# Chapter 2
# Economic agents



## *2.1 Economic agents and the concept of the private and public sectors*

### Economic agents

**Economic agents** are individuals and organisations that participate in the economy and make economic decisions. There are numerous economic agents including consumers or households, businesses, social enterprises and not-for-profit organisations, such as charities, as well as special interest groups including trade unions. These economic agents form the **private sector** in the economy. In contrast, **public sector** economic agents include local, state and federal governments, government business enterprises (GBEs) such as Australia Post, and statutory authorities such as the Reserve Bank of Australia (RBA) and the Australian Competition and Consumer Commission (ACCC). In short, the 28 million people who populate the Australian economy are all considered economic agents whether they are consumers, workers, politicians, economists or entrepreneurs.

Economic agents participate in the economy in numerous ways. This includes households and businesses buying and selling resources in factor markets, and buying and selling goods and services in product markets. It includes the government collecting taxes and spending the funds raised on collective goods and services, and formulating and implementing economic policies. It also involves financial institutions collecting savings deposits and issuing loans to fund the consumption and investment undertaken by households and businesses, and special interest groups such as ACOSS (Australian Council of Social Service) advocating that the government increase the size of transfer payments for disadvantaged members of society.

### Private and public sectors

The Australian economy is a **mixed economy** with the overwhelming majority of economic activity (about 80 per cent) occurring in the private sector while the remainder takes place in the public sector (about 20 per cent). The private sector relates to private ownership and control of resources, and the economic decisions made by the owners of these resources. On the other hand, the public sector relates to government ownership and control of resources, and the economic decisions made by the government and its agencies.

Households and businesses account for the bulk of private sector activity. Businesses can be unincorporated businesses, such as sole traders and partnerships. Typical examples of such entities include cafes, florists and hairdressing salons. They can also be incorporated businesses such as private (or proprietary limited) companies, and publicly-listed (or limited) companies whose shares are traded on the Australian Securities Exchange (ASX). Examples of such entities include BHP, Commonwealth Bank, CSL, Telstra and Woolworths.

All tiers of government, whether federal, state or local, contribute to public sector activity as do GBEs such as Australia Post, Australian Naval Infrastructure, Australian Rail Track, NBN Co., and Snowy Hydro Limited, and statutory authorities like the RBA and ACCC.

## Application Exercise 2a: Research into incorporated businesses


Conduct research into private and publicly-listed companies and prepare a short report.

Part A of your report must highlight five differences between these two types of company structures.

In Part B provide an overview of an ASX-listed company of your choice that addresses the following points:

1. Name of the business
2. The CEO
3. Mission statement
4. Core business activities
5. Market capitalisation and relative position among ASX listed companies
6. Share price, price-earnings ratio and dividend yield
7. Current challenges
8. Future plans

For Part C, include an overview of a private company of your choice similar to the one above, but omit points five and six.

In Part D, focus on a Government Business Enterprise (GBE) of your choice. This section of your report should address the same points as Part C.

**Extension**: You might also wish to investigate a social enterprise of your choice and present your findings. Here, you should focus on the differences between social enterprises and not-for-profit organisations. You should also cover the points contained in Parts C and D.

## Application Exercise 2b: Privatisation investigation


Numerous Government Business Enterprises (GBEs) have been privatised over the last three decades including the likes of the Commonwealth Bank, Medibank Private, Qantas and Telstra. Privatisation is the process of selling government assets to the private sector. This is done through an initial public offering (IPO), which facilitates the transfer of government assets into private hands. Prior to privatisation, many GBEs were corporatised. This involves the government retaining ownership but running these businesses as if they were private sector corporations, with a focus on productivity and restructuring.

Investigate a formerly government-owned asset that has been privatised and prepare a short report that addresses the 4 Ws. Use the 4 Ws as sub-headings for your report.

- Which GBE was privatised?
- Who instigated the privatisation?
- When was the GBE privatised?
- Why was the GBE privatised and has it been successful? Provide evidence, if possible.

## Review Questions 2.1

1. Define economic agent and provide some examples.
2. Provide examples of some of the ways that economic agents participate in the economy.
3. Distinguish between the private and public sector, and quantify their contribution to economic activity.
4. Provide examples of three public sector organisations and determine if they are GBEs
5. Define privatisation and provide a possible justification for privatising a GBE.

## 2.2 The traditional economic viewpoint of consumer behaviour

Economists are concerned with understanding what motivates economic agents and how economies function. Needless to say, economic agents and the economies they inhabit are immensely complex. Therefore, in order to develop theories or models capable of explaining and predicting how economic agents are likely to respond to incentives, or behave in certain contexts, economists must make simplifying assumptions. Such assumptions enable economists to focus on what is most important. The resultant theories can provide economists with powerful insights that can be used to design incentive schemes and economic policies directed at raising living standards and enhancing societal welfare. However, it is always worth remembering that theories/models developed in social sciences, such as Economics, are not perfect.

The traditional economic viewpoint of consumer behaviour has a long history and is a useful tool for analysing and predicting consumer behaviour. At the centre of this theory is the notion of the 'representative consumer', known as **homo economicus** or 'rational economic man'.

### Rationality, self-interest and utility maximisation

Economists assume that consumers are rational. This basically means that consumers act in their self-interest to maximise their **utility** or satisfaction given their **budget (or income) constraint**. Accordingly, a rational consumer will compare the costs and benefits of each option and choose those ones where the benefits outweigh the costs. This also includes considering the future consequences of their choices. In short, the rational consumer will strive to make decisions that yield the greatest **net benefits** or maximum utility.

What does this all mean in the context of the real world? Consider the following practical examples to illustrate these concepts. A rational consumer might, for example, purchase a Volkswagen Golf if the price of a Honda Civic increases. If their income increases, they might buy a more expensive house in a better suburb. To buy that more expensive house they will need to take out a loan that must eventually be repaid, and accordingly will be mindful of the future consequences of such a decision.

**Study tip**

*Is utility maximisation possible? The psychologist Abraham Maslow famously said: 'it isn't normal to know what we want. It is a rare and difficult psychological achievement'. Behavioural economists would agree with this statement.*

On the face of it, this seems pretty obvious and uncontroversial, given that the consumer response in each situation is reasonably predictable. In this respect, the traditional economic viewpoint is the dominant theory for explaining and predicting consumer behaviour. However, it is not the only theory. The relatively new field of Behavioural Economics uses insights from the field of psychology to enhance our understanding of consumer behaviour. This is explored in detail in Chapter 5, helping to provide a more complete theory of consumer behaviour.

### Informed decision making

Economists also assume that consumers have access to relevant and accurate information to make rational decisions. Armed with **perfect information** consumers can calculate and compare the costs and benefits of each choice, and rank these choices based on their relative net benefits. Obviously, the first choice is the optimal or utility maximising choice.

### Marginal benefits from consumption

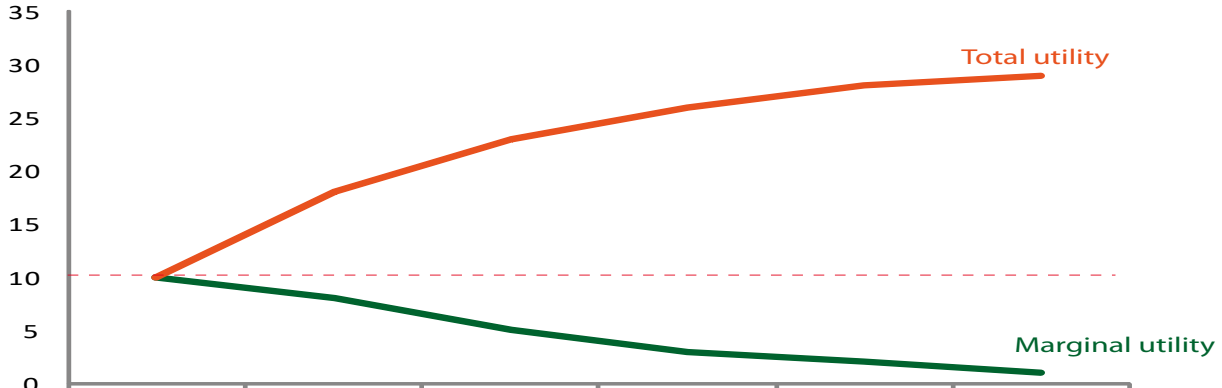
In Economics, the **law of diminishing marginal utility** states that each additional (or marginal) unit of a good or service that is consumed generates less utility (satisfaction) than the previous one. According to this theory, the second unit of something consumed provides less satisfaction (utility) than the first, and the third unit provides less than the second, and so on. Therefore, **total utility** *grows less rapidly* with each additional unit consumed. For a numerical and graphical representation of the law of diminishing marginal utility refer to the pizza example below. In the example, the utility gained from the pizza slices has been calculated using 'Utils' – a theoretical measure of utility (satisfaction) gained from consumption.

**Table 2.1:** Marginal and total utility of pizza consumption

| Pizza | Marginal utility (Utils*) | Total utility (Utils) |
|---|---|---|
| **1st Slice** | **10** | 10 |
| **2nd Slice** | **8** | 18 |
| **3rd Slice** | **5** | 23 |
| **4th Slice** | **3** | 26 |
| **5th Slice** | **2** | 28 |
| **6th Slice** | **1** | 29 |

**Utils are a theoretical measure of utility*

Chart 2.1: Marginal and total utility




| 1st Slice | 2nd Slice | 3rd Slice | 4th Slice | 5th Slice | 6th Slice |
|---|---|---|---|---|---|
| 10 | 8 | 5 | 3 | 2 | 1 |
| 10 | 18 | 23 | 26 | 28 | 29 |

Table 2.1 and Chart 2.1 highlight that the first slice of pizza that is consumed will provide a relatively high level of satisfaction (utility) for the average person. This makes sense because the first slice is the most 'enjoyable' or 'pleasurable'. The second slice will be slightly less enjoyable and so on, until we eventually get to a point (perhaps after slice 6) where another slice of pizza provides us with no additional satisfaction at all. In other words, the marginal utility (extra satisfaction gained) continues to fall towards zero.

