Economic growth can increase our material living standards but because it uses resources, it may cause environmental damage that lowers society’s wellbeing.

2.1 The meaning of living standards, economic growth, trade-offs and environmental sustainability

In order to understand some of the key concepts associated with the topic of economic growth, it is important to first understand concepts such as living standards, trade-offs and environmental sustainability.

Material living standards are helped by economic growth

Most people throughout the world would like to be better off and enjoy improved material living standards. This means having higher incomes per person and being able to consume or purchase more goods and services. In poor countries, improvement in material living standards may come from producing more food, vaccinations against preventable diseases like malaria, clean drinking water, and basic education and housing. In rich countries like Australia, we not only expect that these basic material needs will be met, but we also try to satisfy our virtually unlimited wants for consumer goods and services such as iPods, fashionable clothes, entertainment, travel, body makeovers and the latest energy-devouring appliances. Whether we are talking about rich or poor
countries, strong economic growth is usually seen as the main way of improving our material living standards. Economic growth refers to increasing the level of national output or production between one year and the next, hopefully at a rate faster than the rise in population.

Here, economic growth can be visualised using the production possibility diagram (PPD) we introduced in chapter 1 (pp. 0–0). As shown in figure 2.1 below, economic growth (producing more goods and services) is only achievable in the long term if there is an outward shift in the nation's production possibility frontier (PPF). The PPF represents the country's productive capacity or potential, dictated by our access to natural, labour and capital resources, and levels of efficiency. Growing the PPF enables more of society's needs and wants to be satisfied, thus improving our material living standards.

![Figure 2.1](image)

**Figure 2.1** Growing the size of the economy allows for higher average incomes per person and better average material living standards.

A **trade off** is a cost based on what has to be sacrificed or given up, following a decision or choice.

Non-material living standards are not related to the quantity of goods and services that we have but are elements of our wellbeing that affect the quality of our daily lives, and may perhaps involve levels of freedom, happiness, quality of family life, justice, amount of leisure time, crime, and the state of the natural environment.

But here lies a real dilemma as sometimes economic growth comes at a cost.

**Trade-offs associated with economic growth**

While growing the economy brings benefits, especially in poor countries, have you ever stopped to consider the **trade off** (i.e. what is being given up or sacrificed, a cost or disadvantage)?

- For instance, does having even more goods and services available in rich countries actually make us happier and better off overall?
- What have we given up (the opportunity cost) to achieve this material affluence?
- What damage has economic growth inflicted on the natural environment, and has it contributed to global warming and climate change?
- Can the rapid depletion of natural resources, which we have seen up to this point, keep going indefinitely?
- Will the living standards of future generations suffer because of the choices we make?

Indeed, the **quantity of material possessions** is not the only thing that affects the current and future living standards of Australians. Figure 2.2 (p. 00) shows that society's wellbeing is not influenced by only material considerations. Living standards are also affected by **non-material** aspects of our wellbeing that influence the quality of our daily lives. Non-material living standards are not related to the quantity of material goods and services, and may vary from person to person.
to person. For example, non-material living standards might be affected by levels of freedom, happiness, job satisfaction, quality of family life, justice, amount of leisure time, crime rates, the state of the natural environment and pollution levels.

**Material living standards . . .**
- are affected by the amount or real value of goods and services produced each year, since this also affects the levels of national income per person and consumption
- rise when the economy gets bigger as a result of economic growth and access to more resources
- depend on whether the nation’s goods, services and incomes produced each year, are shared or divided up fairly evenly or unevenly
- depend on whether there is inflation (i.e. generally rising prices), since this impacts on the purchasing power of people’s incomes
- are affected by the levels of employment (those with jobs) and unemployment (those without jobs and looking for them).

**Non-material living standards . . .**
- are related to the quality of our daily lives or wellbeing, as affected by many factors other than the quantity of material goods or services, considered important by individuals
- may be affected by the levels of, for example,
  - personal happiness
  - environmental health or pollution
  - leisure time versus work
  - job satisfaction
  - crime, peace and violence
  - family relationships and cohesion
  - freedom — economic, social and political democracy
  - absence of congestion or overcrowding.

**Sustainable economic development**
Growing concern about these trade offs associated with economic growth, gave rise to the concept of sustainable economic development. This concept is commonly defined as a method of expanding the economy’s production levels to meet the needs for goods and services of the present population, without undermining the ability of future generations to meet their own needs. Another definition of sustainability is an economy where production is in equilibrium or balance with the environment and its ecological support systems. This chapter explores the issues of economic growth, its sustainability and impact on Australian living standards.
2.2 The measurement of economic growth

As noted, economic growth exists when a country’s economy gets bigger over time. It occurs when there is a rise in the total volume of goods and services produced by a nation between one year and the next. Economic growth means that there are more goods and services being produced and made available for consumers. Furthermore, when output grows faster than the size of Australia’s population, there is a rise in the average level of per capita income or material living standards.

Nowadays, the most common indicator of the growth rate in national production is the annual percentage change in gross domestic product (GDP) or, more precisely, chain volume gross domestic product. Here, GDP statistics attempt to estimate the total annual value of goods and services produced or sold by a nation. To make one year’s GDP results comparable with another’s, the exaggeration of the value of production caused by the effects of inflation or generally rising prices is removed statistically. The resulting measure shows changes in the volume of goods and services produced and is called chain volume GDP (or real GDP). GDP figures are prepared by the Australian Bureau of Statistics (ABS) every quarter (three-monthly intervals), and the four quarters may then be combined to calculate the annual rate of economic growth.

Limitations of GDP as a measure of production and living standards

For various reasons, GDP is not a totally accurate measure of the level of national production. Here are just five of the many limitations or inaccuracies of these statistics that cause GDP to either overestimate or underestimate the actual value of national production and, hence, material living standards.

GDP excludes most non-marketed production

Some non-marketed goods and services are not included in the GDP figure. For example, do-it-yourself home production such as painting, housework and gardening are not
included. Production involved in the cash economy, such as work paid in cash and not declared to the tax department, is also excluded from GDP. In addition, production in the black market economy (for example, the production of illegal drugs) is not included in GDP. It is estimated that this non-marketed production could add 10–15 per cent to GDP if it were included.

**GDP uses inaccurate ‘guestimations’ of some types of production**

Because of the lack of an alternative, the value of some non-marketed production making up GDP has to be ‘guestimated’, or imputed, leading to inaccuracies. For example, the amount of farm production that is consumed on the farm and not sold, is estimated. To use another example, the annual value of accommodation provided by houses occupied by their owners, is also estimated. This leads to inaccuracy in Australia’s GDP figures.

**GDP fails to take account of negative externalities that lower non-material living standards**

Negative externalities (environmental and other costs imposed on third parties that result from production and economic activity) are not taken into account in calculating GDP. For example, economic growth sometimes undermines our personal wellbeing (for example, through the loss of leisure time for families to spend together, increased stress levels and loss of job satisfaction due to pressure to be efficient) and destroys the natural environment (e.g. the depletion of environmental resources, generation of pollution, acceleration of global warming and climate change). Because these costs are not subtracted from the annual value of production, using GDP as a measure exaggerates our real living standards.

**GDP needs to be adjusted to take account of population size**

On its own, GDP takes no account of the number of people who have to share the nation’s production pie. So, to indicate whether society is becoming better off materially, the value of GDP needs to be divided by the number of people making up the total population. Here, annual GDP per capita (‘per capita’ means ‘per head’) is often quoted as a general indicator of average material living standards. It is calculated as shown in figure 2.6.

To illustrate, if Australia’s GDP for 2012–13 was equal to $1 525 441 million, GDP per head could be calculated by dividing the total GDP of $1 525 441 million by 22.917 million people in Australia to arrive at an average figure of around $66 563 per person per year.

**GDP fails to take account of the way goods, services and incomes are distributed or shared**

Having economic growth and a bigger GDP do not necessarily guarantee that people are better off. Material living standards are greatly affected by the way we share or
distribute the goods, services and incomes resulting from production. If a few people benefit because of great economic inequality, average material wellbeing is lower than if the production and income ‘cakes’ were divided or shared more evenly. As we shall see in chapter 4, Australia’s pattern of distribution is fairly uneven, at least prior to the government’s policies designed to redistribute incomes more fairly.

2.3 The business cycle and recent trends in Australia’s rate of economic growth

In all countries, the rate of economic activity or economic growth (usually measured by the annual percentage change in GDP) moves up and down in a wave-like manner. This is called the business cycle (also called the economic cycle) and is illustrated in figure 2.8 below. Indeed, the production cycle passes through five main phases or economic situations.

Let us take a closer look at the five main phases of the economic cycle shown in figure 2.8:

1. The expansion or recovery
   The expansion or recovery phase is where the level of GDP is rising and growth rates are quite fast (perhaps around 3.0 to 3.5 per cent or more per year). Here, it is common to see strong levels of spending, unemployment rates fall (i.e. the percentage of the labour force who are actively looking for work but cannot find a job drops) and inflation accelerate (i.e. the general rise in prices gets faster).

2. The peak (perhaps a boom)
   The peak phase occurs when GDP reaches its maximum level (i.e. the economy’s productive capacity or limit) and the rate of growth usually starts to ease. If inflation or general prices are rising quickly (perhaps above 3 per cent a year) and unemployment rates are very low (perhaps below 4.5 or 5 per cent), this is usually called a boom (for example, between 2006 and mid-2008, and to a lesser extent 2010–11).
3. The contraction or slowdown
The contraction or downswing phase is where the rate of growth in GDP or production is slower. Typically, national spending levels are down, unemployment gradually starts to rise and inflation eases.

4. The trough (perhaps a recession)
The trough phase occurs when production reaches its lowest level, possibly involving negative rates of economic growth. If GDP actually falls over two consecutive quarters (i.e. a period of six months or more), this is called a recession (e.g. almost in 2008–09). Here, unemployment rises (perhaps well above 5 or 6 per cent), while inflation slows (perhaps to less than 2 per cent). It is even possible that there may be generally falling prices or deflation. Additionally, in cases where the drop in production is really large, it is called a depression.

5. Domestic economic stability
Domestic economic stability is the ideal economic position for an economy to be in. At an average of around 3.0 to 3.5 per cent a year, rates of national spending and economic growth are neither too fast (causing an inflationary boom) nor too slow (causing recession). Indeed, a central feature of Australian Government policy is to promote better living standards through the pursuit of the goal of strong and sustainable economic growth where GDP rises fairly steadily by an average of around 3.0 to 3.5 per cent a year, over the economic cycle. This situation lies midway between the peak and trough, and is usually experienced temporarily as the economy passes through it on its way up or down in the business cycle. Here, unemployment is usually low (i.e. around 4.5 to 5 per cent) and inflation is slow (i.e. prices rising by an average of about 2–3 per cent a year).

Figure 2.10 (p. 00) shows that Australia’s quarterly rate of change in GDP (i.e. calculated every three months) between 2002–03 and 2013–14, actually behaved in a cyclical way. With the help of the indicator table below the graph, see if you can spot any of the five economic situations (i.e., peak/boom, slowdown/trough/recession, recovery, domestic economic stability) just mentioned. For instance, you may notice the following:

- Thanks to economic growth, the size of the economy got bigger throughout the 11 year period covered by the graph.
- While many economies in Europe, Asia and North America shrank into recession during the global financial crisis (GFC), the Australian economy saw positive rates of economic growth, albeit, fairly weak in quarters one and two of 2008–09.
- During 2009–10–11–12, the graph shows that there was a strong recovery following the GFC, where overall, the annualised rates of growth strengthened, despite the adverse effects on production of cyclone Yasi and the Queensland floods in January 2011 which destroyed crops and infrastructure and reduced mining output; the Victorian floods in December 2010; the earthquakes in New Zealand; and the tsunami and Fukushima nuclear meltdown in Japan that slowed our exports.
- During 2012–13–14, the rate of economic growth again appeared to slow, causing unemployment to rise.
- For the period, Australia’s GDP growth averaged about 3.0 per cent a year — a rate that was much faster than our 1.3 per cent annual rise in population size. As a result, each person, on average, could enjoy a larger slice of the production and income ‘cakes’, strengthening material living standards by around 1.7 per cent a year.

While overall, the Australian economy has increased in size, figure 2.11 (p. 00) shows that some industries — such as mining, construction, finance and insurance, property and business services, health and retail — have contributed more to economic growth than others, like agriculture, where production has risen more slowly.
1. What is the business cycle (economic cycle)? Illustrate this on a fully labelled diagram.
2. Describe the economic features or characteristics (i.e. refer to levels of spending, GDP, inflation, unemployment) of each of the following situations found along the business cycle:
   a. Expansion
   b. Peak or boom
   c. Contraction
   d. Trough or recession
   e. Domestic economic stability.
3. What caused Australia’s rate of GDP growth (i.e. the level of economic activity) to be so weak in quarter 2, 2010–11, or perhaps during quarters 1, 2 and 3 of 2008–09?
2.4 Factors affecting Australia's rate of economic growth

In this section, we will discover that there are two types of factors affecting Australia's rate of economic growth.

1. **Aggregate supply-side factors.** Aggregate supply-side factors alter the resources available for production, along with business costs and profits, and the economy's long-term productive capacity or potential level of GDP.

2. **Aggregate demand-side factors.** Aggregate demand-side factors alter levels of national spending on GDP and the extent to which the economy's productive capacity is actually used in the short term.

Let us now investigate these two sets of factors in detail.

**Aggregate supply factors affect Australia's potential rate of economic growth**

Earlier (see chapter 1, pp. 7–8) we saw how the volume or quantity of productive resources and how efficiently these resources are used, ultimately determine a country's productive capacity. This capacity is represented on a production possibility diagram by the PPF which shows the potential level of GDP or aggregate supply (AS). In other words, in the long term, Australia's economically sustainable rate of economic growth is limited by our access to natural, labour and capital resources. If there is a rise in the volume of these resources or improved efficiency due to more favourable aggregate supply-side factors that firms regard as beneficial, the PPF will grow and shift outwards as shown in figure 2.12 below. Faster economic growth is then more sustainable because the country’s productive capacity is bigger.

The issue of productive capacity helps to explain why the economically sustainable rate of GDP growth in some countries like China is perhaps 8–10 per cent a year. By contrast, Australia can only sustain growth of around 3.0 to 3.5 per cent a year and in low-income economies in Africa, the figure can be even slower than 1–2 per cent (less than the growth in their populations). The point is that, without increased productive capacity resulting from the impact of favourable supply-side factors, economic growth cannot occur.

---

**Aggregate supply-side factors** affect an economy's productive potential and relate to the many conditions that influence the long-term willingness and ability or capacity of producers to make goods and services.

**Aggregate demand-side factors** affect the level of total spending on a nation’s goods and services, thereby affecting the short-term or cyclical level of economic activity.

**Favourable aggregate supply-side factors** are those that grow an economy’s productive potential.

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**FIGURE 2.12** Growing the size of the economy’s productive capacity allows for better average material living standards.
Over the years, there have been both favourable and unfavourable aggregate supply-side conditions affecting Australia’s potential rate of economic growth, some of which are shown in table 2.1 below.

Let us now look more closely at some of these developments.

### TABLE 2.1 Trends in some supply-side factors affecting Australia’s potential rate of economic growth

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</thead>
<tbody>
<tr>
<td>Annual GDP growth (percentage change per year — reference year 2011–12)</td>
<td>4.1</td>
<td>3.2</td>
<td>3</td>
<td>3.8</td>
<td>3.7</td>
<td>2.0</td>
<td>2.2</td>
<td>3.6</td>
<td>2.6</td>
<td>3</td>
<td>64.9</td>
<td></td>
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<tr>
<td>1. Labour productivity (annual percentage change in GDP per hour worked)</td>
<td>2.2</td>
<td>0.9</td>
<td>0.7</td>
<td>0.9</td>
<td>0.7</td>
<td>0.6</td>
<td>1.9</td>
<td>-0.3</td>
<td>2.0</td>
<td>2.2</td>
<td>1.2</td>
<td></td>
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<tr>
<td>2. Labour force participation rate (percentage at June)</td>
<td>63.5</td>
<td>63.9</td>
<td>64.4</td>
<td>64.8</td>
<td>65.2</td>
<td>65.4</td>
<td>65.2</td>
<td>65.6</td>
<td>65.4</td>
<td>65.2</td>
<td>64.9</td>
<td></td>
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<tr>
<td>3. Labour force growth rate (annual percentage change)</td>
<td>1.3</td>
<td>2.3</td>
<td>2.2</td>
<td>2.2</td>
<td>2.2</td>
<td>1.8</td>
<td>2.1</td>
<td>1.8</td>
<td>0.7</td>
<td>1.3</td>
<td>1.8</td>
<td></td>
<td></td>
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<tr>
<td>4. Farm production volume index (1997–98 = 100 points)</td>
<td>109</td>
<td>108</td>
<td>111</td>
<td>95</td>
<td>104</td>
<td>108</td>
<td>108</td>
<td>114</td>
<td>120</td>
<td>118</td>
<td>110</td>
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**Sources:** Data derived from RBA Statistics, ABS 6202.0, 5206.0, RBA statistics (Table G9).

