economic slowdown. For businesses, the symptoms of weakening growth included falling profitability

## Economic skills

**Investigation - macroeconomics and your family**

Ask older members of your family about their standard of living when they were your age. For example, you could ask questions like 'How many rooms did the house have?'; 'How many TVs were in the house?'; 'Did the car have a sound system?' Then ask the same people questions about the economy, such as 'What is Australia's GDP?'; 'What is the current inflation rate?'; 'What is the current employment rate?'; 'Is the state of the economy better this year than last year?' and even 'Do you think government debt is too high?' Record their answers and reflect on them as your course progresses.

and heightened gloom about trading prospects, according to one gauge of sentiment released yesterday." (*Jacob Saulwick, Signs of a slowing economy, Sydney Morning Herald, 13 March 2008*)

- "Real Gross Domestic Product (GDP) declined 1.4 per cent in the first quarter, the largest quarterly decrease since 1991. Both domestic and international demand continued to weaken. Real GDP fell 0.3 per cent in March. The declines in February and March were less pronounced than those in the preceding three months". (*Statistics Canada web site accessed August 2, 2009*)
- "Recent CPI data had confirmed that inflation was likely to remain low for some time. While prospects for growth are positive, there is room for stronger growth, which could be assisted by lower interest rates. (*Reserve Bank Board minutes, 2 August 2016*)."
- "We are projecting a modest improvement in global growth to 3.4 percent in 2020, another downward revision of 0.2 per cent from our April projections. However, unlike the synchronized slowdown, this recovery is not broad-based and remains precarious". (*Gita Gopinath, IMF Blog, October 15, 2019*)
- "The coronavirus remains first and foremost a very major public health issue, but it is also having very significant effects on economies and financial systems around the world". (*Statement by Philip Lowe, Reserve Bank Governor: Monetary Policy Decision, 7 April, 2020*).
- "Inflation in Australia is the highest it has been since the early 1990s. In headline terms, inflation was 6.1 per cent over the year to the June quarter; in underlying terms it was 4.9 per cent. Global factors explain much of the increase in inflation, but domestic factors are also playing a role". (*Statement by Philip Lowe, Reserve Bank Governor: Monetary Policy Decision, 2 August, 2022*).

These excerpts show that economic conditions change over time – sometimes rapidly. As we are all participants in the economy (as buyers, sellers, borrowers, savers, employers, employees and taxpayers) it makes sense that we should try to understand these changing conditions.

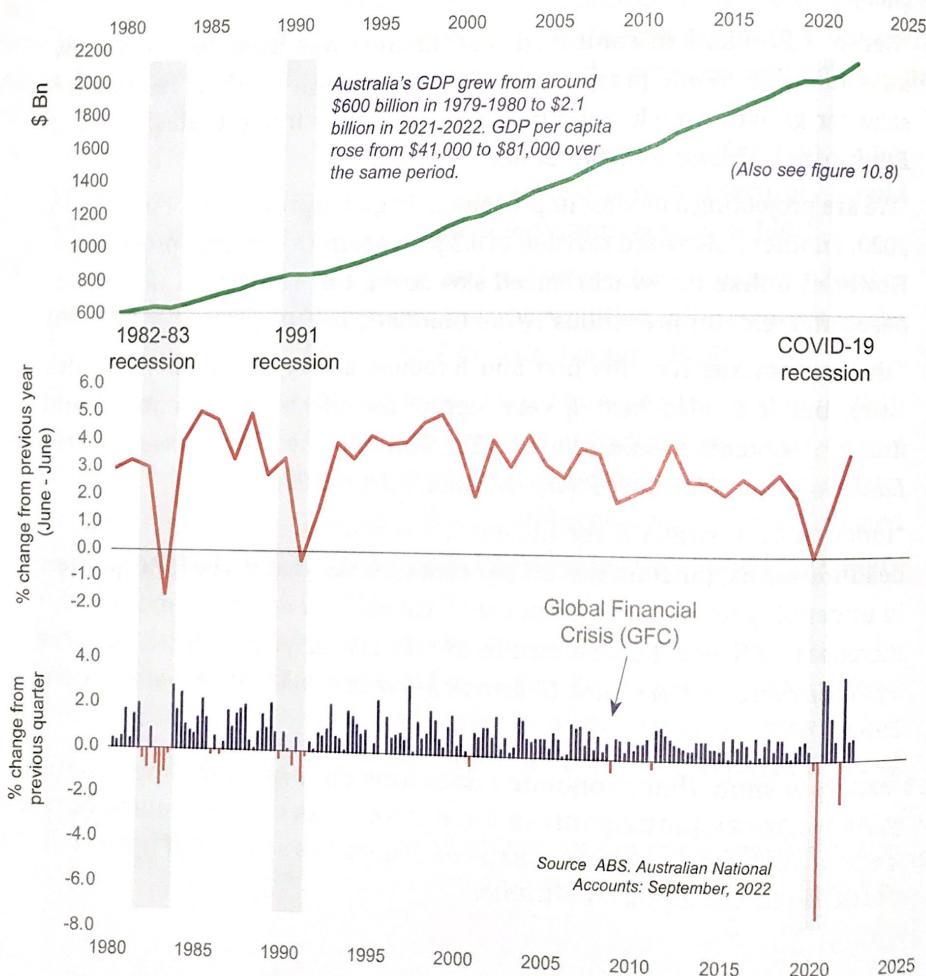
## Macroeconomic trends and cycles

In the long term, economic growth is the key objective for the economy, because it enables people to enjoy a higher standard of living. The economy grows when more resources become available, or as available resources are used more efficiently.