Given that consumers experience diminishing marginal utility, they will seek to consume goods and services in different combinations in order to maximise their total utility over time. For example, when buying 'take-away food' over the course of a week or month, a person is likely to 'mix it up' and visit different fast food outlets, perhaps purchasing pizza one day, sushi the next, and fish and chips the night after. This variety will typically lead to a higher overall level of utility or satisfaction compared to one where a person purchases the same take away food each day.

A practical application of the law of diminishing marginal utility are sales promotions run by service stations where they offer their customers a 50 per cent discount on the purchase of a second chocolate bar or bag of chips. Given that consumers derive less utility from the second confectionery bar, the price discount is used to entice them to purchase an additional chocolate bar. This pricing strategy is often used in a range of markets, including retail clothing, health products and perfumes.

The law of diminishing marginal utility is one of the theoretical underpinnings of the downward sloping demand curve (see Chapter 3). Although the law of diminishing marginal utility provides insights into consumer behaviour, it does have its limitations. For example, how much utility or satisfaction a consumer gains from consuming a particular good or service is subjective. That is, it will vary from consumer to consumer. Therefore, it is impossible to measure utility objectively. As previously noted, the concept of utils is a purely hypothetical measure of utility. Thus, constructing a demand curve for a good or service that accurately captures the utility enjoyed by the numerous consumers in any market is problematic.

## Review Questions 2.2

1. Explain why economic theories contain assumptions.
2. Describe the traditional economic viewpoint of consumer behaviour. Your response should cover the ideas of rationality, self-interest and utility maximisation.
3. Describe why informed decision-making is an important assumption in the traditional economic viewpoint of consumer behaviour.
4. Explain how the law of diminishing marginal utility can affect consumer decisions. Use an example to illustrate your explanation.
5. Provide an example of how businesses can apply the law of diminishing marginal utility to increase sales revenue.

## Application Exercise 2c: Utility

Complete the data in the table below calculating the marginal utility from dumpling consumption.

| Dumplings | Marginal utility (Utils) | Total utility (Utils) |
|---|---|---|
| First dumpling | | 15 |
| Second dumpling | | 28 |
| Third dumpling | | 37 |
| Fourth dumpling | | 42 |
| Fifth dumpling | | 44 |
| Sixth dumpling | | 45 |

**Questions/tasks**

1. **Construct a line graph, plotting the data on marginal utility and total utility. Plot the utility on the y-axis (vertical) and the number of dumplings consumed on the x-axis (horizontal). Ensure you fully label the graph.**
2. **With reference to the graph, explain the relationship between marginal utility and total utility.**
3. **Using what you have learned about the theory of diminishing marginal utility (DMU), explain why the data shown on the graph is likely to be an accurate representation of the average consumer's utility (satisfaction) in consuming dumplings.**
4. **Imagine that you own a shop specialising in the serving of dumplings. Outline how you could use your knowledge of DMU to increase total revenue (i.e. total sales) for the shop.**


Dumplings

## 2.3 The ways consumers and workers might respond to positive and negative incentives

The authors of *Freakonomics*, Steven D. Levitt and Stephen J. Dubner describe economics as 'the study of incentives'. An **incentive** encourages economic agents to make particular choices. Incentives typically employ benefits or rewards to encourage the desired behaviour. By contrast, a disincentive (negative incentive) discourages economic agents from making specific decisions. A feature of disincentives is the use of costs or penalties to influence behaviour. Many economists would argue that the distinction between incentives and disincentives is not particularly important. They would simply say that an incentive is any measure that leads to a change in behaviour. Needless to say, by altering costs and benefits, governments and businesses can motivate consumers and workers to make particular choices to achieve desired outcomes.

Before reading on, complete the following Give One, Get One thinking routine. This requires you to come up with some ideas about how governments can influence consumer and worker behaviour, and to list them in the left hand column. Then move around the classroom and try to 'get one' idea from each classmate, in return 'giving one' of your ideas to that classmate. Complete as many rows as you can.

| How can the government influence the behaviour of consumers and workers? | |
|---|---|
| My ideas to give | Ideas from my friend |
| | |
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Governments use their control over the tax system and their considerable spending power to influence the decisions of consumers and workers. They can also seek parliamentary approval for new laws to mandate or even prohibit the consumption of certain goods. Put simply, governments use their authority and power to create both incentives and disincentives.

## Taxes and tax rebates, subsidies and regulations

**Study tip**

*Externalities are sources of market failure. Market failure describes a situation where the pursuit of self-interest by consumers and businesses results in an inefficient allocation of resources, which compromises the living standards or economic welfare of all members of society. The belief that markets can 'fail' is a justification for government intervention in markets through the use of taxes, subsidies, laws and other policies. Externalities and market failure are covered in greater detail in the VCE Economics Unit 3 course.*

Governments seek to encourage the consumption of goods and services that generate positive spillovers or **externalities**. A **positive externality in consumption** occurs when the consumption of a good or service confers a benefit on a third party or bystander. This means that someone who did not pay for the good or service receives part of the benefit from that good or service. For example, when a person gets vaccinated against the flu, it reduces the risk of infection for the individual, but society benefits too. These benefits to society are in addition to the benefits to the individual because a decision to get vaccinated not only protects the individual from catching the flu, but also others, namely those people who have not been vaccinated. The government recognises that it is in society's best interests for as many people as possible to be vaccinated, as it raises the level of immunity among the population (referred to as 'herd immunity'). Moreover, there are many other 'external' benefits that stem from vaccinations, such as fewer working days lost and fewer people presenting ill at hospitals and clinics, resulting in cost savings for the healthcare system.

**Study tip**

*A subsidy is a cash payment. Subsidies can be paid to either the consumer or producer. The former is known as a consumption subsidy while the latter is known as a production subsidy.*

For all of these reasons, the government uses **subsidies** or cash payments to reduce the cost of vaccines to encourage more people to get vaccinated. These subsidies can be paid directly to consumers or to businesses providing the vaccines. Alternatively, the government can provide them free-of-charge, as was the case with COVID-19 vaccinations. In the absence of such government intervention, too few resources will be allocated to goods and services that generate positive externalities, as people cannot monetise the benefits they provide others. In other words, 'good deeds' such as being vaccinated are not correctly valued by the market.

Sometimes the government can resort to more punitive actions or disincentives. The government can introduce bills to parliament to make laws or regulations that prohibit or mandate certain behaviour. For example, during the COVID-19 pandemic, the government implemented restrictions, lockdowns, and stay-at-home orders to minimise the spread of the virus. In relation to COVID-19 vaccinations, the government was not prepared to mandate vaccinations. Instead, it used a range of disincentives that effectively punished those members of society who did not get vaccinated. This included restrictions on their freedom of movement, such as laws preventing them from attending certain venues, travelling on commercial aircraft and working in some organisations. This is similar to the 'No Jab, No Pay' legislation that came into effect in 2016, which denied parents who do not vaccinate their children (against common childhood illnesses) from accessing government benefits such as the childcare rebate, which covers a portion of the fees charged by childcare centres.


Education also provides positive externalities for society as a whole. For example, a better-educated population is likely to:

- result in less crime
- generate higher levels of productivity
- create a more tolerant and harmonious society
- means more informed citizens, resulting in better quality government
- lead to more innovation, resulting in higher levels of economic growth.

For these reasons, the government uses the law to mandate a minimum school leaving age of fifteen and provides education free-of-charge through public schools. In the absence of direct provision by the government, too few resources (such as labour and capital) would be allocated to education, as the costs of educating a child for most parents would be too prohibitive.

On the other hand, a **negative externality in consumption** occurs when the consumption of a good or service imposes a cost on a third party or bystander. Without government intervention, too many resources are allocated to goods and services that result in negative externalities. This is because, when making decisions about what to consume, people typically ignore the harmful effects of their consumption on third parties. That is, they only consider the costs to themselves, while ignoring the costs that accrue to bystanders. For example, the consumption of cigarettes results in negative externalities, as non-smokers can develop smoking-related illnesses from inhaling second-hand smoke (i.e., passive smoking). To curb the consumption of cigarettes, the government uses indirect taxes. Over the past 10 years, the federal government has increased excise on tobacco by more than 300% (from approximately $0.35 to $1.12 per cigarette). The tobacco companies generally pass on any increases in excise taxes to consumers in the form of higher prices, effectively deterring consumption. Of course, this is the government's intention, as the increase in the price of a packet of cigarettes leads to a decrease in the quantity of cigarettes demanded. However, because tobacco is an addictive substance, any increase in price results in a less than proportional decrease in the quantity demanded. A World Bank study showed that a 10% increase in the price of cigarettes reduces consumption by about 4% in developed countries and 8% in developing countries.

**Study tip**

*The imposition of an indirect tax on products like cigarettes (or fuel and alcohol) creates a disincentive for consumers to smoke. However, the fact that these goods are addictive (or necessities) means that the taxes also raise significant revenue for the government.*

The government can also use the law to create disincentives to smoke. Australia's **plain packaging laws** prohibit tobacco companies from adorning cigarette packets with appealing graphics and prominent brand names. These laws also require cigarette packets to display confronting images of the health effects of smoking, accompanied by jarring health warnings such as 'smoking kills'. The aim of such laws is to decrease the demand for cigarettes. Plain packaging laws are also backed up by anti-smoking campaigns in the mass media. For example, QUIT Victoria regularly runs TV advertisements aimed at persuading people to give up smoking. Moreover, laws prohibit smoking in public places such as restaurants, bars, shopping centres and sporting venues. All of these measures are designed to ameliorate the negative externalities associated with the consumption of tobacco.

The government can also use **direct taxes** to influence the behaviour of consumers and workers. For example, the government can incentivise greater labour force participation and greater labour productivity by lowering the marginal tax rates that apply to people's incomes. Personal income taxes are essentially a tax on the wages and salaries people receive in return for contributing to the production process. Therefore, taxing income too heavily can stifle the incentive to work and/or to work hard. By lowering the marginal tax rates that apply to the lower tax brackets and raising the tax-free threshold, unemployed people (particularly those who are unskilled and therefore generally only able to secure low paid jobs) will have an even stronger incentive to secure work. Lower income tax rates mean that these people get to keep more of the income they earn, which makes working relatively more attractive than remaining on welfare and receiving unemployment benefits. Such changes to income tax can eliminate 'welfare traps' caused by a poorly designed tax and welfare system.