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**Growing Australia’s productive capacity by developing our natural resources**

There are many ways that Australia has increased the volume and efficiency of its natural resources, thereby growing our productive capacity, the size of the PPF and the potential rate of economic growth.

- Exploration has led to many mineral discoveries such as gold, iron ore, bauxite, coal and uranium, as well as natural gas and oil. Recently we have seen the development of a minerals boom as new mining projects have been opened up.
- There has also been substantial development of land resources through scientific soil and pasture improvements, irrigation and better land management.

**Growing Australia’s productive capacity by increasing our labour resources**

Australia’s labour resources (i.e. the labour force) provide the mental talents and physical power needed to expand our productive capacity and potential rate of economic growth. Over the years, the size and efficiency of our labour force has grown for several reasons:

- high levels of immigration, around 190,000 people per year (people coming into Australia from overseas), with 70 per cent being classified as skilled migrants
- natural births
- an increase in the retirement age
- a rise in the percentage of adults participating or being involved in work
- increases in federal government spending on education (e.g. the schools building program, the Australian Curriculum, and the ‘education revolution’).

It is especially important that Australia seeks to grow its labour productivity or efficiency, because this means that a bigger GDP is produced per hour worked, thereby lifting our productive capacity, expanding the PPF and strengthening Australia’s sustainable rate of economic growth. Unfortunately, as shown in figure 2.13 (p. 00), there has been a slowdown in labour productivity growth in more recent years.

In addition, figure 2.14 (p. 00) indicates that Australia’s productivity lags well behind that of some countries like Norway, Ireland and the US.

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**Labour productivity** relates to the efficiency of workers as measured by the value of GDP per hour worked.
Growing Australia’s productive capacity through private investment to expand our capital resources

Economic growth is usually faster in countries that have high levels of investment spending in new plant and equipment like factories, mines, machinery and computers. New equipment used by firms usually incorporates the latest technology, thereby reducing production times and costs. In Australia’s case, private business investment spending has been partly financed by capital inflow from overseas and partly from local sources. By increasing the quantity and efficiency of a country’s capital resources, investment spending helps to boost productive capacity and aggregate supply, grow the PPF and raise the sustainable rate of economic growth.

Growing Australia’s productive capacity through government investment in infrastructure

Federal, state and local governments in Australia (sometimes in partnership with private businesses) provide important infrastructure or capital resources needed to enable other businesses to produce goods and services, and expand their operations. Here, there are two important types of infrastructure:

- **Economic infrastructure** refers to the construction of railways, roads, port facilities, dams, power and improved communications, including the recent rollout of the National Broadband Network or NBN.
Social infrastructure includes the facilities needed for providing education and health, bringing benefits to both individuals and business. Without an adequate and efficient supply of infrastructure, local firms and the Australian economy cannot grow productive capacity or the potential level of GDP. However, despite the growth in government investment spending on infrastructure over the past decade to 2014, the level has been inadequate. Some areas have been allowed to deteriorate. For example, serious infrastructure shortages or bottlenecks have developed in power, water, skilled education and transport. These have limited Australia’s sustainable rate of economic growth.

The negative impact of climate change and severe weather events on Australia’s productive capacity
Especially over the past six to eight years to 2014, severe weather conditions affecting Australian farming, mining and tourism have been unfavourable to aggregate supply. Our productive capacity, or PPF, has been limited greatly by persistent drought (2004–10 and in Western Queensland in 2013–14), fires, storms, cyclones and even floods (e.g. December 2010, January 2011 and January 2013). Evidence suggests that these severe weather events are the by-product of climate change resulting in part from various economic activities emitting greenhouse gases that add to global warming.

Many factors can affect labour efficiency including access to new, more efficient technology and capital equipment, the wage or pay system that is used to motivate personal effort, and the health, education and skills of workers.

Growing productive capacity by government microeconomic policy or efficiency reforms
During the past two decades to 2014, the Australian government has implemented many microeconomic policies. Microeconomic efficiency reforms are measures designed to cut production costs and improve our use of resources. If successful, they should allow for more output to be produced from the same inputs, thereby increasing productive capacity, aggregate supply, the PPF and the sustainable potential rate of economic growth.

Recent microeconomic efficiency reforms of the federal government include the following:
- **Labour market reform.** The wage system operating in Australia’s labour market has been changed or reformed and involves substantial labour market deregulation. Today, there are fewer workers covered by the traditional minimum wage system, where wages are regulated through a government institution called the Fair Work Commission. Instead, these days, the wages of most employees are now decided through a decentralised or deregulated system of enterprise agreements. These workplace agreements are made through negotiations between staff and their boss, on a firm-by-firm basis. Pay rises are more closely linked with worker efficiency or performance, than under the traditional minimum wage system. This newer system helps to grow Australia’s productive capacity or PPF far more effectively.
- **Promoting competition.** Strong competition usually increases aggregate supply and grows capacity through improved business efficiency and cost cutting among rival firms. As mentioned in chapter 1, the ACCC (Australian Competition and Consumer Commission) has been set up to enforce the Competition and Consumer Act (before 2010, the CCA was called the Trade Practices Act). These laws make anti-competitive behaviour, which leads to increased inflation, illegal.
- **Lower tax rates.** Tax rates on personal incomes, company profits, capital gains and imports have been, and will be, cut to lower the tax burden on individuals and firms. For instance, an enquiry into Australian taxation recommended that company tax rates be lowered from 30 to 25 per cent — more in line with rates in similar countries overseas. It is argued that this reform to cut tax rates would help create greater financial incentives to work hard, expand businesses and improve efficiency. Greater efficiency would then grow our productive capacity.
**Trade liberalisation.** Trade liberalisation involves a shift towards free trade where there is reduced protection of local industry from foreign imports. This means cutting tariffs (the tax added onto the price of imports — the last reductions for some industries were in 2010, with more scheduled for 2015) and signing free trade agreements with other countries (where trade between nations, such as Australia and the US, occurs without tariffs). With less protection from imports, our resources are used far more efficiently, only producing those goods and services where Australia has the greatest cost advantage. This helps to grow productive capacity and strengthen our sustainable rate of economic growth.

### Aggregate demand factors affect Australia’s actual cyclical level of economic growth

When we see newspaper headlines about the latest recession or boom, we realise that Australia’s rate of economic growth can alter quite suddenly. This is often the result of changes in the decisions made by households, businesses, governments and people overseas about their overall level of spending on Australian-made goods and services, which is called aggregate demand. As we shall see, changes in spending on Australian-made goods and services, or aggregate demand (AD), decides the extent to which our nation’s productive capacity is actually used. To help understand the causes of this short-term instability as seen on the business cycle diagram (figure 2.8, p. 00), let us start by looking at the five-sector circular flow model representing the Australian economy.

**The five sectors of the model show the key decision makers**

As is evident in figure 2.16 below, it is easy to see how the five-sector circular flow model got its name.

```
FIGURE 2.16 The five-sector circular flow model of the Australian economy
```

Notice that this version of the circular flow model has **two** main sectors or parts:

1. **The household sector**
   
   This sector includes around 23 million consumers or spenders, making up Australia’s entire population. Apart from making decisions about spending, these households also supply or sell resources to the business sector.

2. **The business sector**
   
   The business sector consists of all types of firms (e.g. sole traders, partnerships, public companies) that supply or sell goods and services, using resources purchased from households. Businesses also make decisions about investment levels, production and how many staff to employ.

Additionally, the model has **three** lesser sectors:

3. **The financial sector**
   
   The financial sector consists of organisations such as banks, building societies, the stock exchange and life insurance companies. These institutions collect or borrow

---

**Aggregate supply/ productive capacity is affected by:**

- Quantity and efficiency of all resources
- Profitability
- Production costs
- Microeconomic policy
- Wage costs
- Cost of credit
- Tax rates on firms
- Seasonal factors
- Participation and strike rates
- Climatic conditions
- An ageing population.

\[ \text{Flow } 4 = \text{production (i.e. supply) of goods and services (GDP)} \]

\[ \text{Flow } 2 = \text{total incomes paid (demand for resources)} \]

\[ \text{Flow } 1 = \text{supply of resources to businesses} \]

\[ \text{Flow } 3 = \text{AD} = C + I + G + X - M \]

\[ \text{Aggregate demand is affected by:} \]

- Consumer confidence
- Business confidence
- Disposable income
- Interest rates
- Population growth
- Exchange rate for A$ (the tax added onto the price of imports — the last reductions for some industries were in 2010, with more scheduled for 2015) and signing free trade agreements with other countries (where trade between nations, such as Australia and the US, occurs without tariffs). With less protection from imports, our resources are used far more efficiently, only producing those goods and services where Australia has the greatest cost advantage. This helps to grow productive capacity and strengthen our sustainable rate of economic growth.

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Additionally, the model has **three** lesser sectors:

3. **The financial sector**
   
   The financial sector consists of organisations such as banks, building societies, the stock exchange and life insurance companies. These institutions collect or borrow
household savings from some individuals and lend them as credit to businesses wanting to expand through investment spending involving the purchase of new plant and equipment.

4. **The government sector**
The government sector includes the activities and decisions of the federal, state and local governments. It collects various types of tax revenue from those earning income and then uses this to help pay for government spending on the provision of goods and services for the community (e.g. public roads, health, education, transport and housing).

5. **The overseas sector**
The overseas sector involves spending by Australians on imports of goods and services, and spending decisions made by overseas countries on our exports of goods and services.

### The model’s four flows link decision makers
There are *four* main flows or streams that link these sectors of the Australian economy.

- **Flow 1**
  Flow 1 is the flow or supply of labour, capital and *natural resources* from the household sector to the business sector. Ultimately, a nation’s productive capacity or potential output or supply of goods and services is determined by the volume and efficiency of its productive resources. As mentioned earlier, it is impossible for countries to produce more than their resources will permit. Hence, the expansion of resources is vital if the supply of goods and services produced in an economy is to grow between one year and the next.

- **Flow 2**
  Flow 2 is the payment of total *income* (made up of wages, interest and rent) to households that sell resources. As such, it represents the demand by businesses for resources. The more resources bought by firms each year, the higher the total level of incomes. However, total incomes fall when there are fewer resources wanted or employed by firms.

- **Flow 3**
  Flow 3 represents aggregate demand (AD) or total annual spending on Australian-made goods and services. This reflects the spending decisions made by households, businesses and governments, both here and overseas. It is made up of expenditure components including private consumption spending (C), plus private investment spending (I), plus government consumption and investment spending (G), plus overseas spending on Australian exports of goods and services (X), minus Australian spending on imports of goods and services (M).

\[
AD = C + I + G + X - M
\]

In turn, AD is affected by the level of total *leakages* or the withdrawal of income (i.e. S + T + M), relative to total *injections* or additions to the spending stream (i.e. I + G + X). Leakages act like a brake and slow the economy, but injections work like an accelerator and speed up GDP or economic activity. Hence, decisions that raise leakages relative to falling injections slow C, and reduce AD. However, decisions that cause leakages to fall relative to rising injections, will tend to accelerate the level of AD.

- **Flow 4**
  Flow 4 is the annual value ($) of a nation’s production or supply of goods and services. This is measured using gross domestic product (GDP). The level of GDP is taken as a general indicator of economic activity and growth in the Australian economy. It should also be noted that, according to this model, the values of these flows are equal. That is:

\[
AD = C + I + G + X - M = GDP = \text{value of resources employed} = \text{total incomes paid}
\]
Using the circular flow model to explain changes in Australia’s rate of economic growth

The wonderful thing about the circular flow model is that it can be used to make predictions and understand economic relationships. It can also help you to understand why a nation’s growth in production (measured by GDP) goes up and down over time, creating the business cycle mentioned on p. 00. Let us see how it works.

How spending (AD) helps determine production levels (GDP)

It is possible to start our explanation at any point on the circular flow model. Again referring to figure 2.16 (p. 00), assume that AD or total expenditure on Australian-made goods and services (flow 3) was originally equal to $1000 billion a year. It is logical that businesses would try to produce goods and services or GDP equal to $1000 billion (flow 4) to satisfy this demand. In order to do this, firms would need to purchase $1000 billion of resources supplied by households (flow 1). Businesses would also have to pay households $1000 billion in total incomes in exchange for these resources (flow 2). Households would then use most of their income for private consumption spending (C). This includes the purchase of food, clothes, holidays and health services. Alternatively, some income may be diverted into various leakages such as savings (S) in the financial sector, taxes (T) paid to the government sector, or spending on imports (M) through the overseas sector. Leakages act like a brake on the economy and slow total spending. Eventually, however, it is possible that these three sectors may re-inject spending back into the economy, thereby influencing the level of AD (flow 3). Injections here might include business investment spending (I), government spending (G) and overseas spending on our exports (X). These injections act like an accelerator to lift AD and speed up the economy. Our explanation has now examined all four flows making up the circular flow diagram. Even so, we have still not explained why the rate of economic growth or GDP (as a measure of economic activity) sometimes rises and falls in a cyclical fashion.

The business cycle in the level of GDP and rate of economic growth

We all know that if we take a period of time lasting several years, Australia’s economic conditions change. On the news, for example, there is often talk about booms, recessions and domestic economic stability. These economic situations occur when the pace or rate of economic growth or national production speeds up or slows down. Often economic growth changes in a cyclical way, as we saw illustrated on the business cycle diagram (see figure 2.8, p. 00). Using the circular flow model, we can now start to understand how these cyclical changes in the rate of economic growth could occur. Remember that the level of GDP (as a measure of economic activity) in the economy will remain steady, only if there is no change in the level of leakages relative to the level of injections.

Rising GDP, perhaps leading to a boom

In the short term, there is a cyclical rise in the level of GDP (flow 4) if the value of leakages (lower S + T + M) falls relative to injections (I + G + X). If this happens (continuing the numerical example used earlier), consumption expenditure (C) will rise, stimulating AD above its original level of $1000 billion, perhaps reaching $1200 billion. Because the size of the flows making up the model are of equal value, GDP, employment of resources and incomes will also need to increase to help maintain equality. If the economy was already operating at or near its productive capacity, stronger AD may mean that spending will outstrip national production or aggregate supply. Normally, this would cause widespread shortages of goods and services, leading to increased inflation. These signs are typical of a period of expansion or possibly a boom in economic activity (e.g. perhaps as seen in Australia between 2007 and mid-2008, and to a lesser extent in 2010–11). A step-by-step explanation of the cause of booms, using the circular flow model as a guide to your thinking, is shown in figure 2.17 (p. 00).

Falling GDP, perhaps leading to recession

By contrast, a fall in the level of GDP (flow 4) or economic growth can reflect rising leakages and lower injections. This reduces consumption spending (C) and slows AD. Returning to our example, if AD fell from $1000 billion to, say, $800 billion, GDP would
fall below the economy's capacity, and employment of resources and incomes would also drop to restore equality between the various flows. Additionally, with slowing economic growth and activity, inflation is likely to fall because national production supplied exceeds the level of AD or spending, causing stocks of unsold goods to build up. To try to avoid this, firms would cut or discount their prices, slowing inflation. These are common signs of a slowdown (e.g. as in Australia 2008–09 and to a lesser extent in 2012–13) or possibly a recession. This step-by-step explanation of the cause of recessions, using the circular flow model to guide your thoughts, is summed up in figure 2.18 below.