Figure 8.1 charts Australia's Real Gross Domestic Product (GDP) between 1980 and 2022. From \$605 billion in 1979–80, the size of the economy grew to \$2.09 trillion in 2021–2022 (top panel). Over the whole period, the average rate of economic growth was 3 per cent per annum. This panel also reveals a characteristic of developed economies such as Australia – economic growth follows a slow upward path, but does not occur at a constant rate. Sometimes it is faster, sometimes slower.

**Figure 8.1 GDP: Australia 1980 – 2022**

The green line shows Australia's GDP in constant prices between June 1980 and June 2022. The red line describes the annual rate of growth in real GDP; the blue columns describe quarterly growth. Over the whole period, the average rate of economic growth was 3 per cent per annum. Australia's three recessions are indicated by shaded columns.



The middle panel shows the annual rate of change in real GDP. It provides a more detailed picture of changes in the level of economic activity. In seven of the years in the period 1980 to 2022, real rates of economic growth exceeded 4 per cent. As shown by the shaded areas, there were also years in which real growth was negative. In 1983 and 1991, Australia's GDP fell by 1.6% and 0.3% respectively. In 2020, the annual rate of growth was zero.

The lower panel is a more detailed (quarterly, or three-monthly) view of growth rates over the same period. It reveals 12 quarters in which growth was above 2 per cent, and 18 quarters of negative growth between June 1980 and June 2022.

Between the end of the 1991 recession and December 2021, the Australian economy enjoyed a long period of economic expansion. Annual growth rates were above 3 per cent in 15 of those years, with just three quarters of negative growth. For the latter half of the 2010s, however, economic growth was quite sluggish. Quarterly rates averaged 0.5 per cent, and annual rates just 2 per cent! The onset of the COVID-19 pandemic in early 2020 resulted in the first recession in Australia since 1991.

Taken together, the three panels in figure 8.1 show that (a) the economy grows slowly over time, and (b) the path of growth is not smooth. The concept describing these fluctuations in the level of economic activity and rate of growth is called the 'business cycle'. Chapters 8 – 10 describe the business cycle, explain its causes, and discuss the economic theory that has been developed to analyse it.

## **The business cycle**

The business cycle is the term used to describe the short-run fluctuations in expenditure, output and income that occur around an increase in real GDP over the long run.

Figure 8.2 shows a typical business cycle model. The y-axis represents real GDP. The upward sloping (green) line represents the long-term growth that results from increases in population and the labour force; the stock of capital equipment; technological change and improving productivity.

The red line depicts a regular cycle of contraction and expansion. Typically, the cycle is described as having two phases and two turning points:

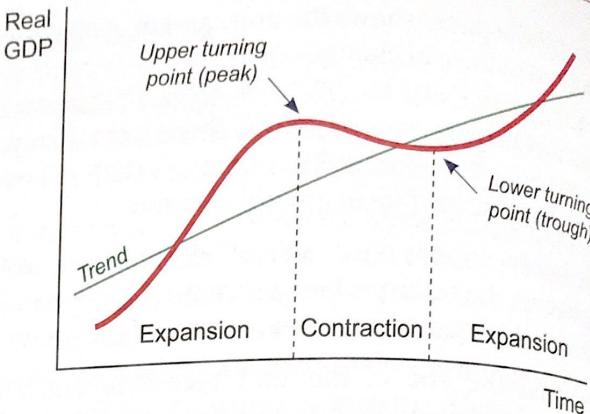
- the expansion or upswing phase;
- the upper turning point (the peak of the cycle);
- the contraction or downswing phase; and
- the lower turning point (trough)

The characteristics of each phase of the model are described below.

### **Expansion**

The expansion is a period during which real GDP is increasing. It is associated with an increase in production (output of goods and services), which results in

*The model describes the phases of a recurring cycle in economic activity, around a long term growth trend.*  
*Real GDP expands until it reaches a peak (upper turning point) of the cycle, until The contraction is a period of declining GDP.*



**Figure 8.2 The Business Cycle model**

greater use of productive factors such as labour; more wages (in aggregate) and higher levels of spending. The expansion phase of the cycle features some typical characteristics:

- rising business investment in the capital equipment needed to produce goods and services;
- rising levels of household consumption spending, particularly on discretionary items;
- confidence in household and business sectors;
- higher business profitability;
- relatively high utilisation of productive capacity;
- increasing labour market participation; and
- falling cyclical unemployment.

The rate of growth in an expansion in a developed economy is generally about 3 per cent per annum (0.75 per cent each quarter), but this may be faster (in which case it could be called a 'boom') or slower. As long as real GDP is rising, the term expansion is used.

### Peak

The expansion phase can't last forever, as economic activity is limited by the economy's productive capacity – how many workers there are to make the products, how many consumers there are to purchase them; how much capital equipment is available for workers to use; and how productive they are. The level of economic activity will reach a peak (upper turning point). As the cycle peaks, the increases of income, output and expenditure that characterised the expansion start to level off. Optimism gives way to uncertainty, and households and firms adjust their expectations about the future and reduce their planned spending. Inventories (stocks of goods that have not sold) rise – a signal that firms should cut production.