**Study tip**

*The marginal tax rate is the tax rate people pay on each additional dollar of income earned. Australia has a progressive income tax system, which means that the marginal tax rate increases as income rises. The goal of a progressive income tax system is to promote a more equitable distribution of income by taxing people according to their earnings, with low-income earners being taxed at a lower rate than higher-income earners.*

Reducing the **personal income tax** burden is also likely to encourage people to work harder and be more entrepreneurial, as they get to keep more of the income they earn from their efforts. For example, the government reduced the income tax burden through the revised Stage 3 tax cuts, which came into effect on the 1st of July 2024. These changes involved a substantial reduction in the tax payable for most income earners, with a person earning the full-time annual salary (approximately $100,000) receiving a tax saving of around $2,200. In addition, the 2025-26 Budget provided for further tax relief via a cut in the tax rate from 16% to 14% by 2027 for income between $18,201 and $45,000. Combined, these changes lift **disposable incomes** and provide incentives to both spend and work. .

Another option available to the government is the use of **tax rebates (tax offsets)**. In response to the COVID-19 induced recession of 2020, the government announced the retention of the Low and Middle Income Tax Offset (LMITO). This measure effectively reduces the amount of personal income tax paid by low-and middle-income earners after they lodge their tax returns at the end of the financial year. In monetary terms, eligible households received up to $1080 (and couples $2160), boosting their disposable income. At the macroeconomic level, this represented a personal income tax cut of $7.8 billion for households. Given the LMITO was targeted at low-and middle-income earners with a relatively high **marginal propensity to consume (MPC)** this measure was pretty effective in stimulating consumption spending (C) and aggregate demand (AD) to support the economic recovery from the recession.

**Study tip**

*The ageing population is a natural phenomenon which refers to an increase in the median age of the population or an increase in the proportion of the population of retirement age (65+). If nothing is done to address this long-term challenge, living standards are projected to decline.*

In recent federal budgets, the government has made various adjustments to childcare subsidies to make childcare more affordable in order to boost labour force participation. One reason for the relatively lower labour force participation rate among women is the high cost of childcare. If women are allocating the majority of their wage or salary to pay for childcare, it is not really worth their time and effort to work. The childcare rebate aims to make work a better economic proposition. It is predicted that this initiative will incentivise greater labour force participation, helping to address the looming challenge of an ageing population.

**Study tip**

*Moral hazard is a common problem in insurance markets because buyers of insurance cannot be closely monitored. It is an example of 'asymmetric information' as a market failure, an area of Economics that will be covered in VCE Economics Unit 3.*

The nature of some types of incentives can lead to unexpected results. A case in point is insurance services, which provide monetary compensation in the event of a specified loss, damage, illness or death, in return for the regular payment of a premium. The protection or cover provided by car insurance can create 'perverse incentives', causing insured people to behave recklessly because the insurer, rather than the insured person, will bear the cost of repairs in the event of an accident.

This is compounded by the fact that insured people cannot be easily observed or monitored and thus might be tempted to act in an irresponsible way. Unsurprisingly, accidents have a greater probability of occurring. Economists use the term **moral hazard** to describe this situation. The description of moral hazard is used because of the heightened 'risk' or 'hazard' of inappropriate or 'immoral behaviour'. In contrast, those people without insurance have an incentive to be more careful because they don't have the 'peace of mind' of being compensated for any losses they might incur.

Further, moral hazard causes more problems as the insurer receives more claims than they anticipated, resulting in a higher number of insurance payouts, forcing them to charge higher premiums for all their customers, even the well-behaved ones!

## Application Exercise 2d: Moral Hazard

Most consumers participate in the market for car insurance. To insure their cars, consumers pay an annual insurance premium but also an excess when they make a claim. The excess is the contribution that they make to the cost of repairs if they are involved in an accident and it is their fault. Car insurance policies can be structured to screen buyers of insurance. **Screening** mechanisms are used to induce buyers to reveal important information in order to help sellers of insurance deal with the problem of moral hazard. A car insurance company can offer its customers the choice of two car insurance policies:

Policy No. 1: High annual insurance premium but low excess.
Policy No. 2: Low annual insurance premium but high excess.

1. **Identify which policy a risky driver would select and which policy a safe driver would select. Justify your response.**
2. **Discuss the following proposition: 'Offering its customers the choice of different car insurance policies is a clever screening mechanism.'**


Governments encourage **enterprise bargaining**, whereby businesses directly negotiate with their workers regarding wages and conditions of employment. These negotiations result in enterprise agreements. When negotiating **enterprise agreements,** businesses and trade unions often include productivity clauses, which link wage increases to productivity growth. Higher productivity occurs when higher levels of output are achieved from the same inputs. For example, labour productivity increases when the same hours worked (the input) result in more goods and services (the output) being produced. Moreover, because productivity growth reduces a business' average costs of production, businesses can afford to pay their workers higher wages without having to sacrifice profit margins. Such schemes are designed to incentivise hard work by providing appropriate monetary rewards.

Non-monetary rewards can also be used to motivate workers to work hard. For example, many business firms formally recognise their best workers through awards such as 'employee of the month'.

## Review Questions 2.3

1. Distinguish between an incentive and a disincentive and provide two examples of each.
2. Explain the difference between a tax and a tax rebate (offset).
3. Distinguish between positive and negative externalities and provide examples of each.
4. Explain how the government uses incentives to promote the consumption and production of goods and services

that generate positive externalities.

5. Explain how the government uses disincentives to discourage the consumption and production of goods and services that result in negative externalities.
6. Explain how a mix of incentives can be used to support stronger labour force participation rates and higher growth in labour productivity.
7. Use the problem of moral hazard and insurance markets to explain the idea of 'perverse incentives.'
8. Explain why enterprise agreements often include productivity clauses.

## Application Exercise 2e: Child care and incentives

In Economics, an incentive is anything that motivates an economic agent (e.g. a consumer or a business) to behave in a particular way. Incentives can be extrinsic or intrinsic. An extrinsic incentive is external to an economic agent and includes things such as cash rewards, bonuses, profits and fines. It also encompasses non-monetary incentives, such as peer recognition or disapproval, social status, power or even the threat of incarceration. On the other hand, intrinsic incentives are internal to the economic agent. For example, getting satisfaction from the work one does or the "warm inner glow" from making a positive difference to society, perhaps through volunteering or participating in civic life.

As Levitt and Dubner, the co-authors of the popular Economics book Freakonomics assert "incentives are the cornerstone of modern life". Indeed, understanding them is the key to solving just about any riddle, from match fixing to online dating to violent crime. Economists have great faith in incentives. They believe that properly designed incentive schemes can fix just about any problem, economic or otherwise. At a simple level, price discounting can be an effective incentive for consumers that ultimately helps a business to clear excess (surplus) stock. Similarly, offering complimentary eye tests can incentivise individuals to undergo important testing that has the potential to identify the risk of developing diabetes and conditions such as hypertension. Such information can then be used by the patient in consultation with their doctor to make timely lifestyle changes.

However, seemingly well-designed incentives can sometimes go awry. A case-in-point is the incentive scheme used in childcare centres in Israel. In the coastal city of Haifa, child care centres close at 4.00 pm. They essentially rely on the goodwill of parents to pick their children up on time. More often than not, parents collected their children on time and rarely, if ever, came after 4.30 pm. Parents were rarely late because it meant relying on the generosity of one childcare worker, who would have to stay back to look after the children of latecomers. Being late meant having to face a potentially irate childcare worker and possibly having to make a grovelling apology for the inconvenience caused.

These observations prompted a pair of behavioural economists, John List and Uri Gneezy, to conduct an experiment. What would happen if a financial disincentive, such as a fine, was introduced to discourage parents from picking up their children late? The results were unexpected. The introduction of the financial penalty actually caused parents to show up late. In fact, parents stopped showing up on time entirely.

The experiment involved 10 childcare centres across Haifa. In six of these centres a small fine of $3 per child was introduced for every time a parent showed up more than 10 minutes late. These fines would then be added to parent's monthly childcare bill. In these childcare centres, parents immediately started showing up late, with tardiness eventually settling at about twice the pre-fine level. In other words, the introduction of the fine caused twice as many parents to show up late. Interestingly, tardiness remained unchanged in the four childcare centres that did not introduce fines!

This experiment called into question the so-called 'power' of financial or monetary incentives to bring about the desired change in human behaviour. In the case of childcare centres, non-financial incentives such as avoiding the guilt of inconveniencing childcare workers were far more effective. The introduction of the fine simply meant that parents could assuage their guilt (i.e. they could turn up late 'with a clear conscience'). The great economist, Adam Smith, described 'conscience' as "a permanent partner in an inaudible conversation, who acted as a check and scrutineer". So, in cases like these, it is clear that the power of financial or monetary incentives can be undermined by the role that conscience plays in decision making. Undesirable patterns of behaviour that are ordinarily controlled, to some extent, by the operation of a person's conscience are perversely encouraged by financial incentives designed to discourage this behaviour (e.g. the simple payment of a fine).

In the completely unrelated example of car safety, incentives also yielded unexpected results. The introduction of laws mandating the wearing of seat belts in the United States led to drivers driving less safely, a phenomenon known as the 'Peltzman effect'. The heightened sense of security engendered by a seat belt unexpectedly led to more risk taking and reckless driving on US roads.