**Ideal levels of GDP leading to domestic economic stability**

Somewhere between the peaks in GDP on the one extreme, and the troughs at the other, lies the desirable economic situation called domestic economic stability or balance. Here, the level of AD is ideal and at a level that exactly matches the country’s productive capacity. Expenditure is neither too great, causing an inflationary boom, nor is it too small, causing a recession where there is high unemployment. In the above example, this situation might involve AD being equal to around $1000 billion per year (not $1200 billion, nor $800 billion).

However, even now, there are still unanswered questions. For instance, why do people change their spending levels in the short term, thereby causing AD and GDP to rise or fall?

**Demand-side factors determine aggregate demand and GDP**

In the short term, the spending decisions made by households, businesses and governments, both here and overseas, affect Australia’s level of AD. In turn, AD has a really important influence on our rate of economic growth and general economic conditions. Typically, these conditions change cyclically through periods of expansion, boom,
Economic growth and sustainable development

You may recall that when the level of AD rises there is a period of expansion in GDP leading to a peak or, perhaps, an inflationary boom (as the economy is near its productive capacity or PPF as in 2007–08, and to a lesser extent in 2010–11). Here, prices usually are rising quickly due to general shortages of goods and services. By contrast, when the level of AD falls, there is a period of contraction or a slowdown in production leading to a trough (as in 2008–09 and to a lesser extent in 2013–14) or, perhaps, a recession when unemployment rises.

Given the great importance of the level of AD as a determinant of short-term conditions and the rate of economic growth in Australia, it is vital that we now understand what causes AD (i.e. $C + I + G + X - M$) to rise and fall, resulting in the business cycle. Here, the key lies in knowing that various aggregate demand-side factors, both here and overseas, operate to influence the level of total spending on Australian-made goods and services. Statistics showing trends in various demand-side factors are summarised in Table 2.2 below.

**TABLE 2.2** Trends in some demand-side factors affecting Australia’s levels of AD and economic growth

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<tbody>
<tr>
<td>Annual GDP growth (percentage change per year — reference year 2011–12)</td>
<td>4.1</td>
<td>3.2</td>
<td>3</td>
<td>3.8</td>
<td>3.7</td>
<td>1.7</td>
<td>2.0</td>
<td>2.2</td>
<td>3.6</td>
<td>2.6</td>
<td>2.0</td>
<td>2.2</td>
<td>3.6</td>
<td>3.0</td>
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<tr>
<td>1. Consumer confidence index (Westpac/Melbourne Institute)</td>
<td>116</td>
<td>117</td>
<td>106</td>
<td>108</td>
<td>103</td>
<td>87</td>
<td>115</td>
<td>109</td>
<td>96.1</td>
<td>101.8</td>
<td>105.8</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. Business confidence index — average of quarterly (NAB net balance)</td>
<td>11.1</td>
<td>6.7</td>
<td>7.1</td>
<td>7.1</td>
<td>0.7</td>
<td>-16.2</td>
<td>13.3</td>
<td>7.2</td>
<td>-0.2</td>
<td>-2.1</td>
<td>5.1</td>
<td></td>
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<tr>
<td>3. Annual change gross disposable income (percentage change per year)</td>
<td>5.5</td>
<td>3.6</td>
<td>4.6</td>
<td>4.4</td>
<td>5.2</td>
<td>3.4</td>
<td>-0.3</td>
<td>6.9</td>
<td>4.5</td>
<td>0.6</td>
<td>3.8</td>
<td></td>
<td></td>
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<tr>
<td>4. Official interest rates set by the RBA (percentage at June)</td>
<td>5.25</td>
<td>5.5</td>
<td>5.75</td>
<td>6.25</td>
<td>7.25</td>
<td>3</td>
<td>4.5</td>
<td>4.75</td>
<td>3.5</td>
<td>2.75</td>
<td>4.85</td>
<td></td>
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<tr>
<td>5. Underlying budget outcome ($ billions)</td>
<td>8</td>
<td>13.6</td>
<td>15.8</td>
<td>17.2</td>
<td>19.7</td>
<td>-27</td>
<td>-55</td>
<td>-48</td>
<td>-44</td>
<td>-18.8</td>
<td>-30.1</td>
<td>-11.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. US growth in GDP (percentage change per year)</td>
<td>3.9</td>
<td>3.3</td>
<td>3</td>
<td>2</td>
<td>1.9</td>
<td>-3.4</td>
<td>0.3</td>
<td>1.9</td>
<td>2.8</td>
<td>1.4</td>
<td>1.7</td>
<td></td>
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<tr>
<td>7. Exchange rate (TWI at June — 1970 = 100)</td>
<td>59.1</td>
<td>64.5</td>
<td>62.2</td>
<td>68.9</td>
<td>73.4</td>
<td>64.1</td>
<td>67.7</td>
<td>77</td>
<td>76.5</td>
<td>73.9</td>
<td>68.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Population growth rate (percentage change per year)</td>
<td>1.2</td>
<td>1.2</td>
<td>1.3</td>
<td>1.8</td>
<td>2</td>
<td>2.1</td>
<td>1.6</td>
<td>1.4</td>
<td>1.5</td>
<td>1.8</td>
<td>1.6</td>
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</table>

**Sources:** Data derived from RBA Statistics; ABS 1350.0, 3101.0, 5206.0 (Table 3), 6457.0 (Tables 1 & 7); RBA statistics Tables D1, G12, G4.

*Note: revised Treasury estimate August Economic Statement, 2013*

The level of private consumption spending (C) as a part of AD

Households make expenditure decisions that affect AD and the rate of economic growth. Their level of private consumption spending (C) on food, clothes, electrical goods, entertainment and holidays, for example, is affected by changes in the following aggregate demand-side factors.

- **Disposable income** of households represents money available for spending after the payment of tax and the receipt of government welfare benefits. Rises in disposable income increase private consumption spending as in 2010–11–12.
- **Consumer confidence** or the degree of optimism about future household incomes and employment prospects. Greater optimism often leads to stronger consumption.

**Private consumption spending** (C) represents household spending that is designed to help satisfy our immediate needs and wants for goods and services (e.g. food, holidays and clothing).

- **Interest rates** received by households on their savings deposits or those to be paid on borrowed credit. Higher interest rates encourage savings and discourage borrowing to buy expensive consumer items such as a house or car, as seen during 2009–11.
- **The rate of population growth** that takes into account the excess of births over deaths and immigration levels. More rapid population growth as in 2012–13 often lifts consumption.
- **Budgetary policies** affect taxes and government spending. Cuts in personal income tax rates, as in 2012–13, increase disposable income and hence consumption.

Let us see how consumption expenditure is influenced by using an example. The level of C would tend to rise if consumer confidence strengthened, population size increased, income taxes were cut, or interest rates fell on borrowed credit used to purchase consumer goods such as a new surfboard, computer or holiday to Queensland’s theme parks. Using the circular flow model to guide our explanation, it follows that higher C would then tend to stimulate AD, sales (while cutting unsold stock levels), GDP or economic activity, employment of resources, incomes and, perhaps, even the inflation rate. In reverse, weaker aggregate demand-side conditions would normally slow C, AD, GDP and the level of economic activity, perhaps leading to a recession.

**The level of private investment spending (I) as a part of AD**

Firms make expenditure decisions that affect AD and the rate of economic growth. The level of **private investment spending** (I) by businesses on new plant equipment such as computers, factory buildings and trucks, for instance, reflects the influence of the following aggregate demand-side conditions.

- **Business confidence** or optimism about future sales and profits of companies. Pessimism leads to reduced investment spending on new plant and equipment, as followed after the global financial crisis in 2008–09 and again in 2011–12–13.
- **Interest rates** charged by banks on loans to firms. Higher rates, as in 2009–11, tend to discourage investment spending on new equipment because it becomes dearer for firms to borrow and repay credit, while lower rates encourage investment spending as in 2012–13–14.
- **Company tax rates** that must be paid on business profits. Lower tax rates, as originally promised for 2012, raise after-tax profits and encourage new investment spending designed to expand the business.

Here, an increase in the level of I could reflect stronger business optimism, reduced interest rates on credit borrowed by firms, lower company tax rates or very low levels of unsold stocks of goods. This would tend to lead to an expansion in AD and the rate of economic growth (GDP), where rising levels of economic activity would also help increase employment, incomes and perhaps inflation. In reverse, weaker aggregate demand-side conditions that slowed I would also reduce AD, GDP and economic activity, leading to a contraction or slowdown.

**The level of government spending (G) as a part of AD**

Decisions taken by governments also affect AD and the rate of economic growth. The level of **government spending** (G) on the provision of community services (e.g. health, education and childcare) is influenced by the following demand-side developments.

- **The level of unemployment.** G often increases when the unemployment rate rises because, through this approach, the government can help lift the level of AD and perhaps avoid recession, as demonstrated during 2008–10 and 2013–14.
- **The level of inflation.** G often decreases or slows when inflation is rising because this helps the government slow AD and reduce inflationary pressures as in 2007–08 and 2011–12.
- **The speed of population growth.** G often rises faster when population growth is more rapid following a rise in the birth rate, a lower death rate or increased level of immigration as in 2012–13.

So G might increase due to rising levels of unemployment (e.g. 2008–10 and 2013–14), falling inflation, generous election promises or a faster growth in our population size, thereby tending to increase AD, GDP (economic activity), employment and incomes. In reverse, events that reduce G also tend to cause a slowdown in the level of AD, GDP and economic activity.
The level of export spending (X) as a part of AD

Decisions made by consumers abroad also affect Australia’s AD and rate of economic growth. The level of export spending (X) by people overseas on Australian-made goods and services (e.g. cotton, wool, minerals, manufactured items and travel) is determined by changes in the following aggregate demand-side conditions.

- The exchange rate or the value of the A$ when swapped or converted into other currencies. A high A$, as in 2010–11–12, tends to slow exports because they become dearer, while a fall in the A$, as in 2013–14, makes exports cheaper, leading to increased sales abroad.
- Overseas economic conditions such as booms and recessions. A recession abroad (especially in China), as occurred following the global financial crisis in 2008–09 and in 2012–13–14, slows overseas spending on our exports, while a boom overseas tends to raise our exports.
- Natural disasters and severe weather events in Australia and overseas. Cyclone Yasi and the floods in Queensland and Victoria in late 2010, early 2011 and 2013 reduced our agricultural and mining production available for export, while the Japanese tsunami in 2011 slowed the demand for our exports.

This means that aggregate demand-side factors, including a fall in the A$, a boom overseas in nations with whom we trade (e.g. US, China, Japan), favourable climatic conditions in Australia for growing rural produce, and higher commodity prices received for our exports, would all tend to accelerate X, AD, GDP (economic activity), employment, incomes and perhaps inflation. By contrast, conditions that weaken X would tend to slow AD, GDP and economic activity.

The level of import spending (M)

Decisions made by local residents affect AD and the rate of economic growth. The level of import spending (M) by Australians (e.g. oil, computers, business equipment and overseas holidays) reflects changes in the following aggregate demand-side conditions.

- The exchange rate or value of the A$ against other currencies. A fall in the A$ as in 2013–14, tends to make imports dearer in Australia, while a rise in the A$, as in 2010–11–12, tends to make imports cheaper and more attractive.
- Trends in local economic conditions. If there is confidence and a boom locally, this results in more imports, while a recession usually means lower imports.
- Consumer confidence and business confidence levels locally. Greater optimism, as in 2007–08 or 2009–10–11, results in more spending on imports of goods and services, while pessimism as in 2013–14 lowers spending on imports.
- Our inflation rate relative to that overseas. Higher inflation at home makes overseas imports more attractive.

Remember that higher imports have a negative effect on AD and are subtracted from its value. Hence, conditions like a falling A$, a recession in our economy, higher prices paid for imports and weaker consumer and business confidence in Australia would all tend to slow M, allowing AD, GDP growth and economic activity to grow faster than otherwise. In reverse,
events that increase imports would tend to undermine spending on locally made items, slowing the level of AD, the rate of economic growth and pace of domestic activity.

- Try applied economic exercises 3, 4, 5, pp. 00-0
- Try folio of annotated media commentaries 1, p. 00
- Try class debate 1, p. 000
- Try the wall chart for display, pp. 000-0

2.5 Some benefits of Australia’s mostly strong economic growth

As we shall see below, there is little doubt that economic growth has helped Australians to enjoy better material living standards, and even improved some aspects of our non-material wellbeing.

Economic growth creates more jobs and employment

Strong economic growth and rises in GDP create extra jobs, helping to keep unemployment rates at low levels. Indeed, one of the Australian government’s aims is to achieve the goal of full employment. This desirable situation occurs when unemployment is low, at around 4.5 to 5 per cent of the labour force.

One benefit of strong economic or GDP growth of around 3.0 to 3.5 per cent a year, as illustrated in figure 2.21 below, is that it helps to generate fuller employment. Economic growth means that firms usually need to employ more staff to lift production. Thanks to sustained growth, unemployment fell to a 34-year monthly low of only 3.9 per cent in February 2008 and 4.9 per cent in early 2011. By contrast, when there is a slowdown or recession and economic growth is weak, cyclical unemployment soon rises (e.g. 1992–93 unemployment peaked at 11 per cent; following the slowdown starting in late 2008, Australia’s monthly unemployment rate reached 5.8 per cent by late-2009; and again in February 2014 it reached 6.0 per cent.).

The relationship between Australia’s rate of economic growth and the unemployment rate

Source: Data derived from ABS 1350.0, 5206.0, 6202.0; RBA Statistics.

Economic growth increases personal incomes

In general, income is the reward earned by those individuals who sell resources to the business sector. Most people aspire to have rising incomes.

Strong economic growth usually helps to raise personal incomes because firms need to buy extra labour resources from households to lift their production levels. However, higher average incomes per capita are especially likely when there is a rise in the level of efficiency in the use of resources (producing more output per unit of input). This rise in real incomes or purchasing power of families means people can afford to buy more goods and services than previously.
Another benefit of a growing economy is that there will be an increase in income or revenue collected by the federal government from personal income and other types of tax. This money can then become available to help the needy through the payment of cash welfare benefits (to the unemployed, families, sick, aged and veterans for example) and the provision of cheap or free community services provided by the government through the public sector (for example, public health, education, transport and housing). Economic growth makes these types of assistance more affordable and raises access to basic goods and services for the poor. By contrast, if economic growth is weak, supporting the incomes of the neediest individuals becomes even less affordable and their living standards would fall.

**Economic growth can improve our international trading position**

External or international trade involves Australia buying imports of goods and services from overseas, and selling our exports of goods and services abroad. Our export trade accounts for over 20 per cent of all production, income and jobs, so it is certainly very important for the economy. When the value of exports exceeds the value of imports, Australia has a trading surplus, but when imports exceed exports, there is a trade deficit. In addition to exports and imports, our international transactions involve the movement of money capital or investment into and out of the country. Incoming investment from overseas often helps to finance the expansion of Australian businesses and capital resources. It can help to make up for the lack of local savings and investment.

Economic growth can help strengthen Australia’s trading position and material living standards. A growing economy is able to produce more goods and services for export. This helps to pay for imports and helps to make our trading balance more favourable. Thanks to a growing economy, there are also attractive opportunities for foreigners who want to invest in local businesses and the share market. In turn, this helps to build up the economy’s capacity to lift production.

**Economic growth can sometimes slow inflation**

Inflation occurs when the prices of most goods and services are rising. This is seen as very damaging for the economy and for many individuals. Indeed, the government tries to achieve the goal of low inflation where the general level of prices is rising slowly at an average inflation rate of around 2 to 3 per cent a year.

In those situations where economic growth is the result of better productivity or efficiency (i.e. making more output using fewer inputs of resources), then the rate of inflation should fall. This is because greater efficiency helps to lower production costs for firms. With reduced costs and strong competition, rival businesses will lower their prices and should still make good profits. Cost inflation should slow.

**Economic growth can improve material and non-material living standards**

Material living standards depend on the volume and range of goods and services made available for each member of society. Often measures like GDP per person (Australia’s GDP divided by our population size), average income per person, average consumption per head of population, the number of cars per household or the level of calories of food intake per person are used to help measure average material living standards. So how might economic growth help lift our material living standards?