### Contraction

The contraction is the period during which real GDP is falling. Businesses record a fall in sales, and respond to this reduction in demand by producing fewer goods and services. As a result, the use of productive inputs falls. Unemployment rises, household incomes fall and spending on goods and services declines. The business cycle model also uses the term 'recession' for the period of economic contraction, but, as explained in the sidebar, the term is often reserved for times when there has been two successive quarters (three-month periods) of negative real growth.

Contractions are characterised by:

- rising levels of cyclical unemployment;
- reduced company profits;
- lower sales of consumer durables;
- lower levels of consumer and business confidence;
- stable, or sometimes lower, prices;
- higher savings rates; and
- lower interest rates.

#### Downturn, contraction or recession?

The 'r' word is meant to convey a serious downturn in the economy, but not a depression! A popular view is that a recession exists when there have been two consecutive quarters of negative economic growth. There are alternative views, one being that a recession is a 1.5 percentage point lift in the unemployment rate within a twelve month period. This could be a more meaningful definition because unemployment figures show the real impact of an economic downturn.

### The trough

Periods of contraction tend to be relatively short and sharp compared to periods of expansion. The lower turning point marks the end of the contraction and the start of a new growth period. This may feature firms replacing or updating worn-out capital equipment, in which case investment spending resumes. Businesses might undertake product and process innovation (new products and more efficient processes) to stay in business, attract buyers and gain a 'competitive advantage' over their rivals. The level of economic activity and confidence gradually rises as the economy starts to expand again. In modern economies, the end of the contraction could also be supported by fiscal and monetary policy (see later chapters).

### Real business cycles

The business cycle model depicts a fairly smooth and regular transition from one period of the cycle to another. This is unlikely to be true in the real economy, where fluctuations in economic activity vary both in terms of the length of the phases, and their amplitude (the height of the boom or depth of the trough). This is evident from figure 8.1. The 1982-83 recession had six quarters (out of seven) of negative growth, after which 23 of the next 25 quarters recorded increases in real

GDP. Annual growth was very strong (around 5 per cent in 1985 and 1988) before the economy entered another recession in 1991.

A deep 1991 recession was followed by a very long period of economic growth in Australia. Although there were one-quarter slowdowns in December 2000, December 2008 and March 2011, Australia had 29 years of consecutive growth until the pandemic struck in 2020. To that date, this was the longest uninterrupted run of economic growth in the developed world.

The worldwide pattern was somewhat different, with recessions in many countries in 1990-2000 and again during the Global Financial Crisis (GFC) in 2008-2009. Australia avoided a recession in both periods, although there was a one-quarter slowdown in each. Interestingly, the world growth path conforms quite closely to the regular 7-9 year fluctuations described by the business cycle model.

## Explaining the business cycle

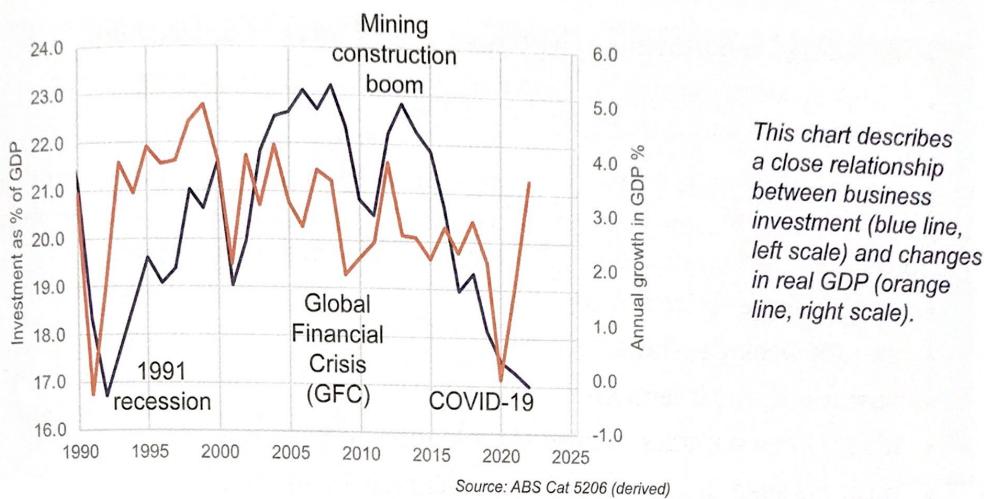
What causes these cyclical fluctuations in economic activity?

One explanation is that cycles are 'endogenous' (they have an internal cause). This means that some types of spending in the economy are likely to rise and fall themselves over time.

An example is business investment. Investment is expenditure on equipment that businesses use to assist labour in production of goods and services (i.e. capital equipment). Investment decisions are essentially driven by two things - current and expected profitability, and the cost and availability of the funds used for capital spending. When household spending is rising, firms invest to take advantage of expected sales and profits. New investment expands the economy through the multiplier effect (see chapter 9). Investment will fall however when businesses have enough equipment to handle anticipated demand in the future. When that point is reached, there are fewer opportunities to profitably employ more capital equipment. Over-investment gives way to under-investment until the capital equipment built in expansion is worn out (depreciated) and requires replacement. Investment fluctuations partly occur because capital equipment lasts for a long period of time.

A link between investment and the business cycle seems to be borne out by figure 8.3, which shows a close relationship between business investment in Australia, shown here as a proportion of GDP (blue line, left scale) and changes in real GDP (orange line, right hand scale).