**Questions**

1. **Define incentives.**
2. **Distinguish between extrinsic and intrinsic incentives and provide examples.**
3. **With reference to the experiment at childcare centres in Haifa, analyse why the introduction of a fine for tardiness failed to have the desired effect. In your answer, make reference to the role of a person's 'conscience'.**
4. **Explain why well-meaning laws such as the mandatory wearing of seat belts resulted in perverse outcomes.**

## 2.4 The traditional economic viewpoint of business in the economy: profit maximisation

The traditional economic viewpoint is based on the idea that self-interest is the motivating force that drives market economies. That is, consumers and businesses act purely for their own benefit. Consumers aim to maximise their utility, while businesses aim to maximise **profit**. Profit is the income earned by a business and is calculated by deducting costs of production (or expenses) from revenue (or sales). This income is then distributed to the business' owners or reinvested in the business.

The following extract from Adam Smith's economic treatise *The Wealth of Nations (1776)* neatly summarises the traditional economic viewpoint:

> ***'It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love (self-interest), and never talk to them of our necessities but of their advantages'.***

Adam Smith essentially claimed that markets have a remarkable ability to coordinate the actions of millions of self-interested consumers and businesses to achieve an efficient allocation of resources. In other words, when 'left alone' (known as **laissez faire**), markets tend to produce those goods and services that consumers value most, and which are also the most profitable for businesses to produce.


Nobel Laureate Milton Friedman, in a now-classic article written for the New York Times Magazine in 1970, asserted:

> ***…there is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits so long as it stays within the rule of the game, which is to say, engages in open and free competition without deception or fraud. ('The Social Responsibility of Businesses Is to Increase Its Profits')***

Friedman was dismissive of the idea that businesses had obligations to anyone or anything beyond their shareholders. In his view, business decisions should be directed at maximising returns for shareholders and increasing shareholder wealth. In other words, the sole consideration of any business firm is profit.

The ideas of these economists are also expressed in the notion of **consumer sovereignty**, which describes how consumers determine what and how much is produced by casting 'dollar votes'. Businesses motivated by profit respond accordingly by producing those goods and services that consumers want. Further, as consumers' preferences change when new information becomes available businesses will naturally respond by reallocating resources to the production of those goods and services being demanded.

Apart from allocating resources in accordance with consumers' wishes, businesses also seek to improve their productivity to maximise their profits. As mentioned earlier, higher productivity can be achieved by increasing the quantity of output from a given quantity of inputs, or by maintaining current output levels but using a smaller quantity of inputs. Either way, higher productivity reduces a business's average costs of production, which increases their profit margins. Indeed, producing at the lowest possible cost is a major consideration for any businesses seeking to maximise profits.

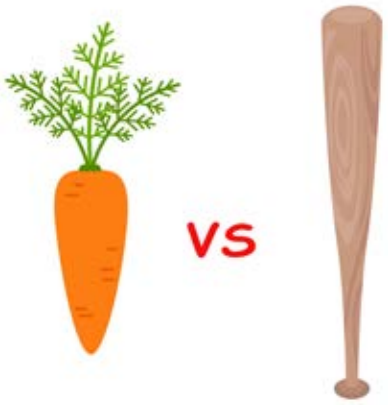
## Review Questions 2.4

1. Outline the traditional economic viewpoint of businesses in the economy.
2. Define laissez faire.
3. Outline the social responsibility of a business according to Milton Friedman.
4. Explain how markets can serve the interests of both consumers and businesses.
5. Outline two ways that businesses can maximise profits.

## 2.5 The ways businesses might respond to incentives and disincentives, including taxes and tax rebates, subsidies and regulations

Businesses, like consumers, also respond to incentives and disincentives. The lure of higher profits is the ultimate incentive for businesses. For instance, an increase in consumer demand for a particular product will result in an increase in its price relative to other products. Accordingly, businesses will respond to this **price signal** by allocating more resources to the production of the product because of the better profit opportunities that now exist. Similarly, as the price of a product falls due to weaker consumer demand, businesses will allocate fewer resources to the product, as it is now less profitable to produce. In short, changes in relative prices result in changes to relative profitability, providing the incentive for businesses to reallocate resources to the production of those goods and services where the most lucrative profit opportunities exist.

The government can use incentives to affect a business's costs of production, profits and production decisions. For example, the government can provide **production subsidies** to businesses in order to reduce their costs of production and provide them with additional incentives to produce particular goods and services. A case in point is the subsidies provided to farmers during droughts to support them in maintaining their presence on the land. During such adverse weather events, the carrying capacity of the land is compromised by a lack of water, making it difficult to sustain livestock and grow crops. Production subsidies allow farmers to buy feed to keep livestock healthy and farms viable. In the absence of such incentives, more farmers are likely to leave the land, undermining Australia's food security and future economic prosperity.




Conversely, the government can also withdraw production subsidies, which can accelerate the demise of an industry. For example, the government decided to stop 'propping up' Australia's car manufacturing industry, which was among many factors that contributed to the decisions of Ford, GM Holden and Toyota respectively to cease all Australian-based car manufacturing operations at the end of 2017. These production subsidies were essentially a 'life line' to Australia's ailing car manufacturing industry, which was struggling to compete and remain viable as a result of a number of factors. These included the high value of the Australian dollar (exchange rate), which made imported cars relatively cheaper, and the gradual removal of tariffs over time by the Australian government, which resulted in even lower prices for imported cars compared to domestically-made vehicles.

The removal of **tariffs** (taxes on imports) is also an example of how the government can use incentives to bring about change in business behaviour. Lowering tariffs is about promoting structural change to improve the economy's performance over the long run. Some commentators have equated tariff reform to Economic Darwinism or 'survival of the fittest' as the removal of tariffs lowers the price of imported goods, exposing Australia's import-competing industries to intense competition from foreign-made or imported goods. To remain viable, Australia's import-competing industries are forced to restructure their operations by implementing new technology and by adopting more efficient work practices, in order to raise productivity and lower costs of production. These cost savings can then be passed onto consumers in the form of lower prices, enhancing the international competitiveness of Australia's import-competing industries. So over time, Australia's import-competing industries should be able to compete with imported products without the need for protection from tariffs. [The economic role of tariffs, and their removal, is considered in more detail in Chapter 8.]

Inevitably, some industries won't be able to adapt to the new, highly competitive environment and thus will be forced to close down. Therefore, reductions in tariffs can also lead to a reallocation of resources to areas where Australia possesses a **comparative advantage**, such as minerals, beef, wine, education, tourism and biotech products. The theory of comparative advantage asserts that countries should allocate resources to those goods and services they can produce at a lower opportunity cost than their trading partners. It is only through specialising in the production of a narrower range of goods and services in which a country possesses a comparative advantage that it can maximise the total level of output from their resources. Any surplus can be exported and the income earned can be used to import those goods and services a country is relatively less efficient at producing.

Disincentives can be used to tackle the long-term challenge of climate change. The burning of fossil fuels such as coal for industrial production, releases $CO_2$ emissions into the atmosphere, leading to global warming. It is future generations that bear the brunt of the costs connected to a warming planet. In 2012, to address these negative externalities and mitigate the effects of climate change, the government introduced a **carbon tax** of $23 per tonne of $CO_2$ emissions. This tax, which is an example of '**carbon pricing**', was levied on Australia's 500 biggest polluters. The carbon tax sought to change

the structure of relative prices by increasing the price of carbon-intensive production, such as energy generated from fossil fuels, relative to the price of less carbon intensive production, such as energy generated from renewable sources such as wind and solar power. Given the carbon tax was an additional cost of production for carbon intensive producers, it motivated them to take action to reduce their CO2 emissions in order to lower their production costs. In essence, the carbon tax served as a disincentive to release CO2 emissions. Furthermore, given that these additional costs were typically passed on to consumers, resulting in higher prices, consumers also had an incentive to switch to cheaper, low-emissions alternatives such as wind or solar energy. By altering the structure of relative prices, the carbon tax aimed to lower the level of CO2 emissions.


The government also pledged a proportion of the revenue generated from the carbon tax to support the development of green sources of energy. This financial support in the form of a **production subsidy** strengthens the business case for 'green energy' by lowering the costs of production and incentivising large-scale investment in renewables such as wind and solar. Further, increasing the supply of 'green energy' helps to drive down its cost and ultimately lowers the prices paid by consumers. For economic and political reasons, the carbon tax was repealed in 2014 and replaced with a **Direct Action Plan**, which focused more on the government supporting (via subsidies) those endeavours that had the potential to reduce emissions. Going forward, in line with Australia's current commitment to reduce CO2 emissions by 62-70% below 2005 levels by 2035,, it is clear that state and federal governments will increasingly disincentivise CO2 emissions via carbon pricing in an attempt to further increase the relative price of 'dirty' forms of production, which reduces the relative price of 'clean' forms of production. [Pricing greenhouse gas emissions to tackle climate change is considered in more detail in Chapter 9 as part of the study of economics and environmental sustainability.]

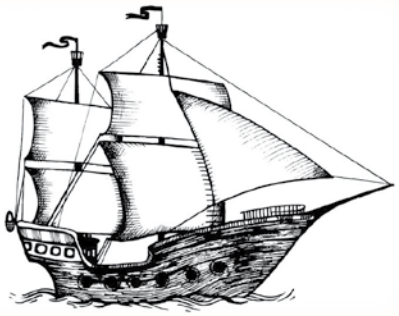
The government can provide **tax rebates** or **tax concessions** to businesses that undertake research and development (R&D) into new production methods and products. Currently, the Federal Government allows businesses to claim R&D expenses at a rate of 150% for tax purposes. This favourable tax treatment incentivises the development of new, more efficient production technologies, which have the potential to boost the international competitiveness of Australian businesses in an increasingly integrated and competitive global economy. Moreover, the development of new and desirable products can stimulate economic growth and job opportunities.


In response to the COVID-19 induced recession of 2020, the Federal Government introduced a **wage subsidy** known as **JobKeeper** to assist businesses significantly affected by the pandemic. To be eligible for the wage subsidy, businesses with an annual turnover (revenue) of less than $1 billion had to demonstrate that their turnover had declined by 30% or more. While businesses with an annual turnover of more than $1 billion had to show that their turnover had fallen by at least 50%. The JobKeeper Payment was a fortnightly payment paid at $1,500 per employee. This payment sought to partially cover businesses' wages costs, so more Australians could retain their jobs (stay 'on the books') and continue to 'earn' an income. In the absence of such an incentive businesses would have retrenched many more employees in order to stem their losses and remain financially viable. Consequently, the subsidy prevented the official unemployment rate from climbing to well above 10%. The JobKeeper Payment serves to illustrate how powerful incentives can be, and how they can be used to 'engineer' the right sorts of outcomes that serve the national interest.