When the economy’s production grows faster than its population, there will generally be more goods and services on average for each member of society to enjoy. Average incomes and purchasing power rise. This should make society better off materially, assuming that having more possessions is better for us. Figure 2.23 (p. 00) shows that in most years, Australia’s rate of economic growth was faster than the rise in population, so real incomes (i.e. purchasing power after allowing for inflation) per person rose in most years. However, notice what happened in 1990–92 and again in 2008–09 when the rate of economic growth was negative or zero and, hence, slower than the rise in prices.

**FIGURE 2.22** When national production rises faster than our population, people enjoy higher incomes and purchasing power enabling them to buy more goods and services than previously.

**Community services**, such as health and education, are often provided free or at a low, subsidised price using tax revenue, so that everyone can have access to them, even the poor. **International trade** involves countries selling their exports and buying imports of goods and services. **Trading surplus** occurs when the total value of a country’s exports exceeds the total value of its imports over a period of time. **Trade deficit** occurs when the total value of a country’s imports exceeds the total value of its exports over a period of time. The government’s **goal of low inflation** is to have general prices for a basket of consumer goods and services in the economy rising slowly by an average of around 2 to 3 per cent per year. **Efficiency** or productivity refers to the level of output of goods and services produced from a particular quantity of inputs or resources. Greater output gained from inputs usually means there has been a rise in productivity or efficiency and a fall in production costs. **Cost inflation** is where prices for goods and services rise between one year and the next, due to rising production costs paid by firms. **Real incomes** represent what money incomes will actually purchase after allowing for the effects of inflation or rising prices.
in population. In these years, per capita GDP and incomes fell, suggesting that average material living standards probably declined.

### FIGURE 2.23 Relationship between Australia’s rate of economic growth and average material living standards

**Source:** Data derived from ABS 1350.0, 5206.0, 3235.0.

1. Select and explain how any three of the following might benefit from Australia having a strong rate of economic growth:
   - Material living standards
   - Non-material living standards
   - Jobs and employment
   - Incomes
   - The inflation rate
   - Our international trading balance.

Economic growth can sometimes help improve our **non-material living standards** and the **quality of our daily lives**. Think for a moment about the massive non-material benefits Australians enjoy, largely thanks to decades of strong economic growth. For example:

- By sacrificing some of our excess income, individuals have the possibility of gaining more leisure time and reducing the hours of work
- We have an increased ability to enrich our lives and minds through the broadening experiences gained from international travel
- We have the resources and capacity to tackle environmental problems that currently reduce our wellbeing
- There is the opportunity to extend our life expectancy and improve the quality of life through improved health possibilities, care and nutrition
- Society can eliminate many physically demanding, boring and mind-numbing jobs that reduce work satisfaction
- There is the capacity to allocate resources to cultivate the arts, music and drama that enrich our lives and expand our possibilities.

**Try applied economic exercise 6, p. 00**

### 2.6 Positive and negative externalities associated with economic growth and their impact on Australia’s allocation of resources

We have seen that, in the long term, Australia’s economic growth has involved lifting the level of national output by gaining access to greater volumes of resources and by using resources more efficiently. In turn, lifting production has allowed us to create jobs, increase incomes and raise consumption, making us better off materially and even non-materially.

During this process of producing and consuming goods and services, various **externalities** (also called spillovers) arise. Externalities are simply costs or benefits for individuals or third parties who are not directly involved in the production or consumption of particular goods or services. These externalities can be **positive externalities** (the benefits spillover to third parties) or **negative externalities** (the costs spillover to third parties) that arise from our economic activities. Whatever type, externalities represent examples of **market failure** (which we discussed in chapter 1, pp. 00–0) where the market or price system causes some resources to be used or allocated inefficiently. Soon we will see that externalities cause some particular types of goods or services to be over-produced, while others will be under-produced. Let’s first look at negative externalities.
The effects of negative externalities on how resources are used

Negative externalities, as discussed previously, are the unwanted social and/or financial costs of production or consumption of goods and services, which are transferred or spillover onto third parties not directly associated with the market transaction. For example, because most businesses that pollute the environment only take into account their internal costs, such as wage costs that directly affect them, and fail to include external costs that affect third parties, hence society’s living standards are reduced and too many resources are allocated to the production of harmful goods and services. This is because the profitability of such production will be artificially high, since some costs are being paid by the environment and by other individuals (both from current and future generations). Here, the price system has failed to register all the information needed by businesses and consumers to make good decisions and use resources to maximise our wellbeing.

One of the main negative externalities associated with economic growth is the destruction and depletion of environmental resources such as forests, rivers, oceans, ecosystems, biodiversity, non-renewable resources and air quality. These resources are overused and wasted since they are often regarded as being limitless. They are there for the taking and available free of charge. Their users often pass on their environmental costs for others to pay. By contrast, if these external costs were internalised and directly taken into account by businesses making decisions, profits in some areas would be less and production of damaging types of goods and services, lower. Scarce resources would be allocated or used differently, and general living standards would be higher.

More specifically, and of growing concern in recent years, is the environmental issue of greenhouse gas emissions (for example, carbon dioxide and methane) into the atmosphere as a consequence of economic activity. These emissions are linked to climate change, global warming, rising sea levels and rogue weather events. As shown in figure 2.25 below, Australia’s emissions largely arise from producing electricity, transport, manufacturing, mining and agriculture.

Our current failure to take negative externalities of some production into account means that, despite rising production levels, pollution problems for the community will become worse and our living standards will be damaged. Australians are among the worst polluters in the world and our gas emissions generated by economic growth are rising. This is shown in figure 2.26 (p. 00).

Greenhouse gas emissions could have catastrophic effects if left unchecked. For instance, Australia’s living standards would suffer if rising sea levels due to global warming led to extensive flooding in our capital cities and coastal towns; if fires and storms were to become more severe, there would be property damage and loss of life. If less rain fell, more farmland would become unproductive and the snowfields could disappear. Without the current inclusion of these external costs by decision makers and users of resources, production and emissions will go on unabated. The real challenge for governments is to find a mechanism or policy (such as introduction of a carbon tax or starting a carbon emissions trading scheme) designed to force businesses and households who contribute to these problems, to...

![Figure 2.24](image_url)

**FIGURE 2.24** The expansion of industries that emit carbon and other pollutants results in negative externalities or spillovers, including climate change. Current and future generations will pay for these through lower future living standards.

**FIGURE 2.25** The main sources of Australia’s greenhouse gas emissions by industry.

Source: Data is derived from The Garnaut climate change review, figure 7.15.

![Figure 2.26](image_url)

**FIGURE 2.26** The main sources of Australia’s greenhouse gas emissions by industry.

Source: DCC (2008b); ABS (2007).
internalise or pay the full cost of their decisions, thereby changing how our resources will be used in the future.

The effects of positive externalities on how resources are used

Positive externalities are the opposite of negative externalities. They represent the spillover of benefits to be enjoyed by third parties that result from the production and consumption decisions of others. As with negative externalities, such benefits are external to the market or price system and are not taken into consideration by buyers or sellers of goods and services when decisions are made about how Australia’s resources are used. When particular goods or services are produced and others are consumed, any positive externalities (the spillover benefits) will be ignored by key decision makers who are largely guided by the benefits or satisfaction gained by them personally, and not by any external benefits that other third parties might enjoy. If external benefits were taken into account, production and consumption of these goods or services would be higher, and our resources better allocated.

There are numerous examples of positive externalities arising from economic activities where some benefit spills over for third parties to enjoy, for example:

1. The satisfaction gained by your neighbours when you paint your house or improve its appearance in some way. This might also cause others in the street to enjoy higher property values, even though they did not pay to improve your house.

2. The production and consumption of education. Clearly, personal spending on education provides benefits to individuals such as higher income and improved job opportunities. However, your spending on education also results in external benefits that spill over, to be enjoyed by the rest of society. For instance, the economy might greatly benefit from increased worker efficiency, greater innovation, lower crime rates and reduced government outlays on welfare payments to the poor.

3. Vaccinations, blood tests and chest X-rays. Again, the benefit is not limited to individuals directly involved with the market transaction. The whole community enjoys the spillover benefits and living standards are increased.

4. If a business buys and installs expensive equipment that reduces its pollution of the atmosphere. While there are internal costs to the firm, important benefits spill over for the community to enjoy, including a reduced incidence of breathing disorders, improved health for local residents, lower health costs for government and a reduced impact on climate change.

In all four cases, the exclusion by the market of these positive externalities means that fewer resources will be allocated to various areas of production than would otherwise be the case. Here, decisions made through the market are distorted and this lowers our living standards. Fortunately, government policy decisions and intervention can help to correct some of the misallocation of resources caused by the market system.
2.7 Decisions made by households, businesses and governments affect Australia’s rate of economic growth and the environment

Each day, households, businesses and governments (both here and overseas) make decisions, spend money (i.e. $AD = C + I + G + X - M$) and undertake various economic activities. Generally, when choices are made that increase levels of household consumption, business investment, government or net export spending, the rate of economic growth tends to accelerate, creating various externalities and impacting on the environment.

The influence of households

As consumers, we all affect Australia’s rate of economic growth by our level of household consumption spending. For example, if we decide to buy chocolates, drive to the footy match, turn on a light switch, buy disposable tissues, go to the cinema, ski in Japan or add to our level of bank savings, this choice has a direct impact on $AD$ and, hence, the level of GDP and economic growth (think of the circular flow model).

Our decisions affect what firms produce and the use of renewable natural resources (productive inputs that can be replaced or regenerate fairly quickly; for example, some plants and animals) and non-renewable natural resources (resources like oil, that cannot be replenished). The decisions made also result in externalities and affect the health of environmental resources (communally used gifts of nature; for example, clean air, stable climatic conditions, areas of natural beauty, unpolluted oceans stocked with fish and a healthy stratosphere). However, the impact of household consumption spending...
The influence of businesses

Business firms also make many decisions affecting the rate of economic growth. For example, will they undertake business expansion through increased investment spending on new plant and equipment? This has an impact on the levels of AD (AD = C + I + G + X − M) in the circular flow model, as well as on Australia’s level of productive capacity. This affects growth of GDP, employment, incomes and material living standards. There are also decisions made by firms about what renewable, non-renewable, environmental and other resources they will use to produce the goods and services wanted by households. Will businesses grow their production and will this have negative externalities and adverse impacts on non-material living standards?

Overall, business firms often tend to downplay negative externalities including environmental concerns, because to do otherwise would mean higher costs and lower profits. They attempt to reassure both governments and the community that their activities are not creating significant damage. They usually tend to reject the need for direct government environmental regulations or intervention in the market, instead promoting their commercial interests through organisations such as the Minerals Council of Australia, the National Association of Forest Industries, and the Business Council of Australia. In recent times, for instance, forest industry groups have conducted a campaign to extend logging licences in state forests and to build a pulp mill in Tasmania, while miners pushed for additional uranium and other mines, and for increased mining in Kakadu National Park.

The influence of the Greens and conservationists

The Australian Conservation Foundation, the Wilderness Society and Greenpeace are three pressure groups that seek to influence the decisions made by households, businesses and governments. They aim to heighten community awareness about negative externalities, environmental matters and various economic activities such as whaling, over-fishing, the use of long-line nets, the dangers of nuclear power, excessive logging, the adverse effects of mining, and the need to expand and protect our national parks and heritage areas. In addition, the Greens and some independents have often sought election to federal and state seats based on their environmental policies. Indeed, starting in 2010, the minority Gillard government relied on votes from these groups to achieve a majority in the Lower House, in exchange for action on the environment, including the introduction of a carbon tax that commenced in July 2012. In contrast, during the September 2013 election, the Coalition promised to scrap the carbon tax and replace it with an incentive based, ‘Direct Action’ policy. After lengthy debate and opposition, the carbon tax was abolished early in July 2014, but as yet, legislation has not been passed to allow for the implementation of the Federal government’s proposed Direct Action policy.

Government policies can affect the rate of economic growth

Already we have mentioned in passing that the Australian government wants to grow the economy. Its target or goal of strong and sustainable economic growth is to see GDP rise by an average of perhaps 3.0 to 3.5 per cent a year. Rates above this often cause the economy to overheat (suffer from shortages of goods and services, and inflation) because there is insufficient productive capacity available and aggregate supply is limited. Rapid growth also greatly accelerates environmental damage. However, slower rates of economic growth below this 3.0 to 3.5 per cent range mean there is unused productive capacity. Here, GDP is rising too slowly to maintain full employment and improve living standards.
As we shall now see, the Australian government uses both aggregate demand and aggregate supply policies to help promote a sustainable rate of economic growth, and avoid both inflation and unemployment.

**Australian government policies to regulate Australia’s level of aggregate demand and economic growth**

Macroeconomic or aggregate demand policies involve government measures to regulate the level of spending on Australian goods and services (i.e. \( AD = C + I + G + X - M \)). These strategies are used in a way designed to help flatten out the severe ups and downs in the business cycle. This stabilising approach is illustrated in figure 2.30.

There are two types of macroeconomic policies that can be used to promote a steadier rate of economic growth.

**Monetary policy**

**Monetary policy** involves the Reserve Bank of Australia (RBA) using changes in interest rates to control spending and regulate the level of economic activity and GDP. Here, interest rates represent the cost to firms and households for borrowing credit. Alternatively, people with savings deposits in a bank account also receive interest as a reward. By changing interest rates, the RBA can regulate how much money is saved, borrowed and spent using countercyclical policy. With this in mind, the RBA can push down interest rates to stimulate borrowing and spending (an expansionary policy to lift AD, as in 2008–09 and 2011–12–13–14) if there is a recession or downturn in the rate of economic growth. By contrast, when spending and activity are running too strongly, causing an inflationary boom, rises in RBA interest rates are the way to go (i.e. a more contractionary policy as in, for example, 2002–08, and a loss expansionary policy between 2010–11 and 2012–13).

**Budgetary policy**

The federal treasurer introduces budgetary policy each year. It involves changing rates of tax (e.g. personal income tax, company tax on profits, the goods and services tax, excise tax on alcohol, tobacco and petrol), along with levels of government outlays (e.g. on welfare benefits, health, education, defence, communications and industry assistance). Since taxes are a leakage in the circular flow model and government outlays are an injection (see p. 69), the budget can alter AD and, hence, the short-term rate of economic growth. When the budget is used as a stabiliser of the business cycle, measures are applied in a countercyclical way. Thus, in a period of recession where low spending causes a drop in the rate of economic growth, the treasurer could cut tax rates or increase budget outlays to encourage more spending (an expansionary budget deficit; for example, $54 billion in 2009–10 following the global financial crisis in 2008–09). In reverse, if the pace of economic growth was too high and the economy was overheating leading to an inflationary boom, rises in tax rates and reduced government outlays should cool economic activity (contractionary budget surplus; for example, in 2007–08 of $19 billion or cutting the size of the budget deficit from $55 billion to an estimated $18 billion between 2009–10 and 2012–13).

**Australian government policies to promote aggregate supply and economic growth**

Aggregate supply policies, especially government microeconomic reforms, have been widely applied to improve efficiency in the use of Australia’s resources. Higher efficiency means getting more output from the same inputs, thus growing aggregate supply. Higher efficiency also reduces production costs, raises profits and encourages
firms to expand output. This improves the capacity of the economy to produce goods and services, and lifts the potential or sustainable rate at which economic growth can occur.

Many federal government microeconomic efficiency reforms have been applied recently, including:

- **Cutting tax rates.** Between 2000 and 2012, the government reduced tax rates on personal incomes, company profits and capital gains from the selling of assets such as shares and property. Lower tax rates help encourage greater personal effort by individuals. They also improve business profits and encourage investment in new technology and equipment. As a result, these reforms should help increase efficiency, lift productive capacity and boost the potential rate of economic growth.

- **Deregulation of the labour market.** Market deregulation involves gradually reducing the government’s interference in various markets. Perhaps the best-known example is the deregulation of the labour market. Essentially, this has involved a shift from the government-regulated minimum wage system for setting pay and conditions, to the widespread use of enterprise bargaining. In the latter case, wages are set through negotiations between workers and their bosses, on a firm-by-firm basis. Pay levels are related to a worker’s productivity or efficiency so, unlike the old system, there is now a greater incentive to work hard. In all cases, the main aim of market deregulation is to increase the level of market competition and efficiency. In turn, greater efficiency slows production costs and grows the economy’s potential GDP.