Another example of an endogenous influence on the business cycle is that households and businesses take on more debt in a period of economic expansion because they expect that the value of assets such as property and shares will rise. Eventually however, the debt burden becomes excessive, so households and businesses cut back their spending and increase savings to reduce debt. Saving more is 'good' for an individual household, but if all households save more, aggregate spending must fall.



**Figure 8.3 Investment expenditure and GDP**

Another explanation for business cycles is the impact of 'exogenous' shocks (outside influences) on the economy. Such shocks could be positive or negative, and are 'random' in nature. Examples of negative shocks include climatic events (good seasons and bad seasons, floods and droughts); geopolitical events; and the epidemics / pandemics that affect community health. These shocks disrupt production, employment, income and prices throughout the economy.

The mining construction boom a decade ago could be regarded as a positive shock because so much capacity was developed in a short period of time to satisfy unexpected overseas demand for iron ore and gas. Perhaps climate change will act as a positive shock in the near future, because huge investment in infrastructure will be required to reduce greenhouse gas emissions.

### Economic indicators

So what phase of the cycle best describes the economy in at the minute? Is the economy expanding or contracting? Are business conditions good enough for firms to purchase new equipment or take on more employees? Is it a good time for households to borrow money to build an extension, or perhaps build a new house with that all-important home theatre? Information about the current state of the economy is important for many household, business and government decisions. Reflecting that, there is an army of professional economists and statisticians employed in collecting and analysing data about the state of the economy. They maintain large datasets that allow them to discover trends, uncover relationships, and make forecasts about the future. These datasets are often sourced from statistics published by government institutions such as the Treasury; Reserve Bank of Australia; Australian Bureau of Statistics; the Department of Foreign Affairs and Trade (DFAT); and the Productivity Commission. Private organisations also collect economic data to provide advice to their clients. Examples include:

- economics departments in banks, advisory firms and universities;
- industry bodies associated with real estate; construction; mining and automotive sectors; and

Gross Domestic Product (GDP) is the most accurate indicator of the state of the economy, because it is the primary aggregate measure of output. There are many narrower (or partial) indicators of economic activity, examples being:

- the Consumer Price Index (CPI);
- average weekly earnings (AWE);
- business hiring intentions;
- labour force statistics such as participation and unemployment;
- business spending on capital equipment (i.e. investment);
- motor vehicle registrations;
- building approvals;
- industrial and agricultural production;
- interest rates;
- levels of public and private debt;
- tourism data (such as hotel occupancy rates and tourist arrivals);
- exchange rates; and
- stock market indices such as the ASX All-Ordinaries Index.

Some, such as hiring intentions, are based on surveys of firms and households. Questionnaires yield important data, as they may report reasons behind trends.

Most data collection involves time lags. Even GDP data suffers a lag between the collection and publication of data. The GDP/National Accounts data for the June quarter of 2022, for example, was published in the ABS national accounts released on September 7 of that year.

Economic indicators are often classified according to whether they are 'leading', 'coincident', or 'lagging'. These terms refer to the timing of the relationship between changes in the indicator and changes in the overall level of economic activity (see figure 8.4). Thus we expect trends in leading indicators to predict a trend in the business cycle several months down the track.

Coincident indicators appear to move in-line with the level of economic activity, like manufacturing output; production of building materials; sales of consumer durables; retail sales; and the growth of GDP.

Lagging indicators are not expected to show any change until after trends in the rest of the economy have been confirmed. Lagging indicators thus reflect events that occurred some time in the past. Examples are changes in labour markets; savings bank deposit levels and consumer debt levels.

Economic indicators		
Leading indicators	Coincident indicators	Lagging indicators
Share prices Building approvals Levels of stock (inventory) held by retail firms Manufacturers' new orders Business and consumer confidence Consumer expectations New employment vacancies New business start-ups	GDP Manufacturing output Sales of consumer durables Production of building materials Retail sales Job advertisements Motor vehicle sales Money supply Capacity utilisation	Interest rates Consumer debt Unemployment rate Bankruptcies Inflation rate (CPI)

**Figure 8.4 Examples of economic indicators**

## Recent macroeconomic conditions

In this section, we review Australia's recent growth record, concentrating on the years 2014-2022. The period was characterised by

- sluggish economic growth between 2014 and 2019 (representing a continuing hangover from the GFC in 2008-2009);
- the COVID-19 pandemic and the associated sharp recession and recovery; and
- the economic fallout from geopolitical tension, especially the Russian invasion of Ukraine.

Australian economic growth in the period between 2014 and 2019 averaged just 2.4 percent – weaker than the long term (1980-2022) average of 3.0 per cent. In per capita terms, the economy went backwards in three consecutive quarters in 2018-2019. World economic growth was also sluggish over the 2014-2019 period, although it showed signs of picking up in late 2019. Part of the explanation for sluggish growth over that period is that the global financial crisis (GFC) in 2008 left long-lasting scars on the economy. The GFC could be regarded as an example of the debt cycle we discussed earlier.

Business investment was very strong in the mid-2000s (peaking at 22 per cent of GDP). Mining investment reached a high of 8 per cent of nominal GDP in 2013, compared to its long-term average of 3 per cent. But mining investment is 'lumpy'. Large sums can be spent in the project development and construction phase, which may last two to three years. Investment then drops off when construction is complete and projects shift to their operational phase.