In the section on consumers and incentives, the issue of moral hazard was introduced, where products such as insurance can create 'perverse incentives'. Moral hazard can also create 'perverse incentives' for businesses. For example, during the Global Financial Crisis, there were growing concerns about the security of bank deposits. In response, many governments around the world, including the Australian Government, guaranteed bank deposits to reassure deposit holders and stop a potential 'run on the banks.' However, this guarantee could have encouraged some banks to take unnecessary risks with their customers' deposits, as they knew they had the backing of the government. That is, the government would come to their rescue or 'bail them out' if a bank made poor lending decisions that ultimately threatened both the value of deposits and, by extension, the viability of the banking system.

## Application Exercise 2f: The Second Fleet and incentives

In 1790 the Second Fleet set sail from Portsmouth, England. However, unlike the First Fleet, this was a commercial operation as the British Government 'outsourced' the transportation of nearly 1000 convicts to shipping contractors Camden, Calvert & King, for a flat fee of 6 pennies for each convict that boarded their vessels for the fledging colony of New South Wales. Accordingly, they crammed their 'human cargo' onto the ships the Surprize, Neptune and Scarborough for the journey.



The five-month voyage around the Cape of Good Hope and across the vast Indian Ocean was notoriously harsh for the convicts. This was further compounded by decisions taken by the management at Camden, Calvert & King to keep costs down. The first of which was to recruit the crew from seedy dock-side taverns.

This crew of hard-drinking illiterates, were brutal in their treatment of the convicts, frequently administering vicious floggings with the cat-o'-nine-tails. The convicts also received starvation rations, so surplus food could be sold on arrival at Sydney Cove. They were also kept in squalid conditions below deck and in leg-irons for long periods of time. Further, scurvy, a disease caused by a lack of Vitamin C, ran rampant. Its symptoms included bleeding gums, loosening of teeth, the opening of previously healed wounds and general malaise. By the time the ships berthed at Sydney Cove the convicts were covered in lice, and about one-third of the convicts who had departed England had perished. Many of the survivors of what came to be known as the 'Death Fleet' were left in a terrible state, lean and emaciated, barely able to move and speak. An eye witness, the Reverend Johnson, wrote: "the misery I saw amongst them is indescribable…their heads, bodies, clothes, blankets, were all full of lice. They were wretched, naked, filthy, dirty, lousy, and many of them utterly unable to stand, to creep, or even to stir hand or foot." (Wikipedia, Second Fleet).

When news reached England of the calamity there was outrage. This prompted the British Government to change the payment mechanism for the transportation of the Third Fleet of convicts. Shipping contractors would now be paid on results, with approximately 20 per cent of the payment depending on the convict arriving in good health. Needless to say, the outcomes were vastly better. There was less overcrowding and far better treatment of the convicts. These improvements in conditions was ultimately reflected in a sharp drop in the death rate from 1 in 3 convicts to 1 in 11 convicts. The change to incentives – a theme central to the study of Economics - led to a change in the way Camden, Calvert & King treated their 'human cargo'.

The improvements between the Second Fleet and Third Fleet also highlights another major theme in Economics: trade-offs. This is where an economic agent chooses a course of action and, in the process, sacrifices something of value. For example, when Camden, Calvert & King were paid by the number of convicts that set sail from England they chose to pack as many convicts as they could aboard the ships. The trade-off was a higher death rate, much to the dismay of the British Government and public. However, once they had a strong financial incentive to get their 'human cargo' to Sydney Cove alive and in a good state of health they opted for a different trade-off: fewer convicts per ship, more rations per convict and better treatment during the voyage.

Questions

1. Compare the outcome of the voyage of the Second Fleet with the Third Fleet.
2. Describe some of the decisions Camden, Calvert & King made to maximise their profits when transporting convicts as part of the Second Fleet.
3. Compare the incentive schemes used for the transportation of convicts for the Second and Third Fleets.
4. Explain why the incentive scheme used for the Third Fleet resulted in vastly improved outcomes.
5. Define trade-offs.
6. Compare how the trade-offs changed when the incentive scheme used for the transportation of convicts changed.
7. "At its root, economics is the study of incentives". Discuss.

## Review Questions 2.5

1. Distinguish between a tax rebate and a subsidy and provide an example of each.
2. With reference to an example, explain how the provision of production subsidies can support businesses through difficult periods.
3. With reference to an example, explain how the withdrawal of production subsidies can affect the ongoing viability of an industry.
4. Explain the intention behind the government's decision to remove tariffs on imported cars.
5. With reference to the recent past, explain how the government combined incentives and disincentives to tackle the long-term challenge of climate change.
6. Explain how the government used subsidies during the COVID-19 induced recession of 2020 to prevent a significant increase in unemployment.
7. Explain how the government's guarantee on bank deposits during the Global Financial Crisis had the potential to create a moral hazard.

## 2.6 The traditional economic viewpoint of the government in the economy: maximisation of living standards

The traditional role of the government in the economy is to maximise both dimensions of living standards; that is, **material living standards** and **non-material living standards**. Improving material living standards is essentially about increasing people's access to goods and services as measured by real GDP per capita. With respect to non-material living standards, this involves enhancing people's 'quality of life' by achieving the following types of outcomes:

- reducing traffic congestion
- improving air quality
- raising literacy and numeracy
- increasing life expectancy
- cleaning up waterways
- lifting general levels of happiness
- lowering crime rates.


It should be noted that the factors listed above are by no means an exhaustive list of the ways that people's 'quality of life' can be enhanced.

To improve society's living standards, the government will use various economic policies to pursue its macroeconomic goals. This includes promoting sustainable economic growth and employment opportunities, while keeping inflation to a minimum. Economic growth improves people's access to goods and services, and generates both employment and income, which provides a sense of happiness and satisfaction. Growing the economy in a sustainable manner enables future generations to enjoy comparable living standards to current generations. Keeping inflation low maintains people's purchasing power and protects the value of their savings, while helping to make Australia's tradables sector internationally competitive. The government also seeks to improve society's living standards by promoting an efficient allocation of resources and an equitable distribution of income.

The next section deals with the government's role in maximising society's living standards in more detail.

# Review Questions 2.6

1. Distinguish between material and non-material living standards.
2. Explain how material and non-material living standards are measured.
3. Outline how the pursuit of sustainable economic growth and job creation, along with the maintenance of low inflation contribute to higher living standards.

## 2.7 The role of government in economic stabilisation, improving efficiency in resource allocation and redistribution of income to improve living standards

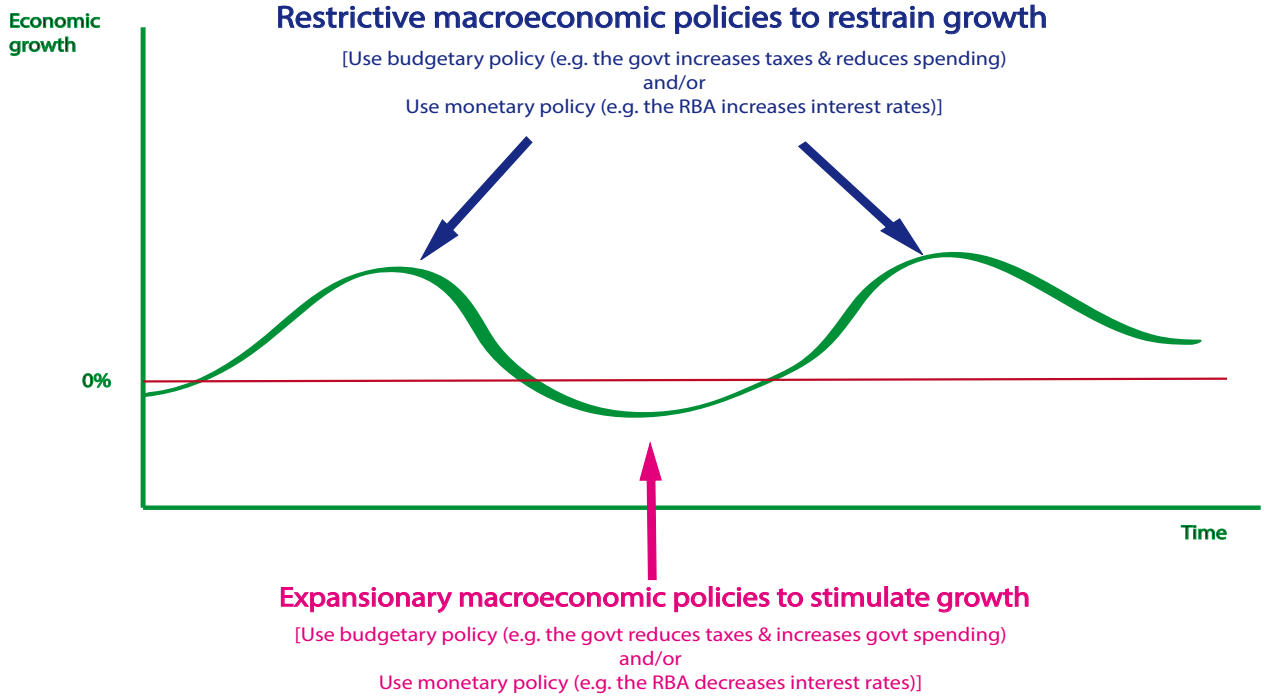
### Economic stabilisation

A feature of market capitalist economies such as the Australian economy is the **business cycle**, which refers to the cyclical movement of economic activity over time, with periods of above average rates of economic growth and periods of negative or low rates of economic growth as measured by Real GDP. The business cycle consists of different phases including expansions (upswings, upturns), peaks (possibly booms), contractions (downswings, downturns) and troughs (possibly recessions).