- **Promotion of greater competition.** The government has introduced reforms to stimulate the level of competition or rivalry between firms in the setting of prices. This should force businesses to cut costs by better efficiency levels. Improved efficiency enables greater output from the same inputs. In this area, government measures have included bolstering the power and profile of the Australian Competition and Consumer Commission (ACCC). As discussed, this organisation is responsible for enforcing the Competition and Consumer Act (CCA) of 2010 (formerly called Trade Practices Act or TPA). The CCA makes it illegal for firms to collude using strategies to push up or fix prices, or limit competition. So activities such as price fixing, collusive bidding, market zoning, price leadership and interlocking directorships are all outlawed because they reduce business efficiency and productive capacity, and worsen the inflation rate (see chapter 1, p. 20).

- **Tariff cuts.** Tariffs are an indirect tax that is added onto the price of imports. Tariffs limit competition from imports, reduce local efficiency, increase production costs for other local industries and slow the potential rate of economic growth. Since the early 1970s, the federal government has progressively reduced tariffs protecting local firms. Figure 2.31 (p. 85) shows that general tariff rates have gradually fallen from a high of 38 per cent in the late 1960s, to less than 5 per cent since 1996. Higher tariff rates applying in special industries (e.g. textiles, footwear, clothing, automobiles) have also been reduced greatly from a peak in the mid-1980s. In addition, further tariff cuts occurred in 2010 and more are scheduled for 2015. The lowering of government tariff protection means that only efficient firms will survive and resources will be allocated to those areas where Australia has a cost advantage in production. Greater efficiency should lift the potential rate of economic growth.

- **National infrastructure projects.** Especially in the last five years to 2013, there was increased federal government spending on national infrastructure projects. Government budget spending on highways, rail links, port facilities, telecommunications including the National Broadband Network (NBN), water supply, the power grid, and education and training facilities help to grow the quantity and efficiency of Australia’s capital resources. This helps encourage business expansion, the growth in Australia’s productive capacity and PPF, and the potential rate of economic growth.

- **Immigration policy.** In recent years, the federal government has actively promoted quite high levels of immigration, of around 190 000 migrants a year, especially those with wanted skills that are in short supply. This policy helps reduce labour shortages and thus increases both the quantity and efficiency of Australia’s labour resources. In turn, a bigger and more skilled labour force helps to grow our PPF and the sustainable rate of economic growth.
International cooperation between governments can affect economic growth and the environment

Internationally, governments have worked together to promote economic growth and improve the environment.

International government cooperation to promote global economic growth

The governments of some nations work together to influence the world’s rate of economic growth. In the recent global financial crisis (GFC) and recession during 2008–10 (initially caused by greed and unsound lending practices by banks and others at the high-risk end of the home mortgage market in the US), there was substantial international cooperation to tackle the problem. With recession (i.e. negative economic growth) at that time and shrinking GDP in many key economies in 2009 as shown in figure 2.32 (p. 86), governments in the US, Australia, UK, Germany, Italy, France, China, Japan and elsewhere discussed the problem and all adopted expansionary monetary and budgetary policies.

These policies sought to lift AD and restore financial, consumer and business confidence. Measures included cutting income tax rates, boosting government spending on building public infrastructure (highways, schools, ports, dams, rail links, telecommunications), and increased cash handouts to families and those on welfare. Official interest rates were also slashed dramatically to very low levels (almost zero per cent in the US, Japan and UK) and other measures were adopted to encourage bank lending.

The work of the G20 is another example of international government cooperation to promote global economic growth. The G20 was formed in 1999, made up of the finance ministers from each of the top 20 trading economies including Australia and the European Union. At the G20 Summit held in London on 15 March 2009 the finance ministers tried to deal with the most serious economic downturn since the Great Depression (1929–34) through the following measures:

- stimulating global spending
- closer monitoring and some re-regulation of financial markets
- establishing better ways to deal with toxic or bad debts
- increased financial support for the International Monetary Fund (IMF) to help the G20 support troubled countries.

More recently, in mid-2011 and in 2012, major European leaders got together to again provide extra finance to the Greek government to help it meet its spending commitments, and avoid even harsher financial measures that may have caused the Greek economy to slide deeper into recession. This came on top of special credit arrangements extended to several other European nations to help rescue them from deteriorating economic conditions following the global financial crisis.

**FIGURE 2.31** How the Australian government has changed tariffs protecting local industry

There is also international cooperation through the World Trade Organization (WTO). This is an institution originally set up in 1995 to promote free trade as a means of accelerating global economic growth and development. Comparative cost advantage involves nations specialising in the production of those particular goods and services where they have the greatest cost advantage or least cost disadvantage in production. Economic globalisation involves the creation of one large international market where goods, services and money capital are free to flow across national borders.

The influence of government on environmental issues

In the years to 2014, much alarm has been expressed about negative externalities associated with economic growth and worsening environmental issues such as:

- rising greenhouse gas emissions including CO₂
- global warming (a rise in average world temperatures of up to 6.4 degrees Celsius by 2010 above 1990 levels)
- destruction of the ozone layer
- extreme weather events including prolonged drought, floods and bushfires
- melting of the polar ice caps
- rising sea levels (by between 0.5 to 1.0 metres) endangering island and coastal communities
- acid rain (where carbon and other emissions into the atmosphere cause rain to become dangerously acidic)
- deteriorating air quality
- deforestation
- lack of healthy environmental river flows
- toxic substances entering our food chain
- waste disposal issues
- destruction of biodiversity (where some plant and animal species become extinct).
In addition, we now know that environmental damage causes great loss of life, damages the economy through reduced production (for example, farm, mine and export output) and weakens the government’s financial position through lower tax revenue and the need for higher government spending on infrastructure and assistance to those affected. Clearly, failure to adequately respond to this harm, threatens our survival and undermines our living standards.

As a result of growing concern, a range of environmental policies has been introduced, both by the Australian government and through international government cooperation. These measures are designed to help reduce environmental damage and global warming resulting from economic activities.

**International cooperation to protect the environment — the Kyoto protocol**

Early in 2008, the Australian government signed the Kyoto agreement. This is an international agreement initiated in 1997 through the United Nations aiming to stabilise the concentration of greenhouse gases in the environment, which are adding to climate change and global warming. By 2011, over 190 countries supported the agreement, but a notable exception was the United States. In order to reach targets under this agreement, several countries already have, or plan to have, a carbon tax including Denmark, Finland, Germany, Italy, the UK, South Africa and India. Some even have emissions trading schemes (see later explanation, p. 00).

From Australia’s point of view, signing this accord initially committed us to limiting our greenhouse gas emissions for the period 2008–12, to a target of 108 per cent of the 1990 emissions level. It is then up to our government to work out ways of achieving the target. Current modelling suggests that this outcome should be attainable. However, the challenge will be far more difficult in subsequent periods to 2020 and 2050, when the government initially agreed to a 60 per cent cut. Achieving these reductions cannot be done without a range of government environmental policies.

**The Australian government’s environmental policies**

Australia’s annual carbon emissions per person are the highest in the world (27.3 metric tons of CO2 per person per year). This contributes disproportionately to global warming and extreme weather events. With this thought in mind, Australian governments have recently attempted to respond to this worrying situation, mostly with limited success, through three environmental policies, the last of which is expected to be implemented sometime during 2014. All three policies have sought to reduce carbon dioxide (CO2) emissions, climate change, global warming and extreme weather events.

1. **The proposed Carbon Pollution Reduction Scheme (CPRS)**
   The idea of the Carbon Pollution Reduction Scheme (CPRS) was first floated in the Garnaut Climate Change Review in 2008 and was favoured by the Rudd Labor government. Essentially, it sought to reduce emissions by putting a price on the release of carbon into the atmosphere, by businesses. This scheme involved the government’s sale of one pollution permit for each tonne of CO2 emissions. By making it more expensive and less profitable for firms to generate greenhouse gases, businesses would change their decisions and switch to cleaner products and technologies, thus reducing market failure involving negative externalities in the form of climate change.

   In this scheme, it was proposed that the exact cost or price of permits would be decided by the forces of demand and supply in a carbon emissions market. Here, the carbon price would move up and down, mainly as a result of changed conditions of demand by polluters. In the end, with an election looming, lack of numbers to pass the legislation in the Upper House and uncertainty surrounding this complex scheme, the Rudd government’s carbon emissions trading scheme (ETS) failed to get parliamentary approval.

2. **The introduction of a carbon tax**
   With support from the Greens and Independents, the minority Gillard Labor government decided to introduce a carbon tax from July 2012, following the successful passing of the Clean Energy Act (2011). The tax is a far simpler way to put a cost or price on carbon emissions by firms, than the CPRS or an ETS, and it should also help to reduce negative externalities or market failure. However, the coverage of this tax is quite narrow. It is only paid by Australia’s 500 worst-polluting companies (typically in generating electricity, waste disposal by councils, and in steel and aluminium

Environmental policies are measures adopted by governments designed to reduce environmental damage caused by the production, consumption and disposal of goods and services. The Kyoto agreement is a 1997 international treaty, signed by Australia in 2008. It commits Australia to limiting its carbon emissions for the period 2008–12 to 108 per cent of the 1990 emissions level.
smelting). The starting price for the tax was $23 for each tonne of carbon emissions. This cost was then planned to rise annually by 2.5 per cent until 2015, when the then government hoped to introduce the CPRS or ETS.

The carbon tax was also designed to affect the behaviour of consumers who would be encouraged to reduce their consumption of now more expensive, environmentally dirty goods and services, switching instead to cleaner substitutes (e.g. electricity generated from wind, hydro or solar) on which there was no tax. So while the carbon tax helps to promote new green industries and a more efficient use of resources in the long term, unfortunately, it is a regressive tax for lower income earners who faced the burden of higher prices for electricity, transport, food and other goods and services. Although low income earners and some overseas trade exposed exporting businesses were partly compensated for higher prices by receiving a cut in their rate of income tax (paid out of the $7 billion in government revenue from the sale of the pollution permits) or other offsets, this compensation aspect greatly reduced the effectiveness of the tax in changing household and business behaviour towards greener alternatives.

3. The proposed ‘Direct Action’ climate change policy of the Coalition

During the September 2013 election, the Coalition under Mr Abbott, promised to abolish the carbon tax and the Clean Energy Act, abandon the planned move to an emission trading scheme (ETS) scheduled for 2015, and introduce a new Direct Action climate change policy. Achieving this requires the passage of the Clean Energy Legislation (Carbon Tax Repeal) Bill, through both houses of parliament. In July 2014, this legislation finally passed the Upper House and so the carbon tax has now been abolished. However, the legislation allowing for the introduction of Direct Action policy has not yet been passed by the Senate.

Although some of the finer details are still being thrashed out, essentially, the Direct Action Policy appears to involve two main parts:

- First, the use of financial incentives or the carrot, for firms to reduce their emissions. This is centred around:
  - establishing a $1.55 billion (over four years) Emissions Reduction Fund (ERF) to direct money to genuine, new projects that will reduce emissions in Australia
  - encouraging firms to bid for money under a reverse auction process, where the lowest cost applications for reducing emissions will win grants projects from increasing energy efficiency in manufacturing and buildings, to planting trees.

- Second, there is the stick or requirement for businesses to have emissions below a current set baseline. Indeed, some companies are already subject to annual reporting of their emissions, which for most, will become their baseline after the new scheme commences (assuming the legislation finally passes the Upper House at some stage). Firms exceeding their baseline could be required to purchase carbon credits or offsets from the carbon market, where the price would be set by the operation of demand and supply for credits.

Additionally, other, less dramatic environmental strategies are planned by the Abbott government, including the development of carbon capture and soil storage, that is claimed to also improve soil quality, the establishment of a Green Army involving 15,000 people in local communities to clean up and enhance the environment, the enhancement of natural water supplies and reduced reliance on water desalination plants that are energy intensive, a review of the current 20 per cent renewable energy target, and streamlining the environmental approval process for business.

Critics of the Direct Action policy claim it may end up being more expensive and less effective than the proposed ETS in meeting the Kyoto emissions targets, to which Australia agreed (i.e. a 5 per cent reduction in our carbon emissions by 2020). In addition, some businesses feel that the incentives appear insufficient to be worthwhile.

1. How has international cooperation helped to achieve the following?
   a. Promote economic growth
   b. Protect the environment

- Try the multiple-choice test, pp. 00-00
- Try terminology revision 1, 2, 3, pp. 00-0
- Try applied economic exercises 8, 9, 10, pp. 00-0
- Try folio of annotated media commentaries 2, p. 00
- Try reports on an investigation 2, 3, pp. 00-000
- Try economic simulation activity — role play, p. 000
- Try an essay p. 000
In order to satisfactorily complete VCE Economics Unit 1, Part 1, the teacher must decide whether the student has demonstrated the achievement of the specified key knowledge and key skills for Outcome 2. The teacher’s decision should reflect results from school-based assessment. Generally, this should take place as part of the normal teaching and learning program. In addition, most assessment will be completed in class under a limited time frame. With this in mind, teachers may select from an appropriate range of tasks provided on the following pages.

Multiple-choice test questions

Using the multiple-choice answer grid (below), select the letter (A, B, C, D) that represents the most appropriate answer for each question by marking it with a tick (✓).

**Answer grid**

<table>
<thead>
<tr>
<th>Question</th>
<th>A</th>
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**Question 1**

In an economy, economic growth always occurs when:

A there is more spending on goods and services between one year and the next.
B there is more production of goods and services between one year and the next.
C there are more resources available between one year and the next.
D business activity is steady between one year and the next.

**Question 2**

Concerning GDP (chain volume) as a measure of economic growth or the size of the economy, which statement is generally false?

A It measures the annual value of most goods and services produced.
B In the circular flow model, it can also be estimated by measuring AD or the total incomes paid to producers.
C It has had to be adjusted to help remove the effects that inflation has on the value of production.
D Its value includes all goods and services produced in the country (including washing the dog, home-grown vegetables, trade in illegal guns) and it makes a downward adjustment to allow for negative externalities.

**Question 3**

The Australian government seeks to achieve the goal of a strong and sustainable rate of economic growth. This is currently defined as an annual long-term rise in GDP averaging around:

A 1–2 per cent
B 2–3 per cent
C 3–3.5 per cent
D above 4–5 per cent.

**Question 4**

From figure 2.33 (p. 00), which of the following is incorrect concerning Australia’s rate of economic growth (measured by the annual percentage change in GDP)?

A Economic growth and activity generally moved in a cyclical pattern.
B The government’s target range for economic growth was generally achieved during the years shown.
C There is no evidence that there may have been a recession during this period.
D There were at least two major slowdowns in the rate of economic growth over the period shown.
Question 5
Which one of the following would have an effect on the rate of economic growth that is different to that of the other three?
A The government announces a cut in income tax.
B Households feel pessimistic about future employment prospects and fear that they may soon become unemployed.
C The rate of economic growth in the United States and Japan strengthens, combined with a lower exchange rate for the A$.
D Interest rates fall following an announcement by the RBA.

Question 6
Given the following hypothetical data in Table 2.3 below, predict what may soon happen to the country’s rate of economic growth. Assume that, currently, the country has been enjoying a 3.6 per cent annual rate of economic growth with fairly low unemployment.

**TABLE 2.3 Hypothetical data relating to percentage changes in AD for a country**

<table>
<thead>
<tr>
<th>Component of AD</th>
<th>Annual percentage growth last year</th>
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<td>1</td>
</tr>
<tr>
<td>X</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>M</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

A The rate of economic growth will probably tend to accelerate.
B It is impossible to predict anything about the rate of economic growth.
C The rate of economic growth will probably tend to slow.
D There will tend to be a boom.

Question 7
Referring again to Table 2.3 and the two-year trend in the components of AD (C + I + G + X − M), which one of the following causes is most likely to be a correct explanation?
A Businesses became more optimistic about sales and profits.
B Economic activity overseas must be rising.
C There is a slower rate of rise or even a fall in household disposable income.
D The government has recklessly increased budget spending on public works and community services such as health and education.