*The GFC of 2008-09 is regarded as an example of a credit cycle recession (borrowing, exuberance, debt) brought about by excessive real estate investment and the securitisation of debt, especially in the US, during the 1990s and 2000s.*

Non-mining investment was lower than average, possibly explained by rise in the terms of trade and appreciation of the Australian dollar that were the result of overseas demand for minerals. Currency appreciation reduced the competitiveness of the domestic economy (especially manufacturing and tourism).

Reflecting slow growth, inflation in most of the developed world was low, and there were concerns in some countries about the possibility of deflation late in the decade. Several countries in Europe had negative interest rates over the period 2015-2019, and some applied 'unconventional' monetary policy measures to try to stimulate their economies.

In Australia, private sector growth until the end of 2019 was quite weak, with the annual growth in household consumption well below its 25 year average. Unemployment averaged over 5.5 per cent of the workforce in the later half of the decade, and underemployment reached 9 per cent in 2019.

Figure 8.5 charts Australian growth since 2014. The orange line shows quarterly GDP (in billions of dollars, left hand scale). The red dotted line shows the growth trend over the whole period, based on the quarterly average growth rate of 0.6 per cent. Blue columns show the quarterly change in GDP (in per cent, right hand scale). The graph shows that the onset of the COVID-19 pandemic in January 2020 was a significant negative shock to the economy. GDP fell slightly in the March quarter, and by a massive \$34 billion (or 6.9 per cent) in the June quarter - the largest peace-time fall since the Great Depression of the 1930s.

The pandemic had a significant impact on both the supply and demand sides of the economy. Initially, the shutdowns and restrictions on movement necessary to contain the spread of the virus caused significant disruption to supply chains. The pandemic exposed the problems in the 'just-in-time' supply system which has characterised the latest era of globalisation. International air freight continued to operate, but capacity was limited because the passenger aircraft that also carry goods were grounded. The cost of transporting goods in sea containers rose by 50 percent on Australian routes because port activity around the world slowed to reflect COVID-19 protocols, and the manufacture of new containers could not keep up with demand. Agricultural producers relying on overseas workers could not get staff, and tertiary education (Australia's third largest export for most of the 2000s) lost nearly all of its new intake of students from overseas in both 2020 and 2021. Some commodity prices suffered fluctuations due to changes in demand and supply over 2020 and 2021. Oil prices initially crashed, then slowly returned to normal. The petrol price in Australia was below a dollar per litre in June 2020, but back above \$1.50 twelve months later.

Two-thirds of Australian businesses reported lower demand for their goods and services in the first half of 2020; and one-third experienced cash flow issues. The burden was particularly high on sectors such as hospitality, travel and tourism. The majority of workers still had jobs, but fewer places to spend as many businesses were operating at reduced capacity, and travel bans were in force.

2014-2019	2020-2022	2023-2025
<p>The economy was characterised by:</p> <ul style="list-style-type: none"> <li>slow growth (monthly average 0.6%, annual 2.4%).</li> <li>low inflation (CPI rising 1-2% p.a.).</li> <li>concerns about deflation in some countries in 2018.</li> <li>unemployment fell from 6.2% in late 2014 to 5.1% at December 2019.</li> <li>underemployment above 8% for the whole period.</li> <li>mining investment down 50% over the period 2012 - 2017.</li> <li>private capital spending also fell in the first half of this period.</li> <li>low wage growth, with the wage share of total factor income two per cent less than the long term average.</li> <li>profit share of total factor income was four per cent above the 1960-2020 average.</li> </ul>	<p>Pandemic - rapid downturn with:</p> <ul style="list-style-type: none"> <li>supply chain interruptions</li> <li>business shutdowns due to health priorities</li> <li>fall in consumption; increase in the savings rate</li> <li>W-shaped recovery with growth near trend at end of 2022.</li> <li>Ukraine war increased economic uncertainty.</li> <li>Floods in eastern Australia.</li> <li>Rapid rise in inflation in 2022 due to higher prices for energy and food. Upward pressure on interest rates.</li> </ul>	<p>Inflation should moderate. Possible recession in the US and Europe.</p> <p>Demand for commodity exports may insulate Australia from a downturn. Need for urgent action/investment on climate change.</p>