In the short to medium-term the main determinant of the business cycle is the level of aggregate demand or total expenditure on final goods and services produced within Australia's borders. Thus, any changes in aggregate demand will be reflected in the different phases of the business cycle, such as expansions, peaks, contractions and troughs. Further, without any government intervention, the wave-like or cyclical pattern of economic activity would be more volatile. That is, the economy would be more likely to experience protracted periods of declining (or negative) rates of economic growth and higher rates of unemployment, as well as long and destabilising inflationary booms. Therefore, there is a compelling case for government intervention in the economy to stabilise the business cycle.

The Federal (or Commonwealth) Government and the Reserve Bank of Australia (RBA) play a major role in the **economic stabilisation** by implementing **aggregate demand policies** such as budgetary policy and monetary policy to stabilise the business cycle. The use of budgetary policy to stabilise the cycle involves the Federal Government altering the level and composition of government revenues and expenditure to stimulate or dampen aggregate demand to smooth out fluctuations in the business cycle. Monetary policy relates to the RBA altering the cash (interest) rate, and at times resorting to unconventional monetary policy tools (such as during the 'COVID-19 induced recession of 2020'), to stimulate or restrain aggregate demand to stabilise the business cycle. Figure 2.1 below highlights how budgetary and monetary policies can be used in a counter-cyclical manner to achieve economic stabilisation.

## Figure 2.1 Economic stabilisation policies




The stabilisation of the business cycle is critical to achieving three important macroeconomic goals pursued by the Federal Government with the support of the RBA. These goals are:

**Strong and sustainable economic growth** involves achieving the highest rate of economic growth possible, consistent with strong employment growth, but without jeopardising low and stable inflation and intertemporal efficiency, as well as avoiding unacceptable external pressures, such as a build-up of 'bad' or unproductive foreign debt. The rate of growth in real GDP per annum that is considered both strong and sustainable is 3 - 3.5 per cent per year.

**Full employment** entails achieving the maximum growth in employment and the lowest level of unemployment possible without jeopardising low and stable inflation. This is often expressed in terms of the NAIRU or the non-accelerating inflation rate of unemployment. In the current context this is thought to be an unemployment rate of approximately 4.25%.

**Low and stable inflation** (also referred to as **price stability**) involves keeping increases in the general price level (as measured by growth in the Consumer Price Index) to between 2 and 3 per cent, on average, over time. This is the medium-term operational objective monetary policy, which has the endorsement of the Federal Government.

When these three macroeconomic goals are achieved simultaneously, **domestic economic stability** is attained. Indeed, the simultaneous achievement of these three macroeconomic goals will raise society's **living standards** in both material and non-material terms.

The macroeconomic goals are also supported by the use of **aggregate supply policies** that operate over a longer time frame. These policies seek to improve the willingness and ability of businesses to supply goods and services, increasing the total volume of goods and services available for sale in the economy and boosting the economy's capacity to supply (i.e. productive capacity).

## Application Exercise 2g The Business cycle

**Identify in which stage of the business cycle the following events are most likely to occur. Be prepared to justify your answers.**

| Item | Peak | Trough |
|---|---|---|
| The Reserve Bank of Australia tightens monetary policy | | |
| High levels of demand inflation | | |
| The ASX 200 (sharemarket) records a record high | | |
| Unemployment drops to an extremely low level | | |
| The Australian Government implements an expansionary budg-etary policy | | |
| Property prices plummet | | |
| Business bankruptcies rise sharply | | |
| There is a steep increase in unleased office space in the CBD | | |
| An increase in net migration | | |
| An increase in the number of job vacancies (job advertisements) | | |
| A decrease in bank lending | | |
| A surge in the number of dwelling (housing) approvals | | |
| Chronic capacity constraints on output in the economy | | |
| A large increase in the amount of overtime worked | | |
| Widespread pessimism among households and businesses | | |

Aggregate supply policies refer to any government policy action that is designed to reduce the costs of production and/or improve supply conditions for business firms. Such policies increase the economy's potential level of output by making aggregate supply conditions more favourable and ultimately expand the 'speed' at which the economy can grow, over the long term. These policies will typically include those government initiatives that seek to improve the quality and/or quantity of the nation's productive resources, such as physical capital (e.g machinery and infrastructure) and human capital (i.e. labour). Examples of these policies include government initiatives that are designed to improve education and training in order to raise labour productivity; subsidising childcare to increase labour force participation; tax concessions for research and development expenditure; and removing outdated or cumbersome business regulations that will help to incentivise business activity.

## Efficiency in resource allocation

The Federal Government also strives to promote an **efficient allocation of resources,** which entails all of the nation's resources being used in the production of goods and services in such a way that national welfare or living standards is maximised. This implies that any change in the way resources are allocated from this point will result in a deterioration of national living standards. What is, or isn't, considered to be the most efficient allocation of resources for any particular nation largely depends on the values it places on various goods and services. For example, a nation that is highly materialistic is likely to value the highest possible production levels, regardless of the impact on the environment. Compared to another country that is more environmentally conscious, it will therefore tend to produce more carbon intensive forms of energy (creating greater levels of CO2 emissions) relative to more environmentally friendly energy production (such as solar or wind energy).

Achieving the most efficient allocation of resources will typically imply that the economy has achieved 'efficiency' in all its possible forms. This includes allocative efficiency, productive efficiency, dynamic efficiency and intertemporal efficiency. Given the basic economic problem of relative scarcity it is no wonder that societies and economists are concerned with the efficient use of the economy's limited resources. [Allocative and productive efficiency were considered in Chapter 1, but it is worth returning to these ideas along with two further types of efficiency as we consider the role of the government in promoting efficiency in the economy.]

### *Allocative efficiency*

**Allocative efficiency** occurs when resources are used to produce those goods and services that best satisfy society's needs and wants. This means that the goods and services that provide people with the highest level of utility will be produced in the most efficient way. Goods and services will be made in the right quantities and will go to those people who value them the most. When allocative efficiency occurs, no resources will be wasted, and it will be impossible to make someone better off without making someone else worse off. From a production point of view, the cost of producing a given output is minimised (or output from a given quantity of inputs is maximised) and from

a consumption point of view, the goods and services produced by society will provide the highest level of 'collective' satisfaction. This type of efficiency is often defined in the same way as 'an efficient allocation of resources' described earlier, but can also have a more specific meaning that is beyond the scope of this text (See Study Tip).

The inherent ability of market capitalist economies to allocate resources efficiently has delivered high living standards for the populations that inhabit them. This has made market capitalism the most successful and dominant economic system worldwide. Although, as noted below, sometimes governments are required to intervene in markets when they fail to deliver the most optimal outcomes for society.

**Study tip**

*In a first year microeconomics course, allocative efficiency has a much more specific meaning and is commonly described as the situation where production of goods and services occurs at a point where the marginal benefits of consumption equate to the marginal costs. An increase in production beyond this point is too high because it results in marginal costs exceeding marginal benefits and any production below this point is too low (and sub-optimal) because society would benefit from higher production levels.*

### *Productive efficiency*

**Productive efficiency** is also referred to as **technical efficiency** and entails maximising the output of goods and services from all available resources or factors of production. This implies that goods and services are being produced at the lowest possible cost. Productive efficiency could therefore be improved if workers and/or machinery are able to produce more goods or services per hour worked (an increase in labour productivity) or per machine hour used (an increase in capital productivity).

**Study tip**

*The Austrian economist, Friedrich Hayek argued that markets were the most efficient mechanism for allocating resources because they represented the individual decisions of millions of consumers and thousands of producers—the wisdom of crowds, if you like. Bureaucrats and politicians would never have enough information to allocate resources as efficiently. Hayek was essentially making the point that market capitalist economies are superior to planned socialist economies in allocating resources and maximising living standards.*

### *Dynamic efficiency*

**Dynamic efficiency** is the speed at which resources are reallocated from one area of production to another. High levels of dynamic efficiency implies that resources are highly mobile and easily interchangeable and businesses are adaptive and creative in response to changing economic circumstances. This may involve developing and using new technologies and/or being innovative with product offerings to be able to better meet the changing tastes of consumers. For example, during COVID-19, manufacturers of alcohol and cleaning products quickly adapted their production processes, reallocating their resources (e.g. labour and capital) to the production of hand sanitisers that were in short supply during the early stages of the pandemic.

Allocative, productive and dynamic efficiency are generally conditional on markets being competitive with no or low barriers to entry to markets, and the absence of powerful businesses with the ability to exercise **market power,** restricting output and raising prices to the detriment of consumers (technically referred to as firms abusing market power and eroding consumer surpluses). To illustrate, if there are high barriers to entry to markets (e.g. large set-up costs as in the mining industry or the requirement for government licenses as in banking), the incumbent businesses would not face the threat of new competitors entering the market in response to better profit opportunities. This would enable the incumbents to earn **abnormal profits** (or **supernormal profits**) in perpetuity. Such profits are above what is considered necessary to warrant ongoing participation in the market. Similarly, businesses would not face the necessary competitive pressures to use their resources as efficiently. For example, businesses will be under less pressure to extract as much output as possible from their inputs in an effort to reduce costs/prices in order to win over customers from rival businesses. Further, if there were only a small number of large businesses in a market (as opposed to numerous small businesses each with only a tiny fraction of total sales), they would be tempted to collude to restrict output, which raises prices and generates supernormal profits.

Given the detrimental impact of uncompetitive markets on allocative, productive and dynamic efficiency, the government seeks to promote competition through laws such as the Competition and Consumer Act (2010), which prohibits anti-competitive behaviour and is enforced by the Australian Competition and Consumer Commission (ACCC). This is explored in detail in Chapter 4.

### *Inter-temporal efficiency*

Inter-temporal efficiency is achieved when resources are appropriately allocated between current consumption and future consumption. An idea that is closely connected to inter-temporal efficiency is sustainable development. According to the Brundtland Report:

> ***"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs".***

Therefore, the over-consumption of resources by current generations will jeopardise the living standards of future generations, and ultimately compromise inter-temporal efficiency.