Question 8
In the long term, an economy needs more than just increased spending to accelerate its rate of economic growth. Which of the following is **not** a correct explanation of this statement?
A Strong spending or AD cannot make an economy grow any faster once it has reached its productive capacity or potential GDP.
B The lack of access to extra resources restricts production levels and economic growth in some economies.
C Some economies cannot lift the growth in output because of low efficiency in production.
D In the long term, spending is always too low for the economy to fully use its capacity.

Question 9
Which of the following developments would tend to affect Australia’s long-term rate of economic growth in a different way to that of the other three?
A The use of genetically modified crops by farmers
B Successful measures to help drought-proof Australian farmers
C Legislation that lowers the minimum retirement age for workers
D Legislation that raises the minimum school leaving age to 17 years

Question 10
Which of the following would **not** tend to lift Australia’s long-term, sustainable rate of economic growth?
A A fall in the female participation rate in the labour force
B Government microeconomic efficiency reforms including deregulation of the labour market and the encouragement of savings to provide cheaper finance to help increase the level of business investment
C The adoption of best work practice by local firms, managers and employees
D Encouragement of mineral exploration and R&D
Question 11
Concerning the effects of economic growth, which of the following is false?
A Economic growth usually causes cyclical unemployment to fall as economic activity rises.
B Economic growth that emphasises greater efficiency and cost cutting by firms, can lead to higher structural unemployment in the short term.
C Without special government policies, such as progressive income taxes or welfare benefits for the needy, there is the danger that economic growth may increase inequality in personal income levels.
D Strong economic growth that results in a rise in household income may reduce spending on imports of goods and services, possibly improving our trade balance with overseas nations.

Question 12
Increased economic growth:
A can cause the economy to overheat, leading to inflation.
B need not cause inflation if there have been rises in worker efficiency and lower production costs.
C can cause negative externalities such as reduced leisure time, traffic congestion, urban overcrowding and waste disposal problems for cities.
D All of the above may result.

Question 13
Expansionary government macroeconomic or aggregate demand policies are most likely to increase the rate of economic growth when:
A there are high levels of unemployment and unused productive capacity in the economy.
B there is a boom.
C there is inflation and the economy is overheating.
D the economy is operating at its ideal level of economic activity and is at its productive capacity.

Question 14
Which of the following government policies would help most to increase the rate of business investment spending (I) and hence AD?
A A higher rate of personal income tax
B A reduction in the rate of tax on company profits from 30 to 25 per cent
C An increase in the GST from 10 to 20 per cent
D A rise in the top effective rate of capital gains tax from 22.25 to 25.25 per cent of the gains

Question 15
Microeconomic reforms or aggregate supply policies can help to increase the rate of economic growth by:
A reducing incentives to business
B increasing the output of goods and services gained from each unit of resources used in the economy
C neither A nor B
D both A and B.

Question 16
Which of the following is not primarily a microeconomic or aggregate supply policy designed to promote economic growth?
A Cutting the rates of personal and company tax to increase incentives
B The government adopting an expansionary budgetary and monetary policy to lift spending
C Measures enforced by the ACCC to promote greater competition among firms operating in various markets
D Trade liberalisation involving tariff cuts and the adoption of reduced protection

Question 17
In the long term, tariff reductions may help to strengthen Australia’s economic growth by:
A forcing local firms to cut costs and become more competitive with imports
B making it cheaper for local firms to import necessary equipment (e.g. tractors, robots, materials) needed for production
C improving efficiency in the way resources are used or allocated, shifting resources into areas of competitive cost advantage
D All of the above may apply.

Question 18
The level of private consumption spending (C) and the rate of economic growth are likely to fall if there was a:
A rise in consumer confidence
B fall in household savings
C rise in household income
D rise in government taxation.

Question 19
The level of private investment spending (I) and rate of economic growth would tend to increase if there was a:
A rise in business confidence about future sales
B rise in interest rates on bank loans to businesses
C fall in business profits
D rise in the rate of company tax on firms.

Question 20
The value of spending on Australian exports (X) is likely to rise if:
A there was a recession overseas
B they became cheaper or more competitive for overseas buyers
C the exchange rate for the A$ rose or became dearer against overseas currencies
D there was a drought or floods in Australia that destroyed our crops.

Question 21
Which statement about AD is most correct?
A Aggregate demand is the total of all types of spending in Australia represented by C + I + G + X + M.
B C represents private household consumption of, for example, take-away food, shelter, cars, holidays and clothes.
C I represents business spending, which would rise if business confidence fell.
D If AD rose, GDP would fail.

Question 22
Concerning the five-sector circular flow model of the Australian economy, which statement about the value of aggregate demand and GDP is true? The values of aggregate demand or GDP equal:
A the total value of C + I + G + X + M
B the total value of C + I + G + X − M
C the total value of C + I + G + X + M
D None of the above totals is correct.

Question 23
Using table 2.4, which of the following statements about AD in the Australian economy in 2011–12 and 2012–13 is incorrect?

<p>| TABLE 2.4 Estimates for the Australian economy between 2011–12 and 2012–13 |</p>
<table>
<thead>
<tr>
<th>Component</th>
<th>2011–12</th>
<th>2012–13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private consumption (C)</td>
<td>799</td>
<td>839</td>
</tr>
<tr>
<td>Savings (S)</td>
<td>106</td>
<td>97</td>
</tr>
<tr>
<td>Private investment (I)</td>
<td>341</td>
<td>358</td>
</tr>
<tr>
<td>Tax revenue (T)</td>
<td>216</td>
<td>234</td>
</tr>
<tr>
<td>Government outlays (G)</td>
<td>341</td>
<td>342</td>
</tr>
<tr>
<td>Imports (M)</td>
<td>318</td>
<td>319</td>
</tr>
<tr>
<td>Exports (X)</td>
<td>316</td>
<td>301</td>
</tr>
</tbody>
</table>

A AD was higher in 2012–13 than in 2011–12.
B AD was equal to $1478 billion in 2011–12 and was $1521 billion in 2012–13.
C AD in 2012–13 may have reflected increased consumer confidence on levels that existed in 2011–12.
D The value of net exports over the period 2011–12 to 2012–13 changed from −$2 to −$18 billion thereby tending to slow AD and reduce the rate of economic growth.
Question 24
Again using the data contained in table 2.4 (p. 000), which statement about leakages and injections is true?
A The total value of leakages fell over the period between 2011–12 and 2012–13.
B The total value of leakages increased from $640 billion in 2011–12 to $650 billion in 2012–13.
C The total value of injections fell in 2012–13 relative to the total value of injections in 2011–12.
D None of the above statements is true.

Question 25
Which of the following would be least likely to increase a country’s rate of economic growth?
A Increased investment levels and the expansion of capital resources
B Farming methods resulting in better soil management and fertility
C Increased concern over environmental matters and Aboriginal land claims (which have reduced access to natural resources)
D The accelerated application of new technology in industry

Question 26
The household and business sectors both interact with the natural environment. Which of the following is an incorrect assessment of this relationship?
A The household sector uses air, water and energy from the natural environment.
B Eventually, the household and business sectors dispose of waste and garbage into the environment, more or less equal in weight to all the goods ever produced.
C The production of more goods and services always helps improve both material and non-material living standards.
D In promoting economic growth, it is important for both households and businesses to realise that environmental resources such as air and water are not ‘free goods’ and that the world must reduce its waste of these things.

Question 27
Economic growth often results in:
A a fall in the quality of air, the extinction of native plants and animals, and the destruction of healthy rivers and oceans.
B greater consumer choice, better health and longer life expectancy.
C the growth of cities and of urban problems such as traffic congestion and waste disposal.
D All of the above.

Question 28
Which statement is most correct? ‘Environmental resources’ include:
A all the gifts of nature as well as those provided by people.
B minerals.
C forests.
D air, oceans and the stratosphere.

Question 29
A negative externality is best illustrated by which of the following examples?
A You clean up and beautify your front garden that is seen from the street.
B The club near your house runs its noisy and unruly venue each Friday and Saturday night until 3 a.m.
C A bauxite mining company restores a damaged mine site and replants the native vegetation.
D You pay for the cost of repairing the inside of your house.

Question 30
Environmental problems have become more severe:
A because firms seek to maximise profits, minimise costs and exploit natural and environmental resources for which they are not currently charged a price.
B because the recycling of waste by households and firms has been inadequate.
C because population pressures and materialism mean more production is necessary.
D All of the above are correct.

Question 31
Which of the following government measures would be least effective in helping to combat environmental problems?
A Government taxes imposed at higher rates on single-use disposable products
B Building a new freeway to carry more cars
C Improving public transport quality, reliability, speed, coverage and comfort
D Encouraging businesses to use more modern, non-polluting production methods by providing tax incentives, and charging companies that emit CO2

Question 32
Which of the following is not a weakness of using GDP per head as a measure of a nation’s total welfare or overall living standards?
A The value of some production, such as home duties, and the output of the cash and black market economies is excluded, making GDP an underestimation of the economy’s real level of output.
B GDP makes no proper allowance for changes in the number of hours worked and the amount of time that parents have left over after work to spend with their children.
C Only the direct costs of production are taken into account, rather than considerations such as the full impact on the quality of the natural environment.
D All of the above are relevant problems or weaknesses.

Question 33
Concerning the business cycle, which statement is least correct?
A A period of expansion is normally associated with falling employment.
B Domestic economic stability usually occurs when there is low inflation (an average of around 2–3 per cent a year) and low unemployment (around 4.5–5 per cent of the labour force), and strong and sustainable economic growth (a rise in GDP of about 3–3.5 per cent a year).
C A recession is a small depression where output falls over six or more consecutive months.
D Inflation slows during a contraction.

Question 34
Which of the following would be least likely to grow productive capacity and aggregate supply in the long term?
A Ongoing reductions in tax rates
B Restrictions on the level of foreign investment in, and ownership of, Australian industry
C Promotion of workplace or enterprise bargaining as the system used to determine workers’ pay (as opposed to the minimum wage system)
D Encouraging greater competition and cost cutting among rival firms in an industry

Terminology revision

1. Select the most frequently used terms for chapter 2 from the following list. Write out brief and accurate definitions of these using the Economics dictionary as a guide. Alternatively, try
constructing a crossword using some of the key words from the list below. Here, you will need to write out definitions for the clues across and down. This task is fun and made easy if you use a program called Puzzlemaker. Use the crossword weblink to help you create your puzzle.

Applied economic exercises

**Question 1**
A Carefully define the meaning of *living standards*, noting its two main parts or sections.
B In general, what is the main requirement for continued increases in material living standards in the long term?
C Classify each of the following events into those that are likely to affect material living standards and those that are likely to affect non-material living standards. Indicate the likely direction of change (i.e. an increase or decrease).

**Item or event** | Affects either material or non-material living standards, and the likely direction of change
---|---
1. Your boss gets you to work more unpaid overtime. |  
2. Higher levels of GDP per hour worked |  
4. Due to a new freeway, the time taken to go to work falls. |  
5. New mineral resources are discovered and mined. |  
6. There is a rise in the minimum wage to around $622 per week as in 2013–14. |  
8. Inflation falls to low levels. |  
9. The minimum age for voting is increased to 25 years. |  
10. Welfare benefits are abolished. |  
D What are the main types of relationships that exist between improvements in material and non-material living standards? Is there a trade off?

**Question 2**
Examine figure 2.34 (p. 00) showing quarterly (three-monthly intervals) percentage changes in Australia’s rate of economic growth, as indicated by GDP.
Australia’s quarterly rate of economic growth 2002–03 to 2012–13 (percentage change in chain volume GDP — reference year 2011–12)

Source: Data derived from ABS, 5206.0. See also Excel tables, Table 2, www.abs.gov.au/AUSSTATS/abs@.nsf/DtlsPage/5206.0Dec%202013/0OpenDocument

**Question 3**

A What is meant by a nation’s productive capacity?

B Using the top section of table 2.5 below, carefully draw and fully label a hypothetical production possibility diagram for a country (with a graph layout similar to that shown on p. 00) that can only produce goods or services. On this diagram, mark in the original PPF (i.e. PPF1).

**TABLE 2.5** Production possibilities for a hypothetical country

<table>
<thead>
<tr>
<th>Type of production</th>
<th>Original production possibility</th>
<th>New production possibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Original annual production of services</td>
<td>300</td>
<td>200</td>
</tr>
<tr>
<td>Original annual production of goods</td>
<td>0</td>
<td>300</td>
</tr>
</tbody>
</table>

**New production possibilities for the country following certain developments**

<table>
<thead>
<tr>
<th>Type of production</th>
<th>New production possibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>New annual production of services</td>
<td>350</td>
</tr>
<tr>
<td>New annual production of goods</td>
<td>0</td>
</tr>
</tbody>
</table>

**A country’s annual production possibilities**

**FIGURE 2.35**

C Suppose that certain events occurred that changed the production possibilities, as shown in the lower section of table 2.5. Draw and label a second, new PPF (PPF2). Referring to this diagram, identify and briefly explain two important sets of factors that would allow the country’s production levels to grow over a period of time, creating a bigger PPF.

D For each of the headlines in table 2.6 (p. 00), explain how the supply-side factor or event could affect Australia’s productive capacity and potential rate of economic growth in the long term.
SCHOOL ASSESSMENT TASKS AND LEARNING ACTIVITIES

TABLE 2.6 Supply-side events affecting Australia’s longer-term rate of economic growth

<table>
<thead>
<tr>
<th>Supply-side factor, event or newspaper headline</th>
<th>Definition of the supply-side factor (where appropriate) and explanation of the impact on Australia’s rate of economic growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Australian worker productivity or efficiency reaches a new record low.</td>
<td></td>
</tr>
<tr>
<td>2. New oil and gas discoveries are made in SA to rival those of the North-West Shelf.</td>
<td></td>
</tr>
<tr>
<td>3. Genetically modified (GM) sheep double wool production per sheep.</td>
<td></td>
</tr>
<tr>
<td>5. Expenditure on new capital equipment and buildings reaches an all-time high.</td>
<td></td>
</tr>
<tr>
<td>6. Australia’s overall participation rate in the labour force rises from 65 per cent to over 68 per cent.</td>
<td></td>
</tr>
<tr>
<td>7. Bass Strait oil and gas reserves run out.</td>
<td></td>
</tr>
<tr>
<td>8. Soils in the Murray River region become salinized and useless.</td>
<td></td>
</tr>
<tr>
<td>10. Mining in Kakadu causes environmental damage and discourages tourism in the region.</td>
<td></td>
</tr>
<tr>
<td>11. New technology reduces power costs and increases productive efficiency.</td>
<td></td>
</tr>
<tr>
<td>12. Australia’s population rises to 26 million people.</td>
<td></td>
</tr>
<tr>
<td>13. A carbon tax is introduced to help slow greenhouse gas emissions and global warming.</td>
<td></td>
</tr>
</tbody>
</table>

Question 4
The following subset of 37 short questions requires that you provide concise answers. These are to help sharpen your understanding of the nature and workings of the five-sector circular flow model of the Australian economy.

Understanding the five-sector circular flow model and the main influences on economic conditions
1. Draw and fully label the five-sector circular flow model.
2. What are the main economic functions of the household sector?
3. What are the main functions of the business sector?
4. What are the main functions of the financial sector?
5. What are the main functions of the government sector?
6. What are the main functions of the overseas sector?
7. Who are the suppliers of resources?
8. Who are the buyers of resources?
9. How are the suppliers of resources rewarded for their efforts, skills and risk?
10. Who are the demanders of finished goods and services?
11. When do wants become an actual demand for goods and services?
12. How might households dispose of the income they receive?
13. What are the main general determinants of the level of C?
14. What are leakages?
15. How is the impact of leakages different from that of injections?
16. Why might household saving levels change from one period of time to the next?
17. What factors affect the level of imports?
18. Under what circumstances might governments increase tax leakages relative to government spending?
19. Define what is meant by AD.
20. What are the immediate determinants of the level of AD?
21. List six reasons why AD may rise or fall.
22. What are three main economic effects of a rise in AD by $100 million for an economy that has unemployed resources or unused productive capacity?
23. What is the immediate effect of a decision by the business sector to increase its production or supply of goods and services?
24. What is the main cause of increased incomes?
25. What may cause some people to receive no income at all?
26. Why might there be reduced employment of resources and rising unemployment in an economy?
27. What are the effects on the economy of AD rising faster than the productive capacity of the country?
28. What is the impact on AD of a rise in imports?
29. Give three reasons why businesses might decide to increase their investment spending.
30. What three specific events could increase exports?
31. What three specific events could increase imports?
32. Give three specific reasons why households may cut their consumption expenditure.
33. Give two specific reasons why a government may lower government spending.
34. According to the model, what is the general cause of a contraction or recession in economic activity (GDP)?
35. According to the model, what is the general cause of an expansion in economic activity (GDP)?
36. According to the model, what can be said about the values or size of the flows of AD, GDP and total incomes in an economy in a given year?
37. What is the name of the flow that measures the general level of economic activity in a country’s economy?