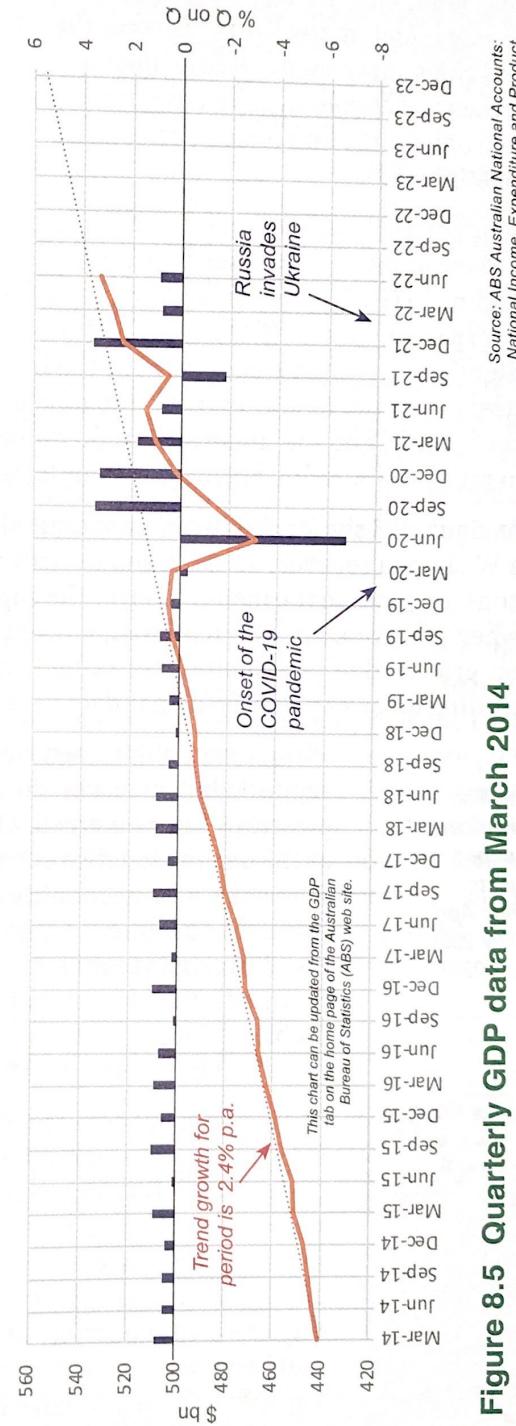


Figure 8.5 Quarterly GDP data from March 2014

Discretionary consumption fell 7.9 per cent in the first half of 2020, and the household savings ratio jumped from 5.4 per cent in 2018-2019 to 12.3 per cent a year later, and has been higher than that since (ABS, September 2022). In order to stay afloat, many firms 'pivoted' their business practices – restaurants, hotels and cafes survived by offering take-away service; retailers increased their on-line presence; schools switched to remote learning; and many businesses cut face-to-face office time and instead conducted their business through email and 'Zoom' meetings.

Four quarters of recovery followed in late 2020 and early 2021, but the delta variant of the virus caused further shutdowns in NSW and Victoria and another decline in GDP in the September quarter of 2021. The December 2021 quarter saw a very strong result (3.9%), and both the March and June quarters of 2022 were slightly better than trend. Perhaps the hardest outcome to explain in 2022 is the strength of the labour market. The official unemployment rate was just 3.4 per cent in July, and the underutilisation rate was below 10 per cent for the first time in many years. Many businesses complained of a lack of staff.

As figure 8.5 shows, the initial economic shock of the pandemic was followed by a W-shaped recovery to the trend growth path. The pandemic will have further consequences in the medium term. The supply of some types of skilled labour fell when jobs were idle. Zero migration over two years will have a long term impact on growth due to a shortage of skilled workers and lower population growth, leading to lower potential demand for several years.

*Four million people received JobKeeper payments between April and July 2020 (RBA, 2020).*

Many companies survived the pandemic with government support, but may not do so over the next few years as other pressures have emerged. Other pandemic-related changes such as the decline in office occupancy rates may also have an impact. Transport and hospitality sectors lost skilled and experienced workers and found it difficult to rebuild capacity (as evidenced by the air transport problems that emerged as the demand for travel returned). The economy still suffers some supply chain and illness problems in the workforce related to the Omicron variant of the virus, which is more easily transmissible, but less virulent.

The significant economic shock in 2022 was the Russian invasion of Ukraine in February. The war had a severe impact on production of goods and services in Ukraine, not to mention the dislocation and personal costs to those affected. Ukraine is a significant producer and exporter of wheat, corn, sunflower oil, fertiliser and timber. A range of economic sanctions applied on Russia impacted on the supply of oil and gas, on which much of Europe had been dependent. The resulting shortages and price increases fed inflationary pressure in Europe and around the world, and central banks raised policy interest rates to bring it under control (risking further slowdowns).

Headline inflation rates - August 2022 (% p.a)	
Japan	2.6
Australia	6.1
Canada	7.6
USA	8.5
Euro area	9.1
UK	10.1
Russia	15.1
Turkey	80.0

Source: Trading Economics

In September, the World Bank cut its forecast for world growth from 2.8 per cent to 2.2 per cent (and just 0.3 per cent in the Euro area).

To add to these shocks, Australia's east coast suffered several major flood events in 2021 and 2022. Floods cut production in key agricultural areas, forcing up the prices of food. They also disrupted activity in many key towns and cities, and may mean many residents face resettlement away from flood-prone areas.

Stresses on global supply chains are falling and there is a chance that shipping capacity will exceed global demand in 2023, leading to falling transport prices. Likewise, the supply-demand imbalance in the world semiconductor industry may be resolved in 2023, meaning normal production of all the machines and goods that contain chips will be restored, and prices could fall as sources of supply increase. On the other hand, gas prices have risen on world markets as Russia is a key supplier. Prices tripled in Europe between January and August, 2022 – presenting challenges for manufacturing industry, households and governments (feeling the pressure to cap prices for consumers). Prices are again forecast to rise in the European winter. Gas is an important input in the production of fertiliser, leading to forecasts of short supply and high prices to add further constraints to food supply.

How will international events affect the Australian economy? As figure 8.5 illustrates, the economy bounced back from the impact of the pandemic to be close to the trend rate of growth since 2014. Continuing inflation is a threat to growth because it has pushed up the cost of living for households, and the cost of productive inputs used by business, potentially leading to lower aggregate demand and greater uncertainty. But Australia is expected to benefit because it is an exporter of many of the key commodities for which prices have risen, such as grains, gas, and coal. As at October, 2022, the terms of trade is above its levels during the mining boom. This suggests another period of rising national income (increased export revenues, employment and taxes) which might protect the economy from the downturn expected for most of the world economy.