As noted earlier, competitive markets can result in an inefficient allocation of resources. This situation is referred to as **market failure**, which occurs when the pursuit of self-interest by market participants such as consumers and businesses leads to an allocation of resources that does not maximise societal welfare and living standards. This is because self-interested consumers and businesses are primarily concerned with utility and profit maximisation respectively, rather than overall societal welfare. Types of market failure include public goods, externalities (as previously discussed in the section on incentives), asymmetric information and common access resources. In such instances, government intervention in specific markets is justified to address market failure.

**Study tip**

*The environmental economist Herman E. Daly famously said "the economy is a wholly owned subsidiary of the environment, not the reverse". This quote highlights that long-term prosperity is intrinsically tied to the good stewardship of the natural environment.*

**Study tip**

*Market failures such as public goods, externalities, asymmetric information and common access resources are studied in detail in Unit 3.*

A case-in-point are common access resources (CAR) such as air, forests and fish. CAR possess two characteristics that lead to market failure. Firstly, CAR are subject to rivalry in consumption, which means that one person's consumption reduces the amount of the resource that is available for someone else. Secondly, CAR are non-excludable, which means that anyone can utilise them without paying for them. Therefore, there tends to be an overconsumption of CAR because of the lack of excludability and the absence of prices. Thus, it stands to reason that economic agents acting in their self-interest will seek to exploit CAR before they run out, which perversely accelerates the depletion of these resources for everyone. For example, the overconsumption of fish by current generations reduces the stock of fish available to future generations jeopardising inter-temporal efficiency. With future generations less able to satisfy their needs and wants, their living standards will be diminished.

A possible government intervention in the case of CAR is the use of regulations such as issuing fishing licenses, imposing fishing quotas and size restrictions on the fish that can be caught, and policing this through the Coast Guard/Water Police. These interventions should curb the overconsumption of fish and promote the sustainable harvesting of fish stocks. Ultimately, this supports the attainment of inter-temporal efficiency by preserving this CAR for both current and future generations, effectively maintaining living standards over time. [Inter-temporal efficiency, market failure and government interventions are considered in more detail in the topic of economics and environmental sustainability in Chapter 9.]

## Application Exercise 2h: Common Access Resources

**Read the extract about the Tragedy of the Commons from Robert H. Frank's book, *The Economic Naturalist – Why Economics Explains Almost Everything* (pgs. 121-122) and answer the questions that follow.**

For gourmets around the globe, there is no greater delicacy than caviar from the Caspian Sea. The rarest and most precious variety comes the beluga sturgeon, which can grow up to 9 metres (30 feet) long, weigh as much as 800 kilograms (1,800 pounds), and live as long as 100 years. Beluga caviar has long been expensive but readily available. Since the dissolution of the former Soviet Union in 1989, however, supplies have plummeted, and its price has escalated sharply. What went wrong?

The Caspian Sea is now surrounded by Iran and four independent nations that were once part of the Soviet Union: Russia, Kazakhstan, Turkmenistan and Azerbaijan. Before 1989, the powerful central governments of Iran and the Soviet Union tightly regulated commercial activity in the Caspian Sea. They kept the tragedy of the commons under control by prohibiting the harvest of smaller sturgeon. When the Soviet Union's demise left central governments unable to maintain strict regulatory control, sturgeon fishermen realised that restraint was no longer economically viable. Any sturgeon they left behind would simply have been harvested by others.

Russia and Iran have again begun co-operating in an effort to curb pollution and overfishing in the Caspian Sea. In the meantime, however, buyers can expect to continue paying around £250 for 100 grams of beluga caviar.

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**Questions**

1. **Using the case study, and your knowledge of common access resources, explain why stocks of beluga sturgeon fell to critically low levels.**
2. **Suggest some possible government interventions to curb overfishing to promote inter-temporal efficiency.**
3. **Describe one other example of common access resources and the action taken by governments to protect it.**

### Redistribution of income

The government will also aim to promote a more **equitable distribution of income.** The nature of market capitalist economies is such that they reward effort, personal betterment, risk taking, innovation, entrepreneurship and plain old greed. These attributes inevitably result in inequality in the distribution of income (and wealth). Given inequality is an inherent feature of market capitalist economies, governments seek to redistribute incomes in a fair but not equal manner, to ensure that all members of society can enjoy a dignified standard of living and avoid absolute poverty. This is seen as a hallmark of a civil and affluent society, and necessary for maintaining social cohesion.

To promote an equitable distribution of incomes the government maintains a progressive personal income tax system and provides means-tested transfer payments to financially support the most disadvantaged members of society. It also seeks to provide equality of opportunity through free and compulsory education, and schemes that provide people from certain backgrounds with better access to university to pursue higher education. An equitable distribution of income will be explored extensively in Chapter 10.

## Review Questions 2.7

1. Describe the business cycle, and identify the main determinant of the business cycle in the short to medium-term.
2. Describe why government intervention to stabilise the business cycle is needed.
3. Briefly outline how budgetary policy and monetary policy can be used to stabilise the business cycle.
4. Explain the three macroeconomic goals pursued by the government, and outline how they contribute to higher living standards.
5. Explain the difference between aggregate demand policies and aggregate supply policies.
6. Provide some examples of aggregate supply policies.
7. Describe an efficient allocation of resources.
8. Define allocative efficiency, and the role of markets and capitalist ownership in promoting allocative efficiency.
9. Define productive efficiency and its relationship to allocative efficiency.
10. Define dynamic efficiency and its relationship to allocative efficiency.
11. Analyse why uncompetitive markets can be detrimental to the achievement of allocative, productive and dynamic efficiency.
12. Briefly outline the role of the Australian Competition and Consumer Commission (ACCC).
13. Define intertemporal efficiency and its connection to sustainable development.
14. Explain why free (unregulated) and competitive markets can result in market failure.
15. Describe the market failure of common access resources, and how the government can intervene to correct this type of market failure.
16. Outline the notion of an equitable distribution of income, and describe why inequality in the distribution of income is a characteristic of market capitalist economies.
17. Identify two ways that the government can promote a more equitable distribution of income.

## *2.8 Multiple choice review questions*

**1. Which of the following would be considered a negative externality?**

a) Cigarette smoke inhaled by non-smokers in public spaces
b) The Formula 1 Grand Prix in Melbourne promoting the city of Melbourne to international tourists
c) Beautifying your home and the benefits this provides to your neighbours, both aesthetically and in terms of their property values
d) The research and development done by the defence industry and its dissemination to other industries

**2. Which of the following combinations are considered to be examples of positive externalities?**

**i. Abnormally high property prices enjoyed by homeowners located in the immediate vicinity of zoned, top performing public schools**
**ii. The overall decline in car theft as a result of some car owners installing concealed anti-theft devices in their cars**
**iii. The Formula 1 Grand Prix in Melbourne and the disruption it causes to local traffic**
**iv. Loud music from a raucous party disturbing the neighbours' sleep**

a) Statements iii & iv
b) Statements i & iv
c) Statements ii & iii
d) Statements i & ii

**3. Which of the following government policies is most likely to address a negative externality?**

a) Reduction in excise tax on petrol
b) Abolition of national park entry fees
c) Lowering rebates on the installation of solar panels
d) Increasing fees on metered car parking spaces in the city

**4. Which of the following combination has the most potential to create a moral hazard?**

**i. The decision by the Australian Government to guarantee bank deposits in the event of another Financial Crisis**

**ii. Third party car insurance, which only covers the cost of repairs to the motor vehicle of the party who was not at fault**

**iii. Comprehensive car insurance, which covers the cost of repairing the motor vehicles of both parties involved in a motor vehicle accident irrespective of who is at fault**

**iv. The installation of video surveillance cameras in the workplace**

a) Statements i & ii.
b) Statements i & iii.
c) Statements ii & iii
d) Statements iii & iv

**5. Which of the following does not represent an increase in productivity?**

a) Output remains unchanged but fewer inputs are used up in production
b) Output increases but the same amount of inputs are used in production
c) Output remains the same but more inputs are used up in production
d) Output increases but fewer inputs are used up in production

**6. When compared with country B, people in country A are twice as productive at producing cars and three times as productive at producing computer software. According to the theory of comparative advantage**

a) Legislation to ensure that petrol has lower levels of harmful substances like lead
b) The granting of a license to Woodside resources company to expand its liquefied natural gas extraction on the North West Shelf of Australia
c) Requiring fishing companies to limit their catch so as to encourage sustainable fish stocks in Port Phillip Bay
d) Tax incentives to companies who invest in R&D to help make their products more sustainable

**7. Which of the following is not an example of a government action to reduce a negative externality?**

a) Legislation to ensure that petrol has lower levels of harmful substances like lead
b) The granting of a licence to Adani Mining Company to open coal mines in central Queensland
c) Requiring commercial fishing companies to limit their catch so as to encourage sustainable fish stocks in Port Phillip Bay
d) Providing tax incentives to companies who invest in research and development so as to make their products more sustainable

**8. Which of the following is not considered an example of an aggregate supply policy initiative designed to increase productive capacity?**

a) Lower interest rates
b) An increase in childcare subsidies
c) More spending on education and training
d) Reducing the regulatory burden on businesses

**9. Which of the following is not an element of domestic economic stability?**

a) Full employment
b) Low and stable inflation
c) An efficient allocation of resources
d) Strong and sustainable economic growth

**10. Which of the following is not considered an aggregate supply policy?**

a) The provision of more generous childcare subsidies
b) Increased spending on training and education
c) Deregulation.
d) The Reserve Bank increasing the cash (interest) rate.