Question 5
A ‘The level of aggregate demand helps to determine the rate of economic growth and the extent to which the economy’s productive capacity is actually used.’ Define what is meant by the term aggregate demand (AD).
B What is the business cycle? Show this diagrammatically, labelling all information.
C Carefully complete table 2.7 below summarising the main differences between the three different economic situations (i.e. a boom, recession and domestic economic stability) found on the business cycle diagram. Where possible, add typical statistics for the indicator in each economic situation.

TABLE 2.7 Summary table comparing various economic conditions

<table>
<thead>
<tr>
<th>Indicator of the economic situation</th>
<th>1. Domestic economic stability</th>
<th>2. Boom</th>
<th>3. Recession</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of AD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of GDP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and rate of economic growth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment rate (percentage)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation rate (percentage)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
D Use the five-sector circular flow model of the economy to help you predict in a logical and step-by-step way, the likely effects of the 12 economic events (see box below) on the short-term or cyclical levels of:

(i) AD.
(ii) inflation or generally rising prices.
(iii) GDP and the rate of economic growth.
(iv) employment or unemployment of resources.
(v) incomes.

Start each answer with a brief definition of the italicised term (see the Economics dictionary), and then go on to give your reasons. In answering the question, remember that many of the listed events change the size of flow number 3 (i.e. AD) and so (in order) the next flow to be affected is flow number 4, then flow number 1 and then finally, flow number 2. Before completing this task read the sample answer provided to guide you in your response (horizontal arrows have been used indicating ‘lead to’ and vertical arrows either mean ‘increase’ or ‘decrease’). Notice how the explanation works its way around the circular flow model in a forward direction. You may also find it useful to review figures 2.17 and 2.18 (p. 00) before starting your responses.

**Events affecting aggregate demand, economic growth and the economy**

1. **Consumer confidence** weakens dramatically as in 2008–09, 2011–12.
2. **Household disposable income** rises more quickly as in 2007–08, 2010–11–12.
3. There is a slowdown overseas in China as in 2013–14.
4. The **exchange rate** for the A$ rises or appreciates against other currencies as in 2005–08 and 2010–11–12.
5. **Interest rates** fall on credit borrowed by business firms from 7.25 to 3.0 per cent as in 2008–09 and 2012–13–14.
6. **Business stocks of unsold goods** fall unexpectedly to very low levels as in 2007–08.
7. There is a widespread **drought** in rural Australia as in 2001–09 and Western Queensland in 2013–14.
8. Between 2005 and 2014, there are a number of free trade agreements signed that abolish **tariffs** on goods imported from overseas.
9. To stage the World Soccer Cup in Melbourne, which would attract many local and overseas tourists, several billions of dollars of **investment** in building facilities would be required.
10. You decide to spend your week’s wages on a night out in Melbourne and reduce your level of **savings** by $450.
11. In 2011–12, the federal government announced that it will introduce a new tax (mining resource rent tax) on the profits earned by large mining companies.
12. **Australian households** try to increase their levels of saving as between 2008–09 and 2013–14.

**SAMPLE ANSWER: Predict the likely economic effects on Australia’s economy of a strong fall in the level of business confidence.**

**Definition:** Business confidence relates to the general level of business optimism or pessimism about its future sales and profits. This affects businesses’ investment decisions.

**Step-by-step explanation:** If there was a collapse in business confidence, firms would be pessimistic and feel that their future sales and profits will fall →↓ investment spending (I) by firms on new plant and equipment since there would be no need to expand their capacity →↓ AD or total spending on Australian-made goods and services (flow 3) because I is one of the injections in the economy →↓ in the rate of growth in national output or GDP produced by Australian businesses (flow 4) because sales are falling and unsold stocks rising →↓ amount of resources needed or employed by Australian firms (flow 1), thus decreasing employment and increasing the level of unemployment →↑ total incomes paid to Australian households (flow 2) and reduced material living standards.

**Question 6**

A There are many **benefits** that result from strong rates of economic growth. Explain how you would expect a rise in Australia’s rate of economic growth from –1.5 per cent to 3.5 per cent a year, to benefit each of the factors listed in table 2.8.

**TABLE 2.8 The benefits of stronger economic growth**

<table>
<thead>
<tr>
<th>Aspect of the economy</th>
<th>Explanation of the effects of stronger rates of economic growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The rate of unemployment and cost to the government of paying unemployment benefits</td>
<td></td>
</tr>
<tr>
<td>2. The average level of personal income per person</td>
<td></td>
</tr>
<tr>
<td>3. The amount of government income tax revenue collected</td>
<td></td>
</tr>
<tr>
<td>4. The level of exports available for sale abroad</td>
<td></td>
</tr>
<tr>
<td>5. Australia’s balance of international trade</td>
<td></td>
</tr>
<tr>
<td>6. Our rate of inflation</td>
<td></td>
</tr>
<tr>
<td>7. Material living standards (as indicated by average GDP or consumption per head per year)</td>
<td></td>
</tr>
<tr>
<td>8. The likely level of non-material wellbeing or quality of life</td>
<td></td>
</tr>
</tbody>
</table>

**Question 7**

A Giving examples, explain what is meant by **externalities**.

B What is the difference between **positive externalities** and **negative externalities**? Giving examples, explain how the existence of externalities means that resources are not allocated in ways that maximise the living standards of Australians. They cause some types of undesirable goods or services to be over-produced, while other desirable things are underproduced.

C **Negative externalities** often arise out of our economic activities. (i) What is meant by **negative externalities**? (ii) What types of negative externalities are likely to result from the economic activities listed in table 2.9?

**TABLE 2.9 The nature of negative externalities**

<table>
<thead>
<tr>
<th>Type of activity</th>
<th>The resulting negative externality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wood chipping in the Otways and north-east Victoria</td>
<td></td>
</tr>
<tr>
<td>2. Paper manufacture in Burnie, Tasmania</td>
<td></td>
</tr>
<tr>
<td>3. Construction of a new freeway in Melbourne</td>
<td></td>
</tr>
</tbody>
</table>
SCHOOL ASSESSMENT TASKS AND LEARNING ACTIVITIES

(iii) If negative externalities were fully taken into account by decision makers, what effect should they have on the production levels of those particular types of goods or services that cause these cost spillovers? Explain your reasons.

D ‘Dramatic increases in carbon emissions are a threat to human survival.’
(i) Explain the nature of this threat.
(ii) Examine figure 2.36 below showing the main sources of Australia’s carbon emissions. Using the first graph, what types of economic activities in Australia contribute most to our greenhouse gas emissions (especially CO₂)?

TABLE 2.10 Classifying types of resources used in production

<table>
<thead>
<tr>
<th>Type of product</th>
<th>Classification of resources (R or NR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nylon shirt</td>
<td>R</td>
</tr>
<tr>
<td>2. Plantation pine coffee table</td>
<td>NR</td>
</tr>
<tr>
<td>3. Petrol (crude oil)</td>
<td>R</td>
</tr>
<tr>
<td>4. Gas made from corn or sugar cane</td>
<td>R</td>
</tr>
<tr>
<td>5. Solar or wind power</td>
<td>NR</td>
</tr>
<tr>
<td>6. Woollen jumper</td>
<td>NR</td>
</tr>
<tr>
<td>7. Steel framing for a house</td>
<td>R</td>
</tr>
<tr>
<td>8. Plastic ruler</td>
<td>R</td>
</tr>
<tr>
<td>9. Cement</td>
<td>R</td>
</tr>
<tr>
<td>10. Sardines from the Atlantic Ocean</td>
<td>R</td>
</tr>
</tbody>
</table>

F One problem of economic growth is that environmental resources are overused and may become exhausted. What are environmental resources? Give examples of these and explain why environmental resources may be seriously depleted or run out.

G If successful action is not taken to reduce greenhouse gas emissions, outline two important ways in which global warming might reduce Australia’s economic growth and material living standards.

Question 8
A Define what is meant by the government’s goal of a strong and sustainable rate of economic growth.
B What are macroeconomic or aggregate demand policies and how can these be useful in helping the government achieve a rate of economic growth averaging around 3–3.5 per cent a year?
C List and outline the main differences between monetary and budgetary policies (as two means of stabilising the level of economic growth).

D Referring to figure 2.34 (p. 00) in question 2, how would you expect the RBA to change the level of interest rates during quarters 1 and 2, 2008–09 or in 2012–13? Step through your reasoning to justify your answer.

E Again referring to figure 2.34, how would you expect the treasurer to change the levels of taxes and government spending during the budgets of 2007–08 or 2011–12? Explain your reasoning.

Question 9
Define the term microeconomic or aggregate supply-side policy. For each microeconomic reform or aggregate supply policy listed in table 2.11 (p. 00), outline the nature of the government’s policy change and then explain how it should increase Australia’s productive capacity and lift the sustainable speed limit at which the economy can grow.
100 Economics Down Under

Book 1

Question 10

A Complete table 2.12 below that outlines two key actions households and businesses might each take to reduce their greenhouse gas emissions.

**TABLE 2.12** Decisions or actions that can be taken to reduce greenhouse gas emissions

<table>
<thead>
<tr>
<th>Actions to reduce greenhouse gas emissions by households or consumers</th>
<th>Actions to reduce greenhouse gas emissions by businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
</tr>
</tbody>
</table>

B What is a *carbon tax*? Explain how a *carbon tax* could work to help reduce the level of carbon emissions (as an area of market failure) and the contribution of economic activity to global warming.

A folio of annotated media commentaries using print or electronic materials

**Question 1: Trends, causes and effects of economic growth**

Collect several media articles (e.g. from newspapers, magazines or the internet) about economic growth. Annotate and use these articles to analyse at least one of the following topics related to economic growth and use this to create a class presentation or write a brief report.

- **Trends in statistics.** Using a graph or statistics, report on the latest trends in Australia’s quarterly (three monthly) rate of economic growth, or that for a country overseas (e.g. US, Japan, China).
- **Causes of recent trends.** You may look at trends in the figures for economic growth and then try to explain their causes (i.e. demand-side or supply-side causes).
- **Effects of economic growth.** Look at the latest good or bad economic and non-economic effects of the change in the rate of economic growth.
- **Government policies.** Discuss the strengths and weaknesses of specific government policies that have been used to help influence the rate of economic growth and the environment.

**Question 2: Sustainable economic growth and the environment**

Collect any three media or newspaper articles about the issue of sustainable economic growth and the environment. Use this information to report on some of the following:

- the latest trends in environmental developments, including greenhouse gas emissions or alternative power generation (see also the Australian Bureau of Statistics data)
- the causes of recent trends in environmental issues
- the effects of environmental developments on our living standards
- government policies to reduce environmental problems.

A report on an investigation

**Question 1: What is the current and future state of the Australian economy?**

**Background**

Some economists believe that in the years to mid-2008, the Australian economy experienced many of the basic characteristics found in periods of boom. However, in late 2008 and 2009, there was a sharp contraction and there were signs that we were heading for a recession. More recently between 2010–11 and 2011–12, there was a general recovery in national production, although, there was growing uncertainty and a slowdown in 2012–13–14.

**Outline of the task**

Prepare a brief report (working individually or in pairs) on the current and future state of the Australian economy. This report could be presented in written form or as PowerPoint to the class. See if you can identify and explain at least four important signs or statistical indicators of the recent economic situation. In order to prepare the report, you will need access to up-to-date statistical data for each indicator that should be converted into graphs, each accompanied by a comment that interprets what the data shows about the current state and direction of the economy.

**Resources**

There are several sources of data available. Often quarterly or monthly data is most useful for spotting changes in the economy’s direction, since it is more up-to-date. For instance, you might try the following resources:

- The Australian Bureau of Statistics (ABS) has free online statistical resources available. Go to the homepage and check out the menu on the top left column.
5. For everyone to live at the same material standard of living
4. If the world’s space was divided evenly between all
3. What is the size of the world’s population?
2. How big was Claire Miller’s ecological footprint?
1. What is meant by a person’s ‘ecological footprint’?

**Ecological quiz**

1. What is meant by a person’s ‘ecological footprint’?
2. How big was Claire Miller’s ecological footprint?
3. What is the size of the world’s population?
4. If the world’s space was divided evenly between all people, on average, how much space (in hectares) is available?
5. For everyone to live at the same material standard of living and consume the same amount of resources as Claire Miller, how many Earths would there need to be? Is her lifestyle ecologically sustainable?

**How my life helps kill Earth**

By CLAIRE MILLER,
Environment Reporter

CLAIRE MILLER’S ECOLOGICAL FOOTPRINT:
8.1 ha

Australian average 9 ha
World average 2.8 ha

Claire’s footprint would be substantially reduced if she:
- became a vegan
- sold the family car
- stopped flying
- ate only locally produced and in-season food
- fully insulated the house (walls, floor and ceiling)
- installed solar panels on the roof
- used only low-energy lightbulbs and appliances.

If all six billion people in the world lived the way I take for granted, we would need the resources of 3.7 Earths to support them. This is assuming we appropriate all biologically productive space to meet the demands of just one species, namely us humans.

Such was the uncomfortable outcome of calculating my ecological footprint at the Redefining Progress website. The site was set up by LEAD International, a non-profit organisation devoted to promoting sustainable development and funded by the Rockefeller Foundation.

The ecological footprint is essentially a measure of the space required to provide the resources to support my standard of living. It takes account of everything from transport habits to diet to household energy use. My footprint was 8.1 hectares. The amount of space available per capita is 2.2 hectares and shrinking because of overpopulation, degradation and pollution.

But my opening scenario is not realistic. The other five million or so species with whom we share the planet give us clean air, clean water, fertile soil and food courtesy of their complex interactions and genetic diversity. These species need space to get on with the job.

As it stands, a measly 7 per cent of Earth is at present set aside and more or less protected for all those other creatures. That means we would actually need 4.1 Earths for all people to adopt my standard of living.

The landmark 1987 report of the World Commission on Environmental Development, *Our Common Future* (better known as the Brundtland report), suggested the international community should aim...
to protect a minimum 12 per cent of the planet for other species. It is not nearly enough for them to survive and, worse, it bumps up the footprint to 4.8 Earths.

I enjoy what I consider a modest but typical Western life. I probably fly more often than the average, but I live in a smaller than average house, rarely drive alone and frequently use public transport. My footprint was calculated on the bluntest of indicators; a more accurate and personalised result could be obtained if I was prepared to keep detailed records for 30 days.

But give or take a planet, I suspect the end result would be much the same: I, we — the Western world — are clearly living way beyond our ecological means. It is a sobering thought that the world’s richest 20 per cent consume 80 per cent of the world’s natural resources. That means even if we could somehow wish away the impoverished multitudes or deny them the opportunities of industrialisation, the global environment would not be especially better off.

The situation is created by what Michael Jacobs described in his 1991 book The Green Economy as the invisible elbow of market forces. None of us set out to degrade the environment, but we do nonetheless through the collective impact of our individual activities.

‘Sometimes there is deliberate and intended destruction, the foreseen cost of ruthless consumption,’ Jacobs writes. ‘But more usually, degradation occurs by mistake, the unwitting result of other, smaller decisions . . . Small, individual decisions add up inexorably to large, collective ones, and no one is counting. Market forces are at work.’

Most of the time we don’t even think about it. Light at the flick of a switch in my house, for instance, is all I see of a grossly polluting and inefficient coal-fired electricity system that at best loses 65 per cent in its far-flung transmission and distribution. Solar panels on my roof would be a direct, non-polluting source of household energy but I alone would bear the costs of purchase and installation. If I eat strawberries out of season, they must be supplied from somewhere far distant. That means huge energy costs in transport and storage and increased water from spoilage. Further, the price does not reflect the environmental cost of industrial agriculture, salinity, biodiversity collapse, exhausted and eroded soils, polluted water and dying rivers.