**Excerpt: Minutes of RBA Monetary Policy Meeting, October 2022.**

Notwithstanding the easing in measures of headline inflation, core inflation remained high and was increasingly being driven by higher prices for services. Higher services inflation was a response to strong domestic demand and growth in labour costs running above rates that would be consistent with inflation returning to central banks' targets. Labour markets remained tight, with very high vacancy rates and unemployment rates back to or a little below their pre-pandemic lows.

Recent indicators continued to point to a further moderate softening in aggregate demand in advanced economies. Household consumption was growing modestly, with some switch back to spending on services and away from goods. Businesses' hiring and investment intentions remained at or above pre-pandemic levels. The recent cost-of-living policies announced by governments in Europe would help support economic activity and reduce some of the downside risks. The housing sector in a number of countries remained an area of weakness, reflecting rising interest rates.

**Worksheet**

1. Distinguish between the terms 'macroeconomics' and 'microeconomics'.
2. To what extent do you think macroeconomic events are relevant to you over the next few years, your parents; your grandparents? Find an article from Australian media that discusses a recent macroeconomic event that is relevant to your family. Explain its relevance.
3. The three panels in figure 8.1 are based on the same data. Describe the differences between the graphs? Which, in your opinion, gives the best representation of changes in RGDP?
4. Draw the model of the business cycle and describe its phases. What stage of the business cycle is the Australian economy currently going through, in your opinion? Explain your choice. What about the world economy?
5. Explain what leading, coincident and lagging economic indicators are. Provide three examples of each. Why do economists collect such data?
6. List three events that might act as an exogenous cause of an economic contraction.
7. Briefly outline the impact of the pandemic on employment and economic growth.
8. Why is the COVID-19 recession associated with both falls in aggregate demand and aggregate supply?
9. How does the war in Ukraine affect the Australian economy? Could it create any opportunities for Australian business?

**Australian car sales**

The following table shows quarterly car sales (by total number of vehicles sold) in Australia for the period between 2018 Q1) and 2022 (Q2).

Year and quarter	Sales (original)	Year and quarter	Sales (original)	Year and quarter	Sales (original)
2018 Q1	291538	2020 Q1	233361	2022 Q1	262436
2018 Q2	313984	2020 Q2	209053	2022 Q2	275422
2018 Q3	275483	2020 Q3	202476		
2018 Q4	272106	2020 Q4	272077		
2019 Q1	265538	2021 Q1	263648		
2019 Q2	285928	2021 Q2	303820		
2019 Q3	256998	2021 Q3	248672		
2019 Q4	254403	2021 Q4	233691		

Source: Federal Chamber of Automotive Industries: Media releases (various issues)

1. Calculate the quarterly percentage change in sales, and graph your results over the period OR convert the sales data into an index number for each quarter (using the March quarter of 2018 [2018 Q1] as the base period). Explain why economists often convert original data to a rate of change, or an index number.
2. Suggest how this information may have been collected. Original data is often modified and shown as 'seasonally adjusted' or 'trend' data. Why would it be modified? Is there any evidence of seasonality in these figures?
3. Would car sales be considered a leading, coincident or lagging indicator of economic activity? Justify your choice.

4. Explain why this data series would be useful information for: a company importing car tyres; a retailer of car accessories; a bank; a transport planner in a state government; economists at the Reserve Bank of Australia (RBA).
5. On a scale of 1-5, with 5 being 'closest', suggest how closely the car sales data would be related to data on: consumer confidence; interest rates; electricity prices; fuel prices; furniture sales; job vacancies; and the rate of unemployment.

### **Economic indicators**

Refer to the Trading Economics website at <http://www.tradingeconomics.com>. Select Indicators > Countries > Australia.

Select any five datasets from the list of Australian economic indicators. Navigate to the graphical view of each of your chosen indicators and select the '10 year' view. Describe trends in the indicators you have chosen. Cut and paste each of the graphs into a document or presentation. Make sure they cover the same time period. Do you note any similarities between the graphs? Suggest an explanation.

Now compare one or two indicators across a range of developed countries. Describe any similarities. Note that it is difficult to use data for developing countries, even China and India, because consistent high rates of economic growth at this stage of their economic development tend not to exhibit clear cyclical patterns.

### **Economic sentiment survey**

Carry out an economic survey in your local area. Do the survey twice, asking the same people, with the second survey following the first by at least three months.

Stages in your research:

1. Define the purpose of the survey - in this case, you wish to find out whether people you are surveying feel confident about the short to medium term future. Because 'confidence' is very difficult to measure in absolute terms, you could measure 'confidence compared to three months ago'.
2. Write some questions which you believe will measure 'confidence'. You could test these by asking a small group of people and changing the questions which perform poorly. The best questions are unambiguous; invite replies which can be converted to numbers on a scale (e.g. 1 = definitely disagree; 2 = disagree; 3 = not sure; 4 = agree; 5 = strongly agree); and take a short amount of time to administer and record. Perhaps you could include one or two 'open' questions at the end of your survey, to give respondents a chance to explain their expectations in more detail e.g. which type of spending would you be most likely to cut if household income fell by ten per cent?
3. Send your questions to a small sample of people (by email, or using a stamped, self-addressed envelope). Try to ask at least 50 people by allocating everyone in the class two or three surveys each. The sample should contain people of different ages, occupations, backgrounds, places of residence etc. Ensure you follow appropriate ethical requirements, including giving an assurance to your respondents that their answers will remain confidential.
4. Carefully collate and record all responses. Compile 'descriptive statistics' which describe the results (e.g. proportions in each of the five categories). Search for any relationships which appear to exist (e.g. 80 per cent of respondents who thought economic conditions would improve also expected lower interest rates).