**11. With reference to the traditional economic viewpoint, which of the following assumptions is incorrect?**

a) Consumers aim to maximise utility subject to a budget constraint
b) Consumers seek to derive the most satisfaction from the income at their disposal by buying those goods and services that reflect their preferences
c) Consumers act in the interests of others
d) Consumers make rational choices

**12. Diminishing marginal utility generally means that**

a) greater consumption of a good or services always yields more utility
b) each additional unit of a good or service consumed is a little less satisfying
c) the opportunity cost of extra consumption is always lower
d) products that are scarce will have a higher price

**13. Which of the following is classified as a direct tax?**
a) Goods and services tax
b) Personal income tax
c) Excise tax
d) Tariffs

**14. What name is given to the type of efficiency where resources are quickly reallocated to meet the changing tastes and needs of consumers?**
a) dynamic efficiency
b) allocative efficiency
c) productive efficiency
d) intertemporal efficiency

**15. Which statement regarding the use of aggregate demand policies is not correct?**
a) Monetary policy will be tightened (higher interest rates) during the boom phase of the business cycle
b) Budgetary policy will become more contractionary during an economic downturn
c) Government spending is likely to fall relative to government revenue when the unemployment rate falls to very low levels
d) Monetary policy and budgetary policy will often be used in tandem to manage the business cycle

**16. Non-material living standards are most likely to increase when**
a) average incomes increase, thus improving access to goods and services
b) there are higher levels of production
c) people experience less leisure time
d) there is less congestion on roads

**17. Which of the following is not considered to be an indicator of non-material living standards?**
a) air quality
b) literacy and numeracy rates
c) general levels of happiness
d) Real GDP per capita

**18. Which type of efficiency is least likely to be related to the goal of achieving a strong rate of economic growth?**
a) Allocative
b) Productive
c) Inter-temporal
d) Dynamic

**19. Which of the following would be classified as a disincentive?**
a) A production subsidy
b) A tax rebate
c) An advertising campaign
d) An indirect tax

**20. Which of the following initiatives is unlikely to reduce carbon pollution?**
a) Subsidies to 'dirty' producers who agree to reduce emissions
b) The re-implementation of a carbon tax
c) Subsidies to 'clean' producers for further investment into renewable energy
d) A decrease in the research and development tax concessions available to businesses

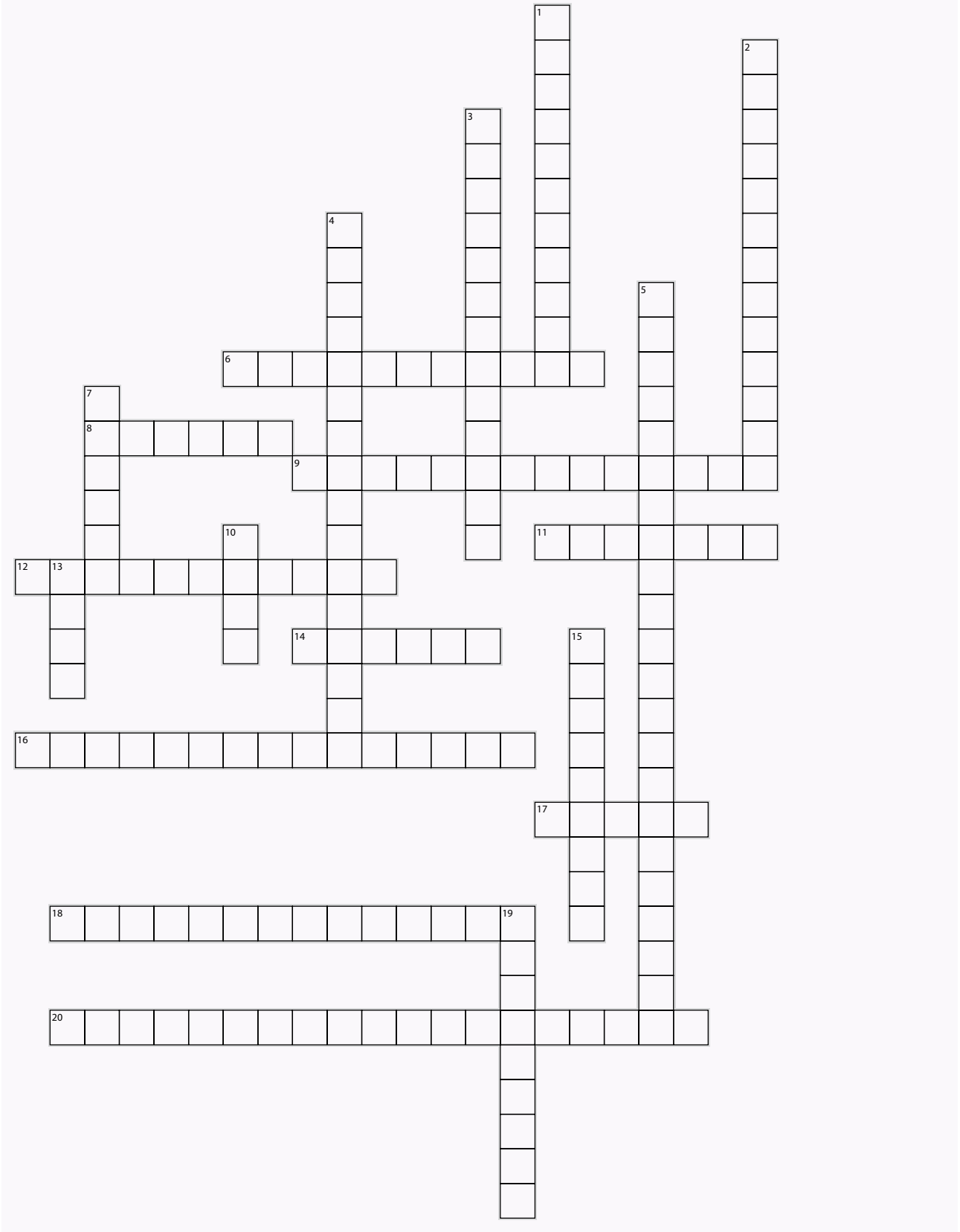
## *2.9 Chapter crossword puzzle*

**Across**

6. The JobKeeper scheme implemented during the COVID-19 induced recession of 2020 is an example of this (two words)
8. A common form of incentive used by the government, where part of the original payment for a good or service is returned to the buyer
9. A Latin term meaning 'rational economic man' (two words)
11. A type of efficiency that involves resources moving swiftly from one activity to another
12. Where consumers act with considered self-interest
14. A tax on an import
16. The satisfaction that consumers gain from consuming an additional unit of a good or service (two words)
17. A measure of satisfaction, happiness or well-being
18. Consumers, businesses and governments are classified in this way (two words)
20. A principle that states that in market capitalist economies, consumers determine how resources are allocated by casting 'dollar votes' (two words)

## Down

1. A situation where an economic agent has an incentive to increase their exposure to risk because it does not bear the full costs of that risk
2. The main variable that is manipulated when monetary policy is changed (two words)
3. The wave-like movement of economic activity over time, as measured by Real GDP (two words)
4. The fixed amount of income consumers have at their disposal to spend (two words)
5. A concept closely related to intertemporal efficiency (two words)
7. The difference between sales revenue and the costs of production
10. Another term for 'equitable' in the context of government efforts to achieve an equitable distribution of income
13. A statutory authority involved in policing competition laws
15. Something that induces an economic agent, whether a consumer or business, to act
19. An action taken by an uninformed party to induce an informed party to reveal information



## 2.10 Chapter summary

1. Economic agents are individuals and organisations that participate in the economy, and make economic decisions.
2. Examples of economic agents include consumers or households, businesses, social enterprises and not-for-profit organisations, such as charities, and special interest groups such as trade unions, and the government and statutory authorities.
3. The private sector relates to private ownership and control of resources, and the economic decisions made by the owners of these resources.
4. The public sector relates to government ownership and control of resources, and the economic decisions made by the government and its agencies.
5. Most economic activity in Australia takes place in the private sector as the Australian economy is a market capitalist economy.
6. The traditional economic viewpoint of consumer behaviour is based on the idea of Homo economicus or 'rational economic man'.
7. Homo economicus strives to maximise their utility (or satisfaction) based on a rational and informed assessment of the cost and benefits, and given their budget constraint.
8. Consumers experience diminishing marginal utility from the consumption of goods and services and, therefore over a period of time will 'mix it up' by consuming different combinations of goods and services in order to maximise their total utility.
9. Consumers respond to incentives and disincentives such as taxes, tax rebates, subsidies and regulations.
10. Governments employ incentives to encourage the consumption of those goods and services that generate positive externalities or confer benefits on third parties or bystanders, such as vaccinations. This can be achieved through the use of subsidies or through direct provision free of charge.
11. Conversely, governments aim to discourage the consumption of those goods and services that generate negative externalities or impose costs on third parties or bystanders, such as second-hand cigarette smoke. This can be achieved through the use of taxes or laws prohibiting consumption.
12. Certain products such as insurance can create 'perverse incentives' because of the problem of moral hazard. This is where the insured party is more likely to act irresponsibly or recklessly, as they know they are insured against any loss.
13. Incentives such as childcare subsidies, lower income taxes and less generous welfare payments can be used to encourage more people to participate in the labour force.
14. Monetary incentives such as pay rises linked to productivity improvements and non-monetary incentives such as the recognition of employees' achievements can be used to boost workplace productivity.
15. The traditional economic viewpoint of business behaviour is based on the idea of profit maximisation. That is, businesses seek to maximise their profits by producing those goods and services that consumers value most and by producing them at the lowest possible cost.
16. Businesses, like consumers and workers, respond to incentives, such as taxes, tax rebates, production subsidies, tariff reform and wage subsidies.
17. The Federal Government and statutory authorities such as the Reserve Bank of Australia, and the Australian Competition and Consumer Commission pursue the macroeconomic goals of strong and sustainable economic growth, full employment, low and stable inflation, an efficient allocation of resources and an equitable distribution of income in order to maximise society's living standards.
18. Economic stabilisation involves the use of budgetary policy and monetary policy to stabilise the fluctuations in the business cycle.
19. An efficient allocation of resources entails all of the nation's resources being used in the production of goods and services in such a way that national welfare or living standards is maximised.
20. Productive efficiency is also referred to as technical efficiency and entails maximising the output of goods and services from all available resources or factors of production.
21. Dynamic efficiency is the speed at which resources are reallocated from one area of production to another.
22. Inter-temporal efficiency is achieved when resources are appropriately allocated between current consumption and future consumption.
23. To achieve its macroeconomic goals the Federal Government and its statutory authorities use various economic policies such budgetary policy, monetary policy, aggregate supply policies and competition policy to maximise living standards.