The environment similarly subsidises the global spread of Western fast-food diets. All those hamburgers from McDonald’s, Hungry Jack’s and the like have to come somewhere far distant. That means huge energy costs in transport and storage and increased water from spoilage. Further, the price does not reflect the environmental cost of industrial agriculture, salinity, biodiversity collapse, exhausted and eroded soils, polluted water and dying rivers.

If ecological footprints were confined to national borders, Australia would be in good shape. According to Earth Counci’s international ranking, the average Australian takes up nine hectares, but the country could support footprints of 14 hectares. Plenty of room to move except that no nation exists in isolation. Countries draw down on the reserves of others to obtain resources they do not have. It is what world trade is all about.

Australia, for example, has a population of 21 million, but grows food for 50 million. This earns valuable export income, but feeding the rest of the world is costing us dearly in land and water degradation.

Japan, by comparison, is overpopulated and resource-poor. It has room for individual footprints of 0.9 hectares but its 126 million citizens average footprints of 4.3 hectares each. Their Western standard of living is possible because they are highly industrialised and can afford important resources.

Most of the developing world, quite reasonably, wants more than the status quo. They want Nikes, mobile phones and cars as well as enough to eat and decent shelter. The question is how can it be done without dooming us all. Obviously one of the first steps will be reducing material consumption in the West. It will be a case of making less go further.

The next time I jump in a car because I can’t be bothered walking five minutes to the supermarket, the question is whether my lifetime of minor conveniences is worth the price of the planets we don’t have to spare.

7. ‘To save the planet, the stark choice facing us is either to reduce material living standards or cut population growth.’
8. ‘That significant human-induced climate change is a load of nonsense, and attempts by Australia to correct the problem will only harm our living standards and achieve very little globally.’

Wall chart for display
Ask students to prepare correctly titled wall charts for a classroom display. These could graph the latest trends in Australia’s indicators related to economic growth. The graphs may include quarterly changes in GDP, recent data on C, I, G, net X, consumer confidence, business confidence, changes in interest rates, overseas economic activity (e.g. US, Japan), disposable income, labour productivity, and average GDP per person per year. On or below the graphs, students should also include brief commentary boxes or callouts highlighting the main trends or features, along with their forecasts for the next 6–12 months.

The fastest way of doing this is to use a computer with Microsoft Excel and internet access. This means that data can be easily updated as new figures are released each month or quarter. Statistics can be accessed online from the ABS or RBA websites (see RBA Statistics).

Economic simulation activity — role play
The federal government has called a forum to discuss ways of increasing Australia’s sustainable rate of economic growth. Each group represented is required to deliver a speech (maximum five minutes) in which it makes recommendations. In order to start research on your policy proposals, your Economics class should be divided into the various groups that are attending the economic forum (see below for group ideas).

After spending a lesson or so preparing your speech, elect a speaker to represent the group.

At the conclusion of the forum, each student is required to write a media briefing or media article stating the key findings of the forum.

Possible groups at the economic forum
- The conservationists or ‘Greens’
- A council representing the interests of immigrants
- A union of teachers and educationalists
- The business and mining council
- Politicians representing the government and opposition
- The Australian Council of Trade Unions (ACTU)
- Research agencies (e.g. the CSIRO)

Analysis of visual evidence — a cartoon
There are many cartoons in this text that can be used to extend a student’s understanding of economics.

An essay
Write a 500-word essay that touches on the following aspects:
1. What are the two main determinants of the rate of economic growth in Australia?
2. Discuss whether the benefits of further economic growth are sufficient to outweigh the costs.
3. Select three important personal things that households, businesses or governments can do to help limit the environmental problems associated with economic growth.
The meaning of living standards, economic growth and sustainable development

- People want to be better off and enjoy higher material living standards with increased levels of consumption and incomes per person. For this to occur, there needs to be an increase in production levels or economic growth, at a rate that is faster than the rise in population.
- Economic growth ultimately involves increasing our nation’s PPF or productive capacity, usually by access to more resources.
- Often there is a trade off between increased material living standards and our level of non-material living standards (affected, perhaps, by personal happiness, the quality of the natural environment, pollution, amount of leisure, crime rates, level of congestion, freedom, family life). More of one can mean less of the other.
- Because of this trade off, we need to question whether high rates of economic growth are sustainable, so that they do not undermine the ability of current and future generations to enjoy reasonable living standards.

Measuring Australia’s economic growth and what is produced

- GDP is the most common general indicator of changes in the nation’s total output of goods and services produced each year.
- Unfortunately, however, GDP as a measure of the size of our economy lacks accuracy for several reasons and may not tell us much about actual changes in our living standards.
  - For instance, GDP excludes some production,
  - GDP estimates some output.
  - GDP also fails to take account of negative externalities, population size, and how unevenly production and incomes are distributed.

The business cycle and recent trends in Australia’s economic growth

- The rate of economic growth changes from time to time in a cyclical way. This is called the business cycle.
- The business cycle consists of various phases — the expansion, the peak (possibly a boom), the contraction, the trough (possibly a recession) and possibly, domestic economic stability.
- Recently, the Australian economy went through a long period of economic expansion that peaked in mid-2008 in boom-like conditions. Since then, there was a sharp contraction during late 2008 and into early-2009 during the global financial crisis (GFC), followed by a general recovery during 2009–11, and a slowdown in 2012–13–14.

Factors affecting Australia’s rate of economic growth

The rate of economic growth is determined by two sets of factors:

- Aggregate supply-side factors: Most importantly in the medium and longer terms, the sustainable potential rate of economic growth is governed by aggregate supply-side factors. These factors affect Australia’s productive capacity and size of our PPF. Supply-side factors often affect the volume or quantity of resources and how efficiently these resources are used (i.e. the output gained from each unit of input). The supply or availability of resources is affected by the following:
  - growing our natural resources, perhaps through mineral exploration
  - growing the volume and efficiency of our labour resources, through immigration, natural births and a higher work participation rate
  - stronger worker productivity, through training and education
  - drought, floods and changing climatic conditions
  - increasing business investment spending on new plant and equipment
  - increased government investment spending on national infrastructure (e.g. roads, railways, power generation, water supply)
  - government microeconomic efficiency reforms or aggregate supply policies (e.g. labour market deregulation to lift efficiency, competition policy, cuts in tax rates and immigration policy).
• **Aggregate demand-side factors:** In the short term, changes in aggregate demand-side factors affect spending (AD) and hence national production and the rate of economic growth. Key aggregate demand-side factors could include the following:
  – changes in consumer and business confidence
  – changes in disposable income
  – changes in monetary policy (interest rates) and budgetary policy (taxes and government spending)
  – changes in the exchange rate and level of economic activity overseas.
• The five-sector circular flow model is a handy tool for looking at how changes in demand-side conditions can impact on the levels of AD, economic growth and activity (GDP), employment and incomes.
• For instance, in 2008–09, demand-side conditions weakened (e.g. the global financial crisis and recession, collapse of consumer and business confidence, and falling disposable income). Falling sales caused stocks to rise and firms to cut production, leading to recession. Businesses reduced their demand for resources, contributing to rising unemployment and falling incomes. Conditions were also generally weaker during 2012–13–14.
• By contrast, generally stronger demand-side conditions during 2009–11 helped to grow the economy’s GDP faster (despite some adverse aggregate supply factors including natural disasters in late 2010 and early 2011).

**Some benefits of Australia’s strong economic growth**
Economic growth results in both benefits and costs. Economic growth often helps or can help to:
• create jobs and lower unemployment rates as firms expand production
• raise personal incomes and make the provision of welfare benefits for the needy more affordable
• strengthen our international trade balance by increasing export capacity and production
• create positive externalities
• improve both economic and non-material aspects affecting our living standards.

Even so, sometimes, economic growth can bring costs. For instance:
• improvements in efficiency designed to boost production may cause a short-term rise in the level of structural unemployment
• sometimes not everyone in the community shares the benefits that result from economic growth and higher incomes
• strong economic growth and higher incomes often lead to more spending on imports by households and businesses
• economic growth can also lead to increased inflation if the economy expands too quickly, causing it to overheat
• economic growth can undermine non-material living standards. For example, it can cause environmental problems (costs or negative externalities of economic growth such as pollution, destruction of native habitat, urban crowding and waste disposal, which lower our quality of life).

**Positive and negative externalities associated with economic growth and their impact on Australia’s allocation of resources**
• In growing production, various externalities (also called spillovers) arise. Externalities are simply costs (negative externalities) or benefits (positive externalities) affecting individuals or third parties who are not directly involved in the production or consumption of particular goods or services.
• **Negative externalities** are the unwanted social and/or financial costs of production or consumption that are transferred (or spill over) onto third parties not directly associated with the transaction. For example, because most businesses that pollute the environment only take into account internal costs that directly affect them and fail to include external costs that affect third parties, society’s living standards are reduced. Left unchecked by governments, too many resources are sometimes allocated to profitable but socially undesirable and damaging production.
• One of the key negative externalities associated with economic growth is the destruction and depletion of environmental resources (forests, rivers, oceans, ecosystems, biodiversity, non-renewable resources and air quality). These resources are overused since often they are regarded as being free. Their users often pass on the environmental cost of their use, for others to pay.
• If these external costs were internalised and taken into account by businesses making decisions, profits would be less and fewer scarce resources would be allocated towards some types of goods or services that have dangerous effects and lower our living standards.

• Emissions of greenhouse gases into the atmosphere are a negative externality and a consequence of economic activities. This is a major concern because of the link to climate change, rising sea levels, fires and storms, loss of life and reduced farm output. Governments need to correct this failure and reallocate resources.

• Positive externalities are the benefits enjoyed by third parties that result from the production and consumption decisions of others. Such benefits are ignored by the market and cause fewer resources to be allocated to some goods or services that are communally beneficial.

• Examples of positive externalities might include the satisfaction gained by your neighbours when you paint your house, your spending on education and vaccinations that benefit the wider community, and business installation of equipment to reduce pollution benefiting the general environment.

• Correcting negative and positive externalities involving market failure requires government policies to affect decision makers.

Decision making by households, businesses and governments influence Australia’s rate of economic growth and the environment

The decisions made by households, businesses and governments greatly influence Australia’s rate of economic growth and the state of the environment.

• Households make decisions about saving and consumption spending that affects AD and the short-term rate of economic growth. They also make decisions about the goods and services they buy, use and dispose of. Some of these goods and services result in positive externalities (external benefits), while others have adverse environmental effects and cause negative externalities (external costs).

• Businesses, too, make decisions about investment, the type and level of goods and services to be produced and employment. These decisions affect the rate of economic growth, along with environmental conditions and the level of negative externalities.

• Finally, governments make decisions that affect the sustainable rate of economic growth and the state of the environment. For instance, in order to help promote the goal of a sustainable rate of economic growth (GDP/national output growing by around 3–3.5 per cent a year), the government uses aggregate demand policies, aggregate supply policies and environmental policies to help raise our current and future living standards.

- Government aggregate demand policies to affect economic growth
  o Aggregate demand or macroeconomic measures involve the use of monetary policy (RBA changes in interest rates) and budgetary policy (changes in tax rates and government spending and other outlays).
  o When the rate of economic growth slows down too much or a recession occurs (e.g. almost in 2008–09), the government may adopt expansionary policies to accelerate AD or spending (e.g. cuts in interest and taxes, and more government spending).
  o When the economy overheats and is growing too strongly (e.g. 2006–08), a contractionary approach is used to slow AD (e.g. higher interest and tax rates, and cuts in government outlays).
  o Applying expansionary or contractionary budgetary and RBA monetary policies to help flatten out the business cycle is called a countercyclical approach. It can help to maintain a sustainable rate of economic growth, while avoiding severe inflation (boom) or high unemployment (recession).

- Government aggregate supply policies to affect economic growth
  o Aggregate supply or microeconomic efficiency reform policies have also been used to accelerate the potential rate of economic growth and increase the speed at which our economy can expand.
  o These reforms might include lower tax rates, labour market deregulation, the promotion of stiffer competition between firms and tariff cuts on imports.
  o By lifting efficiency (the level of output produced from the input of each unit of resource), recent microeconomic reforms have enabled the Australian economy and GDP to grow faster than would otherwise have been the case.
Environmental policies of the Australian government

- Environmental policies affect Australia’s current and future sustainable rate of economic growth.
- In recent years, the federal government used or proposed, three policies to reduce climate change caused by CO₂ emissions:
  1. First, there was the Carbon Pollution Reduction Scheme (CPRS) involving an emissions trading scheme to price carbon. This proposal was abandoned.
  2. Secondly, a carbon tax starting at $23 per tonne actually commenced in July 2012.
  3. Finally, the current Abbott government hopes to abolish the carbon tax and replace it with its ‘Direct Action’ policy involving financial incentives to firms who bid for grants, along with baseline emission limits.

International government policies affecting economic growth and the environment

- During the GFC and ensuing global recession, major governments around the world cooperated through a group called the G20, by providing credit to weak countries and by using expansionary monetary and budgetary policies to help stimulate the world’s rate of economic growth.
- There is growing international cooperation to help protect the environment and reduce greenhouse gas emissions (e.g. the Kyoto protocol that Australia signed in 2008).
Most people want to have better material and non-material living standards.

**Better material living standards**
- produce more goods and services per person through steady and strong economic growth
- grow the PPF by increasing the volume and efficiency of resources.

**Growing our PPF or productive capacity**

**Better non-material living standards**
- protect the natural environment
- more leisure time
- happiness
- be with family and friends
- job satisfaction
- tolerance
- freedom.

There is a trade-off between these two aspects of wellbeing.

**The concept of a sustainable development:**
- i.e. growing the economy to meet the needs of the present population without undermining the ability of future generations to meet their needs.

**GDP is the common measure of economic growth or the size of Australia's economy.**

\[ \text{GDP} = \text{the total national value of goods and services produced each year} \]

**Limitations of GDP as a measure of economic growth and overall living standards**
- Excluded production results in underestimation (e.g. home duties, cash economy)
- Estimated production (e.g. the value of farm output consumed on the farm)
- Fails to take account of population size among whom goods and services are divided
- Fails to take account of the way the goods, services and incomes are distributed
- Fails to take account of negative externalities or the trade-off between economic and non-economic welfare.

Australia's rate of economic growth changes in the short and long terms.

**The short-term cyclical rate of growth — the business cycle**

The government tries to promote aggregate supply using cost-cutting microeconomic efficiency measures like reforms involving the labour market, promotion of competition, lower tax rates, welfare, and trade liberalisation.
Economic growth results in benefits and externalities for Australia.

**Some benefits of Australia’s mostly strong economic growth**
- More goods and services are produced
- Increased levels of consumption and material living standards, and perhaps even our non-material wellbeing
- More jobs and employment are created
- Perhaps lower inflation
- Higher average incomes are possible (also helping the government pay for welfare and services)
- Possible improvement in our international trading position

**Positive (benefits) and negative (costs) externalities associated with economic growth and their impact on Australia’s allocation of resources**
- *Positive externalities* or spill-overs arising from production or consumption (e.g. education, vaccinations, installation of antipollution equipment by a firm) mean that collectively beneficial output is underproduced and too few resources are allocated.
- *Negative externalities* or cost spill-overs arising from production consumption (e.g. pollution from generating electricity using brown coal, release of greenhouse gases) mean that harmful output is over produced.

**Decision making by households that affects economic growth and the environment**
- Whether to save or spend, thus affecting the levels of AD and economic growth
- Whether to work or participate
- Whether to buy single use goods made from non-renewable resources or durable items made from renewable resources
- How to dispose of goods after use

**Decision making by government that affects economic growth and the environment**
- Whether to increase or decrease tax, government spending and interest rates thus affecting the levels of AD, GDP and economic growth
- Whether to encourage renewable energy, impose a cost on carbon emissions, pass laws, or use financial incentives
- Whether to have a carbon tax or ETS, or a direct action plan.

**Decision making by businesses that affects economic growth and the environment**
- Whether to invest in new technology and equipment, thus affecting both AD and the economy’s productive capacity
- Which resources to use and how to produce goods and services
- Whether to recycle waste