**Multiple choice questions**

Choose the best alternative in the following questions.

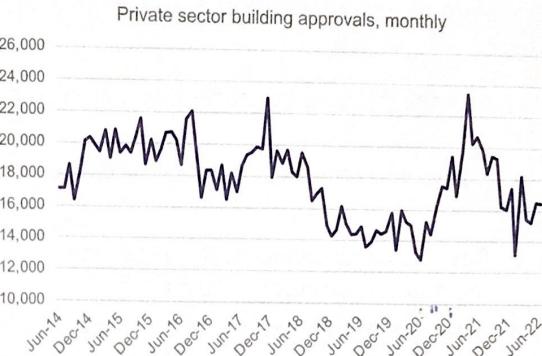
Choose the best alternative in the following questions.

1. Which of the following alternatives is NOT correct?
  - a. Macroeconomics is the study of aggregate (total) levels of production, expenditure and income in the economy.
  - b. In studying macroeconomics, economists describe trends in economic indicators, and seek explanations as to why they change from time to time.
  - c. Macroeconomics is the study of the individual sectors of the economy.
  - d. Macroeconomics includes the study of policy measures which can improve the state of the economy in the short term.
2. A recession is a decline in:
  - a. the unemployment rate if it lasts six months or longer.
  - b. real GDP that lasts six months or longer.
  - c. potential GDP that lasts six months or longer.
  - d. the inflation rate that lasts six months or longer.
3. Which of the following would be associated with a peak in the business cycle?
  - a. inflationary pressure AND falling real GDP.
  - b. rising employment AND business investment.
  - c. increasing investment risk AND capacity constraints.
  - d. a booming economy AND falling casual employment opportunities.
4. At the start of an upswing of economic activity, which of the following pairs of events would most likely be occurring?
  - a. Falling employment AND rising interest rates.
  - b. Improving business expectations AND rising private investment.
  - c. Inflationary pressure AND excess capacity in manufacturing industry.
  - d. A reduction in inventory levels (business stocks) AND high levels of consumption of durable goods (such as electrical goods).
5. Which of the following pairs of events are more likely in the early stages of a downswing in economic activity?
  - a. Replacement of worn-out equipment AND inflationary pressure.
  - b. Improved economic sentiment AND rising investment.
  - c. Firms become uncertain about the future AND retail sales rise.
  - d. Investment falls after previous increases in capital stock AND borrowers re-assess their credit limits.
6. Unemployment levels tend to:
  - a. change before real GDP because they reflect business hiring plans.
  - b. increase when GDP growth is above average.
  - c. rise during the recovery phase of the business cycle.
  - d. lag changes in the rate of change of GDP.
7. If GDP rose from \$250 million to \$258 million over a year, the annual rate of growth was:
  - a. 0.8%
  - b. 1.6%
  - c. 3.2%
  - d. 8.0%

### Data interpretation 1

The questions refer to the chart at right. Source: ABS Building Approvals.

- From the chart, estimate (a) the number of buildings that received approval (approval for construction) in December 2017, and (b) the percentage change in approvals between June, 2020 and March 2021. [2 marks]
- Are building approvals a leading, coincident or lagging indicator? Explain [2 marks]
- Refer to figure 10.6 in the text and comment on the relationship (if any) between private sector building approvals and economic growth. [2 marks]
- Describe the trend in this data between December 2017 and December 2019, and explain the likely impact of that trend on employment, hours worked, the manufacture of building materials and applications for finance. [4 marks]



### Data interpretation 2

The question refers to the economic data for a hypothetical economy presented in the table below.

Indicator	Real GDP	Unemployment rate	Consumer price index	Current account deficit	Business investment
Unit	\$ bn	% labour force	Year 1 = 100	% of GDP	% of GDP
Year 1	922	4.6	100.0	1.2	14.2
Year 2	943	5.3	102.8	0.6	14.3
Year 3	960	5.7	105.8	0.8	15.3
Year 4	998	5.4	110.6	-1.5	18.6

- Calculate the rate of economic growth in Year 2; the inflation rate in Year 4; and the change in business investment in Year 3. [3 marks]
- Explain the relationship, over the four year period, between EITHER economic growth and unemployment; business investment and growth; or inflation and unemployment. [4 marks]
- Describe the performance of the economy over the four year period. [5 marks]

**Extended responses**

*Each of the following questions should be answered in 2-3 pages of writing. Include diagrams and examples where appropriate. Pay attention to the allocation of marks when writing your answer.*

1. a. Describe the typical characteristics of the expansion phase of the 'business cycle'? [12 marks]
- b. Explain why an economic expansion cannot continue indefinitely. [8 marks]
2. a. Describe, using examples, the role of economic indicators in understanding macroeconomic events. [10 marks]
- b. Referring to examples, discuss how economic indicators would be expected to change during the downswing phase of the business cycle. [10 marks]
3. a. Discuss the causes of the cyclical fluctuations that characterise the business cycle. [10 marks]
- b. Discuss the likely trends of TWO of the following economic indicators in the trough phases of the business cycle: business profitability; the level of imports and exports; retail spending; and the Australian government Budget outcome. [10 marks]